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DECEMBER 1982

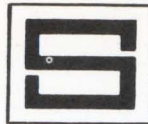
# TRANSISTOR

JANUARY 1983 THROUGH DECEMBER 1983 — EDITION 53

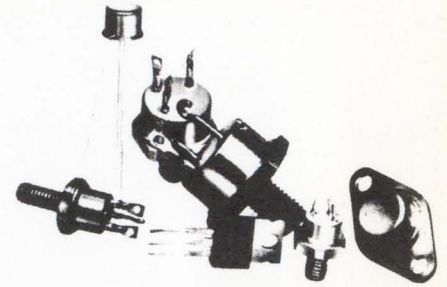
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ELECTRONIC INFORMATION SERIES





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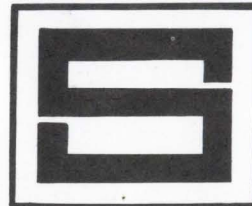
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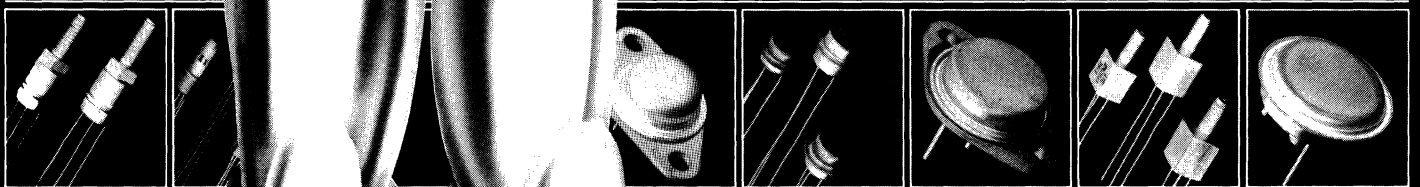


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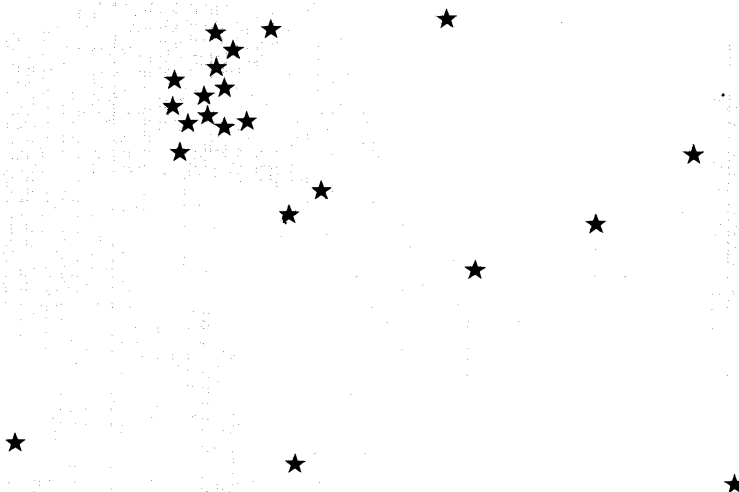
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# D.A.T.A. BOOK®

## ELECTRONIC INFORMATION SERIES

### VOLUME 27 - BOOK 36 - DECEMBER 1982

# TRANSISTOR

JANUARY 1983 THROUGH DECEMBER 1983 - EDITION 53  
27,074 TYPES 137 MANUFACTURERS

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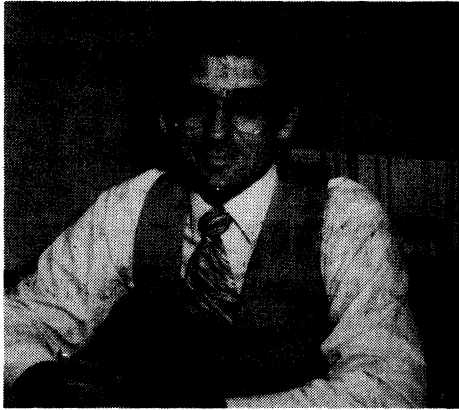
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## FROM THE EDITOR:

With over 25 years experience in compiling information, D.A.T.A. continues to seek ways to simplify reference research for components, boards and software. We have recently instituted a program of analysis of components to determine pin-for-pin functional equivalence. With this cross-referencing system, it is easy to find hundreds of parts which have pin-for-pin functional equivalence. Schematics are easy to find since they are organized by the same number. Cross-referencing from type number is just as easy in the type number to functional number index or the technical sections.

This feature, which we refer to as the "Functional Equivalence Master Index" will be available in all our IC titles shortly. Additionally, we now highlight technology variations in our digital titles by sorting on TTL, ECL, CMOS, etc. Also being simplified in upcoming editions is the symbology.

## CHANGES TO THIS EDITION...

Your new total of currently available devices has reached 27,074 from 136 manufacturers. Included within this total are 1,817 all new devices introduced to the electronic industry during the past year. The largest percentage of these new devices are found in sections 5, 11 and 12. Since the last edition our source manufacturers have made specification changes to 102 devices and deleted 874 from their current product listing.

- **International "How To Use" Section**

The "How To Use" section has been translated into French, German and Spanish as well as appearing in English.

- **Transistor Arrays**

Transistor Arrays in DIP and "Can" packages are included to provide a comprehensive listing of all transistors.

- **Microfilm Service**

D.A.T.A. is currently offering it's entire archives of datasheets in microfilm form. Those parts which have datasheets in this service are identified with a special symbol in the Cross Index.

## Also New....

D.A.T.A. now has the first book on Engineering Microprocessor Software. It has a new easy to use format with detailed descriptions of over 2,000 software packages plus five indexes. The new Modules and Hybrid book has some 5000+ power supplies as well as A/D and D/A converters. This book has over 440 pages on this specialized technology.

D.A.T.A. will continue making major changes which I will announce in this spot in upcoming editions.

Frank B. Wahl  
Editor in Chief



# EDITORIAL POLICY AND PROCEDURES

- PURPOSE** This D.A.T.A.BOOK is designed to report comprehensively on what is presently being produced throughout the world in the field of transistor devices. While a book such as this can not provide 100% of the information you might need, its primary aims are those of facilitating the selection of types suitable to your technical requirements, and of directing you to the sources of their manufacture.
- ACQUISITION** D.A.T.A. acquires and processes the information presented in this D.A.T.A.BOOK with the cooperation of the participating manufacturers who supply us with their latest technical information. Manufacturers are not charged for the listing of their products.
- JEDEC OUTLINES** The electrical, mechanical and environmental characteristics tabulated for the standard JEDEC type numbers are derived directly from the registration releases. The particular manufacturer or manufacturers for whom such types are registered are so indicated by the use of a symbol next to their code(s) in the Type No. Cross-Index. In general, the JEDEC-designated types produced by the various manufacturers, whether registered or not, do conform with the registered specifications; however, there may be exceptions, and it is recommended that the individual manufacturers be consulted.
- MILITARY TYPE NUMBERS** The electrical, mechanical and environmental information tabulated for the military types in the technical sections is derived directly from the applicable military specifications and standards. The source information, showing the particular manufacturers qualified for each type, is derived from the QPL (Qualified Parts List) associated with the governing specification, or from the manufacturers' Qualification Test Letters.
- SUBSTITUTE TYPES AND COMPATIBILITY** This D.A.T.A.BOOK can not truly claim to be an interchangeability chart; however, because of the sequencing arrangement of selected characteristics in the technical section, types with the same or similar characteristics are grouped together. For the purposes of replacement, two sections are provided which give the participating manufacturers designated "Direct" and "Suggested" replacement types. Many of these possible substitute type numbers also appear in the technical sections. This allows for convenient technical comparison of characteristics.
- PRICE AND AVAILABILITY** Because of the rapidly-changing and complex nature of this field, current price and delivery information should be obtained direct from the manufacturers. The list of manufacturers and the Sales Offices Section in back of the book will assist you in this.
- MANUFACTURERS' SPECIFICATIONS** This book includes currently-manufactured devices and devices soon-to-be available with their major characteristics, drawings and manufacturers. Every effort is made to ensure the accuracy of the entries herein; however, the publisher can not be held responsible nor guarantee against the possibility of error or omission. Only the manufacturers or their authorized representatives can provide you with complete technical details.

# HOW TO USE THIS BOOK

## 2 BASIC WAYS:

- |   |   |                                       |
|---|---|---------------------------------------|
| <p><b>1</b> If you know:<br/>Electrical &amp; mechanical requirements</p> | <p><b>And need to know:</b><br/>A type number</p>   | <p><b>Read:</b><br/>Explanation 1</p> |
| <p><b>2</b> A type number</p>   | <p>The electrical and/or mechanical characteristics<br/>or<br/>its circuit and outline configuration<br/>or<br/>who manufactures it<br/>or<br/>an equivalent type</p> | <p>Explanation 2</p>                  |

- 1** If you know: the electrical and mechanical requirements (including military):  
And need to know: a suitable type number:

- a. Select from the Table of Contents the Technical Section corresponding to the known device type.
- b. Turn to that section. Symbols and codes used in these technical sections are explained in the "Interpreter" pages at the back of the book.
- c. Notice the sequencing parameters in top right corner of the page

**7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL**

IN ORDER OF (1) DISSIPATION (2) TYPE No.

LINE No.	TYPE No.	MAX. DISS. @ 25°C (W)	MAX. V <sub>p</sub> (V)	ABS. MAX. V <sub>DSS</sub> (V)	MAX. RATINGS @ 25°C (V)	MAX. I <sub>D</sub> (A)	MAX. I <sub>G</sub> (A)	MAX. I <sub>DSS</sub> @ V <sub>GS</sub> =0 (A)	MAX. I <sub>GSS</sub> @ V <sub>GS</sub> =V <sub>D</sub> (A)	TEST COND. (V)	PARAMETERS @ 25°C COMMON SOURCE		MAX. C <sub>iss</sub> (pF)	DERATE IN FREE AIR (F)	MAX. STRUCTURE TEMP. (°C)	DWG. No.	C E O D E
											g <sub>fs</sub> (mhos)	Y <sub>os</sub> (pF)					
1	J100	350m	10 <sup>1</sup>	20	30	10m	20m	0.5n	0.0	20	0.5m	3.0k1	8p	150S	T092	DD	
2	J101	350m	1.5 <sup>1</sup>	20	30	10m	1.0m	0.5n	0.0	20	0.5m	3.0k1	8p	150S	T092	DD	
3	J102	350m	4.0 <sup>1</sup>	20	30	10m	4.5m	0.5n	0.0	20	1.0m	1.2k1	8p	150S	T092	DD	

- d. Locate the type numbers that are in general agreement with your requirements. Because of the sequencing these types will appear together; select your type number. Military types are prefaced with JAN.
- e. If you need the manufacturer, use the manufacturer code from the Type Index page.



f. Turn to the Manufacturers' Codes, Names and Addresses Section.

**MANUFACTURERS' CODES, NAMES & ADDRESSES**

GPL MFR. DESIG.			FSCM/ NATO No.			D.A.T.A. MFRS. CODE			MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS											
D1597			ALGG			* AEG-Telefunken, Geschäftsbereich Elektronische, Bauelemente, Postfach 1109, D7100, Heilbronn, West Germany														

g. Find the manufacturer code and thus the name.

h. Local offices of the manufacturer can be found in the Sales Office Listing Section and company logos are listed in the Logo Section.



**If you know:** the type number (including military which has JAN prefix):  
**First:** Turn to Section 1, the TYPE NUMBER CROSS INDEX and find your type number.

**If you need to know:**

a. The electrical characteristics:

Note the page and line number beside your Type.



1. TYPE No. CROSS INDEX												IN TYPE NUMBER SEQUENCE											
TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line						
HA1199	HITJ	4. 4																					
HA11226	HITJ	4. 7																					
HA11227	HITJ	4. 1																					

Locate that page and line number, and you will find the electrical characteristics.

or b. The circuit and outline drawings:

Those numbers are in the last column



7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL												IN ORDER OF (1) DISSIPATION (2) TYPE No.											
LINE No.	TYPE No.	MAX DISS @ 25°C	MAX Vp & Id=0	ABS MAX BVdss	MAX RATINGS BVgss	MAX Id	MAX Ig	MAX Idss @ Vgs=0 & Vds=Vp	MAX Igss @ Vgs=Vp & Vds=0	TEST COND	PARAMETERS @ 25°C	COMMON SOURCE	r(DS) on	MAX Cis	DERATE IN FREE AIR	MAX TEMP	STRUC. TURE	DWG #	AL C				
		(W)	(V)	(V)	(V)	(A)	(A)	(A)	(A)	(V)	MIN MAX	mhos	(f)	(f)	W/°C	(°C)		TO200 Ser	TO72 DV	TO72 DV			
1	3N124	300m	4.5	15	50	30	20m	20m	2.0m	25n	0.0 15	50m 2.0m	2.0u	10k	14p	1.7m	200						
2	3N125	300m	4.0	15	50	50	20m	20m	4.5m	25n	0.0 15	80m 2.4m	10u	75k	14p	1.7m	200						
3	3N126	300m	6.5	15	50	50	20m	20m	9.0m	25n	0.0 15	1.2m 3.6m	20u	50k	14p	1.7m	200						

and the drawings are in the Drawing Sections and numbered sequentially.

or c. Who manufactures it:

Use the manufacturer code



1. TYPE No. CROSS INDEX												IN TYPE NUMBER SEQUENCE											
TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line	TYPE No.	MFRS/Pg&Line						
HA1199	HITJ	4. 4																					
HA11225	HITJ	4. 7																					

refer to the Manufacturers' Codes, Names and Addresses for complete information. Local offices can be found in the Sales Office Listings Section.

or d. An equivalent type:

Survey the type numbers with similar electrical parameters surrounding the known number to determine the suitable alternatives.

Symbols and codes used in these technical sections are explained in the "Interpreter" pages at the back of the book.

# WIE MAN DIESES NACHSCHLAGEWERK BENUTZT

## 2 Die ZWEI Richtlinien:

- |  |  |  |
|--|--|--|
| <p><b>1</b></p> <p><b>Das wissen Sie:</b></p> <p>Die elektrischen und mechanischen Anforderungen</p> | <p><b>Das wollen Sie wissen:</b></p> <p>Eine entsprechende Typennummer</p>   | <p><b>Dann lesen Sie:</b></p> <p>Erläuterung 1</p> |
| <p><b>2</b></p> <p>Eine Typennummer</p>  | <p>Die elektrischen bzw. mechanischen Eigenschaften ODER die Anschlußbelegung ODER den Hersteller ODER eine äquivalente Ausführung</p> | <p>Erläuterung 2</p>                               |

**1 Das wissen Sie:** die elektrischen und mechanischen Anforderungen (auch für militärische Ausführungen)

**Das wollen Sie wissen:** eine entsprechende Typennummer

- Wählen Sie aus dem Inhaltsverzeichnis den technischen Abschnitt aus, der sich auf die bekannte Bausteinart bezieht.
- Schlagen Sie diesen technischen Abschnitt auf. Die in den technischen Abschnitten verwendeten Symbole und Schlüssel sind auf den Seiten "Interpreter" am Ende des Buches erläutert.
- Beachten Sie die in der oberen rechten Ecke angegebene Reihenfolge der Parameter.



### 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION (2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS. @ 25°C (W)	MAX. Vp (V)	ABS. MAX. BVdss (V)	MAX. RATINGS @ 25°C (V)	MAX. Id (A)	MAX. Ig (A)	MAX. Vgs-0 & Vds=0 (V)	MAX. Vgs & Vds=0 (V)	TEST COND. (V)	COND. (V)	PARAMETERS @ 25°C			COMMON SOURCE		DERATE (F)	IN AIR (F)	MAX. TEMP. (°C)	STRUC. TURE	DWG. #	C. #
												MIN.	MAX.	gfs (mhos)	r(DS) on (Ω)	Cis (F)						
1	MFE2093	300m	2.5†	15	50	3.0m		7.0m	10n	0.0	15	25m	50m	1.5u	2.5k	8.0p	2.0m	175	Δ	T072	DJ	
2	MFE2094	300m	4.5†	15	50	3.0m		1.4m	100p	0.0	15	350u	700u	3.0u	1.8k	6.0p	2.0m	175	Δ	T072	DJ	
3	MFE2095	300m	5.5†	15	50	3.0m		3.0m	100p	0.0	15	400u	800u	10u	1.3k	6.0p	2.0m	175	Δ	T072	DJ	



- Suchen Sie die Typennummern der Bausteine heraus, die im allgemeinen Ihren Anforderungen entsprechen. Wegen der Reihenfolge der Parameter stehen diese Typen alle zusammen. Wählen Sie die Typennummer des Bausteins, der Ihren Anforderungen am genauesten entspricht. Militärischen Ausführungen sind die Buchstaben JAN vorgesetzt.
- Falls Sie auch noch den Hersteller wissen möchten, suchen Sie den Herstellerschlüssel (Spalte "MFRS") auf den Seiten "Type No. Cross Index".
- Schlagen Sie den Abschnitt "Manufacturers' Codes, Names + Addresses" auf.

### MANUFACTURERS' CODES, NAMES & ADDRESSES

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS	
		IP	Integrated Photomatrix, Inc., 1101 Bristol Rd., Mountainside, NJ 07092	
		IR	Infrared Industries, Inc., 62 Fourth Ave., Waltham, MA 02254	

- g. Dort finden Sie neben dem Herstellerschlüssel den vollen Namen sowie die Anschrift des jeweiligen Herstellers.
- h. Niederlassungen und Vertriebsbüros des Herstellers finden Sie im Abschnitt "Sales Office Listing", Firmenzeichen im Abschnitt "Logo".



**Das wissen Sie:** eine Typennummer (auch militärische mit den vorgesetzten Buchstaben JAN)

**Zunächst:** Abschnitt 1 "Type No. Cross Index" aufschlagen und die Typennummer suchen

**Das wollen Sie wissen:**

- a. Die elektrischen Eigenschaften:  
Die Seiten- und Zeilenangaben neben der Typennummer notieren:



**1. TYPE No. CROSS INDEX**

IN TYPE NUMBER SEQUENCE									
TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line
CK1254	RTN 103-18	CK2171	RTN 117-80	CL18	CLA 122-81	CM4-2828	CHM 42-48	CN752	APX 123-5
CK1255	RTN 101-75	CK2172	RTN 117-81	CL110	CLA 124-101	CM4-2828-2	CHM 42-47	PHIN	RTCF
CK1256	RTN 103-14	CK2173	RTN 117-82	CL111	CLA 124-100	CM4-2838	CHM 42-46		VALG

Die entsprechende Seite aufschlagen und die angegebene Zeile suchen.  
Dort finden Sie die elektrischen Eigenschaften.

ODER

- b. Die Anschlußbelegung:  
Die Angaben sind in der letzten Spalte rechts.



**7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL**

LINE No	TYPE No	1 MAX DEVIANCE @ 25°C (W)	2 MAX Vp (V)	3 ABS BVdss (V)	4 MAX BVgss (V)	5 Id (A)	6 Ig (A)	7 IIdss @ Vgs=0 & Vds=Vp (A)	8 Iggss @ Vgs=0 & Vds=0 (A)	9 TEST COND (V)	10 COMMON SOURCE (mhos)	PARAMETERS @ 25°C		DERATE		STRUC-TURE	Y200 s/a	# L C
												MIN	MAX	IN FREE AIR W/C (°C)	MAX TEMP (°C)			
1	J100	350m	101	20	30	10m	20m	0.5n	0.0	20	0.5m	3.0k	8p	150S	150S	TO92	DD	
2	J101	350m	1.51	20	30	10m	1.0m	0.5n	0.0	20	0.5m	3.0k	8p	150S	150S	TO92	DD	
3	J102	350m	4.01	20	30	10m	4.5m	0.5n	0.0	20	1.0m	1.2k	8p	150S	150S	TO92	DD	

Die Zeichnungen finden Sie entsprechend numeriert in dem Abschnitt "Drawings".

ODER

- c. Den Hersteller:  
Suchen Sie den Herstellerschlüssel (Spalte "MFRS") auf den Seiten "Type No. Cross Index".



**1. TYPE No. CROSS INDEX**

IN TYPE NUMBER SEQUENCE									
TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line	TYPE No.	MFRS/Pa&Line
AND718P	AND 88-51	AP005-4RB	CENB 80-82	BPX29	BPX95C1	APX 88-18	C30B50EL	RCA 80-80	
AND718R	AND 38-108	AR01550	DPI 181-23	(cont)	FERB PHIN	BPX95C2	APX 88-19	C30B50FL	RCA 80-81
AND718Y	AND 52-5	AR02550	DPI 181-62	MULB					RCA 80-82

Im Abschnitt "Manufacturers' Codes, Names + Addresses" finden Sie dann den vollen Namen sowie die Anschrift des Herstellers.  
Niederlassungen und Vertriebsbüros des Herstellers finden Sie im Abschnitt "Sales Office Listing" Firmenzeichen im Abschnitt "Logo".

ODER

- d. Eine äquivalente Ausführung:  
Suchen Sie die Ihnen bekannte Typennummer auf. Diese ist von Typen mit ähnlichen elektrischen Parametern umgeben.  
Wählen Sie unter diesen die geeignete äquivalente Ausführung.

Die in den technischen Abschnitten verwendeten Symbole und Schlüssel sind auf den Seiten "Interpreter" am Ende des Buches erläutert.



# COMMENT UTILISER CE MANUEL

## 2 METHODES FONDAMENTALES:

- |          |   |  |                   |
|----------|---|--|-------------------|
|          | <b>Si vous connaissez:</b>                              | <b>Et il vous faut:</b>  | <b>Consultez:</b> |
| <b>1</b> | Les caractéristiques électriques et mécaniques requises | Un type de composants  | Explication 1     |
| <b>2</b> | Le type de composants                                   | Les caractéristiques électriques et/ou mécaniques<br>OU<br>La configuration de son boîtier<br>OU<br>Le fabricant<br>OU<br>Un modèle équivalent | Explication 2     |

- 1 Si vous connaissez:** les conditions électriques et mécaniques requises (y compris pour le secteur militaire).
- Et il vous faut:** la référence du modèle qui convient.

- Dans la table des matières, sélectionnez la Section Technique correspondant au genre de système connu.
- Reportez-vous à cette section. L'explication des codes et symboles utilisés dans les sections techniques se trouve à la fin du manuel, aux pages intitulées "Interpreter."
- Remarquez les paramètres séquentiels en haut de la page, à droite.

### 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

LINE No.	TYPE No.	MAX DISS @ 25°C (W)	MAX Vp (V)	ABS MAX RATING @ 25°C (V)	MAX BVdss (V)	MAX BVgss (V)	MAX Id (A)	MAX Ig (A)	MAX Idss @ Vgs=0 (A)	MAX Igss @ Vgs=0 (A)	TEST COND Vgs (V)	COND Vds (V)	PARAMETERS @ 25°C COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)	DERATE IN FREE AIR (W/°C)	MAX TEMP (°C)	STRUC. TURE	DWG #	L C A D E
													MIN	MAX							
1	2N5248	380m	8.0	15	30	10m	20m	5.0	0.0	15	3.5m	8.5m	50u	100%	8.0p#	2.9m	150S	#	T092	DA	
2	2N5549	380m	7.0	15	40	10m	20m	5.0	0.0	15	6.0m	15m	75u#	100%	18.0p#	2.4m	200S	#	T018	DH	
3	2N5949	380m	7.0	15	30	10m	20m	5.0	0.0	15	3.5m	7.5m	50u	100%	18.0p#	2.8m	150S	#	R203	DB	

- Repérez les références des modèles qui correspondent a vos conditions requises. Grace a leur ordre séquentiel, ces modèles apparaîtront groupés; choisissez votre type. Les modèles militaires sont précédés du préfixe JAN.
- S'il vous faut le fabricant, utilisez le code des fabricants qui vous est donné à la page de l'Index des Modèles.

f. Reportez-vous à la section consacrée aux Codes, Noms et Adresses des Fabricants.

## MANUFACTURERS' CODES, NAMES & ADDRESSES

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS			
D1597	ALGG	* AEG-Telefunken, Geschäftsbereich Elektronische, Bauelemente, Postfach 1109, D7100, Heilbronn, West Germany				

g. Recherchez le code du fabricant et vous trouverez ainsi son nom.

h. Vous trouverez les représentants locaux du fabricant dans la section où sont répertoriés les bureaux de vente; et les sigles des sociétés dans celle qui leur est consacrée.



**Si vous connaissez:** la référence du modèle (y compris la référence militaire qui est précédé de JAN).

**Tour d'abord:** reportez-vous à la section 1, a la rubrique type number, cross index et trouvez la référence de votre modèle.

**S'il vous faut:**

a. Les caractéristiques électriques:

Relevez le numéro de la page et de la ligne à côté de votre modèle.



### 1. TYPE No. CROSS INDEX

TYPE No.		MFRS/Pg&Line		TYPE No.		MFRS/Pg&Line		TYPE No.		MFRS/Pg&Line		TYPE No.		MFRS/Pg&Line	
880BR11	LXD	186-55	102B3-32	EEVB	182-70	103F7-12	EEVB	186-17	107B7-13	EEVB	189-84	126-1	HEI	189-89	
8509R11GH	LXD	186-30	102B3-41	EEVB	182-80	103F7-13	EEVB	186-18	107B7-14	EEVB	189-85	126-1	HEI	189-88	
9105R11	LXD	172-8	102B3-42	EEVB	182-81	103F7-14	EEVB	186-19	107B7-26	EEVB	189-86	182ET	IEE	46-106	

Repérez le numéro de cette page et de cette ligne et vous trouverez les caractéristiques électriques.

ou b. Les dessins du boîtier:

Ces références se trouvent dans la dernière colonne



### 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION (2) TYPE No.

LINE No.	TYPE No.	MAX DEVICE DISS @ 25°C (W)	MAX Vp (V)	ABS MAX Id=0 (V)	MAX Vgs (V)	ABS MAX BVdss (V)	MAX RATINGS BVgss (V)	MAX Id (A)	MAX Ig (A)	MAX Idss (A)	MAX Vgs=0 (V)	MAX VgsVp (V)	MAX Vgs=0 & Vds=0 (V)	TEST COND		PARAMETERS @ 25°C COMMON SOURCE		DERATE		STRUC-TURE	DWG #	#L C	
														Vgs	Vds	gfs	Yos	on	Cis				FREE AIR TEMP
1	2N55551	310m	10	0	0	25	25	40m	15m	10n	50m	10n	25m	10n	30%	10p#	2.8m	150S	#	Y082	DD		
2	2N56381	310m	10	0	0	30c	30c	40m	15m	10n	50m	10n	25m	10n	30%	10p#	2.8m	150S	#	Y082	DD		
3	2N56391	310m	10	0	0	30c	30c	40m	15m	10n	50m	10n	25m	10n	30%	10p#	2.8m	150S	#	Y082	DD		

et les dessins sont dans la section qui leur est consacrée et sont numérotés comme indiqué.

ou c. Le fabricant:

Utilisez le code du fabricant et reportez-vous aux Codes,



### 1. TYPE No. CROSS INDEX

TYPE No.		MFRS/Pg&Line		TYPE No.		MFRS/Pg&Line		TYPE No.		MFRS/Pg&Line		TYPE No.		MFRS/Pg&Line	
1A48B	HAFO	84-18	12SM1020GE10P1NR	114-73	4N26	FSC	MOY4121-85	85M1020ES	INR	114-89	44PH05P	ASE	84-18		
1A48C	HAFO	84-18	12SM1020GE10P1NR	114-73	4N26	FSC	MOY4121-85	85M1020ES	INR	114-89	44PH05P	ASE	84-18		
1A48FB	HAFO	81-1	12SM1020GE10T1NR	114-74		GIC	MON	85M1020E5PL	INR	114-90	44PH05P	ASE	84-18		

Noms et Adresses des Fabricants pour de plus amples informations. Vous trouverez les représentants locaux dans la section où sont répertoriés les bureaux de vente. Les sigles des sociétés se trouvent dans la section qui leur est consacrée.

ou d. Un modèle équivalent:

Recherchez les références des modèles ayant des paramètres électriques similaires et se trouvant de la référence autour connue afin de déterminer les alternatives qui conviennent.

L'explication des codes et des symboles utilisés dans les sections techniques se trouvent à la fin du manuel, aux pages intitulées "Interpreter."

# COMO USAR ESTE LIBRO

## 2 MODOS BASICOS:

- |  |  |  |
|--|--|--|
| <p><b>Si Ud. sabe:</b></p> <p><b>1</b> Los requisitos eléctricos y mecánicos</p> <p><b>2</b> Un número de tipo</p> | <p><b>Y necesita saber:</b></p> <p>Un número de tipo</p> <p>Las características eléctricas y/o mecánicas</p> <p>o</p> <p>su encapsulado</p> <p>o</p> <p>quien lo fabrica</p> <p>o</p> <p>un tipo equivalente</p> | <p><b>Lea:</b></p> <p>Explicación 1</p> <p>Explicación 2</p> |
|--|--|--|

**1 Si Ud. sabe:** los requisitos eléctricos y mecánicos (incluyendo los militares):  
**Y necesita saber:** un número de tipo adecuado:

- Elija de entre la tabla de materias adecuada la sección técnica que corresponda al dispositivo conocido
- Diríjase a esa sección. Los símbolos y códigos que se emplean en estas secciones técnicas se explican en las páginas "Interpretador" en la parte trasera del libro.
- Mire los parámetros secuenciales en el extremo derecho superior de la página.

### 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX DISS @ 25°C (W)	MAX Vp & Vds (V)	ABS MAX RATINGS @ 25°C BVdss (V)	MAX BVgss (V)	Id (A)	Iq (A)	Idss @ Vgs=0 (A)	MAX Igss @ Vgs=0 (A)	TEST COND Vgs (V)	COND Vds (V)	PARAMETERS @ 25°C			MAX. Cis (pF)	IN FREE AIR W/C (°C)	STRUC. TURE	DWG #	# C
												COMMON SOURCE gfs (mhos)	Yos (pF)	on (f)					
1	2N5248	360m	8.0	15	30	10m	20m%	5.0n	0.0	15	3.5m	8.5m	50u	100%	2.9m	150S	#	1092	DA
2	2N5549	360m	8.0	15	40	10m	20m%	5.0n	0.0	15	6.0m	15m	100%	8.0p#	2.4m	200S	#	TO18	DH
3	2N5949	360m	7.0	15	30	10m	18m%	1.0n	0.0	15	3.5m	7.5m	75u#	200%	2.8m	150S	#	R203	DB

- Localice los tipos que por lo general concuerdan con sus requisitos. Debido al control secuencial, estos tipos aparecerán juntos; seleccione su tipo. Los tipos militares aparecen con el prefijo JAN.
- Si necesita saber el fabricante, use el código de fabricantes que se encuentra en la página del Índice de Tipos.



f. Diríjase a la Sección de Códigos, Nombres y Direcciones de Fabricantes.

## MANUFACTURERS' CODES, NAMES & ADDRESSES

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS
↓	↓	↓	
	D1597	ALGG	* AEG-Telefunken, Geschaltsbereich Elektronische, Bauelemente, Postfach 1109, D7100, Heilbronn, West Germany

g. Encuentre el código del fabricante y así encontrará el nombre.

h. Las oficinas regionales del fabricante pueden encontrarse en la Sección de Listas de Oficinas de Venta y los logos se encuentran en la Sección de Logos.



**Si Ud. sabe:** el número del tipo (incluyendo el tipo militar con su prefijo JAN)

**Primero:** Diríjase a la Sección 1, el INDICE DE REFERENCIA SISTEMATICA DE NUMEROS DE TIPOS y localice el número de su tipo.

**Si necesita saber:**

a. Las características eléctricas:

Mire la página y el número de la línea al lado de su Tipo



### 1. TYPE No. CROSS INDEX

TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line
85DSR11	LXD 156 55	102B3 32	EEVB 152 79	103F7 12	EEVB 156 17	107B7 13	EEVB 159 84	125 1	HEI 189 89				
85D9R11GH	LXD 156 30	102B3 41	EEVB 152 80	103F7 13	EEVB 156 18	107B7 14	EEVB 159 65	126 1	HEI 189 88				
91DSR11	LXD 172 6	102B3 42	EEVB 152 81	103F7 14	EEVB 156 19	107B7 26	EEVB 159 66	152ET	IEE 46 106				

Localice esa página y el número de la línea, y encontrará las características eléctricas.

o

b. El aspecto:

Esos números se encuentran en la última columna



### 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

LINE No.	TYPE No.	1 MAX DEVICE DISS @ 25°C (W)	MAX Vp (V)	MAX BVds (V)	ABS MAX BVgss (V)	MAX RATINGS @ 25°C Id (A)	MAX Idss @ Vgs=0 (A)	MAX Igss @ Vgs=0 (A)	TEST COND Vgs Vds (V)	COND Vgs Vds (V)	PARAMETERS @ 25°C COMMON SOURCE		r(DS) on (Ω)	MAX Cis (pF)	IN FREE AIR W/C (°C)	STRUC TURE	DWRG #	L C	
											MIN (mhos)	MAX (pF)							
1	2N3066	300m	9.5	30	50Δ	100m	4.0m	1.0n	0.0	30	400u	1.0m	50uf	10p%	1.7m	200C	TO18	DBZ	
2	2N3066A	300m	9.5	30Δ	50Δ	4.0m	100m	4.0m	1.0n	0.0	30	400u	1.0m	50u	10p%	1.7m	200C	TO18	DBZ
3	2N3067	300m	14.5	30	50Δ	100m	4.0m	1.0n	0.0	30	300u	1.0m	20uf	10p%	1.7m	200C	TO18	DBZ	

y los dibujos se encuentran en la Sección de Dibujos, numerados según se indica.

o

c. Quien lo fabrica:

Use el código del fabricante



### 1. TYPE No. CROSS INDEX

TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line	TYPE No.	MFRS Pg & Line
1A48B	HAFO 84 16	2SM1020GE10T	INRI	INRJ	114 73	4N26	FSC	GESY	MOYA 121 88	BSM1020ES	INR	114 89	44PHOB
1A48C	HAFO 84 16						GIC	HON					44PHOB
1A48FB	HAFO 81 1	2SM1020GE10T	INR	114 74						BSM1020E8PL	INR	114 90	44PHOB

y vaya a la Sección de Códigos, Nombres y Direcciones de los Fabricantes para obtener la información completa. Las oficinas locales del fabricante pueden encontrarse en la Sección de Listas de Oficinas de Venta y los logos se encuentran en la Sección de Logos.

o

d. Un tipo equivalente:

Revise los tipos que tengan parámetros eléctricos similares al rededor del número conocido para determinar las alternativas convenientes.

Los símbolos y códigos que se emplean en estas secciones técnicas se explican en las páginas "Interpretador" en la parte trasera del libro.

# USE OF POWERS-OF-TEN MULTIPLIERS AND SYMBOLS & CODES IN THE TECHNICAL SECTIONS

To present a maximum amount of information in a minimum amount of space, use is made in this book of the following data modifiers:

## POWERS-OF-TEN MULTIPLIERS

The powers-of-ten multipliers shown below are used in numeric columns when the value being entered is many times greater or smaller than the units of measure indicated in the column heading. Usually, the latter are the so-called 'basic' units; such as V (volts), A (amperes) and s (seconds). The multipliers and an explanation of their use are given below:

MULTIPLIERS			EXPLANATION		
Power	Prefix	Symbol	Value of Data To Be Entered	Basic Unit In Column Heading	Actual Entry
10 <sup>12</sup>	tera	T	3 milliamperes	A (amperes)	3.0m
10 <sup>9</sup>	giga	G	9 megahms	Ω (ohms)	9.0M
10 <sup>6</sup>	mega	M	0.5 volt	V (volts)	500m*
10 <sup>3</sup>	kilo	k	10 amperes	A (amperes)	10
10 <sup>2</sup>	hecto	h			
10	deka	da			
10 <sup>-1</sup>	deci	d			
10 <sup>-2</sup>	canti	c			
10 <sup>-3</sup>	milli	m			
10 <sup>-6</sup>	micro	μ			
10 <sup>-9</sup>	nano	n			
10 <sup>-12</sup>	pico	p			
10 <sup>-15</sup>	femto	f			
10 <sup>-18</sup>	atto	a			

\*May also be written as 0.5, with no multiplier

Recommended by International Committee on Weights and Measures. Adopted by National Bureau of Standards

## SYMBOLS & CODES

**Symbols:** Symbols such as #, Δ, and \$ are used in all columns, numeric or otherwise, whenever the data entries differ in some way from the entity defined in the column heading. For instance, if a given heading specifies Max. Power (in Watts) and the numeric value being entered for a given type represents the minimum power instead, the variance is denoted by the appearance of a special symbol alongside the numeric entry.

**Codes:** Codes are used in some columns as means to abbreviate the data being entered. The codes may be alphabetic (A, B, C, etc.) numeric (1,2,3, etc.) or some combination of both.

**Note:**

The symbols and codes used herein are explained on the Interpreter Pages in back of the book.

# HOW TYPE NUMBERS ARE SEQUENCED IN THE TYPE NUMBER CROSS INDEX

Sequencing of type numbers in the Type Number Cross-Index is governed by the following rules:

Rules	Examples	Rules	Examples
1. Type numbers are listed in numeric-alphabetic sequence; i.e., type numbers beginning with a number (decimal, fraction, or whole) precede type numbers beginning with a letter.	13A01 143 1202 A147 AN127 B2000	3. Zeros are ignored in sequencing except when the zero is the only basis for distinguishing one type number from another. In this case the type number containing the zero is listed first.	0112 112 0113 00115 AP01 AP1 AP02
2. Decimals and fractions precede whole numbers. An equivalent decimal precedes the fraction when the remainder of type number is identical.	.25Z150 1/4Z150 3/4M12Z 1T3	4. Number and/or letter groupings preceding hyphens or slashes are the controlling factors in sequencing. The hyphens and slashes themselves precede any identically positioned letters also having the same beginning number/letter groupings.	66-0706 66M1 70/10 70A9

# HOW TYPE NOS. ARE ARRANGED IN THE TECHNICAL SECTION — SEQUENCING PARAMETERS

The arrangement of types in the technical sections is keyed to a set of special characteristics selected for their importance from among the general group of characteristics tabulated in each section. These selected characteristics, or sequencing parameters, differ from one section to another, and are identified at the top of each page, as shown in the sample below.

MAJOR CHARACTERISTICS										SEQUENCING PARAMETERS									
<b>5. SILICON NPN - LOW POWER TRANSISTORS</b>																			
										IN ORDER OF (1) MAX COLLECTOR DISSIPATION (2) fab & (3) TYPE No.									
LINE No.	TYPE No.	1 C <sub>CL</sub> D <sub>ISS</sub> @25°C (W)	2 f <sub>at</sub> (Hz)	DERATE IN FREE AIR W.C	T M E A M X P	ABS MAX RATINGS @25°C				MAX I <sub>cbo</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			C <sub>ob</sub>	STRUC TURE	DWG Y200 s/a TO200 Ser	# L C O A D E		
						BV <sub>cb0</sub>	BV <sub>ce0</sub>	BV <sub>eb0</sub>	I <sub>c</sub>		BIAS		COMMON EMITTER						
						(V)	(V)	(V)	(A)	(V)	(A)	h <sub>FE</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001	(F)			

The different types within a section are first arranged in ascending numeric (or alphabetic) order of the first such parameters. Groups of types having a common value for the first parameter are then arranged in ascending order of the second parameter. This process continues for each parameter in turn, up to and including the last parameter which, in every instance, is the type number itself. The final arrangement, by type number, is done in accordance with the sequencing of type numbers in the cross-index, as explained on the preceding page.

A simplified model of the arrangement as described is shown below.

4 Type Number	Characteristics			
	1 A	2 B	C	3 D
A13	100		325	
A4	100		1000	20
A9	100	A	20	25
A10	100	A	200	25
A3	100	B	40	15
A1	100	C	80	10
A8	100	C	900	15
A7	100	D	35	30
A11	110	A	60	25
A2	120	A	300	15
A5	120	B	150	20
A6	120	B	200	20
A12	120	B	475	25

Last Seq. Par.
1st Seq. Par.
2nd Seq. Par.
(Not Seq.)
3rd Seq. Par.

Note that the absence of an entry for any sequencing parameter is regarded as a zero, and precedes any actual entries in the sequencing.



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2AC128-01	BELI	430-85	2C8318	MOTA	441-110	2G401	GDC	143-11	2N43A			2N61B		
2AC132	BELI	430-86	2C8341	MOTA	442-1	HSE	STI		(cont.)	SPE		(cont.)	CSR	CEN
2AC188	BELI	430-87	2C8379	MOTA	442-2	2G402	GDC	143-12	STI	STR			ETC	DIT
2AC188-01	BELI	430-58	2C8423	MOTA	442-3	HSE	STI		TIC	UPI			IDI	HTN
2AD149	BELI	430-59	2C8438	MOTA	442-4	2G403	GDC	143-13		WAB			IDI	NJS
2BDY20	PHIN	430-60	2C8488	MOTA	442-5	HSE	STI		JAN2N43A	GPD	139-44		SEI	SPE
2BDY38	PHIN	430-61	2C8491	MOTA	442-6	2G404	GDC	143-10	2N44	AMR	138-66		STC	STI
2C918	MOTA	441-6	2C8543	MOTA	442-7	HSE	STI		ASI	CSR			UPI	UPI
2C2102	MOTA	441-7	2C8545	MOTA	442-8	2G413	GDC	136-28	ETC	GTC		2N61C	AMR	141-67
2C2222A	MOTA	441-8	2C8547	MOTA	442-9	HSE	STI		HTN	IDI			CSR	
2C2369A	MOTA	441-9	2C8566	MOTA	442-10	2G414	GDC	136-32	NJS	SEI			ETC	
2C2484	MOTA	441-10	2C8603	MOTA	442-11	HSE	STI		SST	STR			IDI	
2C2857	MOTA	441-11	2C8604	MOTA	442-12	2G415	GDC	136-33	SPE	STI			SEI	
2C2894	MOTA	441-12	2CY30	CEI	155-73	HSE	STI		UPI	WAB			STC	
2C2807A	MOTA	441-13		HSE		2G416	GDC	136-34	2N44A	AMR	141-17		UPI	
2C2846	MOTA	441-14	2CY31	HSE	155-74	HSE	STI		ASI	CEI		2N63	AMR	135-71
2C3303	MOTA	441-15		STI		2G417	GDC	136-27	CRJ	CSR			CSR	
2C3308	MOTA	441-16	2CY32	HSE	155-79	HSE	STI		ETC	GPD			HTN	
2C3439	MOTA	441-17		STI		2G508	GDC	139-61	GTC	HTN			SPE	
2C3468	MOTA	441-18	2CY33	CEI	155-80	HSE	STI		IDI	NJS		2N64	AMR	135-74
2C3501	MOTA	441-19		HSE		2G509	GDC	139-62	SPE	STI			CSR	
2C3506	MOTA	441-20	2CY34	HSE	155-84	HSE	STI		STR	UPI			HTN	
2C3511	MOTA	441-21		STI		2G524	GDC	143-39	WAB	GPD	139-28		SPE	
2C3546	MOTA	441-22	2CY38	HSE	168-30	HSE	STI		AMR	AMR	138-67	2N65	AMR	137-41
2C3553	MOTA	441-23		STI		2G525	GDC	143-45	ETC	HTN			CSR	
2C3635	MOTA	441-24	2CY39	HSE	168-31	HSE	STI		NJS	SPE			HTN	
2C3724	MOTA	441-25		STI		2G526	GDC	143-50	UPI	UPI			SPE	
2C3762	MOTA	441-28	2G101	GDC	136-44	HSE	STI		STI	STI			CSR	
2C3767	MOTA	441-27		STI		2G527	GDC	143-56	2N45A	AMR	138-68	2N77	AMR	132-55
2C3796	MOTA	441-28	2G102	GDC	136-46	HSE	STI		CRJ	CSR			CRJ	
2C3799	MOTA	441-29		STI		2G601	STI	143-46	DIT	ETC			DIT	
2C3866	MOTA	441-30	2G103	GDC	140-88	2G602	STI	142-103	HTN	IDI			HTN	
2C3868	MOTA	441-31		STI		2G603	GDC	139-109	NJS	SEI			ETC	
2C3904	MOTA	429-2	2G104	GDC	140-89	HSE	STI	391-3	SPE	STC			NJS	
2C3906	MOTA	429-2		STI		2G604	STI	139-108	UPI	UPI			SEI	
2C3960	MOTA	441-32	2G106	GDC	140-96			389-98	WAB	HTN	254-15	2N78	AMR	146-56
2C4091	MOTA	441-33		STI		2G605	GDC	139-110	SPE	SPE			CSR	
2C4117	MOTA	441-34	2G108	GDC	137-81	HSE	STI	389-20	2N57	AMR	141-53		HTN	
2C4220	MOTA	441-35	2G109	GDC	137-83	HSE	STI	143-40	2N59	CSR			ETC	
2C4236	MOTA	441-36		STI		2G102A	GDC	406-3	CEN	CRJ			HTN	
2C4239	MOTA	441-37	2G110	GDC	144-75	HSE	STI	143-47	CSR	DIT			SEI	
2C4240	MOTA	441-38		STI		2G102B	GDC	404-71	ETC	HTN			SEI	
2C4261	MOTA	441-39	2G138	GDC	142-102	HSE	STI	143-51	HTN	NJS		2N78A	AMR	146-33
2C4352	MOTA	441-40		STI		2G102C	GDC	404-18	SEI	SPE			CSR	
2C4405	MOTA	441-41	2G139	GDC	142-106	HSE	STI	143-57	STC	STI			ETC	
2C4416	MOTA	441-42		STI		2G102D	GDC	403-37	UPI	UPI			HTN	
2C4427	MOTA	441-43	2G140	GDC	143-2	HSE	STI	156-17	2N59A	AMR	141-75		SEI	
2C4900	MOTA	441-44		STI		2H1254	CEI	366-104	CEN	CSR		JAN2N78A	AMR	146-41
2C4920	MOTA	441-45	2G141	GDC	143-3	HSE	STI	156-21	DIT	ETC		2N83	CSR	252-83
2C4923	MOTA	441-46		STI		2H1255	CEI	365-76	HTN	IDI			AMR	
2C4957	MOTA	441-47	2G201	HSE	137-82	HSE	STI	156-18	NJS	SEI			HTN	
2C5031	MOTA	441-48		STI		2H1256	CEI	365-72	SPE	STC		2N94	AMR	147-35
2C5038	MOTA	441-49	2G202	HSE	137-84	HSE	STI	156-22	STI	UPI			CSR	
2C5087	MOTA	441-50		STI		2H1257	CEI	365-77	2N59B	AMR	141-76		HTN	
2C5088	MOTA	441-51	2G210	GDC	260-56	HSE	STI	156-19	CEN	CSR			ETC	
2C5108	MOTA	441-52		STI		2H1258	CEI	365-73	DIT	ETC			NJS	
2C5109	MOTA	441-53	2G220	STI	257-70	HSE	STI	156-23	HTN	IDI			SPE	
2C5160	MOTA	441-54	2G221	STI	257-71	HSE	STI	365-78	NJS	SEI		2N94A	AMR	147-62
2C5179	MOTA	441-55	2G222	STI	257-72	HSE	STI	172-95	SPE	STC			CSR	
2C5192	MOTA	425-55	2G223	STI	257-73	2MA509	IMTM	219-33	STI	UPI			HTN	
			2G224	STI	257-74	2MC509	IMTM	132-73	2N59C	AMR	141-77		AMR	
			2G226	STI	257-75	2N34	CSR		CEN	CSR			ETC	
2C5195	MOTA	441-56	2G227	HSE	257-76		ETC		DIT	HTN			NJS	
2C5208	MOTA	441-57	2G228	HSE	257-77		HTN		HTN	SEI		2N95	AMR	263-16
2C5239	MOTA	441-58	2G229	HSE	257-78		SPE		STI	STI			CSR	
2C5339	MOTA	441-59	2G231	HSE	257-79		STI		2N60	AMR	141-54	2N96	AMR	145-41
2C5345	MOTA	441-60		STI		2N34A	CSR		CEN	CSR		2N97	AMR	146-12
2C5401	MOTA	441-61	2G270	STI	143-69		HTN		CRJ	DIT			CSR	
2C5416	MOTA	441-62	2G271	STI	143-70	2N34A	CSR		HTN	SEI			HTN	
2C5462	MOTA	441-63	2G303	GDC	142-61		HTN	132-83	SPE	STI			SPE	
2C5551	MOTA	441-64		STI		2N35	CSR		2N60	AMR	141-54		SWT	
2C5583	MOTA	441-65	2G304	GDC	143-4		HTN	146-6	CEN	CSR			HTN	
2C5631	MOTA	441-66		STI		2N35	CSR		CRJ	DIT			CSR	
2C5641	MOTA	441-67	2G306	GDC	143-6		HTN		ETC	HTN			ETC	
2C5642	MOTA	441-68		STI		2N36	CSR		IDI	NJS			HTN	
2C5680	MOTA	441-69	2G308	STI	139-27		HTN		SPE	STI			NJS	
2C5682	MOTA	441-70	2G309	STI	140-18		SEI		STC	STI			SPE	
2C5760	MOTA	441-71	2G319	STI	143-38		SST		2N60A	AMR	141-71	2N98	AMR	146-13
2C5836	MOTA	441-72	2G320	STI	143-44		STI		CEN	CSR			CSR	
2C5841	MOTA	441-73	2G321	STI	143-55		UPI		DIT	ETC			ETC	
2C5884	MOTA	441-74	2G322	GDC	139-17	2N36	CSR		HTN	IDI			HTN	
2C5886	MOTA	441-75		STI			HTN	132-74	2N60B	AMR	141-72	2N99	AMR	146-23
2C5944	MOTA	441-76	2G323	STI	139-39		HTN		CEN	CSR			DIT	
2C5945	MOTA	441-77	2G324	STI	139-42		SPE		CSR	ETC			HTN	
2C5946	MOTA	441-78	2G339A	GDC	147-61		STI		IDI	NJS			SPE	
2C5947	MOTA	441-79		STI		2N37	CSR		2N60C	AMR	141-73		HTN	
2C5988	MOTA	441-80	2G344	STI	140-19		HTN		CEN	CSR			CSR	
2C5991	MOTA	441-81	2G345	GDC	139-64		SEI		DIT	HTN			ETC	
2C6031	MOTA	441-82		STI		2N38	CSR		IDI	NJS			NJS	
2C6036	MOTA	441-83	2G371	STI	139-65		HTN		SPE	STI		2N100	AMR	146-3
2C6039	MOTA	441-84	2G374	STI	139-68		SPE		2N60C	AMR	141-73		SPE	
2C6042	MOTA	441-85	2G376	STI	139-67		STI		CEN	CSR			AMR	
2C6045	MOTA	441-86	2G377	GDC	139-68	2N38	CSR		DIT	HT				

# 1. TYPE No. CROSS INDEX

				IN TYPE NUMBER SEQUENCE										
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N106	AMR CSR HTN SEI STI UPI	135-75	2N124	AMR CSR ETC NJS SPE UPI	146-8	2N148	AMR CRI STI AMR	146-37	2N168 (cont.)	SPE UPI WAB		2N185 (cont.)	SPE STI UPI	
	ETC NJS SPE			DIT HTN SEI		2N155	ASI CEN CSR ETC GTC HTN LTE IDI NJS SST STI	253-54	2N168A	ETC NJS	146-48	2N186	CRI ETC NJS	135-76
2N107	AMR CSR GPD NJS SPE STI WAB	132-88	2N125	AMR CSR ETC NJS SPE UPI	146-26				2N169	AMR CSR HTN SPE STI UPI	146-30	2N186A	CSR GPD NJS	142-10
	ETC HTN SEI SST UPI			DIT HTN SEI		2N156	CRI HTN SPE	253-55	2N169A	AMR ETC HTN SPE STI UPI	146-31	2N187	CRI ETC NJS	135-81
2N108	AMR CRI DIT HTN SPE UPI	132-77	2N126	AMR CSR HTN SPE UPI	146-27	2N157	CEN HSE	253-56	2N170	AMR CSR ETC NJS UPI	146-5	2N187A	CSR GPD NJS STI	142-12
	ASI CSR ETC NJS STI			HTN LTE SEI SSI SWT		2N157A	CRI LTE SPE	253-57	2N172	AMR CSR HTN SPE UPI	146-38	2N188	CRI ETC NJS STI	135-90
2N109	AMR CRI DIT HSE NJS SPE UPI	141-19	JAN2N128	none	132-24	2N158	AMR HSE SPE AMR	253-58	2N173	CEN CSR HTN NJS SPE STC	256-91 409-103	2N188A	CSR GPD NJS SPE STI	142-27
	CEN CSR ETC HTN SEI STI		2N129	AMR DIT NJS	132-35	JAN2N158	GPD STC GTC DIT GPD LTE SSI	253-51 253-59	2N174	AMR CRI GPD LTE SLD SST STR UPI	257-77 409-104	2N189	CRI ETC GPD HTN SPE STI	142-11
2N111	AMR CSR ETC NJS SPE UPI	137-68	2N130	AMR CEN CSR HTN NJS SPE UPI	135-31	2N158A	ETC HTN SPE STC TIC	182-41	2N174A	CEN CSR GPD HTN NASSG SEI SPE STC	257-78 410-2	2N191	CRI ETC GPD NJS SPE STI	142-28
	DIT HTN SEI STI		2N131	CEN CSR HTN NJS SPE UPI	135-32	2N160	CRI ETC NJS SSI	182-42	2N175	CEN CSR HTN SPE UPI	260-57	2N192	CRI ETC HTN SPE	142-40
2N111A	AMR ETC NJS SPE UPI	137-69	2N131A	AMR CEN CSR HTN NJS SPE UPI	136-55	2N161	CRI HTN SPE	182-49	2N176	AMR CEN CSR ETC GTC HTN IDI NJS SST UPI	257-79	2N193	CRI ETC NJS SPE	147-46
	CSR HTN SEI		2N132	AMR CEN CSR HTN NJS SPE UPI	135-34	2N161A	ETC NJS	182-52	2N177	ASI CEN CSR ETC GTC HTN IDI NJS SST UPI	257-80	2N194	CRI ETC NJS SPE	146-14
2N112	AMR CSR ETC NJS SPE UPI	137-70	2N132A	CSR ETC NJS SPE UPI	135-80	2N162	CRI HTN SPE	182-53	2N178	WAB AMR CEI CEN CRI ETC GTC HTN IDI NJS SST UPI	257-80	2N194A	CSR HTN SEI STI	146-15
	CRI DIT HTN SEI		2N133	AMR CEN CSR HTN NJS SPE UPI	135-33	2N162A	CSR ETC NJS SPE	182-59	2N178A	ASI CEN CSR ETC GTC HTN IDI NJS SST UPI	257-80	2N206	AMR CEN ETC NJS SPE	134-22
2N112A	AMR ETC NJS SPE UPI	137-71	2N133A	AMR CEN CSR HTN NJS SPE UPI	136-56	2N163	AMR CSR HTN SPE UPI	182-60	2N179	AMR CEN CSR ETC GTC HTN IDI NJS SST UPI	257-79	2N207	CRI HTN IDI LTE SPE UPI	135-35
	CSR HTN SEI		2N134	AMR CEN CSR HTN NJS SPE UPI	135-34	2N163A	ETC NJS	182-60	2N180	AMR CSR HTN SPE UPI	138-51	2N207B	CEN ETC HTN LTE SPE UPI	135-37
2N113	AMR CSR ETC NJS SPE UPI	137-72	2N135	AMR CEN CSR HTN NJS SPE UPI	135-106	2N164	CEN CSR HTN NJS SPE UPI	146-42	2N181	CRI ETC NJS	138-52	2N211	CRI ETC HTN SPE UPI	146-16
	CRI DIT HTN SEI		2N136	AMR CEN CSR HTN NJS SPE UPI	136-3	2N164A	CEN CSR HTN NJS SPE UPI	146-85	2N182	CRI ETC NJS	146-83	2N212	CRI DIT HTN SEI SSY	147-57
2N114	AMR CSR ETC NJS SPE UPI	137-73	2N137	AMR CEN CSR HTN NJS SPE UPI	136-8	2N165	CRI ETC NJS	146-43	2N183	CRI ETC NJS	146-94	2N213	CRI ETC HTN SPE UPI	146-16
	CRI DIT HTN SEI		2N138	AMR CEN CSR HTN NJS SPE UPI	137-86	2N166	CRI HTN SPE	146-4	2N184	AMR CSR HTN SPE UPI	146-99	2N214	CRI ETC NJS SSY	147-57
2N114A	AMR ETC NJS SPE UPI	137-73	2N139	AMR CEN CSR HTN NJS SPE UPI	132-61	2N167	CRI ESE GPD NJS	146-47	2N185	AMR CSR HTN SPE UPI	137-87	2N215	CRI DIT HTN SEI SSY	147-57
	CRI DIT HTN SEI		2N140	AMR CEN CSR HTN NJS SPE UPI	134-92	2N167A	AMR CSR HTN SPE UPI	146-62	2N186	AMR CSR HTN SPE UPI	137-87			
2N117	AMR CSR ESE HTN NJS SPE SWT UPI	182-40	2N141	AMR CEN CSR HTN NJS SPE UPI	252-54	JAN2N167A	none	146-58 374-105 146-32	2N187	AMR CSR HTN SPE UPI	146-99			
	CRI DIT ETC NJS SPE SWT UPI		2N142	AMR CEN CSR HTN NJS SPE UPI	263-18	2N168	AMR CEN CSR HTN SPE UPI	146-32	2N188	AMR CSR HTN SPE UPI	146-99			
JAN2N117	none	182-26	2N143	AMR CEN CSR HTN NJS SPE UPI	146-34				2N189	AMR CSR HTN SPE UPI	146-99			
2N118	AMR DIT ETC NJS SPE SWT UPI	182-47	2N144	AMR CEN CSR HTN NJS SPE UPI	146-34				2N190	AMR CSR HTN SPE UPI	146-99			
	CSR ESE HTN SEI SSI TCY		2N145	AMR CEN CSR HTN NJS SPE UPI	146-34				2N191	AMR CSR HTN SPE UPI	146-99			
JAN2N118	none	182-33	2N146	AMR CEN CSR HTN NJS SPE UPI	146-35				2N192	AMR CSR HTN SPE UPI	146-99			
2N118A	AMR ETC NJS SPE SWT UPI	182-58	2N147	AMR CEN CSR HTN NJS SPE UPI	146-36				2N193	AMR CSR HTN SPE UPI	146-99			
	ESE HTN SEI SSI		2N148	AMR CEN CSR HTN NJS SPE UPI	146-36				2N194	AMR CSR HTN SPE UPI	146-99			
2N119	AMR CSR ESE HTN NJS SPE SWT UPI	182-51	2N149	AMR CEN CSR HTN NJS SPE UPI	146-36				2N195	AMR CSR HTN SPE UPI	146-99			
	CRI DIT ETC SEI SSI TCY		2N150	AMR CEN CSR HTN NJS SPE UPI	146-36				2N196	AMR CSR HTN SPE UPI	146-99			
JAN2N119	none	182-34	2N151	AMR CEN CSR HTN NJS SPE UPI	146-36				2N197	AMR CSR HTN SPE UPI	146-99			
2N120	AMR CSR ETC NJS SPE TCY	182-56	2N152	AMR CEN CSR HTN NJS SPE UPI	146-36				2N198	AMR CSR HTN SPE UPI	146-99			
	CRI DIT HTN SEI SSI		2N153	AMR CEN CSR HTN NJS SPE UPI	146-36				2N199	AMR CSR HTN SPE UPI	146-99			
2N122	AMR CSR HTN SEI SSI WAB	314-4	2N154	AMR CEN CSR HTN NJS SPE UPI	146-36				2N200	AMR CSR HTN SPE UPI	146-99			
	CRI DIT NJS SPE		2N155	AMR CEN CSR HTN NJS SPE UPI	146-36				2N201	AMR CSR HTN SPE UPI	146-99			
2N123	AMR CSR ETC HTN SEI SST UPI	139-96 399-31	2N156	AMR CEN CSR HTN NJS SPE UPI	146-36				2N202	AMR CSR HTN SPE UPI	146-99			
	CRI DIT HTN NJS SPE STI		2N157	AMR CEN CSR HTN NJS SPE UPI	146-36				2N203	AMR CSR HTN SPE UPI	146-99			
JAN2N123	none	139-69	2N158	AMR CEN CSR HTN NJS SPE UPI	146-36				2N204	AMR CSR HTN SPE UPI	146-99			
2N123A	HSE STI	393-32 139-70	2N159	AMR CEN CSR HTN NJS SPE UPI	146-36				2N205	AMR CSR HTN SPE UPI	146-99			

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2N213	AMR CSR DIT HTN SEI	148-7	2N233A (cont.)	HTN NJS SEI SSY		2N250 (cont.)	CSR GPD HTN LTE SPE STC UPI		2N264	AMR CSR SCA SSI	181-44	2N284	AMR CSR HTN SPE	137-31
2N213A	AMR CSR HTN SPE STI	148-11	2N234A	ASI CEN CSR ETC GTC	254-34	2N250A	ASI CEN CSR GPD HTN LTE SPE STI	257-81	2N265	AMR CSR HTN SPE UPI	134-26	2N284A	AMR CSR HTN SPE	137-32
2N214	AMR CSR DIT HTN SEI STI	148-14	2N235	ASI CEN CSR GPD HTN LTE SPE STI	254-35	2N251	ASI CEN ETC GTC HTN LTE SPE STI	254-19	2N267	AMR HTN STI	132-66	2N285	AMR CEN HTN SPE	254-40
2N214A	AMR CSR HSE IDI SPE	148-10	2N235A	ASI CEN CSR GPD HTN LTE SPE STI	254-36	2N251A	ASI CEN ETC GTC HTN LTE SPE STI	257-82	2N268	AMR HTN STI	255-7	2N285A	AMR CEN HTN SPE	254-41
2N215	AMR CSR CEN CSR HTN	138-53	2N235B	ASI CEN CSR GPD HTN LTE SPE STI	254-37	2N252	ASI CEN ETC GTC HTN LTE SPE STI	132-30	2N268A	AMR CEN ESE GPD LTE SPE STI	255-8	2N291	AMR CSR HTN SPE	141-56
2N216	AMR CSR HTN SEI SSY UPI	146-17	2N236A	ASI CEN CSR GPD HTN LTE SPE STI	254-38	2N253	ASI CEN ETC GTC HTN LTE SPE STI	146-39	2N269	AMR CEN ESE GPD LTE SPE STI	136-77	2N292	AMR CSR HTN SPE	146-44
2N217	AMR CSR ESE GPD SPE UPI	141-20	2N236B	ASI CEN CSR GPD HTN LTE SPE STI	254-39	2N254	ASI CEN ETC GTC HTN LTE SPE STI	146-40	2N270	AMR CEN ESE GPD LTE SPE STI	137-88	2N292A	AMR CSR HTN SPE	146-89
2N218	AMR CSR CEN CSR HTN SPE SWT	132-62	2N237	ASI CEN CSR GPD HTN LTE SPE STI	138-43	2N255	ASI CEN ETC GTC HTN LTE SPE STI	253-61	2N271	AMR CEN ESE GPD LTE SPE STI	140-1	2N293	AMR CSR HTN SPE	146-49
2N219	AMR CSR HTN SPE UPI	134-93	2N238	ASI CEN CSR GPD HTN LTE SPE STI	132-78	2N255A	ASI CEN ETC GTC HTN LTE SPE STI	253-62	2N271A	AMR CEN ESE GPD LTE SPE STI	140-2	2N296	AMR CSR HTN SPE	253-65
2N220	AMR CSR HTN SPE UPI	132-12	2N238	ASI CEN CSR GPD HTN LTE SPE STI	132-78	2N256	ASI CEN ETC GTC HTN LTE SPE STI	253-63	2N272	AMR CEN ESE GPD LTE SPE STI	138-69	2N297	AMR CSR HTN SPE	254-42
JAN2N220	none	132-10	2N239	ASI CEN CSR GPD HTN LTE SPE STI	132-78	2N257	ASI CEN ETC GTC HTN LTE SPE STI	253-64	2N273	AMR CEN ESE GPD LTE SPE STI	137-89	2N297A	AMR CSR HTN SPE	254-43
2N223	AMR CSR HTN SPE UPI	143-106	2N240	ASI CEN CSR GPD HTN LTE SPE STI	132-36	2N258	ASI CEN ETC GTC HTN LTE SPE STI	253-65	2N274	AMR CEN ESE GPD LTE SPE STI	134-98	2N297A	AMR CSR HTN SPE	254-43
2N224	AMR CSR HTN SPE UPI	143-104	2N241	ASI CEN CSR GPD HTN LTE SPE STI	132-20	2N259	ASI CEN ETC GTC HTN LTE SPE STI	253-66	2N275	AMR CEN ESE GPD LTE SPE STI	256-92	2N299	AMR CSR HTN SPE	132-18
2N225	AMR CSR HTN SPE UPI	143-105	JAN2N240	none	135-93	2N260	AMR CEN ESE GPD LTE SPE STI	253-67	2N276	AMR CEN ESE GPD LTE SPE STI	409-105	2N301	AMR CSR HTN SPE	256-94
2N226	AMR CSR HTN SPE UPI	143-99	2N241A	ASI CEN CSR GPD HTN LTE SPE STI	142-38	2N261	AMR CEN ESE GPD LTE SPE STI	253-68	2N277	AMR CEN ESE GPD LTE SPE STI	256-93	2N301A	AMR CSR HTN SPE	256-95
2N227	AMR CSR HTN SPE UPI	143-100	2N242	ASI CEN CSR GPD HTN LTE SPE STI	253-60	2N262	AMR CEN ESE GPD LTE SPE STI	253-69	2N278	AMR CEN ESE GPD LTE SPE STI	409-106	2N302	AMR CSR HTN SPE	139-88
2N228	AMR CSR HTN SPE UPI	148-12	2N243	ASI CEN CSR GPD HTN LTE SPE STI	223-96	2N263	AMR CEN ESE GPD LTE SPE STI	182-86	2N279	AMR CEN ESE GPD LTE SPE STI	137-27	2N303	AMR CSR HTN SPE	140-30
2N229	AMR CSR HTN SPE UPI	148-13	2N244	ASI CEN CSR GPD HTN LTE SPE STI	223-97	2N264	AMR CEN ESE GPD LTE SPE STI	255-5	2N280	AMR CEN ESE GPD LTE SPE STI	137-28	2N303A	AMR CSR HTN SPE	140-30
2N231	AMR CSR HTN SPE UPI	132-6	2N245	ASI CEN CSR GPD HTN LTE SPE STI	134-97	2N265	AMR CEN ESE GPD LTE SPE STI	255-6	2N281	AMR CEN ESE GPD LTE SPE STI	137-30	2N303B	AMR CSR HTN SPE	140-30
2N232	AMR CSR HTN SPE UPI	132-7	2N246	ASI CEN CSR GPD HTN LTE SPE STI	144-100	2N266	AMR CEN ESE GPD LTE SPE STI	255-7	2N282	AMR CEN ESE GPD LTE SPE STI	430-62	2N303C	AMR CSR HTN SPE	140-30
2N233	AMR CSR HTN SPE UPI	147-36	2N247	ASI CEN CSR GPD HTN LTE SPE STI	144-100	2N267	AMR CEN ESE GPD LTE SPE STI	255-8	2N283	AMR CEN ESE GPD LTE SPE STI	137-33	2N303D	AMR CSR HTN SPE	140-30
2N233A	AMR CSR HTN SPE UPI	147-37	2N248	ASI CEN CSR GPD HTN LTE SPE STI	254-18	2N268	AMR CEN ESE GPD LTE SPE STI	255-9	2N284	AMR CEN ESE GPD LTE SPE STI	137-34	2N303E	AMR CSR HTN SPE	140-30

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2N303 (cont.)	NJS UPI		2N317A (cont.)	HVS NJS		2N328B (cont.)	CSR HTN		2N334A (cont.)	CEI ESE		2N338A (cont.)	STR UPI	
2N306	AMR CSR HTN SEI SSY UPI	146-9	2N319	ASI CRI CSR GPD HTN LTE SPE STI	143-41	2N329	ESE HTN NASG SLD RTN SPE SSI SST STR		2N335	CEN ETC HTN SLD SST SSI STI		2N339	TCY WAB	230-59
2N307	AMR CEI CRI ETC GPD HTN LTE SPE STC UPI	252-99	2N320	AMR CEN CSR GPD HTN LTE SPE STI	143-48	2N329A	HSE HTN SPE SWT STI	160-110	2N335A	ASI CEN CSR ETC HTN SLD SST SSI STI	182-54	2N339A	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	191-52
2N307A	ASI CEN CSR GPD HTN LTE SPE STC UPI	255-10	2N321	ASI CRI ETC GPD HTN LTE SPE STI	143-52	JAN2N329A	AMR CEN CSR DIT ESE GTC HTN NJS SLD RTN SPE SST STR TCY TSI	164-83	JAN2N335 2N335A	ASI CEN CSR ETC HTN SLD SST SSI STI SWT TCY	182-37 212-24	2N340	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	230-60
2N308	AMR CSR HTN SPE UPI	132-31	2N322	CEN CSR GPD HTN LTE SPE STI	142-14	2N329B	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	165-7	2N336	ASI CEN CSR ETC HTN SPE SST STI UPI	182-57	2N340A	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	191-53
2N309	AMR CSR HTN SPE UPI	132-32	2N323	ASI CRI ETC GPD HTN LTE SPE STI	142-41	2N330A	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	165-67	2N336A	ASI CEN CSR ETC HTN SPE SST STI UPI	212-1 212-25	2N341	CSR HTN SPE SST STI UPI	230-61
2N310	AMR CSR HTN SPE UPI	132-33	2N324	ASI CRI ETC GPD HTN LTE SPE STI	142-49	2N331	AMR CSR HTN SPE SST	164-84	2N337	ASI CEN CSR ETC HTN SPE SST STI UPI	182-57	JAN2N341 2N341A	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	224-14 191-54
2N311	CEN CSR HTN SPE	134-3	2N326	AMR CEN CSR GPD HTN LTE SPE STI	263-21	2N331A	ASI CEN CSR GPD HTN IDC LTE SPE STR	144-73	JAN2N336 2N336A	ASI CEN CSR ETC HTN SPE SST STI UPI	182-38 212-26	2N342	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	230-62
2N312	CEI CRI ETC NJS SPE STI	146-59	2N327	AMR CEN CSR GPD HTN LTE SPE STI	263-19 160-108	JAN2N331 2N332	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	141-104 182-43	2N337A	ASI CEN CSR ETC HTN SPE SST STI UPI	181-47 372-34	JAN2N342 2N342A	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	230-71 230-63
2N315	CEN CSR HTN IDI SPE STC	135-108 404-30	JAN2N326 2N327	CRI DIT GPD NJS STI GPD AMR HTN SPE STI	263-19 160-108	2N332A	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	212-15	2N337B	ASI CEN CSR ETC HTN SPE SST STI UPI	181-45 389-31 212-29	JAN2N342A 2N342B	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	230-72 223-98
2N315A	AMR CEI CRI ETC GPD HTN LTE SPE STI	137-90 402-72	2N327A	AMR CEN CSR GPD HTN LTE SPE STI	164-81	2N333	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	182-50	2N338	ASI CEN CSR ETC HTN SPE SST STI UPI	181-52 374-106	2N343	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	230-64
2N315B	AMR HTN STC STI UPI	137-91 402-73	2N327B	AMR CEN CSR GPD HTN LTE SPE STI	165-57	JAN2N333 2N333A	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	212-15	2N338A	ASI CEN CSR ETC HTN SPE SST STI UPI	181-45 389-31 212-29	JAN2N343 2N343A	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	230-73 230-65
2N316	ASI CEN CSR GTC HVS NJS SSY STI	136-11 401-73	2N328	AMR CEN CSR GPD HTN LTE SPE STI	160-109	2N334	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	182-36 212-22	2N339	ASI CEN CSR ETC HTN SPE SST STI UPI	181-48 389-36 212-40	2N343B	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	223-99
2N316A	AMR CEI CRI ETC GPD HTN LTE SPE STI	137-92 397-64	2N328A	AMR CEN CSR GPD HTN LTE SPE STI	164-82	JAN2N333A 2N333A	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	211-110 182-61	2N340	ASI CEN CSR ETC HTN SPE SST STI UPI	181-48 389-36 212-40	2N344	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	132-13
2N317	AMR CEN CSR GDC HTN IDI SPE STI	136-15 396-84	2N328B	AMR CEN CSR GPD HTN LTE SPE STI	165-6	JAN2N333A 2N334	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	211-110 182-61	2N341	ASI CEN CSR ETC HTN SPE SST STI UPI	181-48 389-36 212-40	2N345	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	132-14
2N317A	AMR CEN ETC HTN	137-93 396-14	JAN2N328A 2N328B	AMR CEN CSR GPD HTN LTE SPE STI	165-6 165-60	2N334A	AMR CSR HTN NASG SLD RTN SPE SSI SST STR TSI	212-23	2N342	ASI CEN CSR ETC HTN SPE SST STI UPI	181-48 389-36 212-40	2N350	WAB AMR CEI CRI ESE HTN NJS SLD SST STI TCY	256-96



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2N350 (cont.)	STC WAB		2N360 (cont.)	NJS SEL		2N377 (cont.)	STI WAB		2N388A	AMR CEN	147-83 401-42	2N398A (cont.)	CSR ETC	
2N350A	AMR CEI	257-83	2N361	SPE STC		2N377A	AMR CEI	147-76 405-29	ASI CRI	CSR ESE		JAN2N398A	GPD HTN	138-47
	CEI CSR		2N362	AMR	141-33		CEI CRI		ETC HSE	GPD HTN		2N398B	LTE SPE	144-5
	GPD HTN			CEI ETC			ETC GTC		IDI SLD	NJS SPE			STC STR	
	IDI NJS			HTN NJS			HTN NJS		SST STI	STC STC			UPI WAB	
	SPE STC			STC			STC STC		UPI WAB	UPI WAB			GPD AMR	
	UPI			UPI			UPI WAB		2N389	AMR CRI	329-32		AMR CSR	
2N351	AMR CEI	256-97	2N363	CEI ETC	141-34	2N378	AMR CEI	256-18 411-5	ASI CEN	HTN SCA		JAN2N398A	ETC HSE	
	CRI DIT			HTN NJS			CRI ETC		HTN SCA	NJS SMLB		2N398B	IDC LTE	
	GPD HTN			SEL SSY			GTC IDI		SPC SSI	SPC STC			SEI SST	
	ETC GTC			STI			HTN LTE		STC SWT	STC SWT			STC STI	
	IDI NJS			UPI			SST UPI						UPI WAB	
	SPE STC			UPI			UPI WAB						AMR CEN	254-45
	UPI			UPI			UPI WAB						AMR CEN	
2N351A	AMR CEI	257-84	2N364	CEI ETC	147-43	2N379	AMR CEI	256-19 411-6	JAN2N389	AMR CSR	329-49 329-33	2N399	GPD HTN	
	CRI DIT			HTN NJS			CRI DIT		2N389A	HTN SPC			LTE NJS	
	GPD HTN			SEL SSY			GPD HTN		AMR CSR	SPE SST			LTE SPE	
	ETC GTC			STI			HTN LTE		2N392	UPI WAB	255-11		UPI	
	IDI NJS			UPI			IDI NJS		ASI CEN	CEI CRI		2N400	AMR CSR	254-46
	SPE STC			UPI			SLD SST		HTN SPC	HTN SST			GPD HTN	
	UPI			UPI			UPI WAB		STC SWT	UPI WAB			LTE SPE	
2N352	AMR CEI	253-66	2N365	CEI ETC	147-47	2N380	AMR CEI	256-20	2N393	AMR CSR	132-25	2N401	AMR CSR	254-47
	CRI DIT			HTN NJS			CRI DIT		2N393	HTN SPC			GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N392	SPE SST			LTE SPE	
	ETC GTC			STI			HTN LTE		ASI CEN	CEI CRI			UPI	
	IDI NJS			UPI			IDI NJS		HTN SPC	HTN SST			UPI	
	SPE STC			UPI			SLD SST		STC SWT	UPI WAB			UPI	
	UPI			UPI			UPI WAB		2N393	2N393	132-25		UPI	
2N353	AMR CEI	253-107	2N366	CEI ETC	147-55	2N381	AMR CEI	142-62	2N393	CSR HTN	132-63	2N401	AMR CSR	254-47
	CRI DIT			HTN NJS			CRI DIT		2N393	NJS SSI	139-49		GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N393	SPE SST	132-63		LTE SPE	
	ETC GTC			STI			HTN LTE		2N393	UPI WAB	139-49		UPI	
	IDI NJS			UPI			IDI NJS		2N393	2N393	132-63		UPI	
	SPE STC			UPI			SLD SST		2N393	CSR HTN	139-49		UPI	
	UPI			UPI			UPI WAB		2N393	NJS SSI	139-49		UPI	
2N353A	AMR CEI	146-82 405-13	2N367	CEI ETC	135-73	2N381	AMR CEI	142-62	2N393	UPI WAB	132-25	2N401	AMR CSR	254-47
	CRI DIT			HTN NJS			CRI DIT		2N393	CSR HTN	132-25		GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N393	SPE SST	132-25		LTE SPE	
	ETC GTC			STI			HTN LTE		2N393	UPI WAB	132-25		UPI	
	IDI NJS			UPI			IDI NJS		2N393	CSR HTN	132-25		UPI	
	SPE STC			UPI			SLD SST		2N393	NJS SSI	132-25		UPI	
	UPI			UPI			UPI WAB		2N393	2N393	132-25		UPI	
2N354	AMR CEI	147-15 405-12	2N368	CEI ETC	135-82	2N382	AMR CEI	142-71	2N394	AMR CSR	132-63 139-49	2N402	AMR CSR	141-62
	CRI DIT			HTN NJS			CRI DIT		2N394	HTN SPC			GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N394	SPE SST			LTE SPE	
	ETC GTC			STI			HTN LTE		2N394	UPI WAB			UPI	
	IDI NJS			UPI			IDI NJS		2N394	CSR HTN			UPI	
	SPE STC			UPI			SLD SST		2N394	NJS SSI			UPI	
	UPI			UPI			UPI WAB		2N394	2N394	132-63 139-49		UPI	
2N355	AMR CEI	146-93 403-12	2N369	CEI ETC	135-94	2N383	AMR CEI	142-85	2N395	AMR CSR	139-63 396-10	2N404	AMR CSR	140-25 403-35
	CRI DIT			HTN NJS			CRI DIT		2N395	HTN SPC			GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N395	SPE SST			LTE SPE	
	ETC GTC			STI			HTN LTE		2N395	UPI WAB			UPI	
	IDI NJS			UPI			IDI NJS		2N395	CSR HTN			UPI	
	SPE STC			UPI			SLD SST		2N395	NJS SSI			UPI	
	UPI			UPI			UPI WAB		2N395	2N395	139-63 396-10		UPI	
2N355A	AMR CEI	147-16 398-45	2N370	CEI ETC	145-23	2N383	AMR CEI	142-85	2N396	AMR CSR	139-97 390-101	2N404	AMR CSR	140-25 403-35
	CRI DIT			HTN NJS			CRI DIT		2N396	HTN SPC			GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N396	SPE SST			LTE SPE	
	ETC GTC			STI			HTN LTE		2N396	UPI WAB			UPI	
	IDI NJS			UPI			IDI NJS		2N396	CSR HTN			UPI	
	SPE STC			UPI			SLD SST		2N396	NJS SSI			UPI	
	UPI			UPI			UPI WAB		2N396	2N396	139-97 390-101		UPI	
2N356	AMR CEI	146-82 405-13	2N371	CEI ETC	134-99	2N384	AMR CEI	137-7	2N396A	AMR CSR	139-97 390-101	2N404	AMR CSR	139-50 139-51
	CRI DIT			HTN NJS			CRI DIT		2N396A	HTN SPC			GPD HTN	
	GPD HTN			SEL SSY			GPD HTN		2N396A	SPE SST			LTE SPE	
	ETC GTC			STI			HTN LTE		2N396A	UPI WAB			UPI	
	IDI NJS			UPI			IDI NJS		2N396A	CSR HTN			UPI	
	SPE STC			UPI			SLD SST		2N396A	NJS SSI			UPI	
	UPI			UPI			UPI WAB		2N396A	2N396A	142-86 397-60		UPI	
2N356A	AMR CEI	147-15 405-12	2N372	CEI ETC	134-100	2N384	AMR CEI	137-7	2N396A	CSR HTN			UPI	
	CRI DIT			HTN NJS			CRI DIT		2N396A	SPE SST			UPI	
	GPD HTN			SEL SSY			GPD HTN		2N396A	UPI WAB			UPI	
	ETC GTC			STI			HTN LTE		2N396A	CSR HTN			UPI	
	IDI NJS			UPI			IDI NJS		2N396A	NJS SSI			UPI	
	SPE STC			UPI			SLD SST		2N396A	2N396A	142-86 397-60		UPI	
	UPI			UPI			UPI WAB		2N396A	2N396A	142-86 397-60		UPI	
2N357	AMR CEI	146-93 403-12	2N373	CEI ETC	256-17 411-1	JAN2N384	AMR CEI	136-99	2N396A	AMR CSR	142-86 397-60	JAN2N404	AMR CSR	139-50 139-51
	CRI DIT			HTN NJS		2N385	AMR CEI	147-77	2N396A	HTN SPC		2N404A	GPD HTN	
	GPD HTN			SEL SSY			CRI DIT		2N396A	SPE SST			LTE SPE	
	ETC GTC			STI			GPD HTN		2N396A	UPI WAB			UPI	
	IDI NJS			UPI			HTN LTE		2N396A	CSR HTN			UPI	
	SPE STC			UPI			SLD SST		2N396A	NJS SSI			UPI	
	UPI			UPI			UPI WAB		2N396A	2N396A	142-86 397-60		UPI	
2N357A	AMR CEI	147-16 398-45	2N374	CEI ETC	256-17 411-1	JAN2N384	AMR CEI	136-99	2N396A	CSR HTN		JAN2N404	GPD HTN	
	CRI DIT			HTN NJS		2N385	AMR CEI	147-77	2N396A	SPE SST		2N404A	LTE SPE	
	GPD HTN			SEL SSY			CRI DIT		2N396A	UPI WAB			UPI	
	ETC GTC			STI			GPD HTN		2N396A	CSR HTN			UPI	
	IDI NJS			UPI			HTN LTE		2N396A	NJS SSI			UPI	
	SPE STC			UPI			SLD SST		2N396A	2N396A	142-86 397-60		UPI	
	UPI			UPI			UPI WAB		2N396A	2N396A	142-86 397-60		UPI	
2N358	AMR CEI	146-96 399-32	2N375	CEI ETC	256-17 411-1	JAN2N384	AMR CEI	136-99	2N396A	AMR CSR	142-86 397-60	JAN2N404	AMR CSR	139-50 

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2N408 (cont.)	ASI CEN CSR GPD HTN NJS SPE STI		2N417 (cont.)	GTC HVS IDC IDJ SPE STI		2N428 (cont.)	CEI CEN CSR GPD HTN NJS SPE STI		2N445 (cont.)	CEN CSR GPD HTN NJS SPE STI		2N457A (cont.)	CEI CEN CSR GPD HTN NJS SPE STI	
2N409	CEN CSR GDC NJS	134 - 87	JAN2N417 2N418	none AMR CEI CEN CSR GPD HTN LTE SPE	140 - 33 254 - 48 363 - 63	JAN2N428	UPI WAB GPD	140 - 6 398-103 140 - 7 398-104	2N445A	CEN CSR GPD HTN NJS SPE	147 - 38	2N457B	ASI CEN CSR GPD HTN NJS SPE STI	260 - 60
2N410	CEN CSR HTN SPE STI	134 - 88	2N419	AMR CEI CEN CSR GPD HTN LTE SPE	254 - 49	2N428A	CEN CSR GPD HTN NJS SPE TIC		2N446	ASI CSR GPD HTN NJS SPE	146 - 91	2N457C	ASI CEN CSR GPD HTN NJS SPE STI	
2N411	CEN CSR HTN SPE STI	134 - 95	2N420	ASI CEN CSR GPD HTN LTE SPE	254 - 50 363 - 64	2N438	ASI CEN CSR GPD HTN NJS SPE TIC	146 - 80 398 - 12	2N446A	CEI CEN CSR GPD HTN NJS SPE	147 - 65	JAN2N457B	GPD HTN NJS SPE STI	260 - 61 410 - 28 256 - 90 411 - 18
2N412	ASI CEN GDC HTN NJS SPE STI	134 - 96	2N422	ASI CEN CSR GPD HTN LTE SPE	138 - 61	2N438A	ASI CEN CSR GPD HTN NJS SPE TIC	147 - 44 397 - 85	2N447	ASI CSR GPD HTN NJS SPE	146 - 97	2N458	ASI CEN CSR GPD HTN NJS SPE STI	
2N413	ASI CEN CSR GPD HTN NJS SPE STI	139 - 16	2N422A	ASI CEN CSR GPD HTN LTE SPE	254 - 51 363 - 65	2N439	ASI CEN CSR GPD HTN NJS SPE TIC	146 - 90 393 - 33	2N447A	ASI CSR GPD HTN NJS SPE	147 - 90	2N458A	ASI CEN CSR GPD HTN NJS SPE STI	255 - 14
2N413A	CEN ETC HTN NJS STC	139 - 18	2N422B	ASI CEN CSR GPD HTN LTE SPE	138 - 71 141 - 80	2N440	ASI CEN CSR GPD HTN NJS SPE TIC	147 - 64 393 - 34	2N447B	ASI CSR GPD HTN NJS SPE	389 - 99	2N458B	ASI CEN CSR GPD HTN NJS SPE STI	260 - 62
2N414	ASI CEN CSR GPD HTN NJS SPE STI	139 - 90	JAN2N422 2N422A	none AMR CEI CEN CSR GPD HTN LTE SPE		2N440A	ASI CEN CSR GPD HTN NJS SPE TIC	146 - 98 386 - 80	2N448	CRI ETC HTN NJS SPE STI	146 - 45	JAN2N458B	GPD HTN NJS SPE STI	260 - 63 410 - 29 256 - 21 411 - 7
2N414A	CEN CSR GPD HTN NJS STC	139 - 91	2N424	ASI CEN CSR GPD HTN LTE SPE	329 - 34	2N440A	ASI CEN CSR GPD HTN NJS SPE TIC	147 - 19 386 - 81	2N449	CRI ETC HTN NJS SPE STI	146 - 50	2N459	ASI CEN CSR GPD HTN NJS SPE STI	142 - 29
2N414B	CEN ETC HVS NJS STC	142 - 72	JAN2N424 2N424A	AMR CEI CEN CSR GPD HTN LTE SPE	329 - 50 329 - 35	2N441	CEN CSR GPD HTN NJS SPE TIC	256 - 99 409-107	2N450	CRI ETC HTN NJS SPE STI	140 - 8	2N459A	ASI CEN CSR GPD HTN NJS SPE STI	257 - 86
2N414C	CEN CSR HTN NJS STC	142 - 73	2N425	ASI CEN CSR GPD HTN LTE SPE	139 - 53 402 - 30	2N442	CEN CSR GPD HTN NJS SPE TIC	256 - 100 408-108	2N451	HTN AMR CSR GPD HTN NJS SPE STI	334 - 44	2N459B	ASI CEN CSR GPD HTN NJS SPE STI	
2N415	ASI CEN GDC HTN NJS SPE STI	140 - 3	JAN2N425 2N425A	AMR CEI CEN CSR GPD HTN LTE SPE	139 - 19 402 - 28 139 - 85 401 - 26	2N443	CEN CSR GPD HTN NJS SPE TIC	256 - 101 408-109	2N452	HTN AMR CSR GPD HTN NJS SPE STI	256 - 88 411 - 16	2N460	ASI CEN CSR GPD HTN NJS SPE STI	142 - 29
2N415A	CEN CSR GPD HTN NJS STC	140 - 4	2N426	ASI CEN CSR GPD HTN LTE SPE		2N444	CEN CSR GPD HTN NJS SPE TIC	146 - 77	2N453	HTN AMR CSR GPD HTN NJS SPE STI	255 - 12	JAN2N461 2N463	ASI CEN CSR GPD HTN NJS SPE STI	143-101 254 - 52 406 - 72
2N416	ASI CEN CSR GPD HTN NJS SPE STI	140 - 5	JAN2N426 2N426A	AMR CEI CEN CSR GPD HTN LTE SPE	139 - 29 402 - 29 140 - 16 398-105	2N445	ASI CEN CSR GPD HTN NJS SPE TIC	256 - 101 408-109	2N454	HTN AMR CSR GPD HTN NJS SPE STI	260 - 59 410 - 27 256 - 89 411 - 17	JAN2N463 2N464	ASI CEN CSR GPD HTN NJS SPE STI	255 - 15 138 - 54
JAN2N416 2N417	none AMR CEI CEN CSR GPD HTN NJS SPE STI	139 - 71 140 - 47	JAN2N427 2N427A	AMR CEI CEN CSR GPD HTN LTE SPE	139 - 72 398-101 140 - 46	2N446	ASI CEN CSR GPD HTN NJS SPE TIC	146 - 79	2N455	HTN AMR CSR GPD HTN NJS SPE STI	255 - 13	JAN2N464 2N465	ASI CEN CSR GPD HTN NJS SPE STI	138 - 40 138 - 62

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2N465 (cont.)	ETC GPD HTN IDI NJS STC STR		2N477 (cont.)	CRI DIT HTN SPE SSI		2N489 (cont.)	CSR HTN SLD SSI SWT WAB UPI		2N492C	ΔGESY AMR CEN ESE HTN SLD SPE SWT WAB	436-13	2N498 (cont.)	TIC WAB RTN AMR	299-102 300-93
JAN2N465 2N466	ASI CEN CSR ETC GPD HTN LTE NJS SPE STI UPI	138-44 138-72	2N478	ASI CEN CSR HTN SCA SSI	185-99	2N489A	AMR CEN CSR HTN SLD SPE SSI SWT UPI	435-107	2N493	ΔGESY AMR CEN CSR HTN SLD SPE SSI SWT	436-14	JAN2N498 2N498A	TIIF NJS SPE SWT CEN CSR GTC HTN NJS SLD SSI STI	
JAN2N466 2N467	ASI CEN CSR ETC GPD HTN LTE NJS SPE STI UPI	138-45 138-101	2N479	ASI CEN CSR HTN SCA SSI	185-100	JAN2N489A 2N489B	AMR CEN CSR HTN SLD SPE SSI SWT UPI	435-108 435-109	2N493A	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT	436-15	2N499	CRI HTN SPE STR	132-52
JAN2N467 2N468	ASI CEN CSR GPD HSE HVS LTE SELI STC STR	138-55 185-79	2N479A	ASI CEN CSR HTN SCA SPE SSI	185-101	2N489A	AMR CEN ESE NJS SPE SSI SWT UPI	435-110	JAN2N493A 2N493B	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT UPI	436-16 436-17	JAN2N499 2N499A	MOTA AMR ETC IDC SSI SWT UPI	133-1 133-59
JAN2N467 2N470	CEN ETC IDI SPE SST	185-80	2N480	AMR CEN CRI ETC HTN SCA SPE SSI	185-102	2N490A	AMR CEN ESE NJS SPE SSI SWT UPI	436-1	2N494	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT	436-18	JAN2N499A 2N500	CRI HTN SPE STR	133-60 132-79
2N471	CEN CSR HTN NJS SSI	185-81	2N480A	ASI CEN CSR HTN SCA SPE SSI	185-103	JAN2N490A 2N490B	AMR CEN ESE NJS SPE SSI SWT UPI	436-2 436-3	2N494A	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT	436-19	2N501	CEN CSR HTN LTE SSI SWT	133-44 364-13
2N471A	CEN CSR HTN NJS SPE	185-82	2N481	CEN CSR HSE IDI SELI STC STR	139-30	2N490C	AMR CEN ESE NJS SPE SSI SWT UPI	436-4	JAN2N494A 2N494B	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT	436-20 436-21	2N501A	CEN CSR HTN LTE SSI SWT	133-45 364-14
2N472	CEN ETC IDI SSI STI	185-83	2N482	CEN CSR HSE IDI SELI STC STR	139-45	2N491	AMR CEN ESE NJS SPE SSI SWT UPI	436-5	2N494C	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT	436-22	JAN2N501A	none	133-10 364-6 133-65
2N472A	CEN CSR HSE IDI SSI	185-84	2N483	CEN CSR HSE HTN SCA SPE SSI	139-84	2N491A	AMR CEN ESE NJS SPE SSI SWT UPI	436-6	2N495	ASI CSR HTN LTE SPE	150-50	JAN2N502A 2N502B	AMR MOTA AMR ETC IDC SPE TIC	134-49 134-4
2N473	CEN CSR ETC IDI SPE SST	185-85	2N484	CEN CSR GPD HTN SCA SPE SSI	140-9	JAN2N491A 2N491B	AMR CEN ESE NJS SPE SSI SWT UPI	436-7 436-8	2N496	CRI HTN SCA SSI	299-75	JAN2N502B	ESE HTN NJS SSI	134-50 132-28
2N474	CEN CSR ETC IDI SPE SST	185-86	2N485	CRI ETC HTN IDI SELI STC STR UPI	139-94	2N492	AMR CEN CSR HTN SLD SPE SSI SWT UPI	436-9	2N497	AMR CEN CSR GTC HTN NJS SCA SPE SST SWT	299-101 300-92	JAN2N502B	WAB MOTA AMR CSR HTN SPE WAB MOTA	134-50 132-28
2N474A	CEN CSR ETC IDI SPE SST	185-87	2N486	CEN CSR GPD HTN SCA SPE SSI	140-22	2N492A	AMR CEN ESE NJS SPE SSI SWT UPI	436-10	JAN2N497 2N497A	ΔGESY AMR CEN ESE HTN SLD SPE SSI SWT	299-101 300-92	2N503	CRI ETC IDC	132-51
2N475	CEN DIT HTN SCA SSI	185-88	2N487	CEN CSR HSE HTN SCA SPE SSI	136-9	JAN2N492A 2N492B	AMR CEN ESE NJS SPE SSI SWT UPI	436-11 436-12	2N498	ASI CEN CSR ETC HTN SLD SPE SSI SWT	299-76	2N504	CEN CSR HTN SPE	137-56
2N475A	CEN CSR HSE IDI SSI	185-89	2N488	CEN CSR HSE HTN SCA SPE SSI	435-106	2N493	AMR CEN ESE HTN SLD SPE SSI SWT UPI					2N505	CEN CSR ETC	132-84
2N476	CEI CRI DIT HTN SEI SSI	185-96	2N489	ΔGESY AMR CEN CRI								2N506	CRI ETC	146-10
2N476A	CEI HSE	185-98										2N507	CRI ETC SEI	142-59
2N477	CEI	185-97										2N508	ASI CSR GPD IDI NJS SSY STI	142-82

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2N511 (cont.)	NJS SST		2N520	ASI CEN ETC GTC HVS NASG SPE STC UPI	135-101	2N525A	ASI CSR HTN NASG SPE STI	143-81	2N539A	ESE HTN STR UPI GPD STC AMR	254-23	2N550 (cont.)	SSI SST	
2N511A	ASI CRI ESE GPD LTE SPE STC	260-65	2N520A	ASI CEN CSR GPD HTN IDI SLD SST STI	139-31	2N526	ASI CEN CSR ESE GPD HTN IDI NASG SEI SST STI TIIF	143-30	2N540	CRI GPD IDC STC	254-17	2N551	ASI CRI ETC IDC SCA SPE SST SWT	218-20
2N511B	CEI CSR ETC GTC IDI NJS SPE STC	260-66	2N521	ASI CEN CSR GTC HVS IDI SPE STI	136-4	JAN2N526	WAB GESY GPD	143-36	2N540A	ESE HTN STC	254-24	2N552	CEI CRI ETC IDI SPE SST	218-21
2N512	CEN ETC HTN SPE STC	260-67	2N521A	ASI CEN ETC HTN IDC NASG SPE STI	139-98	2N526A	ASI CSR ETC IDI NJS STC TIC	143-62	2N541	ASI CEN CSR GTC IDI SCA SPE SST	185-89	2N553	ASI CEN CSR GPD HTN NJS SST STI	254-53
2N512A	CEN CSR GPD LTE SST	260-68	2N522	ASI CEN CSR GPD HTN IDI SPE STI	136-13	2N527A	ASI ESE HTN NASG SPE STI	143-83	2N542	ASI CEN CSR GTC IDI SCA SPE SST SWT	185-90	2N554	ASI CEN CSR GPD HTN IDI NJS SPE SST	256-102
2N512B	CEN ETC HTN SPE STC	260-69	2N522A	ASI CEN ETC GTC HVS NASG SPE STI	140-34	2N529	CEN CSR ETC NJS SPE	429-63	2N542A	CEI CSR HTN SLD SSI	185-91	2N555	ASI CEN CSR ETC NJS SPE SST STI	256-103
2N513	CEN CSR ETC HTN SPE	260-70	2N523	ASI CEN CSR GTC HTN IDI SPE STI	136-17	2N530	CEN CSR ETC SPE WAB	429-64	2N543	ASI CEN CSR GTC IDI SLD SSI STI	185-92	2N556	CEN CSR HSE IDI SPE	146-68 406-22
2N513A	CEN ETC HTN SPE	260-71	2N523A	ASI CEN ETC GTC HVS NASG SPE STI	140-49	2N531	CEN CSR ETC SPE	429-65	2N543A	CEI CSR HTN SPE SST	185-93	2N557	CEN CSR HSE IDI SPE	146-69 408-37
2N513B	CEN ETC HTN SPE	260-72	2N524	ASI CEN CSR GTC HTN IDI SPE STI	143-28	2N532	CEN CSR ETC SPE	429-66	2N544	ASI CEN CSR GTC IDI SLD SSI STI	135-7 217-74 392-22	2N558	CEN CSR HSE IDI SPE	146-70 406-23
2N514	CEN ESE GPD SPE	260-24	2N524A	ASI CEN ETC HTN IDI SPE STI	140-26	2N533	ASI CRI ETC SPE	429-67	2N545	ASI CRI ETC HTN SCA SPE SST	217-75 392-23 217-76 392-24	JAN2N559	AMR CEI CSR GTC HTN IDI SPE STC none	140-90 377-70 212-44 374-108
2N514A	CEN CSR ETC HTN STC	260-25	2N525	ASI CEN CSR GTC HTN IDI SPE STI	143-29	2N535	CRI ETC	132-94	2N546	ASI CEN CSR GTC IDI SLD SSI STI	218-23	2N560	ASI CRI DIT HTN NJS SPE STI	211-8 374-98 255-83
2N514B	CEN ESE GPD SPE STC	260-26	2N525A	ASI CEN CSR GTC HTN IDI SPE STI	143-60	2N535A	CSR HTN	132-95	2N547	ASI CRI ESE GSE IDI SCA SPE SST	218-24	JAN2N560	CEN CSR GPD HTN NJS SPE STC	138-63
2N515	CRI ETC NJS	146-18	2N526	ASI CEN CSR GTC HTN IDI SPE STI	143-28	2N535B	CSR HTN	132-96	2N548	ASI CEN CSR GTC IDI SLD SSI STI	218-25	2N561	CEN CSR GPD HTN NJS SPE	138-71
2N516	CRI ETC NJS	146-19	2N527	ASI CEN CSR GTC HTN IDI SPE STI	139-98	2N536	CRI HTN	132-97	2N549	ASI CRI ETC HTN SCA SPE SST	218-26	2N562	CRI ETC HTN	136-72
2N517	CRI ETC NJS	146-20	2N528	ASI CEN CSR GTC HTN IDI SPE STI	143-28	JAN2N537	none	143-64	2N550	ASI CEN CSR GTC IDI SLD SSI STI	218-27	2N563	CEN CSR GPD HTN NJS SPE	138-73
2N518	CRI ETC NJS	140-17	2N529	ASI CEN CSR GTC HTN IDI SPE STI	140-34	2N538	CRI GPD SPE STC	254-20	2N551	ASI CEN CSR GTC IDI SCA SPE SST	185-89	2N564	CEN CSR GPD HTN NJS SPE	138-74
2N519	ASI CEN ETC GTC HVS NJS STC UPI	135-68	2N530	ASI CEN CSR GTC HTN IDI SPE STI	136-17	2N538A	ESE HTN SST STR	254-21	2N552	ASI CEN CSR GTC IDI SCA SPE SST	185-90	2N565	CEN CSR GPD HTN NJS SPE	138-75
2N519A	ASI CEN CSR GTC HVS NJS STC UPI	138-46	2N531	ASI CEN CSR GTC HTN IDI SPE STI	136-13	2N539	CRI GPD SPE STR	254-22	2N553	ASI CEN CSR GTC IDI SCA SPE SST	185-91	2N566	CEN CSR GPD HTN NJS SPE	138-76
			2N532	ASI CEN CSR GTC HTN IDI SPE STI	136-13	JAN2N539	GPD STC	254-16				2N567	CRI	138-108

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2N567 (cont.)	ETC HTN SPE STI		2N581 (cont.)	IDI SLD SST STI		2N598 (cont.)	STR WAB none		2N613 (cont.)	HTN NJS STC		2N634 (cont.)	CRI ETC HSE SPE STI	
2N568	AMR CEN GPD HVS NJS STC	136-73	2N582	ASI CEN CSR GPD HTN LTE HTN IDI SLD SST STI SWT	136-95	JAN2N598	TIC	144-14 384-66 144-18 382-81	2N614	CEN CSR HSE IDI	137-53	2N634A	ASI CSR GPD HTN SPE	147-85
2N569	CRI ETC HTN SPE	139-5	2N583	ASI CRI ETC HSE IDI SPE STC	134-90	2N599	ASI CEN CSR GPD HTN LTE HTN IDI SLD SST STI WAB GPD	144-19 382-82 145-15 384-69	2N615	CEN CSR HSE IDI	137-54	2N635	ASI CRI ETC HSE NJS	147-98
2N570	CEN CSR GPD HVS NJS STC	136-75	2N584	CEN CSR GPD HTN LTE HTN IDI SPE STC	136-96	2N600	CEI GTC IDI LTE SPE WAB none	145-14 384-67 145-16 382-85	2N616	CEN ETC HTN NJS	139-106	2N635A	ASI CSR GPD HTN SLD	147-97
2N571	CRI ETC HTN SPE	139-32	2N585	ASI CRI ETC HSE IDI SPE STC	147-1	JAN2N600	CEI GTC IDI LTE SPE WAB none	145-14 384-67 145-16 382-85	2N617	CEN CSR HSE IDI	137-55	2N636	ASI CRI ETC HSE NJS	147-105
2N572	CEN CSR GPD HVS NJS STC	136-76	2N586	ASI CRI ETC HSE IDI SPE STC	143-73	2N601	CEI GTC IDI LTE SPE WAB none	145-14 384-67 145-16 382-85	2N618	ASI CEN CSR ETC GTC HTN LTE SPE STC	256-22 411-2	2N636A	CEN CSR GPD HTN SLD SST	147-106
2N573	CEN CSR HTN NJS	141-81	2N587	CEN CSR GPD HTN LTE	147-20 404-31	2N602	CEI GTC IDI LTE SPE WAB none	145-14 384-67 145-16 382-85	2N619	CRI UNI CRI SPE AMR HSE SPE	191-44	2N637	ASI CEN CSR GPD HTN IDI NJS	254-54 409-86
2N574	CSR GPD SPE	261-104	2N588	CRI ETC NJS	132-53	2N603	CEN HSE IDI	136-109	2N620	SPE	191-47	2N637A	ASI CEN CSR GPD HTN IDI NJS	254-58 409-88
JAN2N574	none	261-105	2N588A	ASI CRI ETC HSE IDI SPE STC	133-62	2N603A	AMR CSR HTN SPE SSS	136-90	2N621	CRI HTN	191-48	2N637B	ASI CEN CSR GPD HTN LTE SPE STC	254-55 409-87
2N575	ESE HTN SSI	261-107	2N589	CEN CSR GPD LTE	257-87	2N604	CEN HSE IDI	137-4	2N622	HSE IDI	208-12	2N637C	ASI CEN CSR GPD HTN LTE SPE STC	254-56 409-88
JAN2N575	none	261-108	2N590	CRI ETC NJS	132-53	2N604A	CEN HTN	136-110 398-44 136-92	2N623	HTN	132-69	2N638	ASI CEN CSR GPD HTN LTE SPE STC	254-57 409-89
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ETC	GPD		LTE	STC		HTN	HTN		SPE	WAB		HTN	HTN	
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HTN	LTE		SSY	AMR	135-11	CEN	CRI		GTC	HTN		STI	TCY	
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JAN2N1559A	GPD STC	258-97 409-28	2N1592	AMR CEN CSR HTN SSI STI	181-41	2N1617	AMR CEN ESE GSE HTN PPC SLD SPE SST UPI	325-89	2N1641	AMR HTN SSI	429-21	2N1665	CEN HTN SPE SSI	141-2
2N1560	AMR CEN CSR GPD IDC SPE STI	258-98	2N1593	AMR CEN CSR HTN SSI STI	181-42	2N1617A	AMR CEN ESE GSE HTN PPC SLD SPE SST UPI	328-30	2N1642	AMR HTN SSI	429-22	2N1666	CEN HTN SPE	255-98 411-19
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2N1588	AMR CEN CSR HTN SPE	181-37	2N1616	AMR CEN CSR HTN SSI STI	300-105	2N1631	AMR CEN ESE GSE HTN PPC SLD SPE SST UPI	325-100	2N1655	AMR HTN SSI	153-72	2N1680	AMR CEN HTN SPE	302-100





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2N1820	AMR	355-97	SST	SSY		CSR	ESE		THEF	THCS		HTN	THEF	
HTN	SPE	410-43	STI	THCS		GPD	HTN		WAB			SCA	SSI	
2N1823	AMR	355-70	THEF	TIIF		LTE	NASG		AMR		352-71	SSI	SST	
HTN	SPE	410-44	UPI	WAB	226-77	SPE	UPI		ASI	CRI		HTN	GDC	209-60
2N1824	AMR	355-71	AMR	ASI		UPI	UTS		GTC	HTN		SPE	PPC	364-17
HTN	SPE	410-45	CDIL	CEI		AMR	WAB	260-79	IDI	PPC		AMR	GDC	209-61
2N1825	AMR	355-72	CEN	CRI		CEN	AMR		SCA	SPE		SPE	GDC	364-105
CRI	HTN	410-46	CSR	ESE		CSR	GPD		SPE	SSI		SWT		
2N1826	AMR	355-73	ETC	GDC		HTN	IDC		STR	THEF		AMR	AMR	140-14
HTN	SPE	410-47	GTC	HTN		LTE	NASG		THCS	WAB		CRI	CRI	403-3
2N1830	AMR	355-74	IDI	MEHK		NJS	SEI		SSI	SPE		HTN	SPE	
CRI	HTN	410-48	MOTA	NASG		SPE	UPI		STI	HTN		SPE	STC	
2N1831	AMR	355-75	NJS	RTN		STC	WAB		AMR	HTN		UPI	UPI	
HTN	SPE	410-49	SCA	SEI		AMR	AMR	260-80	DIT	HTN		AMR	AMR	258-108
2N1832	AMR	355-76	SPE	SSI		CEN	HTN		SPE	HTN		CEN	CSR	
CRI	HTN	410-50	SST	STI		AMR	SPE	260-81	SWT	AMR		ETC	GPD	
2N1833	AMR	355-77	SWT	THCS		CEN	CSR		CRI	HTN		HTN	LTE	
ESE	HTN	410-51	THEF	TIIF		CSR	GPD		SPE	SST		SLD	SPE	
2N1837	AMR	219-62	UPI	WAB	227-18	HTN	IDC		STC	STI		SST	STC	
CDIL	CEN	384-49	JAN2N1890	FSC		ASI	NASG		AMR	HTN		UPI	UTS	
CRI	CSR		2N1891	RTN	147-71	CEN	SEI		AMR	HTN		WAB	WAB	254-69
ETC	HTN		ASI	CEI	429-23	HTN	HTN		HTN	SCA		GDC	GPD	
IDI	SCA		CSR	ESE		SSI	SSI		SSI	SSI		HTN	HTN	
SPE	SSI		HSE	HTN		2N1908A	CEN	260-82	2N1943	AMR	225-8	2N1971	CEN	
STI	WAB		IDI	SLD		CEN	AMR		CRI	HTN		CEI	CEN	
2N1837A	AMR	228-31	SPE	SST		HTN	HTN		SPE	HTN		CRI	CSR	
CEN	ETC	384-50	STC	STI		ASI	AMR	154-7	2N1944	CEI	218-109	GDC	GPD	
HTN	SCA		2N1892	AMR	139-79	CSR	CRI	437-20	HTN	HTN		HTN	HTN	
2N1837B	HTN	228-32	ASI	CEI	389-12	HTN	HTN		SPE	SSI		SSI	AMR	218-64
2N1838	AMR	219-28	CEN	CRI		SSI	SPE		2N1945	AMR	218-110	CDIL	CEN	
AS	CDIL	384-42	CSR	ESE		HTN	HTN		HTN	HTN		CEN	CSR	
CEI	CEN		ETC	GPD		2N1918	HTN	154-22	IDI	SPE		FSC	HTN	
CRI	CSR		HTN	HTN		ASI	AMR	437-21	SSI	STI		IDI	SCA	
ETC	HTN		SCA	SSI	226-6	CSR	CRI		2N1946	AMR	219-1	SPE	SSI	
IDI	SCA		SSI	STI		HTN	HTN		CRI	HTN		2N1973	AMR	226-79
SPE	SSI		ALGG	FSC		2N1919	HTN	153-98	HTN	SPE		CDIL	ASI	
2N1839	AMR	219-29	ASI	CDIL		ASI	CSR	437-22	2N1947	AMR	219-2	CDIL	CEI	
AS	CEN	384-43	CEI	CEN		HTN	HTN		HTN	SPE		CEN	CRI	
CRI	CSR		CRI	CSR		2N1920	HTN	153-99	2N1948	AMR	219-3	CSR	ETC	
ETC	HTN		ESE	ETC		ASI	AMR	437-23	HTN	SPE		GDC	GTC	
IDI	SPE		FERB	GDC		CSR	CRI		2N1949	AMR	219-4	HTN	HTN	
SSI	WAB		GTC	HTN		HTN	HTN		HTN	SPE		HTN	HTN	
2N1840	AMR	219-30	HVS	IDC		2N1921	HTN	153-100	2N1950	AMR	219-5	HTN	HTN	
AS	CDIL	395-91	IDI	LUCB		CSR	HTN	437-24	CRI	HTN		HTN	HTN	
CEN	CRI		MEHK	MOTA		HTN	HTN		HTN	SPE		HTN	HTN	
CSR	ETC		NASG	PHIN		2N1922	HTN	153-101	2N1951	AMR	219-6	HTN	HTN	
HTN	HTN		RCA	RCAB		CRI	HTN	437-25	CRI	HTN		HTN	HTN	
SPE	SSI		RTN	SCA		HTN	HTN		HTN	HTN		HTN	HTN	
2N1853	AMR	137-110	SEI	SEI		2N1923	HTN	223-100	2N1952	AMR	219-7	HTN	HTN	
CEN	CRI		SGAI	SIEG		STI	HTN		HTN	HTN		HTN	HTN	
CSR	ESE		SLD	SPE		2N1924	HTN	143-53	2N1953	AMR	219-8	HTN	HTN	
HSE	HTN		SST	SSY		ASI	AMR		CEN	HTN		HTN	HTN	
IDI	SPE		STI	STR		CRI	CRI		HTN	HTN		HTN	HTN	
SSI	STC		SWT	THCS		HTN	HTN		2N1954	AMR	219-9	HTN	HTN	
JAN2N1853	UPI	138-1	TIC	TIIF		2N1925	HTN	143-58	2N1955	AMR	219-10	HTN	HTN	
none	none	398-52	TIIF	UPI		CSR	HTN		HTN	HTN		HTN	HTN	
2N1854	AMR	140-53	VALG	WAB		ESE	HTN		2N1956	AMR	219-11	HTN	HTN	
CEN	CRI		JAN2N1893	FSC	226-78	HTN	HTN		AMR	HTN		HTN	HTN	
HTN	HTN		AMR	RTN		2N1926	HTN	143-59	2N1957	AMR	219-12	HTN	HTN	
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STC	UPI		ASI	CEN		2N1928	HTN		HTN	HTN		HTN	HTN	
JAN2N1854	none	140-54	CEN	CSR		2N1929	HTN		2N1959	AMR	219-14	HTN	HTN	
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CEN	CRI		GTC	HTN		2N1931	HTN		2N1961	AMR	219-16	HTN	HTN	
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CSR	ETC		ESE	HTN		2N1936	HTN		2N1966	AMR	219-21	HTN	HTN	
HTN	IDC		SPE	SSI		2N1937	HTN		2N1967	AMR	219-22	HTN	HTN	
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HTN	IDC		2N1901	AMR	342-71	2N1941	HTN		2N1971	AMR	219-26	HTN	HTN	
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CEN	CRI		SPE	SSI		2N1943	HTN		2N1973	AMR	219-28	HTN	HTN	
CSR	ETC		2N1902	AMR	342-72	2N1944	HTN		2N1974	AMR	219-29	HTN	HTN	
HTN	IDC		CRI	HTN		2N1945	HTN		2N1975	AMR	219-30	HTN	HTN	
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CEN	CRI		HTN	IDC		2N1959	HTN		2N1989	AMR	219-44	HTN	HTN	
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GDC	GTC		HTN	NJS		2N1961	HTN		2N1991	AMR	219-46	HTN	HTN	
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2N2173	CRI SLD	143- 66 366- 90	2N2193A	AMR ASI CEI CSR ESE GTC HTN MEHK NJS RTN SLD SSI SWT	226- 13 376- 8	2N2200	AMR CRI ETC NJS	134- 37	2N2213	AMR HTN SSI STI	176-107													
2N2175	ASI CEN CSR HTN RTN SPE SST TCY	149- 67	2N2193A	AMR ASI CEI CSR ESE GTC HTN MEHK NJS RTN SLD SSI SWT	226- 13 376- 8	2N2200	AMR CRI ETC NJS	134- 37	2N2214	AMR HTN SSI STI	228- 81													
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2N2177	ASI CEN CSR HTN NASG SLD SSI TSI	149- 64	2N2193A	AMR ASI CEI CSR ESE GTC HTN MEHK NJS RTN SLD SSI SWT	226- 13 376- 8	2N2200	AMR CRI ETC NJS	134- 37	2N2216	AMR HTN SSI STI	228- 81													
2N2178	ASI CEN CSR HTN RTN SPE SST TCY	149- 65	2N2193A	AMR ASI CEI CSR ESE GTC HTN MEHK NJS RTN SLD SSI SWT	226- 13 376- 8	2N2200	AMR CRI ETC NJS	134- 37	2N2217	AMR HTN SSI STI	228- 81													
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	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2226	AMR ΔWESY	352-72	2N2245	ASI HTN		2N2274	CRI IDC	150-37 437-37	2N2292	CEI CEN	
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	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2229	AMR ΔWESY	352-75	2N2248	ASI HTN		2N2277	CRI IDC	150-40 437-40	2N2295	CEI CEN	256-58
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	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2232	AMR ΔWESY	352-78	2N2251	ASI HTN		2N2280	CRI IDC	149-87 437-43	2N2298	CEI CEN	256-61
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	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2244	AMR ΔWESY	352-90	2N2263	ASI HTN		2N2292	CRI IDC	149-99 437-55	2N2310	CEI CEN	256-73
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2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2246	AMR ΔWESY	352-92	2N2265	ASI HTN		2N2294	CRI IDC	149-101 437-57	2N2312	CEI CEN	256-75
	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2247	AMR ΔWESY	352-93	2N2266	ASI HTN		2N2295	CRI IDC	149-102 437-58	2N2313	CEI CEN	256-76
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2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2249	AMR ΔWESY	352-95	2N2268	ASI HTN		2N2297	CRI IDC	149-104 437-60	2N2315	CEI CEN	256-78
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JAN2N2221A	FSC RTN	215-16 368-78	2N2251	AMR ΔWESY	352-97	2N2270	ASI HTN		2N2299	CRI IDC	149-106 437-62	2N2317	CEI CEN	256-80
2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2252	AMR ΔWESY	352-98	2N2271	ASI HTN		2N2300	CRI IDC	149-107 437-63	2N2318	CEI CEN	256-81
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JAN2N2221A	FSC RTN	215-16 368-78	2N2254	AMR ΔWESY	352-100	2N2273	ASI HTN		2N2302	CRI IDC	149-109 437-65	2N2320	CEI CEN	256-83
2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2255	AMR ΔWESY	352-101	2N2274	ASI HTN		2N2303	CRI IDC	149-110 437-66	2N2321	CEI CEN	256-84
	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2256	AMR ΔWESY	352-102	2N2275	ASI HTN		2N2304	CRI IDC	149-111 437-67	2N2322	CEI CEN	256-85
JAN2N2221A	FSC RTN	215-16 368-78	2N2257	AMR ΔWESY	352-103	2N2276	ASI HTN		2N2305	CRI IDC	149-112 437-68	2N2323	CEI CEN	256-86
2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2258	AMR ΔWESY	352-104	2N2277	ASI HTN		2N2306	CRI IDC	149-113 437-69	2N2324	CEI CEN	256-87
	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2259	AMR ΔWESY	352-105	2N2278	ASI HTN		2N2307	CRI IDC	149-114 437-70	2N2325	CEI CEN	256-88
JAN2N2221A	FSC RTN	215-16 368-78	2N2260	AMR ΔWESY	352-106	2N2279	ASI HTN		2N2308	CRI IDC	149-115 437-71	2N2326	CEI CEN	256-89
2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2261	AMR ΔWESY	352-107	2N2280	ASI HTN		2N2309	CRI IDC	149-116 437-72	2N2327	CEI CEN	256-90
	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2262	AMR ΔWESY	352-108	2N2281	ASI HTN		2N2310	CRI IDC	149-117 437-73	2N2328	CEI CEN	256-91
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	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2265	AMR ΔWESY	352-111	2N2284	ASI HTN		2N2313	CRI IDC	149-120 437-76	2N2331	CEI CEN	256-94
JAN2N2221A	FSC RTN	215-16 368-78	2N2266	AMR ΔWESY	352-112	2N2285	ASI HTN		2N2314	CRI IDC	149-121 437-77	2N2332	CEI CEN	256-95
2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2267	AMR ΔWESY	352-113	2N2286	ASI HTN		2N2315	CRI IDC	149-122 437-78	2N2333	CEI CEN	256-96
	ASI BELI CDIL CEN CSR ESE FERB GDC HTN IDI LUCB NASG NSC PHIN RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI		2N2268	AMR ΔWESY	352-114	2N2287	ASI HTN		2N2316	CRI IDC	149-123 437-79	2N2334	CEI CEN	256-97
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2N2223	CSR FERB MOTA NJS RTN SCA SELI SLD SIEG SPE SSSY STR THCS TIID UPI	212-67 430-67	2N2270	AMR ΔWESY	352-116	2N2289	ASI HTN		2N2318	CRI IDC	149-125 437-81	2N2336	CEI CEN	256-99
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JAN2N2221A	FSC RTN	215-16 368-78	2N2272	AMR ΔWESY	352-118	2N2291	ASI HTN		2N2320	CRI IDC	149-127 437-83	2N2338	CEI CEN	256-101
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JAN2N2553	GPD STC	145-25	2N2568	AMR CSR GPD LTE SPE STC	195-42 437-49	2N2599	AMR CSR SCA SSI SPE	166-23	2N2610	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	232-67	2N2636	CEN CSR GPD	259-12 397-65
2N2554	CRI GPD LTE SLD STC	253-37	2N2569	CRI PHIN SPE	195-43 437-50	2N2599A	AMR CSR SCA SSI SPE	166-24	JAN2N2609	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	181-81	2N2637	CEN CSR GPD	259-13 397-66
2N2555	DIT HTN NJS SPE	253-38	2N2570	AMR CSR GPD LTE SPE STC	350-6 405-24	2N2600	AMR CSR SCA SSI SPE	166-50	2N2611	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	307-69	2N2638	CEN CSR GPD HTN	259-14 397-67
JAN2N2555	GPD STC	145-26	2N2571	AMR CSR GPD LTE SPE STC	350-7 403-62	2N2601	AMR CSR SCA SSI SPE	166-51	2N2612	CEN DIT GPD LTE	257-10	2N2639	AMR CEI CSR GTC HTN IDI	194-15 430-75
2N2556	CRI GPD LTE SLD SST	253-39	2N2572	CRI HTN SPE STC	350-8 405-25	2N2602	AMR CSR SCA SSI SPE	166-25	2N2613	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	136-78	JAN2N2639	none	194-21 430-76
2N2557	CRI ESE HTN NJS SPE STC	253-40	2N2573	AMR CSR GPD LTE SPE STC	350-9 405-26	2N2603	AMR CSR SCA SSI SPE	166-52	2N2614	CEN HTN SPE SWT	136-79	2N2640	AMR CEI CSR GTC HTN IDI	194-16 430-77
JAN2N2557	GPD STC	252-24	2N2574	AMR CSR GPD LTE SPE STC	350-11 408-2	2N2604	AMR CSR SCA SSI SPE	166-16	2N2615	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	199-76	2N2641	ASI CRI GDC HTN MEHK NASC SCA SLD SPE SST STI UPI	194-17 438-82
2N2558	CRI DIT GPD LTE SPE STC	253-41	2N2575	AMR CSR GPD LTE SPE STC	350-12 408-3	2N2605	AMR CSR SCA SSI SPE	166-17 166-18	2N2616	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	199-101	2N2642	ASI CRI GDC HTN MEHK NASC SCA SLD SPE SST STI	194-18 430-78
2N2559	CRI GPD LTE SPE STC	253-42	2N2576	AMR CSR GPD LTE SPE STC	194-45	2N2606	AMR CSR SCA SSI SPE	166-18	2N2617	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	140-26	2N2643	AMR CEI CSR GTC HTN IDI	194-19 430-80
JAN2N2559	GPD STC	252-25	2N2577	AMR CSR GPD LTE SPE STC	cont.next col.	2N2607	AMR CSR SCA SSI SPE		2N2618	AMR AMX CEN CEN DIT IFE NJS NSC SOD WAB MOTA SIX	140-28	2N2644	AMR CEI CSR GTC HTN IDI	194-22 430-79

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2N2643 (cont.)	GDC HTN IDI MEHK NASG RTN SCA SGAI SLD SPE SSI STI TIIF UPI WAB		2N2659	AMR GPD CRI HTN NJS SST	252-100	2N2697 (cont.)	HTN SPE SEI THCS		2N2721 (cont.)	SPE THCS SSI		2N2743	AMR HTN CRI SPE	352-84 407-28
2N2644	AMR ASI CEN GDC HTN MEHK RTN SCA SLD SPE SSI STI TIIF UPI WAB	194-20 438-83	2N2660	AMR GPD CRI HTN SLD	252-101	2N2698	CRI HTN SPE	311-30 377-5	2N2722	ASI CEN GDC HTN IDI MOTA SCA SLD SPE SST	195-44 430-85	2N2744	CRI ESE SPE	352-85 407-29
2N2645	AMR CEI CEN GDC HTN MEHK RTN SCA SLD SPE SSI STI TIIF UPI WAB	212-71	2N2661	AMR GPD CRI HTN SLD	252-102	2N2706	ASI CEN SPE	144-42	2N2723	CRI MOTA RTN SCA SSI	414-19	2N2745	HTN SPE	352-86 407-30
2N2646	AMR CEN DIT HTN MOTA SELI SPE SWT UPI	436-52	2N2662	AMR GPD CRI HTN SLD SPE	252-103	2N2707	CEN ESE	429-68	2N2724	CRI IDC RTN SCA SST	414-23	2N2746	CRI HTN SPE	352-87 407-31
2N2647	AMR CEN ESE MOTA SELI SPE SWT UPI	436-53	2N2663	AMR GPD CRI HTN SLD SPE	252-104	2N2708	ASI CEN CSR ESE ESE FERB HTN NASG	190-41	2N2725	CRI FSC RTN SCA SST	414-18	2N2747	CRI SPE SSI	352-88 407-32
2N2648	AMR CEN CSR HSE IDI	144-70 386-82	2N2664	AMR GPD CRI HTN SLD SPE	252-105	2N2709	HTN NASG RTN SPE SSI SSY TIC	189-86 153-55	2N2726	CRI HTN SPE SST STI	301-3	2N2748	AMR HTN CRI SPE SSI	352-89 407-33
2N2650	HTN SPE	305-7	2N2665	AMR GPD CRI HTN SLD SPE	252-106	2N2710	AMR CEN CSR ESE ESE HTN NASG	207-88 365-38	2N2727	CEI CEN CSR ESE ESE GDC HTN IDI MOTA SCA SST	301-4	2N2749	CRI HTN SPE	352-90 407-34
2N2651	AMR ASI CEN CSR FSC HTN LTE SSI	207-53 369-61	2N2666	AMR GPD CRI HTN SLD SPE	252-107	2N2711	AMR CEN CSR ESE ESE HTN NASG	185-14	2N2728	CEN CEN CSR ESE ESE GDC HTN IDI MOTA SCA SST	261-17 411-4	2N2750	AMR HTN CRI SPE SSI	352-91 407-35
2N2652	CRI HTN NASG	194-84 430-81	2N2667	AMR GPD CRI HTN SLD SPE	252-108	2N2712	AMR CEN CSR ESE ESE HTN NASG	185-15	2N2729	CRI CEN CSR ESE ESE GDC HTN IDI MOTA SCA SST	200-10	2N2751	AMR HTN CRI SPE SSI	352-92 408-38
2N2652A	HTN NASG	194-85 430-82	2N2668	AMR GPD CRI HTN SLD SPE	252-109	2N2713	AMR CEN CSR ESE ESE HTN NASG	185-16	2N2730	CEN CEN CSR ESE ESE GDC HTN IDI MOTA SCA SST	261-18 410-10	2N2752	AMR HTN CRI SPE SSI	352-93 408-39
2N2654	AMR ASI SPE	135-50 443-15	2N2669	AMR GPD CRI HTN SLD SPE	252-110	2N2714	AMR CEN CSR ESE ESE HTN NASG	185-17	2N2731	CEN CEN CSR ESE ESE GDC HTN IDI MOTA SCA SST	261-19 410-11	2N2753	AMR HTN CRI SPE SSI	352-94 408-40
2N2655	CEN ESE HVS	307-70	2N2670	AMR GPD CRI HTN SLD SPE	253-1	2N2715	AMR CEN CSR ESE ESE HTN NASG	185-18	2N2732	CEN CEN CSR ESE ESE GDC HTN IDI MOTA SCA SST	261-20 410-12	2N2754	AMR HTN CRI SPE SSI	352-95 408-41
2N2656	AMR GPD CRI HTN SLD SPE	206-82	2N2671	AMR GPD CRI HTN SLD SPE	135-51 443-16	2N2716	AMR CEN CSR ESE ESE HTN NASG	185-19	2N2733	AMR GPD HTN SPE	260-50 410-13	2N2755	AMR HTN CRI SPE SSI	352-96 408-42
2N2657	AMR CEI CEN CSR GSE HTN NASG PPC SEI SPE SSI STI	303-53 377-2	2N2672	AMR GPD CRI HTN SLD SPE	135-52	2N2717	AMR CEN CSR ESE ESE HTN NASG	185-19	2N2734	AMR GPD HTN SPE	260-51 410-14	2N2756	AMR HTN CRI SPE SSI	352-97 408-43
2N2658	AMR CEI CEN CSR GSE HTN NASG PPC SEI SPE SSI STI	303-54 377-3	2N2673	AMR GPD CRI HTN SLD SPE	259-15 411-27	2N2718	AMR CEN CSR ESE ESE HTN NASG	185-19	2N2735	AMR GPD HTN SPE	260-52 410-15	2N2757	AMR HTN CRI SPE SSI	352-98 407-36
			2N2674	AMR GPD CRI HTN SLD SPE	261-16 411-28	2N2719	AMR CEN CSR ESE ESE HTN NASG	185-19	2N2736	AMR GPD HTN SPE	260-53 410-16	2N2758	AMR HTN CRI SPE SSI	352-99 407-37
			2N2675	AMR GPD CRI HTN SLD SPE	195-22 398-28	2N2720	AMR CEN CSR ESE ESE HTN NASG	185-19	2N2737	AMR GPD HTN SPE	260-54 410-17	2N2759	AMR HTN CRI SPE SSI	352-100 407-38
			2N2676	AMR GPD CRI HTN SLD SPE	194-42 398-27	2N2721	AMR CEN CSR ESE ESE HTN NASG	185-19	2N2738	AMR GPD HTN SPE	260-55 410-18	2N2760	AMR HTN CRI SPE SSI	352-101 407-39
			2N2677	AMR GPD CRI HTN SLD SPE	194-43 398-43	2N2722	AMR CEN CSR ESE ESE HTN NASG	136-45	2N2739	AMR GPD HTN SPE	352-80 407-24	2N2761	AMR HTN CRI SPE SSI	352-102 407-40
			2N2678	AMR GPD CRI HTN SLD SPE	163-70 376-75	2N2723	AMR CEN CSR ESE ESE HTN NASG	143-72 379-94	2N2740	AMR GPD HTN SPE	352-81 407-25	2N2762	AMR HTN CRI SPE SSI	352-103 407-41
			2N2679	AMR GPD CRI HTN SLD SPE	163-71 376-76	2N2724	AMR CEN CSR ESE ESE HTN NASG	197-43	2N2741	AMR GPD HTN SPE	352-82 407-26	2N2763	AMR HTN CRI SPE SSI	352-104 407-42
			2N2680	AMR GPD CRI HTN SLD SPE	311-29 377-4	2N2725	AMR CEN CSR ESE ESE HTN NASG	195-27 430-83	2N2742	AMR GPD HTN SPE	352-83 407-27	2N2764	AMR HTN CRI SPE SSI	352-105 407-43
			2N2681	AMR GPD CRI HTN SLD SPE	311-29 377-4	2N2726	AMR CEN CSR ESE ESE HTN NASG	195-28 430-84				2N2765	AMR HTN CRI SPE SSI	352-106 407-44

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2N2766	AMR HTN PFI SPE	Δ WESY	352-107	407-45	2N2787 (cont.)	ETC IDI SPE	CRI HTN SCA SSI STI	2N2812 (cont.)	STC WAB none	JAN2N2812	329-55 391-61 325-98	2N2825	Δ STC AMR GSE	346-77	2N2845 (cont.)	SSI SWT THIF	SPR STI WAB						
2N2767	CRI PPC	AMR	352-108	407-46	2N2788	ASI CEN ETC IDI SPE	AMR CEI CRI HTN SCA SSI STI	2N2813	AMR ASI CSR GTC HTN SCA SPR STC	Δ SODI		2N2826	CRI HTN	252-70	2N2846	ASI CEN ETC GTC IDI SGAI SSI THCS	AMR CEI CSR GDC HTN NASG	228-96 371-15					
2N2768	CRI PPC	AMR	352-109	407-47	2N2789	ASI CEN ETC IDI SPE	AMR CEI CRI HTN SCA SSI STI	2N2814	AMR ASI CSR GTC HTN SCA SLD SPR SSI STC	Δ SODI	325-99	2N2827	Δ STC AMR ASI CSR GTC HTN SCA SLD SPR SSI	318-95	2N2847	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	206-84 366-1					
2N2769	AMR GTC IDI PFI SPC SSI	Δ WESY	352-110	408-44	2N2790	ASI HTN SCA SSI	AMR HTN SCA SSI	JAN2N2814	AMR ASI CSR GTC HTN SCA SLD SPR SSI	WAB none	329-56 391-62 346-67	2N2828	AMR ASI CSR GTC HTN SCA SLD SPR SSI	321-90	2N2848	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	228-97 366-2					
2N2770	AMR ESE HTN PPC SPC SSI	Δ WESY	353-1	408-45	2N2791	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2815	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-68	2N2829	AMR ASI CSR GTC HTN SCA SLD SPR SSI	205-24	2N2849	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-70 380-71					
2N2771	AMR DIT IDI PFI SPR	Δ WESY	353-2	408-46	2N2792	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2816	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-69	2N2830	AMR ASI CSR GTC HTN SCA SLD SPR SSI	257-11 406-52	2N2850	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-71 380-72					
2N2772	AMR HTN PPC SPR	Δ WESY	353-3	408-47	2N2793	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2817	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-70	2N2831	AMR ASI CSR GTC HTN SCA SLD SPR SSI	257-12 406-53	2N2851	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-72 380-73					
2N2773	CRI PPC	AMR	353-4	408-48	2N2794	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2818	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-71	2N2832	AMR ASI CSR GTC HTN SCA SLD SPR SSI	257-13 406-54	2N2852	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-73 380-74					
2N2774	CRI IDI SPR	AMR	353-5	408-49	2N2795	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2819	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-72	2N2833	AMR ASI CSR GTC HTN SCA SLD SPR SSI	257-14 406-55 253-14	2N2853	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-74 380-75					
2N2775	AMR GTC IDI PFI SPR	Δ WESY	353-6	409-1	2N2796	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2820	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-73	2N2834	AMR ASI CSR GTC HTN SCA SLD SPR SSI	169-74 371-84	2N2854	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-75 380-76					
2N2776	AMR GTC IDI PFI SPR	Δ WESY	353-7	409-2	2N2797	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2821	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-74	2N2835	AMR ASI CSR GTC HTN SCA SLD SPR SSI	169-75 371-85	2N2855	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-76 380-77					
2N2777	AMR HTN PPC SPC SSI	Δ WESY	353-8	409-3	2N2798	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2822	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-75	2N2836	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-68	2N2856	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-77 380-78					
2N2778	AMR GTC IDI PFI SPR	Δ WESY	353-9	409-4	2N2799	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2823	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-76	2N2837	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-69	2N2857	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-78 380-79					
2N2779	CRI SPR	AMR	353-10	409-5	2N2800	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2824	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-77	2N2838	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-70	2N2858	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-79 380-80					
2N2780	CRI SPR	AMR	353-11	409-6	2N2801	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2825	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-78	2N2839	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-71	2N2859	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-80 380-81					
2N2781	CRI IDI SPR	AMR	311-31		2N2802	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2826	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-79	2N2840	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-72	2N2860	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-81 380-82					
2N2782	CRI SCA	AMR	311-32		2N2803	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2827	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-80	2N2841	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-73	2N2861	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-82 380-83					
2N2783	CRI SPR	AMR	311-33		2N2804	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2828	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-81	2N2842	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-74	2N2862	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-83 380-84					
2N2784	ASI CEN CSR GDC HSE IDC SCA SSI SWT	AMR	200-14	361-103	2N2805	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2829	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-82	2N2843	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-75	2N2863	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-84 380-85					
2N2785	CRI RTN SPR	AMR	438-84		2N2806	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2830	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-83	2N2844	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-76	2N2864	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-85 380-86					
2N2786	AMR HTN	AMR	252-34		2N2807	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2831	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-84	2N2845	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-77	2N2865	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-86 380-87					
2N2787	ASI CEN	AMR	228-92	373-107	2N2808	ASI HTN SCA SSI	AMR HTN SCA SSI	2N2832	AMR ASI CSR GTC HTN SCA SLD SPR SSI	Δ STC CRI ESE GSE HTN PFI SPC SSI	346-85	2N2846	AMR ASI CSR GTC HTN SCA SLD SPR SSI	232-78	2N2866	ASI CEN ETC HTN SCA SLD SPR SSI THCS	AMR CEI CSR GDC HTN NASG	229-87 380-88					

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2N3405	Δ GSEY CEN CSR HTN IDC MEHK MISI SLD SPR SWT	217-42	2N3419	Δ TII CEI CEN CSR GDC HTN IDI SCA SGAI SMLB SST STC SWT	294-28 387-57	2N3439	AMX CRI IPE NASG	286-2 397-62	JAN2N3444S	MOTA	301-19 369-60 334-56 389-21	2N3462	HSE	193-78
2N3407	HTN	188-66		CEI CEN CSR GDC HTN IDI SCA SGAI SMLB SST STC SWT			BELI CDIL CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC		2N3445	ΔMOTA	334-57 389-22	2N3463	HSE	194-46
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2N3409	CRI SCA	215-22 431-23		CEI CEN CSR GDC HTN IDI SCA SGAI SMLB SST STC SWT			CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	2N3465	CSR PPC SMLB	246-72	
2N3410	CRI SCA SSI	215-23 431-24	JAN2N3419	Δ TII GSE HTN	296-94 388-59		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC		2N3446	ΔMOTA	334-57 389-22	2N3466	CSR PPC SMLB	246-73
2N3411	CRI SCA SPE	215-24 431-25	2N3420	Δ TII ASI CEN CSR GDC HTN IDI SCA SGAI SMLB SST STC SWT	294-29 387-58		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	2N3467	TIC WAB ΔMOTA	267-43 367-64	
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2N3414	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-25		ASI CEN CSR GDC HTN IDI SCA SGAI SMLB SST STC SWT			CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	JAN2N3468	AMR CEI CEN CSR GDC HTN NJS SEI SLD SST SWT TIIF	267-54 367-105 296-8	
2N3415	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-26	JAN2N3421	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26	2N3440S	AMR CRI ESE HTN	301-17 314-23	2N3447	ΔMOTA	334-58 389-23	2N3469	AMR CEI CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	353-15
2N3416	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-27	2N3422	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26	2N3441	AMR CRI ESE HTN	301-17 314-23		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	140-98 367-87		AMR CEN ESE NSG SOD	353-16
2N3417	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-28	2N3423	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC		2N3449	GPD	140-99 367-88	2N3470	Δ WESY CEN IPE SOD	353-17
2N3418	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-29	2N3424	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26	2N3442	AMR CRI ESE HTN	301-17 314-23	JAN2N3449	WAB none	140-99 367-88	2N3471	Δ WESY CEN IPE SOD	353-18
2N3419	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-30	2N3425	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3472	Δ WESY CEN IPE SOD	353-19
2N3420	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-31	2N3426	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26	JAN2N3441	AMR CRI ESE HTN	301-17 314-23	2N3450	ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	140-99 367-88	2N3473	Δ WESY CEN IPE SOD	353-20
2N3421	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-32	2N3427	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26	2N3442	AMR CRI ESE HTN	301-17 314-23	2N3451	ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	140-99 367-88	2N3474	Δ WESY CEN IPE SOD	353-21
2N3422	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-33	2N3428	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3475	Δ WESY CEN IPE SOD	353-22
2N3423	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-34	2N3429	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26	JAN2N3442	AMR CRI ESE HTN	301-17 314-23	2N3452	ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	140-99 367-88		AMR CEN ESE NSG SOD	353-23
2N3424	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-35	2N3430	Δ TII UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3476	Δ WESY CEN IPE SOD	353-24
2N3425	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-36		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3477	Δ WESY CEN IPE SOD	353-25
2N3426	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-37		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3478	Δ WESY CEN IPE SOD	353-26
2N3427	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-38		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3479	Δ WESY CEN IPE SOD	353-27
2N3428	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-39		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3480	Δ WESY CEN IPE SOD	353-28
2N3429	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-40		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3481	Δ WESY CEN IPE SOD	353-29
2N3430	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-41		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3482	Δ WESY CEN IPE SOD	353-30
2N3431	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-42		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3483	Δ WESY CEN IPE SOD	353-31
2N3432	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-43		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3484	Δ WESY CEN IPE SOD	353-32
2N3433	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-44		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3485	Δ WESY CEN IPE SOD	353-33
2N3434	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-45		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3486	Δ WESY CEN IPE SOD	353-34
2N3435	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-46		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3487	Δ WESY CEN IPE SOD	353-35
2N3436	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD SPR SWT	205-47		UNI GSE HTN	296-96 388-61 199-103 431-26		CEI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC			ASI CEN CSR DIT ESE FERB GDC HTN IDI SCA SGAI SMLB SST STC	219-43 372-100 159-91 366-35	2N3488	Δ WESY CEN IPE SOD	353-36
2N3437	Δ GSEY CEN CSR GDC HTN IDC MEHK MISI NJS RHM SLD													

# 1. TYPE No. CROSS INDEX

TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line		
			Pg&Line									Pg&Line									Pg&Line					
2N3476	AMR HTN PPC SSI	Δ WESY	353-21	2N3494	(cont.)				2N3502	AMR CDIL CEN CSR GDC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI	Δ FSC	176-17 368-39	2N3511	CSR HTN NJC SPT SWT	AMR IDC SCA SST WAB	205-30	2N3553	(cont.)								
2N3477	AMR HTN PPC SSI	Δ WESY	353-22	2N3495	ASI CEN CSR ESE GTC HTN NASG SLD SSI STI THCS	173-5 388-55			2N3503	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI	Δ FSC	176-18 368-40	2N3512	CRI ETC HTN SSI	228-102 365-55	JAN2N3553	NASG HTN SSI	Δ TII								
2N3478	ASI CEN DIT GTC IDI NJC SCA SSI		189-91	2N3496	AMR CEN CSR FSC GTC HTN SCA SSI STI THCS	167-96 388-63			2N3504	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI	Δ FSC	167-97 368-41	2N3513	DIT IDC HTN SSI	431-28	2N3554	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3479	AMR HTN PPC SSI		436-55	2N3497	AMR CEN CSR GTC HTN SCA SSI STI THCS	167-23 388-56			2N3505	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI	Δ FSC	167-98 368-42	2N3514	HTN SCA SMLB		2N3555	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3480	AMR HTN PPC SSI		436-56	2N3498	AMR CEN CSR GTC HTN SCA SSI STI THCS	294-32			2N3506	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		294-36 367-11	2N3515	CSR ETC HTN SSI	431-29	2N3556	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3481	AMR HTN PPC SSI		436-57	2N3499	AMR CEN CSR GTC HTN SCA SSI STI THCS	301-21 380-20 294-33			2N3507	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-25 367-89	2N3516	HTN SCA SSI	431-30	2N3557	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3482	AMR HTN PPC SSI		436-58	JAN2N3498	MOTA RTN	301-22 380-21 294-34			2N3508	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		294-37 367-12	2N3517	HTN SCA SSI	431-31	2N3558	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3483	AMR HTN PPC SSI		436-59	2N3500	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3509	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-26 367-90	2N3518	HTN SCA SSI	431-32	2N3559	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3484	AMR HTN PPC SSI		269-25	2N3501	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3510	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		210-62 364-28	2N3519	HTN SCA SSI	431-33	2N3560	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3485	AMR HTN PPC SSI		370-51	JAN2N3500	MOTA RTN	301-23 380-22 294-35			2N3511	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-27 367-88	2N3520	HTN SCA SSI	431-34	2N3561	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
JAN2N3485A	AMR HTN PPC SSI		167-92	2N3502	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3512	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-89	2N3521	HTN SCA SSI	431-35	2N3562	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3486	AMR HTN PPC SSI		370-52	JAN2N3499	MOTA RTN	301-24 380-23			2N3513	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		294-37 367-12	2N3522	HTN SCA SSI	431-36	2N3563	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3486A	AMR HTN PPC SSI		167-94	2N3503	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3514	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-28 367-91	2N3523	HTN SCA SSI	431-37	2N3564	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
JAN2N3486A	AMR HTN PPC SSI		167-95	JAN2N3500	MOTA RTN	301-25 380-24			2N3515	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-92	2N3524	HTN SCA SSI	431-38	2N3565	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3487	AMR HTN PPC SSI		370-53	2N3504	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3516	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-29 367-93	2N3525	HTN SCA SSI	431-39	2N3566	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3488	AMR HTN PPC SSI		370-54	JAN2N3499	MOTA RTN	301-26 380-25			2N3517	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-94	2N3526	HTN SCA SSI	431-40	2N3567	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3488A	AMR HTN PPC SSI		167-96	2N3505	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3518	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-30 367-95	2N3527	HTN SCA SSI	431-41	2N3568	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
JAN2N3488A	AMR HTN PPC SSI		167-97	JAN2N3500	MOTA RTN	301-27 380-26			2N3519	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-96	2N3528	HTN SCA SSI	431-42	2N3569	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3489	AMR HTN PPC SSI		370-55	2N3506	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3520	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-31 367-97	2N3529	HTN SCA SSI	431-43	2N3570	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3489A	AMR HTN PPC SSI		167-98	JAN2N3499	MOTA RTN	301-28 380-27			2N3521	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-98	2N3530	HTN SCA SSI	431-44	2N3571	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3490	AMR HTN PPC SSI		370-56	2N3507	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3522	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-32 367-99	2N3531	HTN SCA SSI	431-45	2N3572	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
JAN2N3489A	AMR HTN PPC SSI		167-99	JAN2N3500	MOTA RTN	301-29 380-28			2N3523	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-100	2N3532	HTN SCA SSI	431-46	2N3573	AMR CEI CEN CSR GTC HTN NASG SLD SSI STI THCS									
2N3491	AMR HTN PPC SSI		370-57	2N3508	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3524	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-33 367-101	2N3533	HTN SCA SSI	431-47											
2N3492	AMR HTN PPC SSI		370-58	JAN2N3499	MOTA RTN	301-30 380-29			2N3525	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-102	2N3534	HTN SCA SSI	431-48											
2N3493	AMR HTN PPC SSI		370-59	2N3509	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3526	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-34 367-103	2N3535	HTN SCA SSI	431-49											
2N3494	AMR HTN PPC SSI		370-60	JAN2N3499	MOTA RTN	301-31 380-30			2N3527	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-104	2N3536	HTN SCA SSI	431-50											
2N3495	AMR HTN PPC SSI		370-61	2N3510	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3528	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-35 367-105	2N3537	HTN SCA SSI	431-51											
2N3496	AMR HTN PPC SSI		370-62	JAN2N3499	MOTA RTN	301-32 380-31			2N3529	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-106	2N3538	HTN SCA SSI	431-52											
2N3497	AMR HTN PPC SSI		370-63	2N3511	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3530	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-36 367-107	2N3539	HTN SCA SSI	431-53											
2N3498	AMR HTN PPC SSI		370-64	JAN2N3499	MOTA RTN	301-33 380-32			2N3531	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-108	2N3540	HTN SCA SSI	431-54											
2N3499	AMR HTN PPC SSI		370-65	2N3512	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3532	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-37 367-109	2N3541	HTN SCA SSI	431-55											
JAN2N3498A	AMR HTN PPC SSI		167-99	JAN2N3500	MOTA RTN	301-34 380-33			2N3533	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-110	2N3542	HTN SCA SSI	431-56											
2N3499A	AMR HTN PPC SSI		167-100	2N3513	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3534	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-38 367-111	2N3543	HTN SCA SSI	431-57											
2N3500	AMR HTN PPC SSI		370-66	JAN2N3499	MOTA RTN	301-35 380-34			2N3535	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-112	2N3544	HTN SCA SSI	431-58											
2N3501	AMR HTN PPC SSI		370-67	2N3514	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3536	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-39 367-113	2N3545	HTN SCA SSI	431-59											
2N3502	AMR HTN PPC SSI		370-68	JAN2N3499	MOTA RTN	301-36 380-35			2N3537	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-114	2N3546	HTN SCA SSI	431-60											
2N3503	AMR HTN PPC SSI		370-69	2N3515	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3538	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-40 367-115	2N3547	HTN SCA SSI	431-61											
2N3504	AMR HTN PPC SSI		370-70	JAN2N3499	MOTA RTN	301-37 380-36			2N3539	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-116	2N3548	HTN SCA SSI	431-62											
2N3505	AMR HTN PPC SSI		370-71	2N3516	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3540	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-41 367-117	2N3549	HTN SCA SSI	431-63											
2N3506	AMR HTN PPC SSI		370-72	JAN2N3499	MOTA RTN	301-38 380-37			2N3541	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-118	2N3550	HTN SCA SSI	431-64											
2N3507	AMR HTN PPC SSI		370-73	2N3517	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3542	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-42 367-119	2N3551	HTN SCA SSI	431-65											
2N3508	AMR HTN PPC SSI		370-74	JAN2N3499	MOTA RTN	301-39 380-38			2N3543	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-120	2N3552	HTN SCA SSI	431-66											
2N3509	AMR HTN PPC SSI		370-75	2N3518	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3544	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-43 367-121	2N3553	HTN SCA SSI	431-67											
2N3510	AMR HTN PPC SSI		370-76	JAN2N3499	MOTA RTN	301-40 380-39			2N3545	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		367-122	2N3554	HTN SCA SSI	431-68											
2N3511	AMR HTN PPC SSI		370-77	2N3519	AMR BELI CEI CEN CSR GTC HTN NASG SLD SSI STI THCS				2N3546	AMR CDIL CEN CSR ESE GTC HTN MEHK NJS RTN SEI SLD SSI STI THCS UPI		301-44 367-123	2N3555	HTN SCA SSI												

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2N3575	CEI GDC HTN SCA	232-19	2N3594	AMR CEN GTC HTN SCA	303-61	2N3613	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC SWT UPI	256-75	2N3627	AMR CRI HTN SSI	305-15		ASI CEN CSR HTN SCA	157-64 376-45
2N3576	ASI CEN CSR GTC HTN IDC NASG SCA STI THCS	164-58 364-22	2N3595	CEI GDC HTN SCA STC	307-78	2N3614	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC SWT UPI	256-76	2N3628	ASI DIT SCA	305-16	2N3638A	ASI CEN CSR HTN SCA	
2N3578	ASI CEN DIT HTN SOD	232-87	2N3596	CEI GDC HTN SCA STC	307-79	2N3615	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	256-77	2N3629	CRI GTC HTN IDC NASG SCA	316-68		ASI CEN CSR HTN SCA	
2N3579	HTN SPE SCA	166-67	2N3597	AMR CRI DIT GTC HTN SCA STC	342-80 398-15	2N3616	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	256-78	2N3630	CRI GTC HTN IDC NASG SCA	316-69		ASI CEN CSR HTN SCA	
2N3580	GTC HTN SPE SSI	166-68	2N3598	AMR CRI DIT GTC HTN SCA STC	342-81 398-16	2N3617	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	256-79	2N3631	SPE WAB AMR	240-41	2N3639	ASI CEN CSR HTN SCA	153-24 365-39
2N3581	HTN SPE SSI	164-94	2N3599	AMR CRI DIT GTC HTN SCA STC	342-82 398-17	2N3618	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	256-80	2N3632	CRI ESE MOTA NJS PPC SMLB SSI THEF UPI VALG	313-41		ASI CEN CSR HTN SCA	
2N3582	HTN SPE SSI	164-95	2N3600	AMR CRI DIT GTC HTN SCA STC	189-102	2N3619	AMR CRI DIT GTC HTN SCA STC	305-11	2N3633	CEN CSR HTN SCA	200-18 361-104	2N3640	CEN CSR HTN SCA	153-25 365-40
2N3583	AMR CRI ESE GTC HTN IDC NASG SCA STI THCS TSI WAB	316-59	2N3601	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	145-8 401-79	2N3620	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	305-12	2N3634	ASI CEN CSR GDC HTN MEHK NJS RTN SEI SPE SSI SWT THCS	270-26 391-67	2N3641	ASI CEN CSR HTN SCA	202-91
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2N3585	AMR CRI ESE GTC HTN IDC NASG SCA STI THCS TSI WAB	316-62 406-10	2N3604	STI	145-18 401-82	2N3623	AMR CRI DIT GTC HTN SCA	305-13	JAN2N3635	AMR CDIL CRI ETC GDC HTN MEHK NJS RTN SEI SPE SSI SWT THCS	267-25 391-83 270-29 391-68	2N3643	ASI CEN CSR DIT GDC HTN SCA	203-72
JAN2N3585	AMR CRI ESE GTC HTN IDC NASG SCA STI THCS TSI WAB	316-63 406-21	2N3605	AMR CRI DIT GTC HTN SCA STC	188-67 369-14	2N3624	ASI CEN CSR ETC GPD HTN IDC LTE SPE STC TIC	305-14	2N3636	AMR CDIL CRI ETC GDC HTN MEHK NJS RTN SEI SPE SSI SWT THCS	267-26 391-82 270-29 391-68		ASI CEN CSR HTN SCA	
2N3587	CEI DIT GDC HTN IDC NASG SCA STI	431-34	2N3606	CEN GDC HTN SCA STC	188-68 371-47	2N3625	CEI CSR HTN PPC SEI	316-66	JAN2N3636	MOTA RTN	267-25 391-83	2N3644	ASI CEN CSR DIT GDC HTN SCA	158-34 368-43
2N3588	HTN SST	136-35	2N3607	CEN GDC HTN SCA STC	188-69 372-12	2N3626	CEI CSR HTN PPC SEI	316-67	2N3637	AMR CDIL CRI ETC GDC HTN MEHK NJS RTN SEI SPE SSI SWT THCS	267-26 391-82 270-29 391-68		ASI CEN CSR HTN SCA	
2N3589	CRI HTN SLD STC	307-74	2N3608	AMR CRI DIT GTC HTN SCA STC	233-53 437-70 256-73	2N3627	CEI CSR HTN PPC SEI	316-68	JAN2N3637	WAB MOTA RTN	267-27 391-84	2N3645	ASI CEN CSR HTN SCA	189-10 363-50
2N3590	CRI HTN SLD SSI STI	307-75	2N3609	AMR CRI DIT GTC HTN SCA STC	233-53 437-70 256-73	2N3628	CEI CSR HTN PPC SEI	316-69	2N3638	ASI CEN CSR HTN SCA	156-80 376-29		ASI CEN CSR HTN SCA	
2N3591	HTN SST	307-76	2N3610	AMR CRI DIT GTC HTN SCA STC	233-53 437-70 256-73	2N3629	CEI CSR HTN PPC SEI	316-70		ASI CEN CSR HTN SCA			ASI CEN CSR HTN SCA	
2N3592	HTN SST	307-77	2N3611	AMR CRI DIT GTC HTN SCA STC	233-53 437-70 256-73	2N3630	CEI CSR HTN PPC SEI	316-71		ASI CEN CSR HTN SCA			ASI CEN CSR HTN SCA	
2N3593	CEI GDC HTN IDC	303-60	2N3612	AMR CRI DIT GTC HTN SCA STC	233-53 437-70 256-73	2N3631	CEI CSR HTN PPC SEI	316-72		ASI CEN CSR HTN SCA			ASI CEN CSR HTN SCA	

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2N3647	AMR CSR HTN SPE SWT	210-47 362-65	2N3675	AMR CEI CRI GSE HTN PPC SEI SODI STI	305-17 407-17	2N3692	ASI CRI ETC HTN MEHK NJS SLD SST SWT	187-45	2N3705	AMR CEN CSR HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	206-19	2N3713	AMR CEI CRI CSR ESE GTC IDC INR NJS SEI SGAI SODI SPE SST SWT TIIC UPI	340-59 391-94
2N3648	AMR CRI HTN SPE SWT	210-58 362-38	2N3676	AMR CEI CRI GTC HTN PPC SEI SODI STI	305-18 407-18	2N3693	ASI CEN CSR GDC HTN MEHK NJS SLD SST UPI	187-46	2N3706	AMR CEI CRI ESE HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	206-20	2N3714	AMR CEI CRI CSR ESE GTC IDC INR NJS SEI SGAI SODI SPE SST SWT TIIC UPI	340-60 391-95
2N3659	CRI ESE HTN SCA STC	299-106	2N3677	AMR DIT HTN SST TSI	165-75 437-71	2N3694	CDIL CRI ETC HTN IDC MEHK NJS SLD SST UPI	187-47	2N3707	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-31	2N3715	AMR CEI CRI CSR ESE GTC IDC INR NJS SEI SGAI SODI SPE SST SWT TIIC UPI	340-61 391-96
2N3660	CEN CSR PPC SEI SMLB SPE	272-79	2N3678	ASI CEN CSR HTN MEHK SCA SLD SST	228-103 366-3	2N3696	AMR CEI CRI ESE HTN MEHK NASG NSC SLD SST UPI	187-47	2N3708	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-32	2N3716	AMR CEI CRI CSR ESE GTC IDC INR NJS SEI SGAI SODI SPE SST SWT TIIC UPI	341-86 403-108 340-62 391-97
2N3661	CEN CSR PPC SEI SMLB SPE	272-80	2N3680	AMR CEI CRI GDC HTN MEHK SCA SLD SST	194-103 431-35	2N3698	AMR CEI CRI ESE HTN MEHK NASG NSC SLD SST UPI	232-20 232-10	2N3709	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-33	2N3717	AMR CEI CRI CSR ESE GTC IDC INR NJS SEI SGAI SODI SPE SST SWT TIIC UPI	341-87 403-109 340-63 391-98
2N3662	AMR CRI HTN NASG SPE THCS	189-87	2N3681	ASI CEN CSR HTN MEHK SCA SLD SST	190-9	2N3700	ALGG ASI CEI CRI ESE GDC HTN MEHK NSC SLD SST UPI	213-74	2N3710	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-34	2N3718	AMR CEI CRI CSR ESE GTC IDC INR NJS SEI SGAI SODI SPE SST SWT TIIC UPI	341-88 403-110 340-64 391-99
2N3663	AMR CRI GDC MEHK NASG SPE THCS	189-88	2N3682	AMR CEI CRI GTC HTN MEHK SCA SLD SST	190-10	JAN2N3700	AMR CEI CRI ESE GDC HTN MEHK NSC SLD SST UPI	213-75	2N3711	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-35	2N3719	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	270-105 379-10
2N3664	AMR CRI GDC MEHK NASG SPE THCS	301-27	2N3683	AMR CEI CRI FSC HTN SCA SLD SST	243-67	2N3701	AMR CDIL CRI ESE GDC HTN MEHK NASG NSC SLD SST UPI	213-44	2N3712	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-36	2N3720	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	270-106 379-11
2N3665	ASI CEN CSR FSC GTC HTN MEHK NASG PPC SEI SODI SST STC	301-28	2N3684	AMR CEI CRI GDC HTN MEHK SCA SLD SST	243-68	2N3702	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	163-72	2N3713	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-37	2N3721	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	185-36
2N3666	AMR CRI GDC MEHK NASG SPE THCS	301-29	2N3685	AMR CEI CRI FSC HTN SCA SLD SST	237-88	2N3703	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	163-73	2N3714	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-38	2N3722	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	
2N3667	AMR CRI GTC HTN SPE THCS	336-88 408-33	2N3686	AMR CEI CRI GDC HTN MEHK SCA SLD SST	237-20	2N3704	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	206-18	2N3715	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	225-91	2N3723	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	
2N3668	AMR CRI GTC HTN SPE THCS	301-29	2N3687	AMR CEI CRI FSC HTN SCA SLD SST	243-68	2N3705	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	187-45	2N3716	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-39	2N3724	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	
2N3669	AMR CRI GTC HTN SPE THCS	301-29	2N3688	AMR CEI CRI FSC HTN SCA SLD SST	237-21	2N3706	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	187-46	2N3717	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-40	2N3725	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	
2N3670	AMR CRI GTC HTN SPE THCS	301-29	2N3689	AMR CEI CRI FSC HTN SCA SLD SST	237-88	2N3707	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	163-72	2N3718	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-41	2N3726	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	
2N3671	AMR CRI GTC HTN SPE THCS	173-28 370-55	2N3690	AMR CEI CRI FSC HTN SCA SLD SST	237-20	2N3708	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	187-47	2N3719	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-42	2N3727	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	
2N3672	AMR CRI GTC HTN SPE THCS	167-99 370-56	2N3691	AMR CEI CRI FSC HTN SCA SLD SST	237-21	2N3709	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SST UPI	187-47	2N3720	AMR CEN CSR GDC HTN MEHK NASG NSC SLD SPE SST SWT TIIC UPI	205-43	2N3728	AMR CEN CSR HTN PPC SEI SODI SST SWT UPI	

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2N3962	ASI CEI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-49	2N3975	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3991	HTN	144-97	2N4012	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-76	2N4027	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3963	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3976	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3992	HTN	144-97	2N4013	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4028	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3964	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3977	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3993	HTN	144-97	2N4014	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4029	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3965	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3978	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3994	HTN	144-97	2N4015	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4030	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3966	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3979	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3995	HTN	144-97	2N4016	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4031	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3967	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3980	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3996	HTN	144-97	2N4017	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4032	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3968	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3981	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3997	HTN	144-97	2N4018	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4033	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3969	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3982	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3998	HTN	144-97	2N4019	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4034	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3970	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3983	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N3999	HTN	144-97	2N4020	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4035	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3971	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3984	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4000	HTN	144-97	2N4021	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4036	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3972	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3985	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4001	HTN	144-97	2N4022	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4037	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3973	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3986	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4002	HTN	144-97	2N4023	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4038	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3974	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3987	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4003	HTN	144-97	2N4024	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4039	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3975	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3988	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4004	HTN	144-97	2N4025	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4040	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3976	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3989	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4005	HTN	144-97	2N4026	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4041	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3977	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3990	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4006	HTN	144-97	2N4027	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4042	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3978	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3991	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4007	HTN	144-97	2N4028	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4043	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3979	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3992	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4008	HTN	144-97	2N4029	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4044	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3980	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3993	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-71	2N4009	HTN	144-97	2N4030	ASI CRI CSR GDC HTN PPC SCA SEI SPE STC STC TIIF UPI WAB	431-77	2N4045	CEI CEN CSR DIT GTC HTN MOTA NJS NSC SGAI SLD SST SWT TIIF WAB	169-23 380-2
2N3981	ASI CEN DIT HTN MEHK NJS SGAI SPE SST SWT TIIF	163-50	2N3994	AMX CEN CRI IPE MEHK NASG SOD WAB	248-49 389-7									

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2N4028 (cont.)	SSI STI THCS		2N4035 (cont.)	CSR ETC GDC GTC HTN IDI SCA SSAI SSI SST STI SWT VALG WAB		2N4050 (cont.)	CEN CSR GPD LTE STR UPI		2N4068	GDC SPE	410-79	2N4091 (cont.)	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WAB	237-87	2N4063	HTN	305-30	2N4082	CRI NJIN	431-92	2N4108	CEI CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	324-50	2N4040	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	311-37	2N4064	HTN	305-31	2N4083	CEN DIT NJIN	431-93	2N4109	CEI CSR ESE GTC HTN IDI PPC SODI SST SSY THCS TIIF THEF VALG WAB	324-51	2N4041	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	311-38	2N4065	HTN	305-32	2N4084	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	185-42	2N4042	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	431-86	2N4066	HTN	305-33	2N4085	GDC HTN IDI PPC SODI SST SWT WAB	185-43	2N4043	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	431-87	2N4067	HTN	305-34	2N4086	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50	2N4044	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	431-88	2N4068	HTN	305-35	2N4087	GDC HTN IDI PPC SODI SST SWT WAB	185-44	2N4045	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	431-89	2N4069	HTN	305-36	2N4088	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50	2N4046	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	228-106 368-85	2N4070	HTN	305-37	2N4089	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50	2N4047	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	228-107 368-86	2N4071	HTN	305-38	2N4090	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50	2N4048	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	281-30 410-77	2N4072	HTN	305-39	2N4091	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50	2N4049	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	281-31 410-78	2N4073	HTN	305-40	2N4092	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50	2N4050	ASI CEI CRI DIT ESE FERB FSC GDC HTN HVS IDI MEHK NASC NJIN PHIN RTCF RTN SCA SEL SPE SSI SST STR THCS TIIF VALG WAB	281-32	2N4074	HTN	305-41	2N4093	AMX CEN CRI DIT ESE INL MEHK MOTA NASC NJIN PHIN RTCF SIX SOD SST SSY THCS TIIF THEF VALG WAB	232-94 248-50

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2N4114	ASI CSR IDI SEI SMLB SSI STC SODI SWT	324-53	2N4124 (cont.)	FSC GDC HTN LUCB NASC NECE NJS PHIN RTCF SPE SST STI THCS		2N4139	AMX CEN IPE SOD WAB	240-80	2N4220 (cont.)	NJS SIX SPE SWT THCS TSC VALG WAB		2N4231	ASI CEN CRI DIT GTC HTN IDI MOTA PPC SLD SPE SST SWT WAB	316-76
2N4115	ASI ESE GTC SCA STC SWT	325-79				2N4140	ASI CDIL CRI ETC HTN MEHK NASC SLD SPE SST STI	197-108 371-19	2N4220A	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-62	2N4231A	ASI RCA SODI	328-50
2N4116	ASI ESE GTC PPC SEI SSI SWT	325-80	2N4125	ASI CEN DIT FERB GDC HTN IDI LUCB NASC NECE NJS RHM SEI SPE SST STI THCS	162-50	2N4141	CDIL CRI ESE GDC HTN MEHK NASC SLD SPE SST STI	197-107 371-20	2N4221	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-63	2N4232	ASI CEN ESE HTN IDI MOTA PPC SLD SPE SST SWT WAB	316-77
2N4117	ASI INL MOTA NSC THCS	240-54				2N4142	CDIL CRI ESE GDC HTN MEHK NASC SLD SPE SST STI	158-36 370-59	2N4221A	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-64	2N4232A	ASI PPC SMLB SST	328-51
2N4117A	ASI ESE IPE NASC SMLB THCS	240-55	2N4126	ASI CEN DIT FERB GDC HTN IDI LUCB NASC NECE NJS RHM SEI SPE SST STI THCS	162-81	2N4143	CDIL CRI ESE GDC HTN MEHK NASC SLD SPE SST STI	158-37 370-60	2N4222	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-65	2N4233	ASI CEN ESE HTN IDI MOTA PPC SLD SPE SST SWT WAB	316-78
2N4118	ASI CEN CRI IPE NASC SOD THCS	240-56				2N4150	ASI CEN CRI GSE HTN IDI PPC SCA SGAI SMLB SODI SST STI THCS	305-25 383-55	2N4222A	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-66	2N4233A	ASI PPC SODI SST	328-52
2N4118A	ASI ESE IPE NASC SMLB SPE THCS	240-57	2N4127	ASI CEN DIT FERB GDC HTN LUCB NASC NECE NJS RHM SEI SPE SST STI THCS	314-45	JAN2N4150	ASI SODI	305-26 395-84	2N4223	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-67	2N4234	AMR CEI CEN CRI DIT ESE GTC HTN IDI MOTA PPC SLD SPE SST SWT TIC	267-46
2N4119	ASI CEN CRI IPE NASC SOD THCS	240-58				2N4207	ASI CEN CRI GTC HTN IDI PPC SCA SGAI SMLB SODI SST STI THCS	180-34 363-83	2N4224	AMX CEN ESE IPE NJS NSC SOD SPE THCS TII	240-68	2N4235	ASI CEN CRI DIT ESE GTC HTN IDI MOTA PPC SLD SPE SST SWT TIC	267-47
2N4119A	ASI ESE IPE NASC SMLB SPE THCS	240-59	2N4128	ASI CEN DIT HTN PPC SPE TIC	318-96	2N4208	ASI CEN CRI GTC HTN IDI PPC SCA SGAI SMLB SODI SST STI THCS	180-35 383-85	2N4225	ASI CEN CRI ESE IPE NJS NSC SOD SPE THCS TII	305-27 367-35	2N4236	AMR CEI CEN CRI DIT ESE GTC HTN IDI MOTA PPC SLD SPE SST SWT TIC	267-48
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2N4121	CEN CSR HTN IDI NJS SPE STI UPI	153-12 371-65	2N4131	ASI CEN DIT HTN PPC SPE TIC	325-110	2N4210	ASI CEN CRI GTC HTN IDI PPC SCA SGAI SMLB SODI SST STI THCS	342-86	2N4227	ASI CEN CRI ESE IPE NJS NSC SOD SPE THCS TII	197-108 371-21	2N4238	ASI CEN CRI DIT ESE GTC HTN IDI MOTA PPC SLD SPE SST SWT TIC	
2N4122	CEN CSR HTN IDI NJS SPE STI UPI	153-23 371-66	2N4132	ASI CEN DIT HTN PPC SPE TIC	305-24	2N4211	ASI CEN CRI GTC HTN IDI PPC SCA SGAI SMLB SODI SST STI THCS	342-87	2N4228	CDIL CEN CRI ESE IPE NJS NSC SOD SPE THCS TII	158-38 370-61			
2N4123	ASI CEN CSR FERB GDC HTN IDI NJS SPE SST UPI	203-74	2N4133	ASI CEN DIT HTN PPC SPE TIC	298-64	2N4220	AMX CEN CRI ESE IPE NJS NSC SOD SPE THCS TII	240-61						
2N4124	ASI CEN CSR	cont.next col.	2N4134	ASI CEN DIT HTN PPC SPE TIC	189-11									

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2N4238	ASI CEN CSR ESE GSE HTN MEHK NJS SLD SPE SST SWT UPI	225-37	2N4252	CEI ETC HTN NJS SST SCA STI	185-45	2N4272	(cont.) SEI SMLB SSI STC SWT	(cont.)	2N4291	ASI CRI MEHK SLD THCS	154-68	2N4305	(cont.) HTN SCA SODI STC	GTC PPC SMLB SSI STI WAB	
2N4239	ASI CEN CSR ESE GSE HTN MEHK NJS SCA SGAI SODI SSI STI	225-38	2N4253	CEN GTC IDC SCA STI	185-46	2N4273	CRI HTN IDI SLD STC	315-87	2N4292	ASI CRI PIHS SST UPI	189-69	2N4306	CRI IDI	ASI ESE SPE	318-29 377-57
2N4240	ASI CSD HTN PPC RCAB SPE STI TIIF WAB	318-79 393-68	2N4254	CDIL ESE IDC SLD	192-110	2N4274	CRI GDC IDI NJS SEI SPE SST STI	189-25 361-81	2N4293	ASI CRI SST	189-70	2N4307	ASI CEN CSR GSE HTN PPC SMLB SSI STI	ASI CRI DIT GTC IDI SCA SODI STC SWT WAB	318-30 377-59
2N4241	BELI CRI GPD SPE	254-87	2N4255	HTN SLD	193-1	2N4275	ASI CRI GDC IDI NJS SEI SPE SST STI	189-26 361-82	2N4294	ASI CRI IDI THCS	189-27 362-66	2N4308	CRI	ASI IDI PPC	318-30 377-59
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2N4243	CEN CSR LTE	259-21	2N4257A	CSR	153-28 363-77	2N4277	CEN CSR GPD	261-37 410-84	2N4296	CEN GDC HVS PPC SSI SST	298-27 408-107	2N4310	CRI PPC	ASI CRI ESE GTC IDI SCA SODI STC WAB	318-31 377-61
2N4244	CEN CSR	259-22	2N4258	CSR HTN IDC NASC NSC SPE SST	151-28 363-18	2N4278	CEN CSR GPD	261-38 410-85	2N4297	CEN GDC HVS PPC SSI SST	298-28 408-108	2N4311	ASI CEN CSR GTC IDI SCA SODI STC WAB	ASI CRI ESE GTC IDI SCA SODI STC WAB	318-32 377-62
2N4245	CRI HTN	259-23	2N4259	CEI CRI HTN MEHK NSC SPE SST	184-56	2N4279	CEN CSR GPD	261-39 410-86	2N4298	ASI CRI HTN IDI SPE SST	298-29 408-109	2N4312	CRI	ASI IDI	318-32 377-63
2N4246	CRI HTN	259-24	2N4260	ASI CRI IDI RTN SCA STI THCS	153-40	2N4280	CEN CSR ESE LTE	261-40 410-87	2N4299	CEN ESE HTN IDI SCA SPE STC	298-30 408-110	2N4314	ASI CRI ESE HTN MEHK NJS PPC SCA SST TIIF	ASI CRI ESE GTC IDI SCA SODI STC WAB	318-32 377-63 267-49
2N4247	CEN CSR LTE	259-25	2N4261	ASI CRI IDI RTN SPE SST	153-42	2N4281	CEN CSR GPD	261-41 410-88	2N4300	ASI CEN CSR GDC GTC	314-57	2N4316	ASI CRI ESE HTN MEHK NJS PPC SCA SST TIIF	ASI CRI ESE GTC IDI SCA SODI STC WAB	318-32 377-63 267-49
2N4248	CDIL CRI ESE GDC IDI MISI NJS SLD SST STI	151-24	JAN2N4261	MOTA RTN STI	152-46 360-64 311-4	2N4282	CEN CSR GPD	261-42 410-89	2N4301	ASI CSR GTC IDI PPC SODI SST STI	329-57	2N4317	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-72
2N4249	CDIL CRI ETC HTN IDI MISI NJS SEI SPE SSY THCS	151-25	2N4262	ASI CRI IDI RTN SPE SST	201-6	2N4283	CEN CSR ESE LTE	261-43 410-90	2N4302	CEN ESE HTN IDI SCA SPE STC	240-69	2N4318	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
2N4250	CDIL CRI ESE GDC IDI MISI NJS SEI SPE SSY THCS	151-26	2N4263	ASI CRI IDI RTN SPE SST	201-6 363-47	2N4284	ASI CRI ESE LTE	154-19	2N4303	ASI CRI MEHK SLD THCS	240-70	2N4319	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-74
2N4250A	CEN HTN NJS SST THCS	151-27	2N4264	ASI CEN CSR FSC IDI SPE SST THCS	201-7 363-48	2N4285	ASI CRI ESE LTE	191-70	2N4304	ASI CRI MEHK SLD THCS	240-71	2N4320	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
2N4251	CRI NJS SSI THCS	193-17 360-97	2N4265	ASI CEN CSR FSC IDI SPE SST THCS	201-7 363-48	2N4286	ASI CRI ESE LTE	154-33	2N4305	ASI CRI MEHK SLD THCS	240-71	2N4321	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4266	ASI CEN CSR FSC IDI SPE SST THCS	233-99 374-102 205-36	2N4287	ASI CRI ESE LTE	191-71	2N4306	ASI CRI MEHK SLD THCS	240-71	2N4322	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4267	ASI CEN CSR FSC IDI SPE SST THCS	233-99 374-102 205-36	2N4288	ASI CRI ESE LTE	154-33	2N4307	ASI CRI MEHK SLD THCS	240-71	2N4323	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4268	ASI CEN CSR FSC IDI SPE SST THCS	201-7 363-48	2N4289	ASI CRI ESE LTE	154-34	2N4308	ASI CRI MEHK SLD THCS	240-71	2N4324	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4269	ASI CEN CSR FSC IDI SPE SST THCS	201-7 363-48	2N4290	ASI CRI ESE LTE	154-34	2N4309	ASI CRI MEHK SLD THCS	240-71	2N4325	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4270	ASI CEN CSR FSC IDI SPE SST THCS	217-71				2N4310	ASI CRI MEHK SLD THCS	240-71	2N4326	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4271	ASI CEN CSR FSC IDI SPE SST THCS	307-83				2N4311	ASI CRI MEHK SLD THCS	240-71	2N4327	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4272	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4312	ASI CRI MEHK SLD THCS	240-71	2N4328	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4273	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4313	ASI CRI MEHK SLD THCS	240-71	2N4329	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4274	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4314	ASI CRI MEHK SLD THCS	240-71	2N4330	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4275	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4315	ASI CRI MEHK SLD THCS	240-71	2N4331	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4276	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4316	ASI CRI MEHK SLD THCS	240-71	2N4332	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4277	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4317	ASI CRI MEHK SLD THCS	240-71	2N4333	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4278	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4318	ASI CRI MEHK SLD THCS	240-71	2N4334	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4279	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4319	ASI CRI MEHK SLD THCS	240-71	2N4335	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4280	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4320	ASI CRI MEHK SLD THCS	240-71	2N4336	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4281	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4321	ASI CRI MEHK SLD THCS	240-71	2N4337	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4282	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4322	ASI CRI MEHK SLD THCS	240-71	2N4338	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4283	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4323	ASI CRI MEHK SLD THCS	240-71	2N4339	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4284	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4324	ASI CRI MEHK SLD THCS	240-71	2N4340	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4285	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4325	ASI CRI MEHK SLD THCS	240-71	2N4341	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4286	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4326	ASI CRI MEHK SLD THCS	240-71	2N4342	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4287	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4327	ASI CRI MEHK SLD THCS	240-71	2N4343	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4288	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4328	ASI CRI MEHK SLD THCS	240-71	2N4344	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4289	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4329	ASI CRI MEHK SLD THCS	240-71	2N4345	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4290	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4330	ASI CRI MEHK SLD THCS	240-71	2N4346	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4291	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4331	ASI CRI MEHK SLD THCS	240-71	2N4347	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4292	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4332	ASI CRI MEHK SLD THCS	240-71	2N4348	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4293	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4333	ASI CRI MEHK SLD THCS	240-71	2N4349	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4294	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4334	ASI CRI MEHK SLD THCS	240-71	2N4350	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4295	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4335	ASI CRI MEHK SLD THCS	240-71	2N4351	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4296	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4336	ASI CRI MEHK SLD THCS	240-71	2N4352	AMX CEN DIT ESE IPE NASC NSC SPE	ASI CRI ESE GTC IDI SCA SODI STC WAB	240-75
			2N4297	ASI CEN CSR FSC IDI SPE SST THCS	307-84				2N4337	ASI CRI MEHK SLD THCS	240-7				

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2N4347 (cont.)	HTN LUCB NASG PHIN RCAB SEN SODI SPE STI UPI		2N4382 (cont.)	CEN DIT ESE IPE NASG SOD SWT		2N4395 (cont.)	GTC PPC SLD SODI SSI SPE SST		2N4404 (cont.)	CDIL CEN CRI DIT GTC HTN SCA SSI SST NASG SEI	365-94	2N4416	AMX CEN CSR ESE IPE MOTA NJS SIX SPE THCS TIIF TSC UPI VALG	ASISOD ASICRI ASIDIT INLMEHK MOTANASG NJSNSC SIXSLD SPEHTN THCSWAB TIIFHTN TSCUPI VALGWAB	240-77
2N4348	ASI CEN CSD ESE HTN IPSI NASG PPC SEI SLD SPC SST SWT UPI	337-16	2N4383	CEN CRI CSR GDC HTN IDC MEHK NJS SCA THCS WAB	227-103	2N4396	CEI CSR IDC PPC SLD SODI SST WAB	329-59 400-108	2N4405	ASI CEI CEN CRI DIT ESE GDC HTN IDC NASG SEI	270-34 365-95	2N4416A	AMX CEN MEHK NJS SIX SMLB THCS TIC TIIF TSI	ASISOD ASICRI ASIDIT INLMEHK MOTANASG NJSNSC SIXSLD SPEHTN THCSWAB TIIFHTN TSCUPI VALGWAB	240-78
2N4349	ASI CEN CSD ESE HTN IPSI NASG PPC SEI SLD SPC SST SWT UPI	303-64 369-44	2N4384	CDIL CEN CSR GDC HTN IDC MEHK NJS SCA THCS WAB	214-22	2N4397	CEI CSR IDC PPC SLD SODI SST WAB	189-71	JAN2N4405	ASI CEI CEN CRI DIT ESE GDC HTN IDC NASG SEI	267-55 366-73 270-35 375-15	JAN2N4416A	AMX CEN MEHK NJS SIX SMLB THCS TIC TIIF TSI	ASISOD ASICRI ASIDIT INLMEHK MOTANASG NJSNSC SIXSLD SPEHTN THCSWAB TIIFHTN TSCUPI VALGWAB	240-79 238-24
2N4350	ASI CEN CSD ESE HTN IPSI NASG PPC SEI SLD SPC SST SWT UPI	303-65	2N4385	CEN CRI CSR GDC HTN IDC MEHK NJS SCA THCS WAB	227-104	2N4398	CEI CSR IDC PPC SLD SODI SST WAB	284-22 390-73	2N4406	AMR CEI CEN CRI DIT ESE GDC HTN IDC NASG SEI	270-36 375-16	2N4417	AMX CEN MEHK NJS SIX SMLB THCS TIC TIIF TSI	ASISOD ASICRI ASIDIT INLMEHK MOTANASG NJSNSC SIXSLD SPEHTN THCSWAB TIIFHTN TSCUPI VALGWAB	207-91 362-81 207-69 363-13 207-58 362-32 207-31 362-59 207-59 363-52 164-59 367-99
2N4351	ASI CEN CSD ESE HTN IPSI NASG PPC SEI SLD SPC SST SWT UPI	240-76 375-89	2N4386	CDIL CEN CSR GDC HTN IDC MEHK NJS SCA THCS WAB	214-23	2N4399	CEI CSR IDC PPC SLD SODI SST WAB	284-23 390-74	2N4407	ASI CEN CRI DIT ESE GDC HTN IDC NASG SEI	270-36 375-16	2N4418	AMX CEN MEHK NJS SIX SMLB THCS TIC TIIF TSI	ASISOD ASICRI ASIDIT INLMEHK MOTANASG NJSNSC SIXSLD SPEHTN THCSWAB TIIFHTN TSCUPI VALGWAB	207-91 362-81 207-69 363-13 207-58 362-32 207-31 362-59 207-59 363-52 164-59 367-99
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2N4356	CDIL CRI ESE HTN IDC MEHK NJS SCA THCS WAB	161-81 379-43	2N4391	AMX CEN CSR ELMA IPE MOTA NJS PHIN RTCF SLD SPE SST THCS WAB	248-59 360-99	2N4403	CEI CSR IDC PPC SLD SODI SST WAB	162-51 364-107	2N4413	ASI CEN CRI DIT ESE GDC HTN IDC NASG SEI	166-1	2N4423	AMX CEN MEHK NJS SIX SMLB THCS TIC TIIF TSI	ASISOD ASICRI ASIDIT INLMEHK MOTANASG NJSNSC SIXSLD SPEHTN THCSWAB TIIFHTN TSCUPI VALGWAB	207-91 362-81 207-69 363-13 207-58 362-32 207-31 362-59 207-59 363-52 164-59 367-99
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						2N4879	AMR CEN DIT HTN IPE ♦INL NASG							
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						2N4881	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4882	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4883	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4884	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4885	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4886	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4887	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4888	AMR CEN DIT HTN IPE ♦INL NASG							
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						2N4900	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4901	AMR CEN DIT HTN IPE ♦INL NASG							
						2N4902	AMR CEN DIT HTN IPE ♦INL NASG							
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2N4908	ASI CEN ESE HTN PPC SMLB SSI WAB SWT	283-38	2N4917	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	151-29 371-69	2N4930	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	270-39	JAN2N4947	none	436-71	2N4968	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	186-8
2N4909	ASI CEN ESE HTN PPC SMLB SSI WAB SWT	283-39	2N4918	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	277-31	JAN2N4930	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	270-40	2N4948	AMR HTN SLD	436-73	2N4969	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	186-95 368-25
2N4910	AMR CEI CSD ETC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	314-25	2N4919	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	277-32	2N4931	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	270-41	2N4949	AMR HTN SLD	436-74	2N4970	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	187-48 370-64
2N4911	AMR CEI CSR ESE HTN PPC SMLB SSI WAB SWT	314-26	2N4920	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	277-33	2N4932	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	270-42	2N4950	AMR HTN SLD	206-89 371-22	2N4971	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	152-47 375-25
2N4912	AMR CEI CSR ESE HTN PPC SMLB SSI WAB SWT	314-27	2N4921	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	318-110	2N4933	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	326-2	2N4951	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-90 371-23	2N4972	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	152-48 375-102
2N4913	AMR CEI CSR ESE HTN PPC SMLB SSI WAB SWT	329-60	2N4922	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	319-1	2N4934	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	190-63	2N4952	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-91 371-24	2N4973	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	413-51 413-50 301-42 248-61 360-101
2N4914	AMR CEI CSR ESE HTN PPC SMLB SSI WAB SWT	329-61	2N4923	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI SPE SST STC THCS TIID	319-2	2N4935	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	190-64	2N4953	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-92 371-25	2N4974	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	248-62 362-1
			2N4924	AMR CEI CRI CSR GTC HTN IPSI NJS RCA SLD SODI	301-40	2N4936	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	190-65	2N4954	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	204-40 438-101 202-43 431-103	2N4975	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	165-90 437-84 165-76 437-85 165-63 437-86
						2N4937	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	171-68 431-99	2N4955	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-27 380-84	2N4976	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63
						2N4938	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	171-69 431-100	2N4956	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-28 380-86	2N4977	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63
						2N4939	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	438-99	2N4957	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	228-109 380-85	2N4978	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	165-90 437-84 165-76 437-85 165-63 437-86
						2N4940	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	155-20 431-101	2N4958	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-27 380-84	2N4979	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63
						2N4941	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	155-21 431-102	2N4959	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	228-109 380-85	2N4980	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	165-90 437-84 165-76 437-85 165-63 437-86
						2N4942	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	438-100	2N4960	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-27 380-84	2N4981	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63
						2N4943	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	228-41	2N4961	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-27 380-84	2N4982	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63
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						2N4945	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	190-86	2N4963	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-27 380-84	2N4984	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63
						2N4946	AMR CEI CRI DIT GDC HTN IDI MEHK SCA SPE STI	190-86	2N4964	AMR CEN CSR GDC HTN IDI MEHK NSC SPE STI	215-27 380-84	2N4985	ASI CEN CSR GDC HTN IDI MEHK NSC SPE STI	206-63

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2N4995	CEN CSR GESY MEHK RHM SST TIIC	206-84	2N5008 (cont.)	SEI SODI SSI STC	SCA SLD SPE SST SWT WAB	2N5027	CEN CSR IDC	201-70 365-9	2N5048	AMR CSR IDI SLD STC	334-75 396-80	2N5068 (cont.)	CEI CRI CSR GTC IDI NJS SEI SMLB SPC SSI STC SWT TIID	AMR CEN CSD HTN IPSI PPC SLD SODI SPE SST STI TIIF WAB ΔMOTA	329-65
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2N5001	CRI ESE PPC SEI SODI SST STC	276-14	2N5014	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5033	CRI DIT NSC SPE	201-77 363-14	2N5054	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5074	CRI IDI SCA SLD SST	326-6	
2N5002	CRI DIT IDC PPC SEI SODI SST STI TIIF	324-54	2N5015	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5034	CRI DIT NSC SPE	201-77 363-14	2N5055	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5075	CRI IDI SCA SLD SST	326-7	
2N5003	CRI ESE PPC SEI SODI SST STI TIIF	278-48	2N5016	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5035	CRI DIT NSC SPE	201-77 363-14	2N5056	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5076	CRI IDI SCA SLD SST	326-8	
2N5004	CRI DIT GTC NJS SCA SLD SSI SST SWT TIIF	324-55	2N5017	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5036	CRI DIT NSC SPE	201-77 363-14	2N5057	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5077	CRI IDI SCA SLD SST	326-9	
2N5005	CRI ESE PPC SEI SODI SST STI TIIF	278-49	2N5018	AMX CEN DIT INL NASG SIX SPE	AMX CEN DIT INL NASG SIX SPE	2N5037	CRI DIT NSC SPE	201-77 363-14	2N5058	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5078	CEN IFE NSC SOD TSI	240-86	
2N5006	CRI ESE HTN SPE STI	334-69	2N5019	AMX CEN DIT INL NASG SIX SPE	AMX CEN DIT INL NASG SIX SPE	2N5038	CRI DIT NSC SPE	201-77 363-14	2N5059	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5079	CRI GTC	296-97	
2N5007	CRI ESE SCA SODI SST SWT	282-47	2N5020	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5039	CRI DIT NSC SPE	201-77 363-14	2N5060	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5080	CRI GTC	296-98	
2N5008	CRI ESE HTN SPE STI	334-70	2N5021	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5040	CRI DIT NSC SPE	201-77 363-14	2N5061	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5081	CRI DIT	207-104	
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			2N5023	CEI CRI GTC MEHK NSC SPE SST SWT	CEI CEN CSR GTC MEHK NSC SPE SST SWT	2N5042	CRI DIT NSC SPE	201-77 363-14	2N5063	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5083	CEI GTC PPC SEI SSI SST STC	316-82 387-110	
			2N5024	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5043	CRI DIT NSC SPE	201-77 363-14	2N5064	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5084	CEI GTC PPC SEI SSI SST STC	316-83 388-42	
			2N5025	CRI ESE HTN SMLB SSI	CRI DIT GDC HVS SPE STI	2N5044	CRI DIT NSC SPE	201-77 363-14	2N5065	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5085	CEI IDI SCA SLD SST	316-84 388-1	
			2N5026	ASI CSR ESE HTN SMLB SSI	ASI DIT GDC HVS SPE STI	2N5045	CRI DIT NSC SPE	201-77 363-14	2N5066	AMR CSR HTN NJS PPC SCA SMLB SSI SWT STC	320-99 386-86	2N5086	AMR CEN	161-60	

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2N5087	AMR CEN CRI ESE FSC HTN LUCB MOTA MISI NASG NSC RHM SPE SST SWT UPI	161-61	2N5100	CRI GDC HVS SSI	274-78	2N5121	CRI SPE	432-1	2N5136	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	190-83	2N5149	CEI CEN CRI DIT GTC PPC SEI SPE STC TIIF	271-6
2N5088	CDIL CRI ESE GDC HTN IDI MISI NASG NSC RHM SPE SST SWT UPI	201-108	2N5101	CRI GDC SEI STC SWT	313-60	2N5122	CRI STI	156-63 432-2	2N5137	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	194-29	2N5150	AMR CEN CRI GTC HTN NSC SODI SSI STC TIIF	303-71
2N5089	CDIL CRI ESE GDC HTN IDI MISI NASG NSC RHM SPE SST SWT UPI	201-109	2N5102	CRI GDC SEI STC SWT	303-69	2N5123	CRI STI	166-95	2N5138	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	151-79	2N5151	CEI CEN CRI ESE HTN SCA SGAI SODI STC TIIF	272-70
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2N5091	CRI GDC HVS SSI STI	267-20	2N5104	ASI CEN IPE MEHK NASG	240-88	2N5125	CRI STI	432-4 166-97 432-5 188-71	2N5140	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	189-39	2N5153	CEI CEN CRI DIT GTC PPC SEI SODI SSI STC TIIF	272-71
2N5092	CRI GDC HVS SCA SSI STI	300-6	2N5105	ASI CEN IPE MEHK NASG	240-89	2N5126	CEN CSR HTN NJS SST SWT UPI	186-97	2N5141	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	187-49	2N5154	CEI CEN CRI ESE HTN SCA SGAI SODI STC TIIF	307-48
2N5093	CRI DIT HTN SSI STI	267-21	2N5106	ASI CEN IPE MEHK NASG	240-89	2N5127	ASI CEN CDIL CRI HTN IDI NJS PPC SLD SST SWT UPI	186-98	2N5142	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	156-64 376-30	2N5155	CEI CEN CRI GPD HTN PPC SPE	260-46 410-19
2N5094	CSR ESE HTN SPE STC SWT	267-22	2N5107	ASI CEN IPE MEHK NASG	208-4 440-39 298-73	2N5128	ASI CEN CDIL CRI HTN IDI NJS PPC SLD SST SWT UPI	186-97	2N5143	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	151-98 376-31	2N5156	CEI CEN CRI GPD HTN PPC SPE	259-26 410-106
2N5095	CSR ESE HTN IDI SMLB STC SWT	300-7	2N5108	ASI CEN IPE MEHK NASG	208-4 440-39 298-73	2N5129	ASI CEN CDIL CRI HTN IDI NJS PPC SLD SST SWT UPI	195-89	2N5144	AMR CDIL CEN CSR HTN NJS PPC SLD SST SWT UPI	207-32 440-40 229-26 440-41 426-70 271-5	2N5157	CEN CEN CRI DIT GTC HTN PPC SPE	348-24 398-79
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2N5175	HTN	185- 50	2N5195	AMR CEI CEN CRI ESE GTC HTN NJS NSC SGAI SPE SST SWT UPI	278- 63	2N5213	HTN PPC CRI HTN PPC UPI	314- 28	2N5230	AMR CEN CSR GDC HTN MEHK NJS SPR STI UPI	269- 37 437- 89	2N5244	Δ TII AMR CRI ESE MEHK NJS SLD SOD SPE THCS THEF TIID WAB	244-101
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2N5438	CEN CSR GPD	280-30 409-66	2N5460	Δ MOTA CEN ESE HTN SMLB SPE SIX	243-7	2N5479	GSE IPE	325-49 378-18	2N5536	CSR DIT SSI STC		2N5537	CRI DIT SSI STC	301-48 440-58
2N5439	CRI DIT LTE	280-31 409-67	2N5461	Δ MOTA CEN ESE HTN SMLB SPE SIX	243-8	2N5480	GSE IPE	325-50 378-19	2N5537	CSR DIT SSI STC		2N5538	CRI DIT SSI STC	301-49 440-59
2N5440	CEN CSR GPD	280-32 409-68	2N5462	Δ MOTA CEN ESE HTN SMLB SPE SIX	243-9	2N5481	GSE IPE	325-51 378-20	2N5538	CSR DIT SSI STC		2N5539	CRI DIT SSI STC	301-50 440-60
2N5441	CEN CSR GPD	280-33 409-69	2N5463	Δ MOTA CEN ESE HTN SMLB SPE SIX	243-10	2N5482	GSE IPE	325-52 378-21	2N5539	CSR DIT SSI STC		2N5540	CRI DIT SSI STC	301-51 440-61
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2N5443	CEN CSR GPD	280-35 409-71	2N5465	Δ MOTA CEN ESE HTN SMLB SPE SIX	243-12	2N5484	GSE IPE	325-54 378-23	2N5541	CSR DIT SSI STC		2N5542	CRI DIT SSI STC	301-53 440-63
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2N5445	CEN CSR GPD	280-37 409-73	2N5467	Δ MOTA CEN ESE HTN SMLB SPE SIX	243-14	2N5486	GSE IPE	325-56 378-25	2N5543	CSR DIT SSI STC		2N5544	CRI DIT SSI STC	301-55 440-65
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NJS	SCA		♦DIT		2N5702	GPD		SST	SMLB		CSD	CSD		
SEI	SMLB		♦FSC		2N5703	GPD		SST	STC		CSD	CSD		
SODI	STC		HTN		2N5704	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5705	GPD		SST	WAB		CSD	CSD		
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NJS	SCA		♦DIT		2N5709	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5710	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5711	GPD		SST	WAB		CSD	CSD		
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NJS	SCA		♦DIT		2N5716	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5717	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5718	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5719	GPD		SST	WAB		CSD	CSD		
JAN2N5666	♦UNI	298-19 385-63 321-104 384-106	2N5682	ΔMOTA	294-41	2N5720	GPD		SST	277-96	CSD	CSD	306-94	
CRI	CSR		ASI		2N5721	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5722	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5723	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5724	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5725	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5726	GPD		SST	WAB		CSD	CSD		
JAN2N5667	♦UNI	298-19 385-63 321-104 384-106	2N5683	ΔMOTA	284-95	2N5727	GPD		SST	277-97	CSD	CSD	306-95	
CRI	CSR		ASI		2N5728	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5729	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5730	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5731	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5732	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5733	GPD		SST	WAB		CSD	CSD		
JAN2N5668	♦UNI	298-19 385-63 321-104 384-106	2N5684	ΔMOTA	284-96 404-3 284-97	2N5734	GPD		SST	277-98	CSD	CSD	306-96	
CRI	CSR		ASI		2N5735	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5736	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5737	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5738	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5739	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5740	GPD		SST	WAB		CSD	CSD		
JAN2N5669	♦UNI	298-19 385-63 321-104 384-106	2N5685	ΔMOTA	284-95	2N5741	GPD		SST	277-99	CSD	CSD	306-97	
CRI	CSR		ASI		2N5742	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5743	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5744	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5745	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5746	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5747	GPD		SST	WAB		CSD	CSD		
JAN2N5670	♦UNI	298-19 385-63 321-104 384-106	2N5686	ΔMOTA	284-95	2N5748	GPD		SST	277-100	CSD	CSD	306-98	
CRI	CSR		ASI		2N5749	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5750	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5751	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5752	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5753	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5754	GPD		SST	WAB		CSD	CSD		
JAN2N5671	♦UNI	298-19 385-63 321-104 384-106	2N5687	ΔMOTA	284-95	2N5755	GPD		SST	277-101	CSD	CSD	306-99	
CRI	CSR		ASI		2N5756	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5757	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5758	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5759	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5760	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5761	GPD		SST	WAB		CSD	CSD		
JAN2N5672	♦UNI	298-19 385-63 321-104 384-106	2N5688	ΔMOTA	284-95	2N5762	GPD		SST	277-102	CSD	CSD	307-00	
CRI	CSR		ASI		2N5763	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5764	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5765	GPD		SST	STC		CSD	CSD		
SEI	SMLB		♦FSC		2N5766	GPD		SST	WAB		CSD	CSD		
SODI	STC		HTN		2N5767	GPD		SST	WAB		CSD	CSD		
SWT	WAB		IDC		2N5768	GPD		SST	WAB		CSD	CSD		
JAN2N5673	♦UNI	298-19 385-63 321-104 384-106	2N5689	ΔMOTA	284-95	2N5769	GPD		SST	277-103	CSD	CSD	307-01	
CRI	CSR		ASI		2N5770	GPD		SST	SCA		CSD	CSD		
♦GSE	IDJ		CEN		2N5771	GPD		SST	SMLB		CSD	CSD		
NJS	SCA		♦DIT		2N5772	GPD		SST	STC		CSD</			

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line			
2N5805	CEI GTC INR RCAB SMLB	333- 9 393- 68	2N5826	CEN DIT GDC HTN MEHK SPR STR	205- 40	2N5846A	CEN ESE SWT WAB THCS	222- 98 366- 5	2N5871	RCAB SMLB SODI SSI SWT TIID	(cont.)	2N5879	CEI ESE HTN INR PPC SPE SSE SWT TIID	(cont.)	283- 70 397-100		
2N5810	CRI ESE MEHK SPR STR	211- 22	2N5827	CRI HTN SPR STR	205- 41	2N5847	CRI ESE PPC SPE TIIC	312- 45	2N5872	ASI CEN CSR GTC IDI PPC SMLB	282- 38 397- 92	2N5880	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 70 397-100	2N5881	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	342- 42 397-101
2N5811	CRI ESE MEHK SEI SPR STR	168- 55	2N5827A	CEN HTN DIT STR	205- 42	2N5848	CRI ESE PPC SPE TIIC	321- 37	2N5873	CEI CEN CSR GTC IDI PPC SMLB	334- 23 397- 93	2N5882	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	342- 43 397-102	2N5883	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	284- 27 397-103
2N5812	CRI HTN SPR STR	211- 23	2N5828	CRI HTN SPE SST STR	205- 43	2N5849	CRI ESE PPC SPE TIIC	331-101	2N5874	CEI CEN CSR GTC IDI PPC SMLB	334- 24 397- 94	2N5884	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	284- 28 397-104	2N5885	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	346- 87 397-105
2N5813	CRI HTN SPR STR	168- 56	2N5828A	CRI HTN SPE SST STR	205- 44	2N5850	CRI ESE PPC SPE TIIC	282- 39	2N5875	ASI CEN CSR GTC IDI PPC SMLB	283- 49 397- 95	2N5886	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	346- 88 397-106	2N5887	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-103
2N5814	CRI HTN NJS SPR STR	211- 24	2N5829	CRI HTN SPE SST STR	151- 33	2N5851	CRI ESE PPC SPE TIIC	216- 59	2N5876	ASI CEN CSR GTC IDI PPC SMLB	283- 50 397- 96	2N5888	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-104	2N5889	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-105
2N5815	CRI HTN SPE STI THCS	168- 57	2N5830	CRI HTN SPE SST STR	221- 47	2N5852	CRI ESE PPC SPE TIIC	216- 85	2N5877	ASI CEN CSR GTC IDI PPC SMLB	341- 97 397- 97	2N5890	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5891	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5816	CRI HTN SPE STI THCS	211- 25	2N5831	CRI HTN SPE SST STR	221- 48	2N5853	CRI ESE PPC SPE TIIC	282- 40	2N5878	ASI CEN CSR GTC IDI PPC SMLB	341- 98 397- 98	2N5892	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5893	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5817	CRI ESE MEHK SPR STR	168- 58	2N5832	CRI HTN SPE SST STR	221- 49	2N5854	CRI ESE PPC SPE TIIC	301- 55	2N5879	ASI CEN CSR GTC IDI PPC SMLB	283- 50 397- 96	2N5894	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5895	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5818	CRI HTN SPE STI THCS	211- 26	2N5833	CRI HTN SPE SST STR	221- 50	2N5855	CRI ESE PPC SPE TIIC	367- 83	2N5880	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5896	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5897	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5819	CRI HTN SPE STI	168- 59	2N5834	CRI HTN SPE SST STR	270- 45 443- 23 190- 74	2N5856	CRI ESE PPC SPE TIIC	301- 56 364- 19	2N5881	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5898	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5899	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5820	CRI GDC MEHK SPR STR	211- 27	2N5835	CRI HTN SPE SST STR	332- 2 403- 72	2N5857	CRI ESE PPC SPE TIIC	301- 57 364- 18	2N5882	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5900	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5901	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5821	CRI GDC MEHK STI	168- 60	2N5838	CRI HTN SPE SST STR	332- 2 403- 72	2N5858	CRI ESE PPC SPE TIIC	331- 52	2N5883	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5902	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5903	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5822	CRI MEHK SPR STI	211- 28	2N5839	CRI HTN SPE SST STR	331- 98 404- 7 332- 3 403- 73	2N5859	CRI ESE PPC SPE TIIC	268- 48	2N5884	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5904	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5905	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5823	CRI MEHK SPR STI	168- 61	2N5840	CRI HTN SPE SST STR	331- 99 404- 8 332- 4 404- 23	2N5860	CRI ESE PPC SPE TIIC	271- 8 377- 66	2N5885	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5906	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5907	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5824	CRI DIT HTN SPE STI	205- 38	2N5841	CRI HTN SPE SST STR	331- 100 404- 24 201-110	2N5861	CRI ESE PPC SPE TIIC	280-110 397- 87	2N5886	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	283- 49 397- 95	2N5908	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5909	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106
2N5825	CRI DIT HTN SPE STI	205- 39	2N5842	CRI HTN SPE SST STR	202- 1 170- 82 432- 39 171- 42 432- 40 214- 84 386- 88	2N5862	CRI ESE PPC SPE TIIC	329- 77 397- 89	2N5887	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	341- 97 397- 97	2N5910	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106	2N5911	ASI CEN CSR ESE HTN INR PPC SPE SSE SWT TIID	255-106

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2N5890 (cont.)			2N5928	ΔPTI	353-48 408-52	2N5956	ΔRCA	277-24	2N5979 (cont.)			2N6021		
GPD	DIT		CRI	PPC		CRI	CSD		CRI	STI		HTN	CRI	278-4
2N5891	GTC	255-107	SSI	STC		CSR	ESE		SEI	SES		SES	CRI	
DIT	CEN		HTN	CRI	342-98	IPSI	NJS		ΔMOTA	STI	282-90	STI	STR	278-5
GTC	GPD		SCA	PPC	394-39	PPC	RCAB		CRI	ΔMOTA	282-91	HTN	CRI	
2N5892	DIT	255-108	SEI	SSI		SEI	SMLB		CRI	STI	282-92	STR	CRI	
GPD	GTC		HTN	STC		SODI	STC		CRI	ΔMOTA	282-92	SMLB	HTN	278-6
2N5893	DIT	255-109	SCA	CRI	342-99	SWT	STC		CRI	STI	282-92	STR	CRI	
GPD	GTC		SMLB	HTN	394-40	CEI	SWT	342-107	CRI	ΔMOTA	338-27	CRI	STR	278-7
2N5894	DIT	255-110		SCA		CSR	SSI	402-56	CRI	STI	338-27	HTN	CRI	
GPD	GTC			SEI		IDI	STC		CRI	ΔMOTA	338-28	SPE	CRI	
2N5895	GPD	256-1		SSI		SCA	SODI		CRI	STI	338-29	STR	CRI	
2N5896	GTC	256-2	2N5931	AMR	342-100	SEI	STC		CRI	ΔMOTA	338-29	SMLB	HTN	278-8
GPD	DIT		CRI	HTN	394-41	SSI	SWT		CRI	SSY	338-29	STR	CRI	
2N5897	GTC	256-3	PPC	SCA			STC		CRI	ΔMOTA	283-7	CRI	STR	278-9
GPD	DIT		SEI	SMLB		JAN2N5957	none	343-1	CRI	ESE	283-8	SMLB	HTN	
2N5898	DIT	256-4	SSI	STC				402-64	CRI	ΔMOTA	283-8	STR	CRI	
GPD	GTC			STC		2N5958	CRI	283-85	CRI	SPE	283-9	WAB	HTN	284-29
2N5899	DIT	256-5	2N5932	CRI	342-101	PPC	SCA	402-57	CRI	ΔMOTA	283-9	CEI	CEN	
GPD	GTC		HTN	PPC	397-2	SEI	SODI		CRI	SPE	338-68	CRI	DIT	
2N5900	DIT	256-6	SCA	SEI		SSI	STC		CRI	ΔMOTA	338-68	GTC	INR	
GPD	GTC		SMLB	SPE		JAN2N5958	none	283-86	CRI	STI	338-69	NJS	PPC	
2N5901	DIT	256-7	SSI	STC				402-65	CRI	ΔMOTA	338-69	SEI	SMLB	
GPD	SST		2N5933	CRI	342-102	CEI	SWT	402-58	CRI	ESE	338-70	SPE	STC	
2N5902	ΔSIX	246-40	HTN	PPC	397-3	CSR	IDI		CRI	ΔMOTA	338-70	SWT	WAB	
AMR	CRI	432-41	SCA	PPC		IDI	PPC		CRI	ESE	321-38	ΔMOTA	CEN	284-30
INL	NJS		SMLB	STC		SCA	SEI		CRI	ΔTIC	321-39	CEI	DIT	
NSC	SOD			STC		SODI	SSI		CRI	SPE	321-40	ESE	INR	
2N5903	ΔSIX	246-41	2N5934	CRI	342-103	STC	SWT	343-3	CRI	TIC	310-108	PPC	SEI	
CRI	INL	432-42	ESE	HTN	397-4	JAN2N5959	none	402-66	CRI	CRI	310-108	SMLB	STC	
NJS	NSC		PPC	SCA				283-87	CRI	TIC	321-41	SWT	WAB	
SOD	SOD		SEI	SMLB		2N5960	PPC	402-59	CRI	CRI	321-41	ΔMOTA	HTN	284-31
2N5904	ΔSIX	246-42	SSI	STC		PPC	SCA		CRI	STR	208-21	CEI	CEN	
CRI	INL	432-43	2N5935	CRI	342-104	SEI	SODI		CRI	STR	208-21	CRI	DIT	
NJS	NSC		HTN	PPC	398-20	SSI	STC		STI	WAB	164-96	ESE	INR	
SOD	SOD		SCA	SEI		JAN2N5960	none	283-88	CRI	CEN	164-96	PPC	SEI	
2N5905	ΔSIX	246-43	SMLB	STC				402-67	STI	STR	164-96	SMLB	STC	
ANA	CRI	432-44	2N5936	CRI	342-105	ΔFSC	CRI	221-51	CRI	WAB	164-96	UPU	WAB	
DIT	INL		HTN	PPC	398-21	CEN	CSR		CRI	STR	164-96	WAB	WAB	
NJS	NSC		SCA	SEI		CSR	ESE		STI	STR	164-96	CEI	CEN	338-71
SOD	SPE		SMLB	SSI		NJS	SEI		STI	WAB	164-96	CEN	CEI	402-8
2N5906	ΔSIX	246-44	2N5937	CRI	342-106	SPE	SST		STI	WAB	164-96	CRI	ΔGSE	
ANA	CRI	432-45	HTN	PPC	398-22	THCS	UPI		STI	WAB	164-96	GTC	PPC	
DIT	INL		SCA	SEI		2N5962	ΔFSC	221-52	HTN	WAB	164-96	SCA	SCA	
NJS	NSC		SMLB	SSI		CEN	CRI		STR	WAB	164-96	SEI	SGAI	
SOD	SPE			STC		CSR	ESE		STR	WAB	164-96	SSI	SSI	
2N5907	ΔSIX	246-45	2N5938	ΔTII	316-93	SPE	SWT		STR	WAB	164-96	STC	STC	
ANA	CRI	432-46	CRI	PPC	440-63	UPI	WAB		STR	WAB	164-96	STC	STC	
INL	NJS		HTN	PPC	326-22	2N5963	ΔFSC	222-1	STR	WAB	164-96	WAB	WAB	
NSC	SOD		SCA	SEI	440-64	ESE	STI		STR	WAB	164-96	WAB	WAB	
2N5908	ΔSIX	246-46	2N5939	ΔTII	326-22	STI	STI	223-60	STR	WAB	164-96	WAB	WAB	
ANA	CRI	432-47	NJS	PPC	440-64	CEI	STC	347-34	STR	WAB	164-96	WAB	WAB	
INL	NJS		SCA	SEI		2N5966	CRI	402-60	STR	WAB	164-96	WAB	WAB	
NSC	SOD		SMLB	STC		IDI	PPC		STR	WAB	164-96	WAB	WAB	
2N5909	ΔSIX	246-47	2N5940	ΔTII	326-23	SCA	SEI		STR	WAB	164-96	WAB	WAB	
ANA	CEN	432-48	CRI	DIT	440-65	SODI	SSI		STR	WAB	164-96	WAB	WAB	
CRI	INL		PPC	SEI		JAN2N5966	STC	347-35	STR	WAB	164-96	WAB	WAB	
NJS	NSC		2N5941	ΔMOTA	328-81	none	STC	402-68	STR	WAB	164-96	WAB	WAB	
SOD	SPE		CRI	ESE		2N5967	CRI	284-57	STR	WAB	164-96	WAB	WAB	
2N5910	CEN	160-103	SEI	SPE	338-67	PPC	SEI	402-61	STR	WAB	164-96	WAB	WAB	
CRI	WAB	363-87	2N5942	CRI	338-67	SODI	SSI		STR	WAB	164-96	WAB	WAB	
DIT	CEN		DIT	ESE		JAN2N5967	STC	284-58	STR	WAB	164-96	WAB	WAB	
NASG	CSR		THEF	THEF		none	STC	402-69	STR	WAB	164-96	WAB	WAB	
SPE	IDI		2N5943	GTC	294-42	2N5968	CEI	347-36	STR	WAB	164-96	WAB	WAB	
2N5911	STI	246-48	MOTA	MOTA	311-16	CRI	GTC	402-62	STR	WAB	164-96	WAB	WAB	
CRI	SEI	432-49	ΔMOTA	ΔMOTA		IDI	PPC		STR	WAB	164-96	WAB	WAB	
INL	NJS		2N5947	CRI	244-105	SCA	SEI		STR	WAB	164-96	WAB	WAB	
NSC	SOD		PPC	ESE		SODI	SSI		STR	WAB	164-96	WAB	WAB	
2N5912	ΔSIX	246-49	THCS	THCS		JAN2N5968	STC	347-37	STR	WAB	164-96	WAB	WAB	
CRI	ESE	432-50	2N5949	ΔTII	244-105	none	STC	402-70	STR	WAB	164-96	WAB	WAB	
INL	NJS		AMR	CEN		2N5969	CRI	284-59	STR	WAB	164-96	WAB	WAB	
NSC	SOD		CRI	NASG		PPC	SEI	402-63	STR	WAB	164-96	WAB	WAB	
2N5913	ΔSIX	246-49	NSC	TIIC		SODI	SSI		STR	WAB	164-96	WAB	WAB	
CRI	ESE	432-50	WAB	WAB		JAN2N5969	STC	284-60	STR	WAB	164-96	WAB	WAB	
INL	NJS		2N5950	ΔTII	244-106	none	STC	402-71	STR	WAB	164-96	WAB	WAB	
NSC	SOD		AMR	CEN		2N5970	CRI	341-72	STR	WAB	164-96	WAB	WAB	
2N5914	WAB	301-58	NSC	TIIC		PPC	SEI	396-54	STR	WAB	164-96	WAB	WAB	
CRI	WAB		WAB	WAB		SODI	SSI		STR	WAB	164-96	WAB	WAB	
DIT	CEN		2N5951	ΔTII	244-107	JAN2N5970	CSR	341-73	STR	WAB	164-96	WAB	WAB	
NJS	ESE		AMR	CEN		PPC	PPC	396-55	STR	WAB	164-96	WAB	WAB	
SCA	NJS		CRI	ESE		SEI	SEI		STR	WAB	164-96	WAB	WAB	
THCS	NSC		NASG	NSC		2N5971	CRI	341-73	STR	WAB	164-96	WAB	WAB	
2N5914	SEI	304-103	TIIC	TIIC		IDI	PPC		STR	WAB	164-96	WAB	WAB	
DIT	ESE		WAB	WAB		SCA	SMLB		STR	WAB	164-96	WAB	WAB	
2N5916	CRI	303-74	2N5952	ΔTII	244-108	SEI	SSI		STR	WAB	164-96	WAB	WAB	
DIT	CRI		AMR	CEN		2N5972	CRI	341-74	STR	WAB	164-96	WAB	WAB	
GTC	CRI		CRI	ESE		CSR	PPC	396-56	STR	WAB	164-96	WAB	WAB	
PPC	NJS		NASG	NSC		SEI	SEI		STR	WAB	164-96	WAB	WAB	
SCA	NSC		TIIC	TIIC		2N5973	CRI	341-75	STR	WAB	164-96	WAB	WAB	
THCS	WAB		WAB	WAB		PPC	SMLB		STR	WAB	164-96	WAB	WAB	
2N5914	ΔTIC	304-103	2N5953	ΔTII	244-109	SEI	STC		STR	WAB	164-96	WAB	WAB	
DIT	ESE		AMR	CEN		2N5974	CRI	341-74	STR	WAB	164-96	WAB	WAB	
2N5916	CRI	303-74	CRI	ESE		PPC	WAB		STR	WAB	164-96	WAB	WAB	
DIT	CRI		NASG	NSC		SEI	WAB		STR	WAB	164-96	WAB	WAB	
GTC	CRI		TI											

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2N6043	ASI GTC NSC RCA SWT	414-48	2N6057	CEI CEN CSD	422-16	2N6081	THCS TIC	316-35	2N6108	SGAI SPE SWT	278-66	2N6128	PPC SEI SSI STC	336-89
2N6044	ASI GTC NSC	414-49	2N6058	CEI CEN CSD	422-17	2N6082	ASI ESE PPC	330-109	2N6109	BELI RCAB	278-67	2N6129	CEI GTC PPC	
2N6045	ASI GTC NSC SPE	414-45	JAN2N6058	ASI CEN CSD	401-85	2N6083	THCS TIC	330-110	2N6110	ASI CEI CEN	278-68	2N6130	CEI GTC PPC	326-24
2N6046	ASI GTC NSC SPE	346-89	2N6059	CEI CEN CSD	422-18	2N6084	ASI ESE PPC	333-34	2N6111	BELI RCAB	278-69	2N6131	CEI GTC PPC	326-26
2N6047	ASI GTC NSC SPE	346-91	2N6060	CEI CEN CSD	401-86	2N6085	THCS TIC	333-34	2N6112	ASI CEI CEN	278-69	2N6132	CEI GTC PPC	279-98
2N6048	ASI GTC NSC SPE	397-5	2N6061	CEI CEN CSD	401-87	2N6086	ASI ESE PPC	194-106	2N6113	BELI RCAB	278-69	2N6133	CEI GTC PPC	279-99
2N6049	ASI GTC NSC SPE	397-6	2N6062	CEI CEN CSD	401-88	2N6087	THCS TIC	194-107	2N6114	ASI CEI CEN	278-69	2N6134	CEI GTC PPC	279-100
2N6050	ASI GTC NSC SPE	346-91	2N6063	CEI CEN CSD	401-89	2N6088	ASI ESE PPC	194-108	2N6115	BELI RCAB	278-69	2N6135	CEI GTC PPC	
2N6051	ASI GTC NSC SPE	397-7	2N6064	CEI CEN CSD	401-90	2N6089	THCS TIC	194-109	2N6116	ASI CEI CEN	278-69	2N6136	CEI GTC PPC	325-35
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2N6053	ASI GTC NSC SPE	422-20	2N6066	CEI CEN CSD	401-92	2N6091	THCS TIC	432-55	2N6118	ASI CEI CEN	278-69	2N6138	CEI GTC PPC	316-47
2N6054	ASI GTC NSC SPE	280-20	2N6067	CEI CEN CSD	401-93	2N6092	ASI ESE PPC	195-1	2N6119	BELI RCAB	278-69	2N6139	CEI GTC PPC	316-48
2N6055	ASI GTC NSC SPE	422-13	2N6068	CEI CEN CSD	401-94	2N6093	THCS TIC	432-56	2N6120	ASI CEI CEN	278-69	2N6140	CEI GTC PPC	316-49
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2N6052	ASI GTC NSC SPE	423-72	2N6070	CEI CEN CSD	401-96	2N6095	THCS TIC	432-57	2N6122	ASI CEI CEN	278-69	2N6142	CEI GTC PPC	377-18
2N6053	ASI GTC NSC SPE	422-15	2N6071	CEI CEN CSD	401-97	2N6096	ASI ESE PPC	195-3	2N6123	BELI RCAB	278-69	2N6143	CEI GTC PPC	316-95
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2N6055	ASI GTC NSC SPE	419-56	2N6073	CEI CEN CSD	401-99	2N6098	ASI ESE PPC	336-66	2N6125	BELI RCAB	278-71	2N6145	CEI GTC PPC	276-17
			2N6074	CEI CEN CSD	401-100	2N6099	THCS TIC	271-52	2N6126	ASI CEI CEN	278-72	2N6146	CEI GTC PPC	378-69
			2N6075	CEI CEN CSD	401-101	2N6100	ASI ESE PPC	274-28	2N6127	BELI RCAB	278-72	2N6147	CEI GTC PPC	276-18
			2N6076	CEI CEN CSD	401-102	2N6101	THCS TIC	277-9	2N6128	ASI CEI CEN	278-72	2N6148	CEI GTC PPC	378-70
			2N6077	CEI CEN CSD	401-103	2N6102	ASI ESE PPC	279-77	2N6129	BELI RCAB	278-72	2N6149	CEI GTC PPC	279-78
			2N6078	CEI CEN CSD	401-104	2N6103	THCS TIC	279-77	2N6130	ASI CEI CEN	278-72	2N6150	CEI GTC PPC	378-22
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			2N6080	CEI CEN CSD	401-106	2N6105	THCS TIC	332-27	2N6132	ASI CEI CEN	278-72	2N6152	CEI GTC PPC	378-23
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						2N6107	THCS TIC	332-28	2N6134	ASI CEI CEN	278-72			
						2N6108	ASI ESE PPC	332-29	2N6135	BELI RCAB	278-72			
						2N6109	THCS TIC	332-30	2N6136	ASI CEI CEN	278-72			
						2N6110	ASI ESE PPC	332-30	2N6137	BELI RCAB	278-72			
						2N6111	THCS TIC	332-30	2N6138	ASI CEI CEN	278-72			
						2N6112	ASI ESE PPC	332-31	2N6139	BELI RCAB	278-72			
						2N6113	THCS TIC	332-31	2N6140	ASI CEI CEN	278-72			
						2N6114	ASI ESE PPC	332-31	2N6141	BELI RCAB	278-72			
						2N6115	THCS TIC	332-31	2N6142	ASI CEI CEN	278-72			
						2N6116	ASI ESE PPC	332-31	2N6143	BELI RCAB	278-72			
						2N6117	THCS TIC	332-31	2N6144	ASI CEI CEN	278-72			
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						2N6119	THCS TIC	332-31	2N6146	ASI CEI CEN	278-72			
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						2N6121	THCS TIC	332-31	2N6148	ASI CEI CEN	278-72			
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						2N6123	THCS TIC	332-31	2N6150	ASI CEI CEN	278-72			
						2N6124	ASI ESE PPC	332-31	2N6151	BELI RCAB	278-72			
						2N6125	THCS TIC	332-31	2N6152	ASI CEI CEN	278-72			
						2N6126	ASI ESE PPC	332-31	2N6153	BELI RCAB	278-72			
						2N6127	THCS TIC	332-31	2N6154	ASI CEI CEN	278-72			
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						2N6129	THCS TIC	332-31	2N6156	ASI CEI CEN	278-72			
						2N6130	ASI ESE PPC	332-31	2N6157	BELI RCAB	278-72			
						2N6131	THCS TIC	332-31	2N6158	ASI CEI CEN	278-72			
						2N6132	ASI ESE PPC	332-31	2N6159	BELI RCAB	278-72			
						2N6133	THCS TIC	332-31	2N6160	ASI CEI CEN	278-72			
						2N6134	ASI ESE PPC	332-31	2N6161	BELI RCAB	278-72			
						2N6135	THCS TIC	332-31	2N6162	ASI CEI CEN	278-72			
						2N6136	ASI ESE PPC	332-31	2N6163	BELI RCAB	278-72			
						2N6137	THCS TIC	332-31	2N6164	ASI CEI CEN	278-72			
						2N6138	ASI ESE PPC	332-31	2N6165	BELI RCAB	278-72			
						2N6139	THCS TIC	332-31	2N6166	ASI CEI CEN	278-72			
						2N6140	ASI ESE PPC	332-31	2N6167	BELI RCAB	278-72			
						2N6141	THCS TIC	332-31	2N6168	ASI CEI CEN	278-72			
						2N6142	ASI ESE PPC	332-31	2N6169	BELI RCAB	278-72			
						2N6143	THCS TIC	332-31	2N6170	ASI CEI CEN	278-72			
						2N6144	ASI ESE PPC	332-31	2N6171	BELI RCAB	278-72			
						2N6145	THCS TIC	332-31	2N6172	ASI CEI CEN	278-72			
						2N6146	ASI ESE PPC	332-31	2N6173	BELI RCAB	278-72			
						2N6147	THCS TIC	332-31	2N6174	ASI CEI CEN	278-72			
						2N6148	ASI ESE PPC	332-31	2N6175	BELI RCAB	278-72			
						2N6149	THCS TIC	332-31	2N6176	ASI CEI CEN	278-72			
						2N6150	ASI ESE PPC	332-31	2N6177	BELI RCAB	278-72			
						2N6151	THCS TIC	332-31	2N6178	ASI CEI CEN	278-72			
						2N6152	ASI ESE PPC	332-31	2N6179	BELI RCAB	278-72			
						2N6153	THCS TIC	332-31	2N6180	ASI CEI CEN	278-72			
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						2N6155	THCS TIC	332-31	2N6182	ASI CEI CEN	278-72			
						2N6156	ASI ESE PPC	332-31	2N6183	BELI RCAB	278-72			
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						2N6158	ASI ESE PPC	332-31	2N6185	BELI RCAB	278-72			
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2N6205	ΔCTR	328-80	2N6233	CEI CEN GTC PPC SEI SSI STC	321-64 393-87	2N6263	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6273	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR	351-69				
2N6206	ΔCTR	306-100	2N6234	CEI CEN GTC PPC SEI SSI STC	321-65 393-88	2N6264	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6274	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR	350-19 389-49				
2N6207	ΔCTR	312-47	2N6235	CEI CEN GTC PPC SEI SSI STC	321-66 393-89	2N6265	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6275	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR	350-20 395-92 389-50				
2N6208	DIT	318-91	2N6236	CEI CEN GTC PPC SEI SSI STC	282-72	2N6266	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6276	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR	350-22 389-51				
2N6211	ΔRCAB CRI ESE MOTA SEI SODI STI	276-19 396-85	2N6237	CEI CEN GTC PPC SEI SSI STC		2N6267	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6277	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
JAN2N6211	ΔCTR CRI ESE MOTA SEI SODI STI	276-20 397-56	2N6238	CEI CEN GTC PPC SEI SSI STC		2N6268	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6278	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
2N6212	ΔRCAB CRI ESE MOTA SEI STC	276-21 396-86	2N6239	CEI CEN GTC PPC SEI SSI STC		2N6269	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6279	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
JAN2N6212	ΔCTR CRI ESE MOTA SEI STC	276-22 397-57	2N6240	CEI CEN GTC PPC SEI SSI STC		2N6270	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6280	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
2N6213	ΔRCAB CRI ESE MOTA SEI STC	276-23 396-87	2N6241	CEI CEN GTC PPC SEI SSI STC		2N6271	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6281	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
JAN2N6213	ΔCTR CRI ESE MOTA SEI STC	276-24 397-58	2N6242	CEI CEN GTC PPC SEI SSI STC		2N6272	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6282	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
2N6214	ΔRCAB CRI ESE MOTA SEI STC	276-25	2N6243	CEI CEN GTC PPC SEI SSI STC		2N6273	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6283	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
2N6215	ΔSODI CRI PPC SEI	347-38 401-87	2N6244	CEI CEN GTC PPC SEI SSI STC		2N6274	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6284	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					
2N6216	DIT	286-6 398-91	2N6245	CEI CEN GTC PPC SEI SSI STC		2N6275	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR		2N6285	ΔRCAB CEN CSD EET HTN IDI LUCB NJS PPC SCA SODI SPE STC STR					





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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
JAN2N8437	none	284-37	2N8474	(cont.)		2N8500	RCAB		2N8543	ΔMOTA	332-8	2N8583	CEI	395-67
2N6438	ΔMOTA	284-38	SMLB	♦RCAB		(cont.)	SEI		CEI	CEN	398-14	(cont.)	CRI	
CRI	DIT	387-74	SST	SPE		2N8502	STC	219-106	CRI	CSD		CEI	PPC	208-50
ESE	NJS			SWT			WAB	439-2	DIT	EET		CEI	STC	385-81
SEI	WAB		2N6475	ΔRCA	278-73	2N8503	ΔMOTA	203-77	GTC	INR		ΔTCY	ESE	165-64
SPE	ASI		ASI	CEI		2N8510	CRI	439-3	IPSI	LUCB		ΔTCY	WAB	385-82
STC	CEN		CEN	CRI			CRI	337-19	PPC	SGAI			STC	332-7
JAN2N6438	none	284-39	GTC	♦RCAB			CEI	403-64	SST	SODI		2N6569	ΔMOTA	403-107
2N6441	ΔMOTA	217-12	NSC	SST			GTC		STI	THCS		CEI	CEN	
CRI	STI	432-59	SMLB	WAB			♦RCAB		♦UNI	WAB		CRI	ESE	
2N6442	ΔMOTA	217-13				2N6511	SEI	337-20	ΔMOTA	ΔMOTA	337-44	GTC	PPC	
CRI	STI	432-60	2N6476	ΔRCA	278-74		STC	403-65	CEI	CEN	401-104	RCA	RCAB	
2N6443	ΔMOTA	217-14	ASI	CEI		2N6512	CRI		CRI	CSD		SMLB	STC	
CRI	STI	432-61	CEN	ESE			GTC		DIT	EET			WAB	
2N6444	ΔMOTA	217-15	GTC	NSC			♦RCAB		GTC	HVS		2N6570	CRI	350-29
CRI	STI	432-62	♦RCAB	SMLB			SEI		INR	♦RCA		STC	TRWC	
2N6445	ΔMOTA	217-16	SPE	WAB		2N6513	STC		PPC	IPSI		2N6571	CRI	350-30
CRI	STI	432-63					STI		SGAI	SMLB		STC	TRWC	
2N6446	ΔMOTA	217-17	2N6477	ΔRCA	326-27	2N6514	♦UNI		SODI	SST		2N6572	ΔCTR	350-31
CRI	STI	432-64	CRI	PPC			ΔRCA	337-21	STC	STI		2N6573	CEI	337-46
2N6447	ΔMOTA	217-18	♦RCAB	SWT		2N6515	CEI	403-66	THCS	♦UNI		CRI	CSD	399-33
CRI	STI	432-65	2N6478	ΔRCA	326-28		GTC			WAB		DIT	EET	
2N6448	ΔMOTA	217-19	ASI	CRI		2N6516	♦RCAB		CEI	INR		CRI	CSD	337-47
CRI	STI	432-66	PPC	♦RCAB			SEI		CRI	IPSI		EET	HVS	399-34
2N6449	ΔMOTA	247-102	2N6479	ΔRCA	329-79	2N6517	SST		IPSI	SGAI		INR	IPSI	
CRI	CRI		CRI	♦RCAB	391-63		STI		SPE	SODI		SEI	SMLB	
2N6450	♦TCY	247-103	2N6480	ΔRCA	329-80	2N6518	♦UNI		STC	STI		STC	STI	
♦TCY	CRI		CRI	♦RCAB	391-64		WAB		THCS	♦UNI		WAB	CEI	337-48
CRI	SCA	244-110	2N6481	CRI	336-69	2N6519	ΔMOTA	220-94	JAN2N6546	RCA	343-11	2N6574	CRI	337-47
2N6452	CRI	245-1	RCAB	SEI	391-65	2N6520	ΔMOTA	383-87	CEI	CEN	401-27	CRI	CSD	399-34
2N6453	CRI	245-2	2N6482	CRI	336-70	2N6521	CEN		CRI	CSD	343-12	EET	HVS	
2N6454	TCY	245-3	RCAB	SCA	391-66	2N6522	ESE		DIT	ESE	401-106	INR	IPSI	
2N6455	CRI	325-36	2N6483	ΔINL	239-63	2N6523	PPC		EET	INR		SPE	SMLB	
2N6456	DIT	328-47	ΔINL	CRI	432-67	2N6524	♦RCAB		GTC	INR		STI	WAB	
ESE	PPC		ΔINL	CRI	432-68	2N6525	SEI		IPSI	PPC		ΔMOTA	CEI	401-54
2N6457	CRI	338-78	2N6485	ΔINL	239-65	2N6526	STC		SGAI	PPC		CEI	CEN	420-67
2N6458	CRI	328-48	ΔINL	CRI	432-69	2N6527	WAB		SODI	PPC		CRI	DIT	
2N6459	CRI	337-17	2N6486	CEN	332-33	2N6528	SPR		SST	PPC		ESE	GTC	
2N6460	CRI	338-79	CEN	SOD		2N6529	WAB		STC	PPC		♦RCA	SMLB	
2N6461	ESE	307-91	2N6487	ΔINL	239-65	2N6530	STI		THCS	PPC		STC	STI	
SCA	CRI		CEN	CRI	432-69	2N6531	ΔMOTA	220-95	♦UNI	PPC		WAB	WAB	
SSI	SMLB		DIT	CRI		2N6532	ΔMOTA	383-88	RCA	PPC		ΔMOTA	CEI	401-55
2N6462	CRI	307-92	MOTA	GTC		2N6533	ΔMOTA	220-96	2N6547	ΔMOTA	401-27	2N6577	CEI	420-68
SCA	STI		RCAB	NSC		2N6534	ΔMOTA	383-89	CEI	CEN	401-107	CRI	CEN	
SSI	SMLB		2N6487	♦RCAB	332-34	2N6535	CEN		CRI	CSD		ESE	DIT	
2N6463	CRI	307-93	CRI	SMLB		2N6536	ESE		DIT	EET		♦RCA	GTC	
SCA	STI		CEI	WAB		2N6537	STI		ESE	GTC		SMLB	SEI	
SSI	STI		CRI	WAB		2N6538	STI	173-99	GTC	INR		STC	STC	
2N6464	SCA	307-94	CEN	CRI		2N6539	ΔMOTA	383-90	IPSI	IPSI		WAB	WAB	
SCA	STI		GTC	CRI		2N6540	ΔMOTA	173-100	PPC	SGAI		ΔMOTA	ΔMOTA	401-56
SPE	STI		NSC	RCA		2N6541	ΔMOTA	383-91	SST	SODI		CEN	CRI	420-69
2N6465	ΔRCA	318-99	♦RCAB	SGAI		2N6542	ΔMOTA	173-101	STC	STC		DIT	GTC	
CRI	PPC		SMLB	SST		2N6543	ΔMOTA	383-92	THCS	THCS		NJS	RCA	
SMLB	STC		2N6488	WAB	332-35	2N6544	ΔMOTA	173-101	2N6549	ΔMOTA	414-42	SMLB	STC	
2N6466	ΔRCA	318-100	CRI	WAB		2N6545	ΔMOTA	383-92	CEN	WAB		STC	STC	
CRI	PPC		CEI	WAB		2N6546	ΔMOTA	173-100	NSC	WAB		WAB	WAB	
SMLB	STC		CRI	WAB		2N6547	ΔMOTA	383-91	SST	WAB		STC	STC	
2N6467	ΔRCA	277-25	2N6489	CEI	281-91	2N6548	ΔMOTA	173-101	♦UNI	WAB		ΔTCY	WAB	
CRI	PPC		CEN	CRI		2N6549	ΔMOTA	383-91	JAN2N6547	WAB		none	WAB	
2N6468	ΔRCA	277-26	ESE	CRI		2N6550	ΔMOTA	173-101	CEI	CEN	343-13	2N6579	ΔTRWS	337-49
CRI	PPC		MOTA	CRI		2N6551	ΔMOTA	383-92	SMLB	CEN	401-28	DIT	EET	395-21
RCAB	SMLB		NSC	CRI		2N6552	ΔMOTA	173-101	2N6548	ΔMOTA	414-43	GSE	HVS	
2N6469	ΔRCA	282-88	RCAB	CRI		2N6553	ΔMOTA	173-101	CEN	SMLB		SMLB	STC	
CEI	CEN		SST	CRI		2N6554	ΔMOTA	414-35	NSC	WAB		STI	WAB	
CRI	INR		WAB	CRI		2N6555	ΔMOTA	414-37	SST	WAB		ΔTRWS	WAB	
PPC	RCAB		2N6489	WAB	281-91	2N6556	ΔMOTA	299-86	2N6549	ΔMOTA	414-42	DIT	HVS	
SEI	SMLB		CEN	WAB		2N6557	ΔMOTA	418-22	CEN	SMLB		GSE	SMLB	
STC	TII		ESE	WAB		2N6558	ΔMOTA	418-22	NSC	WAB		STC	STC	
2N6470	ΔRCA	338-23	2N6490	CEI	281-92	2N6559	ΔMOTA	418-22	2N6550	ΔTCY	246-80	2N6581	ΔTRWS	337-51
CEI	CEN		CEN	CRI		2N6560	ΔMOTA	173-101	CRI	SMLB		DIT	EET	395-23
CRI	INR		GTC	CRI		2N6561	ΔMOTA	383-92	SMLB	WAB		GSE	HVS	
PPC	RCAB		NSC	CRI		2N6562	ΔMOTA	173-101	2N6551	ΔMOTA	298-32	SMLB	SODI	
SEI	SMLB		RCAB	CRI		2N6563	ΔMOTA	418-23	CRI	DIT		STC	STI	
SCA	STC		♦RCAB	CRI		2N6564	ΔMOTA	418-24	ESE	NSC		WAB	WAB	
2N6471	ΔRCA	338-24	SMLB	CRI		2N6565	ΔMOTA	418-24	SPE	SWT		2N6582	ΔTRWS	337-52
CEI	CEN		2N6491	CEI	281-93	2N6566	ΔMOTA	418-25	2N6552	WAB		CEI	DIT	395-24
CRI	INR		CEN	CEN		2N6567	ΔMOTA	418-25	CRI	NSC		EET	GSE	
PPC	RCAB		GTC	CRI		2N6568	ΔMOTA	418-25	SWT	WAB		HVS	SMLB	
SEI	SMLB		NSC	CRI		2N6569	ΔMOTA	418-25	2N6553	WAB		SODI	STC	
STC	TII		RCAB	CRI		2N6570	ΔMOTA	418-25	CRI	WAB		STI	WAB	
2N6472	ΔRCA	338-25	♦RCAB	CRI		2N6571	ΔMOTA	418-25	2N6554	ΔMOTA	269-85	2N6583	ΔTRWS	337-53
CEI	CEN		SMLB	CRI		2N6572	ΔMOTA	418-25	CRI	NSC		CEI	DIT	395-25
CRI	INR		2N6491	WAB	281-93	2N6573	ΔMOTA	418-25	PPC	SEI		EET	GSE	
PPC	RCAB		CEN	WAB		2N6574	ΔMOTA	418-25	2N6555	WAB		HVS	SMLB	
SEI	SMLB		GTC	WAB		2N6575	ΔMOTA	418-25	CRI	WAB		SODI	STC	
SCA	STC		NSC	WAB		2N6576	ΔMOTA	418-25	2N6556	WAB		STC	STC	
2N6473	ΔRCA	322-59	♦RCAB	WAB		2N6577	ΔMOTA	418-25	2N6557	WAB		WAB	WAB	
CEI	CEN		SMLB	WAB		2N6578	ΔMOTA	418-25	2N6558	WAB		2N6584	ΔTRWS	337-54
CRI	INR		2N6491	WAB	281-93	2N6579	ΔMOTA	418-25	2N6559	WAB		CEI	CRI	395-26
PPC	RCAB		CEN	WAB		2N6580	ΔMOTA	418-25	2N6560	WAB		DIT	EET	
SEI	SMLB		GTC	WAB		2N6581	ΔMOTA	418-25	2N6561	WAB		GSE	HVS	
STC	TII		NSC	WAB		2N6582	ΔMOTA	418-25	2N6562	WAB		SMLB	STC	

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2N6591	ΔMOTA	298-38	2N6677	(cont.)		2S001	CEI	182-44	2S501	CEI	193-98	2SA239	HSE	134-42
	NSC			STC			GDC			HSE			SST	
2N6592	ΔMOTA	298-39		UNI			STI			TII		2SA240	HSE	134-41
	NSC		2N6678	ΔRCA	343-23	2S002	GDC	182-45	2S502	CEI	193-99		SST	
2N6593	ΔMOTA	298-40		ESE	397-26		STI			HSE		2SA257	CEI	133-8
	NSC			GSE		2S003	CEI	182-65	2S503	GDC	193-100		SST	179-2
	SST			PTC			STI			STI	377-6	2SA258	CEI	133-7
2N6594	ΔMOTA	281-81		MOTA			HSE			HSE	197-109		SST	179-3
	CEN		2N6686	ΔRCA	346-101	2S004	CEI	182-46	2S512	CEI	180-76	2SA285	SST	132-105
	RCA	404-9		STC	389-33		HSE			HSE		2SA316	SST	133-38
	SMLB			STC		2S005	STI	181-34	2S701	CEI	180-76	2SA321	SST	132-100
				UNI			GDC			HSE		2SA322	SST	132-101
2N6601	ΔAPX	193-14	2N6687	ΔRCA	346-102	2S012	STI	324-60	2S702	GDC	180-77	2SA323	SST	132-103
	ΔMOTA	429-78		STC	389-34		GDC			CEI		2SA324	SST	132-106
				STI			SMLB			HSE		2SA341	ETC	133-92
	CRI		2N6688	ΔRCA	346-103	2S012A	STI	328-90	2S703	GDC	180-78	2SA342	SST	133-93
	ESE			STC	389-35		HSE			CEI		2SA343	CEI	135-29
	SPE			STI		2S013	GDC	328-91	2S711	GDC	218-32	2SA353	SST	134-109
2N6648	ΔRCA	419-51	2N6689	ΔRCA	343-24	2S013A	SMLB	328-92	2S712	HSE	218-33	2SA377	SST	133-5
	CEN			STC	397-27		STI			STI		2SA420	SST	133-6
	GTC		2N6690	ΔRCA	343-25	2S014	GDC	181-50	2S721	HSE	329-43	2SA429	SST	150-73
	MOTA			STC	397-28		STI			STI		2SA429G	TOSJ	166-98
			2N6691	ΔRCA	343-26	2S017	GDC	299-87	2S722	GDC	329-44	2SA434	CEI	135-18
2N6649	ΔRCA	419-52		STC	396-81		HSE			STI		2SA435	SST	135-19
	CEN		2N6692	ΔRCA	343-27	2S017	STI	299-87	2S722	TII	329-44	2SA440A	SST	133-72
	DIT			STC	396-82		SMLB			GDC		2SA467G	TOSJ	166-99
	LAM		2N6693	ΔRCA	343-28	2S018	GDC	299-88	2S723	HSE	329-45	2SA473	IMTM	272-109
	MOTA			STC	396-83		SMLB			STI			SST	135-18
			2N6702	ΔRCA	326-30	2S018	GDC	299-88	2S724	STI	329-46	2SA474	SST	135-19
JAN2N6649	ΔRCA	405-34		SMLB	385-38		HSE			GDC		2SA483	SST	133-72
	CEN	419-37	2N6703	ΔRCA	326-31	2S019	STI	299-89	2S724	HSE	329-46	2SA489	SST	271-76
	DIT	419-53		STI	385-39		CEI			STI		2SA490	MEHK	276-30
	LAM		2N6704	ΔRCA	326-32		HSE			GDC			SST	264-1
	MOTA			STI	385-40	2S020	GDC	299-90	2S731	SMLB	209-30	2SA493G	MEHK	276-30
	STC		2N6705	NSC	298-85		SMLB			STI		2SA495	TOSJ	152-50
JAN2N6650	ΔRCA	405-35		THCS	298-86	2S021	STI	155-51	2S732	GDC	209-31	2SA495G	IMTM	167-103
	NSC	419-38	2N6706	NSC	298-87		GDC			HSE			SST	367-70
	SMLB	383-63	2N6707	NSC	298-87	2S022	STI	155-77	2S733	STI	209-32	2SA496	SST	271-76
			2N6708	THCS	269-96		GDC			HSE		2SA497	SST	172-92
2N6654	ΔGSE	343-17		NSC	269-97	2S023	STI	155-88	2S741	GDC	209-32	2SA498	SST	172-93
	STC	383-64	2N6709	NSC	269-98		GDC			HSE		2SA499	SST	155-15
	STI		2N6710	THCS	269-98	2S024	STI	334-79	2S742	STI	180-70	2SA500	ETC	368-91
2N6655	ΔGSE	343-18		NSC	298-88		GDC			HSE		2SA503	ETC	177-85
	SMLB	383-65	2N6711	THCS	298-88		SMLB			STI	180-70	2SA504	ETC	367-84
	STI		2N6712	NSC	298-89	2S025	GDC	334-80	2S743	STI	180-72	2SA505	SST	271-77
2N6656	THCS	249-44	2N6713	THCS	298-90		SMLB			HSE	180-71	2SA509	ETC	173-2
	STC	360-105	2N6714	NSC	298-91	2S026	CEI	334-81	2S744	GDC	193-42	2SA509G	TOSJ	173-3
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	STC	360-106	2N6716	NSC	298-93	2S033	STI	320-99	2S745	STI	180-72	2SA512	TOSJ	177-2
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	STC	360-108	2N6720	NSC	298-97	2S035	STI	320-100	2S747A	GDC	193-43	2SA524	ETC	175-96
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	GSE		2N6744	NSC	298-120	2S110	STI	320-108	2S749A	STI	180-77	2SA537HC	HITJ	136-89
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2SA1153	♦NECJ	369-48	2SB176	ETC	137-50		WAB		2SB624	MATJ	176-71	2SB747	MATJ	264-55
2SA1154	♦NECJ	177-79		SST		2SB513A	ETC	276-50	2SB624B	SAKJ	273-20	2SB750	MATJ	416-35
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2SB840C	HITJ	275-47	2SC134	CEI	204-85	2SC353	HSE	224-57	2SC469	SST	180-89	2SC573	ETC	286-15
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		393-70		NECJ		25D257	PPC	402-106	25D373	PPC	317-36	25D460	NECE	309-85
25C3060	FCAJ	343-43	25D155	SST	313-85		PPC	356-68	25D374	PPC	317-36	25D461	NECE	309-85
		393-71		SST		25D258	PPC	402-107	25D375	PPC	317-36	25D462	NECE	309-85
25C3061	FCAJ	348-42	25D156	PPC	305-37		PPC	356-69	25D376	PPC	317-36	25D463	NECE	309-85
		393-72	25D157	FCAJ	305-38		PPC	402-108	25D377	PPC	317-36	25D464	NECE	309-85
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		399-83	25D158	PPC	317-21		PPC	402-109	25D379	PPC	317-36	25D466	NECE	309-85
25C3076	TOSJ	287-11	25D159	PPC	317-22	25D261	PPC	211-30	25D380	PPC	317-36	25D467	NECE	309-85
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		393-73		FCAJ	399-84		PPC	335-14	25D382	PPC	317-36	25D469	NECE	309-85
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		404-12			381-57	2SD787D	HITJ	230-13	2SD903	TSAJ	287-66
2SD542	FCAJ	348-50	2SD661	MATJ	193-60	2SD787E	HITJ	230-14	2SD904	TSAJ	287-67
		405-3	2SD662	MATJ	219-26	2SD788B	HITJ	230-15	2SD917	MATJ	331-68
2SD543	FCAJ	348-51	2SD664	TOSJ	398-54	2SD788C	HITJ	230-16	2SD919	MATJ	209-68
		405-4			416-90	2SD788D	HITJ	230-17	2SD933H	HITJ	333-66
2SD544	SONY	287-51	2SD665	TOSJ	347-64	2SD788E	HITJ	230-18	2SD934K	HITJ	333-67
2SD545	MEHK	214-78	2SD666AB	HITJ	230-35	2SD789B	HITJ	230-19	2SD946	MATJ	412-102
	TSAJ		2SD666AC	HITJ	230-36	2SD789C	HITJ	230-20	2SD946A	MATJ	412-103
2SD546	ETC	319-40	2SD666B	HITJ	230-37	2SD789D	HITJ	230-21	2SD950	MATJ	325-33
2SD548	TOSJ	405-48	2SD666C	HITJ	230-38	2SD789E	HITJ	230-22	2SD951	MATJ	287-68
		424-94	2SD666D	HITJ	230-39	2SD790B	HITJ	230-23	2SD952	MATJ	331-69
2SD549	TOSJ	415-90	2SD667AB	HITJ	230-40	2SD790C	HITJ	230-24	2SD953	MATJ	338-51
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			2SD667B	HITJ	230-42	2SD794	NECE	309-88	2SD957A	HITJ	327-20
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			2SD668AB	HITJ	296-34		NECEJ		2SD960	MATJ	321-32
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2SD557	SAKJ	339-19	2SD668B	HITJ	296-36	2SD797	TOSJ	348-54	2SD965	MATJ	223-110
2SD558	NECEJ	389-101	2SD668C	HITJ	296-37	2SD798	TOSJ	399-91	2SD966	MATJ	296-42
			2SD668D	HITJ	296-38	2SD799	TOSJ	399-92	2SD968	MATJ	230-89
2SD560	FCAJ	392-46	2SD669AB	HITJ	315-6	2SD801	HITJ	327-5	2SD968A	MATJ	230-90
	NECEJ	416-25	2SD669AC	HITJ	315-7	2SD802	HITJ	327-6	2SD969	MATJ	219-73
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2SD586	NECE	328-108	2SD685	TOSJ	399-88	2SD820	TOSJ	327-10			
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		381-56	2SD692	MATJ	417-3			404-36	2SD995	TSAJ	287-71
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2SD592NC	MATJ	224-68	2SD696A	TOSJ	424-74	2SD836A	MATJ	416-38	2SD1001	NECEJ	297-3
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2SD601	MATJ	187-4	2SD725	HITJ	326-110	2SD851	NECEJ	333-65	2SD1018	NECEJ	333-68
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2SD603	ETC	191-108	2SD732K	TSAJ	333-63	2SD855	MATJ	319-43	2SD1023	SHEJ	412-92
			2SD733	TSAJ	339-21	2SD855A	MATJ	319-44	2SD1024	SHEJ	287-76
2SD605	MATJ	419-104	2SD733K	TSAJ	339-22	2SD855B	MATJ	319-45	2SD1025	SHEJ	412-93
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2SD615	SAKJ	415-19	2SD745A	NECE	342-66	2SD858B	MATJ	329-3	2SD1037	FCAJ	287-80
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2SD631	FCAJ	348-53	2SD756AF	HITJ	224-8	2SD866A	MATJ	322-98	2SD1051	MATJ	230-95
2SD633	TOSJ	325-54	2SD756D	HITJ	224-9	2SD867	TOSJ	335-20	2SD1052	TOSJ	319-50
2SD634	TOSJ	325-55	2SD756E	HITJ	224-10	2SD868	TOSJ	327-13	2SD1052A	TOSJ	287-88
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2SD642	TOSJ	355-108	2SD763	HITJ	229-104	2SD875	MATJ	230-88	2SD1069	TOSJ	322-105
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2SK19Y	WAB	238-37	2SK168F	HITJ	238-46	3N52	GPD	259-30			438-25	3N171	INL	SOD	362-11
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4C31	STI	182-75		WESY	408-92			405-60		WESY	408-15			THCS	THEF
9A1000	THCS	413-40	151-20SPC	SPC	350-52	153-22	STI	348-76	163-16A	PTI	353-77	182T2B	THCS	PPC	329-96
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11CB2	STI	295-86	151-22	STI	350-53	153-22SPC	SPC	348-77	163-18	STI	353-78	182T2C	THCS	PPC	329-97
11CB3	STI	295-87		WESY	408-93			405-61		WESY	408-16			THCS	THEF
11CB4	STI	295-88	151-22SPC	SPC	350-54	153-24	WESY	348-78	163-18A	PTI	353-79	183T2A	THCS	PPC	329-98
11CB5	STI	295-89			408-62			405-62		STI	407-64			THCS	THEF
11CB6	STI	295-90	151-24	WESY	350-55	153-24SPC	SPC	348-79	163-18SPC	SPC	353-80	183T2B	THCS	PPC	329-99
11CB7	STI	295-91			408-63			405-63		STI	407-65			THCS	THEF
11CB8	STI	295-92	151-26SPC	SPC	350-56	153-26SPC	SPC	348-80	163-20	STI	353-81	183T2C	THCS	PPC	329-100
30	SSE	438-47			408-64			405-64		WESY	408-17			THCS	THEF
40	SSE	438-48	151-28SPC	SPC	350-57	153-28SPC	SPC	348-81	163-20A	PTI	353-82	184T2A	THCS	PPC	329-101
50	SSE	438-49			408-65			405-65		STI	407-66			THCS	THEF
60	SSE	438-50	151-30SPC	SPC	337-31	153-30SPC	SPC	348-82	163-20SPC	SPC	353-83	184T2B	THCS	PPC	329-102
70	SSE	438-51			408-66			405-66		STI	407-67			THCS	THEF
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72T2	HSE	297-64		WAB	408-94		WESY	406-86		WESY	408-18			THCS	THEF
73T2	HSE	297-65			408-94	154-04SPC	SPC	348-84	163-22A	PTI	353-85	185T2A	THCS	PPC	329-103
74T2	HSE	297-66	152-04SPC	SPC	350-59			405-67		STI	407-68			THCS	THEF
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92PE77A	NSC	269-104	152-06SPC	SPC	350-62	154-07	WESY	406-88	163-24SPC	SPC	407-70			THCS	THEF
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92PE488	NSC	299-1	152-08	STI	350-64	154-08SPC	SPC	348-89	164-04	STI	353-90	0401	THCS	WAB	164-10
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92PU06	NSC	299-6	152-10	STI	350-67	154-10SPC	SPC	348-93	164-05	WESY	407-75	0411	THCS	WAB	151-102
92PU07	NSC	299-7	152-10SPC	SPC	350-68	154-12	STI	348-94	164-05	WESY	353-94	0411	THCS	PPC	337-63
92PU10	NSC	299-8	152-12	STI	350-69	154-12	STI	348-94	164-06	STI	408-19	0412	THCS	WAB	388-107
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92PU200	NSC	270-2	152-20SPC	SPC	350-78	154-22	STI	348-100	164-08SPC	SPC	353-101	0802	THCS	WAB	166-72
92PU391	NSC	299-14			408-73	154-18SPC	SPC	348-101	164-09	WESY	407-79	0803	THCS	WAB	166-73
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101B	STI	140-101	152-24	WESY	350-81	154-24	STI	348-103	164-10A	PTI	408-24	1401-0425	THCS	PTI	356-81
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107B	STI	140-105			408-74	154-20SPC	SPC	348-104	164-12	STI	408-25	1401-0625	THCS	PTI	406-103
107M	STI	140-106	152-30SPC	SPC	337-32	163-04	STI	348-104	164-12A	WESY	353-106	1401-0815	THCS	PTI	406-104
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151-06SPC	WESY	408-83	153-06SPC	SPC	348-54	163-04A	PTI	348-110	164-16	WESY	354-2	1401-1025	THCS	PTI	356-89
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1561-0608	PPC	346-106	1716-1205	PPC	330-5	1743-1630	PPC	340-104	1763-1830	PPC	341-16	1814-3501	SSI	320-14
STC	WESY			SSI	391-43		SSI	394-57		STI				387-38
1561-0610	PPC	346-107	1716-1402	PPC	330-6	1743-1810	PPC	343-69	1768-0420	SSI	293-72	1814-3502	SSI	320-15
STC	WESY			SSI	387-88		SSI	394-58	1768-0610	PPC	343-90			391-28
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STC	WESY			SSI	387-89		SSI	398-26	1768-0630	PPC	343-92	1814-3702	SSI	287-103
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STC	WESY			SSI	391-45		SSI	387-11	1768-0810	PPC	343-93	1843-2005	PPC	341-17
1561-0808	PPC	340-70	1716-1802	PPC	330-10	1748-0630	PPC	343-73		STC	387-26			394-2
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1561-0815	PPC	340-72	1718-0402	PPC	330-12	1748-0820	PPC	343-75		STC	394-72	1843-2020	PPC	341-19
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STC	WESY			SSI	387-96		SSI	394-60	1768-1020	PPC	343-97			394-5
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STC	WESY			SSI	387-92		SSI	387-13	1768-1030	PPC	343-98			394-6
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STC	WESY			SSI	387-98		SSI	394-61	1768-1210	PPC	343-99			394-7
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STC	WESY			SSI	387-93		SSI	387-14	1768-1220	PPC	343-100			394-8
1561-1208	PPC	340-76	1718-0805	PPC	330-17	1748-1220	PPC	343-80		STC	392-10	1843-2510	PPC	341-24
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1571-1025	PPC	315-79	1723-0605	PPC	340-82	1756-0860	PPC	351-77		STC	393-98	1843-3520	PPC	341-37
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40006	STI	137-14					RCAB			PPC			CRI	328-29
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	SPE					40317	CRI	301-79		SCA		40372	SSI	303-11
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40051	STI	255-30					RCAB			STC		40377	STI	305-41
	SPE		40261	STI	135-1		SSI			SWT			WAB	
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	GTC					40317S	STI	301-81		PPC			RCAB	
	SCA		40263	GDC	136-86	40318	PPC	317-52	40347S	PPC	305-42	40374	RCAB	317-56
40081	STI	297-27					RCAB			STC			STI	
	SPE		40264	GDC	305-39		SMLB			SWT		40375	RCAB	303-13
	CEI					40319	STI	270-46	40347V1	RCAB	308-17	40376	RCAB	301-96
	IDI		40268	GDC	136-42		ASI			STI	308-18	40377	RCAB	
	SPE						HSE		40348	CEI	305-43	40385	RCAB	
40082	STI	301-66	40269	GDC	139-56		RCAB			CRI			RCAB	
40084	STI	213-81	40279	DIT	308-9		SSI			HSE			RCAB	
	CEI						RCAB			PPC			RCAB	
	IDI		40280	PPC	303-88		SPE			RCAB			RCAB	
	STI					40319L	WAB	270-47		SSI		40385L	STI	306-103
	GTC	199-58					PPC			SSI		40385S	STI	306-104
	SCA	375-75					RCAB			STI		40389	STI	299-17
40218	STI	197-60	40281	WAB	308-10	40319S	PPC	270-48	40348L	WAB	305-44		RCAB	
40219	STI	370-67					STI		40348S	PPC	305-45		RCAB	
	SPE	207-38	40282	DIT	313-88	40320	ASI	301-82	40348V1	RCAB	308-19	40390	STI	306-105
40220	STI	366-37					GTC			STI	308-20	40391	RCAB	270-3
	SPE	199-35	40283	DIT	209-90		RCAB		40348V2	SSI	305-46		RCAB	
40221	STI	369-45					SSI			WAB			RCAB	
	SPE	207-39	40290	CRI	303-89	40320L	WAB	301-83	40349	CEI		40392	RCAB	303-91
40222	STI	371-52				40320S	STI	301-84		PPC			RCAB	
	SPE	197-61	40291	PPC	308-11	40321	STI	303-2		RCAB			RCAB	
40231	GTC	370-68					SSI		40349L	CEI	305-47	40394	RCAB	271-12
	SCA	213-16	40292	DIT	313-89		RCAB			IDI	305-48		RCAB	
40232	GTC	213-17					SSI		40349S	PPC	308-21		RCAB	
	SCA	213-18	40294	RCAB	190-13	40321L	WAB	303-3		STI	308-22	40395	RCAB	136-88
40233	GTC	208-88				40321S	STI	303-4	40349V1	PPC	184-75	40396	SSY	429-81
	SCA	185-8	40295	WAB	190-46	40322	STI	317-53	40349V2	STI	184-76	40396/N	STI	148-41
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40235	STI	185-8					SSI		40360	SSY	301-88	40398	STI	212-84
	SPE		40306	PPC	308-12	40323	STI	301-85		WAB			STI	
40236	STI	185-9					GTC		40360L	CEI	301-89	40399	RCAB	212-85
	CEI		40307	PPC	313-44		RCAB		40360S	IDI	301-90		RCAB	
	IDI		40309	PPC	301-67		SSI		40361	SCA	301-91	40400	RCAB	212-86
	SPE					40323L	WAB	301-86		STI			RCAB	
40237	GTC	185-10				40323S	STI	301-87		WAB		40403	STI	142-94
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	IDI		40311	WAB	301-70		CEN		40362L	CEI	270-50	40407	STI	
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40242	STI	185-4				40326	STI	303-5	40363	PPC	301-94	40410	STI	
	CEI		40311L	PPC	301-71		RCAB			RCAB			STI	
	IDI		40311S	STI	301-72		SSI		40364	SSY	317-55	40411	STI	
40243	STI	185-1					WAB			WAB			STI	
	SPE		40312	PPC	316-7	40326L	STI	303-6	40366	CEI	302-90	40412	STI	
40244	STI	184-100				40326S	STI	303-7		IDI	302-91		STI	
	CEI					40327	STI	303-8	40366L	RCAB	302-92		STI	
	IDI						ASI		40366S	RCAB	302-93		STI	
40245	STI	184-101					GTC			SSY	301-95		STI	
	SPE		40313	RCAB	317-51		RCAB		40367	RCAB	302-92		STI	
40246	STI	184-102					SSI		40367L	STI	302-93		STI	
	CEI						WAB			WAB			STI	
40250	STI	315-85					STC		40367S	PPC	302-93		STI	
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40519	STI	198-95	40611	STI	252-89	40854	RCAB	287-109	A5T3505	STI	205-50	A5T5326 A5T5327	STI STI	143-33 143-33
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	CEN		AD155	GPD	252-5	NASG	TIIF	392-21	B144008	PPC	324-99	(cont.)	STR	
AC178	GPD	141-58	AD161	CRI	263-22	ASY27	GPD	140-31	B145000	PPC	324-100	THCS	TIF	
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AC179	GPD	148-5		◆SMLB		NASG	TIIF	389-17	B148000	PPC	335-33	BC108CP	◆FERRB	195-109
		263-14	AD161/AD162	◆SMLB	429-85	ASY28	GPD	147-58			384-17	BC109	◆BELI	195-110
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AC180K	GPD	132-3		GPD		NASG	TIIF	390-75			384-18	CRI	IDI	
		252-35		◆SMLB			GPD	147-93	B148002	PPC	335-35	ITTG	LUCB	
AC181	GPD	148-36	AD163	CEN	255-43	ASY29	CEN	147-107			384-19	◆MEHK	MISI	
AC181K	GPD	146-1		◆GPD		ASY29-RT	CEN	386-89	B148003	PPC	335-36	◆MULB	NASG	
		263-1	AD164	GPD	252-6	ASY48	GPD	145-27			384-20	NSC	◆PHIN	
AC182	GPD	142-78	AD165	GPD	263-20	ASY50	CEN	141-108	B148004	PPC	335-37	◆RTCF	SGAI	
AC183	GPD	148-19	AD262	GPD	253-16	ASY54N	CEN	139-36			384-21	◆SIEG	SST	
AC184	GPD	143-54	AD263	GPD	253-17	ASY55N	CEN	139-102	B148005	PPC	335-38	STR	SWT	
AC185	GPD	148-28	AD810	◆ANA	195-71	ASY56N	CEN	139-10			384-22	THCS	THEF	
AC187	◆BELI	263-15		STI	432-88	ASY57N	CEN	139-48	BAL0002-100	CTR	288-4	TII	TIF	
	CRI		AD811	◆ANA	195-72	ASY58N	CEN	139-93	BAL0101-150	CTR	288-5	◆VALG	◆WAB	
	GTC			STI	432-89	ASY59N	CEN	140-24	BAL0101-150A	◆CTR	288-6	BC109B	ALGG	196-1
AC187/01	◆VALG	263-12	AD812	◆ANA	195-73	ASY63N	CEN	134-16	BAL0101-200	CTR	288-7	BELI	CDIL	
AC187/AC188	◆BELI	429-83		STI	432-90	ASY70	CEN	145-30	BAM20	◆CTR	443-52	CEN	FERRB	
AC187K	GPD	148-64	AD813	◆ANA	195-74		GPD		BAM40	◆CTR	443-53	IDI	ITTG	
	◆VALG			STI	432-91	ASY73	CEN	147-13	BAM40SR	◆CTR	443-54	◆MEHK	MISI	
AC188	◆BELI	252-32	AD814	ANA	208-53	ASY74	CEN	147-14	BAM80	◆CTR	443-55	MULB	◆NSC	
	CRI			STI	432-92	ASY76	GPD	144-26	BAM80SR	◆CTR	443-56	PHIN	SELI	
	GTC		AD815	ANA	208-54		SMLB		BAM100SR	◆CTR	443-57	SGAI	SIEG	
	◆VALG			STI	432-93	ASY77	GPD	144-27	BAM120	◆CTR	443-58	SST	STR	
AC188-01/AC187-01	BELI	429-84	AD816	ANA	208-55		SMLB		BAM120SR	◆CTR	443-59	THCS	TIF	
AC188/01	◆BELI	252-28	AD818	ANA	432-94	ASY80	GPD	145-6	BAM150	◆CTR	288-8	◆VALG	WAB	
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AC194	GPD	148-27		STI		ASZ16#	◆GPD	260-45	◆MEHK	MISI		IDI	ITTG	
		263-7	AD822	◆ANA	432-98	ASZ17	◆GPD	255-48	◆MULB	NASG		◆MEHK	MISI	
AC194K	GPD	148-33		STI		CEN	◆GPD	411-14	◆NSC	PHIN		◆MULB	◆NSC	
		263-8	AD830	◆ANA	246-98		SMLB		◆RTCF	SGAI		PHIN	SELI	
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ACY17	CEN	144-30		ANA	432-100		CEN		THCS	THEF		THCS	TIF	
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BC200Y	MEHK	149-56	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213CP BC213K	THCS FERR CDIL CEN	158-93 158-94 375-39	BC237A18	NSC SST	198-16	BC240E	THCS	204-48
BC201	CEN	154-53	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213P	THCS FERR MISI PIHS	158-102 158-103 375-47	BC237A18	NSC SST	198-16	BC240F	THCS	204-49
BC202	CEN	155-33	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213AP BC213B	THCS FERR MISI PIHS	158-89 158-90 375-37	BC237A18	NSC SST	198-16	BC240G	THCS	204-50
BC203	CEN	155-34	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213BP BC213C	THCS FERR MISI PIHS	158-91 158-92 375-38	BC237A18	NSC SST	198-16	BC240H	THCS	204-51
BC204	CEN	151-38	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213CP BC213K	THCS FERR CDIL CEN	158-93 158-94 375-39	BC237A18	NSC SST	198-16	BC240I	THCS	204-52
BC204-6	WAB CDIL THCS	158-66	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213P	THCS FERR MISI PIHS	158-102 158-103 375-47	BC237A18	NSC SST	198-16	BC240J	THCS	204-53
BC204A	CEN MEHK	158-67	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213AP BC213B	THCS FERR MISI PIHS	158-89 158-90 375-37	BC237A18	NSC SST	198-16	BC240K	THCS	204-54
BC204B	CEN MEHK	158-68	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213BP BC213C	THCS FERR MISI PIHS	158-91 158-92 375-38	BC237A18	NSC SST	198-16	BC240L	THCS	204-55
BC204VI	IDI THCS	158-69	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213CP BC213K	THCS FERR CDIL CEN	158-93 158-94 375-39	BC237A18	NSC SST	198-16	BC240M	THCS	204-56
BC205	CEN IDI NASC	152-42	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213P	THCS FERR MISI PIHS	158-102 158-103 375-47	BC237A18	NSC SST	198-16	BC240N	THCS	204-57
BC205A	cont.next col.	158-70	BC212A-16	WAB CDIL CEN IDI MEHK THCS	226-41	BC213AP BC213B	THCS FERR MISI PIHS	158-89 158-90 375-37	BC237A18	NSC SST	198-16	BC240O	THCS	204-58

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TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
BC259C	MEHK	159-19	BC297	CEN	164-76	BC308#	IDI		BC317	CRI	200-106	BC328	CEN		BC260	MEHK	155-68	BC298	MEHK	164-77	(cont.)	ITG		BC317	MEHK	204-26	BC328	PHIN		BC260A	WAB	158-28	BC300	CEN	303-99	BC308A5	MISI	159-108	BC317A	NSC	200-107	BC328-5	THCS	175-75	BC260B	WAB	158-29	BC300	WAB		BC308A18	PIHS	159-107	BC317A	THCS	200-107	BC328-10	WAB	173-69	BC260C	WAB	158-30	BC300	CEN		BC308A	THCS	157-80	BC317A	WAB	204-27	BC328-10	MEHK		BC261	WAB	155-55	BC300	WAB		BC308A	THCS		BC317A	WAB	200-108	BC328-16	THCS	166-105	BC261A	WAB	159-20	BC300-4	MEHK	229-61	BC308A	THCS		BC317A	WAB	204-27	BC328-16	MEHK		BC261A	CDIL	159-20	BC300-5	MEHK	229-62	BC308A	THCS		BC317A	WAB	200-108	BC328-16	NSC		BC261A	CRI	159-20	BC300-6	MEHK	229-63	BC308A	THCS		BC317A	WAB	204-28	BC328-16	MEHK		BC261A	IDI	159-20	BC301	MEHK	303-100	BC308A	THCS		BC317A	WAB	200-109	BC328-16	NSC		BC261A	MEHK	159-20	BC301	MEHK	229-64	BC308A	THCS		BC317A	WAB	204-28	BC328-16	PHIN		BC261A	NSC	159-20	BC301-4	MEHK	229-64	BC308A	THCS		BC317A	WAB	200-109	BC328-16	SPR		BC261B	WAB	159-21	BC301-5	MEHK	229-65	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC261B	CDIL	159-21	BC301-6	MEHK	229-66	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG	166-106	BC261B	IDI	159-21	BC302	MEHK	303-101	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC261B	MEHK	159-21	BC302	MEHK	229-67	BC308A	THCS		BC317A	WAB	200-110	BC328-16	PHIN		BC261B	NSC	159-21	BC302-4	MEHK	229-67	BC308A	THCS		BC317A	WAB	204-29	BC328-16	SPR	166-107	BC261C	WAB	159-22	BC302-5	MISI	229-68	BC308A	THCS		BC317A	WAB	200-110	BC328-16	VALG		BC261C	THCS	159-22	BC302-6	MEHK	229-69	BC308A	THCS		BC317A	WAB	204-29	BC328-16	ITG	166-107	BC262	WAB	157-24	BC303	MEHK	271-15	BC308A	THCS		BC317A	WAB	200-110	BC328-16	MISI		BC262	MEHK	157-24	BC303	MEHK	271-15	BC308A	THCS		BC317A	WAB	204-29	BC328-16	SPR		BC262	MEHK	157-24	BC303	MEHK	271-15	BC308A	THCS		BC317A	WAB	200-110	BC328-16	VALG	166-107	BC262	WAB	157-24	BC303	MEHK	271-15	BC308A	THCS		BC317A	WAB	204-29	BC328-16	ITG		BC262A	WAB	159-23	BC303-4	MEHK	178-22	BC308A	THCS		BC317A	WAB	200-110	BC328-16	MISI		BC262A	CDIL	159-23	BC303-5	MEHK	178-23	BC308A	THCS		BC317A	WAB	204-29	BC328-16	SPR		BC262A	IDI	159-23	BC303-6	MEHK	178-24	BC308A	THCS		BC317A	WAB	200-110	BC328-16	VALG	166-107	BC262A	MEHK	159-23	BC304	MEHK	271-16	BC308A	THCS		BC317A	WAB	204-29	BC328-16	ITG		BC262A	NSC	159-23	BC304	MEHK	271-16	BC308A	THCS		BC317A	WAB	200-110	BC328-16	MISI		BC262B	WAB	159-24	BC304-4	MEHK	178-25	BC308A	THCS		BC317A	WAB	204-29	BC328-16	SPR		BC262B	CDIL	159-24	BC304-5	MEHK	178-26	BC308A	THCS		BC317A	WAB	200-110	BC328-16	VALG	175-76	BC262B	IDI	159-24	BC304-6	MEHK	178-27	BC308A	THCS		BC317A	WAB	204-29	BC328-16	ITG	166-106	BC262B	MEHK	159-24	BC307	MISI	159-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	MISI		BC262B	NSC	159-24	BC307	MISI	159-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	PHIN		BC262C	WAB	159-25	BC307	MISI	159-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC262C	THCS	159-25	BC307	MISI	159-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC262C	MEHK	159-25	BC307#	IDI	157-25	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC262C	WAB	159-25	BC307#	IDI	157-25	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC262C	THCS	159-25	BC307#	IDI	157-25	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC263	WAB	155-56	BC307A5	MEHK	159-81	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC263	MEHK	155-56	BC307A18	MEHK	159-82	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC263	MEHK	155-56	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC263A	WAB	159-26	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC263A	CDIL	159-26	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC263A	IDI	159-26	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC263A	MEHK	159-26	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC263B	WAB	159-27	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC263B	CDIL	159-27	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC263B	IDI	159-27	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC263B	MEHK	159-27	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC263C	WAB	159-28	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC263C	THCS	159-28	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC264	WAB	241-36	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264	MEHK	241-36	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264A	WAB	241-37	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264A	NSC	241-37	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC264A	PHIN	241-37	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264B	WAB	241-38	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264B	NSC	241-38	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264B	PHIN	241-38	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC264C	WAB	241-39	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264C	NSC	241-39	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264D	WAB	241-40	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264D	PHIN	241-40	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC264E	WAB	241-41	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264E	NSC	241-41	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264F	WAB	241-42	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264F	PHIN	241-42	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC264G	WAB	241-43	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264G	NSC	241-43	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264H	WAB	241-44	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264H	PHIN	241-44	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC264I	WAB	241-45	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264I	NSC	241-45	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264J	WAB	241-46	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264J	PHIN	241-46	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC264K	WAB	241-47	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264K	NSC	241-47	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264L	WAB	241-48	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264L	PHIN	241-48	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC264M	WAB	241-49	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264M	NSC	241-49	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264N	WAB	241-50	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264N	PHIN	241-50	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	166-107	BC264O	WAB	241-51	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264O	NSC	241-51	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264P	WAB	241-52	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		BC264P	PHIN	241-52	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	VALG	175-76	BC264Q	WAB	241-53	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	ITG		BC264Q	NSC	241-53	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	204-29	BC328-16	MISI		BC264R	WAB	241-54	BC307A	MEHK	157-78	BC308A	THCS		BC317A	WAB	200-110	BC328-16	SPR		



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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BC338-25 (cont.)	PHIN		BC393	SGAI	187-14	BC441	CEN	331-85	BC488	CRI	174-104	BC547 (cont.)	SST	SIEG
BC338-25	VALG		BC393	WAB	166-47	BC441	NASG		BC488	WAB	174-105	BC547	THEF	THCS
BC338-25-18	MOTA	222-95	BC394	MEHK	225-98	BC445	SGAI	203-79	BC488	MEHK	174-106	BC547	TIID	TII
BC338-25-5	MOTA	222-97	BC394	WAB		BC445	WAB		BC488	MEHK	174-107	BC547	TIID	VALG
BC338-25#1	MOTA	222-97	BC394	MEHK	208-85	BC445	WAB		BC488	MEHK	174-108	BC547	TIID	WAB
BC338-25#1	SPR	223-52	BC407	CDIL	192-54	BC445	MEHK	221-75	BC488	MEHK	174-109	BC547	TIID	ALGG
BC338-40#	MISI	221-69	BC407	IDI		BC445	WAB		BC488	MEHK	174-110	BC547	TIID	CDIL
BC338-40#1	ITTG	219-52	BC407A	THCS	192-55	BC445	WAB		BC488	MEHK	175-1	BC547	TIID	MEHK
BC338AP	PHIN		BC407A	CDIL		BC445	MEHK	174-48	BC488	MEHK	175-2	BC547	TIID	MULB
BC338BP	SIEG		BC407B	IDI		BC445	MEHK	162-57	BC488	MEHK	175-3	BC547	TIID	PHIN
BC338CP	SPR	201-79	BC407B	THCS	192-56	BC445	WAB		BC488	MEHK	175-4	BC547	TIID	SIEG
BC340	MISI	221-70	BC408	CDIL	192-57	BC445	WAB		BC488	MEHK	175-5	BC547	TIID	TII
BC341	FERR	221-71	BC408	IDI		BC445	WAB		BC488	MEHK	175-6	BC547	TIID	VALG
BC342	FERR	221-72	BC408	CRI	192-57	BC445	WAB		BC488	MEHK	220-65	BC547	TIID	NECJ
BC343	FERR	221-73	BC408	PHIN		BC445	WAB		BC488	MEHK	222-50	BC547	TIID	FERR
BC344	MEHK	227-72	BC408A	THCS	192-58	BC445	WAB		BC488	MEHK	220-66	BC547	TIID	ALGG
BC345	WAB		BC408A	CDIL		BC445	WAB		BC488	MEHK	222-51	BC547	TIID	CDIL
BC347	MEHK	227-73	BC408B	IDI	192-59	BC445	WAB		BC488	MEHK	222-52	BC547	TIID	MEHK
BC348	MEHK	227-74	BC408B	THCS		BC445	WAB		BC488	MEHK	222-53	BC547	TIID	MULB
BC349	MEHK	177-56	BC408B	CDIL	192-59	BC445	WAB		BC488	MEHK	222-54	BC547	TIID	PHIN
BC350	MEHK	227-75	BC408C	IDI	192-60	BC445	WAB		BC488	MEHK	222-55	BC547	TIID	SIEG
BC350A	MEHK	177-57	BC408C	THCS	192-60	BC445	WAB		BC488	MEHK	222-56	BC547	TIID	TII
BC350B	MEHK	195-75	BC409	CDIL	192-61	BC445	WAB		BC488	MEHK	222-57	BC547	TIID	VALG
BC350L	MEHK	195-76	BC409	IDI		BC445	WAB		BC488	MEHK	222-58	BC547	TIID	NECJ
BC351	MEHK	195-77	BC409	CRI	192-61	BC445	WAB		BC488	MEHK	222-59	BC547	TIID	FERR
BC351A	MEHK	195-77	BC409B	THCS	192-62	BC445	WAB		BC488	MEHK	222-60	BC547	TIID	APX
BC351B	MEHK	195-77	BC409B	CDIL		BC445	WAB		BC488	MEHK	222-61	BC547	TIID	MEHK
BC352	MEHK	162-11	BC409C	IDI	192-63	BC445	WAB		BC488	MEHK	222-62	BC547	TIID	MULB
BC352A	MEHK	162-12	BC409C	THCS	192-63	BC445	WAB		BC488	MEHK	222-63	BC547	TIID	PHIN
BC352B	MEHK	162-13	BC413	CEN	192-38	BC445	WAB		BC488	MEHK	222-64	BC547	TIID	SIEG
BC352L	MEHK	162-14	BC413	IDI		BC445	WAB		BC488	MEHK	222-65	BC547	TIID	TII
BC357	MEHK	162-15	BC413	THCS	192-38	BC445	WAB		BC488	MEHK	222-66	BC547	TIID	VALG
BC358	MEHK	200-22	BC413	MEHK	191-19	BC445	WAB		BC488	MEHK	222-67	BC547	TIID	ALGG
BC360	MEHK	178-9	BC413B	MEHK	198-47	BC445	WAB		BC488	MEHK	222-68	BC547	TIID	CDIL
BC361	MEHK	178-10	BC413B	MEHK	198-47	BC445	WAB		BC488	MEHK	222-69	BC547	TIID	MEHK
BC362	MEHK	272-101	BC413BP	MEHK	198-48	BC445	WAB		BC488	MEHK	222-70	BC547	TIID	MULB
BC363	MEHK	272-102	BC413C	MEHK	198-49	BC445	WAB		BC488	MEHK	222-71	BC547	TIID	PHIN
BC364	MEHK	272-103	BC413C	MEHK	198-49	BC445	WAB		BC488	MEHK	222-72	BC547	TIID	SIEG
BC365	MEHK	309-37	BC413CP	MEHK	198-50	BC445	WAB		BC488	MEHK	222-73	BC547	TIID	TII
BC366	MEHK	309-38	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-74	BC547	TIID	VALG
BC367	MEHK	309-39	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-75	BC547	TIID	NECJ
BC368	MEHK	227-3	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-76	BC547	TIID	FERR
BC368	MEHK	227-4	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-77	BC547	TIID	ALGG
BC369	MEHK	177-39	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-78	BC547	TIID	CDIL
BC375	MEHK	177-40	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-79	BC547	TIID	MEHK
BC376	MEHK	222-9	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-80	BC547	TIID	MULB
BC377	MEHK	174-90	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-81	BC547	TIID	PHIN
BC378	MEHK	208-9	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-82	BC547	TIID	SIEG
BC378	MEHK	208-7	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-83	BC547	TIID	TII
BC378	MEHK	208-10	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-84	BC547	TIID	VALG
BC381	MEHK	208-8	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-85	BC547	TIID	ALGG
BC381	MEHK	173-70	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-86	BC547	TIID	CDIL
BC382	MEHK	174-46	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-87	BC547	TIID	MEHK
BC382	MEHK	196-42	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-88	BC547	TIID	MULB
BC382	MEHK	196-43	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-89	BC547	TIID	PHIN
BC382	MEHK	196-44	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-90	BC547	TIID	SIEG
BC382	MEHK	196-45	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-91	BC547	TIID	TII
BC382L	MEHK	196-46	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-92	BC547	TIID	VALG
BC383	MEHK	196-47	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-93	BC547	TIID	ALGG
BC383	MEHK	196-48	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-94	BC547	TIID	CDIL
BC383B	MEHK	196-49	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-95	BC547	TIID	MEHK
BC383C	MEHK	196-50	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-96	BC547	TIID	MULB
BC383L	MEHK	196-51	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-97	BC547	TIID	PHIN
BC384	MEHK	196-52	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-98	BC547	TIID	SIEG
BC384	MEHK	196-53	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	222-99	BC547	TIID	TII
BC384	MEHK	196-54	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-0	BC547	TIID	VALG
BC384C	MEHK	196-55	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-1	BC547	TIID	ALGG
BC384L	MEHK	196-56	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-2	BC547	TIID	CDIL
BC385	MEHK	196-57	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-3	BC547	TIID	MEHK
BC386	MEHK	196-58	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-4	BC547	TIID	MULB
BC387	MEHK	200-78	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-5	BC547	TIID	PHIN
BC388	MEHK	160-75	BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-6	BC547	TIID	SIEG
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-7	BC547	TIID	TII
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-8	BC547	TIID	VALG
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	223-9	BC547	TIID	ALGG
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-0	BC547	TIID	CDIL
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-1	BC547	TIID	MEHK
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-2	BC547	TIID	MULB
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-3	BC547	TIID	PHIN
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-4	BC547	TIID	SIEG
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-5	BC547	TIID	TII
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-6	BC547	TIID	VALG
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-7	BC547	TIID	ALGG
			BC414	MEHK	192-39	BC445	WAB		BC488	MEHK	224-8	BC547	TIID	CDIL
			BC414	MEHK	192-39									



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TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
BC550B	NECJ	223-17	BC558B	(cont.)		BC617	*SIEG	414-27	BCF70	*PHIN	152-17	BCW60FF	SIEG	200-95	BC550C	*ALGG	215-105	BC618	*TIID	414-24	BCF70#	RTCF	187-31	BCW60FM	SIEG	200-96	BC550CP	*MULB	215-39	BC618#	*SIEG	412-27	BCF70R	*APX	152-18	BCW60R	THCS	183-4	BC555	*PHIN		BC635	*TIID	228-5	BCF70R#	*MULB		BCW61A	*SIEG	150-92	BC556A	CDIL	223-18	BC635#	MISI		BCF81	*PHIN	152-19	BCW61B	*FERR	150-93	BC556B	ITTTG	215-106	BC636	*NECE		BCF81#	*MULB	187-32	BCW61C	*SIEG	150-94	BC556C	*ALGG	169-97	BC636#	*PHIN		BCF81R	*THCS	188-76	BCW61D	*ALGG	150-81	BC557A	*MULB	223-18	BC637	*THEF		BCF81R#	*SIEG	204-55	BCW61E	*SIEG	150-82	BC557B	*PIHS	215-106	BC637#	*THCS		BCV26	*MULB	188-77	BCW61F	*ALGG	150-83	BC557C	*SIEG	169-97	BC637#	MEHK		BCV27	*PHIN	204-56	BCW61G	*SIEG	150-84	BC558A	CDIL	223-18	BC637#	MISI		BCV46	*THCS	204-56	BCW61H	*ALGG	150-85	BC558B	ITTTG	215-106	BC637#	*NECE		BCV47	*SIEG	188-78	BCW61I	*SIEG	150-86	BC558C	*ALGG	169-97	BC637#	*PHIN		BCV71	*PHIN	204-57	BCW61J	*SIEG	150-87	BC558D	*MULB	223-18	BC637#	*THCS		BCV71R	*THCS	188-79	BCW61K	*ALGG	150-88	BC558E	*PIHS	215-106	BC637#	*SIEG	228-8	BCV71R#	*MULB	204-58	BCW61L	*SIEG	150-89	BC558F	*SIEG	169-97	BC637#	*ALGG	177-19	BCV72	*APX	188-80	BCW61M	*SIEG	150-90	BC558G	*MULB	171-70	BC637#	MEHK		BCV72#	*PHIN	204-59	BCW61N	*SIEG	150-91	BC558H	*PIHS	215-106	BC637#	*NECE		BCV72R	*THCS	188-81	BCW61O	*ALGG	150-92	BC558I	*SIEG	169-97	BC637#	*PHIN		BCV72R#	*MULB	204-59	BCW61P	*SIEG	150-93	BC558J	*MULB	171-70	BC637#	*THCS		BCV72R#	*SIEG	152-20	BCW61Q	*SIEG	150-94	BC558K	*ALGG	169-97	BC637#	*SIEG	177-20	BCV72R#	*PHIN	188-81	BCW61R	*ALGG	150-95	BC558L	*MULB	171-70	BC637#	*ALGG	228-9	BCV72R#	*THCS	204-60	BCW61S	*SIEG	150-96	BC558M	*PIHS	215-106	BC637#	*SIEG	228-9	BCV72R#	*MULB	204-60	BCW61T	*SIEG	150-97	BC558N	*SIEG	169-97	BC637#	*MULB		BCV72R#	*PHIN	152-20	BCW61U	*SIEG	150-98	BC558O	*SIEG	171-70	BC637#	*SIEG	228-10	BCV72R#	*THCS	151-45	BCW61V	*SIEG	150-99	BC558P	*MULB	171-70	BC637#	*SIEG	429-86	BCV72R#	*MULB	152-21	BCW61W	*SIEG	150-100	BC558Q	*SIEG	169-97	BC637#	*SIEG	177-21	BCV72R#	*PHIN	152-21	BCW61X	*SIEG	150-101	BC558R	*SIEG	171-70	BC637#	MEHK		BCV72R#	*THCS	151-46	BCW61Y	*SIEG	150-102	BC558S	*SIEG	169-97	BC637#	*SIEG	177-22	BCV72R#	*MULB	152-22	BCW61Z	*SIEG	150-103	BC558T	*SIEG	171-70	BC637#	*SIEG	196-65	BCV72R#	*PHIN	151-47	BCW62A	*SIEG	150-104	BC558U	*SIEG	169-97	BC637#	*SIEG	174-80	BCV72R#	*THCS	152-23	BCW62B	*SIEG	150-105	BC558V	*SIEG	169-97	BC637#	*SIEG	173-106	BCV72R#	*MULB	151-47	BCW62C	*SIEG	150-106	BC558W	*SIEG	169-97	BC637#	*SIEG	220-98	BCV72R#	*PHIN	151-48	BCW62D	*SIEG	150-107	BC558X	*SIEG	169-97	BC637#	*SIEG	220-99	BCV72R#	*THCS	188-82	BCW62E	*SIEG	150-108	BC558Y	*SIEG	169-97	BC637#	*SIEG	151-106	BCV72R#	*MULB	151-48	BCW62F	*SIEG	150-109	BC558Z	*SIEG	169-97	BC637#	*SIEG	151-107	BCV72R#	*PHIN	188-83	BCW62G	*SIEG	150-110	BC559A	*SIEG	169-97	BC637#	*SIEG	151-108	BCV72R#	*THCS	188-84	BCW62H	*SIEG	150-111	BC559B	*SIEG	169-97	BC637#	*SIEG	184-85	BCV72R#	*MULB	188-85	BCW62I	*SIEG	150-112	BC559C	*SIEG	169-97	BC637#	*SIEG	151-109	BCV72R#	*PHIN	188-86	BCW62J	*SIEG	150-113	BC559D	*SIEG	169-97	BC637#	*SIEG	184-86	BCV72R#	*THCS	188-86	BCW62K	*SIEG	150-114	BC559E	*SIEG	169-97	BC637#	*SIEG	151-21	BCV72R#	*MULB	188-87	BCW62L	*SIEG	150-115	BC559F	*SIEG	169-97	BC637#	*SIEG	184-87	BCV72R#	*PHIN	188-88	BCW62M	*SIEG	150-116	BC559G	*SIEG	169-97	BC637#	*SIEG	180-66	BCV72R#	*THCS	188-88	BCW62N	*SIEG	150-117	BC559H	*SIEG	169-97	BC637#	*SIEG	160-67	BCV72R#	*MULB	188-89	BCW62O	*SIEG	150-118	BC559I	*SIEG	169-97	BC637#	*SIEG	160-68	BCV72R#	*PHIN	188-90	BCW62P	*SIEG	150-119	BC559J	*SIEG	169-97	BC637#	*SIEG	160-68	BCV72R#	*THCS	188-90	BCW62Q	*SIEG	150-120	BC559K	*SIEG	169-97	BC637#	*SIEG	160-96	BCV72R#	*MULB	188-91	BCW62R	*SIEG	150-121	BC559L	*SIEG	169-97	BC637#	*SIEG	160-97	BCV72R#	*PHIN	188-92	BCW62S	*SIEG	150-122	BC559M	*SIEG	169-97	BC637#	*SIEG	413-90	BCV72R#	*THCS	188-92	BCW62T	*SIEG	150-123	BC559N	*SIEG	169-97	BC637#	*SIEG	413-91	BCV72R#	*MULB	188-93	BCW62U	*SIEG	150-124	BC559O	*SIEG	169-97	BC637#	*SIEG	413-92	BCV72R#	*PHIN	206-51	BCW62V	*SIEG	150-125	BC559P	*SIEG	169-97	BC637#	*SIEG	413-93	BCV72R#	*THCS	188-93	BCW62W	*SIEG	150-126	BC559Q	*SIEG	169-97	BC637#	*SIEG	413-94	BCV72R#	*MULB	206-51	BCW62X	*SIEG	150-127	BC559R	*SIEG	169-97	BC637#	*SIEG	413-95	BCV72R#	*PHIN	163-108	BCW62Y	*SIEG	150-128	BC559S	*SIEG	169-97	BC637#	*SIEG	152-13	BCV72R#	*THCS	163-108	BCW62Z	*SIEG	150-129	BC559T	*SIEG	169-97	BC637#	*SIEG	187-27	BCV72R#	*MULB	163-108	BCW63A	*SIEG	150-130	BC559U	*SIEG	169-97	BC637#	*SIEG	162-33	BCV72R#	*PHIN	196-66	BCW63B	*SIEG	150-131	BC559V	*SIEG	169-97	BC637#	*SIEG	152-14	BCV72R#	*THCS	157-87	BCW63C	*SIEG	150-132	BC559W	*SIEG	169-97	BC637#	*SIEG	187-28	BCV72R#	*MULB	163-109	BCW63D	*SIEG	150-133	BC559X	*SIEG	169-97	BC637#	*SIEG	162-34	BCV72R#	*PHIN	163-109	BCW63E	*SIEG	150-134	BC559Y	*SIEG	169-97	BC637#	*SIEG	152-15	BCV72R#	*THCS	227-38	BCW63F	*SIEG	150-135	BC559Z	*SIEG	169-97	BC637#	*SIEG	187-29	BCV72R#	*MULB	178-2	BCW63G	*SIEG	150-136	BC560A	*SIEG	169-97	BC637#	*SIEG	162-35	BCV72R#	*PHIN	212-87	BCW63H	*SIEG	150-137	BC560B	*SIEG	169-97	BC637#	*SIEG	182-35	BCV72R#	*THCS	183-3	BCW63I	*SIEG	150-138	BC560C	*SIEG	169-97	BC637#	*SIEG	152-16	BCV72R#	*MULB	183-3	BCW63J	*SIEG	150-139	BC560D	*SIEG	169-97	BC637#	*SIEG	187-30	BCV72R#	*PHIN	183-3	BCW63K	*SIEG	150-140	BC560E	*SIEG	169-97	BC637#	*SIEG	182-36	BCV72R#	*THCS	183-3	BCW63L	*SIEG	150-141	BC560F	*SIEG	169-97	BC637#	*SIEG	188-72	BCV72R#	*MULB	183-3	BCW63M	*SIEG	150-142	BC560G	*SIEG	169-97	BC637#	*SIEG	204-51	BCV72R#	*PHIN	183-3	BCW63N	*SIEG	150-143	BC560H	*SIEG	169-97	BC637#	*SIEG	188-73	BCV72R#	*THCS	183-3	BCW63O	*SIEG	150-144	BC560I	*SIEG	169-97	BC637#	*SIEG	204-52	BCV72R#	*MULB	183-3	BCW63P	*SIEG	150-145	BC560J	*SIEG	169-97	BC637#	*SIEG	188-74	BCV72R#	*PHIN	183-3	BCW63Q	*SIEG	150-146	BC560K	*SIEG	169-97	BC637#	*SIEG	204-52	BCV72R#	*THCS	183-3	BCW63R	*SIEG	150-147	BC560L	*SIEG	169-97	BC637#	*SIEG	188-74	BCV72R#	*MULB	204-52	BCW63S	*SIEG	150-148	BC560M	*SIEG	169-97	BC637#	*SIEG	204-53	BCV72R#	*PHIN	183-3	BCW63T	*SIEG	150-149	BC560N	*SIEG	169-97	BC637#	*SIEG	204-53	BCV72R#	*THCS	183-3	BCW63U	*SIEG	150-150	BC560O	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW63V	*SIEG	150-151	BC560P	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW63W	*SIEG	150-152	BC560Q	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW63X	*SIEG	150-153	BC560R	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW63Y	*SIEG	150-154	BC560S	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW63Z	*SIEG	150-155	BC560T	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64A	*SIEG	150-156	BC560U	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64B	*SIEG	150-157	BC560V	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64C	*SIEG	150-158	BC560W	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64D	*SIEG	150-159	BC560X	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64E	*SIEG	150-160	BC560Y	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64F	*SIEG	150-161	BC560Z	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64G	*SIEG	150-162	BC561A	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64H	*SIEG	150-163	BC561B	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64I	*SIEG	150-164	BC561C	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64J	*SIEG	150-165	BC561D	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64K	*SIEG	150-166	BC561E	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64L	*SIEG	150-167	BC561F	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64M	*SIEG	150-168	BC561G	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64N	*SIEG	150-169	BC561H	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64O	*SIEG	150-170	BC561I	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64P	*SIEG	150-171	BC561J	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64Q	*SIEG	150-172	BC561K	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64R	*SIEG	150-173	BC561L	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54	BCW64S	*SIEG	150-174	BC561M	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*MULB	204-54	BCW64T	*SIEG	150-175	BC561N	*SIEG	169-97	BC637#	*SIEG	204-54	BCV72R#	*THCS	204-54

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TYPE No.			MFRS Pg&Line			TYPE No.			MFRS Pg&Line			TYPE No.			MFRS Pg&Line			IN TYPE NUMBER SEQUENCE		
BCW71 (cont.)	MULB THCS		BCW94B	MISI	216-105	BCX42	CRI	161-107	BCX70J#	†SIEG	374-12	BCY32	CEN	154-13						
	†FERR PHIN VALG		BCW94C	†THCS MISI	216-106	BCX42R	†THCS	161-108	BCX70K	†FERR	373-5		GTC	HSE						
BCW71#	†FERR	188-95	BCW94K	†THCS	223-58	BCX45	CRI	222-61	BCX70K#	†SIEG	374-13		NASG	SMLB						
BCW71R	†APX	188-96		WAB		BCX45	†MOTA	364-85	BCX70R	THCS	183-6	BCY32A	HSE	172-60						
	†FERR PHIN		BCW94KA	†THCS	216-107	BCX46	CRI	174-81	BCX70R#	FERR	152-103	†MULB	†PHIN	HSE						
BCW71R#	†FERR	188-97	BCW94KB	†THCS	216-108	BCX46	†MOTA	366-84	BCX71	†SIEG	150-98		RDCF	HSE						
BCW72	†APX	188-98	BCW94KC	†THCS	216-109	BCX47	MEHK	174-15				BCY33	NASG	HSE	153-105					
	†FERR PHIN		BCW95	THCS	216-100	BCX47	†MOTA	222-62	BCX71BG	†ALGG	150-85		HSE	SMLB						
BCW72#	†FERR	188-99	BCW95	THCS	216-100	BCX47	MEHK	221-82	BCX71BH	†ALGG	373-18	BCY33A	†MULB	HSE	172-61					
BCW72R	†APX	188-100	BCW95A	MEHK	216-103	BCX47	CRI	174-82	BCX71BJ	†ALGG	150-87		HSE	RDCF						
	†FERR PHIN		BCW95B	MEHK	216-110	BCX48	†MOTA	366-85	BCX71BK	†SIEG	373-20	BCY34	CEN	154-12						
BCW72#	†FERR	188-99	BCW95C	THCS	217-1	BCX48	MEHK	174-16	BCX71G	†ALGG	150-88		HSE	NASG						
BCW72R	†APX	188-100	BCW95D	MEHK	217-1	BCX49	CRI	222-63	BCX71G#	†SIEG	373-21	BCY34A	†MULB	HSE	172-62					
	†FERR PHIN		BCW95E	THCS	223-59	BCX49	†MOTA	364-87	BCX71H	†FERR	373-59		HSE	SMLB						
BCW72R#	†FERR	188-101	BCW95KA	†THCS	217-2	BCX49	MEHK	221-83	BCX71H#	†SIEG	373-58	BCY38	HSE	168-32						
BCW73	MEHK	210-102	BCW95KB	†THCS	217-3	BCX50	†MOTA	366-86	BCX71J	†FERR	373-59		HSE	NASG						
	WAB		BCW96	MISI	171-110	BCX50	MEHK	174-17	BCX71J#	†SIEG	373-61	BCY39	CEN	168-33						
BCW74	MEHK	210-103		THCS		BCX51	†APX	268-86	BCX71K	†FERR	373-62		HSE	NASG						
	WAB		BCW96A	MEHK	172-1		CRI		BCX71K#	†SIEG	373-63	BCY40	HSE	168-35						
BCW75	MEHK	168-38	BCW96B	MISI	172-2		†NECJ		BCX71R	THCS	150-99		NASG	CEN	195-53					
	WAB		BCW96C	THCS	172-2		RDCF		BCX73	MEHK	221-84	BCY42	HSE	168-35						
BCW76	MEHK	168-39	BCW96D	†THCS	172-3	BCX51-6	SIEG	264-76	BCX73-16	†SIEG	221-85	BCY42#	†FERR	202-74						
	WAB		BCW96E	MISI	172-3	BCX51-10	SIEG	264-77		†SIEG	379-70	BCY43	HSE	195-54						
BCW77	MEHK	229-96	BCW96F	†THCS	176-11	BCX51-16	SIEG	264-78	BCX73-25	†SIEG	221-86		MEHK							
	WAB		BCW96G	THCS	176-11	BCX52	†APX	268-87	BCX73-40	†SIEG	379-71	BCY43#	†FERR	202-75						
BCW78	MEHK	229-97	BCW96H	WAB	172-4		†MULB				221-87	BCY54	HSE	168-34						
	WAB		BCW96KA	†THCS	172-4		†PHIN		BCX74	MEHK	221-88		NASG	CRI	195-33					
BCW79	MEHK	178-33	BCW96KB	†THCS	172-5	BCX52-6	SIEG	264-79	BCX74-16	†SIEG	221-89	BCY55	HSE	433-12						
	WAB		BCW97	MISI	172-6	BCX52-10	SIEG	264-80		†SIEG	379-72		MEHK							
BCW80	MEHK	178-34		THCS		BCX53	†APX	268-88	BCX74-25	†SIEG	379-73	BCY56	CEN	198-55						
	WAB		BCW97A	MEHK	172-7		†MULB		BCX74-40	†SIEG	221-90		HSE	NASG						
BCW81	†PHIN	188-102	BCW97B	MISI	172-8		†PHIN		BCX74-40	†SIEG	379-74		MEHK							
	THCS		BCW97C	THCS	172-8	BCX53-6	SIEG	264-81			221-91		NASG	PHIN						
BCW81#	†MULB	204-61	BCW97D	†THCS	172-9	BCX53-10	SIEG	264-82	BCX75	MEHK	379-75	BCY57	CEN	189-37						
BCW81R	†PHIN	188-103	BCW97E	THCS	176-12	BCX54	†APX	296-44	BCX75-16	†SIEG	174-52		MEHK							
BCW81R#	RTCF		BCW97F	WAB	172-10		†NECJ		BCX75-25	†SIEG	379-76		NASG	PHIN						
BCW85	†MULB	204-62	BCW97G	†THCS	172-11	BCX54-6	SIEG	288-11	BCX75-40	†SIEG	174-54	BCY58	CEN	201-102						
	TIID		BCW97KA	†THCS	172-11	BCX54-10	SIEG	288-12			379-77		HSE	MEHK						
BCW86	WAB	382-80	BCW97KB	†THCS	172-11	BCX54-16	SIEG	288-13	BCX76	MEHK	174-56		MEHK							
	WAB		BCX17	†APX	160-59	BCX55	†APX	296-45	BCX76-16	†SIEG	174-57		NASG	PHIN						
BCW86	†FERR	155-69		THCS			†MULB		BCX76-25	†SIEG	174-58		MEHK							
BCW89	†PHIN	152-28	BCX17R	†FERR	160-60		†PHIN		BCX78	NSC	170-86	BCY58-7	HSE	163-89						
	THCS			THCS		BCX55-6	SIEG	288-14	BCX78-25	†SIEG	379-79	BCY58-8	HSE	163-90						
BCW89#	†APX	162-38	BCX18	†APX	160-61	BCX55-10	SIEG	288-15			379-79	BCY58A	†FERR	230-105						
	†MULB			THCS		BCX56	†APX	296-46	BCX78	NSC	170-86		HSE	382-3						
BCW89R	†PHIN	152-29	BCX18R	†APX	160-62		†MULB		BCX78	NSC	170-86	BCY58B	HSE	230-106						
	THCS			THCS		BCX56-6	SIEG	288-16	BCX78	NSC	170-86		HSE	382-4						
BCW89R#	RTCF		BCX19	†APX	200-79	BCX56-10	SIEG	288-17	BCX78	NSC	170-86	BCY58C	HSE	230-107						
	†MULB			THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	382-5						
BCW90	MISI	220-30	BCX19#	†APX	203-47		†MULB		BCX78	NSC	170-86	BCY58D	HSE	230-108						
	THCS		BCX19R	†APX	200-80	BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	382-6						
BCW90	THCS	220-42		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58E	HSE	201-90						
BCW90A	MEHK	220-32	BCX19#	†APX	203-47		†MULB		BCX78	NSC	170-86		HSE	374-22						
	MISI		BCX19R	†APX	200-80	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58F	HSE	209-91						
BCW90B	†THCS	220-33		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	374-14						
	MISI		BCX19#	†APX	203-47	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58G	HSE	209-92						
BCW90C	†THCS	220-34		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	209-93						
	MISI		BCX19R	†APX	200-80	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58H	HSE	209-94						
BCW90K	†THCS	225-22		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	209-95						
	WAB		BCX19#	†APX	203-47	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58I	HSE	374-15						
BCW90KA	†THCS	220-35		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	209-96						
BCW90KB	†THCS	220-36	BCX19#	†APX	203-48	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58J	HSE	374-16						
BCW90KC	†THCS	220-37	BCX20	†APX	200-81	BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	209-97						
BCW91	MISI	220-31		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58K	HSE	374-17						
	THCS		BCX20#	†APX	203-49	BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	209-98						
BCW91	MEHK	220-43	BCX20R	†APX	200-82	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58L	HSE	209-99						
BCW91A	†THCS	220-38		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-86		HSE	374-18						
	MISI		BCX20#	†APX	203-49	BCX58	†SIEG	215-40	BCX78	NSC	170-86	BCY58M	HSE	209-100						
BCW91B	†THCS	220-39		THCS		BCX58	†SIEG	215-40	BCX78	NSC	170-8									

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TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS			
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
BCY58VIII	ALGG	201-92	BCY65E	SIEG	230-70	BCY77PC	♦FERB	187-43	BCY79PAL	♦FERB	187-72	BD135-16	NSC	312-25										
	CEN	374-67											♦PHIB	♦SIEG										
	HSE		BCY65EA	♦FERB	374-42	BCY77PCK	♦FERB	187-28	BCY79PAM	♦FERB	187-73		♦SMLB											
	MISI												BD135-16	NECJ	288-26									
	PHIN		BCY65EB	♦FERB	382-11	BCY77PCL	♦FERB	187-45	BCY79PB	♦FERB	187-74	BD135-BD136	MULB	429-87										
	THCS												RTCF											
BCY58VIII	VALG		BCY65EC	♦FERB	382-12	BCY77PCM	♦FERB	187-46	BCY79PBK	♦FERB	187-75	BD135%	NECJ	288-27										
	MOTA	201-11										BD136	♦ALGG	273-81										
		373-24	BCY65EIX	♦SIEG	231-5	BCY77VII	ALGG	287-30	BCY79PBL	♦FERB	187-76		♦MULB											
		201-93											NECE											
BCY58X	CEN	374-68	BCY65EPA	♦FERB	374-43	BCY77VII	SGAI	373-66	BCY79PBM	♦FERB	187-77		NSC											
	HSE												♦PHIB											
	MISI		BCY65EPAK	♦FERB	374-45	BCY77VIII	SGAI	373-67	BCY79PC	♦FERB	187-78		PIHS											
	PHIN		BCY65EPAL	♦FERB	374-46	BCY78	VALG	159-55	BCY79PCK	♦FERB	187-79		RTCF											
	THCS		BCY65EPAM	♦FERB	374-47								SGAI											
BCY58X	VALG		BCY65EPB	♦FERB	374-48								SMLB											
	MOTA	201-12											THCS											
		373-25	BCY65EPBK	♦FERB	374-49								THCS											
		201-103	BCY65EPBL	♦FERB	374-50								THCS											
BCY59	CEN		BCY65EPBM	♦FERB	374-51								THCS											
	HSE		BCY65EPC	♦FERB	210-11	BCY78-7	CDIL	164-85	BCY79PCL	♦FERB	187-80		THCS											
	MISI					BCY78-8	CDIL	164-86					THCS											
	PHIN		BCY65EPDK	♦FERB	374-52	BCY78-9	CDIL	164-87	BCY79PCM	♦FERB	187-81	BD136	♦MOTA	273-82										
	THCS					BCY78-10	CDIL	164-88				BD136-6	NSC	274-14										
BCY59X	VALG		BCY65EPC	♦FERB	374-53	BCY78A#	♦FERB	167-47	BCY79PDM	♦FERB	187-82		♦PHIB											
			BCY65EPCM	♦FERB	210-12								SMLB											
			BCY65EPD	♦FERB	210-13	BCY78B#	♦FERB	167-48	BCY79PDM	♦FERB	187-83		NECJ											
BCY59-7	HSE	206-47				BCY78C#	♦FERB	167-49	BCY79PDL	♦FERB	187-84		NECJ	264-86										
BCY59-8	HSE	206-48	BCY65EPDL	♦FERB	210-14	BCY78D#	♦FERB	167-50	BCY79PDL	♦FERB	187-85		NSC	274-15										
BCY59-9	HSE	206-49				BCY78E#	♦FERB	167-51	BCY79PDM	♦FERB	187-86		SIEG											
BCY59-10	HSE	206-50	BCY65EPDM	♦FERB	210-15	BCY78IX	♦ALGG	161-3	BCY79PDM	♦FERB	187-87		NECJ	264-87										
BCY59A	HSE	208-13											NECJ	274-16										
	ITTG		BCY65EVI	♦SIEG	293-78	BCY78J#	♦FERB	167-52	BCY79PDM	♦FERB	187-88		SIEG											
	TII					BCY78K#	♦FERB	167-53	BCY79PDM	♦FERB	187-89		NECJ	264-88										
	TII		BCY65EVI	♦SIEG	293-79	BCY78L#	♦FERB	167-54	BCY79PDM	♦FERB	187-90		NECJ	264-89										
BCY59A#	♦FERB	230-109				BCY78M#	♦FERB	167-55	BCY79PDM	♦FERB	187-91		NECJ	264-90										
	HSE	382-7	BCY65EVI	♦SIEG	293-80	BCY78N#	♦FERB	167-56	BCY79PDM	♦FERB	187-92		NECJ	264-91										
BCY59B	HSE	208-14	BCY65EVI	♦SIEG	293-81	BCY78O#	♦FERB	167-57	BCY79PDM	♦FERB	187-93		NECJ	264-92										
	ITTG					BCY78P#	♦FERB	167-58	BCY79PDM	♦FERB	187-94		NECJ	264-93										
	TII		BCY65EVI	♦SIEG	293-82	BCY78Q#	♦FERB	167-59	BCY79PDM	♦FERB	187-95		NECJ	264-94										
BCY59B#	♦FERB	230-110				BCY78R#	♦FERB	167-60	BCY79PDM	♦FERB	187-96		NECJ	264-95										
	HSE	382-8	BCY65EVI	♦SIEG	293-83	BCY78S#	♦FERB	167-61	BCY79PDM	♦FERB	187-97		NECJ	264-96										
BCY59C	HSE	208-15				BCY78T#	♦FERB	167-62	BCY79PDM	♦FERB	187-98		NECJ	264-97										
	ITTG		BCY65EVI	♦SIEG	293-84	BCY78U#	♦FERB	167-63	BCY79PDM	♦FERB	187-99		NECJ	264-98										
	TII					BCY78V#	♦FERB	167-64	BCY79PDM	♦FERB	187-100		NECJ	264-99										
BCY59C#	♦FERB	231-1				BCY78W#	♦FERB	167-65	BCY79PDM	♦FERB	187-101		NECJ	264-100										
	HSE	382-9	BCY66	CEN	178-85	BCY78X#	♦FERB	167-66	BCY79PDM	♦FERB	187-102		NECJ	264-101										
BCY59D	HSE	208-16				BCY78Y#	♦FERB	167-67	BCY79PDM	♦FERB	187-103		NECJ	264-102										
	ITTG		BCY67	CEN	178-86	BCY78Z#	♦FERB	167-68	BCY79PDM	♦FERB	187-104		NECJ	264-103										
	TII					BCY79A#	♦FERB	167-69	BCY79PDM	♦FERB	187-105		NECJ	264-104										
BCY59D#	♦FERB	231-2				BCY79B#	♦FERB	167-70	BCY79PDM	♦FERB	187-106		NECJ	264-105										
	HSE	382-10	BCY69	CEN	196-67	BCY79C#	♦FERB	167-71	BCY79PDM	♦FERB	187-107		NECJ	264-106										
BCY59IX	ALGG	201-94				BCY79D#	♦FERB	167-72	BCY79PDM	♦FERB	187-108		NECJ	264-107										
	CEN	374-69				BCY79E#	♦FERB	167-73	BCY79PDM	♦FERB	187-109		NECJ	264-108										
	HSE		BCY70	CEN	162-105	BCY79F#	♦FERB	167-74	BCY79PDM	♦FERB	187-110		NECJ	264-109										
	MISI					BCY79G#	♦FERB	167-75	BCY79PDM	♦FERB	187-111		NECJ	264-110										
	PHIN					BCY79H#	♦FERB	167-76	BCY79PDM	♦FERB	187-112		NECJ	264-111										
BCY59IX	VALG					BCY79I#	♦FERB	167-77	BCY79PDM	♦FERB	187-113		NECJ	264-112										
	MOTA	201-13				BCY79J#	♦FERB	167-78	BCY79PDM	♦FERB	187-114		NECJ	264-113										
		373-26				BCY79K#	♦FERB	167-79	BCY79PDM	♦FERB	187-115		NECJ	264-114										
BCY59PA	♦FERB	209-106				BCY79L#	♦FERB	167-80	BCY79PDM	♦FERB	187-116		NECJ	264-115										
	HSE	374-27				BCY79M#	♦FERB	167-81	BCY79PDM	♦FERB	187-117		NECJ	264-116										
BCY59PAK	♦FERB	209-107				BCY79N#	♦FERB	167-82	BCY79PDM	♦FERB	187-118		NECJ	264-117										
	HSE	374-28				BCY79O#	♦FERB	167-83	BCY79PDM	♦FERB	187-119		NECJ	264-118										
BCY59PAL	♦FERB	209-108				BCY79P#	♦FERB	167-84	BCY79PDM															

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BD140#	NECJ	264-97	BD189	CEN	323-26	BD238	ALGG	276-61	BD241A	CEN	323-31	BD244		
BD140#1	TIIF	264-98		NSC			MULB	386-16		NASG	386-29	(cont.)		
BD141	NASG	335-40	BD190	NSC	279-2		CRI			PHIN			RCAB	RCAB
	PPC			NSC			NASG			PC			SST	SST
BD142	CEN	335-41		NSC			PHIN			RCAB			TII	TII
	IPS		BD195	MOTA	331-31		SGAI			THCS			TIIF	TIIF
	NASG		BD196	MOTA	281-57		TOSJ			THCS			TIIF	TIIF
	RCAB		BD197	MOTA	331-32	BD236	VALG	276-62		TIIF			SGAI	SGAI
	SGAI		BD198	MOTA	281-58	BD236#1	MOTA	269-21		TIIF			FERB	FERB
BD142	MOTA	335-42	BD199	MOTA	331-33	BD237	ALGG	317-60		WAB				
BD144	NASG	317-57	BD200	MOTA	281-59		MULB	386-17	BD241A#	FERB	288-46	BD244A	NSC	281-31
	PHIN		BD201	MULB	329-6		CRI			SMLB	386-30		PPC	383-12
BD157	CEN	315-27		NSC			NASG			THCS	386-30		RCAB	
	NASG			RCAB			PHIN			CEN	323-32		SST	
BD157	SMLB	315-28	BD201-BD202	RTCF	429-90	BD237	VALG	299-40	BD241B#	MEHK	386-31		TII	
BD158	MOTA	315-29	BD201#	ALGG	329-7	BD237-BD238	MOTA	429-97		NSC			TIIF	
	CEN		BD202	RCAB	280-84	BD237#1	RTCF	297-13	BD241C#	PC	323-33		TIIF	
	NASG			NSC		BD238	TIIF	276-63		RCAB	386-33		THCS	
BD158	SMLB	315-30		PHIN			ALGG	386-18	BD241B#	THCS	288-47	BD244B	NSC	281-32
BD159	MOTA	315-31		RCAB			MULB			FERB	386-32	BD244B#	PPC	383-13
	NSC		BD202#	PHIN	280-85		VALG		BD241C#	NSC	323-33		RCAB	
BD159	MOTA	315-32	BD203	ALGG	329-8	BD238	RCAB	276-64		PHIN	386-33	BD244B	THCS	
BD160	SMLB	335-43		RCAB		BD238#1	VALG	269-22		NSC		BD244B#	TIIF	
BD165	CEN	315-33		NSC		BD239	MOTA	319-3	BD241C#	PC	386-33		SGAI	
	NASG			RCAB			TIIF	386-19		RCAB			FERB	
BD165	MOTA	315-34		PHIN			NSC		BD241C#	THCS	288-48	BD244C	NSC	281-33
BD165#1	TIIF	297-5	BD203-BD204	RTCF	429-91		PHIN			TIIF	386-34		PPC	
BD166	CEN	275-55	BD203#	ALGG	329-9		PC		BD242	THCS	279-6		RCAB	
	NASG			RCAB			RCAB			TIIF	383-7		SST	
BD166	MOTA	275-56	BD204	NSC	280-86		TII		BD242#	FERB	264-103	BD244C	NSC	281-34
BD166#1	TIIF	269-14		PHIN			TIIF			NSC			PPC	
BD167	CEN	315-35		RCAB			WAB		BD242	THCS	383-8	BD244C#	RCAB	
	NASG		BD204#	VALG	280-87	BD239	SGAI	288-34		NSC		BD244C#	THCS	
BD167	MOTA	315-36		RCAB		BD239#	MEHK	386-20	BD242A	PHIN	279-7		TIIF	
BD167#1	TIIF	297-6	BD205	CRI	338-30	BD239A	NSC	319-4		NSC	383-8		SGAI	
BD168	CEN	275-57		NSC			PC	386-21	BD242A#	PC	279-7	BD245	TIIF	333-10
	NASG		BD206	MOTA	282-93		RCAB			RCAB	383-8		TIIF	333-11
BD168	MOTA	275-58		CRI			THCS		BD242A#	THCS	279-7	BD245	TIIF	333-12
BD168#1	TIIF	269-15	BD207	MOTA	338-31		TII			TIIF	383-8		TIIF	333-13
BD169	CEN	315-37		CRI			WAB		BD242A#	FERB	264-103	BD245	TIIF	333-14
	NASG		BD208	MOTA	282-94	BD239A	SGAI	288-35	BD242B	NSC	279-8	BD246	CEN	281-103
BD169	MOTA	315-38		CRI		BD239B	MEHK	288-36		NSC	383-9		TIIF	283-15
BD169#1	TIIF	297-7	BD220#	NSC	323-27		NSC	386-22	BD242B#	PC	279-8	BD246	TIIF	283-16
BD170	CEN	275-59	BD221#	NSC	323-28		PC	386-23		RCAB	383-9	BD246A	TIIF	281-104
	NASG		BD222#	NSC	323-29		RCAB		BD242B#	NSC	383-9	BD246B	TIIF	281-105
BD170	MOTA	275-60	BD223	NSC	279-3		TII			PC	279-9	BD246C	TIIF	281-106
BD170#1	TIIF	269-16		NSC			THCS		BD242B#	PC	383-9	BD246C	TIIF	281-107
BD171	CEN	315-39	BD224	WAB	279-4		TII			RCAB	383-9	BD249	THCS	344-3
	MOTA			NSC			WAB		BD242B#	RCAB	279-9		TIIF	
BD172	CEN	315-40	BD225	NSC	279-5	BD239B	MEHK	319-5	BD242C	NSC	279-9	BD249	THCS	344-4
	MOTA		BD226	CRI	314-33		NSC	386-24		PC	383-10	BD249B	TIIF	344-5
BD173	CEN	315-41		PHIN		BD239B#	PC	319-6	BD242C#	PC	383-10		TIIF	
	MOTA		BD226-BD227	RTCF	429-92		RCAB	386-25		RCAB	383-10	BD249B	TIIF	344-6
BD175	CEN	319-55		NSC		BD239C	MEHK	386-25	BD242C#	NSC	279-9	BD249C	THCS	344-6
	PIHS		BD227	PHIN	274-104		NSC			PC	383-10	BD249C	TIIF	344-6
BD175#1	TIIF	297-8	BD227	PHIN	274-104		PC		BD242C#	PC	383-10	BD249C	TIIF	344-6
BD176	CEN	277-70		TIIF		BD239C#	NSC	288-39	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS		BD228	MULB	314-34	BD239C#	NSC	288-40	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD176#1	TIIF	269-17		PHIN		BD239C#	NSC	386-26	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD177	CEN	319-56	BD228-BD229	RTCF	429-93	BD240	CRI	277-34	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS			NSC			NSC	383-3	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD177#1	TIIF	297-9	BD229	PHIN	274-105		PC		BD242C#	PC	383-10	BD249C	TIIF	344-6
BD178	CEN	277-71		TIIF		BD240	NSC	288-41	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS		BD229	MULB	274-105		PC	277-34	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD178#1	TIIF	269-18		PHIN		BD240	NSC	277-34	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD179	CEN	319-57	BD230	MULB	314-35		PC	264-99	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS			PHIN		BD240	NSC	358-66	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD178#1	TIIF	269-18	BD230-BD231	RTCF	429-94		PC	277-35	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD179	CEN	319-57		NSC		BD240	NSC	358-66	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS		BD231	PHIN	274-106		PC	383-4	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD179#1	TIIF	297-10		TIIF		BD240A	MEHK	288-42	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD180	CEN	277-72	BD231	MULB	274-106		NSC	288-42	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS			PHIN		BD240A#	NSC	264-100	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD180#1	TIIF	269-19	BD232	MULB	318-54		PC	358-67	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD181	CEN	335-44		PHIN		BD240B	MEHK	277-36	BD242C#	PC	383-10	BD249C	TIIF	344-6
	PIHS		BD232	NSC	318-54		NSC	383-5	BD242C#	PC	383-10	BD249C	TIIF	344-6
BD181	IPS	433-16		PC		BD240B#	NSC	383-5	BD242C#	PC	383-10	BD249C	TIIF	344-6
	NASG		BD232	PHIN	318-54		PC		BD242C#	PC	383-10	BD249C	TIIF	344-6
	RCAB		BD232	RTCF	318-54		RCAB		BD242C#	PC	383-10	BD249C	TIIF	344-6
	SGAI		BD232	VALG	318-54		TII		BD242C#	PC	383-10	BD249C	TIIF	344-6
BD182	VALG	335-45	BD232	VALG	318-54		TIIF		BD242C#	PC	383-10	BD249C	TIIF	344-6
	IPS		BD233	ALGG	315-42		WAB		BD242C#	PC	383-10	BD249C	TIIF	344-6
	NASG		BD233	ALGG	317-58		SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
	RCAB		BD233	ALGG	386-13		SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
	SMLB		BD233	ALGG	386-13		SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
BD182	VALG	335-45		NSC			SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
	IPS			NSC			SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
	NASG			NSC			SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
	RCAB			NSC			SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
	SGAI			NSC			SGAI		BD242C#	PC	383-10	BD249C	TIIF	344-6
BD182	VALG	4												

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TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS			
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
BD267B	LUCB	417-67	BD361	CRI	312-87	BD379	SGAI	317-83	BD501A	RCAB	332-51	BD539C	SMLB	325-77										
	SMLB			MOTA			SMLB	372-78		SMLB			TII											
BD277	RCA	281-70	BD361A	MOTA	312-88	BD379-6	NSC	312-99	BD501B	RCA	332-52	BD539D	SMLB	325-78										
	RCAB					BD379-10	NSC	312-100		RCAB			TII											
BD278	RCA	332-46	BD362	CRI	274-43	BD379-16	NSC	312-101	BD505	CRI	309-98		TII											
	RCAB			MOTA		BD379-25	NSC	312-102					TII											
BD278A	RCA	332-47	BD362A	MOTA	274-44	BD379-30	NSC	312-103	BD505-1	CRI	309-99	BD540	SMLB	279-93										
	RCAB					BD380	SGAI	267-11					TII											
BD278AE	RCAB	332-48	BD370A	MEHK	270-5	BD380-6	SMLB	274-55	BD505-5	MOTA	309-100	BD540A	SMLB	279-94										
BD278E	RCAB	332-49		NSC		BD380-10	NSC	274-56	BD506	MOTA	273-25		TII											
BD287	SIEG	277-102		MISI		BD380-16	NSC	274-57	BD506-1	MOTA	273-26		TII											
	SMLB			WAB		BD380-25	NSC	274-58	BD507	MOTA	309-101	BD540B	SMLB	279-95										
BD288	SIEG	277-103	BD370A-6	MISI	265-5	BD380-25	NSC	274-58	BD507-1	MOTA	309-102		TII											
	SMLB			WAB		BD380-30	NSC	274-59	BD507-5	MOTA	309-103	BD540C	SMLB	279-96										
BD291	PHIN	329-10	BD370B	MEHK	270-6	BD410	SMLB	317-64	BD508	MOTA	273-28		TII											
	SMLB			NSC					BD508-1	MOTA	273-29	BD540D	TII											
BD292	PHIN	280-88	BD370B-6	MISI	265-8	BD415	MEHK	288-71	BD508-5	MOTA	273-30		TII											
	SMLB			WAB		BD416	MEHK	265-21	BD509	MOTA	309-104	BD540D	TII											
BD293	PHIN	329-11	BD370B-10	MISI	265-9	BD416	WAB	265-21	BD509-1	MOTA	309-105		TII											
	SMLB			WAB		BD417	MEHK	288-72	BD509-5	MOTA	309-106	BD543	SMLB	331-70										
BD294	PHIN	280-89	BD370C	MEHK	270-7	BD417	NSC	265-10	BD510	MOTA	273-31		TII											
	SMLB			NSC		BD418	MEHK	265-22	BD510-1	MOTA	273-32	BD543A	SMLB	331-71										
BD295	PHIN	329-12	BD370C-6	MISI	265-11	BD418	WAB	265-22	BD510-5	MOTA	273-33		TII											
	SMLB			WAB		BD424	SIEG	288-73	BD512	ITTT	234-33		TII											
BD296	PHIN	280-90	BD370C-10	MISI	265-12	BD429	SIEG	288-74	BD515	MOTA	309-107		TII											
	SMLB			WAB		BD430	SIEG	265-23	BD515-1	MOTA	309-108	BD543B	SMLB	331-72										
BD301	THCS	328-58	BD370D	MEHK	270-8	BD433	ALGG	321-47	BD515-5	MOTA	309-109		TII											
	SMLB			NSC					BD517	MOTA	309-110	BD543C	SMLB	331-73										
BD302	THCS	280-38	BD371A	MEHK	299-41		MULB		BD517-1	MOTA	310-1		TII											
	SMLB			NSC			NSC		BD517-5	MOTA	310-2	BD543D	SMLB	331-74										
BD303	THCS	328-59	BD371A-6	MISI	288-55		RTCF		BD519	MOTA	310-3		TII											
	SMLB			WAB			SGAI		BD519-1	MOTA	310-4	BD544	SMLB	281-71										
BD304	THCS	280-39	BD371A-10	MISI	288-56	BD433-BD434	MULB	429-98	BD519-5	MOTA	310-5		TII											
	SMLB			WAB			PHIN		BD522	ITTT	249-27	BD544	SMLB	281-72										
BD311	THCS	341-103	BD371B	MEHK	299-42	BD434	NSC	277-104	BD524	SIEG	303-102		TII											
	SMLB			NSC			NSC		BD525	MOTA	310-6	BD544A	SMLB	281-72										
BD312	THCS	280-39	BD371B-6	MISI	288-58		NSC		BD525-1	MOTA	310-7		TII											
	SMLB			WAB			PHIN		BD525-5	MOTA	310-8	BD544B	SMLB	281-73										
BD313	THCS	341-104	BD371B-10	MISI	288-59	BD435	SGAI	321-48	BD526	MOTA	273-34		TII											
	SMLB			WAB			SGAI		BD526-1	MOTA	273-35	BD544B	SMLB	281-73										
BD314	THCS	283-57	BD371C	MEHK	299-43		VALG		BD526-5	MOTA	273-36		TII											
	SMLB			NSC			ALGG		BD526-5	MOTA	273-36	BD544C	SMLB	281-74										
BD315	THCS	346-109	BD371C-6	MISI	288-61	BD436	MULB	429-99	BD527	MOTA	310-9		TII											
	SMLB			WAB			NSC		BD527-1	MOTA	310-10	BD544D	SMLB	281-74										
BD316	THCS	284-40	BD371C-10	MISI	288-62		PHIN		BD527-5	MOTA	310-11		TII											
	SMLB			WAB			RTCF		BD528	MOTA	273-37	BD544D	SMLB	281-75										
BD317	THCS	346-110	BD371D	MEHK	299-44	BD435-BD436	SGAI	321-49	BD528-1	MOTA	273-38		TII											
	SMLB			NSC			SMLB		BD528-5	MOTA	273-39	BD545	SMLB	336-104										
BD318	THCS	284-41	BD372A	MEHK	270-9	BD437	VALG	321-49	BD529	MOTA	310-12		TII											
	SMLB			NSC			ALGG		BD529-1	MOTA	310-13	BD545A	SMLB	336-105										
BD320A	THCS	379-29	BD372A-6	MISI	265-13		MULB		BD529-5	MOTA	310-14		TII											
	SMLB			WAB			NSC		BD530	MOTA	273-40	BD545B	SMLB	336-106										
BD320B	THCS	379-30	BD372A-10	MISI	265-14		PHIN		BD530-1	MOTA	273-41		TII											
	SMLB			WAB			RTCF		BD530-5	MOTA	273-42	BD545C	SMLB	336-107										
BD320C	THCS	379-31	BD372B	MEHK	270-11	BD437	VALG	321-49	BD533	MOTA	273-42		TII											
	SMLB			NSC			ALGG		BD533	MOTA	273-42	BD545D	SMLB	336-108										
BD321A	THCS	414-85	BD372C-6	MISI	265-19	BD437-BD438	MULB	429-100	BD533K	MOTA	273-41		TII											
	SMLB			WAB			PHIN		BD533L	MOTA	273-42	BD546	SMLB	282-67										
BD321B	THCS	379-32	BD372C-10	MISI	265-20		RTCF		BD534	MOTA	273-42		TII											
	SMLB			NSC			ALGG			MOTA	273-42	BD546A	SMLB	282-68										
BD321C	THCS	414-82	BD372D	MEHK	270-12	BD438	VALG	321-49		MOTA	273-42		TII											
	SMLB			NSC			ALGG			MOTA	273-42	BD546B	SMLB	282-69										
BD322A	THCS	379-33	BD373A	MEHK	299-45		GTC			MOTA	273-42		TII											
	SMLB			NSC			NSC			MOTA	273-42	BD546C	SMLB	282-70										
BD322B	THCS	414-86	BD373A-6	MISI	288-63		PHIN			MOTA	273-42		TII											
	SMLB			WAB			NSC			MOTA	273-													



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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BD610	♦MOTA	282-97	BD678	♦PHIN		BD744A	TII	289-89	BD827	♦SIEG		BD900A	NSC	417-95
BD611	♦SIEG	288-86	(cont.)	♦SGAI		BD744B	TIID	380-25	(cont.)	VALG		BD901	NSC	417-80
BD612	♦SIEG	265-42	♦RTCF	SMLB		BD744C	TIID	269-90	♦SMLB			RCA	RCAB	
			♦SIEG					380-26	♦MULB			BD902	NSC	417-81
BD613	♦SIEG	288-87	♦VALG			BD744C	TII	269-91				BD905	NSC	337-65
BD614	♦SIEG	265-43	♦MOTA	CEN	417-13	BD744D	TIID	380-27				BD906	SGAI	
			BD678A	NSC	417-20	BD744D	TII	269-92	BD827-6	SIEG	307-55	BD906	THCS	282-75
BD615	♦SIEG	288-88	♦MOTA	NSC		BD745	TIID	380-28	BD827-10	SIEG	307-56		SGAI	THCS
BD616	♦SIEG	265-44		♦SGAI	416-63	BD745	TII	302-16	BD828	♦SIEG	272-87		THCS	
			BD679	♦ALGG				388-83					THCS	
BD617	♦SIEG	288-89	CEN	♦MULB		BD745A	TII	302-17	BD828Z		272-88	BD907	SGAI	337-66
BD618	♦SIEG	265-45	NSC	♦PHIN				388-84				BD907	THCS	
			BD679	♦RTCF		BD745B	TII	302-18				BD908	SGAI	282-76
BD619	♦SIEG	288-90	♦SIEG	♦VALG				388-85				BD908	THCS	
BD620	♦SIEG	265-46		♦MOTA	417-14	BD745B	TIID	388-86	BD828-6	SIEG	265-65	BD909	SGAI	337-67
			BD679/680	RTCF	429-106			388-86	BD828-10	SIEG	265-66	BD909	THCS	
BD633	NSC	319-58	BD679A	CEN	417-21	BD745C	TII	302-19	BD829	♦SIEG	308-31	BD910	SGAI	282-77
BD633Z	WAB		♦MOTA	NSC				388-86				BD910	THCS	
BD634	NSC	288-91		♦SGAI	416-67	BD745D	TII	302-20	BD829Z		308-32	BD911	SGAI	337-68
			BD680	♦ALGG				388-87				BD911	THCS	
BD634Z	WAB		CEN	CRI		BD746	TIID	270-65	BD829-6	SIEG	307-57	BD912	SGAI	282-78
BD635	MEHK	265-47	♦MULB	NSC				270-66	BD830	SIEG	307-58		THCS	
			♦PHIN	♦RTCF		BD746A	TII	270-67				BD912	THCS	
BD635Z	WAB		♦SGAI	♦SIEG				380-30	BD830Z	♦SIEG	272-90	BD933	SGAI	319-61
BD636	NSC	288-92	♦VALG	♦VALG	417-15	BD746B	TIID	270-68				BD933	THCS	
			BD680Z	♦MOTA	417-22			380-31	BD830-6	NSC	265-67	BD934	PHIN	277-77
BD637	MEHK	265-48	BD680A	CEN		BD746C	TIID	270-69	BD830-10	SIEG	265-68	BD934	SMMLB	319-62
			♦MOTA	NSC				380-32	BD839	♦MULB	310-74	BD935	PHIN	277-78
BD637Z	WAB			♦SGAI	416-64	BD746D	TII	270-69				BD935	SMMLB	319-63
BD638	NSC	288-93	BD681	♦ALGG				380-33				BD936	PHIN	277-79
			CEN	CRI		BD750	RCAB	265-50				BD936	SMMLB	319-64
BD638Z	WAB		NSC	NSC				265-51	BD840	♦MULB	265-69	BD937	PHIN	277-80
BD638Z	MEHK		♦MULB	RTCF	429-107	BD750A	RCAB	265-52				BD937	SMMLB	319-65
BD643	ALGG	417-108	♦PHIN	♦VALG	416-68			265-53	BD841	♦MULB	310-75	BD938	PHIN	277-81
BD643Z	NSC	277-74	BD681/682	♦MULB		BD750B	RCAB	265-54				BD938	SMMLB	319-66
BD644	NSC	417-96	BD682	NSC				265-55	BD842	♦MULB	265-70	BD939	PHIN	277-82
			CEN	♦PHIN		BD750C	RCAB	265-56				BD939	SMMLB	319-67
BD645	♦VALG	417-97	NSC	♦SGAI	416-69			265-57	BD843	♦MULB	310-76	BD940	PHIN	277-83
			BD683	♦VALG		BD751	RCAB	265-58				BD940	SMMLB	319-68
BD645Z	ALGG	417-97	BD683Z	♦MULB	416-69			265-59	BD844	♦MULB	265-71	BD941	PHIN	277-84
BD646	LUCB		BD684	♦RTCF	429-108	BD751A	RCAB	265-59				BD941	SMMLB	319-69
			BD684Z	♦MULB	416-70			265-60	BD845	♦MULB	288-101	BD942	PHIN	277-85
BD646Z	PHIN		BD695A	♦RTCF	418-106	BD751B	RCAB	265-61				BD942	SMMLB	319-70
			BD696A	NSC	418-107			265-62	BD846	♦MULB	265-72	BD943	PHIN	277-86
BD647	♦RTCF	417-100	BD697Z	NSC	418-78	BD751C	RCAB	265-63				BD943	SMMLB	319-71
			BD697A	♦MOTA	418-108			265-64	BD847	♦MULB	288-102	BD944	PHIN	277-87
BD647Z	PHIN		BD698	♦MOTA	418-79	BD795	NSC	288-94				BD944	SMMLB	319-72
			BD698Z	♦MOTA	418-109			288-95	BD848	♦MULB	265-73	BD945	PHIN	277-88
BD648	♦SIEG	429-102	BD699	♦MOTA	418-80	BD796	RCAB	265-58				BD945	SMMLB	319-73
			BD699A	♦MOTA	418-110			265-59	BD849	♦MULB	288-103	BD946	PHIN	277-89
BD648Z	RTCF	417-101	BD700Z	♦MOTA	418-81	BD796Z	NSC	279-107				BD946	SMMLB	319-74
			BD700A	♦MOTA	419-1	BD797	NSC	288-96	BD850	♦MULB	265-74	BD947	PHIN	277-90
BD649	♦MULB	417-102	BD701Z	♦MOTA	418-82			265-59				BD947	SMMLB	319-75
			BD702Z	♦MOTA	418-71	BD798	RCAB	265-59	BD851	♦MULB	415-78	BD948	PHIN	277-91
BD649Z	RTCF	417-103	BD705	CEN	332-15	BD798Z	NSC	279-108				BD948	SMMLB	319-76
				♦SGAI		BD799	RCAB	288-96	BD852	♦MULB	415-79	BD949	PHIN	277-92
BD649Z	ALGG	417-103	BD706	THEF	281-83			265-60	BD853	♦MULB	415-80	BD950	PHIN	277-93
BD649Z	NSC	429-103	BD707	CEN	332-16	BD800	RCAB	265-60				BD950	SMMLB	319-77
BD650	♦VALG	417-104	BD708	THEF	281-84	BD800Z	NSC	279-109	BD854	♦MULB	415-81	BD951	PHIN	277-94
			BD709	CEN	332-17	BD801	RCAB	288-97				BD951	SMMLB	319-78
BD650Z	NSC	417-105	BD710	THEF	281-85	BD801Z	NSC	327-34	BD855	♦MULB	415-82	BD952	PHIN	277-95
			BD711	CEN	332-18	BD802	RCAB	265-61				BD952	SMMLB	319-79
BD651	♦MULB	417-106	BD712	THEF	281-86	BD802Z	NSC	327-34	BD856	♦MULB	415-83	BD953	PHIN	277-96
			BD713	CEN	323-43	BD81	RCAB	265-61				BD953	SMMLB	319-80
BD651Z	NSC	429-104	BD733	THEF	279-19	BD81Z	NSC	279-110	BD857	♦MULB	415-84	BD954	PHIN	277-97
BD652	♦VALG	417-107	BD734	THEF	332-17	BD81Z	RCAB	311-70				BD954	SMMLB	319-81
			BD735	CEN	323-44	BD81Z	NSC	279-110	BD858	♦MULB	415-85	BD955	PHIN	277-98
BD653	♦MULB	332-14	BD736	THEF	279-20	BD81Z	RCAB	311-70				BD955	SMMLB	319-82
BD654	♦RTCF	281-82	BD737	CEN	323-45	BD81Z	NSC	279-110	BD859	♦MULB	415-86	BD956	PHIN	277-99
BD655	♦SIEG	416-61	BD738	THEF	279-21	BD81Z	RCAB	311-70				BD956	SMMLB	319-83
			BD743	CEN	298-45	BD81Z	NSC	279-110	BD860	♦MULB	415-87	BD957	PHIN	277-99
BD656	♦ALGG	416-61	BD743Z	THEF	388-78	BD81Z	RCAB	311-70				BD957	SMMLB	319-84
			BD739	CEN	323-43	BD81Z	NSC	279-110	BD861	♦MULB	415-88	BD958	PHIN	277-99
BD657	CEN		BD740	THEF	281-85	BD81Z	RCAB	311-70				BD958	SMMLB	319-85
			BD741	CEN	332-18	BD81Z	NSC	279-110	BD862	♦MULB	415-89	BD959	PHIN	277-99
BD658	♦MULB	332-14	BD742	THEF	281-86	BD81Z	RCAB	311-70				BD959	SMMLB	319-86
BD659	♦PHIN	281-82	BD743	CEN	298-45	BD81Z	NSC	279-110	BD863	♦MULB	415-90	BD960	PHIN	277-99
BD660	♦SIEG	416-61	BD743Z	THEF	388-78	BD81Z	RCAB	311-70				BD960	SMMLB	319-87
			BD744	CEN	298-46	BD81Z	NSC	279-110	BD864	♦MULB	415-91	BD961	PHIN	277-99
BD661	♦ALGG	416-61	BD745	THEF	388-79	BD81Z	RCAB	311-70				BD961	SMMLB	319-88
			BD746	CEN	298-47	BD81Z	NSC	279-110	BD865	♦MULB	415-92	BD962	PHIN	277-99
BD662	CEN		BD747	THEF	388-80	BD81Z	RCAB	311-70				BD962	SMMLB	319-89
BD663	♦MULB	388-79	BD748	CEN	298-48	BD81Z	NSC	279-110	BD866	♦MULB	415-93	BD963	PHIN	277-99
BD664	♦PHIN	298-47	BD749	THEF	388-81	BD81Z	RCAB	311-70				BD963	SMMLB	319-90
BD665	♦SIEG	388-80	BD750	CEN	298-49	BD81Z	NSC	279-110	BD867	♦MULB	415-94	BD964	PHIN	277-99
			BD751	THEF	388-82	BD81Z	RCAB	311-70				BD964	SMMLB	319-91
BD666	♦SIEG													

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BDT29C	PHIN	288-107	BDT65B	PHIN	(cont.)	BDW22C	CEN	281-84	BDW83B	TII	398-109	BDX34	PHIN	414-69
BDT30	PHIN	265-75	BDT65C	PHIN	399-105	BDW23	CEN	417-23	BDW83C	TII	398-110	BDX34#	PHIN	414-69
BDT30A	PHIN	265-76	BDT91	PHIN	338-35	BDW23A	CEN	417-24	BDW83D	TII	399-1	BDX34A	PHIN	419-25
BDT30B	PHIN	265-77	BDT91#	PHIN	265-87	BDW23B	CEN	417-25	BDW84	TII	399-2	BDX34A#	PHIN	419-8
BDT30C	PHIN	265-78	BDT92	PHIN	282-98	BDW23C	CEN	417-26	BDW84A	TII	399-3	BDX34B	PHIN	419-26
BDT31	PHIN	288-108	BDT92#	PHIN	265-88	BDW24	CEN	417-27	BDW84B	TII	399-4	BDX34B#	PHIN	418-90
BDT31A	PHIN	288-109	BDT93	PHIN	338-36	BDW24A	CEN	417-28	BDW84C	TII	399-5	BDX34B#	PHIN	418-91
BDT31B	PHIN	289-1	BDT93#	PHIN	265-89	BDW24B	CEN	417-29	BDW84D	TII	399-6	BDX34B#	PHIN	419-27
BDT31C	PHIN	289-2	BDT94	PHIN	282-99	BDW24C	CEN	417-30	BDW91	PHIN	412-84	BDX34C	PHIN	418-91
BDT32	PHIN	265-79	BDT94#	PHIN	265-89	BDW24D	CEN	417-29	BDW92	PHIN	412-85	BDX34C#	PHIN	419-28
BDT32A	PHIN	265-80	BDT95	PHIN	282-99	BDW24E	CEN	417-30	BDW93	PHIN	420-8	BDX34D	PHIN	412-76
BDT32B	PHIN	265-81	BDT95#	PHIN	265-90	BDW25	CEN	337-69	BDW93A	PHIN	420-9	BDX34E	PHIN	419-28
BDT32C	PHIN	265-82	BDT96	PHIN	282-100	BDW25A	CEN	337-70	BDW93B	PHIN	420-10	BDX34F	PHIN	412-76
BDT41	PHIN	289-3	BDT96#	PHIN	265-91	BDW25B	CEN	337-71	BDW93C	PHIN	420-11	BDX35	PHIN	317-65
BDT41A	PHIN	289-4	BDV84	PHIN	386-55	BDW25C	CEN	337-72	BDW94	PHIN	420-12	BDX36	PHIN	317-66
BDT41B	PHIN	289-5	BDV84A	PHIN	282-100	BDW25D	CEN	282-79	BDW94A	PHIN	420-13	BDX37	PHIN	317-67
BDT41C	PHIN	289-6	BDV84B	PHIN	265-92	BDW25E	CEN	282-80	BDW94B	PHIN	420-14	BDX38	PHIN	317-67
BDT42	PHIN	265-83	BDV84C	PHIN	386-56	BDW25F	CEN	282-81	BDW94C	PHIN	420-15	BDX39	PHIN	341-77
BDT42A	PHIN	265-84	BDV84D	PHIN	413-18	BDW25G	CEN	282-82	BDX10	PHIN	335-48	BDX40	PHIN	341-78
BDT42B	PHIN	265-85	BDV84E	PHIN	413-19	BDW25H	CEN	282-82	BDX10C	PHIN	335-49	BDX41	PHIN	391-73
BDT42C	PHIN	265-86	BDV84F	PHIN	413-20	BDW25I	CEN	282-82	BDX11	PHIN	335-50	BDX42	PHIN	415-51
BDT60	PHIN	412-1	BDV84G	PHIN	413-21	BDW25J	CEN	399-106	BDX12	PHIN	331-103	BDX43	PHIN	391-74
BDT60A	PHIN	412-2	BDV84H	PHIN	413-22	BDW25K	CEN	399-107	BDX13	PHIN	335-51	BDX44	PHIN	391-75
BDT60B	PHIN	412-3	BDV84I	PHIN	413-23	BDW25L	CEN	399-108	BDX14	PHIN	335-52	BDX45	PHIN	391-85
BDT60C	PHIN	412-4	BDV84J	PHIN	413-24	BDW25M	CEN	399-109	BDX15	PHIN	335-53	BDX46	PHIN	391-85
BDT61	PHIN	412-5	BDV84K	PHIN	413-25	BDW25N	CEN	399-110	BDX16	PHIN	335-54	BDX47	PHIN	391-86
BDT61A	PHIN	412-6	BDV84L	PHIN	413-26	BDW25O	CEN	400-1	BDX17	PHIN	335-55	BDX48	PHIN	391-86
BDT61B	PHIN	412-7	BDV84M	PHIN	413-27	BDW25P	CEN	400-2	BDX18	PHIN	335-56	BDX49	PHIN	391-86
BDT61C	PHIN	412-8	BDV84N	PHIN	413-28	BDW25Q	CEN	400-3	BDX19	PHIN	335-57	BDX50	PHIN	391-86
BDT62	PHIN	420-86	BDV84O	PHIN	413-29	BDW25R	CEN	400-4	BDX20	PHIN	335-58	BDX51	PHIN	391-86
BDT62A	PHIN	420-87	BDV84P	PHIN	413-30	BDW25S	CEN	400-5	BDX21	PHIN	335-59	BDX52	PHIN	391-86
BDT62B	PHIN	420-88	BDV84Q	PHIN	413-31	BDW25T	CEN	400-6	BDX22	PHIN	335-60	BDX53	PHIN	391-86
BDT62C	PHIN	420-89	BDV84R	PHIN	413-32	BDW25U	CEN	400-7	BDX23	PHIN	335-61	BDX54	PHIN	391-86
BDT63	PHIN	420-90	BDV84S	PHIN	413-33	BDW25V	CEN	400-8	BDX24	PHIN	335-62	BDX55	PHIN	391-86
BDT63A	PHIN	420-91	BDV84T	PHIN	413-34	BDW25W	CEN	400-9	BDX25	PHIN	335-63	BDX56	PHIN	391-86
BDT63B	PHIN	420-92	BDV84U	PHIN	413-35	BDW25X	CEN	400-10	BDX26	PHIN	335-64	BDX57	PHIN	391-86
BDT63C	PHIN	420-93	BDV84V	PHIN	413-36	BDW25Y	CEN	400-11	BDX27	PHIN	335-65	BDX58	PHIN	391-86
BDT64	PHIN	399-98	BDV84W	PHIN	413-37	BDW25Z	CEN	400-12	BDX28	PHIN	335-66	BDX59	PHIN	391-86
BDT64A	PHIN	399-99	BDV84X	PHIN	413-38	BDW26	CEN	400-13	BDX29	PHIN	335-67	BDX60	PHIN	391-86
BDT64B	PHIN	399-100	BDV84Y	PHIN	413-39	BDW26A	CEN	400-14	BDX30	PHIN	335-68	BDX61	PHIN	391-86
BDT64C	PHIN	399-101	BDV84Z	PHIN	413-40	BDW26B	CEN	400-15	BDX31	PHIN	335-69	BDX62	PHIN	391-86
BDT65	PHIN	399-102	BDV85	PHIN	413-41	BDW26C	CEN	400-16	BDX32	PHIN	335-70	BDX63	PHIN	391-86
BDT65A	PHIN	399-103	BDV85A	PHIN	413-42	BDW26D	CEN	400-17	BDX33	PHIN	335-71	BDX64	PHIN	391-86
BDT65B	PHIN	399-104	BDV85B	PHIN	413-43	BDW26E	CEN	400-18	BDX34	PHIN	335-72	BDX65	PHIN	391-86







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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BF963	ALGG	243-59	BFR37	SGAI	193-18	BFS36	FERR	217-4	BFT54	SMLB	205-91
BF964	PHIN	238-70	BFR38	SGAI	151-18	BFS36A	FERR	217-5			205-92
	SIEG		THCS	THEF		BFS37	FERR	172-12	BFT55	SMLB	205-92
BF966	PHIN	238-71	BFR39	MEHK	228-47	BFS37A	FERR	172-13			206-44
	SIEG		MISI	THI	367-17	BFS38	FERR	217-9	BFT57	MEHK	206-44
BF980	PHIN	239-16	BFR39TO5	THI	228-48	BFS38A	FERR	217-10		SMLB	206-45
BF981	MULB	239-17		THI	367-18	BFS39	FERR	217-11	BFT58	MEHK	206-45
	PHIN		BFR40	MISI	228-49	BFS40	FERR	172-14		SMLB	206-46
	RTCF			THI	367-19	BFS40A	FERR	172-15	BFT59	MEHK	206-46
BF982	VALG	239-18	BFR40TO5	THI	228-50	BFS41	FERR	172-16		SMLB	177-35
	PHIN			THI	367-20	BFS42	FERR	223-92	BFT60	SMLB	177-36
	RTCF		BFR41	CEN	228-51	BFS43	FERR	223-93	BFT61	SMLB	177-36
BF989	SIEG	238-72		THI	367-21	BFS44	FERR	161-74	BFT62	SMLB	177-37
BF994	SIEG	238-73		THI	228-52	BFS45	FERR	161-75	BFT69	SMLB	163-78
BF995	SIEG	238-74	BFR41TO5	THI	367-22	BFS46	FERR	217-32		THI	163-79
BF996	SIEG	238-75		THI	226-93	BFS46A	FERR	214-57	BFT70	SMLB	163-80
BFN16	SIEG	289-41	BFR50	THI	367-13	BFS49	FERR	214-58		THI	163-80
BFN17	SIEG	265-108		THI	226-42	BFS59K	FERR	214-59	BFT71	SMLB	163-80
BFN18	SIEG	289-42	BFR51	THI	367-3	BFS59L	FERR	214-59		THI	289-52
BFN19	SIEG	265-109		THI	226-43	BFS59M	FERR	214-60	BFT72	THCS	289-52
BFN20	SIEG	230-79	BFR52	THI	367-4	BFS60	FERR	214-61		THEF	289-53
BFN21	SIEG	178-77		THI	216-61	BFS60K	FERR	214-62	BFT73	THCS	289-53
BFN22	SIEG	182-98	BFR54	PHIN	303-23	BFS60L	FERR	214-63		THEF	289-54
	THCS		BFR57	SMLB		BFS60M	FERR	214-64	BFT74	THCS	289-54
BFN22R	THCS	182-99		WAB		BFS61	FERR	214-65		THEF	190-78
BFN23	SIEG	150-71	BFR57	THIF	227-56	BFS61K	FERR	214-66	BFT75	SIEG	190-78
	THCS			MEHK	303-24	BFS61L	FERR	214-67		SMLB	177-58
	THCS		BFR58	THIF	227-57	BFS61M	FERR	214-68	BFT79	SMLB	177-58
BFN23R	THCS	150-41		WAB	303-25	BFS62	ALGG	189-61	BFT80	THI	177-59
BFP11	THI	289-43	BFR58	THIF	227-58	BFS62	MEHK	189-62		THI	177-60
BFP12	THI	289-44	BFR59	THIF	227-59	BFS89	WAB	303-26	BFT81	THI	177-60
BFP13	THI	289-45		SMLB	303-25	BFS89	MEHK	217-72	BFT95	ALGG	153-44
BFP14	THI	289-46	BFR59	THIF	227-58	BFS90	MEHK	176-104		SGAI	171-109
BFP22	SIEG	178-20	BFR60	THI	367-14	BFS91	MEHK	176-105	BFT96	SGAI	171-109
				THI	177-23	BFS92	WAB	368-13	BFT97	SGAI	183-23
BFP23	SIEG	230-80	BFR61	THI	367-5	BFS92	WAB	368-13	BFT98	SGAI	183-23
				THI	177-24	BFS92	NASG	270-70	BFT99	SGAI	183-23
BFP25	SIEG	221-16	BFR62	THI	367-6	BFS92	WAB	368-13	BFT100	SGAI	183-23
BFP26	SIEG	174-9		THI	304-1	BFS92	WAB	368-13	BFT101	SGAI	183-23
BFQ10	MULB	239-97	BFR63	PHIN	304-1	BFS92	NASG	270-70	BFT102	SGAI	183-23
	PHIN			VALG		BFS92	WAB	368-13	BFT103	SGAI	183-23
	VALG		BFR64	PHIN	304-2	BFS92	WAB	368-13	BFT104	SGAI	183-23
BFQ11	MULB	239-98		PHIN	308-33	BFS92	WAB	368-13	BFT105	SGAI	183-23
	PHIN		BFR65	RTCF	308-33	BFS92	NASG	270-71	BFT106	SGAI	183-23
	VALG			RTCF		BFS92	WAB	368-13	BFT107	SGAI	183-23
BFQ12	MULB	239-99	BFR77	RTCF	227-40	BFS93	MEHK	176-108	BFT108	SGAI	183-23
	PHIN			SGAI	227-40	BFS93	WAB	368-13	BFT109	SGAI	183-23
	RTCF		BFR78	MEHK	218-76	BFS93	WAB	368-13	BFT110	SGAI	183-23
BFQ13	MULB	239-100	BFR79	MEHK	227-41	BFS93	WAB	368-13	BFT111	SGAI	183-23
	PHIN		BFR78	MEHK	177-94	BFS93	WAB	368-13	BFT112	SGAI	183-23
	VALG			RTCF	367-23	BFS93	WAB	368-13	BFT113	SGAI	183-23
BFQ14	MULB	239-101	BFR79TO5	THI	177-95	BFS93	WAB	368-13	BFT114	SGAI	183-23
	PHIN			THI	367-24	BFS93	WAB	368-13	BFT115	SGAI	183-23
	RTCF		BFR80	MISI	177-96	BFS93	WAB	368-13	BFT116	SGAI	183-23
BFQ15	MULB	239-102		THI	367-25	BFS93	WAB	368-13	BFT117	SGAI	183-23
	PHIN		BFR80TO5	THI	177-97	BFS93	WAB	368-13	BFT118	SGAI	183-23
	VALG			THI	367-26	BFS93	WAB	368-13	BFT119	SGAI	183-23
BFQ16	MULB	239-103	BFR81	CEN	177-98	BFS93	WAB	368-13	BFT120	SGAI	183-23
	PHIN			THI	367-27	BFS93	WAB	368-13	BFT121	SGAI	183-23
	RTCF		BFR81TO5	MISI	177-99	BFS93	WAB	368-13	BFT122	SGAI	183-23
BFQ18A	MULB	231-24		THI	367-28	BFS93	WAB	368-13	BFT123	SGAI	183-23
	PHIN		BFR84	MULB	241-71	BFS93	WAB	368-13	BFT124	SGAI	183-23
	RTCF			RTCF		BFS93	WAB	368-13	BFT125	SGAI	183-23
BFQ35	THI	177-42		VALG		BFS93	WAB	368-13	BFT126	SGAI	183-23
BFQ36	THI	177-43	BFR86	THI	228-11	BFT19A	RCAB	270-75	BFT127	RCAB	270-75
BFQ37	THI	177-44	BFR86TO5	THI	228-12	BFT19B	RCAB	270-76	BFT128	RCAB	270-76
BFQ42	MULB	443-61	BFR87	THI	228-13	BFT19C	RCAB	270-77	BFT129	RCAB	270-77
	PHIN		BFR87TO5	THI	228-14	BFT27	FERR	217-6	BFT130	RCAB	270-77
BFQ43	MULB	443-62	BFR88	THI	228-15	BFT28	RCAB	270-78	BFT131	RCAB	270-78
	PHIN		BFR88TO5	THI	228-16	BFT28	RCAB	270-79	BFT132	RCAB	270-79
	VALG		BFR89	THEF	228-17	BFT28A	RCAB	270-80	BFT133	RCAB	270-80
BFR10	SGAI	229-36		THI	228-18	BFT28B	RCAB	270-81	BFT134	RCAB	270-81
	WAB	375-70	BFR89TO5	THI	228-19	BFT28C	RCAB	270-82	BFT135	RCAB	270-82
BFR10	MEHK	229-4		THI	302-22	BFT28D	RCAB	270-83	BFT136	RCAB	270-83
BFR11	SGAI	210-49	BFR97	THI	228-13	BFT28E	RCAB	270-84	BFT137	RCAB	270-84
	WAB	375-71	BFR98	THI	228-14	BFT28F	RCAB	270-85	BFT138	RCAB	270-85
BFR11	MEHK	210-17	BFR99	THI	228-15	BFT28G	RCAB	270-86	BFT139	RCAB	270-86
BFR16	SGAI	206-25	BFR99TO5	THI	228-16	BFT28H	RCAB	270-87	BFT140	RCAB	270-87
BFR17	SGAI	206-26		THI	228-17	BFT28I	RCAB	270-88	BFT141	RCAB	270-88
BFR18	SGAI	213-63	BFR99TO5	THI	228-18	BFT28J	RCAB	270-89	BFT142	RCAB	270-89
	WAB	375-70		THI	302-22	BFT28K	RCAB	270-90	BFT143	RCAB	270-90
BFR18	MEHK	213-20	BFR99TO5	THI	228-19	BFT28L	RCAB	270-91	BFT144	RCAB	270-91
BFR19	SGAI	227-78	BFR99TO5	THI	228-20	BFT28M	RCAB	270-92	BFT145	RCAB	270-92
	WAB	375-70	BFR99TO5	THI	228-21	BFT28N	RCAB	270-93	BFT146	RCAB	270-93
BFR19	MEHK	226-90	BFR99TO5	THI	228-22	BFT28O	RCAB	270-94	BFT147	RCAB	270-94
BFR20	SGAI	227-54	BFR99TO5	THI	228-23	BFT28P	RCAB	270-95	BFT148	RCAB	270-95
	WAB	375-70	BFR99TO5	THI	228-24	BFT28Q	RCAB	270-96	BFT149	RCAB	270-96
BFR20	MEHK	226-91	BFR99TO5	THI	228-25	BFT28R	RCAB	270-97	BFT150	RCAB	270-97
BFR21	SGAI	227-55	BFR99TO5	THI	228-26	BFT28S	RCAB	270-98	BFT151	RCAB	270-98
	WAB	375-70	BFR99TO5	THI	228-27	BFT28T	RCAB	270-99	BFT152	RCAB	270-99
BFR21	MEHK	226-92	BFR99TO5	THI	228-28	BFT28U	RCAB	270-100	BFT153	RCAB	270-100
BFR22	WAB	302-21	BFR99TO5	THI	228-29	BFT28V	RCAB	270-101	BFT154	RCAB	270-101
BFR22	MEHK	289-47	BFR99TO5	THI	228-30	BFT28W	RCAB	270-102	BFT155	RCAB	270-102
BFR23	SGAI	265-110	BFR99TO5	THI	228-31	BFT28X	RCAB	270-103	BFT156	RCAB	270-103
	WAB	376-26	BFR99TO5	THI	228-32	BFT28Y	RCAB	270-104	BFT157	RCAB	270-104
BFR23	MEHK	266-1	BFR99TO5	THI	228-33	BFT28Z	RCAB	270-105	BFT158	RCAB	270-105
BFR24	SGAI	271-22	BFR99TO5	THI	228-34	BFT28AA	RCAB	270-106	BFT159	RCAB	270-106
	WAB	376-26	BFR99TO5	THI	228-35	BFT28AB	RCAB	270-107	BFT160	RCAB	270-107
BFR24	MEHK	266-2	BFR99TO5	THI	228-36	BFT28AC	RCAB	270-108	BFT161	RCAB	270-108
BFR28	SIEG	189-30	BFR99TO5	THI	228-37	BFT28AD	RCAB	270-109	BFT162	RCAB	270-109
BFR29	MULB	238-76	BFR99TO5	THI	228-38	BFT28AE	RCAB	270-110	BFT163	RCAB	270-110
	PHIN		BFR99TO5	THI	228-39	BFT28AF	RCAB	270-111	BFT164	RCAB	270-111
	RTCF										

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TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS		
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BFW35	MEHK WAB	219-17	BFX66	†SGAI TIIF	219-32	BFX98	MEHK WAB (cont.)		BFY64	NASG SWT TIIF		BLW87	MULB RTCF	443-84			
BFW36	HSE	219-59	BFX67	†SGAI VALG	439-19	BFX99	NASG WAB	213-88	†SGAI	†SGAI TIIF	297-16	BLW95	†PHIN RTCF	312-53			
BFW37	HSE	219-53						433-35			228-105	BLW96	†PHIN RTCF	443-85			
BFW39	SGAI	433-26	BFX68	NASG VALG	223-75	BFY10	NASG WAB	195-8	BFY65	MEHK MEHK	223-68			289-57			
BFW39A	TIIF	433-27							BFY67A	†SGAI							
BFW40	SGAI	433-28	BFX68Z	WAB MEHK	223-70	BFY11	TIIF	195-7	BFY67C	TIIF	223-69	BLX10	SODI	308-48			
BFW43	TIIF	166-58	BFX69	NASG WAB	227-43	BFY12	HSE	223-89	BFY68Z	†PHIN	227-25	BLX12	†MULB	308-49			
†SGAI	MEHK		BFX69Z	MEHK NASC	226-98	BFY16S	†HSE	228-79	BFY70	†PHIN	302-24	BLX13	†MULB	327-41			
	TIIF		BFX69A	NASC WAB	227-47			359-98				BLX13C	†MULB	443-86			
BFW44	WAB	175-110				BFY18	HSE	197-103	BFY72	CEN CDIL	229-37			443-87			
†SGAI	MEHK		BFX70	†SGAI	213-83	BFY19	TIIF	383-3		†PHIN	376-54	BLX14	†MULB	330-13			
TIIF	SMLB		BFX71	TIIF	433-32			199-63				BLX15	†MULB	443-88			
BFW45	WAB	227-110	BFX72	†SGAI	213-84				BFY74	NASG TIIF	207-63	BLX17	†MULB	349-1			
SST	WAB		BFX73	TIIF	433-33	BFY20	WAB	433-36	BFY75	†MOTA	207-64	BLX18	†MULB	443-89			
BFW45Z	MEHK	227-42				BFY26	NASC	206-68		†SGAI							
BFW81	BELI	241-76	BFX73Z	TIIF	190-4	BFY33	TIIF	363-2	BFY76	MEHK NASC	205-96	BLX17	†MULB	311-86			
†NASC	†PHIN		BFX74Z	WAB MEHK	189-79			223-71				BLX18	†MULB	311-87			
†TSC	VALG		BFX74	NASC WAB	219-31	BFY33Z	HSE	225-102	BFY77	†MOTA	205-104	BLX34	†MULB	354-23			
BFW68	WAB	207-74	BFX74Z	TIIF	172-91	BFY34	MEHK	226-99	BFY78	†SGAI	205-96	BLX35	†MULB	354-24			
BFW68Z	MEHK	387-84	BFX74A	NASC WAB	177-104				BFY79	†MOTA		BLX36	†MULB	354-25			
BFW70	WAB	191-21				BFY34Z	TIIF	226-100	BFY80	†MOTA		BLX37	†MULB	289-58			
BFW70Z	MEHK	191-22	BFX78	†SGAI	430-6	BFY37	MEHK	197-70	BFY81	†MOTA		BLX38	†MULB	289-59			
BFW80	MEHK	219-18	BFX79	†SGAI	430-7	BFY39	TIIF	196-76	BFY82	†MOTA		BLX39A	†MULB	443-90			
BFW92A	WAB	185-12	BFX81	†SGAI	430-8				BFY83	†MOTA							
BFW96	MOTA	185-12				BFY39-1	IDI	196-77	BFY84	†MOTA		BLX40	†MULB	272-107			
BFX11	MULB	238-81	BFX84	†SGAI	226-46	BFY39-2	MISI	196-78	BFY85	†MOTA		BLX41	†MULB	272-108			
†SGAI	NASC					BFY39-3	TIIF	196-79	BFY86	†MOTA		BLX42	†MULB	273-93			
BFX12	TIIF	159-68				BFY39-4	†MISI	196-79	BFY87	†MOTA		BLX43	†MULB	273-94			
†TIIF	†NASC		BFX84Z	†SGAI	226-47	BFY39-5	†MISI	196-80	BFY88	†MOTA		BLX44	†MULB	283-98			
BFX13	CEN	159-70				BFY39-6	†MISI	196-80	BFY89	†MOTA		BLX45	†MULB	283-99			
†NSC	†PHIN					BFY39-7	†MISI	196-80	BFY90	†MOTA		BLX46	†MULB	283-100			
BFX15	†TIIF	218-77				BFY39-8	†MISI	196-81	BFY91	†MOTA		BLX47	†MULB	344-8			
†NSC	†PHIN		BFX85	†SGAI	226-48	BFY39-9	†MISI	196-81	BFY92	†MOTA		BLX48	†MULB	344-9			
BFX17	†TIIF	433-30				BFY39-10	†MISI	196-82	BFY93	†MOTA		BLX49	†MULB	289-60			
†NSC	†PHIN					BFY39-11	†MISI	196-82	BFY94	†MOTA		BLX50	†MULB	359-99			
BFX18	†TIIF	229-5				BFY39-12	†MISI	196-82	BFY95	†MOTA		BLY11S	†MULB	311-88			
†NSC	†PHIN		BFX85Z	†SGAI	226-49	BFY39-13	†MISI	196-82	BFY96	†MOTA		BLY12	†MULB	335-62			
BFX19	†TIIF	189-31				BFY39-14	†MISI	196-82	BFY97	†MOTA		BLY13	†MULB	304-3			
†NSC	†PHIN					BFY39-15	†MISI	196-82	BFY98	†MOTA		BLY14	†MULB	304-4			
BFX20	†TIIF	189-32				BFY39-16	†MISI	196-82	BFY99	†MOTA		BLY15	†MULB	304-4			
†NSC	†PHIN					BFY39-17	†MISI	196-82	BFY100	†MOTA		BLY16	†MULB	304-4			
BFX21	†TIIF	189-33				BFY39-18	†MISI	196-82	BFY101	†MOTA		BLY17	†MULB	304-4			
†NSC	†PHIN		BFX86Z	†SGAI	226-50	BFY39-19	†MISI	196-82	BFY102	†MOTA		BLY18	†MULB	304-4			
BFX29	†TIIF	172-101				BFY39-20	†MISI	196-82	BFY103	†MOTA		BLY19	†MULB	304-4			
†NSC	†PHIN					BFY39-21	†MISI	196-82	BFY104	†MOTA		BLY20	†MULB	304-4			
BFX30	†TIIF	375-74				BFY39-22	†MISI	196-82	BFY105	†MOTA		BLY21	†MULB	304-4			
†NSC	†PHIN		BFX86	†SGAI	226-51	BFY39-23	†MISI	196-82	BFY106	†MOTA		BLY22	†MULB	304-4			
†NSC	†PHIN					BFY39-24	†MISI	196-82	BFY107	†MOTA		BLY23	†MULB	304-4			
†NSC	†PHIN					BFY39-25	†MISI	196-82	BFY108	†MOTA		BLY24	†MULB	304-4			
†NSC	†PHIN		BFX86Z	†SGAI	226-51	BFY39-26	†MISI	196-82	BFY109	†MOTA		BLY25	†MULB	304-4			
†NSC	†PHIN					BFY39-27	†MISI	196-82	BFY110	†MOTA		BLY26	†MULB	304-4			
†NSC	†PHIN					BFY39-28	†MISI	196-82	BFY111	†MOTA		BLY27	†MULB	304-4			
†NSC	†PHIN		BFX87	†SGAI	226-51	BFY39-29	†MISI	196-82	BFY112	†MOTA		BLY28	†MULB	304-4			
†NSC	†PHIN					BFY39-30	†MISI	196-82	BFY113	†MOTA		BLY29	†MULB	304-4			
†NSC	†PHIN					BFY39-31	†MISI	196-82	BFY114	†MOTA		BLY30	†MULB	304-4			
†NSC	†PHIN					BFY39-32	†MISI	196-82	BFY115	†MOTA		BLY31	†MULB	304-4			
†NSC	†PHIN					BFY39-33	†MISI	196-82	BFY116	†MOTA		BLY32	†MULB	304-4			
†NSC	†PHIN					BFY39-34	†MISI	196-82	BFY117	†MOTA		BLY33	†MULB	304-4			
†NSC	†PHIN					BFY39-35	†MISI	196-82	BFY118	†MOTA		BLY34	†MULB	304-4			
†NSC	†PHIN					BFY39-36	†MISI	196-82	BFY119	†MOTA		BLY35	†MULB	304-4			
†NSC	†PHIN					BFY39-37	†MISI	196-82	BFY120	†MOTA		BLY36	†MULB	304-4			
†NSC	†PHIN					BFY39-38	†MISI	196-82	BFY121	†MOTA		BLY37	†MULB	304-4			
†NSC	†PHIN					BFY39-39	†MISI	196-82	BFY122	†MOTA		BLY38	†MULB	304-4			
†NSC	†PHIN					BFY39-40	†MISI	196-82	BFY123	†MOTA		BLY39	†MULB	304-4			
†NSC	†PHIN					BFY39-41	†MISI	196-82	BFY124	†MOTA		BLY40	†MULB	304-4			
†NSC	†PHIN					BFY39-42	†MISI	196-82	BFY125	†MOTA		BLY41	†MULB	304-4			
†NSC	†PHIN					BFY39-43	†MISI	196-82	BFY126	†MOTA		BLY42	†MULB	304-4			
†NSC	†PHIN					BFY39-44	†MISI	196-82	BFY127	†MOTA		BLY43	†MULB	304-4			
†NSC	†PHIN					BFY39-45	†MISI	196-82	BFY128	†MOTA		BLY44	†MULB	304-4			
†NSC	†PHIN					BFY39-46	†MISI	196-82	BFY129	†MOTA		BLY45	†MULB	304-4			
†NSC	†PHIN					BFY39-47	†MISI	196-82	BFY130	†MOTA		BLY46	†MULB	304-4			
†NSC	†PHIN					BFY39-48	†MISI	196-82	BFY131	†MOTA		BLY47	†MULB	304-4			
†NSC	†PHIN					BFY39-49	†MISI	196-82	BFY132	†MOTA		BLY48	†MULB	304-4			
†NSC	†PHIN					BFY39-50	†MISI	196-82	BFY133	†MOTA		BLY49	†MULB	304-4			
†NSC	†PHIN					BFY39-51	†MISI	196-82	BFY134	†MOTA		BLY50	†MULB	304-4			
†NSC	†PHIN					BFY39-52	†MISI	196-82	BFY135	†MOTA		BLY51	†MULB	304-4			
†NSC	†PHIN					BFY39-53	†MISI	196-82	BFY136	†MOTA		BLY52	†MULB	304-4			
†NSC	†PHIN																

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BR100B	PPC	308-35	BSR43			BSS67R	FERB	188-107	BSV65R	SIEG	183-78	BSW67A	RTCF	231-39
	SOD	440-87	(cont.)					369-27			380-4	SGAI	SMLB	395-89
BR100C	SOD	324-107	PHIN			BSS67R#	FERB	188-108	BSV65RA	SIEG	183-77		VALG	
		440-68						369-28			380-5	BSW67A	ELMA	228-20
BR100D	PPC	320-17	BSR50	RTCF	391-71	BSS68	MULB	156-59	BSV68	VALG	154-54	MULB	PHIN	395-99
	SOD	440-69		VALG	414-50		RTCF			WAB		RTCF	SMLB	
BR100E	SOD	327-44	BSR50Z	MULB	413-85	BSS68#	PHIN		BSV68Z	MEHK	154-42	BSW68Z	RTCF	231-40
		440-70		PHIN		BSS68R	SIEG		BSV69	ALGG	225-29	SGAI	SMLB	395-90
BR100F	SOD	324-108	BSR51	RTCF	391-72			152-72			388-9		VALG	
		440-71		VALG	414-51	BSS68R#	FERB	368-57	BSV77	NASG	229-47	BSW68A	MULB	228-21
BR101A	SOD	308-36	BSR51Z	MULB	413-86	BSS68R	FERB	152-73		SGAI	369-51	PHIN	RTCF	395-100
		440-72		PHIN				368-58	BSV78	MULB	243-78		SMLB	
BR101B	MEHK	308-37	BSR52	MULB	413-87	BSS68R#	FERB	368-60	PHIN	TSC	360-70	BSX21	CEN	197-14
	SOD	440-73		RTCF		BSS70	FERB	152-104		VALG		IDI	MULB	
BR101C	PPC	324-109	BSR56	APX	238-82	BSS70#	FERB	368-99	BSV79	MULB	243-79		NASG	NSC
		440-74		MULB		BSS70R	FERB	152-105	PHIN	TSC	361-1		PHIN	RTCF
BR101D	MEHK	320-18		PHIN				368-100		VALG			TIIF	VALG
	SOD	440-75		THCS		BSS70R#	FERB	368-101	BSV80	MULB	243-80		WAB	
BR101E	PPC	327-45	BSR57	APX	238-83	BSS71	FERB	368-102	PHIN	TSC	362-12	BSX22	TIIF	227-82
		440-76		MULB		BSS72	SGAI	214-90		VALG		BSX24	MISI	187-71
BR101F	SOD	324-110	BSR61	RTCF	402-26	BSS74	SGAI	170-89	BSV81	MULB	238-85	THCS	THEF	
		440-77		VALG		BSS75	SGAI	170-90	PHIN	RTCF			TIIF	
BR200A	SOD	327-46	BSR62	PHIN	413-84	BSS79	SGAI	170-90		VALG		BSX25	TIIF	205-93
		440-78		PHIN			SIEG	203-88	BSV82	NASG	266-7	BSX26	SGAI	207-101
BR200B	SOD	325-1	BSR60Z	VALG	414-52	BSS79B	SIEG	366-12		SMLB	372-103		TIIF	363-57
		440-79		MULB		BSS79C	SIEG	203-90	BSV84	NASG	226-106	BSX30	MEHK	229-31
BR201A	SOD	327-47	BSR60Z	PHIN	413-85	BSS80B	SIEG	162-66	BSV89	SGAI	207-78	BSX32	NASG	371-37
		440-80		PHIN		BSS80C	SIEG	370-78		SGAI	362-103		HSE	229-50
BR201B	SOD	325-2	BSR61	RTCF	402-26	BSS80C	SIEG	162-67	BSV90	SGAI	207-77		SGAI	375-88
		440-81		VALG		BSS81	SIEG	162-68		SGAI	362-104	BSX32Z	MOTA	229-51
BR300A	SOD	330-14	BSR61Z	MULB	413-86	BSS81B	SIEG	203-91	BSV91	SGAI	207-78		SGAI	375-69
		440-82		PHIN		BSS81C	SIEG	203-92		SGAI	362-105	BSX33	SGAI	213-84
BR300B	SOD	330-15	BSR62	PHIN	413-89	BSS82	SIEG	203-93	BSV92	SGAI	207-96		TIIF	384-25
		440-83		PHIN			SIEG	162-69		SGAI	362-107	BSX36	SGAI	164-17
BR301A	SOD	330-16		PHIN		BSS82B	SIEG	370-79	BSV95	NASG	229-48		TIIF	370-85
		440-84		PHIN		BSS82C	SIEG	162-70		SGAI	369-52	BSX36Z	MOTA	183-81
BR301B	SOD	330-17		PHIN		BSS87	SIEG	162-71	BSW17	SGAI	425-71		TIIF	369-105
		440-85		PHIN		BSS89	SIEG	248-10	BSW19	TIIF	190-82	BSX38	MEHK	184-57
BR400A	SOD	330-18	BSS15	SMLB	307-7	BSS89	SIEG	248-10		TIIF	382-69		WAB	
		440-86		SMLB	377-20	BSS91	SIEG	248-46	BSW21	MISI	159-98	BSX38A	MEHK	197-72
BR400B	SOD	330-19	BSS16	NASG	307-8	BSS93	SIEG	248-107	THCS	THEF			WAB	382-67
		440-87		NASG	377-21	BSS95	SIEG	249-26		TIIF		BSX38B	MEHK	197-73
BR401A	SOD	330-20	BSS17	NASG	272-28	BSS97	SIEG	249-28	BSW21A	MISI	159-99		WAB	382-68
		440-88		SMLB		BSS97	SIEG	249-28	THCS	THEF		BSX39	SGAI	207-107
BR401B	SOD	330-21	BSS18	NASG	272-29	BSV15	ALGG	267-32		THEF			SGAI	363-58
		440-89	BSS26	SGAI	207-75		MISI	363-19	BSW22	MULB	159-100	BSX40	TIIF	177-85
BRT60	SMLB	289-65	BSS33	SMLB	218-51		PHIN		THCS	THEF		BSX41	WAB	177-105
BRY56	TRW	436-85	BSS36	SMLB	412-72		PHIN		THCS	TIIF		BSX44	PHIN	200-1
	PHIN		BSS38	MEHK	195-8		PHIN		THCS	TIIF			TIIF	
BRY61	APX	436-86	BSS38Z	PHIN		BSV15Z	VALG		BSW23	TIIF	176-20	BSX45	CEN	294-4
	MULB		BSS42	MEHK	195-9	BSV15-6	PHIN			TIIF	370-80		CRI	MEHK
	RTCF		BSS44	VALG	302-25		PHIN		BSW24	TIIF	167-108		MISI	MULB
BS107	ITTTG	247-20		VALG	369-104	BSV15-10	PHIN			TIIF	370-81		PHIN	RTCF
BS170	ITTTG	248-8		VALG	377-24	BSV15-10	PHIN		BSW25	TIIF	164-71		SGAI	SIEG
BS250	ITTTG	234-20		VALG	377-24	BSV15-16	PHIN			TIIF	365-44		SMLB	THCS
BSR12	APX	153-37		VALG	377-24	BSV15-18	PHIN		BSW26	TIIF	214-92		THEF	TIIF
	MULB			VALG	377-24	BSV16	PHIN		BSW27	TIIF	370-82	BSX45Z	VALG	
	RTCF			VALG	377-24		PHIN			TIIF	228-69		MOTA	294-5
BSR12R	APX	153-38	BSS45	ALGG	229-88	BSV16	PHIN		BSW28	TIIF	370-83	BSX45-6	ALGG	385-57
	MULB			ALGG	385-90		PHIN			TIIF	228-70		CEN	302-27
BSR13	PHIN	188-42	BSS46	ALGG	178-32		PHIN		BSW29	TIIF	373-93		CDIL	363-22
	RTCF			ALGG	385-91		PHIN			TIIF	302-26		IDI	MISI
BSR13#	MULB	200-99	BSS47	FERB	217-7		PHIN			TIIF	370-84		NSC	PHIN
			BSS50	MULB	391-76		PHIN		BSW39-6	ALGG	225-4	BSX45-10	VALG	
BSR13R	PHIN	188-43		RTCF	414-72		PHIN			ALGG	372-79		ALGG	302-28
	RTCF		BSS51	MULB	391-77	BSV16Z	MEHK	266-5	BSW39-10	ALGG	225-5		CDIL	363-23
BSR13R#	APX	231-52		RTCF	414-73	BSV16-6	MISI	267-37		ALGG	372-80		IDI	MISI
BSR14	MULB	201-16	BSS52	VALG	391-78		PHIN		BSW39-16	ALGG	225-8		NSC	PHIN
	PHIN			VALG	414-74	BSV16-10	PHIN			ALGG	372-81		SGAI	SIEG
	THCS		BSS56	FERB	217-8	BSV16-10	PHIN		BSW40	MEHK	175-108		VALG	
BSR14R	MULB	190-101	BSS60	FERB	217-8	BSV16-16	PHIN		BSW40-6	ALGG	372-82	BSX45-16	ALGG	302-29
	PHIN			FERB	391-87		PHIN			ALGG	176-99		CEN	363-24
BSR15	MULB	180-76	BSS61	MULB	391-88	BSV16-18	PHIN		BSW40-10	ALGG	372-83		IDI	MISI
	PHIN			RTCF	414-79		PHIN			ALGG	176-100		NSC	PHIN
	THCS		BSS62	VALG	391-88	BSV17	MULB	267-40	BSW40-16	ALGG	372-84		SGAI	SIEG
BSR15#	APX	180-77		VALG	414-79		PHIN			ALGG	176-101	BSX46	VALG	
BSR15R	MULB	180-78	BSS63	MULB	402-27	BSV17Z	WAB	267-37	BSW40-25	ALGG	372-85		CRI	294-6
	PHIN			RTCF	414-80		MEHK	266-6		ALGG	178-102		MEHK	
BSR15R#	APX	180-79	BSS63Z	PHIN	391-77	BSV17-6	PHIN		BSW41	PHIN	203-94		MISI	PHIN
BSR16	MULB	180-80		VALG	414-80		PHIN			TIIF	374-82		RTCF	SGAI
	PHIN		BSS63R	APX	151-85	BSV17-6	PHIN		BSW41A	PHIN	230-96		SIEG	SMLB
BSR16R	MULB	180-81		VALG	151-85	BSV17-10	SIEG	267-42		PHIN	360-63		THCS	THEF
	PHIN		BSS63RZ	FERB	156-31		PHIN		BSW42#	MISI	196-83	BSX46Z	VALG	
BSR16R#	APX	152-71		FERB	151-97	BSV28	FERB	195-34		MISI	196-84		MOTA	294-7
BSR17	MULB	370-77	BSS64	PHIN	186-30	BSV29	FERB	195-35	BSW42A#	MISI	196-84		CEN	385-58
	PHIN			PHIN		BSV35	FERB	195-35	BSW42B	MISI	196-85	BSX46-6	ALGG	302-30
BSR17R	MULB	204-63	BSS64Z	PHIN	186-30		PHIN		BSW43#	MEHK	196-86		CEN	363-25
	RTCF			PHIN		BSV35A	FERB	217-20		MISI	196-86		PHIN	
BSR30Z	APX	178-72	BSS64R	PHIN	186-30		PHIN		BSW43A	MEHK	199-18		NSC	PHIN
BSR31Z	APX	178-73		PHIN			PHIN							

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BSX47-8 (cont.)	MISI PHIN	363-28	BSY18 (cont.)	NASG *SIEG	363-106	BSY77	HSE RTN	195-85	BT5109 RTN	215-9	BU206	NASG PHIN	*ALGG	327-80
	VALG			TIIF			TIIF		BU100A	SGAI SMLB		SMLB	THCS	358-76
BSX47-10	CEN	302-34	BSY19	NASG *MOTA	201-75	BSY78	HSE THCS	197-20	BU102	HSE NASG	354-26	BU207	*ALGG	333-15
	PHIN	363-29		TIIF			TIIF			SMLB			NASG	358-77
BSX48	CEN	293-73	BSY21	HSE	207-44	BSY79	WAB	193-33	BU103A	HSE SMLB	315-90	BU207	*MOTA	333-16
	NSC	375-107		TIIF			MEHK		BU104	HSE	330-22	BU207A	*SMLB	333-17
	MEHK		BSY21	*MOTA	201-76	BSY80	NASG	193-76		SMLB			*THCS	358-77
	SIEG		BSY24	NASG	219-32		TIIF							
BSX48	*MOTA	294-88	BSY24S	*HSE	228-80	BSY81	MEHK	230-26	BU104	ECCA	330-23	BU208	SMLB	359-26
		375-106					TIIF		BU104D	ECCA	289-67			333-18
BSX49	*SIEG	293-74	BSY25	HSE	219-64	BSY82	MEHK	230-27		THCS	359-52			358-78
	SMLB	374-83	BSY26	NASG	197-75		THCS							
BSX49	*MOTA	294-89	BSY27	MEHK	362-24	BSY83	MISI	230-28	BU104DP	THCS	289-68	BU208	DIT	358-78
		374-83		HSE	197-75		THCS			THEF			NASG	
BSX51	MISI	199-19	BSY28	NASG	366-82	BSY84	MEHK	230-29	BU104P	THEF	289-69		*SIEG	358-78
	THCS	373-31	BSY29	HSE	366-83	BSY85	TIIF	230-30	BU105	THEF			SST	
			BSY28	SGAI	199-43	BSY86	MEHK	230-31					THEF	
BSX51A	MISI	199-20	BSY34	*WAB	361-80	BSY87	TIIF	227-88	BU105-02	KPDI	327-48	BU208	ECCA	333-19
	THCS	373-32	BSY38	HSE	229-49	BSY88	MEHK	228-55	BU106	SMLB		BU208A	NECJ	333-20
				NASG	367-101	BSY89	TIIF	228-89		TIIF			TIIF	
BSX51B	MISI	196-88	BSY40	NSC	361-101	BSY90	NASG	227-90	BU107	SMLB	327-49	BU208	KPDI	333-21
	THCS	373-32	BSY41	HSE	199-40	BSY91	MEHK	226-57	BU108	RCAB	323-53	BU208A	*APX	333-22
BSX52	MISI	199-21	BSY44	*WAB	159-69	BSY92	TIIF	226-58		SMLB			*SIEG	359-27
	THCS	373-33	BSY45	MEHK	365-5	BSY93	THCS	205-94	BU109	SMLB	323-54		THCS	
BSX52A	MISI	199-22	BSY46	NASG	226-56	BSY95	CEN	183-29	BU109D	SMLB	323-54	BU208B	PHIN	289-77
	THCS	373-34	BSY51	HSE	227-83	BSY95A	*WAB	197-77	BU109DP	SMLB	333-14		SMLB	
			BSY51	NSC	361-102	*FERB	IDI		BU109P	THCS	289-72		PHIN	
BSX52B	MISI	196-89	BSY52	HSE	226-55	BT708	RTN	215-107	BU111	THEF	325-3	BU208B	SMLB	289-78
	THCS	373-34	BSY53	NSC	376-23	BT708T	RTN	215-108	BU112	TIIF	325-3	BU208B	VALG	359-28
BSX53	MISI	183-27	BSY54	IDI	227-83	BT918	RTN	216-62	BU113	TIIF	354-27	BU209	*ALGG	333-23
	THCS	373-94	BSY55	NSC	227-85	BT918T	RTN	216-63	BU114	SST	327-49		SMLB	359-29
BSX54	TIIF	183-28	BSY56	HSE	227-85	BT929	RTN	213-21					THCS	
		373-95	BSY57	NSC	227-85	BT929T	RTN	213-22	BU109D	THEF	289-70	BU209	SST	333-24
BSX55	TIIF	183-29	BSY58	MEHK	227-85	BT930	RTN	213-23	BU109DP	THEF	359-53	BU209	THEF	333-25
		373-95	BSY59	NSC	227-85	BT930T	RTN	213-24	BU110	ECCA	330-24	BU209A	PHIN	333-25
BSX55A	MISI	199-21	BSY60	HSE	227-85	BT2221	RTN	215-48	BU111	SMLB	266-8		VALG	359-30
	THCS	373-33	BSY61	MEHK	227-85	BT2221A	RTN	215-109	BU112	THCS	289-71	BU226	ALGG	327-61
BSX55B	MISI	199-22	BSY62	NASG	227-85	BT2221AT	RTN	215-110	BU113	*THCS	289-72	BU322	SMLB	412-36
	THCS	373-34	BSY63	HSE	227-85	BT2221T	RTN	215-49	BU114	THEF	289-72	BU322A	LUCB	412-37
BSX56	MISI	199-23	BSY64	NSC	227-85	BT2222	RTN	215-50	BU115	SMLB	325-5	BU323	LUCB	412-38
	THCS	373-34	BSY65	IDI	227-85	BT2222A	RTN	216-1	BU116	SMLB	330-25	BU323A	ECCA	423-24
BSX57	MISI	199-24	BSY66	MEHK	227-85	BT2222AT	RTN	216-2	BU117	NASG	330-26	BU324	LUCB	412-39
	THCS	373-34	BSY67	NSC	227-85	BT2222T	RTN	216-3	BU118	WAB	335-63	BU325	SMLB	317-78
BSX58	MISI	199-25	BSY68	HSE	227-85	BT2222AT	RTN	216-4	BU119	NASG	335-63	BU326	CEN	387-99
	THCS	373-34	BSY69	NSC	227-85	BT2222T	RTN	216-5	BU120	RCAB	335-63	BU326A	*SGAI	333-2
BSX59	CRI	229-52	BSY70	MEHK	227-85	BT2222AT	RTN	216-6	BU121	SMLB	327-50	BU326B	RCAB	359-19
	THCS	369-56	BSY71	NSC	227-85	BT2222T	RTN	216-7	BU122	TIIF	359-17	BU326C	PHIN	359-29
BSX60	*VALG	229-53	BSY72	HSE	227-85	BT2222AT	RTN	216-8	BU123	THEF	327-51	BU326D	SMLB	359-29
	*FERB	371-70	BSY73	NSC	227-85	BT2222T	RTN	216-9	BU124	THEF	327-51	BU326E	THCS	
BSX61	*VALG	229-54	BSY74	MEHK	227-85	BT2222AT	RTN	216-10	BU125	TIIF	327-51	BU326F	VALG	332-56
	*FERB	374-90	BSY75	NSC	227-85	BT2222T	RTN	216-11	BU126	THEF	327-51	BU326G	SGAI	332-57
BSX62	*VALG	302-35	BSY76	HSE	227-85	BT2222AT	RTN	216-12	BU127	THEF	327-51	BU326H	THCS	392-53
	*SIEG	302-36	BSY77	NSC	227-85	BT2222T	RTN	216-13	BU128	THEF	327-51	BU326I	THCS	
BSX62-6	SIEG	302-36	BSY78	MEHK	227-85	BT2222AT	RTN	216-14	BU129	THEF	327-51	BU326J	THCS	
BSX62-10	VALG	387-40	BSY79	NSC	227-85	BT2222T	RTN	216-15	BU130	THEF	327-51	BU326K	THCS	
BSX62-16	SIEG	229-98	BSY80	HSE	227-85	BT2222AT	RTN	216-16	BU131	THEF	327-51	BU326L	THCS	
	VALG	387-41	BSY81	NSC	227-85	BT2222T	RTN	216-17	BU132	THEF	327-51	BU326M	THCS	
BSX63	*SIEG	302-37	BSY82	MEHK	227-85	BT2222AT	RTN	216-18	BU133	THEF	327-51	BU326N	THCS	
	*VALG	388-39	BSY83	NSC	227-85	BT2222T	RTN	216-19	BU134	THEF	327-51	BU326O	THCS	
BSX63-6	SIEG	302-38	BSY84	HSE	227-85	BT2222AT	RTN	216-20	BU135	THEF	327-51	BU326P	THCS	
		388-40	BSY85	NSC	227-85	BT2222T	RTN	216-21	BU136	THEF	327-51	BU326Q	THCS	
BSX63-10	SIEG	229-100	BSY86	MEHK	227-85	BT2222AT	RTN	216-22	BU137	THEF	327-51	BU326R	THCS	
	VALG	387-42	BSY87	NSC	227-85	BT2222T	RTN	216-23	BU138	THEF	327-51	BU326S	THCS	
BSX63-16	VALG	229-101	BSY88	HSE	227-85	BT2222AT	RTN	216-24	BU139	THEF	327-51	BU326T	THCS	
		387-43	BSY89	NSC	227-85	BT2222T	RTN	216-25	BU140	THEF	327-51	BU326U	THCS	
BSX64	SMLB	302-39	BSY90	MEHK	227-85	BT2222AT	RTN	216-26	BU141	THEF	327-51	BU326V	THCS	
	*VALG		BSY91	NSC	227-85	BT2222T	RTN	216-27	BU142	THEF	327-51	BU326W	THCS	
BSX64-10	VALG	229-102	BSY92	HSE	227-85	BT2222AT	RTN	216-28	BU143	THEF	327-51	BU326X	THCS	
		387-44	BSY93	NSC	227-85	BT2222T	RTN	216-29	BU144	THEF	327-51	BU326Y	THCS	
BSX72	HSE	223-76	BSY94	MEHK	227-85	BT2222AT	RTN	216-30	BU145	THEF	327-51	BU326Z	THCS	
	TIIF	365-88	BSY95	NSC	227-85	BT2222T	RTN	216-31	BU146	THEF	327-51	BU327	THCS	
BSX75	TIIF	210-91	BSY96	HSE	227-85	BT2222AT	RTN	216-32	BU147	THEF	327-51	BU328	THCS	
		365-89	BSY97	NSC	227-85	BT2222T	RTN	216-33	BU148	THEF	327-51	BU329	THCS	
BSX76	NASG	198-57	BSY98	MEHK	227-85	BT2222AT	RTN	216-34	BU149	THEF	327-51	BU330	THCS	
	TIIF	359-103	BSY99	NSC	227-85	BT2222T	RTN	216-35	BU150	THEF	327-51	BU331	THCS	
BSX77	NASG	198-58	BSY00	HSE	227-85	BT2222AT	RTN	216-36	BU151	THEF	327-51	BU332	THCS	
	TIIF	363-42	BSY01	NSC	227-85	BT2222T	RTN	216-37	BU152	THEF	327-51	BU333	THCS	
BSX78	NASG	198-71	BSY02	MEHK	227-85	BT2222AT	RTN	216-38	BU153	THEF	327-51	BU334	THCS	
	TIIF	363-45	BSY03	NSC	227-85	BT2222T	RTN	216-39	BU154	THEF	327-51	BU335	THCS	
BSX79	TIIF	206-69	BSY04	HSE	227-85	BT2222AT	RTN	216-40	BU155	THEF	327-51	BU336	THCS	
		373-96	BSY05	NSC	227-85	BT2222T	RTN	216-41	BU156	THEF	327-51	BU337	THCS	
BSX87	TIIF	207-65	BSY06	MEHK	227-85	BT2222AT	RTN	216-42	BU157	THEF	327-51	BU338	THCS	
		371-56	BSY07	NSC										



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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BU526	ALGG	331-104	BUV20	SODI		BUW84A	RCA	327-62	BUX22	EET	350-110	BUX48AZ	◆MULT	280-21
RCAB	SMLB		(cont.)	◆THEF		◆RCAB	SMLB	388-88	INR	SGAI	403-92	PHIN	RTCF	400-42
BU606	◆SGAI	331-44	BUV21	THCS	350-106	BUW84B	RCA	327-63	SMLB	SODI		BUX49	SMLB	307-9
BU608D	◆SGAI	331-45	SMLB	SODI	402-110	◆RCAB	SMLB	388-89	THCS	◆THEF		THCS	THEF	398-83
BU607	CEN	331-46	THCS	◆THEF		BUW84C	RCA	327-64	BUX22Z	SGAI	403-14	BUX50	SMLB	307-10
◆SGAI	SMLB		BUV22	EET	350-107	◆RCAB	SMLB	388-90	BUX23	EET	351-1	THCS	◆THEF	398-84
BU607D	◆SGAI	331-47	SMLB	SODI	403-13	BUW66	◆SGAI	398-59	SMLB	◆SODI	404-89	BUX51	SMLB	307-11
BU608	CEN	331-48	THCS	◆THEF		BUW67	◆SGAI	398-60	◆THCS	◆THEF		THCS	THEF	398-85
◆SGAI	SMLB		BUV23	EET	359-33	BUW70	◆SIEG	418-1	BUX24	EET	351-2	BUX52	SMLB	307-12
BU608D	◆SGAI	331-49	INR	SMLB		BUW71	◆SIEG	290-9	◆THCS	SODI	404-90	THCS	THEF	401-44
BU626A	◆SIEG	289-82	THCS	THEF		BUW72	◆SIEG	290-10	SMLB	◆THEF		BUX53	SMLB	307-13
SMLB			BUV24	EET	289-102	BUW73	◆SIEG	290-11	BUX25	EET	351-3	THCS	THEF	401-45
BU800	THCS	289-83	◆INR	SMLB	359-34	BUW74	◆SIEG	290-11	SMLB	◆THCS	404-91	BUX54	SMLB	307-14
◆THEF	SGAI	358-24	THCS	THEF		BUW75	◆SIEG	290-11	BUX28	◆THEF		THCS	◆THEF	401-46
BU801	◆THEF	398-57	BUV25	EET	359-35	BUW76	◆SIEG	290-11	BUX29	◆SIEG	418-68	BUX55	SMLB	307-15
BU806	RTCF	416-55	INR	SMLB		BUW77	◆SIEG	339-34	BUX30	SMLB	418-67	BUX59	SMLB	327-65
◆SGAI	SMLB	417-61	THCS	THEF		BUW78	SMLB	339-35	BUX31	◆ALGG	358-32	BUX60	SMLB	327-66
BU807	RTCF	417-62	BUV26	◆THCS	289-103	BUW79	SODI	339-35	BUX30AVA	◆ALGG	412-66	BUX61	SMLB	327-67
◆SGAI	SMLB		THEF	THEF	396-20	BUW80	SMLB	339-36	BUX30AVB	◆ALGG	419-84	THCS	◆THEF	401-47
BU810(A)	SGAI	396-17	BUV27	THCS	289-104	BUW81	SMLB	339-36	BUX30AVC	◆ALGG	419-85	BUX62	SMLB	327-68
BU826	◆PHIN	419-94	BUV28	◆THEF	398-58	BUW82	SODI	339-37	BUX31	RCA	344-12	BUX66	◆RCA	276-65
RTCF	VALG	412-9	BUV37	◆THCS	289-105	BUW83	SODI	339-38	BUX31A	◆RCAB	344-13	◆RCAB	◆RCA	396-103
BU910	◆SGAI	412-10	THCS	THEF	412-43	BUW84	◆SODI	358-30	BUX31B	RCA	344-14	BUX66A	◆RCA	276-66
BU911	◆SGAI	412-11	BUV46	SMLB	289-106	BUW85	SMLB	358-31	BUX32	◆RCAB	344-15	◆RCAB	SMLB	396-104
BU912	◆SGAI	412-12	THCS	THEF	358-25	BUW86	◆TII	419-95	BUX33	RCA	344-16	BUX66B	◆RCA	276-67
BU920	◆SGAI	412-13	BUV47	THCS	358-26	BUW87	TII	419-96	BUX34	RCA	344-17	◆RCAB	SMLB	396-105
BU920P(A)	SGAI	421-96	BUV47A	THCS	289-107	BUW88	TII	419-96	BUX32B	◆RCAB	344-17	BUX67	◆RCA	317-79
BU921	◆SGAI	412-14	THCS	THEF	358-27	BUW89	◆MULB	339-39	BUX34	RCA	344-17	◆RCAB	SMLB	406-16
◆SGAI	SMLB		BUV48	SMLB	289-109	BUW90	◆MULB	339-39	BUX37	◆FERB	313-92	BUX67A	◆RCA	317-80
BU921P(A)	SGAI	421-97	THCS	◆THEF	358-28	BUW91	◆MULB	290-12	BUX38	SMLB	397-30	◆RCAB	SMLB	406-17
BU922	◆SGAI	412-15	BUV48A	THCS	289-110	BUW92	◆MULB	328-23	BUX39	RCA	290-14	BUX67B	◆RCA	317-81
◆SGAI	SMLB		THCS	◆THEF	358-29	BUW93	◆MULB	328-23	THCS	SMLB	358-33	◆RCAB	SMLB	406-18
BU922P(A)	SGAI	421-98	BUV82	◆PHIN	342-51	BUW94	◆INR	341-45	BUX39Z	◆INR	337-2	◆RCAB	SMLB	406-19
BU930	◆SGAI	412-16	BUV83	◆MULB	342-52	BUW95	◆SODI	403-86	BUX40	KPDI	403-93	BUX69	THCS	266-11
BU931	◆SGAI	412-17	BUV94	◆ALGG	312-104	BUW96	◆THEF	403-86	BUX40A	RCA	337-3	THCS	THEF	290-22
BU932	◆SGAI	412-18	BUV95	◆ALGG	312-105	BUW97	◆THEF	403-87	BUX41	◆SODI	359-41	BUX70	THCS	266-12
BUC205	MOTA	442-20	BUV98A	THCS	290-1	BUW98	◆RCAB	341-46	BUX39Z	◆THEF	337-1	BUX77	◆SGAI	318-63
BUC208	MOTA	442-21	THCS	◆THEF	401-22	BUW99	◆RCAB	341-46	BUX40	EET	337-3	BUX78	◆SMLB	384-52
BUR10	SGAI	289-84	BUW11	RTCF	351-90	BUW100	◆RCAB	341-46	◆INR	◆SGAI	403-2	BUX80	◆SMLB	384-53
BUR11	SGAI	289-85	BUW11A	VALG	351-91	BUW101	◆RCAB	341-46	SMLB	THCS	403-2	BUX81	EET	342-38
BUR12	SGAI	289-86	BUW12	RTCF	347-66	BUW102	◆RCAB	341-46	BUX40A	◆THEF	290-15	◆INR	◆MULB	393-40
BUR13	◆SGAI	350-101	BUW12A	VALG	347-67	BUW103	◆RCAB	341-46	BUX41	RCA	337-4	◆PHIN	◆RTCF	
BUR20	◆SGAI	289-87	BUW13	VALG	344-10	BUW104	◆RCAB	341-46	BUX41Z	◆THEF	403-94	◆SGAI	◆SIEG	
BUR21	SGAI	289-88	BUW13A	RTCF	344-11	BUW105	◆RCAB	341-46	BUX41N	◆RCAB	337-24	◆MULB	◆PHIN	
BUR22	SGAI	289-88	BUW16	VALG	344-11	BUW106	◆RCAB	341-46	◆SGAI	RCA	359-42	◆RTCF	◆SIEG	
BUR23	SGAI	350-102	BUW17	◆SIEG	290-3	BUW107	◆RCAB	341-46	THCS	THCS	290-16	EET		332-61
BUR24	SGAI	289-89	BUW18	SMLB	290-4	BUW108	◆RCAB	341-46	BUX41N	◆SGAI	403-8	◆INR	◆MULB	393-41
BUR50	◆SGAI	289-91	BUW19	◆SIEG	290-5	BUW109	◆RCAB	341-46	BUX42	◆THEF	359-43	◆PHIN	◆RTCF	
BUR51	◆SGAI	402-75	BUW22	◆SIEG	290-6	BUW110	◆RCAB	341-46	◆INR	RCA	337-5	◆SGAI	◆SIEG	
BUR52	SGAI	354-28	BUW23	CEN	281-80	BUW111	◆RCAB	341-46	BUX42Z	◆THEF	403-95	THCS	THCS	318-55
BUS11	◆MULB	289-93	BUW24	◆SGAI	385-93	BUW112	◆RCAB	341-46	BUX43	◆THEF	337-6	◆PHIN	◆RTCF	327-69
◆SMLB	VALG	400-27	BUW25	◆SGAI	385-93	BUW113	◆RCAB	341-46	◆INR	RCA	403-96	◆SIEG	◆SMLB	393-55
BUS11A	◆MULB	289-94	BUW26	◆SGAI	337-73	BUW114	◆RCAB	341-46	BUX43Z	◆THEF	337-26	◆MULB	◆PHIN	
◆SMLB	VALG	400-28	BUW27	◆SGAI	337-73	BUW115	◆RCAB	341-46	BUX44	◆THEF	359-45	◆RTCF	◆SIEG	
BUS12	◆MULB	289-95	BUW32	◆SGAI	393-106	BUW116	◆RCAB	341-46	◆INR	RCA	359-45	◆MULB	◆PHIN	327-70
◆SMLB	VALG	400-29	BUW33	◆SGAI	393-106	BUW117	◆RCAB	341-46	BUX44Z	◆THEF	337-7	◆RTCF	◆SIEG	359-67
BUS12A	◆MULB	289-96	BUW34	◆SGAI	393-106	BUW118	◆RCAB	341-46	BUX45	◆THEF	404-92	SMLB	◆MULB	318-55
◆SMLB	VALG	400-30	BUW35	◆SGAI	393-106	BUW119	◆RCAB	341-46	BUX45Z	◆THEF	337-27	◆PHIN	◆RTCF	318-74
BUS13	◆MULB	289-97	BUW36	◆SGAI	393-106	BUW120	◆RCAB	341-46	BUX46	◆THEF	359-46	◆SIEG	◆SMLB	327-70
◆SMLB	VALG	400-31	BUW37	◆SGAI	393-106	BUW121	◆RCAB	341-46	BUX46Z	◆THEF	337-8	◆MULB	◆PHIN	327-70
BUS13A	◆MULB	289-98	BUW38	◆SGAI	393-106	BUW122	◆RCAB	341-46	BUX47	◆THEF	404-93	BUX87	◆MULB	318-58
◆SMLB	VALG	400-32	BUW39	◆SGAI	393-106	BUW123	◆RCAB	341-46	BUX47Z	◆THEF	337-28	◆SIEG	◆SMLB	
BUS14	◆MULB	289-99	BUW40	◆SGAI	393-106	BUW124	◆RCAB	341-46	BUX48	◆THEF	359-47	BUX97	◆RCA	332-20
◆SMLB	VALG	400-33	BUW41	◆SGAI	393-106	BUW125	◆RCAB	341-46	BUX48Z	◆THEF	331-106	◆RCA	◆SMLB	396-107
BUS14A	◆MULB	289-100	BUW41A	◆SGAI	393-106	BUW126	◆RCAB	341-46	BUX49	◆THEF	401-5	BUX97A	◆RCA	332-21
◆SMLB	VALG	400-34	BUW41B	◆SGAI	393-106	BUW127	◆RCAB	341-46	BUX49Z	◆THEF	337-29	◆RCA	◆SMLB	396-108
BUT11	◆MULB	289-101	BUW44	◆SGAI	393-106	BUW128	◆RCAB	341-46	BUX50	◆THEF	359-48	BUX97B	◆RCA	332-22
◆SMLB	VALG	400-35	BUW45	◆SGAI	393-106	BUW129	◆RCAB	341-46	BUX50Z	◆THEF	337-9	◆RCA	◆SMLB	396-109
BUT11A	◆MULB	289-102	BUW46	◆SGAI	393-106	BUW130	◆RCAB	341-46	BUX51	◆THEF	404-93	BUX98	◆RCA	401-23
◆SMLB	VALG	400-36	BUW47	◆SGAI	393-106	BUW131	◆RCAB	341-46	BUX51Z	◆THEF	337-28	SMLB	◆THCS	
BUT13	◆MULB	289-103	BUW48	◆SGAI	393-106	BUW132	◆RCAB	341-46	BUX52	◆THEF	359-47	BUX98#	◆MULB	290-24
◆SMLB	VALG	400-37	BUW49	◆SGAI	393-106	BUW133	◆RCAB	341-46	BUX52Z	◆THEF	337-75	◆PHIN	◆RTCF	401-24
BUT13P	◆MULB	289-104	BUW57	◆SGAI	393-106	BUW134	◆RCAB	341-46	BUX53	◆THEF	401-16	BUX98A	◆SMLB	◆THCS
◆SMLB	VALG	400-38	BUW58	◆SGAI	393-106	BUW135	◆RCAB	341-46	BUX53Z	◆THEF	280-20	BUX98A#	◆MULB	290-25
BUT13P	◆MULB	289-105	BUW58	◆SGAI	393-106	BUW136	◆RCAB	341-46	BUX54	◆THEF	400-40	◆PHIN	◆RTCF	
◆SMLB	VALG	400-39	BUW58	◆SGAI	393-106	BUW137	◆RCAB	341-46	BUX54Z	◆THEF	293-67	BUY10S	◆HSE	280-26
cont.next.col.			BUW58	◆SGAI	393-106	BUW138	◆RCAB	341-46	BUX55	◆THEF	400-41	BUY12	SMLB	359-101
			BUW58	◆SGAI	393-106	BUW139	◆RCAB	341-46	BUX55Z					



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				IN TYPE NUMBER SEQUENCE											
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
BUY22	SMLB	331-80	BUZ41	HTCF	234-88	CA3093E	RCA	425-91	CK754	STI	135-91	CQT1110	CPD	259-36	
		401-77		SIEG		CA3095E	RCA	425-90	CK766	STI	132-4		STC		
BUY23	SMLB	352-57	BUZ41A	SIEG	250-4	CA3096E	RCA	426-102	CK766A	STI	132-5	CQT1110A	STC	259-37	
		401-103	BUZ43	SIEG	234-100	CA3096CE	RCA	426-103	CK790	STI	149-13		STC		
BUY24	NASG	290-27			251-14	CA3096E	RCA	426-104	CK791	STI	149-15	CQT1111	CPD	259-38	
	SMLB	389-63	BUZ44	SIEG	234-101	CA3097E	RCA	426-100	CK793	STI	149-14		STC		
BUY29	SMLB	290-28			251-15	CA3118T	RCA	426-20	CK870	STI	137-66	CQT1111A	CPD	259-39	
BUY30	SMLB	290-29	BUZ44A	SIEG	251-18	CA3118T	RCA	426-19	CK871	STI	137-67		STC		
BUY39	SMLB	322-6	BUZ45	SIEG	251-74	CA3127E	RCA	426-17	CK891	STI	132-67	CQT1112	CPD	259-40	
BUY40	SMLB	322-7	BUZ45A	SIEG	251-75	CA3138AG	RCA	426-53	CK892	STI	132-68		STC		
BUY41	SMLB	314-70	BUZ46	SIEG	251-17	CA3138G	RCA	426-54	CM640	TCY	241-79	CS9011	NSC	200-49	
BUY47	CEN	308-39	BUZ50	SIEG	234-69	CA3146AE	RCA	426-105	CM641	TCY	241-80		WAB		
	SGAI		BUZ50A	SIEG	250-5	CA3146E	RCA	426-107	CM642	TCY	241-81	CS9011E	NSC	200-50	
BUY48	CEN	308-40	BUZ53	SIEG	234-102	CA3183AE	RCA	426-107	CM643	TCY	241-82	CS9011F	NSC	200-51	
	SGAI		BUZ53A	SIEG	251-18	CA3183E	RCA	426-106	CM644	TCY	241-83	CS9011G	NSC	200-52	
BUY49S	CEN	308-41	BUZ54	SIEG	251-76	CA3600E	RCA	427-9	CM645	TCY	241-84	CS9011H	NSC	200-53	
	SGAI		BUZ54A	SIEG	251-77	CA3724G	RCA	426-57	CM646	TCY	241-85	CS9011I	NSC	200-54	
BUY50	ALGG	290-30	BUZ60	SIEG	250-6	CA3725G	RCA	426-65	CM647	TCY	241-86	CS9012	NSC	172-33	
	SMLB	393-65	BUZ63	SIEG	251-19	CD643	TCY	429-47	CM697	TCY	246-105		WAB		
BUY51	SMLB	342-22	BUZ64	SIEG	251-78	CD860	TCY	429-48			368-10	CS9012E	NSC	172-34	
BUY51A	SMLB	342-23	BUZ80	SIEG	234-70	CD3400	CTR	444-4	CM800	TCY	246-106	CS9012F	NSC	172-35	
BUY52	SMLB	342-24	BUZ80A	SIEG	250-7	CD3401	CTR	444-5	CM856	TCY	249-49	CS9012G	NSC	172-36	
BUY52A	SMLB	342-25	BUZ83	SIEG	234-103	CD3403	CTR	444-6	CM860	TCY	246-107	CS9012H	NSC	172-37	
BUY53	SMLB	342-26			251-20	CD4024	CTR	290-41	CMC1530A	PTC	392-95	CS9013	NSC	208-36	
BUY53A	SMLB	342-27	BUZ83A	SIEG	251-21	CD4070	CTR	444-7			423-25		WAB		
BUY54	SMLB	342-28	BUZ84	SIEG	235-4	CD4262	CTR	290-42	CMC1535A	PTC	392-96	CS9013E	NSC	208-37	
BUY54A	SMLB	342-29	BUZ84A	SIEG	251-79	CDT1310	CPD	255-69			423-26	CS9013F	NSC	208-38	
BUY55	SMLB	290-31	BZW20	SIEG	444-90		STC	408-29	CMC1540A	PTC	392-97	CS9013G	NSC	208-39	
	SODI	405-5	C1-12	CTR	302-42	CDT1311	CPD	255-70			423-27	CS9013H	NSC	208-40	
BUY56	SMLB	290-32	C1-28	CTR	302-43		STC	408-30	CMC2510A	PTC	392-98	CS9014	NSC	200-23	
	SODI	405-6	C2-8Z	CTR	307-16	CDT1312	CPD	255-71			422-108		WAB		
BUY57	SMLB	290-33	C3-12	CTR	307-17		STC	408-31	CMC2512A	PTC	392-99	CS9014A	NSC	200-24	
	SODI	405-7	C3-28	CTR	307-18	CDT1313	CPD	255-72			422-109	CS9014B	NSC	200-25	
BUY58	SMLB	290-34	C3T225	TII	241-77		STC	408-32	CMC2515A	PTC	392-100	CS9014C	NSC	200-26	
	SODI	405-8	C3T225A	TII	241-78	CDT1319	CPD	255-73			422-110	CS9014D	NSC	200-27	
BUY68	CEN	304-7	C5-8Z	CTR	314-39		STC	408-25	CMC2530A	PTC	392-101	CS9015	NSC	160-55	
	SGAI		C12-28	CTR	312-37	CDT1320	CPD	255-74			423-28		WAB		
BUY69A	CEN	331-91	C21	SLCB	236-5		STC	408-26	CMC2535A	PTC	392-102	CS9015A	NSC	172-38	
	EET	359-23	C25-28	CTR	318-64	CDT1321	CPD	255-75			423-29	CS9015B	NSC	172-39	
	RCA		C38	SLCB	236-6		STC	408-27	CMC2540A	PTC	392-103	CS9015C	NSC	172-40	
	SST		C40-28	CTR	328-74	CDT1322	CPD	255-76			423-30	CS9015D	NSC	172-41	
	TIID		C50-28	CTR	333-27		STC	408-28	CMC4010A	PTC	392-104	CS9016	NSC	201-18	
	TOSJ		C055	WAB	177-81	CF4-28	CTR	249-47			423-6	CS9016D	NSC	201-19	
BUY69A#	SGAI	337-76	C055P	WAB	176-63	CH3226	PPC	340-15	CMC4012A	PTC	392-105	CS9016E	NSC	201-20	
		389-108	C066	WAB	228-1	CH3232	PPC	340-16			423-7	CS9016F	NSC	201-21	
BUY69B	CEN	331-92	C066P	WAB	224-48	CHV1070A	PTC	405-91	CMC4015A	PTC	392-106	CS9016G	NSC	201-22	
	EET	359-24	C91	SLCB	237-40			421-26			423-8	CS9016H	NSC	201-23	
	INR		C92	SLCB	236-7	CHV1080A	PTC	405-92	CMC4030A	PTC	392-107	CS9017	WAB	186-44	
	SMLB		C93	SLCB	236-8			421-27			423-9	CS9018	NSC	201-52	
	TIID		C94	SLCB	236-9	CHV1090A	PTC	405-93	CMC4035A	PTC	392-108	CS9018D	NSC	201-53	
	TIIF		C94A	SLCB	243-81			421-28			423-10	CS9018E	NSC	201-54	
BUY69B#	SGAI	337-77	C94E	SLCB	239-104	CHV1570A	PTC	405-94	CMC4040A	PTC	392-109	CS9018F	NSC	201-55	
		389-109	C94EG	SLCB	433-45			421-29			423-11	CS9018G	NSC	201-56	
BUY69C	EET	331-93	C94ER	SLCB	433-46	CHV1580A	PTC	405-95	CMC7010A	PTC	392-110	CS1773	CPD	254-13	
	INR	359-25	C95	SLCB	243-82			421-30			423-31		STC	405-20	
	RCA		C95A	SLCB	243-83	CHV1590A	PTC	405-96	CMC7012A	PTC	393-1	CST1789	CPD	254-14	
	SST		C95E	SLCB	239-105			421-31			423-32		STC		
	TIID		C95EG	SLCB	433-47	CHV2060A	PTC	400-77	CMC7015A	PTC	393-2	CT760	SPR	165-83	
BUY69C#	SGAI	383-48	C95ER	SLCB	433-48			421-35			423-33		STC	372-33	
BUY70A	SMLB	328-39	C96E	SLCB	239-106	CHV2080A	PTC	400-78	CP640	TCY	249-18	CT762	SPR	166-108	
	TIID		C96EG	SLCB	433-49			421-36	CP643	TCY	248-89		SPR	372-102	
	TIIF		C97E	SLCB	238-86	CHV2090A	PTC	400-79	CP650	TCY	249-19	CT764	SPR	166-5	
BUY70B	SMLB	328-40	C97EG	SLCB	433-50			421-37	CP651	TCY	249-20		SPR	372-36	
	TIID		C97ER	SLCB	433-51	CIL194	CDIL	188-58	CP652	TCY	249-21	CT767	SPR	166-6	
	TIIF		C98E	SLCB	238-87	CIL194A	CDIL	189-13	CP653	TCY	249-22	CT768	SPR	166-7	
BUY70C	SMLB	328-41	C98EG	SLCB	433-52	CIL194B	CDIL	188-59	CP664	TCY	249-23	CT769	SPR	166-8	
	TIID		C98ER	SLCB	433-53	CIL195	CDIL	187-75	CP665	TCY	249-24	CT770	SPR	166-9	
	TIIF		C155	WAB	177-82	CIL195C	CDIL	187-76	CP666	TCY	249-25	CT1454	SPR	213-87	
BUY71	SMLB	313-93	C155P	WAB	176-61	CIL195D	CDIL	187-77	CPS1540B	PTC	386-3	CT1460	SPR	213-88	
	TOSJ		C166	WAB	224-49	CK64	STI	134-67			422-71	CT1462	SPR	213-89	
BUY72	SMLB	290-35	C166P	WAB	228-2	CK64A	STI	134-68	CPS1545B	PTC	386-4	CT1464	SPR	212-27	
	SODI	405-7	C168	WAB	221-110	CK64B	STI	134-69			422-72	CT5603	WESB	357-85	
BUY73	SMLB	290-36	C169	WAB	221-92	CK64C	STI	134-70	CPS1550B	PTC	386-5	CT5604	WESB	357-86	
	SODI		C266	WAB	220-67	CK65	STI	134-73			422-73	CT5606	WESB	357-87	
BUY77	SMLB	290-37	C266P	WAB	224-4	CK65A	STI	134-74	CPS2510B	PTC	393-3	CT5611	WESB	357-88	
	SODI		C681	TCY	238-88	CK65B	STI	134-75			422-74	CT5650	WESB	357-89	
BUY78	SMLB	290-38	C681A	TCY	238-89	CK65C	STI	134-76	CPS2512B	PTC	393-4	CT5651	WESB	357-90	
	SODI		C683	TCY	238-90	CK66	STI	134-77			422-75	CT5652	WESB	357-91	
BUY79	SMLB	290-39	C683A	TCY	238-91	CK66A	STI	134-78	CPS2515B	PTC	393-5	CTP1112	STI	255-95	
	SODI		C685	TCY	238-92	CK66B	STI	134-79			422-76	CTP1135	STI	255-96	
BUY80	FERB	313-94	C685A	TCY	238-93	CK66C	STI	134-80	CPS2540B	PTC	386-6	CTP1306	STI	255-97	
	SMLB	382-78	C855	WAB	177-25	CK67	STI	134-81			422-80	CTP1500	CPD	259-41</	

# 1. TYPE No. CROSS INDEX

			IN TYPE NUMBER SEQUENCE											
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
CX703A	WAB	226-61	D38H4	GESY	213-50	D40E5	GESY	307-60	D42C8	GESY	311-97	D44C7	GESY	378-80
CX703B	WAB	226-62	D38H5	GESY	213-51	♦MOTA	NSC		NJS	NSC	311-98	D44C8	NSC	378-81
CX704	WAB	290-47	D38H6	GESY	213-52		SST		STI	STI	311-98	(cont.)	SWT	SMLB
CX754	WAB	166-13	D38H7	GESY	213-53	D40E7	GESY	307-61	D42C9	GESY	311-98	D44C8	SWT	WAB
CX901	WAB	195-36	D38H8	GESY	213-54	♦MOTA	NSC		NJS	NSC	378-81		NJS	♦NSC
CX904	WAB	195-37	D38H9	GESY	213-55		SST		STI	STI	378-81		SMLB	SST
CX906	WAB	213-45	D38L1	GESY	413-97	D40K1	GESY	415-26	D42C10	GESY	311-99		SWT	WAB
CX908	WAB	226-108	D38L2	GESY	413-107	♦MOTA	NJS		NJS	NSC	378-82	D44C9	NJS	GESY
CX954	WAB	160-39	D38L3	GESY	414-6		SST		STI	STI	378-83		SMLB	♦NSC
CX956	WAB	169-9	D38L4	GESY	413-98	D40K2	GESY	415-27	D42C11	GESY	311-100		SWT	WAB
CX958	WAB	177-38	D38L5	GESY	413-108	♦MOTA	NJS		NJS	NSC	378-83	D44C10	NJS	GESY
D272219A	TII	210-37	D38L6	GESY	414-7		SST		NJS	NSC	378-84		SMLB	♦NSC
		366-41	D38S1	GESY	209-14	D40K3	GESY	415-28	D42C12	GESY	311-101	D44C10	NJS	SST
D4C28	STI	182-76	D38S2	GESY	209-15	♦MOTA	NSC		NJS	NSC	378-84		SWT	WAB
D4C29	STI	182-77	D38S3	GESY	209-16	D40K4	GESY	415-29	D42D1	GESY	388-6	D44C11	NJS	GESY
D4C30	STI	182-78	D38S4	GESY	209-17	♦MOTA	NSC				415-68		NJS	♦NSC
D4C31	STI	182-79	D38S5	GESY	209-18	D40N1	♦MOTA	305-66	D42D2	GESY	388-7		SMLB	SST
D4D20	STI	181-105	D38S6	GESY	209-19		NSC				415-69	D44C12	NJS	WAB
		377-76	D38S7	GESY	209-20	D40N2	♦MOTA	305-67	D42D3	GESY	388-8		SMLB	SST
D4D21	STI	181-106	D38S8	GESY	209-21		NSC				415-70	D44C12	NJS	WAB
		377-77	D38S9	GESY	209-22	D40N3	♦MOTA	305-68	D42D4	GESY	388-9		SMLB	SST
D4D24	STI	181-31	D38S10	GESY	209-23		NSC				415-71	D44D1	SWT	WAB
D4D25	STI	181-32	D38V1	GESY	212-89	D40N4	♦MOTA	305-69	D42D5	GESY	388-10		SWT	WAB
D4D26	STI	181-33	D38V2	GESY	212-90		NSC				415-72		SWT	WAB
D5J37	GESY	436-88	D38V3	GESY	212-91	D40N4	♦MOTA	305-69	D42D6	GESY	388-11	D44D2	♦GESY	388-12
D5J43	GESY	436-89	D38W7	GESY	208-100		NSC				415-73		♦GESY	416-13
D5J44	GESY	436-90	D38W8	GESY	208-101	D40N5	♦MOTA	305-70	D42R1	NJS	312-106	D44D3	♦GESY	416-14
D5J45	GESY	436-91	D38W9	GESY	208-102		NSC						♦GESY	388-14
D5K1	♦GESY	436-92	D38W10	GESY	208-103	D40P1	♦GESY	305-71	D42R2	NJS	312-107	D44D4	♦GESY	416-15
D5K2	♦GESY	436-93	D38W12	GESY	208-104		NSC						♦GESY	388-15
D7B1	STI	308-42	D38W13	GESY	208-105	D40P1	♦GESY	305-71	D42T1	♦GESY	312-108	D44D5	♦GESY	416-16
D7B2	STI	308-43	D38W14	GESY	208-106	♦MOTA	NJS		D42T2	♦GESY	312-109		♦GESY	388-16
D7D1	STI	308-44	D39C1	GESY	413-99		NSC		D42T3	♦GESY	312-110	D44D6	♦GESY	416-17
D7D2	STI	308-45	D39C2	GESY	413-100	D40P3	♦GESY	305-72	D42T4	♦GESY	313-1		♦GESY	388-17
D7D3	STI	308-46	D39C3	GESY	414-8	♦MOTA	NJS		D42T5	♦GESY	313-2	D44E1	♦GESY	416-18
D7G1	STI	308-47	D39C4	GESY	413-100		NSC		D42T6	♦GESY	313-3		♦GESY	396-21
D7G2	STI	308-48	D39C5	GESY	413-110	D40P5	♦GESY	305-73	D42T7	♦GESY	313-4	D44E2	♦GESY	417-22
D7G3	STI	308-49	D39C6	GESY	414-9	♦MOTA	NJS		D42T8	♦GESY	313-5		♦GESY	396-22
D7ST4010(A)	WESY	400-43	D39J1	GESY	168-108		NSC		D43C1	♦GESY	273-95	D44E3	♦GESY	417-23
D7ST4013(A)	WESY	402-31	D39J2	GESY	168-109	D41D1	♦GESY	271-79			372-40		♦GESY	396-23
D7ST4015(A)	WESY	402-76	D39J3	GESY	168-110	♦MOTA	NJS						♦GESY	417-24
D7ST4510(A)	WESY	400-44	D39J4	GESY	169-1		NSC						♦GESY	327-71
D7ST4513(A)	WESY	402-32	D39J5	GESY	169-2	D41D2	♦GESY	271-80	D43C2	♦GESY	273-96		NJS	NSC
D7ST5010(A)	WESY	400-45	D39J6	GESY	169-3	♦MOTA	NJS				372-41	D44H1	♦GESY	388-18
D10-28	♦CTR	312-38	D39J7	GESY	169-4		NSC						♦GESY	327-72
D16G6	♦GESY	189-50	D39J8	GESY	169-5	D41D4	♦GESY	271-81			372-42	D44H2	♦GESY	388-19
D16P1	SPR	413-41	D39J9	GESY	169-6		NSC						♦GESY	388-20
D29A4	♦SPR	163-33	D40C1	♦GESY	379-22	♦MOTA	NJS						♦GESY	388-21
D29A5	♦SPR	163-34		♦GESY	414-110		NSC						♦GESY	327-73
D29E1	♦GESY	169-32	♦MOTA	NSC			NSC						♦GESY	388-22
D29E1J1	♦GESY	176-8	D40C2	♦GESY	379-23	♦MOTA	NJS						♦GESY	327-74
D29E2	♦GESY	169-87	♦MOTA	NSC			NSC						♦GESY	388-23
D29E2J1	♦GESY	176-13	D40C3	♦GESY	305-54	D41D7	♦GESY	271-83	D43C3	♦GESY	273-97		♦GESY	327-75
D29E4	♦GESY	169-10	NJS	♦GESY	379-24	♦MOTA	NJS						♦GESY	388-24
D29E4J1	♦GESY	176-3	D40C4	♦GESY	379-25		NSC						♦GESY	327-76
D29E5	♦GESY	169-11	♦MOTA	NSC		D41D8	♦GESY	271-84	D43C4	♦GESY	273-100	D44H3	♦GESY	388-25
D29E5J1	♦GESY	176-9	D40C5	♦GESY	379-26	♦MOTA	NJS						♦GESY	327-77
D29E6	♦GESY	169-88	♦MOTA	NSC			NSC						♦GESY	388-26
D29E6J1	♦GESY	176-14	D40C7	♦GESY	379-27	D41D10	♦GESY	271-85	D43C5	♦GESY	273-99		♦GESY	327-78
D29E7	♦GESY	170-62	NJS	♦GESY	415-2	♦MOTA	NJS						♦GESY	388-27
D29E7J1	♦GESY	176-15	♦MOTA	NSC		D41D11	♦GESY	271-86	D43C6	♦GESY	273-100	D44H4	♦GESY	327-79
D29E9	♦GESY	169-12	D40C8	♦GESY	379-28	♦MOTA	NJS						♦GESY	388-28
D29E9J1	♦GESY	176-4	NJS	♦GESY	415-5	D41D13	♦GESY	271-87	D43C7	♦GESY	273-101	D44H5	♦GESY	327-80
D29E10	♦GESY	169-79	D40D1	♦GESY	305-55	♦MOTA	NJS						♦GESY	388-29
D29E10J1	♦GESY	176-10	♦MOTA	NSC		D41D14	♦GESY	271-88	D43C8	♦GESY	273-102	D44H6	♦GESY	327-81
D33D21	♦GESY	213-90	D40D2	♦GESY	365-98	♦MOTA	NJS						♦GESY	388-30
D33D21J1	♦GESY	223-79	D40D3	♦GESY	305-57		NSC						♦GESY	327-82
D33D22	♦GESY	214-46	NJS	♦GESY	365-98	D41E1	♦GESY	272-76	D43C9	♦GESY	273-103	D44H7	♦GESY	327-83
D33D22J1	♦GESY	223-86	♦MOTA	NSC		♦MOTA	NJS						♦GESY	388-31
D33D24	♦GESY	213-91	D40D5	♦GESY	305-59	D41E5	♦GESY	272-77	D43C10	♦GESY	273-104	D44H8	♦GESY	327-84
D33D24J1	♦GESY	223-72	♦MOTA	NSC			NSC						♦GESY	388-32
D33D25	♦GESY	214-26	D40D7	♦GESY	305-60	D41E7	♦GESY	272-78	D43C11	♦GESY	273-105	D44H9	♦GESY	327-85
D33D25J1	♦GESY	223-84	♦MOTA	NSC		♦MOTA	NJS						♦GESY	388-33
D33D26	♦GESY	214-47	NJS	♦GESY	365-101	D41K1	♦GESY	272-79	D43C12	♦GESY	273-106	D44H10	♦GESY	327-86
D33D26J1	♦GESY	223-87	♦MOTA	NSC			NSC						♦GESY	388-34
D33D27	♦GESY	214-69	D40D8	♦GESY	305-61	D41K2	♦GESY	272-80	D43D1	♦GESY	273-107	D44H11	♦GESY	327-87
D33D27J1	♦GESY	223-88	♦MOTA	NSC			NSC						♦GESY	388-35
D33D29	♦GESY	213-46	NJS	♦GESY	365-102	D41K3	♦GESY	272-81	D43D2	♦GESY	273-108	D44H12	♦GESY	327-88
D33D29J1	♦GESY	223-73	♦MOTA	NSC			NSC						♦GESY	388-36
D33D30	♦GESY	214-27	D40D10	♦GESY	305-62	D41K4	♦GESY	272-82	D43D3	♦GESY	273-109	D44H13	♦GESY	327-89
D33D30J1	♦GESY	223-85	♦MOTA	NSC			NSC						♦GESY	388-37
D38H1	GESY	213-47	D40D11	♦GESY	305-63	D42C1	♦GESY	311-90	D44C1	♦GESY	319-8	D44R1	♦GESY	320-19
D38H2	GESY	213-48	♦MOTA	NSC			NSC						♦GESY	383-110
D38H3	GESY	213-49	♦MOTA	NSC		D42C2	♦GESY	311-91	D44C2	♦GESY	319-9	D44R2	♦GESY	320-20
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D44TE3	387-70	D80T257510	356-108	DT1321	356-108	DTS423	305-76	DTS4061	305-76	STI	404-100
D44TE4	332-63		402-42	(cont.)		(cont.)	400-103			STI	424-27
D44TE5	397-71	D60T259010	356-109				230-77	DTS4062	305-76	STI	401-50
D44VH1	334-26		402-43	DT1322	LUCB		307-77				424-15
D44VH4	334-27	D60T307510	356-110				305-77	DTS4065	307-77	STI	349-33
D44VH7	334-28		402-44				400-104				404-101
D44VH10	334-29	D60T309010	357-1	DT4305	♦LUCB	DTS423#	327-82	DTS423M	327-82	SPC	443-14
D44VM1	385-51		402-45								393-42
D44VM4	385-52	D60T357510	357-2	DT4306	♦LUCB			DTS4066	327-83	STI	424-16
D44VM7	385-53		402-46								393-43
D45C1	277-38	D60T404010	357-3	DT4335	♦LUCB	DIT	403-17	DTS4067	403-17	STI	424-22
	372-52		401-34			SPC	412-51				401-51
		D60T405010	357-4	DT4336	♦LUCB	DIT	403-18	DTS4072	403-18	STI	424-17
			402-47			CEN	412-52				393-44
D45C2	277-39	D60T406010	357-5	DT5335	♦LUCB	NJS	403-19	DTS4074	403-19	STI	424-18
	372-53		402-97			SSI	412-53				393-45
		D60T454010	357-6	DT5336	♦LUCB	WAB	403-20	DTS4075	403-20	STI	424-23
			401-35			DIT	412-54				249-71
D45C3	277-40	D60T455010	357-7	DTG110	GPD	DTS425#	259-52	DV1210S	349-25	SIX	259-72
	372-54		402-48			DTS430		DV1210W	351-4	SIX	251-22
		D60T504010	357-8	DTG110A	GPD	DIT	257-25	DV1220S		SIX	251-23
			401-36			SPC	257-25	DV1220W		SIX	251-24
D45C4	277-41	D60T703005	356-102	DTG110B	STC	STI	259-53	DV1230T	344-23	SIX	251-65
	372-55		400-46			WAB	259-53	DV1230W	351-5	SIX	251-103
		D60T704005	356-103	DTG600	GPD	CEN	257-28	DV1240T		SIX	251-104
			400-47			SSI	409-69	E100		NSC	243-84
D45C5	277-42	D60T753005	356-104	DTG601	GPD	STI	257-27	E101		NSC	243-85
	372-56		400-48			DIT	409-70			WAB	
		D60T754005	356-105	DTG602	STC	DTS431#	409-70		344-24	WAB	
			400-49			DTS431M	257-28	E102		NSC	243-86
D45C6	277-43	D60T803005	356-106	DTG603	STC	STI	409-71		398-74	WAB	
	372-57		400-50			DIT	409-71		337-78	NSC	243-87
		D60T804005	356-107	DTG603M	GPD	WAB	409-72	E108		NSC	243-88
			400-51			STI	257-30		391-5	SOD	360-43
D45C7	277-44	D62T257510	357-54	DTG1000	STI	DTS515	409-85	E109		NSC	243-89
	372-58		402-49			STI	259-54		397-7	SOD	360-44
		D62T259010	357-55	DTG1010	GPD	WAB	259-55	E110		NSC	243-90
			402-50			DIT	408-30		391-6	SOD	360-45
D45C8	277-45	D62T307510	357-56	DTG1011	STI	DTS518	260-22	E111		NSC	243-91
	372-59		402-51			STI	260-23		391-8	SOD	361-50
		D62T309010	357-57	DTG110	GPD	DTS519	259-56	E112		NSC	243-92
			402-52			STI	408-31		391-9	SOD	361-51
D45C9	277-46	D62T357510	357-58	DTG1110B	STI	DTS520	259-57			WAB	
	372-60		402-53			STI	408-32	E113		NSC	243-93
		D62T404010	357-59	DTG1200	GPD	DTS520MX	259-58		337-84	SOD	361-52
			401-37			STI	259-59	E114		NSC	243-94
D45C10	277-47	D62T405010	357-60	DTG2000	GPD	DTS660	408-34		335-66	SOD	360-71
	372-61		402-54			STI	257-31	E174		NSC	233-56
		D62T406010	357-61	DTG2100	STC	DTS665	409-16		335-68	SOD	361-2
D45C11	277-48	D62T454010	357-62	DTG2200	GPD	DTS702	257-32	E175		NSC	233-57
	372-62		402-98			STI	409-17		335-70	SOD	362-13
		D62T455010	357-63	DTG2300	GPD	DTS704	257-33	E176		NSC	233-58
			401-38			STI	409-18		335-71	SOD	364-50
D45C12	277-49	D62T504010	402-55	DTG2400	GPD	DTS708	257-34	E177		SOD	233-59
	372-63		357-64			STI	409-19		335-72	SOD	365-58
		D64TS3	400-52	DTG2400M	GPD	DTS709	257-35	E201		NSC	243-95
			400-52			STI	409-20		335-73	SOD	
D45D1	372-93	D64TS5	400-53	DTN1006	♦DIO	DTS710	410-20	E202		NSC	243-96
D45D2	372-94	D66DV5	400-54	DTN9000	♦DIO	DTS712	202-6	E203		SOD	243-97
D45D3	372-95	D66DV6	412-29	DTN9000T	♦DIO	DTS714	221-17	E210		SOD	243-98
D45D4	372-96	D66DV7	400-55	DTN9001	♦DIO	DTS720	180-1		335-77	SOD	
	416-10		412-30	DTN9001T	♦DIO	DTS721	180-2	E211		SOD	243-99
	416-11		412-31	DTS103	STI	DTS723	349-2		335-78	SOD	
D45D5	372-97	D67DE5	400-57	DTS104	STI	DTS723	396-5	E212		NSC	243-100
D45D6	372-98	D67DE6	412-32	DTS105	STI	DTS801	396-6		344-25	SOD	
D45E1	396-24	D67DE7	400-58	DTS106	STI	DTS801#	396-7	E230		SOD	243-101
D45E2	396-25	DA3F3	412-34	DTS107	STI	DTS802	349-7	E231		SOD	243-102
D45E3	396-26	DC2906A	442-22	DTS108	STI	DTS802#	349-8	E232		SOD	243-103
D45H1	280-1	DC2907A	442-23	DTS130	STI	DTS804	349-9	E270		NSC	233-60
	381-3	DC3439	442-24	DTS311	STI	DTS804#	349-8	E300		SOD	233-61
		DC3440	442-25	DTS401	NJS	DTS804#	349-8	E304		SOD	243-104
		DC4352	442-26	DTS401#	SSI	DTS812	349-7	E305		SOD	243-105
D45H2	280-2	DH3467CD	425-95	DTS401#	WAB	DTS812MX	344-18	E308		SOD	243-106
	381-4	DH3468CD	425-96	DTS402	WAB	DTS814	344-18	E309		SOD	243-107
		DH3468CN	425-107	DTS402#	WAB	DTS1010	344-19	E310		SOD	243-108
D45H4	280-3	DH3724CD	425-108	DTS402#	WAB	STI	349-10	E311		SOD	243-109
	381-5	DH3725CD	425-109	DTS403	WAB	DIT	349-10	E312		SOD	244-1
		DH3725CN	425-110	DTS403#	WAB	STI	349-11	E313		SOD	244-2
D45H5	280-4	DI5117/5120	433-54	DTS403#	WAB	DIT	349-11	E314		SOD	217-107
	381-6	DI5118/5121	433-55	DTS403#	WAB	DIT	349-12	E315		SOD	217-108
		DI5119-1	433-56	DTS403#	WAB	DIT	349-12	E316		SOD	217-109
D45H7	280-5	DI5119/5122	433-57	DTS403#	WAB	DIT	349-13	E317		SOD	217-110
	381-7	DMP4025DB	248-11	DTS403#	WAB	DIT	349-13	E318		SOD	218-1
		DN918	442-27	DTS409	WAB	DIT	349-14	E319		SOD	220-6
D45H8	280-6	DN2219A	442-28	DTS409#	WAB	DIT	349-14	E320		SOD	220-7
	381-8	DN2222A	442-29	DTS409#	WAB	DIT	344-20	E321		SOD	220-8
		DN2484	442-30	DTS410	WAB	DIT	349-15	E322		SOD	220-9
D45H9	280-7	DN3439	442-31	DTS410#	WAB	DIT	384-82	E323		SOD	220-10
	381-9	DN5564	247-84	DTS410#	WAB	DIT	349-16	E324		SOD	172-42
		DN5565	247-85	DTS411	WAB	DIT	349-17	E325		SOD	172-43
D45H10	280-8	DN5566	247-86	DTS411#	WAB	DIT	349-17	E326		SOD	172-44
	381-10	DN5567	247-87	DTS411#	WAB	DIT	349-17	E327		SOD	172-45
		DN9000	442-32	DTS411#	WAB	DIT	349-17	E328		SOD	172-46
D45H11	280-9	DN-1006-2	442-33	DTS411#	WAB	DIT	349-17	E329		SOD	218-2
	381-11	DP2605	442-34	DTS411#	WAB	DIT	349-17	E330		SOD	218-3
		DP2907A	442-35	DTS411#	WAB	DIT	349-17	E331		SOD	218-4
		DQN1006	217-106	DTS411#	WAB	DIT	349-18	E332		SOD	218-5
D45H12	280-10	DT1311	230-74	DTS411#	WAB	DIT	349-18	E333		SOD	172-47
	381-12		305-74	DTS413	WAB	DIT	344-21	E334		SOD	172-48
D45VH1	282-42	DT1312	230-75	DTS413#	WAB	DIT	344-21	E335		SOD	172-49
D45VH4	282-43		305-75	DTS413#	WAB	DIT	344-21	E336		SOD	172-50
D45VH7	282-44		404-67	DTS413#	WAB	DIT	344-22	E337		SOD	194-56
D45VH10	282-45	DT1321	230-76	DTS423	WAB	DIT	349-19	E338		SOD	187-78
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EN708	CEN	188-109	ESM639	MISI	228-25	ET6253	♦EET	339-45	FT2955	♦FSC	281-76	GES5816	GESY	214-28
	WAB	371-61	THCS	THEF				392-62		SST		GES5817	GESY	169-80
EN722	CEN	151-89	ESM640	MISI	177-28	ET6542	♦EET	332-8	FT3055	♦FSC	331-77	GES5818	GESY	214-49
	WAB		THCS	THEF				398-5		SST		GES5819	GESY	169-90
EN744	CEN	188-62	ESM642	THEF	221-18	ET6543	♦EET	332-9		SWT		GES5820	GESY	213-94
	WAB	363-107	ESM643	THEF	221-19			398-6	FT3909	NASG	233-13	GES5821	GESY	169-35
EN870	STI	190-84	ESM692	♦THEF	174-10	ET6544	♦EET	337-90	FT5315	STI	430-9	GES5822	GESY	214-29
EN871	STI	190-88	ESM693	♦THEF	174-11			401-29	FT5320	STI	433-59	GES5823	GESY	169-81
EN914	STI	188-110	ESM737	THEF	412-42	ET6545	♦EET	337-91	FT5321	FCAJ	433-60	GES5824	GESY	206-9
		371-62	ESM738	♦THCS	290-48			401-30		STI		GES5825	GESY	206-10
EN916	CEN	189-1			358-34	ET6546	♦EET	344-45	FT5701	FCAJ	425-66	GES5826	GESY	206-11
	WAB		ESM837	SMLB	290-49			401-31	FT5701AM	FCAJ	425-67	GES5827	GESY	206-12
EN918	CEN	189-81	THCS	THEF	358-35	ET6547	♦EET	344-46	FT5702	FCAJ	425-64	GES5827A	GESY	206-13
	WAB		ESM855	♦THCS	400-60			401-32	FT5702M	FCAJ	425-65	GES5828	GESY	206-14
EN930	CEN	185-106	ESM856	♦THCS	412-44	ET10015	EET	412-22	FT5709	FCAJ	425-48	GES5828A	GESY	206-15
	WAB			♦THCS	400-61	ET10016	EET	412-23	FT5709M	FCAJ	425-49	GES6000	GESY	209-38
EN956	CEN	190-89	ESM870	♦THCS	412-45	ET10020	EET	412-24	FT5712M	FCAJ	425-50			
	WAB		ESM871	♦THCS	400-62	ET10021	EET	412-25	FT5713M	FCAJ	425-52	GES6001	GESY	168-17
EN1132	CEN	156-47	ESM1000	THCS	412-46	ETP2008	ETC	225-77	FT5714M	FCAJ	425-51	GES6002	GESY	209-44
EN1613	CEN	195-11	ESM1503	THCS	335-80	ETP3114	ETC	225-78	FT5723M	FCAJ	425-69			
EN1711	STI	195-26	ESM2060	THCS	392-56	ETP3923	ETC	225-79	FT5742M	FCAJ	425-72	GES6003	GESY	168-19
	WAB			THCS	355-100	ETP5092	ETC	225-80	FT5743M	FCAJ	425-73	GES6004	GESY	209-39
EN2219	CEN	203-95	ESM4014	THEF	403-44	ETP5095	ETC	225-81	FT5748M	FCAJ	425-70			
	WAB		ESM4015	THEF	403-45	ETP5095	ETC	225-81	FT5751M	FCAJ	425-68	GES6005	GESY	168-18
EN2222	CEN	188-48	ESM4016	THEF	403-46	FGT3055	♦FERB	332-64	FTR129	♦FSC	216-73	GES6006	GESY	209-45
	WAB		ESM4017	THEF	403-47	FMMT2222	♦FERB	188-49			444-8			
EN2369	SEL1	189-51	ESM4391	THEF	236-17	FMMT2222A	♦FERB	366-13	GE5060	CRI	398-61	GES6007	GESY	168-20
EN2369A	STI	189-52	ESM4392	THEF	236-18	FMMT2369	♦FERB	189-2	GE5061	GESY	423-105	GES6010	GESY	214-10
	WAB	362-92	ESM4446	THCS	246-108	FMMT2907	♦FERB	366-42	GE5062	CRI	398-62	GES6011	GESY	169-7
EN2484	CEN	186-31	ESM4448	THCS	246-109	FMMT2907A	♦FERB	152-75	GE5062	GESY	423-106	GES6012	GESY	214-50
	WAB			THCS	246-109	FMMT2907A	♦FERB	373-97	GE6060	GESY	398-63	GES6012	GESY	214-50
EN2905	CEN	157-94	ET401	EET	344-34	FMMT3905	♦FERB	152-76	GE6061	CRI	390-1	GES6013	GESY	169-36
	WAB	370-25	ET402	♦EET	344-35	FMMT3906	♦FERB	368-102	GE6062	GESY	423-15	GES6014	GESY	214-11
EN2907	CEN	152-30	ET403	♦EET	344-36	FMMTA05	♦FERB	186-73	GES92	CRI	221-93	GES6221	GESY	212-95
	WAB	370-26	ET409	EET	344-37	FMMTA06	♦FERB	186-74	GES93	CRI	174-60			
EN3009	CEN	189-14	ET410	♦EET	344-38	FMMTA12	♦FERB	413-26	GES97	CRI	206-30	GES6222	GESY	206-16
	WAB	363-59	ET411	♦EET	344-39	FMMTA13	♦FERB	413-25	GES98	CRI	206-31	GES6224	GESY	206-17
EN3011	CEN	189-35	ET411	♦EET	344-39	FMMTA14	♦FERB	413-25	GES99	CRI	206-32	GES6225	GESY	206-18
	WAB	363-68	ET413	EET	344-40	FMMTA15	♦FERB	413-25	GES99	CRI	206-33	GES6226	GESY	206-19
EN3013	CEN	189-15	ET413	EET	344-40	FMMTA20	♦FERB	186-81	GES99	CRI	206-34	GES6227	GESY	206-20
	WAB	363-60	ET413	EET	344-40	FMMTA25	♦FERB	151-109	GES99	CRI	206-35	GES6228	GESY	206-21
EN3014	CEN	189-16	ET423	♦EET	344-41	FMMTA56	♦FERB	151-110	GES99	CRI	206-36	GES6229	GESY	206-22
	WAB	363-109	ET423	♦EET	344-41	FN4117	SIX	241-87	GES99	CRI	206-37	GES6230	GESY	206-23
EN3250	CEN	152-74	ET424	♦EET	344-42	FN4118A	SIX	241-88	GES99	CRI	206-38	GES6231	GESY	206-24
	WAB	368-103	ET424	♦EET	344-42	FN4119	SIX	241-89	GES99	CRI	206-39	GES6232	GESY	206-25
EN3502	CEN	157-95	ET425	♦EET	344-43	FN4119A	SIX	241-90	GES99	CRI	206-40	GES6233	GESY	206-26
	WAB	370-27	ET425	♦EET	344-43	FN4119A	SIX	241-91	GES99	CRI	206-41	GES6234	GESY	206-27
EN3504	CEN	152-31	ET430	♦EET	344-44	FN4392	SIX	248-64	GES221	CRI	206-106	GES6235	GESY	206-28
	WAB	370-28	ET430	♦EET	344-44	FN4393	SIX	248-65	GES221A	GESY	206-107	GES6236	GESY	206-29
EN3903	CEN	200-100	ET431	♦EET	344-44	FP02222	♦FPMJ	193-6	GES222	GESY	206-108	GES6237	GESY	206-30
	WAB	368-104	ET431	♦EET	344-44	FP02907	♦FSC	425-62	GES2222	GESY	206-109	GES6238	GESY	206-31
EN3904	CEN	201-24	ET515	EET	337-85	FP03467	FSC	425-53	GES2222A	GESY	207-45	GES6239	GESY	206-32
	WAB	369-29	ET516	EET	337-86	FP03468	FSC	425-54	GES2483	GESY	206-107	GES6240	GESY	206-33
EN3905	CEN	160-83	ET517	EET	337-87	FP03724	FSC	425-55	GES2906	GESY	164-18	GES6241	GESY	206-34
	WAB	368-61	ET518	EET	337-88	FP03725	FSC	425-56	GES2907	GESY	164-19	GES6242	GESY	206-35
EN3906	CEN	160-90	ET519	EET	337-89	FP03725	FSC	425-57	GES3053	GESY	221-94	GES6243	GESY	206-36
	WAB	368-105	ET670	♦ETC	143-103	FT47	♦FSC	323-55	GES3053	GESY	221-95	GES6244	GESY	206-37
ERS100	ETC	225-60	ET701	EET	335-81	SST	STI	323-56	GES3414	GESY	221-96	GES6245	GESY	206-38
ERS120	ETC	225-61	ET708	EET	335-82	FT48	♦FSC	323-56	GES3416	GESY	221-97	GES6246	GESY	206-39
ERS140	ETC	225-62	ET709	EET	335-83	FT49	♦FSC	323-57	GES3417	GESY	221-98	GES6247	GESY	206-40
ERS160	ETC	225-63	ET710	EET	335-84	FT49	♦FSC	323-57	GES3565	GESY	206-8	GES6248	GESY	206-41
ERS180	ETC	225-64	ET721	EET	335-85	FT50	♦FSC	323-58	GES3566	GESY	221-37	GES6249	GESY	206-42
ERS200	ETC	225-65	ET801	EET	335-86	FT50	♦FSC	323-58	GES3567	GESY	221-38	GES6250	GESY	206-43
ERS225	ETC	225-66	ET1550	♦ETC	284-101	FT51	♦FSC	323-59	GES3568	GESY	221-39	GES6251	GESY	206-44
ERS250	ETC	225-67	ET1551	♦ETC	284-102	FT51	♦FSC	323-59	GES3569	GESY	221-40	GES6252	GESY	206-45
ERS275	ETC	225-68	ET4039	EET	421-58	FT51	♦FSC	323-59	GES4121	GESY	153-11	GES6253	GESY	206-46
ERS301	ETC	225-69	ET4040	EET	421-59	FT51	♦FSC	323-59	GES4122	GESY	153-18	GES6254	GESY	206-47
ERS325	ETC	225-70	ET4041	EET	421-60	FT51	♦FSC	323-59	GES4248	GESY	166-34	GES6255	GESY	206-48
ERS350	ETC	225-71	ET4045	EET	421-65	FT51	♦FSC	323-59	GES5305	CEN	414-10	GES6256	GESY	206-49
ERS375	ETC	225-72	ET4050	EET	421-66	FT51	♦FSC	323-59	GES5306	CEN	414-12	GES6257	GESY	206-50
ERS401	ETC	225-73	ET4055	EET	421-67	FT51	♦FSC	323-59	GES5307	CEN	414-11	GES6258	GESY	206-51
ERS425	ETC	225-74	ET4059	EET	421-68	FT51	♦FSC	323-59	GES5308	CEN	414-14	GES6259	GESY	206-52
ERS450	ETC	225-75	ET4060	EET	421-69	FT51	♦FSC	323-59	GES5308A	CEN	414-15	GES6260	GESY	206-53
ERS475	ETC	225-76	ET4061	EET	421-70	FT51	♦FSC	323-59	GES5309	CEN	414-13	GES6261	GESY	206-54
ESM16	THEF	398-102	ET4065	EET	421-36	FT359	♦FSC	423-39	GES5310	CEN	414-11	GES6262	GESY	206-55
ESM25	THCS	239-107	ET5000	EET	422-95	FT401	♦FSC	336-97	GES5311	CEN	414-14	GES6263	GESY	206-56
	WAB	368-104	ET5001	EET	422-96	FT402	♦FSC	336-98	GES5312	CEN	414-15	GES6264	GESY	206-57
ESM25A	THCS	239-108	ET5002	EET	422-97	FT402	♦FSC	336-98	GES5313	CEN	414-15	GES6265	GESY	206-58
	WAB		ET5060	EET	423-12	FT410	♦FSC	336-9						

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TYPE No.			MFRS Pg&Line			TYPE No.			MFRS Pg&Line			TYPE No.			MFRS Pg&Line			IN TYPE NUMBER SEQUENCE		
GT2	GDC	137-44	GT328A	GDC	133-75	GT8001	GTC	382-64	HA7543	GDC	165-15	HEPG0007-RT	MOTA	142-55						
	STI			USSR				421-18		STI		HEPG0008-RT	MOTA	141-4						
GT3	GDC	137-49	GT328B	GDC	133-22	GT8002	GTC	392-65	HA7597	GDC	164-78	HEPG0009-RT	MOTA	143-8						
	STI			USSR				421-19		STI		HEPG0011-RT	MOTA	147-110						
GT11	GDC	135-67	GT346A	GDC	133-84	GT8003	GTC	388-91	HA7598	GDC	164-79	HEPG0000-RT	MOTA	257-37						
	STI			USSR				421-14		STI		HEPG0002-RT	MOTA	261-45						
GT12	GDC	135-79	GT346B	GDC	133-83	GT8004	GTC	388-92	HA7599	GDC	164-80	HEPG0003-RT	MOTA	257-38						
	STI			USSR				421-15		STI		HEPG0004-RT	MOTA	261-46						
GT13	GDC	135-97	GT364	GDC	147-32	GT8005	GTC	388-93	HA7630	GDC	165-28	HEPG0005-RT	MOTA	257-39						
	STI		HSE	STI				421-16		STI		HEPG0006-RT	MOTA	261-47						
GT14	GDC	137-17	GT365	GDC	147-33	GT8100	GTC	420-78	HA7631	GDC	165-29	HEPG0007-RT	MOTA	254-110						
	STI		HSE	STI		GT8101	GTC	420-79		STI		HEPG0009-RT	MOTA	259-60						
GT14H	GDC	135-53	GT366	GDC	147-34	GT8102	GTC	420-80	HA7632	GDC	165-30	HEPG0010-RT	MOTA	261-48						
	STI		HSE	STI		GT8103	GTC	420-81		STI		HEPG0011-RT	MOTA	253-21						
GT20	GDC	132-1	GT402D	USSR	144-53	HA5001	GDC	148-60	HA7633	GDC	165-31	HEPG0012-RT	MOTA	253-22						
	STI		GT402E	USSR	144-54		STI			STI		HEPG0013-RT	MOTA	257-40						
GT20H	GDC	135-54	GT402I	USSR	144-55	HA5002	GDC	148-53	HA7723	GDC	268-60	HEPG0014-RT	MOTA	257-41						
	STI		GT402SZ	USSR	144-56		STI			STI		HEPG0015-RT	MOTA	257-42						
GT24H	GDC	135-39	GT404D	USSR	148-37	HA5003	GDC	148-57	HA7725	GDC	268-61	HEPG0017-RT	MOTA	257-43						
	STI		GT404E	USSR	148-38		STI			STI		HEPG0018-RT	MOTA	259-61						
GT31	GDC	137-38	GT404I	USSR	148-39	HA5005	GDC	148-54	HA7730	GDC	266-14	HEPS0005-RT	MOTA	200-83						
	STI		GT404SZ	USSR	148-40		STI			STI		HEPS0008-RT	MOTA	201-49						
GT32	GDC	137-40	GT406A	USSR	252-52	HA5009	GDC	148-61	HA7731	GDC	266-15	HEPS0009-RT	MOTA	216-86						
	STI		GT600	GDC	251-6		STI			STI		HEPS0010-RT	MOTA	205-17						
GT33	GDC	137-45		GTC		HA5011	GDC	148-58	HA7732	GDC	266-16	HEPS0011-RT	MOTA	210-21						
	STI		GT705A	USSR	263-2		STI			STI		HEPS0012-RT	MOTA	173-9						
GT34	STI	132-2	GT705B	USSR	263-3	HA5012	GDC	148-55	HA7733	GDC	266-17	HEPS0013-RT	MOTA	167-109						
GT34HV	GDC	138-9	GT705D	USSR	263-4		STI			STI		HEPS0014-RT	MOTA	219-91						
	STI		GT705G	USSR	263-5	HA5014	GDC	148-59	HA7734	GDC	268-62	HEPS0015-RT	MOTA	201-25						
GT34N	GDC	138-10	GT705V	USSR	263-6		STI			STI		HEPS0016-RT	MOTA	201-67						
	STI		GT758	STI	135-69	HA5016	GDC	148-56	HA7735	GDC	268-63	HEPS0017-RT	MOTA	200-2						
GT34S	GDC	429-33	GT759	GDC	135-98		STI			STI		HEPS0019-RT	MOTA	160-99						
	STI			STI		HA5020	GDC	148-42	HA7736	GDC	268-64	HEPS0020-RT	MOTA	201-66						
GT40	GDC	135-99	GT760	GDC	135-109		STI			STI		HEPS0024-RT	MOTA	200-66						
	STI			STI		HA5021	GDC	148-45	HA7737	GDC	268-65	HEPS0025-RT	MOTA	204-64						
GT41	GDC	135-104	GT761	GDC	136-10		STI			STI		HEPS0026-RT	MOTA	175-25						
	STI			STI		HA5022	GDC	148-43	HA7804	GDC	165-32	HEPS0027-RT	MOTA	221-20						
GT42	GDC	135-110	GT762	GDC	136-16		STI			STI		HEPS0028-RT	MOTA	174-12						
	STI			STI		HA5023	GDC	148-47	HA7806	GDC	165-33	HEPS0029-RT	MOTA	160-91						
GT43	GDC	136-6	GT763	GDC	136-19		STI			STI		HEPS0030-RT	MOTA	200-101						
	STI			STI		HA5024	GDC	148-44	HA7807	GDC	433-61	HEPS0031-RT	MOTA	160-57						
GT44	GDC	135-100	GT764	GDC	136-18		STI			STI		HEPS0032-RT	MOTA	160-52						
	STI			STI		HA5025	GDC	148-46	HA7808	GDC	165-34	HEPS0033-RT	MOTA	201-45						
GT45	GDC	135-105	GT792	GDC	146-88		STI			STI		HEPS0034-RT	MOTA	220-68						
	STI		HSE	STI		HA5026	GDC	148-48	HA7809	GDC	433-62	HEPS0035-RT	MOTA	202-98						
GT46	GDC	136-1	GT811	GTC	358-36		STI			STI		HEPS0036-RT	MOTA	202-89						
	STI			GDC	412-70	HA7206	GDC	154-39	HA7810	GDC	165-35	HEPS0037-RT	MOTA	162-23						
GT47	GDC	136-7	GT812	GTC	358-37		STI			STI		HEPS0038-RT	MOTA	221-99						
	STI			GDC	412-71	HA7207	GDC	154-43	HA7815	GDC	165-36	HEPS0039-RT	MOTA	190-68						
GT74	GDC	138-11	GT904	GDC	147-59		STI			STI		HEPS0040-RT	MOTA	223-32						
	STI		HSE	STI		HA7501	GDC	168-71	HA9048	GDC	155-37	HEPS3001-RT	MOTA	444-9						
GT75	GDC	138-12	GT905R	GDC	146-66		STI			STI		HEPS3002-RT	MOTA	290-65						
	STI			STI		HA7502	GDC	168-75	HA9049	GDC	155-38	HEPS3003-RT	MOTA	271-2						
GT81	GDC	138-13	GT906AM	USSR	252-7		STI			STI		HEPS3004-RT	MOTA	444-10						
	STI		GT948	GDC	147-60	HA7506	GDC	168-72	HA9054	GDC	154-24	HEPS3005-RT	MOTA	444-11						
GT81H	GDC	135-55		STI			STI			STI		HEPS3006-RT	MOTA	444-12						
	STI		GT949	GDC	147-29	HA7507	GDC	168-77	HA9055	GDC	154-36	HEPS3007-RT	MOTA	444-13						
GT81HS	GDC	143-34		STI			STI			STI		HEPS3008-RT	MOTA	444-14						
	STI		GT949R	GDC	146-67	HA7510	GDC	168-76	HA9056	GDC	154-25	HEPS3009-RT	MOTA	333-71						
GT82	GDC	138-14		STI			STI			GDC	366-106	HEPS3010-RT	MOTA	307-19						
	STI		GT1079	GDC	147-95	HA7515	GDC	268-49	HA9057	GDC	154-37			378-37						
GT83	GDC	138-80		STI			STI			STI		HEPS3011-RT	MOTA	294-43						
	STI		GT1201	GDC	146-110	HA7516	GDC	178-109	HA9058	GDC	154-26	HEPS3012-RT	MOTA	271-23						
GT87	GDC	138-56		STI			STI			STI		HEPS3019-RT	MOTA	306-60						
	STI		GT1202	GDC	147-4	HA7517	GDC	178-110	HA9059	GDC	154-38	HEPS3020-RT	MOTA	310-31						
GT88	GDC	139-2		STI			STI			STI		HEPS3021-RT	MOTA	310-32						
	STI		GT1604	GDC	135-41	HA7518	GDC	179-1	HA9078	GDC	155-39	HEPS3024-RT	MOTA	309-40						
GT100	GDC	136-2		STI			STI			STI		HEPS3028-RT	MOTA	272-104						
	STI		GT1605	GDC	135-44	HA7520	GDC	268-50	HA9079	GDC	155-40	HEPS3032-RT	MOTA	273-45						
GT115A	USSR	132-89		STI			STI			STI		HEPS3033-RT	MOTA	294-106						
GT115B	USSR	132-90	GT1606	GDC	135-45	HA7521	GDC	268-51	HA9500	GDC	176-53	HEPS3034-RT	MOTA	294-107						
GT115D	USSR	132-91		STI			STI			STI		HEPS3035-RT	MOTA	294-108						
GT115G	USSR	132-92	GT1607	GDC	136-14	HA7522	GDC	268-52	HA9501	GDC	176-54	HEPS3036-RT	MOTA	444-15						
GT115V	USSR	132-93		STI			STI			STI		HEPS3037-RT	MOTA	444-16						
GT122	GDC	139-11	GT1608	GDC	147-9	HA7523	GDC	268-53	HA9502	GDC	176-55	HEPS3038-RT	MOTA	444-17						
	STI			STI			STI			STI		HEPS3039-RT	MOTA	444-18						
GT122A	USSR	147-30	GT1609	GDC	147-10	HA7524	GDC	268-54	HA9531	GDC	156-69	HEPS3040-RT	MOTA	444-19						
GT122B	USSR	147-31		STI			STI			STI		HEPS3041-RT	MOTA	444-20						
GT122G	USSR	147-40	GT2693	GDC	139-57	HA7525	GDC	268-55	HA9531A	GDC	156-70	HEPS3042-RT	MOTA	444-21						
GT122V	USSR	147-41		STI			STI			STI		HEPS3043-RT	MOTA	444-22						
GT123	STI	399-30	GT2694	GDC	138-16	HA7526	GDC	268-56	HA9532	GDC	156-71	HEPS3044-RT	MOTA	444-23						
				STI			STI			STI		HEPS3045-RT	MOTA	444-24						
GT124A	USSR	134-23	GT2695	GDC	139-58	HA7527	GDC	268-57	HA9532A	GDC	156-72	HEPS3046-RT	MOTA	444-25						
GT124B	USSR	134-24		STI			STI			STI		HEPS3047-RT	MOTA	310-33						
GT124V	USSR	134-25	GT2696	GDC	138-17	HA7528	GDC	268-58	HA9532B	GDC	166-109	HEPS3048-RT	MOTA	310-34						
GT125A	USSR	138-81		STI			STI			STI		HEPS3049-RT	MOTA	310-35						
GT125B	USSR	138-82	GT2765	GDC	147-78	HA7529	GDC	268-59	HCR1020	LT	429-50	HEPS3050-RT	MOTA	273-46						
GT125D	USSR	138-83		STI			STI			LT	429-51	HEPS3051-RT	MOTA	310-36						
GT125E																				



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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
HPS7000-RT	MOTA	347-4	HSE350-RT	HSE	170-100	IR425	INR	344-56	IR6542	INR	332-10	IRF522	INR	249-91	
HPS7001-RT	MOTA	284-42	HSE373	HSE	134-105			389-4			396-72	IRF523	INR	249-92	
HPS7002-RT	MOTA	341-107	HSE401-RT	HSE	200-84	IR430	INR	344-57	IR6543	INR	332-11	IRF530	INR	250-25	
HPS7003-RT	MOTA	283-59	HSE402-RT	HSE	160-84			389-5			396-73		MOTA	381-66	
HPS7004-RT	MOTA	334-18	HSE403-RT	HSE	160-85	IR431	INR	344-58	IR6544	INR	337-97	IRF531	INR	250-26	
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HPS9002-RT	MOTA	436-97	HSE414-RT	HSE	160-58	IR519	INR	337-96	IR6547	INR	344-60	IRF610	INR	249-34	
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HPS9103-RT	MOTA	415-34	HSE418-RT	HSE	200-64			423-49	IR6583	INR	337-100	IRF612	INR	249-36	
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HSE150-RT	HSE	218-36			421-24			422-60	IRF420	INR	249-85	IRF9530	INR	377-93	
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IN TYPE NUMBER SEQUENCE			IN TYPE NUMBER SEQUENCE			IN TYPE NUMBER SEQUENCE			IN TYPE NUMBER SEQUENCE					
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
IT124	◆INL	209-24	J109	◆SIX	247-24	J4391	◆TSC	244-40	JE9112D	◆NECE	285-5	KP308V	◆USSR	237-28
IT125	◆INL	433-73	◆SIX	NSC	360-58			361-33		◆NECJ		KP312A	◆USSR	237-81
		209-25	J109-18	◆SIX	245-40	J4392	◆TSC	244-41	JE9113A	◆NECE	352-12	KP312B	◆USSR	237-82
		433-74	J110	◆NSC	247-25			361-34		◆NECJ		KP313A	◆USSR	237-28
IT126	◆INL	208-41	◆SIX	◆SIX	360-58	J4393	◆TSC	244-42	JE9113B	◆NECE	352-13	KP313B	◆USSR	237-29
		433-75	J110-18	◆SIX	245-41			361-35		◆NECJ		KP313V	◆USSR	237-30
IT127	◆INL	208-42	J111	◆INL	247-74	J4416	◆TSC	244-43	JE9113C	◆NECE	352-14	KP314A	◆USSR	238-104
		433-76		◆NSC	361-53	J4858	◆TSC	244-44		◆NECJ		KP360A	◆USSR	238-105
IT128	◆INL	208-43		◆SOD				360-72	JE9113D	◆NECE	352-15	KP360B	◆USSR	238-106
		433-77		◆TSC		J4857	◆TSC	244-45		◆NECJ		KP360V	◆USSR	238-107
IT129	◆INL	208-44	J111-18	◆SIX	245-42			360-87	JH2101	◆SOD	241-97	KP901A	◆USSR	249-42
		433-78	J112	◆INL	247-75	J4858	◆TSC	244-46	JH2102	◆SOD	241-98	KP901B	◆USSR	249-43
IT130	◆INL	167-8		◆NSC	361-54			362-16	JH2103	◆SOD	241-99	KP902A	◆USSR	249-1
		433-79		◆SOD		J4859	◆TSC	244-47	JH2104	◆SOD	241-100	KP902B	◆USSR	249-2
IT130A	◆INL	167-9		◆TSC				360-73	JH2105	◆SOD	241-101	KP902V	◆USSR	249-3
		433-80	J112-18	◆SIX	245-43	J4860	◆TSC	244-48	JH2108	◆SOD	241-102	KP903A	◆USSR	236-24
IT131	◆INL	166-87	J113	◆INL	247-76			360-88	K901	◆WAB	195-38	KP903B	◆USSR	236-25
		433-81		◆NSC	361-55	J4861	◆TSC	244-49	K917	◆WAB	192-2	KP903V	◆USSR	236-26
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		433-82		◆TSC		JE8050	◆NECE	297-17	K2115	◆HSE	190-18	KPD1404	◆KPD1	290-69
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IT5911	◆INL	246-52		◆TSC		JE9011I	◆NECE	210-56		◆SOD			◆PPC	365-33
		433-91	J177-18	◆SIX	233-88				KE4093	◆NSC	245-75	KS6110	◆PPC	310-39
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IVN5000SND	◆INL	361-14	J230	◆SIX	245-57				KE4857	◆NSC	245-82	KS6121	◆PPC	364-100
IVN5000TND	◆INL	361-15	J230-18	◆SIX	245-58	JE9014	◆NECE	220-75		◆SOD			◆PPC	332-86
IVN5000TNE	◆INL	361-16	J231	◆SIX	245-59	JE9014A	◆NECE	223-2		◆SOD			◆PPC	364-101
IVN5000TND	◆INL	361-17	J231-18	◆SIX	245-60				KE4858	◆NSC	245-83	KS6122	◆PPC	332-67
IVN5000TNE	◆INL	361-18	J232	◆SIX	245-61	JE9014B	◆NECE	223-3		◆SWT			◆PPC	367-58
IVN5001AND	◆INL	361-19	J232-18	◆SIX	245-62				KE4859	◆NSC	245-84	KS6127	◆PPC	337-35
IVN5001ANF	◆INL	361-20	J270	◆NSC	233-66	JE9014C	◆NECE	223-4		◆SOD			◆PPC	364-88
IVN5001BND	◆INL	361-21	J270	◆SIX	245-63				KE4860	◆NSC	245-85	KS6128	◆PPC	337-36
IVN5001BNE	◆INL	361-22	J270-18	◆SIX	245-64	JE9014D	◆NECE	223-5		◆SOD			◆PPC	367-31
IVN5001BNF	◆INL	361-23	J271	◆NSC	233-67				KE4861	◆NSC	245-86	KS6129	◆PPC	339-50
IVN5001BND	◆INL	361-24	J271	◆SIX	245-65	JE9015	◆NECE	173-80		◆SOD			◆PPC	364-89
IVN5001SND	◆INL	361-25	J300	◆NSC	244-15	JE9015A	◆NECE	175-36		◆SOD	241-106	KS6130	◆PPC	339-51
IVN5001SNF	◆INL	361-26		◆SOD					KE5103	◆SOD	241-107		◆PPC	365-91
IVN5001TND	◆INL	361-27	J300	◆SIX	245-66	JE9015B	◆NECE	175-37		◆SOD	241-108	KSD1051	◆PPC	333-107
IVN5001TNE	◆INL	361-28	J304	◆NSC	244-16				KE5104	◆SOD	232-55	KSD1052	◆PPC	333-108
IVN5001TND	◆INL	361-29		◆SOD		JE9015C	◆NECE	175-38		◆MIC	267-24	KSD1053	◆PPC	333-109
IVN5001TNE	◆INL	361-30	J304	◆SIX	245-67				KE5480	◆SOD	247-26	KSD1054	◆PPC	333-110
IVN5200HND	◆INL	364-55		◆TSC		JE9016	◆NECE	210-69		◆SOD	433-93	KSD1055	◆PPC	334-1
IVN5200HNE	◆INL	364-56	J305	◆SIX	245-68	JE9016D	◆NECE	210-70		◆SOD	247-27	KSD1056	◆PPC	334-2
IVN5200HNF	◆INL	364-57	J308	◆INL	247-77	JE9016E	◆NECE	210-71		◆SOD	433-94	KSD1057	◆PPC	334-3
IVN5200KNE	◆INL	364-58		◆NSC					KE5198	◆SOD	247-28	KSD1058	◆PPC	334-4
IVN5200KNE	◆INL	364-59		◆SOD		JE9016F	◆NECE	210-72		◆SOD	433-95	KSD2101	◆PPC	316-10



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KSP1081	PPC	322-8	KT384A	USSR	155-80	KT927V	USSR	335-94	M8700	WAB	290-107	MA900	HSE	135-80
KSP1092	PPC	322-9	KT385A	USSR	155-81	KT928A	USSR	211-36	M54512L	MITJ	425-12		STI	
KSP1093	PPC	322-10	KT388A	USSR	149-32	KT928V	USSR	211-37	M54513P	MITJ	425-10	MA901	HSE	135-61
KSP1094	PPC	322-11	KT389B	USSR	149-33	KT934A	USSR	290-86	M54514AP	MITJ	425-9		STI	
KSP1095	PPC	322-12	KT389V	USSR	149-34	KT934B	USSR	290-87	M54514P	MITJ	427-19	MA902	HSE	135-62
KSP1102	PPC	330-33	KT391A-2	USSR	180-62	KT934D	USSR	290-88	M54515P	MITJ	425-6		STI	
KSP1103	PPC	330-34	KT391B-2	USSR	180-63	KT934G	USSR	290-89	M54516P	MITJ	425-30	MA903	HSE	135-63
KSP1104	PPC	330-35	KT391V-2	USSR	180-64	KT934V	USSR	290-90	M54517P	MITJ	425-25		STI	
KSP1105	PPC	330-36	KT501A	USSR	161-40	KT935A	USSR	290-91	M54519P	MITJ	425-26	MA904	HSE	135-64
KSP1121	PPC	320-37	KT501B	USSR	161-41	KT936A	USSR	290-92	M54521P	MITJ	425-31		STI	
KSP1122	PPC	320-38	KT501D	USSR	161-42	KT936B	USSR	290-93	M54522P	MITJ	425-27	MA909	HSE	138-23
KSP1123	PPC	320-39	KT501E	USSR	161-43	KT940A	USSR	290-94	M54523P	MITJ	425-32	MA910	HSE	138-24
KSP1124	PPC	320-40	KT501G	USSR	161-44	KT940B	USSR	290-95	M54524P	MITJ	425-33	MA1702	HSE	142-105
KSP1125	PPC	320-41	KT501H	USSR	161-45	KT940V	USSR	290-96	M54525P	MITJ	425-34		STI	
KSP1142	PPC	334-30	KT501I	USSR	161-46	KT943A	USSR	290-97	M54526P	MITJ	425-35	MA1703	HSE	142-64
KSP1143	PPC	334-31	KT501M	USSR	161-47	KT943B	USSR	290-98	M54527P	MITJ	425-16		STI	
KSP1144	PPC	334-32	KT501N	USSR	161-48	KT943C	USSR	290-99	M54528P	MITJ	425-17	MA1704	HSE	142-97
KSP1145	PPC	334-33	KT501V	USSR	161-49	KT943G	USSR	290-100	M54529P	MITJ	425-18		STI	
KSP1146	PPC	334-34	KT502A	USSR	168-83	KT943V	USSR	290-101	M54530P	MITJ	425-28	MA1705	HSE	142-101
KSP1151	PPC	330-38	KT502B	USSR	168-84	KT945A	USSR	290-102	M54531P	MITJ	425-29		STI	
KSP1152	PPC	330-39	KT502D	USSR	168-85	KT3101A-2	USSR	180-68	M54532P	MITJ	425-37	MA1706	HSE	142-65
KSP1153	PPC	330-40	KT502E	USSR	168-86	KT3102A	USSR	191-36	M54533P	MITJ	425-19		STI	
KSP1154	PPC	330-41	KT502G	USSR	168-87	KT3102B	USSR	191-37	M54534P	MITJ	425-20	MA1707	HSE	142-79
KSP1155	PPC	330-42	KT502H	USSR	168-88	KT3102D	USSR	191-38	M54536P	MITJ	425-46		STI	
KSP1156	PPC	330-43	KT503A	USSR	212-6	KT3102E	USSR	191-39	M54537P	MITJ	425-23	MA1708	HSE	142-98
KSP1171	PPC	334-35	KT503B	USSR	212-7	KT3102G	USSR	191-40	M54538P	MITJ	425-24		STI	
KSP1172	PPC	334-36	KT503D	USSR	212-8	KT3102V	USSR	191-41	M54539P	MITJ	425-36	MA3227	HSE	438-66
KSP1173	PPC	334-37	KT503E	USSR	212-9	KT3104A	USSR	149-23	M54560P	MITJ	425-15	MA3228	STI	439-23
KSP1174	PPC	334-38	KT503G	USSR	212-10	KT3104B	USSR	149-24	M54561P	MITJ	425-39	MA3229	STI	439-24
KSP1175	PPC	334-39	KT503V	USSR	212-11	KT3104D	USSR	149-25	M54562P	MITJ	425-43	MA3230	STI	439-25
KSP1201	PPC	344-61	KT604AM	USSR	225-30	KT3104E	USSR	149-26	M54563P	MITJ	425-44	MA3231	STI	439-26
KSP1202	PPC	344-62	KT611AM	USSR	225-31	KT3104G	USSR	149-27	M54564P	MITJ	425-45	MA3232	STI	439-27
KSP1203	PPC	344-63	KT611BM	USSR	225-32	KT3104V	USSR	149-28	M54565P	MITJ	425-13	MA3233	STI	439-28
KSP1204	PPC	344-64	KT620A	USSR	190-108	KT3107A	USSR	159-59	M54566P	MITJ	425-40	MA3234	STI	439-29
KSP1205	PPC	344-65	KT620B	USSR	214-94	KT3107B	USSR	159-60	M54567P	MITJ	425-41	MA4404	LTE	142-56
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KSP1252	PPC	344-67	KT625A	USSR	230-88	KT3107E	USSR	159-62	M54569P	MITJ	425-8	MA4404A	LTE	142-57
KSP1253	PPC	344-68	KT625B	USSR	230-89	KT3107G	USSR	159-63	M54571P	MITJ	425-47	MA7807	STI	433-99
KSP1254	PPC	344-69	KT626A	USSR	273-107	KT3107SZ	USSR	159-64	M54576FP	MITJ	425-42	MA7809	STI	433-100
KSP1255	PPC	344-70	KT626B	USSR	273-108	KT3107V	USSR	159-65	M54577FP	MITJ	425-11	MA7811	STI	165-37
KSP1256	PPC	344-71	KT626D	USSR	273-109	KT394A	USSR	149-2	M54577P	MITJ	425-38		STI	438-67
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KSP1605	PPC	354-36	KT630D	USSR	226-67	KT398B-1	USSR	180-34	MA112	STI	141-42	MA8002	MEHK	228-28
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KT208A	USSR	151-61	KT704B	USSR	200-47	KT622C	USSR	425-77	MA201	HSE	138-36	MC108	PIHS	298-51
KT208B	USSR	151-62	KT704V	USSR	200-48	KT622A	USSR	425-77	MA202	STI	138-92	MC140	PIHS	302-44
KT209D	USSR	151-63	KT807AM	USSR	290-72	KT622B	USSR	425-77	MA203	HSE	138-93	MC141	PIHS	302-45
KT209E	USSR	151-64	KT807BM	USSR	290-73	KT622C	USSR	425-77	MA204	STI	138-94	MC142	PIHS	302-46
KT209G	USSR	151-65	KT808AM	USSR	290-74	KT622B	USSR	425-77	MA205	HSE	138-95	MC150	PIHS	270-93
KT209I	USSR	151-66	KT808BM	USSR	290-75	KT622C	USSR	425-77	MA206	STI	138-96	MC151	PIHS	270-94
KT209K	USSR	151-67	KT808GM	USSR	290-76	KT622C	USSR	425-77	MA208	HSE	141-48	MC152	PIHS	270-95
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KT209M	USSR	151-69	KT814A	USSR	274-2	KT622C	USSR	425-77	MA210	HSE	141-50	MC161	PIHS	302-48
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KT210A	USSR	149-42	KT814V	USSR	274-4	L9014	USSR	195-70	MA212	HSE	141-52	MC163	PIHS	302-50
KT210B	USSR	149-43	KT815A	USSR	311-102	L9015	USSR	195-70	MA213	STI	141-53	MC164	PIHS	302-51
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KT214B-1	USSR	149-46	KT815D	USSR	311-105	LDA401	USSR	207-6	MA216	HSE	141-56	MC167	PIHS	302-54
KT214D-1	USSR	149-47	KT815E	USSR	311-106	LDA401MP	USSR	207-7	MA217	STI	141-57	MC168	PIHS	302-55
KT214E-1	USSR	149-48	KT816A	USSR	276-72	LDA402	USSR	207-8	MA218	HSE	141-58	MC169	PIHS	302-56
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KT214V-1	USSR	149-50	KT816G	USSR	276-74	LDA404	USSR	207-10	MA220	HSE	141-60	MC171	PIHS	302-58
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KT215D-1	USSR	180-27	KT817B	USSR	317-91	LDA405	USSR	207-13	MA223	STI	141-63	MC174	PIHS	302-61
KT215E-1	USSR	180-28	KT817C	USSR	317-92	LDA405	USSR	207-14	MA224	HSE	141-64	MC175	PIHS	302-62
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MD981	STI	434-3	MD3250AF	CRI	163-1	MDS80	♦MOTA	310-48	MHQ4014	♦MOTA	426-75	MJ2501			
MD982	♦MOTA	173-38	MD3250F	♦MOTA	434-34	MDS76	♦MOTA	273-47	MHT7908	♦SODI	291-6	(cont.)	SGAI		
SCA	STI	434-4	MD3250F	CRI	163-2	MDS77	♦MOTA	273-48	MHT7909	♦SODI	291-7	SMLB	STC		
MD982F	♦MOTA	162-94	♦MOTA	♦MOTA	439-54	MDS1678	♦MOTA	310-47	MHT7910	♦SODI	291-8	TII	WAB		
		434-5	MD3251	CRI	172-27	MEU21	♦MEHK	436-99	MJ105	STI	327-84	MJ2801	CRI	334-19	
MD984	♦MOTA	434-6	♦MOTA	♦MOTA	439-55	MEU22	♦MEHK	436-100	MJ400	♦MOTA	308-51	PPC	SCA		
			MD3251A	CRI	172-28	MF120	PIHS	298-52	SMLB	STC		STC	TII		
MD985	CRI	430-10	♦MOTA	♦MOTA	434-35	MF177	PIHS	298-53		STI		MJ2840	CRI	341-56	
♦MOTA	STI		MD3251AF	CRI	163-3	MF178	PIHS	298-54	MJ410	CRI	349-35	PPC	STC		
MD985F	CRI	430-11	♦MOTA	♦MOTA	434-36	MF179	PIHS	298-55	♦MOTA	SCA			CRI		
			MD3251F	CRI	163-4	MF179A	PIHS	298-56	STI	WAB		MJ2841	CRI	341-57	
MD986	CRI	430-12	♦MOTA	♦MOTA	439-56	MF179B	PIHS	298-57	MJ411	CRI	349-36	PPC	STC		
			MD3409	CRI	217-59	MF179C	PIHS	298-58	♦MOTA	SCA		TII	WAB		
MD986F	CRI	430-13	♦MOTA	♦MOTA	439-57	MF3304	STI	149-4	SCA	SWT		MJ2901	CRI	282-34	
			MD3410	CRI	217-60	MFE120	♦MOTA	242-4	CRI	STI		PPC	SCA		
MD990	STI	434-7	♦MOTA	♦MOTA	434-38	MFE121	♦MOTA	242-5	MJ413	♦MOTA	344-76	SST	STC		
MD1120	CRI	434-8	MD3467	CRI	367-76	MFE122	♦MOTA	242-6	SST	STI			TII		
♦MOTA	STI		♦MOTA	♦MOTA	439-57	MFE130	♦MOTA	242-7	MJ420	CRI	225-47	MJ2940	CRI	283-45	
MD1120F	CRI	434-9	MD3467F	CRI	367-77	MFE131	♦MOTA	242-8	GTC	IDI		PPC	STC		
			♦MOTA	♦MOTA	439-58	MFE132	♦MOTA	242-9	SCA	STC			TII		
MD1121	CRI	434-10	MD3725	CRI	372-4	MFE140	♦MOTA	242-10	WAB	CRI		MJ2941	CRI	283-46	
♦MOTA	STI		♦MOTA	♦MOTA	439-59	MFE521	♦MOTA	242-11	CRI	STC		PPC	STC		
MD1122	CRI	434-11	MD3725F	STI	372-5	MFE823	♦MOTA	233-16	MJ421	GTC			TII		
♦MOTA	STI		♦MOTA	♦MOTA	439-60	MFE930	♦MOTA	249-7	GTC	STC		MJ2955	CRI	282-35	
MD1123	CRI	434-12	MD3762	CRI	367-59	MFE960	♦MOTA	249-8	MJ423	CRI	344-77	CRI	♦MOTA		
♦MOTA	SCA		♦MOTA	♦MOTA	439-61	MFE990	♦MOTA	249-9	♦MOTA	SCA		PPC	RCA		
			MD3762F	STI	367-60	MFE2000	♦MOTA	249-9	SST	STI		RCAB	SGAI		
MD1124	STI	434-13	♦MOTA	♦MOTA	439-62	MFE2001	♦MOTA	242-13	SWT	WAB		TII	STC		
MD1125	STI	434-14	MD4260	CRI	172-19	MFE2001	♦MOTA	242-13	MJ424	CRI	349-37	MJ2955A	MOTA	282-36	
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MD1127	STI	434-16	MD4261	CRI	172-20	MFE2004	♦MOTA	248-66	MJ431	CRI	344-78	MJ3000	CRI	422-25	
MD1128	STI	365-24	♦MOTA	♦MOTA	434-40	MFE2005	♦MOTA	369-82	♦MOTA	SCA		STC	♦MOTA		
			MD5000	CRI	160-42	MFE2005	CRI	248-67	SST	STI			SPE		
MD1129	CRI	217-54	♦MOTA	♦MOTA	434-41	MFE2006	♦MOTA	364-78	MJ450	CRI	283-44	STC	TII		
♦MOTA	SCA	434-18	MD5000A	CRI	160-43	MFE2006	CRI	248-68	♦MOTA	TII		MJ3001	CRI	422-26	
			♦MOTA	♦MOTA	434-42	MFE2007	CRI	362-18	STC	CRI	330-44	MJ3001	CRI	♦MOTA	
MD1129F	CRI	203-96	MD5000B	CRI	160-44	MFE2008	CRI	361-56	SCA	STC			CRI		
♦MOTA	SCA	434-19	♦MOTA	♦MOTA	434-43	MFE2008	CRI	248-70	MJ480	TII		MJ3002	CRI	339-53	
			MD5000B	CRI	160-44	MFE2009	CRI	361-57	SCA	STC			STC		
MD1130	CRI	434-20	MD6001	CRI	430-14	MFE2010	CRI	248-71	MJ481	STC		MJ3002	CRI	333-74	
♦MOTA	SCA		♦MOTA	♦MOTA	430-15	MFE2011	CRI	361-58	STC	TII		MJ3010	CRI	335-95	
			MD6001F	CRI	430-15	MFE2012	♦MOTA	248-72	MJ490	SCA		MJ3011	CRI	335-96	
MD1130F	CRI	434-21	MD6002	CRI	430-16	MFE2012	♦MOTA	361-60	SCA	STC		MJ3026	STC		
			♦MOTA	♦MOTA	430-17	MFE2093	CRI	242-14	MJ491	SCA			STC		
MD1131	STI	434-22	MD6002F	CRI	430-17	MFE2093	CRI	242-14	MJ500	STC		MJ3027	CRI	333-75	
MD1132	CRI	217-38	♦MOTA	♦MOTA	430-18	MFE2094	CRI	242-15	MJ501	PPC		MJ3028	STC		
♦MOTA	STI	434-23	MD6003	CRI	430-18	MFE2095	CRI	242-16	PPC	PPC		MJ3028	CRI	339-53	
MD1134	STI	434-24	MD6003F	CRI	430-19	MFE3001	♦MOTA	238-108	MJ802	CRI	378-39	MJ3029	STC		
MD2060F	CRI	202-99	♦MOTA	♦MOTA	430-20	MFE3002	♦MOTA	239-1	♦MOTA	IPSI		♦MOTA	STC		
♦MOTA	SCA	439-34	MD6100	CRI	430-20	MFE3003	♦MOTA	232-47	♦MOTA	PPC		MJ3030	STC		
MD2218	CRI	217-55	♦MOTA	♦MOTA	430-21	MFE3004	♦MOTA	242-17	STC	TII		MJ3030	♦MOTA	344-80	
♦MOTA	SCA	439-35	MD6100F	CRI	430-21	MFE3005	♦MOTA	242-18	MJ900	WAB		MJ3040	STC		
			MD6900	CRI	430-22	MFE3020	CRI	234-15	CRI	CEN		♦MOTA	CRI	422-63	
MD2218A	♦MOTA	217-56	MD7000	CRI	217-61	MFE3021	CRI	366-100	♦SGAI	♦MOTA		♦MOTA	STC		
SCA	STI	439-36	♦MOTA	♦MOTA	439-63	MFE4007	CRI	234-16	STC	WAB		MJ3041	CRI	422-93	
MD2218AF	CRI	203-97	MD7001	CRI	173-39	MFE4008	CRI	232-49	♦MOTA	PPC		♦MOTA	STC		
♦MOTA	SCA	439-37	♦MOTA	♦MOTA	439-64	MFE4009	CRI	232-48	♦MOTA	CEN		MJ3042	CRI	422-94	
MD2218F	CRI	203-98	MD7001F	CRI	162-99	MFE4010	CRI	232-50	♦SGAI	STC		♦MOTA	STC		
♦MOTA	SCA	439-38	♦MOTA	♦MOTA	217-62	MFE4011	CRI	232-51	MJ920	CRI	420-63	MJ3101	CRI	313-97	
MD2219	CRI	217-57	MD7002	CRI	217-62	MFE4012	CRI	232-52	MJ921	CRI	439-72	MJ3201	CRI	311-106	
♦MOTA	SCA	439-39	♦MOTA	♦MOTA	439-65	MFE4013	CRI	232-53	MJ1000	CRI	420-64	♦MOTA	STC		
			MD7003	CRI	217-24	MFE9200	♦MOTA	248-75	CRI	CEN		♦MOTA	STC		
MD2219A	CRI	217-58	♦MOTA	♦MOTA	439-66	MFEC2010	♦MOTA	442-36	♦SGAI	♦MOTA		MJ3202	CRI	311-107	
♦MOTA	SCA	439-40	MD7003A	CRI	217-25	MFEC3002	♦MOTA	442-37	MJ1001	WAB		SMLB	STC		
			♦MOTA	♦MOTA	439-67	MFEC3003	♦MOTA	442-38	CRI	CEN			STC		
MD2219AF	CRI	203-99	MD7003AF	CRI	204-68	MG15G1AL2	TOSJ	412-58	♦SGAI	STC		MJ3237	♦MOTA	280-24	
♦MOTA	SCA	439-41	♦MOTA	♦MOTA	217-26	MG30G1BL2	TOSJ	412-59	MJ1200	WAB		MJ3238	♦MOTA	280-25	
			MD7003B	CRI	217-26	MG50G1BL2	TOSJ	412-61	♦MOTA	CRI		MJ3247	♦MOTA	330-102	
MD2219F	CRI	203-100	♦MOTA	♦MOTA	439-68	MG50G2CL2	TOSJ	412-62	MJ1201	CRI	420-66	MJ3248	♦MOTA	328-53	
♦MOTA	SCA	439-42	MD7003F	CRI	204-69	MG100G1AL2	TOSJ	412-64	MJ1800	CRI	439-73	MJ3260	CRI	333-76	
MD2369	CRI	217-29	♦MOTA	♦MOTA	439-69	MGT108A	USSR	134-17	♦MOTA	SCA		STC	STC		
♦MOTA	SCA	439-43	MD7004	CRI	172-18	MGT108B	USSR	134-18	STC	STI		MJ3430	CRI	344-81	
MD2369A	CRI	217-30	♦MOTA	♦MOTA	439-68	MGT108D	USSR	134-19	MJ2249	CRI	313-95	SCA	STC		
♦MOTA	SCA	439-44	MD7004F	CRI	163-6	MGT108G	USSR	134-20	PPC	STC		STI	STC		
			♦MOTA	♦MOTA	439-69	MGT108V	USSR	134-21	♦MOTA	CRI		MJ3480	CRI	333-28	
MD2369AF	CRI	204-102	MD7005	CRI	217-27	MH0810	MEHK	266-28	PPC	STC		MJ3701	CRI	275-1	
♦MOTA	SCA	439-45	♦MOTA	♦MOTA	439-70	MH0811	MEHK	276-104	♦MOTA	STC			STC		
			MD7005F	CRI	204-95	MH0812	MEHK	276-105	PPC	CRI		MJ3760	CRI	333-32	
MD2369B	CRI	204-103	♦MOTA	♦MOTA	439-71	MH0813	MEHK	276-106	♦MOTA	CRI		MJ3761	CRI	333-33	
♦MOTA	SCA	439-46	MD7007	CRI	217-68	MH0816	MEHK	266-29	MJ2251	STC		MJ3771	CRI	347-11	
MD2369F	CRI	204-104	♦MOTA	♦MOTA	439-72	MH0818	MEHK	266-30	♦MOTA	STC			PPC	397-83	
♦MOTA	SCA	439-47	MD7007A	CRI	217-69	MH0821	MEHK	276-107	STC	CRI		MJ3771	CRI	347-11	
			♦MOTA	♦MOTA	439-73	MH0822	MEHK	276-108	♦MOTA	STC			IPSI		
MD2904	CRI	172-21	MD7007B	CRI	217-70	MH0823	MEHK	276-109	MJ2253	STC		MJ3772	CRI	347-12	
♦MOTA	SCA	439-45	♦MOTA	♦MOTA	439-74	MH0870									

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MJ4031 (cont.)	STC		MJ10008	♦MOTA	403-48	MJ14001 (cont.)	SMLB		MJE224	CEN	313-18	MJE710 (cont.)	CRI	
	WAB			STI	422-85		STI			GTC			GTC	♦MOTA
MJ4032	CEN	422-29	MJ10009	♦MOTA	403-49	MJ14002	♦MOTA	352-81	MJE225	NSC	313-17		NSC	♦MOTA
	♦MOTA			STI	422-86		STI			CRI		MJE711	CEN	275-83
	SMLB		MJ10011	♦MOTA	419-83	MJ14003	♦MOTA	284-100	MJE230	GTC	274-82		♦MOTA	
MJ4033	STC	422-30	MJ10012	♦MOTA	423-1		STC			♦MOTA		MJE712	CRI	275-84
	WAB			STI		MJ15001	SMLB		MJE231	GTC	274-83		♦MOTA	
	♦MOTA		MJ10013	♦MOTA	404-45		STI			NSC		MJE720	CRI	315-45
MJ4034	CEN	422-31	MJ10014	♦MOTA	422-50	MJ15002	RCA		MJE232	GTC	274-84		♦MOTA	
	♦MOTA			STI	404-46		♦MOTA			NSC		MJE721	CRI	315-46
	STC		MJ10015	♦MOTA	422-51	MJ15003	RCA		MJE233	GTC	274-85		♦MOTA	
	WAB			STI	400-70		SMLB			NSC		MJE722	CRI	315-47
MJ4035	CEN	422-32	MJ10016	♦MOTA	400-71	MJ15004	RCA		MJE234	GTC	274-86		♦MOTA	
	♦MOTA			STI	424-28		♦MOTA			NSC		MJE723	CRI	315-47
	WAB		MJ10020	♦MOTA	400-72	MJ15011	RCA		MJE235	GTC	274-87		♦MOTA	
	♦MOTA			STI	424-38		SMLB			NSC		MJE800	CRI	323-73
MJ4101	STC	314-40	MJ10021	♦MOTA	400-73	MJ15012	RCA		MJE240	GTC	313-18		NSC	♦MOTA
MJ4200	WAB	416-95		STI	424-39	MJ15015	SMLB			NSC		MJE801	CRI	416-73
	♦MOTA	439-78	MJ10022	♦MOTA	402-78		STI		MJE241	GTC	313-19		NSC	♦MOTA
MJ4201	CRI	416-86		STI	424-38	MJ15022	♦MOTA			NSC		MJE802	CRI	327-85
	♦MOTA	439-77	MJ10023	♦MOTA	402-79	MJ15025	RCA		MJE242	GTC	313-20		NSC	♦MOTA
MJ4210	CRI	416-87		STI	424-37		♦MOTA			NSC		MJE803	CRI	327-86
	♦MOTA	439-78	MJ10024	♦MOTA	404-26	MJ15025	RCA		MJE243	GTC	313-21		NSC	♦MOTA
MJ4211	CRI	416-88		STI	424-38	MJ15025	RCA			NSC		MJE804	CRI	416-84
	♦MOTA	439-79	MJ10051	♦MOTA	404-27	MJ15025	RCA		MJE244	GTC	313-22		NSC	♦MOTA
MJ4237	♦MOTA	281-22		STI	424-35	MJ15025	RCA			NSC		MJE805	CRI	327-85
MJ4238	♦MOTA	281-23	MJ10052	♦MOTA	424-78	MJ15025	RCA		MJE245	GTC	313-23		NSC	♦MOTA
MJ4240	CRI	276-78		STI	424-77	MJ15025	RCA			NSC		MJE806	CRI	416-83
	♦MOTA	393-75	MJ10101	♦MOTA	424-77	MJ15025	RCA		MJE246	GTC	313-24		NSC	♦MOTA
MJ4247	♦MOTA	330-103	MJ10102	♦MOTA	424-78	MJ15025	RCA			NSC		MJE807	CRI	327-86
MJ4248	♦MOTA	328-54	MJ10201	♦MOTA	424-79	MJ15025	RCA		MJE247	GTC	313-25		NSC	♦MOTA
MJ4360	♦MOTA	323-86	MJ10202	♦MOTA	424-80	MJ15025	RCA			NSC		MJE808	CRI	416-84
	STI	401-85	MJ11011	♦MOTA	423-84	MJ15025	RCA		MJE248	GTC	313-26		NSC	♦MOTA
MJ4361	♦MOTA	323-87		STI	423-85	MJ15025	RCA			NSC		MJE809	CRI	327-85
	STI	401-86	MJ11012	♦MOTA	423-85	MJ15025	RCA		MJE249	GTC	313-27		NSC	♦MOTA
MJ4380	♦MOTA	332-88		STI	423-86	MJ15025	RCA			NSC		MJE810	CRI	417-18
	STI	398-1	MJ11013	♦MOTA	423-86	MJ15025	RCA		MJE250	GTC	313-28		NSC	♦MOTA
MJ4381	♦MOTA	332-89		STI	423-87	MJ15025	RCA			NSC		MJE811	CRI	416-85
	STI	398-2	MJ11014	♦MOTA	423-87	MJ15025	RCA		MJE251	GTC	313-29		NSC	♦MOTA
MJ4400	MOTA	331-94		STI	423-88	MJ15025	RCA			NSC		MJE812	CRI	327-87
	♦MOTA	398-7	MJ11015	♦MOTA	423-88	MJ15025	RCA		MJE252	GTC	313-30		NSC	♦MOTA
MJ4401	MOTA	331-95		STI	423-89	MJ15025	RCA			NSC		MJE813	CRI	417-31
	♦MOTA	398-8	MJ11016	♦MOTA	423-89	MJ15025	RCA		MJE253	GTC	313-31		NSC	♦MOTA
MJ4502	CRI	284-45		STI	392-75	MJ15025	RCA			NSC		MJE814	CRI	418-98
	♦MOTA		MJ11017	♦MOTA	423-90	MJ15025	RCA		MJE254	GTC	313-32		NSC	♦MOTA
	STC			STI	392-76	MJ15025	RCA			NSC		MJE815	CRI	327-88
	PPC		MJ11018	♦MOTA	423-91	MJ15025	RCA		MJE255	GTC	313-33		NSC	♦MOTA
	SWT			STI	392-77	MJ15025	RCA			NSC		MJE816	CRI	417-31
MJ4645	CRI	270-82	MJ11019	♦MOTA	423-92	MJ15025	RCA		MJE256	GTC	313-34		NSC	♦MOTA
	♦MOTA	378-61		STI	423-93	MJ15025	RCA			NSC		MJE817	CRI	418-99
MJ4646	CRI	270-83	MJ11020	♦MOTA	423-94	MJ15025	RCA		MJE257	GTC	313-35		NSC	♦MOTA
	♦MOTA	378-62		STI	392-78	MJ15025	RCA			NSC		MJE818	CRI	419-14
MJ4647	CRI	270-84	MJ11021	♦MOTA	423-93	MJ15025	RCA		MJE258	GTC	313-36		NSC	♦MOTA
	♦MOTA	378-40		STI	423-94	MJ15025	RCA			NSC		MJE819	CRI	418-100
MJ4648	CRI	270-85	MJ11022	♦MOTA	392-80	MJ15025	RCA		MJE259	GTC	313-37		NSC	♦MOTA
	♦MOTA	378-41		STI	423-95	MJ15025	RCA			NSC		MJE820	CRI	419-15
MJ5415	STI	272-30	MJ11028	♦MOTA	424-54	MJ15025	RCA		MJE260	GTC	313-38		NSC	♦MOTA
MJ5418	STI	272-31		STI	392-79	MJ15025	RCA		MJE261	GTC	313-39		NSC	♦MOTA
MJ6302	TII	341-109	MJ11029	♦MOTA	424-55	MJ15025	RCA			NSC		MJE821	CRI	418-101
	♦MOTA	403-61		STI	424-56	MJ15025	RCA		MJE262	GTC	313-40		NSC	♦MOTA
MJ6502	♦MOTA	282-85	MJ11030	♦MOTA	424-56	MJ15025	RCA			NSC		MJE822	CRI	419-16
	STI	392-69		STI	424-57	MJ15025	RCA		MJE263	GTC	313-41		NSC	♦MOTA
MJ6503	♦MOTA	282-86	MJ11031	♦MOTA	424-57	MJ15025	RCA			NSC		MJE823	CRI	283-2
	STI	392-70		STI	424-58	MJ15025	RCA		MJE264	GTC	313-42		NSC	♦MOTA
MJ6700	♦MOTA	278-88	MJ11032	♦MOTA	424-58	MJ15025	RCA			NSC		MJE824	CRI	338-44
	PPC	378-42		STI	424-59	MJ15025	RCA		MJE265	GTC	313-43		NSC	♦MOTA
MJ6701	PPC	278-89	MJ11033	♦MOTA	424-59	MJ15025	RCA			NSC		MJE825	CRI	338-45
	♦MOTA	378-43		STI	424-59	MJ15025	RCA		MJE266	GTC	313-44		NSC	♦MOTA
MJ7000	SCA	341-58	MJ12002	♦MOTA	332-70	MJ15025	RCA			NSC		MJE826	CRI	282-18
	♦MOTA			STI	339-54	MJ15025	RCA		MJE267	GTC	313-45		NSC	♦MOTA
MJ7200	PTI	352-58	MJ12003	♦MOTA	339-54	MJ15025	RCA			NSC		MJE827	CRI	282-17
MJ7201	PTI	352-59		STI	339-55	MJ15025	RCA		MJE268	GTC	313-46		NSC	♦MOTA
MJ8100	SCA	272-32	MJ12004	♦MOTA	339-55	MJ15025	RCA			NSC		MJE828	CRI	333-81
	♦MOTA	378-44		STI	339-56	MJ15025	RCA		MJE269	GTC	313-47		NSC	♦MOTA
MJ8101	♦MOTA	272-33	MJ12005	♦MOTA	339-56	MJ15025	RCA			NSC		MJE829	CRI	333-82
	PPC	378-45		STI	339-57	MJ15025	RCA		MJE270	GTC	313-48		NSC	♦MOTA
	SMLB		MJ13014	♦MOTA	342-14	MJ15025	RCA			NSC		MJE830	CRI	313-23
MJ8400	♦MOTA	344-82		STI	392-81	MJ15025	RCA		MJE271	GTC	313-49		NSC	♦MOTA
MJ8500	♦MOTA	337-37	MJ13015	♦MOTA	342-15	MJ15025	RCA			NSC		MJE831	CRI	418-102
	STI			STI	392-82	MJ15025	RCA		MJE272	GTC	313-50		NSC	♦MOTA
MJ8501	♦MOTA	337-38	MJ13070	♦MOTA	337-10	MJ15025	RCA			NSC		MJE832	CRI	418-103
	STI			STI	390-3	MJ15025	RCA		MJE273	GTC	313-51		NSC	♦MOTA
MJ8502	♦MOTA	340-50		STI	337-102	MJ15025	RCA			NSC		MJE833	CRI	419-18
	STI		MJ13071	♦MOTA	390-4	MJ15025	RCA		MJE274	GTC	313-52		NSC	♦MOTA
MJ8503	♦MOTA	340-51		STI	392-17	MJ15025	RCA			NSC		MJE834	CRI	418-104
	STI		MJ13080	♦MOTA	342-18	MJ15025	RCA		MJE275	GTC	313-53		NSC	♦MOTA
MJ8504	♦MOTA	344-83		STI	392-83	MJ15025	RCA			NSC		MJE835	CRI	419-19
	STI		MJ13081	♦MOTA	342-17	MJ15025	RCA		MJE276	GTC	313-54		NSC	♦MOTA
MJ8505	♦MOTA	344-84		STI	392-84	MJ15025	RCA			NSC		MJE836	CRI	418-105
	STI		MJ13082	♦MOTA	344-85	MJ								

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MJE2955 (cont.)	♦MOTA SST		MM1613	STI	229-15 366-78	MM4006	CRI ♦MOTA	272-35	MMBT3640	MOTA	162-107	MMT3906	♦MOTA	153-50
MJE2955K	CRI SST	282-89	MM1614	STI	178-4 366-75	MM4007	CRI ♦MOTA	272-36	MMBT3904 MMBT3906 MMBT4260	♦MOTA ♦MOTA ♦MOTA	203-54 162-91 163-9	MMT3960	♦MOTA	191-14 380-36 191-15 380-37
MJE2955T	♦MOTA NSC	281-98	MM1619	STI	321-52	MM4008	CRI ♦MOTA	270-87	MMBT4261	MOTA	163-11	MMT4261	MOTA	155-32
MJE3055	CRI SST	338-48	MM1620	STI	331-107	MM4009	♦MOTA	270-88	MMBT4402	MOTA	163-11	MMT4416	MOTA	240-10
MJE3055K	♦MOTA CRI	338-26	MM1711	STI	229-16 366-79	MM4010	♦MOTA	270-89	MMBT4403	MOTA	162-44	MMT5031A	MOTA	193-16
MJE3055T	♦MOTA NSC	332-72	MM1803	HSE STI	218-8	MM4011	♦MOTA	270-90	MMBT5086	MOTA	162-74	MMT5031A	MOTA	193-10
MJE3300	CRI CEN	415-84	MM1812	STI	294-44	MM4012	♦MOTA	270-91	MMBT5087	MOTA	162-74	MMT5031A	MOTA	193-10
MJE3301	♦MOTA CEN	415-85	MM1893	STI	302-50	MM4013	♦MOTA	270-91	MMBT5088	MOTA	161-66	MMT5031A	MOTA	193-10
MJE3302	♦MOTA CEN	415-86	MM1941	MOTA	200-3	MM4014	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE3310	♦MOTA CEN	415-87	MM2193A	SCA STI	302-51 376-24	MM4015	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE3311	♦MOTA CEN	415-88	MM2258	CRI STI	294-45	MM4016	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE3312	♦MOTA CEN	415-89	MM2259	CRI STI	294-46	MM4017	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE3439	MOTA NSC	313-24	MM2260	CRI STI	294-47	MM4018	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE3440	♦MOTA SST	313-25	MM2261	STI	402-16 302-53	MM4019	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4340	♦MOTA CEN	344-99	MM2262	STI	302-53 402-17	MM4020	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4341	♦MOTA CEN	344-100	MM2263	STI	302-54 402-18	MM4021	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4342	♦MOTA CEN	344-101	MM2264	STI	308-52	MM4022	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4343	♦MOTA CEN	344-102	MM2270	STI	302-55	MM4023	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4350	♦MOTA CEN	283-107	MM2484	CRI STI	205-81	MM4024	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4351	♦MOTA CEN	283-108	MM2550	STI	141-16	MM4025	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4352	♦MOTA CEN	283-109	MM2613	STI	141-16	MM4026	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE4353	♦MOTA CEN	283-110	MM2614	STI	141-16	MM4027	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5192J	NSC	323-77	MM2614	STI	170-101	MM4028	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5740	♦MOTA STI	392-87 419-100	MM2711	STI	366-76	MM4029	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5741	♦MOTA STI	392-88 419-101	MM2712	STI	366-77	MM4030	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5742	♦MOTA STI	392-89 419-102	MM3000	CRI SCA	294-48	MM4031	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5850	♦MOTA STI	282-18 392-90	MM3001	CRI SCA	294-49	MM4032	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5851	♦MOTA STI	282-19 392-91	MM3002	CRI SCA	294-50	MM4033	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE5852	♦MOTA STI	282-20 392-92	MM3003	CRI SCA	294-51	MM4034	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE6040	MOTA	419-89	MM3004	CRI SCA	302-56	MM4035	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE6041	MOTA	419-90	MM3005	CRI SCA	304-107	MM4036	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE6042	MOTA	419-91	MM3006	CRI SCA	304-108	MM4037	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE6043	MOTA	419-92	MM3007	CRI SCA	304-109	MM4038	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE6044	MOTA	419-93	MM3008	CRI SCA	294-52	MM4039	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE6045	MOTA	419-94	MM3009	CRI SCA	294-53	MM4040	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE8500	♦MOTA STI	334-9 404-47	MM3010	CRI SCA	302-57	MM4041	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE8501	♦MOTA STI	334-10 404-48	MM3011	CRI SCA	302-58	MM4042	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE8502	♦MOTA STI	334-11 404-49	MM3012	CRI SCA	302-59	MM4043	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE8503	♦MOTA STI	334-12 404-50	MM3013	CRI SCA	302-60	MM4044	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE12007	♦MOTA STI	334-13 404-51	MM3014	CRI SCA	302-61	MM4045	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13002	♦MOTA STI	334-14 404-52	MM3015	CRI SCA	302-62	MM4046	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13003	♦MOTA STI	334-15 404-53	MM3016	CRI SCA	302-63	MM4047	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13004	♦MOTA STI	334-16 404-54	MM3017	CRI SCA	302-64	MM4048	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13005	♦MOTA STI	334-17 404-55	MM3018	CRI SCA	302-65	MM4049	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13006	♦MOTA STI	334-18 404-56	MM3019	CRI SCA	302-66	MM4050	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13007	♦MOTA STI	334-19 404-57	MM3020	CRI SCA	302-67	MM4051	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13008	♦MOTA STI	334-20 404-58	MM3021	CRI SCA	302-68	MM4052	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13009	♦MOTA STI	334-21 404-59	MM3022	CRI SCA	302-69	MM4053	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13070	♦MOTA STI	334-22 404-60	MM3023	CRI SCA	302-70	MM4054	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE13071	♦MOTA STI	334-23 404-61	MM3024	CRI SCA	302-71	MM4055	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE15028	♦MOTA STI	334-24 404-62	MM3025	CRI SCA	302-72	MM4056	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE15029	♦MOTA STI	334-25 404-63	MM3026	CRI SCA	302-73	MM4057	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE15030	♦MOTA STI	334-26 404-64	MM3027	CRI SCA	302-74	MM4058	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE15031	♦MOTA STI	334-27 404-65	MM3028	CRI SCA	302-75	MM4059	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE16002	♦MOTA STI	334-28 404-66	MM3029	CRI SCA	302-76	MM4060	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJE16004	♦MOTA STI	334-29 404-67	MM3030	CRI SCA	302-77	MM4061	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC244	MOTA	442-43	MM3031	CRI SCA	302-78	MM4062	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC254	MOTA	442-44	MM3032	CRI SCA	302-79	MM4063	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC3302	MOTA	442-45	MM3033	CRI SCA	302-80	MM4064	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC3312	MOTA	442-46	MM3034	CRI SCA	302-81	MM4065	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC13009	MOTA	442-47	MM3035	CRI SCA	302-82	MM4066	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC15030	MOTA	442-48	MM3036	CRI SCA	302-83	MM4067	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MJEC15031	MOTA	442-49	MM3037	CRI SCA	302-84	MM4068	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MM439	SCA	155-30	MM3038	CRI SCA	302-85	MM4069	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10
MM1553	STI	331-58	MM3039	CRI SCA	302-86	MM4070	♦MOTA	270-91	MMBT5089	MOTA	161-66	MMT5031A	MOTA	193-10

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MP1532	LTE	259-73	MP2400A	GPD	259-110	MPF256	♦MOTA	244-81	MPS2711	(cont.)		MPS2990Z	MEHK	205-87
		409-52	STC		409-62	NSC			CRI			MPS3013	MOTA	162-102
MP1533	LTE	259-74	WAB			♦MOTA	247-80		FSC					202-8
		409-53	♦LTE		260-1	NSC			IDI					363-61
MP1534	LTE	259-75			362-48	MOTA	248-16		SST			MPS3390	MEHK	202-18
		409-7	MP3811	LTE	256-81	MOT	248-17		THCS				RHM	
MP1535	LTE	259-76	MP3612	LTE	256-82	MPF930	♦MOTA	233-68	WAB				SST	
		409-8	MP3613	LTE	256-83	MPF960			MEHK	205-61		MPS3390Z	THCS	
MP1536	LTE	259-77	MP3614	LTE	256-84	MPF970	♦MOTA	233-68	FERB	211-45			MEHK	205-68
		409-9	MP3615	LTE	256-85				STI	211-46		MPS3391	MOTA	202-17
MP1537	LTE	259-78	MP3617	LTE	256-86	MPF971	♦MOTA	233-69	MP2711K				RHM	
		409-10	MP3618	LTE	256-87	MPF990			MP2711L				SST	
MP1538	LTE	259-79	MP3730	GPD	256-9	MPF4391	♦MOTA	247-81	MP2711M				THCS	
		409-11	GTC						CEN	200-29			WAB	
MP1539	LTE	259-80	MP3730A	♦LTE	256-10	MPF4392	♦MOTA	247-82	CRI			MPS3391Z	IDI	205-69
		259-81			358-38	MPF4393	♦MOTA	247-83	FSC				MEHK	202-9
MP1541	LTE	259-82	MP3730B	♦LTE	256-11				NSC			MPS3391A	MEHK	
		259-83			358-39				SST				SPR	
MP1542	LTE	259-84			256-12	MPF9200	MOTA	247-72	STI				THCS	
MP1543	LTE	259-85	MP3731	STI	256-12	MPQ1500	♦MOTA	426-36	WAB			MPS3392	CEN	200-32
		259-85	MP3954	MPS	247-5	MPQ2369A	MOTA	426-35	MEHK	216-6			IDI	
MP1544	LTE	259-86	MP3954A	MPS	247-6	MPQ3303	♦MOTA	426-52	RHM				FSC	
		259-87	MP3955	MPS	247-7	MPQ3467	♦MOTA	426-59	THCS				NSC	
MP1545	LTE	259-88	MP3956	MPS	247-8	MPQ3546	MOTA	426-27	FERB	211-48			MOTA	
		259-89	MP3958	MPS	247-9	MPQ3725	♦MOTA	426-60	FERB	211-49			RHM	
MP1546	LTE	259-90	MP4048	♦LTE	261-72	MPQ3725A	♦MOTA	426-66	MP2712M				SST	
		259-91			410-91	MPQ3762	♦MOTA	426-73	CEN	200-102			THCS	
MP1547	LTE	259-92	MP4049	♦LTE	261-73	MPS404	♦MOTA	161-38	CRI				WAB	
		259-93			410-92				IDI			MPS3392Z	MEHK	205-70
MP1548	LTE	259-94	MP4050	♦LTE	261-74	MPS404A	♦MOTA	161-39	NSC				FERB	211-60
		259-95			410-93				SWT			MPS3392L	FERB	211-61
MP1549	LTE	259-96	MP4051	♦LTE	261-75	MPS706	♦MOTA	161-39	SST				FERB	211-62
		259-97			410-94	CRI	♦FERB	370-91	THCS			MPS3392M	FERB	211-62
MP1552	LTE	259-98	MP4052	♦LTE	261-76	IDI	♦MOTA		WAB				CEN	200-33
		259-99			410-95	NSC			MEHK	203-102			IDI	
MP1553	LTE	259-100	MP4053	♦LTE	261-77	SWT			FERB	215-60			FSC	
		259-101			410-96	STI	♦MOTA		IDI	361-64			MOTA	
MP1554	LTE	259-102	MP4276	LTE	261-78	THCS			NSC	215-61			RHM	
		257-57			410-97	WAB			STI	361-65			SST	
MP1612A	GPD	257-58	MP4277	LTE	261-79	CEN			THCS	215-62			SWT	
		257-59			410-98	MP2710A			WAB	361-66			THCS	
MP1612B	GPD	257-60	MP4278	LTE	261-80	MP2710B			IDI	200-103			WAB	
		257-61			410-99	MP2710C			NSC	301-67			MEHK	205-71
MP1613	GPD	257-62	MP4279	LTE	261-81	MP2710D			IDI				FERB	211-63
		257-63			410-100	MP2710E			NSC				FERB	211-64
MP2000A	GPD	259-102	MP4280	LTE	261-82	MP2710F			STI	215-63			FERB	211-65
		409-58			410-101	MP2710G			THCS	361-68			FERB	211-65
MP2000B	♦LTE	362-44	MP4281	LTE	261-83	MP2710H			WAB	215-64			CEN	200-34
		257-61			410-102	MP2710I			MEHK	361-69			IDI	
MP2060	GPD	434-53	MP4282	LTE	261-84	MP2710J			FERB	215-64			THCS	
		434-54			410-103	MP2710K			STI	361-69			WAB	
MP2060-1	STI	434-55	MP4283	LTE	261-85	MP2710L			NSC	361-70			MEHK	205-72
		434-56			410-104	MP2710M			STI	200-30			FERB	211-66
MP2060-2	STI	434-57	MP5435	LTE	260-38	MP2710N			CEN	200-31			FERB	211-67
		434-58			409-76	MP2710O			IDI				FERB	211-68
MP2060-3	STI	434-59	MP5436	LTE	260-39	MP2710P			NSC				FERB	200-35
		257-62			409-77	MP2710Q			THCS				CEN	
MP2060-4	STI	434-60	MP5437	LTE	260-40	MP2710R			WAB	205-62			IDI	
		434-61			409-78	MP2710S			MEHK	175-54			♦FERB	
MP2060-5	STI	434-62	MP5438	LTE	260-41	MP2710T			NSC	370-99			MOTA	
		434-63			409-79	MP2710U			SST	175-55			SPR	
MP2060-6	STI	434-64	MP5439	LTE	260-42	MP2710V			STI	175-56			THCS	
		434-65			409-80	MP2710W			NSC	370-100			WAB	
MP2060-7	STI	434-66	MP5440	LTE	260-43	MP2710X			STI	170-103			MEHK	205-73
		257-63			409-81	MP2710Y			CEN	373-99			FERB	211-69
MP2061-1	STI	434-67	MP5905	MPS	237-13	MP2710Z			IDI	170-104			FERB	211-70
		434-68	MP5906	MPS	237-14	MP2710A			NSC	373-100			IDI	200-36
MP2061-2	STI	434-69	MP5907	MPS	237-15	MP2710B			WAB	170-105			MOTA	
		434-70	MP5908	MPS	237-16	MP2710C			SPR	373-101			STI	
MP2061-3	STI	434-71	MPF102	MOTA	239-2	MP2710D			THCS	170-106			WAB	
		434-72				MP2710E			NSC	373-102			MEHK	205-74
MP2061-4	STI	434-73	NASG			MP2710F			FERB	170-107			IDI	200-37
		257-64	SIX			MP2710G			STI	373-103			NSC	
MP2061-5	STI	434-74	SWT			MP2710H			CEN	185-70			STI	
		434-75				MP2710I			♦FERB				WAB	
MP2061-6	STI	434-76	MPF103	NASG	239-3	MP2710J			IDI				MEHK	205-75
		434-77				MP2710K			NSC				IDI	200-38
MP2061-7	STI	434-78	MPF104	NASG	239-4	MP2710L			SST				NSC	
		434-79				MP2710M			STI				STI	
MP2062-1	STI	434-80	MPF105	NASG	239-5	MP2710N			THCS				WAB	
		434-81				MP2710O			WAB	205-63			THCS	
MP2062-2	STI	434-82	MPF106	NASG	239-6	MP2710P			MEHK	211-51			WAB	205-76
		434-83				MP2710Q			FERB	211-52			MOTA	217-45
MP2062-3	STI	434-84	MPF107	NASG	239-7	MP2710R			FERB	211-53			MOTA	217-47
		434-85				MP2710S			CRI	185-71			MOTA	217-48
MP2062-4	STI	434-86	MPF108	NASG	243-20	MP2710T			FERB				MOTA	217-49
		259-104				MP2710U			NSC				SPR	205-105
MP2062-5	STI	434-87	MPF109	NASG	243-21	MP2710V			IDI				STI	
		409-59				MP2710W			NSC				THCS	
MP2100B	♦LTE	259-105	MPF110	NASG	243-22	MP2710X			SST				WAB	
		362-45				MP2710Y			THCS				STI	
MP2137	LTE	256-61	MPF109B	NSC	243-23	MP2710Z			WAB	205-64			SPR	
		256-62	MPF109C	NSC	243-24	MP2710A			MEHK	211-54			STI	
MP2137A	STI	256-63	MPF109D	NSC	243-25	MP2710B			FERB	211-55			THCS	
		256-64	MPF109E	NSC	243-26	MP2710C			NSC	211-56			WAB	
MP2138	LTE	256-65	MPF109F	NSC	243-27	MP2710D								



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MPS3563	MEHK	205-4	MPS3693M	FERB	214-98	MPS3710M	FERB	211-102	MPS5172	THCS	(cont.)	MPS6521	IDI	(cont.)
MPS3565	SPR	186-14	MPS3694	CEN	209-74	MPS3711	CEN	200-61	MPS5172K	WAB		MPS6521	MEHK	◆MOTA
MPS3567	SST		MPS3694	FSC		MPS3711	◆FERB		MPS5172L	FERB	214-30	MPS6521	NASC	◆NSC
MPS3567	CRI	202-44	MPS3694	IDI		MPS3711	◆GESY		MPS5172M	FERB	214-31	MPS6521	RHM	◆NSC
MPS3568	◆MOTA	202-45	MPS3694	NSC		MPS3711	MOTA		MPS5305	SPR	413-37	MPS6521	SST	◆NSC
MPS3568	CRI	202-44	MPS3694	SPR		MPS3711	RHM		MPS5306	SPR	413-46	MPS6521	SWT	◆NSC
MPS3569	◆MOTA	202-46	MPS3694	STI		MPS3711	SST		MPS5306A	SPR	413-47	MPS6521	THCS	◆NSC
MPS3569	CRI	202-46	MPS3694	WAB		MPS3711	THCS		MPS5307	SPR	413-47	MPS6521	WAB	◆NSC
MPS3638	◆MOTA	160-63	MPS3694	MEHK	203-56	MPS3711	WAB		MPS5308	SPR	413-48	MPS6521	CEN	◆NSC
MPS3638	CEN	376-33	MPS3702	CEN	160-64	MPS3711	MEHK	180-14	MPS5308A	SPR	413-48	MPS6521	FSC	◆MOTA
MPS3638	CRI	◆FERB	MPS3702	◆FERB		MPS3711K	FERB	211-103	MPS551M	STI	221-101	MPS6521	IDI	◆NSC
MPS3638	FSC	◆MOTA	MPS3702	◆GESY		MPS3711L	FERB	211-104	MPS5855	MOTA	174-70	MPS6521	MEHK	◆NSC
MPS3638	MEHK	◆MOTA	MPS3702	IDI		MPS3711M	FERB	211-105	MPS5856	MOTA	221-102	MPS6521	RHM	◆NSC
MPS3638	NASC	◆MOTA	MPS3702	◆NSC		MPS3721	CRI	201-28	MPS5857	MOTA	174-71	MPS6521	SST	◆NSC
MPS3638	SPR	◆MOTA	MPS3702	RHM		MPS3721	IDI		MPS5858	MOTA	221-103	MPS6521	SWT	◆NSC
MPS3638	STI	◆MOTA	MPS3702	SST		MPS3721	NSC		MPS6076	MOTA	163-62	MPS6521	THCS	◆NSC
MPS3638	THCS	◆MOTA	MPS3702	THCS		MPS3721	SST		MPS6172	◆MOTA	162-10	MPS6521	WAB	◆MOTA
MPS3638	WAB		MPS3702K	WAB	169-55	MPS3721	MEHK	180-15	MPS6507	CEN	201-62	MPS6521	MEHK	◆MOTA
MPS3638	RHM	174-61	MPS3702L	FERB	169-56	MPS3725	CRI	223-22	MPS6507	IDI		MPS6521	NASC	◆NSC
MPS3638	GESEY	163-84	MPS3702M	FERB	169-57	MPS3826	STI	369-34	MPS6507	IDI		MPS6521	RHM	◆NSC
MPS3638A	CEN	160-70	MPS3703	CEN	160-65	MPS3826	CRI	200-86	MPS6507	IDI		MPS6521	SST	◆NSC
MPS3638A	CRI	◆FERB	MPS3703	◆FERB		MPS3826	◆MOTA		MPS6507	IDI		MPS6521	THCS	◆NSC
MPS3638A	FSC	376-47	MPS3703	FSC		MPS3826	NSC		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	IDI		MPS3703	IDI		MPS3826	◆MOTA		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	◆MOTA		MPS3703	MEHK		MPS3826	SST		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	SPR		MPS3703	◆MOTA		MPS3826	THCS		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	STI		MPS3703	◆NSC		MPS3826	WAB		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	THCS		MPS3703	RHM		MPS3826	WAB		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	WAB		MPS3703	SST		MPS3826	WAB		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	RHM	175-20	MPS3703K	WAB	169-58	MPS3827	MEHK	203-57	MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	GESEY	363-31	MPS3703L	FERB	169-59	MPS3827	MEHK	200-87	MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	GESEY	163-85	MPS3703M	FERB	169-60	MPS3827	CRI	200-87	MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638A	GESEY	376-35	MPS3704	FERB	169-60	MPS3903	◆MOTA		MPS6507	IDI		MPS6521	WAB	◆NSC
MPS3638AK	CRI	170-63	MPS3704	CEN	200-69	MPS3904	SST	373-45	MPS6512	CEN	203-104	MPS6521	WAB	◆NSC
MPS3638AK	FERB	376-48	MPS3704	◆FERB		MPS3904	◆MOTA	222-64	MPS6512	FSC		MPS6521	WAB	◆NSC
MPS3638AL	FERB	170-64	MPS3704	GESEY		MPS3905	NSC	373-105	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AL	FERB	376-49	MPS3704	◆MOTA		MPS3905	◆MOTA	175-57	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	170-65	MPS3704	NSC		MPS3906	NSC	373-106	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	376-50	MPS3704	SPR		MPS3906	◆MOTA	175-72	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	376-55	MPS3704	SST		MPS3906	◆MOTA	374-64	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	376-56	MPS3704	THCS		MPS3906	NSC	374-64	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	169-52	MPS3704	WAB		MPS4248	MOTA	153-8	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	376-36	MPS3704	MEHK	206-35	MPS4248	SPR		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	169-53	MPS3704	FERB	169-61	MPS4249	MOTA	153-9	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	376-37	MPS3704L	FERB	169-62	MPS4249	SPR		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	169-54	MPS3704M	FERB	169-63	MPS4249	RHM	171-50	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	376-38	MPS3704M	CEN	200-70	MPS4250	MOTA	151-86	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	153-7	MPS3705	◆FERB		MPS4250	SPR	369-3	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	367-95	MPS3705	FSC		MPS4250	RHM	171-51	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	◆GESY		MPS4250	◆MOTA	369-4	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	IDI		MPS4250	SPR	151-58	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	◆MOTA		MPS4250	SPR	162-109	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	SPR		MPS4250	STI	163-7	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	STI		MPS4250	THCS	189-36	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	THCS		MPS4250	WAB	362-69	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	WAB		MPS4250	WAB	174-62	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	MEHK	206-36	MPS4250	MEHK	380-12	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	RHM	169-64	MPS4250	IDI		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	◆MOTA	169-65	MPS4250	◆MOTA		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	SPR	169-66	MPS4250	NSC		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	STI	200-71	MPS4250	SPR		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	THCS		MPS4250	STI		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	WAB		MPS4250	THCS		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	MEHK	206-37	MPS4250	WAB		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	RHM	169-67	MPS4250	MEHK	174-63	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	◆MOTA	169-68	MPS4250	CRI	174-64	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	SPR	169-69	MPS4250	IDI	380-13	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	STI	200-58	MPS4250	◆MOTA		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	THCS		MPS4250	NSC		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	WAB		MPS4250	SPR		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	MEHK	180-10	MPS4250	STI		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	RHM	211-91	MPS4250	THCS		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	◆MOTA	211-92	MPS4250	WAB		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	SPR	211-93	MPS4250	MEHK	174-67	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	STI	200-39	MPS4250	IDI	173-94	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	THCS		MPS4250	◆MOTA	185-77	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	WAB		MPS4250	NSC		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	MEHK	180-10	MPS4250	SPR		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	RHM	211-91	MPS4250	STI		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	◆MOTA	211-92	MPS4250	THCS		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	SPR	211-93	MPS4250	WAB		MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	STI	200-39	MPS4250	MEHK	174-67	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	THCS		MPS4250	IDI	173-94	MPS6512	IDI		MPS6521	WAB	◆NSC
MPS3638AM	FERB	◆MOTA	MPS3705	WAB		MPS4250	◆MOTA	185-77	MPS6512	IDI		MPS6521	WAB	◆

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TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line			TYPE No.			MFRS			Pg&Line		
MPS6542A	♦FSC	205-12	MPS6573	GESE	200-90	MPSA06	♦MEHK		MPSA63	CEN	413-54	MPSD58Z	MEHK	162-8												
MPS6543	CEN	201-65	MPS6574	NSC		(cont.)	♦MOTA		♦MOTA	NSC		MPSD56#	GESE	162-9												
	CRI		MPS6573Z	WAB	206-38		RHM		WAB	WAB	413-55	MPSH02	CEN	204-92												
	NASG		MPS6574Z	MEHK			STI		THCS	MEHK			CRI													
	SST		MPS6574	MOTA	200-91		SWT			RHM	413-65	MPSH04	NSC	197-21												
MPS6544	THCS		MPS6575	THCS			WAB		MPSA64	CEN	413-65		STI													
	CEN	200-41	MPS6575Z	WAB	206-39	MPSA06K	♦MOTA	224-45	♦MOTA	SPR		MPSH05	♦MOTA	197-22												
	CRI		MPS6575Z	MEHK	200-92	MPSA06L	FERR	224-46	STI	THCS	413-66		NSC													
	NASG		MPS6575	NSC		MPSA06M	FERR	224-47	♦MOTA	RHM	414-40		STI													
	SST		MPS6575Z	WAB	205-78	MPSA06N	FERR	200-67	STI	CEN			THCS													
MPS6545	THCS		MPS6576	MEHK	200-93	MPSA09	CEN		MPSA65	GESE		MPSH07	♦MOTA	204-96												
	CEN	200-41	MPS6576Z	MOTA	200-93		♦FSC		CRI	SPR			NSC													
	CRI		MPS6576Z	THCS	206-40		♦MOTA		STI	WAB			THCS													
	NASG		MPS6576	WAB	206-40		NSC		MPSA65Z	RHM	413-72	MPSH08	STI	204-97												
	SST		MPS6576Z	MEHK	162-104		STI		MPSA66	CEN	414-41		THCS													
MPS6546A	♦FSC	205-6	MPS6579	♦MOTA			THCS		CRI	GESE		MPSH08	♦MOTA	204-97												
MPS6547	CEN	201-60	MPS6580	THCS	160-92	MPSA09Z	RHM	212-31	STI	SPR			NSC													
	CRI		MPS6580	WAB	200-65	MPSA10	FSC	194-62	SWT	THCS		MPSH10	THCS	205-8												
	NASG		MPS6581	FSC			NSC		UPU	WAB			WAB													
	SST		MPS6581Z	WAB	221-33		MEHK		MPSA66Z	MEHK	413-17		♦MEHK													
MPS6547A	♦FSC	205-7	MPS6581Z	MEHK	223-37		NSC			RHM	163-93		NSC													
MPS6548	CEN	201-61	MPS6585	♦MOTA	360-79		SWT		MPSA70	CEN			♦NSC													
	CRI		MPS6601	♦MOTA	357-69		THCS			UPU			THCS													
	NASG		MPS6602	♦MOTA	357-70		WAB			WAB			THCS													
	SST		MPS6651	♦MOTA	269-42	MPSA12	CEN	414-4		GESE		MPSH11	CEN	205-9												
MPS6560	CRI		MPS6652	♦MOTA	269-43	♦FERR	♦FSC			MEHK			♦MOTA													
	IDI		MPS6652	♦MOTA	269-43	♦FERR	♦FSC			NSC			NSC													
	♦MOTA		MPS6714	♦MOTA	296-49	♦FERR	♦FSC			NSC			NSC													
	NSC		MPS6715	♦MOTA	296-50	♦FERR	♦FSC			RHM			NSC													
	SPR		MPS6716	♦MOTA	296-51	♦FERR	♦FSC			RHM			NSC													
	STI		MPS6717	♦MOTA	296-52	♦FERR	♦FSC			SPR			THCS													
	THCS		MPS6724	♦MOTA	413-102	♦FERR	♦FSC			SWT			THCS													
	WAB		MPS6725	♦MOTA	413-103	♦FERR	♦FSC			THCS			THCS													
	CEN	221-31	MPS6726	♦MOTA	268-89	MPSA12K	FERR	413-69		WAB			THCS													
	CRI		MPS6727	♦MOTA	268-90	MPSA13	CEN	413-104		WAB			THCS													
	IDI		MPS6728	♦MOTA	268-91	♦FERR	♦FSC			WAB			THCS													
	♦MOTA		MPS6729	♦MOTA	268-92	♦FERR	♦FSC			WAB			THCS													
	NSC		MPS6733	♦MOTA	296-53	♦FERR	♦FSC			WAB			THCS													
	SST		MPS6734	♦MOTA	296-54	♦FERR	♦FSC			WAB			THCS													
	THCS		MPS6735	♦MOTA	296-55	♦FERR	♦FSC			WAB			THCS													
	WAB		MPS8000	♦MOTA	220-93	♦FERR	♦FSC			WAB			THCS													
	CEN	221-32		THCS		MPSA13K	FERR	413-53		WAB			THCS													
	CRI			WAB		MPSA14	CEN	414-1		WAB			THCS													
	IDI		MPS8000Z	MEHK	220-78	♦FERR	♦FSC			WAB			THCS													
	♦MOTA		MPS8001	♦MOTA	202-82	♦FERR	♦FSC			WAB			THCS													
	NSC			THCS		♦FERR	♦FSC			WAB			THCS													
	SST		MPS8097	♦MOTA	203-59	♦FERR	♦FSC			WAB			THCS													
	THCS			THCS		♦FERR	♦FSC			WAB			THCS													
	WAB	174-21	MPS8098	♦MOTA	202-107	♦FERR	♦FSC			WAB			THCS													
	CEN	174-22		THCS		♦FERR	♦FSC			WAB			THCS													
	CRI			WAB		♦FERR	♦FSC			WAB			THCS													
	IDI		MPS8099	♦MOTA	202-108	♦FERR	♦FSC			WAB			THCS													
	♦MOTA			THCS		♦FERR	♦FSC			WAB			THCS													
	NSC		MPS8598	♦MOTA	162-45	♦FERR	♦FSC			WAB			THCS													
	SST			THCS		♦FERR	♦FSC			WAB			THCS													
	THCS		MPS8599	♦MOTA	162-46	♦FERR	♦FSC			WAB			THCS													
	WAB			THCS		♦FERR	♦FSC			WAB			THCS													
	CEN	216-7	MPS9410	MEHK	202-11	♦FERR	♦FSC			WAB			THCS													
	CRI	200-88	MPS9411	MEHK	202-12	♦FERR	♦FSC			WAB			THCS													
	NASG		MPS9412	MEHK	202-13	♦FERR	♦FSC			WAB			THCS													
	SST		MPS9416	WAB	220-79	♦FERR	♦FSC			WAB			THCS													
	THCS		MPS9417	WAB	220-80	♦FERR	♦FSC			WAB			THCS													
	WAB		MPS9434	♦MEHK	220-81	♦FERR	♦FSC			WAB			THCS													
	CEN	214-99	MPS9460	MEHK	161-25	♦FERR	♦FSC			WAB			THCS													
	CRI		MPS9461	MEHK	161-26	♦FERR	♦FSC			WAB			THCS													
	IDI		MPS9462	MEHK	161-27	♦FERR	♦FSC			WAB			THCS													
	♦MOTA		MPS9466	WAB	173-81	♦FERR	♦FSC			WAB			THCS													
	NSC		MPS9466A	WAB	175-81	♦FERR	♦FSC			WAB			THCS													
	SPR		MPS9467	WAB	175-82	♦FERR	♦FSC			WAB			THCS													
	STI		MPS9467A	WAB	175-83	♦FERR	♦FSC			WAB			THCS													
	THCS		MPS9468	WAB	175-84	♦FERR	♦FSC			WAB			THCS													
	WAB	214-100	MPS9484	♦MEHK	173-82	♦FERR	♦FSC			WAB			THCS													
	CEN	214-101	MPS9600	WAB	194-59	♦FERR	♦FSC			WAB			THCS													
	CRI		MPS9601	WAB	194-60	♦FERR	♦FSC			WAB			THCS													
	NASG		MPS9602	WAB	194-61	♦FERR	♦FSC			WAB			THCS													
	SST		MPS9623	WAB	200-72	♦FERR	♦FSC			WAB																



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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
MPSU05	♦MOTA	304-110	MRF401	DIT	321-54	MSP10	HSE	305-80	MST75	HSE	299-68	MTP3N35	MOTA	250-88
SST	WAB						STI			STI		MTP3N55	MOTA	250-89
MPSU06	♦MOTA	310-50	MRF402	DIT	294-18	MSP10A	HSE	312-2	MST80	HSE	299-69	MTP3N60	MOTA	250-90
MPSU07	♦MOTA	310-51					HSE			STI		MTP4N45	MOTA	250-91
MPSU10	♦MOTA	310-52	MRF404	♦MOTA	294-54	MSP15	HSE	305-81	MST85	HSE	299-70	MTP4N50	MOTA	250-92
	WAB		MRF406	♦MOTA	328-83		STI			STI		MTP5N05	MOTA	249-108
MPSU31	♦MOTA	296-56	MRF412	♦MOTA	351-13	MSP15A	STI	312-3	MST90	HSE	299-71	MTP5N06	MOTA	249-109
	SST		MRF412A	♦MOTA	351-14	MSP20	HSE	305-82		STI		MTP5N18	MOTA	250-93
MPSU45	♦MOTA	415-25	MRF421	♦MOTA	347-16		HSE			HSE	299-72	MTP5N20	MOTA	250-94
	SST		MRF422	DIT	352-16	MSP20A	HSE	312-4	MST95	STI		MTP5N35	MOTA	250-95
MPSU51	♦MOTA	272-105					STI			HSE	299-73	MTP5N40	MOTA	250-96
	WAB		MRF426	♦MOTA	444-31	MSP25	HSE	305-83		STI		MTP7N12	MOTA	381-72
MPSU51A	♦MOTA	272-106	MRF426A	♦MOTA	444-32		STI			STI	300-13	MTP7N15	MOTA	381-73
MPSU52	♦MOTA	271-101	MRF427A	♦MOTA	328-82	MSP25A	STI	312-5	MST660A	STI	300-14	MTP8N08	MOTA	380-35
	WAB		MRF428A	♦MOTA	352-69	MSP30	HSE	305-84		MEHK	180-39	MTP8N10	MOTA	380-36
							STI			MEHK	149-57	MTP8N12	MOTA	250-97
MPSU55	♦MOTA	273-49					HSE			MEHK	149-72	MTP8N15	MOTA	250-98
MPSU56	♦MOTA	273-50	MRF429	MOTA	349-39	MSP30A	HSE	312-6	MT200	MEHK	149-74	MTP8N18	MOTA	250-99
MPSU57	♦MOTA	273-51	MRF432	♦MOTA	274-29		STI		MT0411	MEHK	149-73	MTP8N20	MOTA	250-100
MPSU60	♦MOTA	273-52	MRF433	♦MOTA	312-55	MSP35	HSE	305-85	MT0412	MEHK	149-75	MTP8P08	MOTA	234-87
	SPE		MRF449	♦MOTA	325-38		STI		MT0413	♦MEHK	181-2	MTP10N05	MOTA	250-101
MPSU95	♦MOTA	273-53	MRF449A	♦MOTA	325-39	MSP35A	STI	312-7	MT3001	MEHK	181-9	MTP10N06	MOTA	250-102
MPSUC01	MOTA	442-92	MRF450	♦MOTA	334-41	MSP40	HSE	305-86	MT3011	MEHK	180-79	MTP10N08	MOTA	250-103
MPSUC03	MOTA	442-93	MRF450A	♦MOTA	334-42		STI		MT4101	♦MEHK	180-83	MTP10N10	MOTA	250-104
MPSUC05	MOTA	442-94	MRF452A	DIT	342-20	MSP40A	HSE	312-8	MT4102	♦MEHK	180-81	MTP10N12	MOTA	250-105
MPSUC31	MOTA	442-95					STI		MT4103	♦MEHK	180-81	MTP10N15	MOTA	250-106
MPSUC51	MOTA	442-96	MRF453	♦MOTA	344-106	MSP45	HSE	305-87	MT4104	♦MEHK	180-81	MTP12N05	MOTA	250-107
MPSUC55	MOTA	442-97	MRF453A	♦MOTA	344-107		STI		MT5000	♦PTI	424-65	MTP12N06	MOTA	250-108
MPSW01	MOTA	296-57	MRF454	♦MOTA	351-15	MSP45A	STI	312-9	MT5001	♦PTI	424-66	MTP12N08	MOTA	250-109
MPSW01A	MOTA	296-58	MRF454A	♦MOTA	351-16	MSP50	HSE	305-88	MT5002	♦PTI	424-83	MTP12N10	MOTA	250-110
MPSW05	MOTA	296-59	MRF455	♦MOTA	344-108		STI		MT5003	♦PTI	424-84	MTP12N12	MOTA	250-111
MPSW06	MOTA	296-60	MRF455A	♦MOTA	344-109	MSP50A	HSE	312-10	MT5004	♦PTI	424-100	MTP12N18	MOTA	384-78
MPSW10	MOTA	296-61	MRF458	♦MOTA	344-110		STI		MT5005	♦PTI	424-101	MTP12N20	MOTA	384-79
MPSW13	MOTA	413-105				MSP55	HSE	305-89	MT5006	♦PTI	424-105	MTP15N05	MOTA	251-2
MPSW14	MOTA	414-2	MRF458A	♦MOTA	345-1		STI		MT5007	♦PTI	424-106	MTP15N06	MOTA	251-1
MPSW42	MOTA	296-62				MSP55A	STI	312-11	MT6000Δ	♦PTI	424-62	MTP15N12	MOTA	384-80
MPSW43	MOTA	296-63	MRF460	♦MOTA	345-2	MSP60	HSE	305-90	MT6006	♦PTI	424-91	MTP15N15	MOTA	384-81
MPSW45	MOTA	414-5	MRF463	♦MOTA	351-17		STI		MT6008	♦PTI	424-104	MTP474	♦MOTA	251-3
MPSW51	MOTA	268-93				MSP60A	HSE	310-53	MT6010	♦PTI	424-102	MTP475	♦MOTA	251-4
MPSW51A	MOTA	268-94	MRF464	♦MOTA	351-18		STI		MT6011	♦PTI	210-85	MTP564	♦MOTA	251-5
MPSW55	MOTA	268-95				MSP65	HSE	305-91			424-103	MTP565	♦MOTA	251-6
MPSW56	MOTA	268-96	MRF464A	♦MOTA	351-19		STI		MTM1N95	MOTA	250-42	MTP814	♦MOTA	234-88
MPSW60	MOTA	268-97				MSP65A	STI	312-12	MTM1N100	MOTA	250-43	MTP815	♦MOTA	234-89
MPSW63	MOTA	413-106	MRF466	♦MOTA	345-3	MSP70	HSE	305-92	MTM2N45	MOTA	250-44	MTP1034	♦MOTA	251-7
MPSW64	MOTA	414-3	MRF472	♦MOTA	296-64		STI		MTM2N50	MOTA	250-45	MTP1035	♦MOTA	251-8
MPSW92	MOTA	268-98	MRF475	♦MOTA	312-1	MSP70A	HSE	310-54	MTM2N85	MOTA	250-46	MTP1224	♦MOTA	251-9
MPSW93	MOTA	268-99					STI		MTM2N90	MOTA	250-47	MTP1225	♦MOTA	251-10
MPU131	SWT	436-102	MRF476	♦MOTA	307-21	MSP75	HSE	305-93	MTM2P45	♦MOTA	234-79	MTP1225	♦MOTA	251-10
MPU132	SWT	436-103	MRF477	♦MOTA	330-47		STI				377-98	MTP1225	♦MOTA	251-10
MPU133	SWT	436-104	MRF479	♦MOTA	316-13	MSP75A	STI	312-13			334-80	MTP1225	♦MOTA	251-10
MPU6027	♦MOTA	436-105	MRF485	♦MOTA	444-40	MSP80	HSE	305-94	MTM2P50	♦MOTA	377-99	MTP1225	♦MOTA	251-10
	SWT		MRF486	♦MOTA	330-48		STI				377-99	MTP1225	♦MOTA	251-10
MPU6028	♦MOTA	436-106	MRF492	♦MOTA	351-20	MSP85	HSE	305-95	MTM3N35	MOTA	250-48	MTP1225	♦MOTA	251-10
	SWT		MRF492A	♦MOTA	351-21		STI		MTM3N40	MOTA	250-49	MTP1225	♦MOTA	251-10
MPX50D	MOTA	440-101	MRF497	♦MOTA	330-49	MSP90	HSE	305-96	MTM3N45	MOTA	250-50	MTP1225	♦MOTA	251-10
MPX200A	MOTA	440-102	MRF501	♦MOTA	189-83		STI		MTM3N50	MOTA	250-51	MTP1225	♦MOTA	251-10
MPX200D	MOTA	440-103				MSP95	HSE	305-97	MTM4N45	MOTA	250-52	MTP1225	♦MOTA	251-10
MRF207	♦MOTA	299-53	MRF502	♦MOTA	189-101		STI		MTM4N50	MOTA	250-53	MTP1225	♦MOTA	251-10
MRF208	♦MOTA	318-45				MSP100	HSE	305-98	MTM5N18	MOTA	250-54	MTP1225	♦MOTA	251-10
MRF209	♦MOTA	321-69					STI		MTM5N20	MOTA	250-55	MTP1225	♦MOTA	251-10
MRF212	DIT	318-46					HSE		MTM5N35	MOTA	250-56	MTP1225	♦MOTA	251-10
						MSP100	STI	308-53	MTM5N40	MOTA	250-57	MTP1225	♦MOTA	251-10
						MSP5405	HSE	308-54	MTM6N55	MOTA	251-96	MTP1225	♦MOTA	251-10
MRF215	♦MOTA	316-39				MSP6605	STI	299-55	MTM6N60	MOTA	251-97	MTP1225	♦MOTA	251-10
MRF216	♦MOTA	328-42				MST10	HSE	225-105	MTM7N12	MOTA	381-70	MTP1225	♦MOTA	251-10
MRF221	DIT	316-40					STI		MTM7N15	MOTA	381-71	MTP1225	♦MOTA	251-10
			MRF604	♦MOTA	304-15	MST10S	HSE	299-56	MTM7N45	MOTA	251-98	MTP1225	♦MOTA	251-10
MRF222	DIT	331-8	MRF607	DIT	302-66	MST15	HSE	299-57	MTM7N50	MOTA	251-99	MTP1225	♦MOTA	251-10
MRF223	DIT	331-9				MST20	HSE	304-16	MTM8N10	MOTA	380-34	MTP1225	♦MOTA	251-10
MRF224	DIT	333-89	MRF618	♦MOTA	444-42	MST20B	HSE	225-106	MTM8N12	MOTA	250-58	MTP1225	♦MOTA	251-10
MRF225	DIT	299-54	MRF621	♦MOTA	320-88		STI		MTM8N15	MOTA	250-59	MTP1225	♦MOTA	251-10
MRF226	DIT	320-87	MRF618	♦MOTA	340-31	MST20S	HSE	299-58	MTM8N18	MOTA	250-60	MTP1225	♦MOTA	251-10
MRF227	DIT	302-63	MRF823	♦MOTA	310-110		STI		MTM8N20	MOTA	250-61	MTP1225	♦MOTA	251-10
MRF229	♦MOTA	302-64	MRF824	♦MOTA	311-1	MST25	HSE	299-59	MTM8N35	MOTA	251-100	MTP1225	♦MOTA	251-10
MRF230	♦MOTA	444-28	MRF825	♦MOTA	329-48		STI		MTM8N40	MOTA	251-101	MTP1225	♦MOTA	251-10
MRF231	♦MOTA	302-65	MRF835	♦MOTA	321-19	MST30	HSE	299-60	MTM8P08	MOTA	234-81	MTP1225	♦MOTA	251-10
	DIT	307-20	MRF4070	MOTA	351-22		STI		MTM8P10	MOTA	234-82	MTP1225	♦MOTA	251-10
			MRF5175	MOTA	309-33	MST30B	HSE	304-17	MTM10N05	MOTA	250-62	MTP1225	♦MOTA	251-10
MRF232	DIT	312-54	MRF5176	MOTA	316-14		STI		MTM10N06	MOTA	250-63	MTP1225	♦MOTA	251-10
			MRF5177	MOTA	324-19	MST30S	HSE	225-107	MTM10N08	MOTA	250-64	MTP1225	♦MOTA	251-10
MRF233	DIT	321-53	MRF5177A	♦MOTA	324-20		STI		MTM10N10	MOTA	250-65	MTP1225	♦MOTA	251-10
MRF234	DIT	327-92	MRF8003	♦MOTA	294-55	MST35	HSE	299-60	MTM10N12	MOTA	250-66	MTP1225	♦MOTA	251-10
MRF237	DIT	305-1	MRF8004	♦MOTA	444-43		STI		MTM10N15	MOTA	2			

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NP2219P	THCS	231-8	NSDU01A	NSC	310-98	OC35	◆GPD	255-80	PE210	PHIB	218-81	PL1112	TIIF	182-21
		368-50	NSDU02	NSC	310-99		LTE	410-108	PE210A	PHIB	218-82	PL1113	TIIF	182-22
NP2221AP	THCS	231-9	NSDU05	NSC	310-100		HSE		PE210B	PHIB	218-83	PL4021	TIIF	183-103
		368-21	NSDU06	NSC	310-101	OC36	◆GPD	255-81	PE210C	PHIB	218-84			382-71
NP2221P	THCS	231-10	NSDU07	NSC	310-102		LTE	410-109	PE254A	◆PHIB	218-10	PL4022	TIIF	184-4
		368-22	NSDU10	NSC	310-103		SMLB		PE254B	◆PHIB	218-11			382-97
NP2222AP	THCS	231-13	NSDU45	NSC	415-38	OC44	PHIN	135-25	PE254C	◆PHIB	218-12	PL4023	TIIF	184-5
		368-51	NSDU45A	NSC	415-39	OC45	PHIN	135-23	PE255D	◆PHIB	215-3			382-98
NP2222P	THCS	231-11	NSDU51	NSC	273-69	OC46	PHIN	135-22	PE3100	FSC	210-87	PL4031	TIIF	184-28
		368-52	NSDU51A	NSC	273-70	OC65	HPD	135-68		NSC				372-6
NP2904AP	THCS	178-92	NSDU52	NSC	273-61	OC66	GPD	135-89	PE4001	FSC	180-3	PL4032	TIIF	164-29
		370-101	NSDU55	NSC	273-71	OC70	GPD	137-46	PE4002	FSC	180-5			372-7
NP2904P	THCS	178-93	NSDU56	NSC	273-62	OC71	GPD	137-47	PE4010	FSC	186-34	PL4033	TIIF	164-30
		370-102	NSDU57	NSC	273-63	OC72	GPD	141-23		NSC				372-8
NP2905AP	THCS	178-94	NSE170	NSC	273-72	OC74	GPD	143-21	PE4020	FSC	180-6	PL4034	TIIF	164-31
		370-103	NSE171	NSC	273-73	OC75	GPD	138-97	PE5025	NSC	210-86			372-9
NP2905P	THCS	178-95	NSE180	NSC	310-104	OC76	GPD	138-98	PE5029	NSC	210-88	PL4051	TIIF	190-93
		370-104	NSE181	NSC	310-105	OC77	GPD	137-48	PE5030B	FSC	210-89			368-24
NP2906AP	THCS	178-96	NSE457	NSC	310-70	OC78	GPD	142-25		NSC		PL4052	TIIF	190-94
		370-105	NSE458	NSC	310-71	OC81N	GPD	142-26	PE5031	FSC	210-90			368-25
NP2906P	THCS	178-97	NSE459	NSC	310-72	OC83N	GPD	143-22		NSC		PL4053	TIIF	190-95
		370-106	NT2222	◆NECE	222-101	OC84N	GPD	143-23	PE6020	FSC	360-31			368-26
NP2907AP	THCS	178-98		◆NECEJ	366-23	OC200	STI	153-103	PE6021	FSC	360-32	PL4054	TIIF	190-102
		370-107	NT2222A	◆NECE	366-53		TII		PE7058	◆FSC	303-28			368-56
NP2907P	THCS	178-99		◆NECEJ		OC201	STI	154-14	PE7059	◆FSC	303-29	PL4055	TIIF	190-96
		370-108	NT2907	◆NECE	175-59		TII		PE8050	◆FSC	296-73			368-27
NPC069	THCS	192-3		◆NECEJ	370-109	OC202	STI	154-15	PE8051	◆FSC	296-74	PL4061	TIIF	185-107
NPC069-98	THCS	192-4	NT2907A	◆NECE	175-60		TII		PE8550	◆FSC	288-108	PL4062	TIIF	185-108
NPC079	THCS	154-101		◆NECEJ	370-110	OC203	STI	153-104	PE8551	◆FSC	288-109	PL4112	TIIF	184-16
NPC079-98	THCS	154-102	NTA959	NECE	266-32		TII		PE8552	FSC	288-110	PMD10K40	CEN	423-76
NPC233	THCS	310-55			397-76	OC204	STI	155-82	PET3702	STI	163-86		◆LAM	
NPC290	THCS	200-74	NTA1008	NECE	266-33		TII		PET3703	STI	163-87	PMD10K60	CEN	423-77
NPC548	THCS	271-89			358-40	OC205	STI	155-83	PET3704	STI	206-41		◆LAM	
NPC549	THCS	271-90	NTA1010	NECE	266-34		TII		PET3705	STI	206-42	PMD10K80	CEN	423-78
NPC634	THCS	273-54			358-41	OC206	STI	155-93	PET3706	STI	206-43		◆LAM	
NPC636	THCS	273-55	NTC1860	NECE	291-9		TII		PET3903	STI	207-12	PMD10K100	CEN	423-79
NPC750	THCS	179-6			390-7	ON630	VALG	412-26	PET3904	STI	207-48		◆LAM	
NPC875	THCS	271-91	NTC1861	NECE	291-10	ON631	VALG	221-23	PET3905	STI	164-26	PMD11K40	CEN	423-66
NPC1096	THCS	310-56			399-7	P417	USSR	133-2	PET3906	STI	164-46		◆LAM	
NPC1098	THCS	310-57	NTC1862	NECE	291-11	P417A	USSR	133-3	PET4001	STI	205-109	PMD11K60	CEN	423-67
NPC1449	THCS	305-99			399-8	P417B	USSR	133-4	PET4002	STI	205-110		◆LAM	
NPC143P	THCS	414-16	NTC1863	NECE	291-12	P824	CHE	443-5	PET4003	STI	206-1	PMD11K80	CEN	423-68
NPC144P	THCS	414-17			397-77	P825	CHE	443-6	PET4058	STI	163-36		◆LAM	
NPC4A2P	THCS	231-28	NTC1864	NECE	291-13	P1086	SIX	233-89	PET4059	STI	163-37	PMD11K100	CEN	423-69
NPC4A3P	THCS	231-29			399-9	P1086-18	SIX	233-90	PET4060	STI	163-38		◆LAM	
NPC492P	THCS	178-100	NTC1865	NECE	291-14	P1086E	NSC	233-71	PET4061	STI	163-39	PMD12K40	CEN	420-56
NPC493P	THCS	178-101			399-10		SOD		PET4062	STI	163-40		◆LAM	
NPD5564	NSC	243-36	NTC1866	NECE	291-15	P1086RR	◆TSC	364-79	PET4124	STI	207-49	PMD12K60	CEN	420-57
NPD5565	NSC	243-37			399-11			364-80	PET4125	STI	164-27		◆LAM	
NPD5566	NSC	243-38	NTC1867	NECE	291-16	P1087	SIX	233-91	PET4126	STI	164-47	PMD12K80	CEN	420-58
NPD8301	NSC	244-62			399-12	P1087-18	SIX	233-92	PET8001	STI	205-82		◆LAM	
NPD8302	NSC	244-63	NTC1868	NECE	291-17	P1087E	NSC	233-72	PET8002	STI	205-83	PMD12K100	CEN	420-59
NPD8303	NSC	244-64			399-13		SOD		PET8003	STI	205-84		◆LAM	
NS1110	SWT	211-106	NTC1869	NECE	291-18	P1087RR	◆TSC	233-18	PET8004	STI	205-85	PMD13K40	CEN	420-50
		360-46			399-14			376-71	PET8005	STI	191-3		◆LAM	
		429-9	NTC1870	NECE	291-19	P1743-0630	SSI	284-1	PET8006	STI	191-4	PMD13K60	CEN	420-51
NS1111	SWT	211-107	NTC1871A	NECE	291-20	P1743-1030	SSI	284-2	PET8007	STI	191-5		◆LAM	
		360-47			399-15	P1743-1430	SSI	284-3	PF4382	NSC	233-73	PMD13K80	CEN	420-52
		429-10	NTC2331	NECE	291-21	P1743-1830	SSI	284-4	PF5101	NSC	243-29		◆LAM	
NS1112	SWT	211-108			358-42	P2646	WAB	437-7	PF5102	NSC	243-30	PMD13K100	CEN	420-53
		429-11	NTC2333	NECE	291-22	P2647	WAB	437-8	PF5103	NSC	243-31		◆LAM	
NS2360	SWT	211-109			358-43	PA6013	◆PHIB	214-71	PF5301	NSC	242-34	PMD16K40	CEN	424-50
		429-12	NTC2334	NECE	291-23	PA6013A	PHIB	214-72	PF5301-1	NSC	242-35		◆LAM	
NS3762	NSC	270-18			358-44	PA6013B	PHIB	214-73	PF5301-2	NSC	242-36	PMD16K60	CEN	424-51
		368-37	NTC2335	NECE	291-24	PA6015	◆PHIB	430-28	PF5301-3	NSC	242-37		◆LAM	
NS3763	NSC	270-19			358-45	PA6015A	PHIB	430-29	PH2222	PHIN	210-22	PMD16K80	CEN	424-52
		368-38	NTD405	NECE	358-46	PA6015B	PHIB	430-30		RTCF			◆LAM	
NS3903	NSC	207-11			412-104	PA6025	PHIB	294-93	PH2222A	VALG	210-23	PMD16K100	CEN	424-53
		369-5	NTD406	NECE	358-47	PA6025A	PHIB	294-94		VALG			◆LAM	
NS3904	◆NSC	207-47			412-105	PA6025B	PHIB	294-95	PH2222R	PHIN	222-102	PMD17K40	CEN	424-46
		369-35	NTD407	NECE	358-48	PB6013	◆PHIB	170-66	PH2369	RTCF	216-49		◆LAM	
NS3905	NSC	164-25	NTD408	NECE	358-49	PB6013A	PHIB	170-67		VALG		PMD17K60	CEN	424-47
		368-68	NTD409	NECE	358-50	PB6013B	PHIB	170-68	PH2907	VALG	167-110		◆LAM	
NS3906	◆NSC	164-45	NTD410	NECE	358-51	PB6014	PHIB	170-109		RTCF		PMD17K80	CEN	424-48
		369-6	NTD411	NECE	358-52	PB6014A	PHIB	170-110	PH2907A	PHIN	168-1		◆LAM	
NSD36	NSC	310-58	NTD558	NECE	358-53	PB6014B	PHIB	171-1		RTCF		PMD17K100	CEN	424-49
NSD36A	NSC	310-59			412-106	PB6015	◆PHIB	430-31	PH2907AR	PHIN	175-61		◆LAM	
NSD36B	NSC	310-60	NTD560	NECE	412-107	PB6015A	PHIB	430-32	PH2907R	PHIN	175-62	PMD20K120	CEN	385-98
NSD36C	NSC	310-61	NTD565	NECE	412-108	PB6015B	PHIB	430-33	PL1021	TIIF	181-107		◆LAM	
NSD102	NSC	310-62	NTD601	NECE	412-109	PB6025	PHIB	267-88	PL1022	TIIF	181-108	PMD20K150	CEN	385-99
NSD103	NSC	310-63	NTM2222A	◆NECE	189-4	PB6025A	PHIB	267-89	PL1023	TIIF	181-109		◆LAM	
NSD104	NSC	310-64			366-54	PB6025B	PHIB	267-90	PL1024	TIIF	181-110	PMD20K200	CEN	385-100

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
PN1711	CEN	185-13	PN3638A	CRI		PN4250	CEN	172-54	PN5139	FSC	PT3513
	MEHK		(cont.)	NSC			SST		(cont.)	NSC	PT3516
PN2218	CEN	222-103	FSC	WAB	173-42	PN4250A	CEN	172-55	PN5140	FSC	PT3520
	FSC	358-104	SST	CEN			NSC			NSC	PT3522
PN2218A	CEN	222-104	PN3639	CRI		PN4258	CEN	173-44	PN5142	FSC	PT3523
	FSC			NSC			NSC			NSC	PT3526
PN2219	CEN	222-105	PN3640	CRI	173-43	PN4258A	CEN	173-45	PN5143	FSC	PT3526
	FSC			NSC			NSC			NSC	PT3526
PN2219A	CEN	223-23	PN3641	CRI	220-2	PN4274	CEN	220-15	PN5163	NSC	PT3993
	FSC			NSC			NSC			NSC	PT4500
PN2221	CRI	219-109	PN3642	CRI	220-3	PN4275	CEN	220-16	PN5179	NSC	PT4502
	MISI			NSC			NSC			NSC	PT4503
	RHM		PN3643	CRI	220-4	PN4302	CEN	245-106	PN5432	NSC	PT4503
PN2221A	CRI	219-110		NSC			NSC		PN5433	CEN	PT4503
	MISI		PN3644	CRI	173-36	PN4302-18	SIX	245-107	PN5434	CEN	PT5000
	SST			NSC		PN4302#	SIX	245-108		NSC	PT5001
PN2221A	CRI	222-106	PN3644	CRI	173-36	PN4303	SIX	245-109	PN5447	NSC	PT5002
	RHM	363-43		NSC			SIX		PN5449	NSC	PT5003
		220-1	PN3645	CRI	173-37	PN4303#	SIX	246-110	PN5816	CEN	PT5004
PN2222	CRI			NSC		PN4304	SIX	246-2		NSC	PT5005
	MEHK		PN3646	CRI	220-12	PN4304-18	WAB	246-3	PN5910	CEN	PT5006
	MISI			NSC		PN4304#	SIX	246-4		NSC	PT5007
	RHM		PN3684	CRI	245-91	PN4342	SIX	246-4	PN5935	SSI	PT5501
PN2222A	CRI	218-10		NSC			SIX	233-74	PN5938	SSI	PT5502
	MEHK		PN3685	CRI	245-92	PN4354	WAB	172-106	PN5937	SSI	PT5902
	MISI			NSC			WAB		PN6076	CEN	PT5955
	SST		PN3686	CRI	245-93	PN4355	NSC	172-107	PN7055	FSC	PT5961
PN2222A	CRI	222-107		NSC			NSC			NSC	SSI
	RHM	363-44	PN3687	CRI	245-94	PN4356	CEN	172-108	PP3000	PPC	PT5963
		218-11		NSC			NSC		PP3001	PPC	PT5994
PN2369	CRI	218-12	PN3688	CRI	219-93	PN4356	NSC	172-108	PP3002	PPC	PT6501
	NSC			NSC			NSC		PP3003	PPC	PT6502
PN2369A	CRI	218-9	PN3689	CRI	219-94	PN4360	SST	233-75	PP3004	PPC	PT6909
	NSC			NSC			CEN		PP3005	PPC	SSI
PN2484	CRI	159-66	PN3692	CRI	219-94	PN4391	WAB	246-5	PP3006	PPC	PT6910
	NSC			NSC			CEN		PP3007	PPC	SSI
PN2904	CRI	175-63	PN3693	CRI	222-66	PN4391-18	SIX	246-6	PP3008	PPC	PT6940
	NSC			NSC		PN4392	SIX	246-7	PP3083	PPC	PT6941
PN2904A	CRI	159-67	PN3694	CRI	219-95	PN4392-18	SIX	246-8	PP3084	PPC	SSI
	NSC			NSC		PN4393	SIX	246-9	PP3085	PPC	PT6942
PN2905	CRI	175-64		NSC			SIX		PP3086	PPC	SSI
	NSC		PN3946	CRI	215-65	PN4393-18	CEN	246-9	PP3087	PPC	PT6943
PN2905A	CRI	173-32		NSC		PN4416	WAB	246-10	PP3088	PPC	SSI
	NSC		PN3947	CRI	369-10	NSC	SIX	246-11	PP3250	PPC	PT6944
PN2906	CRI	175-65		NSC		PN4856	SIX	246-11	PP3310	PPC	SSI
	NSC		PN3962	CRI	216-13		WAB		PP3312	PPC	PT6945
	MISI			NSC		PN4857	SIX	246-12	PP3647	PPC	SSI
	SST		PN4013	CRI	369-39		CEN		PP7535	PPC	PT6946
PN2906	CRI	175-66		NSC		PN4858	WAB	246-13	PP7536	PPC	SSI
	NSC		PN4014	CRI	173-108		WAB		PP7676	PPC	PT6947
	MISI		PN4015	CRI	223-24	PN4859	CEN	246-14	PPR1006	PPC	PT6947
	SST		PN4016	CRI	223-25		NSC		PPR1007	PPC	SSI
PN2906A	CRI	363-36	PN4017	CRI	223-25	PN4859	NSC	246-15	PPR1008	PPC	PT6948
	NSC	173-33	PN4018	CRI	227-78		NSC		PPR1009	PPC	PT6949
	MISI		PN4019	CRI	245-95	PN4858	NSC	246-16	PPR1010	PPC	PT6950
	SST		PN4091	CRI	245-96		NSC		PPR1010	PPC	PT6951
PN2907	CRI	173-34	PN4092	CRI	245-97	PN4860	NSC	246-17	PPR1011	PPC	PT6952
	MEHK		PN4093	CRI	245-98		NSC		PPR1012	PPC	PT6953
	NSC		PN4094	CRI	245-99	PN4861	NSC	246-18	PPR1013	PPC	PT6954
PN2907	CRI	175-66	PN4095	CRI	245-100	PN4888	NSC	173-97	PPR1014	PPC	PT6955
	NSC	363-37	PN4117	CRI	242-38		CEN		PPR1015	PPC	PT6956
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	MEHK		PN4118	CRI	242-39		SST		PPR1017	PPC	PT7502
	NSC			NSC		PN4916	CEN	173-40	PPR1018	PPC	PT7503
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	NSC			NSC			WAB		PT800	SSI	405-123
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	NSC	218-54		NSC			WAB		PT702	SSI	405-127
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PN3638A	CRI	173-12	PN4249	CRI	172-53	PN5139	CEN	175-84	PT3502	SSI	405-138
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PT7944	SSI	347-81	RCA1A03	RCAB	331-108	RCA120	RCAB	418-37	S100-12	CTR	444-50	SCA44	PIHS	194-85
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PT7947	SSI	347-84	RCA1A06	RCAB	321-57	RCA410	RCAB	389-10	S1236	IMTM	323-92	SCA14024	SCA	347-24
		389-97						337-109	S1237	IMTM	279-58			387-45
PT7948	SSI	345-31	RCA1A07	RCAB	321-58	RCA411	RCAB	389-7	S1350	IMTM	327-94	SCA14025	SCA	347-25
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		388-50						338-1	SA2253	STI	185-73			387-47
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		406-1						338-2	SA2254	STI	185-74			387-48
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		376-2						418-2	SA2345	STI	429-58			387-50
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PT9503	PTI	356-62	RCA1A16	RCAB	272-39	RCA1001	RCAB				197-80	SCA14032	SCA	337-39
		405-23						321-60	SA2710	STI	434-95	SCA14033	SCA	345-33
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	THCS		SDF9214	*SOD	242-63	SDM6001	*SODI	390-17		SSI	384-87
SD1214-6	SMLB	444-66	SDF9215	*SOD	242-64			421-48	SDT425	*SODI	349-46
	THCS		SDF9503	*SOD	249-48	SDM6002	*SODI	390-18		SSI	398-76
SD1219	SMLB	327-95	SDF9603	*SOD	249-49	SDM6003	*SODI	390-19	SDT430	*SODI	349-47
	THCS				381-45	SDM6004	SODI	390-20		SSI	398-77
SD1219-5	THCS	444-67			381-46			421-50	SDT431	*SODI	349-48
SD1220-1	THCS	311-2	SDG600	GPD	257-66			390-20		SSI	398-78
	*THEF		SDG601	GPD	257-67	SDM10012	SODI	421-51	SDT665	SODI	327-96
SD1222-5	THCS	316-26	SDG602	GPD	257-68	SDN101	STC	423-5	SDT701	*SODI	291-49
	*THEF		SDG603	GPD	257-69	SDN105	STC	414-76	SDT702	*SODI	291-50
SD1224-2	SMLB	325-53	SDG604	GPD	281-67	SDN201	STC	414-70	SDT703	*SODI	291-51
	THCS		SDG605	GPD	281-68	SDN205	STC	415-91	SDT704	*SODI	291-52
SD1224-10	THCS	328-78	SDG606	GPD	281-69	SDN301	STC	414-58	SDT710	*SODI	291-53
	*THEF		SDG607	GPD	281-90	SDN305	STC	414-59	SDT712	*SODI	291-54
SD1229	THCS	325-67	SDI345	PPC	321-63	SDN345	PPC	321-68	SDT714	*SODI	291-55
SD1229-1	THCS	444-68	SDI445	PPC	278-12	SDN401	STC	415-46	SDT723	*SODI	291-56
	*THEF		SDK345	PPC	321-64	SDN405	STC	415-47	SDT801	*SODI	291-57
SD1272	THCS	291-46	SDK445	PPC	321-65	SDN445	PPC	278-17	SDT802	*SODI	291-58
	*THEF		SDL345	PPC	278-14	SDN501	STC	415-99	SDT804	*SODI	291-59
SD1278	SMLB	444-69	SDL445	PPC	321-66	SDN505	STC	415-98	SDT812	*SODI	291-60
	THCS		SDM345	PPC	321-67	SDN801	STC	416-48	SDT814	*SODI	291-61
SD1285	THCS	328-79	SDM445	PPC	321-68	SDN805	STC	416-47	SDT1050	*SODI	339-63
	*THEF		SDM3000	*SODI	420-47	SDN722	STC	415-74		SSI	
SD1288	THCS	334-21			420-48	SDN822	STC	415-75	SDT1051	*SODI	339-64
SD1290	THCS	334-22	SDM3001	*SODI	420-49	SDN823	STC	415-108		SSI	
	*THEF				430-35	SDN832	STC	415-107	SDT1052	*SODI	339-65
SD1300	SMLB	190-60	SDM3002	*SODI	420-48	SDN833	STC	416-99		SSI	
	THCS				430-36	SDN1010	STC	416-100	SDT1053	*SODI	339-66
SD1301	SMLB	190-71	SDM3003	*SODI	420-49	SDN1020	STC	421-75		SSI	
	THCS				430-37	SDN4040	STC	421-82	SDT1054	*SODI	339-67
SD1405	THCS	444-70	SDM3004	*SODI	420-33	SDN4045	STC	421-69		SSI	
	*THEF				430-38	SDN4060	STC	421-70	SDT1055	*SODI	339-68
SD1407	THCS	351-95	SDM3005	*SODI	420-34	SDN4065	STC	421-71		SSI	
	*THEF				430-39	SDN6000	STC	420-109	SDT1056	*SODI	339-69
SD1416	THCS	444-71	SDM3100	*SODI	430-40	SDN6001	STC	420-110		SSI	
	*THEF				397-32	SDN6002	STC	421-111	SDT1057	*SODI	339-70
SD1428	SMLB	340-23	SDM3101	*SODI	415-108	SDN6003	STC	421-112		SSI	
	THCS				397-33	SDN6006	STC	420-108	SDT1058	*SODI	339-71
SD1430	THCS	291-47	SDM3102	*SODI	415-109	SDN6062	STC	420-107		SSI	
	*THEF				415-110	SDN6251	STC	420-80	SDT1059	*SODI	339-72
SD1438-2	THCS	444-73	SDM3103	*SODI	397-35	SDN6252	STC	420-81		SSI	
SD1446	THCS	444-74	SDM3104	*SODI	397-36	SDN6253	STC	420-82	SDT1060	*SODI	339-73
	*THEF				415-101	SDN22301	STC	421-55		SSI	
SD1451	THCS	345-34	SDM3105	*SODI	397-37	SDN22302	STC	421-56	SDT1061	*SODI	339-74
	*THEF				415-102	SDN22303	STC	421-57		SSI	
SD1451-1	THCS	345-35	SDM3200	*SODI	397-38	SDN22311	STC	421-38	SDT1062	*SODI	339-75
SD1477	THCS	444-75			416-1	SDN22312	STC	421-39		SSI	
SD1478	THCS	311-13	SDM3201	*SODI	397-39	SDN22313	STC	421-40	SDT1064	*SODI	339-77
SD1479	THCS	325-82			416-2	SDF151	STC	414-71		SSI	
SD1480	THCS	351-96	SDM3202	*SODI	397-40	SDF155	STC	415-93	SDT1150	*SODI	327-97
SD1487	THCS	444-76			416-3	SDF251	PPC	321-89	SDT1151	*SODI	327-98
SDF500	*SOD	247-36	SDM3203	*SODI	397-41	SDF345	PPC	321-80	SDT1152	*SODI	327-99
		435-3			415-103	SDF351	STC	414-81	SDT1153	*SODI	327-100
SDF501	*SOD	247-37	SDM3204	*SODI	397-42	SDF445	PPC	278-18	SDT1154	*SODI	327-101
		435-4			415-104	SDF455	PPC	278-18	SDT1155	*SODI	327-102
SDF502	*SOD	247-38	SDM3205	*SODI	397-43	SDF455	PPC	278-18	SDT1156	*SODI	327-103
		435-5			415-105	SDF455	PPC	278-18	SDT1157	*SODI	327-104
SDF503	*SOD	247-39	SDM3300	SODI	397-44	SDF1A09	SODI	307-28	SDT1158	*SODI	327-105
		435-6			414-99	SDF1A11	SODI	307-27	SDT1159	*SODI	327-106
SDF504	*SOD	247-40	SDM3301	SODI	397-45	SDF1A15	SODI	307-28	SDT1160	*SODI	327-107
		435-7			414-100	SDF1B01	SODI	334-25	SDT1161	*SODI	327-108
SDF505	*SOD	247-41	SDM3302	SODI	397-46	SDF7A01	SODI	320-45	SDT1162	*SODI	327-109
		435-8			414-101				SDT1163	*SODI	327-110
SDF506	*SOD	247-42	SDM3303	SODI	397-47	SDT7A02	SODI	320-46	SDT1164	*SODI	328-1
		435-9			414-91				SDT1165	*SODI	328-84
SDF507	*SOD	247-43	SDM3304	SODI	397-48	SDT7A03	SODI	320-47		SSI	
		435-10			414-92				SDT1612	SOD	332-85
SDF508	*SOD	247-44	SDM3305	SODI	397-49	SDT7A04	SODI	320-48		SSI	
		435-11			414-93				SDT1613	SOD	332-86
SDF509	*SOD	247-45	SDM3400	*SODI	397-50	SDT7A05	SODI	320-49		SSI	
		435-12			414-102	SDT7A07	SODI	320-50	SDT1614	SOD	332-87
SDF510	*SOD	247-46	SDM3401	*SODI	397-51					SSI	
		435-13			414-103	SDT7A08	SODI	320-51	SDT1615	SOD	332-88
SDF511	*SOD	247-47	SDM3402	*SODI	397-52					SSI	
		435-14			414-104	SDT7A09	SODI	320-52	SDT1616	SOD	332-89
SDF512	*SOD	247-48	SDM3403	*SODI	397-53					SSI	
		435-15			414-94	SDT7A10	SODI	320-53	SDT1617	SOD	332-90
SDF513	*SOD	247-49	SDM3404	*SODI	397-54					SSI	
		435-16			414-95	SDT7A11	SODI	320-54	SDT1618	SOD	332-91
SDF514	*SOD	247-50	SDM3405	*SODI	397-55					SSI	
		435-17			414-96	SDT7A12	SODI				



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SDT3108	CRI	281-11	SDT3405	PPC	325-10	SDT3710	PPC	275-74	SDT3851	CRI	277-93	SDT4925	CRI	304-34
PPC	†SODI	383-80	†SODI	SSI	395-3	SODI	SSI		PPC	SODI		PPC	SODI	
SDT3109	CRI	281-12	SDT3406	PPC	325-11	SDT3711	PPC	275-75	SDT3852	CRI	277-94	SDT4941	SSI	324-28
PPC	†SODI	383-81	†SODI	SSI	395-4	SODI	SSI		PPC	SODI		SSI	SSI	324-30
SDT3115	CRI	281-13	SDT3407	PPC	325-12	SDT3712	PPC	275-76	PPC	SSI		SDT4942	SSI	324-31
PPC	†SODI		†SODI	SSI	395-5	SODI	SSI		PPC	SSI		SDT4943	SSI	324-32
SDT3116	CRI	281-14	SDT3408	PPC	325-13	SDT3713	PPC	275-77	SDT3875	CRI	281-65	SDT4944	SSI	324-33
PPC	†SODI		†SODI	SSI	395-6	SODI	SSI		PPC	SODI		SDT4945	SSI	324-35
SDT3117	CRI	281-15	SDT3409	PPC	325-14	SDT3714	PPC	275-78	PPC	SSI		SDT5001	PPC	
PPC	†SODI		†SODI	SSI	395-7	SODI	SSI		PPC	SSI		†SODI	SSI	304-36
SDT3118	CRI	281-16	SDT3421	PPC	306-1	SDT3715	PPC	275-79	SDT3876	CRI	281-66	SDT5002	PPC	304-37
PPC	†SODI		†SODI	SSI	306-2	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3119	CRI	281-17	SDT3422	PPC	306-3	SDT3716	PPC	275-80	SDT3877	CRI	281-67	SDT5003	PPC	304-38
PPC	†SODI		†SODI	SSI	306-4	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3125	CRI	278-23	SDT3423	PPC	306-5	SDT3717	PPC	275-81	SDT3901	CRI	284-70	SDT5004	PPC	304-39
PPC	†SODI		†SODI	SSI	306-6	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3126	CRI	278-24	SDT3424	PPC	306-7	SDT3718	PPC	275-82	SDT3902	CRI	284-71	SDT5005	PPC	304-40
PPC	†SODI		†SODI	SSI	306-8	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3127	CRI	278-25	SDT3425	PPC	306-9	SDT3719	PPC	275-83	SDT3903	CRI	284-72	SDT5006	PPC	304-41
PPC	†SODI		†SODI	SSI	306-10	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3128	CRI	278-26	SDT3426	PPC	306-11	SDT3720	PPC	275-84	SDT3904	CRI	284-73	SDT5007	PPC	304-42
PPC	†SODI		†SODI	SSI	306-12	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3129	CRI	278-27	SDT3427	PPC	306-13	SDT3721	PPC	275-85	SDT3905	CRI	284-74	SDT5008	PPC	304-43
PPC	†SODI		†SODI	SSI	306-14	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3201	CRI	330-55	SDT3428	PPC	306-15	SDT3722	PPC	275-86	SDT3906	CRI	284-75	SDT5009	PPC	304-44
PPC	†SODI	394-86	†SODI	SSI	306-16	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3202	CRI	330-56	SDT3429	PPC	306-17	SDT3723	PPC	275-87	SDT3907	CRI	354-71	SDT5010	PPC	304-45
PPC	†SODI	394-87	†SODI	SSI	306-18	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3203	CRI	330-57	SDT3501	PPC	271-27	SDT3724	PPC	275-88	SDT3920	CRI	354-72	SDT5011	PPC	304-46
PPC	†SODI	394-88	†SODI	SSI	271-28	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3204	CRI	330-58	SDT3502	PPC	271-29	SDT3725	PPC	275-89	SDT3921	CRI	354-73	SDT5012	PPC	304-47
PPC	†SODI	394-89	†SODI	SSI	271-30	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3205	CRI	330-59	SDT3503	PPC	271-31	SDT3726	PPC	275-90	SDT3922	CRI	354-74	SDT5013	PPC	304-48
PPC	†SODI	387-51	†SODI	SSI	271-32	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3206	CRI	330-60	SDT3504	PPC	271-33	SDT3727	PPC	275-91	SDT3923	CRI	354-75	SDT5014	PPC	304-49
PPC	†SODI	387-52	†SODI	SSI	271-34	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3207	CRI	330-61	SDT3505	PPC	271-35	SDT3728	PPC	275-92	SDT3924	CRI	354-76	SDT5015	PPC	304-50
†SODI	SSI	387-53	†SODI	SSI	271-36	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3208	CRI	330-62	SDT3506	PPC	271-37	SDT3729	PPC	275-93	SDT4301	CRI	306-10	SDT5016	PPC	304-51
†SODI	SSI	387-54	†SODI	SSI	271-38	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3209	CRI	330-63	SDT3507	PPC	271-39	SDT3730	PPC	275-94	SDT4302	CRI	306-11	SDT5017	PPC	304-52
†SODI	SSI	387-55	†SODI	SSI	271-40	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3225	CRI	339-78	SDT3508	PPC	271-41	SDT3731	PPC	275-95	SDT4303	CRI	306-12	SDT5018	PPC	304-53
PPC	†SODI		†SODI	SSI	271-42	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3226	CRI	339-79	SDT3509	PPC	275-110	SDT3732	PPC	275-96	SDT4304	CRI	306-13	SDT5019	PPC	304-54
PPC	†SODI		†SODI	SSI	276-1	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3227	CRI	339-80	SDT3510	PPC	276-2	SDT3733	PPC	275-97	SDT4305	CRI	306-14	SDT5020	PPC	304-55
PPC	†SODI		†SODI	SSI	276-3	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3228	CRI	339-81	SDT3511	PPC	276-4	SDT3734	PPC	275-98	SDT4306	CRI	306-15	SDT5021	PPC	304-56
PPC	†SODI		†SODI	SSI	276-5	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3229	CRI	339-82	SDT3512	PPC	276-6	SDT3735	PPC	275-99	SDT4307	CRI	306-16	SDT5022	PPC	304-57
PPC	†SODI		†SODI	SSI	276-7	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3301	CRI	278-52	SDT3513	PPC	276-8	SDT3736	PPC	275-100	SDT4308	CRI	306-17	SDT5023	PPC	304-58
†SODI	SSI	394-100	†SODI	SSI	276-9	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3302	CRI	278-53	SDT3514	PPC	276-10	SDT3737	PPC	275-101	SDT4309	CRI	306-18	SDT5024	PPC	304-59
†SODI	SSI	394-101	†SODI	SSI	276-11	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3303	CRI	278-54	SDT3515	PPC	276-12	SDT3738	PPC	275-102	SDT4310	CRI	306-19	SDT5025	PPC	304-60
†SODI	SSI	394-102	†SODI	SSI	276-13	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3304	CRI	278-55	SDT3516	PPC	276-14	SDT3739	PPC	275-103	SDT4311	CRI	306-20	SDT5026	PPC	304-61
†SODI	SSI	394-103	†SODI	SSI	276-15	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3305	CRI	278-56	SDT3517	PPC	276-16	SDT3740	PPC	275-104	SDT4312	CRI	306-21	SDT5027	PPC	304-62
PPC	†SODI		†SODI	SSI	276-17	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3306	CRI	278-57	SDT3518	PPC	276-18	SDT3741	PPC	275-105	SDT4451	CRI	304-23	SDT5028	PPC	304-63
PPC	†SODI		†SODI	SSI	276-19	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3307	CRI	278-58	SDT3519	PPC	276-20	SDT3742	PPC	275-106	SDT4452	CRI	304-24	SDT5029	PPC	304-64
PPC	†SODI		†SODI	SSI	276-21	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3308	CRI	278-59	SDT3520	PPC	276-22	SDT3743	PPC	275-107	SDT4453	CRI	304-25	SDT5030	PPC	304-65
PPC	†SODI		†SODI	SSI	276-23	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3309	CRI	278-60	SDT3521	PPC	276-24	SDT3744	PPC	275-108	SDT4454	CRI	304-26	SDT5031	PPC	304-66
PPC	†SODI		†SODI	SSI	276-25	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3321	CRI	271-92	SDT3522	PPC	276-26	SDT3745	PPC	275-109	SDT4455	CRI	304-27	SDT5032	PPC	304-67
PPC	†SODI		†SODI	SSI	276-27	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3322	CRI	271-93	SDT3523	PPC	276-28	SDT3746	PPC	275-110	SDT4456	CRI	304-28	SDT5033	PPC	304-68
PPC	†SODI		†SODI	SSI	276-29	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3323	CRI	271-94	SDT3524	PPC	276-30	SDT3747	PPC	275-111	SDT4457	CRI	304-29	SDT5034	PPC	304-69
PPC	†SODI		†SODI	SSI	276-31	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3324	CRI	271-95	SDT3525	PPC	276-32	SDT3748	PPC	275-112	SDT4458	CRI	304-30	SDT5035	PPC	304-70
PPC	†SODI		†SODI	SSI	276-33	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3325	CRI	271-96	SDT3526	PPC	276-34	SDT3749	PPC	275-113	SDT4459	CRI	304-31	SDT5036	PPC	304-71
PPC	†SODI		†SODI	SSI	276-35	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3326	CRI	271-97	SDT3527	PPC	276-36	SDT3750	PPC	275-114	SDT4460	CRI	304-32	SDT5037	PPC	304-72
PPC	†SODI		†SODI	SSI	276-37	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3327	CRI	271-98	SDT3528	PPC	276-38	SDT3751	PPC	275-115	SDT4461	CRI	304-33	SDT5038	PPC	304-73
PPC	†SODI		†SODI	SSI	276-39	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3328	CRI	271-99	SDT3529	PPC	276-40	SDT3752	PPC	275-116	SDT4462	CRI	304-34	SDT5039	PPC	304-74
PPC	†SODI		†SODI	SSI	276-41	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3329	CRI	271-100	SDT3530	PPC	276-42	SDT3753	PPC	275-117	SDT4463	CRI	304-35	SDT5040	PPC	304-75
PPC	†SODI		†SODI	SSI	276-43	SODI	SSI		PPC	SODI		†SODI	SSI	
SDT3401	CRI	325-6	SDT3531	PPC	276-44	SDT3754	PPC	275-118	SDT4464	CRI	304-36	SDT5041	PPC	304-76
PPC	†SODI		†SODI	SSI	276-45	SODI	SSI		PPC	SODI		†SODI		



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SDT5840	SSI	358-3	SDT6112	CRI	308-88	SDT7207	PPC	335-109	SDT7805	PPC	330-85
SDT5841	SSI	358-4	PPC	SSI	376-97	SDT7208	PPC	335-110	SDT7806	SSI	330-86
SDT5842	SSI	358-5	SDT6113	CRI	376-98	SDT7209	PPC	336-1	SDT7807	SSI	330-87
SDT5843	SSI	358-6	PPC	SSI	376-99	SDT7210	PPC	306-22	SDT7808	SSI	330-88
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SDT5857	SSI	358-17	SDT8310	CRI	325-24	SDT7418	SSI	306-33	SDT7909	SSI	320-65
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SDT5936	PPC	381-106	SDT6423	CRI	318-47	SDT7632	SSI	336-35			
SDT5937	PPC	318-15	PPC	SSI	318-48	SDT7633	SSI	336-36			
SDT5938	PPC	381-107	SDT6424	CRI	318-49	SDT7634	SSI	336-37			
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SDT5952	PPC	381-114	SDT6431	CRI	318-63	SDT7648	SSI	336-51			
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SDT5957	PPC	318-25	PPC	SSI	318-68	SDT7653	SSI	336-56			
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SDT5967	PPC	318-30	PPC	SSI	318-78	SDT7663	SSI	336-66			
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SDT5971	PPC	318-32	PPC	SSI	318-82	SDT7667	SSI	336-70			
SDT5972	PPC	381-124	SDT6441	CRI	318-83	SDT7668	SSI	336-71			
SDT5973	PPC	318-33	PPC	SSI	318-84	SDT7669	SSI	336-72			
SDT5974	PPC	381-125	SDT6442	CRI	318-85	SDT7670	SSI	336-73			
SDT5975	PPC	318-34	PPC	SSI	318-86	SDT7671	SSI	336-74			
SDT5976	PPC	381-126	SDT6443	CRI	318-87	SDT7672	SSI	336-75			
SDT5977	PPC	318-35	PPC	SSI	318-88	SDT7673	SSI	336-76			
SDT5978	PPC	381-127	SDT6444	CRI	318-89	SDT7674	SSI	336-77			
SDT5979	PPC	318-36	PPC	SSI	318-90	SDT7675	SSI	336-78			
SDT5980	PPC	381-128	SDT6445	CRI	318-91	SDT7676	SSI	336-79			
SDT5981	PPC	318-37	PPC	SSI	318-92	SDT7677	SSI	336-80			
SDT5982	PPC	381-129	SDT6446	CRI	318-93	SDT7678	SSI	336-81			
SDT5983	PPC	318-38	PPC	SSI	318-94	SDT7679	SSI	336-82			
SDT5984	PPC	381-130	SDT6447	CRI	318-95	SDT7680	SSI	336-83			
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SDT9834	SSI	347-89			398-99	SDT98302	*SODI	345-94	(cont.)	STI	345-94	
SDT9840	SSI	345-73	SDT41306	*SODI	339-88	SDT98303	*SODI	345-95		SWT	345-95	
SDT9841	SSI	345-74			398-100	SDT98304	*SODI	345-96		WAB	345-96	
SDT9842	SSI	345-75	SDT44331	*SODI	291-90	SDT98305	*SODI	345-97	SE7056	ASI	345-97	
SDT9843	SSI	345-76	SDT44332	*SODI	291-91	SDT98306	*SODI	345-98		CEN	345-98	
SDT9844	SSI	345-77	SDT44333	*SODI	291-92	SDT98401	*SODI	348-3		NSC	348-3	
SDT9850	SSI	354-109	SDT44334	*SODI	291-93	SDT98402	*SODI	348-4		STI	348-4	
SDT9851	SSI	354-110	SDT44335	*SODI	291-94	SDT98403	*SODI	348-5		SWT	348-5	
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SDT9853	SSI	355-2			396-12				SE7057	SWT	304-95	
SDT9854	SSI	355-3	SDT55407	*SODI	291-96	SDT96405	*SODI	348-7		STI	229-89	
SDT9860	SSI	352-41			396-13				SE8001	STI	229-90	
SDT9861	SSI	352-42	SDT55456	*SODI	356-50	SDT96406	*SODI	348-8		SE8012	STI	216-15
SDT9862	SSI	352-43			403-25				SE8040	STI	215-12	
SDT9863	SSI	352-44	SDT55460	*SODI	356-51	SDT96501	*SODI	352-46		SE8041	STI	228-78
SDT9864	SSI	352-45			403-26	SDT96502	*SODI	352-47		SE8042	STI	304-96
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SDT9871	SSI	347-91			403-27	SDT96504	*SODI	352-49		SE8541	STI	178-59
SDT9872	SSI	347-92	SDT55464	*SODI	356-53	SDT96505	*SODI	352-50		SE8542	STI	271-44
SDT9873	SSI	347-93			403-28	SDT96506	*SODI	352-51		SE9300	ASI	418-72
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SDT9880	SSI	345-78			404-68	SDT96902	*SODI	355-5		LUCB	MOTA	
SDT9881	SSI	345-79	SDT55472	*SODI	356-55	SDT96903	*SODI	355-6		NSC	SWT	
SDT9882	SSI	345-80			404-69	SDT96904	*SODI	355-7		WAB	WAB	
SDT9883	SSI	345-81	SDT55474	*SODI	356-56				SE9301	ASI	418-73	
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SDT9701	PPC	341-59	SDT55476	*SODI	356-57	SDT96906	*SODI	355-9		LUCB	MOTA	
	SODI				402-83					NSC	SWT	
SDT9702	PPC	341-60	SDT55503	*SODI	355-101				SE9302	ASI	418-74	
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SDT9703	PPC	341-61	SDT55505	*SODI	355-103		WAB			LUCB	MOTA	
	SODI		SDT55507	*SODI	355-104	SE1002	CEN	189-18		NSC	SWT	
SDT9704	PPC	341-62	SDT55556	SODI	356-58		WAB		SE9303	CEN	421-44	
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SDT9705	PPC	341-63	SDT55560	SODI	356-59		WAB		SE9304	GTC	421-45	
	SODI				403-30	SE2002	CEN	187-82		CEN	MOTA	
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	SODI		SDT55904	*SODI	356-28		WAB		SE9305	CEN	421-46	
SDT9707	PPC	341-65	SDT55905	*SODI	356-29		WAB			GTC	MOTA	
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SDT9904	*SODI	308-64	SDT69510	*SODI	266-49	SE4020	CEN	187-83		NSC	SWT	
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			SDT69513	*SODI	266-52		THCS		SEMN055	SELI	291-99	
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SDT13204	*SODI	345-89	SDT69604	*SODI	276-90		WAB		SELI	168-4		
SDT13205	*SODI	345-90			385-9	SE5022	CEN	184-58		SELI	168-4	
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			SDT79822	SODI	348-1		WAB		SELI	168-4		
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			SDT79824	SODI	348-2		WAB		SELI	168-4		
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SDT14413	*SODI	291-87	SDT85303	*SODI	336-26		WAB		SELI	168-4		
SDT14414	*SODI	291-88	SDT85304	*SODI	336-27	SE8001	CEN	194-40		SELI	168-4	
SDT14415	*SODI	291-89	SDT85305	*SODI	336-28		WAB		SELI	168-4		
SDT31303	*SODI	351-26	SDT85308	*SODI	336-29	SE8002	CEN	194-41		SELI	168-4	
			SDT85309	*SODI	336-30		WAB		SELI	168-4		
SDT31305	*SODI	406-69	SDT85310	*SODI	336-31	SE8020	CEN	199-85		SELI	168-4	
			SDT85311	*SODI	336-32		WAB		SELI	168-4		
SDT31307	*SODI	406-70	SDT85501	*SODI	308-34	SE8021	CEN	382-71		SELI	168-4	
			SDT85502	*SODI	308-35		WAB		SELI	168-4		
SDT40301	*SODI	347-105	SDT85503	*SODI	308-36	SE7001	CEN	228-110		SELI	168-4	
			SDT85504	*SODI	308-37	SE7002	CEN	227-1		SELI	168-4	
SDT40302	*SODI	347-106	SDT85505	*SODI	308-38		WAB		SELI	168-4		
			SDT85506	*SODI	308-39	SE7005	STI	304-92		SELI	168-4	
SDT40303	*SODI	389-45	SDT85507	*SODI	308-40		WAB		SELI	168-4		
			SDT85508	*SODI	308-41	SE7008	STI	312-14		SELI	168-4	
SDT40304	*SODI	347-108	SDT85509	*SODI	308-42		WAB		SELI	168-4		
			SDT85510	*SODI	308-43	SE7010	STI	227-52		SELI	168-4	
SDT40305	*SODI	389-47	SDT85601	*SODI	328-2	SE7018	STI	210-94		SELI	168-4	
			SDT85602	*SODI	328-3	SE7019	STI	210-95				

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SK3049-RT	HCA	292-1	SML2165	*SMLB	286-72	SO5433	THCS	236-55	SP2805QF	RTN	439-98	SPC164-24	SPC	355-34
	STI		SML2166	*SMLB	266-73	SO5433R	THCS	236-56	SP2905AF	RTN	439-99	SPC164-26	SPC	355-35
SK3052-RT	RCA	252-22	SML2167	*SMLB	412-68	SO5434	THCS	236-57	SP2905AQF	RTN	439-100	SPC164-28	SPC	355-36
SK3053-RT	RCA	266-54	SML2168	*SMLB	292-48	SO5434R	THCS	236-58	SP2905F	RTN	439-101	SPC164-30	SPC	355-37
SK3054-RT	RCA	292-2	SML2169	*SMLB	292-49	SO5550R	THCS	186-75	SP2905QF	RTN	439-102	SPC401	SPC	345-99
	STI		SML2170	*SMLB	292-50	SO5551	THCS	186-76	SP2907AF	*RTN	439-103	SPC402	SPC	349-78
SK3079-RT	RCA	292-3	SML2171	*SMLB	292-51	SO5551R	THCS	186-77	SP2907AQD	RTN	439-104	SPC410	SPC	349-79
	STI		SML2172	*SMLB	292-52	SO5510R	SODI	323-93	SP2907AQF	RTN	439-105	SPC411	SPC	349-80
SK3084-RT	RCA	266-55	SML2174	*SMLB	412-87	SP1C12	SODI	323-94	SP2907F	RTN	439-106	SPC413	SPC	345-100
SK3085-RT	RCA	266-56	SML2175	*SMLB	412-88	SP1C14	SODI	328-12	SP2907QF	RTN	439-107	SPC423	SPC	349-81
SK3103-RT	RCA	292-4	SML2176	*SMLB	292-53	SP31	SODI	323-95	SP3019F	*RTN	439-108	SPC423M	SPC	345-101
	STI		SML2178	*SMLB	292-54	SP32	SODI	279-59	SP3019QD	RTN	439-109	SPC424	SPC	349-82
SK3104-RT	RCA	292-5	SML2179	*SMLB	292-55	SP41	SODI	331-14	SP3251AQD	RTN	439-110	SPC425	SPC	349-83
	STI		SML2180	*SMLB	292-56	SP42	SODI	281-56	SP3439	*SODI	230-1	SPC430	SPC	351-57
SK3111-RT	RCA	292-6	SML2181	*SMLB	230-97	SP44C1	*SODI	297-70	SP3440	*SODI	230-2	SPC431	SPC	351-58
	STI		SML2182	*SMLB	206-76			378-97	SP3467F	*RTN	440-1	SPC431M	SPC	292-66
SK3112-RT	RCA	237-84	SML2183	SMLB	266-74	SP44C2	*SODI	297-71	SP3467QD	RTN	440-2	SPM100	SODI	420-16
SK3116-RT	RCA	239-12	SML2184	SMLB	412-88			378-98	SP3467QF	RTN	440-3	SPM101	SODI	420-17
SK3117-RT	RCA	184-93	SML4005	*SMLB	292-57	SP44C3	*SODI	297-72	SP3724QD	RTN	440-4	SPM102	SODI	420-18
SK3118-RT	RCA	171-3			401-89			378-99	SP3724QDB	*RTN	440-5	SPM105	SODI	420-19
SK3122-RT	RCA	209-75	SML4007	*SMLB	292-58	SP44C4	*SODI	297-73	SP3724QF	RTN	440-6	SPM106	SODI	420-20
SK3123-RT	RCA	252-23			393-84			378-100	SP3725F	*RTN	440-7	SPM107	SODI	420-21
SK3131-RT	RCA	292-7	SML4009	*SMLB	412-63	SP44C5	*SODI	297-74	SP3725QD	RTN	440-8	SPM110	SODI	417-34
	STI		SN75465J	TII	427-79			378-101	SP3725QDB	*RTN	440-9	SPM111	SODI	417-35
SK3132-RT	RCA	223-48	SN75465N	TII	427-80	SP44C6	*SODI	297-75	SP3725QF	RTN	440-10	SPM112	SODI	417-36
SK3137-RT	RCA	219-97	SN75466J	TII	427-71			378-102	SP5415	*SODI	178-36	SPM115	SODI	417-37
SK3178-RT	RCA	292-8	SN75466N	TII	427-72	SP44C7	*SODI	297-76	SP5416	*SODI	178-37	SPM116	SODI	417-38
	STI		SN75467J	TII	427-73			378-103	SP6306	*SODI	292-61	SPM117	SODI	417-39
SK3179-RT	RCA	266-57	SN75467N	TII	427-74	SP44C8	*SODI	297-77	SP6307	*SODI	292-62	SPM120	SODI	418-59
SK3181-RT	RCA	266-58	SN75468J	TII	427-75			378-104	SP6308	*SODI	292-63	SPM121	SODI	418-60
SK3183-RT	RCA	266-59	SN75468N	TII	427-76	SP44C9	*SODI	297-78	SP13006	*SODI	292-64	SPM122	SODI	418-61
SK3187-RT	RCA	429-59	SN75469J	TII	427-77			378-105	SP13007	*SODI	292-65	SPM125	SODI	418-62
SK3188-RT	RCA	292-9	SN75469N	TII	427-78	SP44C10	*SODI	297-79	SP13008	SODI	339-90	SPM126	SODI	418-63
SK3189-RT	RCA	266-60	SO269	THCS	190-106			378-106	SP13009	SODI	339-91	SPM127	SODI	418-64
SK3217-RT	RCA	292-10	SO269R	THCS	190-107	SP44C11	*SODI	297-80	SPC151-04	SPC	351-29	SPT3055-1	*SSI	298-24
SK3219-RT	RCA	292-11	SO679	THCS	153-34			378-107	SPC151-06	SPC	351-30	SPT3379	SSI	299-108
SK3221-RT	RCA	266-61	SO918	THCS	190-104	SP44C12	*SODI	297-81	SPC151-08	SPC	351-31	SPT3380	SSI	299-109
SK3222-RT	RCA	292-12	SO918R	THCS	190-105			378-108	SPC151-10	SPC	351-32	SPT3439	SSI	321-33
SK3244-RT	RCA	219-60	SO930	THCS	185-109	SP44H1	*SODI	297-82	SPC151-12	SPC	351-33	SPT3440	*SSI	302-71
SK3248-RT	RCA	292-13	SO930R	THCS	185-110			388-26	SPC151-14	SPC	351-34	SPT3713	*SSI	336-34
SK3256-RT	RCA	292-14	SO1613	THCS	202-47	SP44H2	*SODI	297-83	SPC151-16	SPC	351-35	SPT3738	*SSI	313-98
SK3257-RT	RCA	266-62	SO1613R	THCS	202-48			388-27	SPC151-18	SPC	351-36	SPT4624	*SSI	330-99
SK3258-RT	RCA	266-63	SO1711	THCS	202-49	SP44H4	*SODI	297-84	SPC151-20	SPC	351-37			395-55
SK3259-RT	RCA	266-64	SO1711R	THCS	202-50			388-28	SPC151-22	SPC	351-38	SPT4625	SSI	330-100
SK3260-RT	RCA	292-15	SO1893	THCS	202-39	SP44H5	*SODI	297-85	SPC151-24	SPC	351-39			395-56
SK3262-RT	RCA	266-65	SO1893R	THCS	202-40			388-29	SPC151-26	SPC	351-40	SPT5303	SSI	347-30
SK3263-RT	RCA	292-16	SO2221	THCS	192-43	SP44H7	*SODI	297-86	SPC151-28	SPC	351-41			400-101
SK3264-RT	RCA	292-17			359-105			388-30	SPC151-30	SPC	351-42	SPT5502	SSI	303-46
SK3265-RT	RCA	292-18	SO2221A	THCS	192-44	SP44H8	*SODI	297-87	SPC152-04	SPC	351-43	SPT5503	SSI	303-47
SK3266-RT	RCA	292-19			359-106			388-31	SPC152-06	SPC	351-44	SPT6145	*SSI	275-18
SK3267-RT	RCA	266-66	SO2221R	THCS	192-45	SP44H10	*SODI	297-88	SPC152-08	SPC	351-45	SPT6502	SSI	293-68
SK3268-RT	RCA	292-20			359-107			388-32	SPC152-10	SPC	351-46	SPT6503	SSI	293-69
	STI		SO2222	THCS	192-46	SP44H11	*SODI	297-89	SPC152-12	SPC	351-47	SRF402	*FERRB	444-77
SK3269-RT	RCA	292-21			359-108			388-33	SPC152-14	SPC	351-48	SRF404	*FERRB	444-78
	STI		SO2222A	THCS	192-47	SP44Q1	*SODI	297-90	SPC152-16	SPC	351-49	SRF405	*FERRB	444-79
SK3270-RT	RCA	292-22			360-11			380-59	SPC152-18	SPC	351-50	SRL1014	STC	295-1
SK3271-RT	RCA	292-23	SO2222R	THCS	192-47	SP44Q3	*SODI	297-91	SPC152-20	SPC	351-51	SRL2014	STC	295-2
	STI		SO2369	THCS	359-109			380-60	SPC152-22	SPC	351-52	SRL2254S	STC	295-3
SK3272-RT	RCA	292-24			189-56	SP45C1	*SODI	269-44	SPC152-24	SPC	351-53	SRL2504	STC	295-4
SK3273-RT	RCA	292-25	SO2369R	THCS	189-57			372-64	SPC152-26	SPC	351-54	SRL2504S	STC	295-5
SK3356-RT	RCA	187-109			360-22			269-45	SPC152-28	SPC	351-55	SRL2754S	STC	295-6
SK3357-RT	RCA	292-26	SO2484	THCS	186-38	SP45C2	*SODI	269-46	SPC152-30	SPC	351-56	SRL3014	STC	295-7
SK3434-RT	RCA	173-110	SO2484R	THCS	186-39			372-65	SPC153-00	SPC	349-50	SRL3014S	STC	295-8
SK3438-RT	RCA	292-27	SO2894	THCS	153-20	SP45C4	*SODI	269-47	SPC153-06	SPC	349-51	SRL3504S	STC	295-9
	STI				360-17			269-47	SPC153-08	SPC	349-52	SRL3504S	STC	295-10
SK3448-RT	RCA	429-60	SO2894R	THCS	153-21	SP45C5	*SODI	269-48	SPC153-10	SPC	349-53	SRL4014	STC	295-11
SK3450-RT	RCA	176-62			360-18			269-48	SPC153-12	SPC	349-54	SRL4014S	STC	295-12
	STI		SO2906	THCS	155-9	SP45C6	*SODI	269-49	SPC153-14	SPC	349-55	SRL4504	STC	295-13
SK3479-RT	RCA	292-28			359-80			269-49	SPC153-16	SPC	349-56	SRL5014	STC	295-14
SK3510-RT	RCA	292-29	SO2906A	THCS	155-10	SP45C7	*SODI	269-50	SPC153-18	SPC	349-57	SRL5504	STC	295-15
SK3511-RT	RCA	292-30			359-81			269-50	SPC153-20	SPC	349-58	SRL6014	STC	295-16
SK3512-RT	RCA	292-31	SO2906R	THCS	155-11	SP45C8	*SODI	269-51	SPC153-22	SPC	349-59	SRL6504	STC	295-17
SK3513-RT	RCA	266-67			359-82			269-51	SPC153-24	SPC	349-60	SRL7014	STC	295-18
SK3529-RT	RCA	292-32	SO2907	THCS	155-12	SP45C9	*SODI	269-52	SPC153-26	SPC	349-61	SRLP1004	STC	267-91
SK3530-RT	RCA	292-33			359-83			269-52	SPC153-28	SPC	349-62	SRLP2004	STC	267-92
SK3531-RT	RCA	429-61	SO2907A	THCS	155-13	SP45C10	*SODI	269-53	SPC153-30	SPC	349-63	SRLP2254S	STC	267-93
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SRS3204S	STC	300-20	SSP708	SLD	292-105	ST30100	STI	271-102	ST11506	STI	315-48
	STI		SSP70C	SLD	292-106			379-109	ST12006	STI	315-49
SRS3504	STC	300-21	SSP72A	SLD	266-87	ST61000	STI	166-36	ST12506	STI	315-50
	STI		SSP77C	SLD	266-88			438-75	ST13003D	STI	421-90
SRS3604S	STC	300-22	SSP72B	SLD	266-89	ST70000	STI	186-16	ST13004	STI	293-8
	STI		SSP77C	SLD	266-90			438-76	ST13005	STI	293-9
SRS4014	STC	300-23	SSP82	SLD	292-107	ST70001	STI	186-17	ST13006	STI	315-51
	STI		SSP82A	SLD	292-108			438-77	ST13007	STI	315-52
SRS4014S	STC	300-24	SSP82B	SLD	292-109	ST71000	STI	206-2	ST13008	STI	293-10
	STI		SSP82C	SLD	292-110	STA1000	STC	306-45	ST13009	STI	293-11
SRS4404S	STC	300-25	SSP84	SLD	266-91			395-74	ST13439	STI	293-12
	STI		SSP84A	SLD	266-92	STA1001	STC	306-46	ST13440	STI	293-13
SRS4504	STC	300-26	SSP84B	SLD	266-93			395-75	ST14003D	STI	421-91
	STI		SSP84C	SLD	266-94	STA1100	STC	318-2	ST14006	STI	315-53
SRS4804S	STC	300-27	SSP3055	SLD	293-1			395-76	ST14007	STI	315-54
	STI		SSX19	PIHS	192-97	STA1101	STC	318-3	ST14040	STI	421-72
SRS5014	STC	300-28			362-72			395-77	ST14045	STI	421-79
	STI				192-98	STA7604	STC	338-55	ST14046	STI	419-93
SRS5504	STC	300-29	SSX20	PIHS	362-73	STA8309	STC	338-56	ST15003D	STI	421-92
	STI				185-94	STA8341	STC	345-103	ST15006	STI	315-55
SRS6014	STC	300-30	ST35	STI	293-2	STA9000	STC	338-82	ST15007	STI	315-56
	STI		ST42R2	STI	293-3			338-83	ST16003D	STI	421-93
SRS6504	STC	300-31	ST44R4	STI	293-4			395-79	ST16006	STI	315-57
	STI		ST45	STI	185-95	STA9001	STC	338-83	ST16007	STI	315-58
SRS7014	STC	300-32	ST402	STI	320-69			395-79	ST17003D	STI	421-94
	STI		ST403	STI	320-70	STA9002	STC	341-82	ST17006	STI	315-59
SRS7504	STC	300-33	ST415	STI	330-101			395-81	ST17007	STI	315-60
	STI		ST440	STI	328-94	STA9003	STC	341-83	ST18003D	STI	421-95
SRS8014	STC	300-34	ST450	STI	328-95			395-82	ST18006	STI	315-61
	STI		ST1242	STI	182-62	STA9004	STC	345-104	STIP10	STI	271-110
SRS1004	STC	267-104	ST1243	STI	182-90			395-82	STIP20	STI	272-1
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	STI		ST1543	STI	180-35	STA9364	STC	338-58	STIP50	STI	268-100
SRS2254S	STC	267-106	ST1607	STI	193-67	STA9370	STC	338-18	STIP105	STI	272-40
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SRS2504S	STC	267-108	ST2110	STI	190-8	STC1728	PTI	345-108	STIP505	STI	269-94
	STI		ST2120	STI	190-25	STC1733	PTI	345-109	STIP1506	STI	275-98
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	STI		ST3031	STI	180-24	STC1738	PTI	346-1	STIP2506	STI	275-100
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	STI		ST4402	STI	306-44	STC2106	PTI	355-41	STP50	STI	293-17
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	STI		ST5061	STI	304-98	STC2108	PTI	355-43	STP55	STI	293-19
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SRS4014	STC	268-4	ST5612	STI	438-71	STC2182	STC	355-46	STS105	STC	349-86
	STI		ST5613	STI	438-72	STC2183	STC	355-47	STS106	STC	349-87
SRS4014S	STC	268-5	ST5614	STI	438-73	STC2184	STC	355-48	STS107	STC	349-88
	STI		ST5615	STI	438-74	STC2185	STC	355-49	STS401	STC	346-6
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SRS4297	STC	274-84	ST5617	STI	438-76	STC2187	STC	355-51	STS403	STC	349-90
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SS2003	SLD	292-70	ST6170	STI	297-32	STI180	STI	308-74	STS436	STC	336-47
SS2004	SLD	292-71	ST6180	STI	227-96	STI190	STI	308-75	STS463	STC	336-48
SS2005	SLD	292-72	ST6190	STI	227-97	STI200	STI	308-76	STS665	STC	336-49
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SS2007	SLD	292-74	ST6210	STI	209-27	STI205	STI	307-29	SU426V(A)	SGAI	396-31
SS2008	SLD	292-75	ST6220	STI	209-28	STI305	STI	307-30			342-41
SS2009	SLD	292-76	ST6230	STI	228-58	STI340	STI	307-31			396-32
SS2010	SLD	292-77	ST6240	STI	328-96	STI341	STI	293-5	SU2080	STC	242-65
SS2011	SLD	292-78	ST6250	STI	328-97	STI342	STI	293-6	SU2081	STC	435-21
SS2012	SLD	292-79	ST6260	STI	297-33	STI343	STI	293-7			242-66
SS2013	SLD	292-80	ST6270	STI	345-102	STI401	STI	332-108			435-22
SS2014	SLD	292-81	ST6280	STI	328-13	STI403	STI	339-92	SU2365	STC	242-67
SS2015	SLD	292-82	ST6290	STI	172-56	STI405	STI	339-93			435-23
SS2016	SLD	292-83	ST6300	STI	172-57	STI409	STI	339-94	SJ2365A	STC	435-24
SS2017	SLD	292-84	ST6310	STI	172-58	STI410	STI	339-95	SU2366	STC	242-68
SS2018	SLD	292-85	ST6320	STI	166-21	STI411	STI	339-96			435-25
SS2019	SLD	292-86	ST6330	STI	166-35	STI413	STI	332-109	SU2366A	STC	242-69
SS2020	SLD	292-87	ST6340	STI	172-72	STI423	STI	339-97			435-26
SS2021	SLD	292-88	ST6350	STI	166-110	STI424	STI	339-98	SU2367	STC	242-70
SS2022	SLD	292-89	ST6360	STI	167-1	STI425	STI	339-99			435-27
SS2023	SLD	292-90	ST6370	STI	172-109	STI430	STI	339-100	SU2367A	STC	242-71
SS3638	SLD	163-88	ST6380	STI	172-110	STI431	STI	339-101			435-28
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SSP58A	SLD	292-92	ST6410	STI	167-29	STI660	STI	338-35	SU2368A	STC	242-73
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SSP60	SLD	266-75	ST6440	STI	172-76	STI702	STI	338-38			435-31
SSP60A	SLD	266-76	ST6450	STI	156-20	STI704	STI	338-39	SU2369A	STC	435-32
SSP60B	SLD	266-77	ST6460	STI	156-73	STI704	STI	338-40	SU2656	STC	247-73
SSP60C	SLD	266-78	ST6470	STI	156-74	STI705	STI	338-41			435-33
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			TD709	SPR	430-47		CEN	393-25	(cont.)	IDI			TII	402-33
TD201	SPR	188-3	TD710	SPR	430-48		IDI			MATJ		TIP35E	TII	406-22
			TD711	SPR	168-11		MEHK			MOTA			TII	402-34
TD202	SPR	188-4			430-49		NSC			RCAB		TIP35F	TII	346-23
			TD712	SPR	371-2		TII			SST			TII	358-107
TD224	SPR	209-76			430-50		TIIF			UPI		TIP36	CRI	284-15
			TD713	SPR	371-3	TIP29B	WAB	319-75	TIP32	WAB	279-61		THCS	402-35
TD225	SPR	209-77			430-51		RCA	390-55	TIP32	RCA	383-35		TIIF	
			TD2219	SPR	188-54	TIP29B#	SGAI	293-80	TIP32#	SGAI	266-95	TIP36A	MOTA	284-16
TD226	SPR	209-78			440-32		FERR	358-80		FERR	279-62		THCS	402-36
			TD2905	SPR	152-99	TIP29C	ASI	319-22	TIP32A	ASI	386-48		TIIF	
TD227	SPR	209-79			440-33		GTC	393-26		GTC		TIP36B	THCS	284-17
			TD62001P	TOSJ	427-42		IDI			IDI			TIIF	402-37
TD228	SPR	195-14	TD62002P	TOSJ	427-43		MATJ			MATJ			WAB	
			TD62003P	TOSJ	427-44		NSC			NSC		TIP36B	THCS	284-17
TD229	SPR	195-15	TD62004P	TOSJ	427-45		MOTA			MOTA			TIIF	402-37
			TD62004P	TOSJ	426-68		RCAB			RCAB			TIIF	
TD230	SPR	195-16	TD620074P	TOSJ	426-69		TIIF			TIIF		TIP36C	THCS	284-18
			TD62101P	TOSJ	427-38	TIP29C	UPI	319-76	TIP32A	UPI	279-63		TIIF	402-38
TD231	SPR	195-17	TD62103P	TOSJ	427-39		RCA	390-56	TIP32A	RCA	383-36		THCS	
			TD62104P	TOSJ	427-40	TIP29C#	SGAI	293-81	TIP32A#	SGAI	266-96	TIP36D	TII	284-19
TD232	SPR	208-89	TD62105P	TOSJ	427-41		FERR	358-81		FERR	358-95		TII	358-108
			TD62107P	TOSJ	426-43	TIP29D	TII	319-77	TIP32A#		279-64	TIP36E	TII	284-20
TD233	SPR	208-90	TD62301P	TOSJ	427-30			358-82	TIP32B	ASI	386-49		TII	358-109
			TD62302P	TOSJ	427-31	TIP29E	TII	319-78		CEN		TIP36F	TII	284-21
TD234	SPR	208-62	TD62501P	TOSJ	427-32			358-83		IDI			TII	358-110
			TD62502P	TOSJ	427-33	TIP29F	TII	319-79		MOTA			TII	281-40
TD235	SPR	208-63	TD62503P	TOSJ	427-34			358-84		RCAB		TIP41	ASI	331-15
			TD62504P	TOSJ	427-35	TIP30	RCA	277-83		SST			CRI	396-45
TD236	SPR	208-64	TD62505P	TOSJ	427-36		SWT	383-31		TIIF			IDI	
			TD62506P	TOSJ	427-37	TIP30#	FERR	267-16	TIP32B	WAB	279-65		GTC	
TD237	SPR	208-65	TD62507P	TOSJ	427-4			358-85		RCA	383-37		MATJ	359-1
			TD62703P	TOSJ	427-14	TIP30A	RCA	277-84	TIP32B	RCA	266-97		NSC	331-16
TD238	SPR	208-66	TD62705P	TOSJ	427-15		SWT	383-32	TIP32B#	SGAI	358-96		SWT	396-46
			TD62706P	TOSJ	427-16	TIP30A#	FERR	267-17		FERR	279-66		TIIF	293-85
TD239	SPR	208-67	TDA3310	SGAI	426-84			358-86	TIP32C	ASI	386-50		TIIF	359-2
			TDA3320	SGAI	426-85	TIP30B	ASI	277-85		CEN		TIP41	RCWA	281-41
TD240	SPR	208-91	TDB3001DP	EFCF	427-50		GTC	386-45		IDI			SWT	331-17
				THEF			IDI			MATJ		TIP41#	FERR	396-47
TD241	SPR	195-18	TDB3002DP	EFCF	427-51		MEHK			NSC			SWT	
				THEF			NSC			RCAB		TIP41A	ASI	281-42
TD242	SPR	208-92	TDB3003DP	EFCF	427-52		RCAB			SST			GTC	331-18
				THEF			TIIF			TIIF			IDI	396-47
TD243	SPR	208-93	TI92	TIIF	195-81	TIP30B	RCA	277-86	TIP32C	RCA	279-67		NSC	
			TI366	HSE	253-102		SWT	383-33		SGAI	383-38		SST	
TD244	SPR	210-25		STI		TIP30B#	FERR	267-18	TIP32C#	FERR	266-98		TIIF	
			TI366A	HSE	260-3			358-87			358-97		WAB	
TD245	SPR	210-26		STI		TIP30C	ASI	277-87	TIP32D	TII	279-68		RCWA	331-18
			TI367	HSE	253-103		GTC	386-46		TII	358-98		SWT	396-48
TD246	SPR	210-27		STI			MOTA		TIP32E	TII	279-69		FERR	293-86
			TI367A	HSE	260-4		RCAB				358-99			359-2
TD247	SPR	210-38		STI			TIIF		TIP32F	TII	279-70			
			TI368	HSE	253-104		UPI				358-100		ASI	281-42
TD248	SPR	210-63		STI		TIP30C	RCA	277-88	TIP33	TII	333-91		GTC	331-19
			TI368A	HSE	260-5		SGAI	383-34	TIP33#	CRI	333-92		IDI	396-49
TD250	SPR	186-20		STI		TIP30C#	FERR	267-19		TIIF	396-41		MATJ	
			TI369	HSE	253-105			358-88		TIIF			NSC	
TD400	SPR	151-72		STI		TIP30D	TII	277-89	TIP33A	TII	333-93		SST	
			TI369A	HSE	260-6		TII	277-90	TIP33A#	MATJ	333-94		TIIF	
TD401	SPR	151-73		STI		TIP30E	TII	277-91	TIP33A#	PPC	396-42		TIIF	
			TI370	HSE	253-106		ASI	293-21		TIIF			WAB	
TD402	SPR	151-74		STI		TIP31	MEHK		TIP33B	TII	333-95		RCWA	331-20
			TI370A	HSE	260-7		WAB	323-96	TIP33B#	MATJ	333-96		SWT	293-87
TD500	SPR	151-75		STI		TIP31	SGAI	390-57		TIIF	396-43		FERR	359-3
			TI376	STI	138-25		SWT	323-97	TIP33C	TII	333-97		WAB	
TD501	SPR	151-76		STI	138-26		ASI	323-97	TIP33C#	TII	333-98		IDI	281-43
			TI377	STI	132-50		CRI	393-27		TIIF	396-44		GTC	331-21
TD502	SPR	151-77		STI	132-44		IDI		TIP33C	MATJ	333-98		MATJ	396-51
			TI378	STI	132-50		MATJ		TIP33C#	TII	396-44		NSC	
TD509	SPR	166-60		STI	132-45		RCAB			TIIF			TIIF	
			TI381	STI	132-46		SST		TIP33D	TII	333-103		WAB	
TD510	SPR	166-61		STI	132-47		TIIF			TII	358-101		RCWA	331-22
			TI382	STI	132-48		UPI		TIP33E	TII	333-104		SGAI	396-52
TD511	SPR	166-62		STI	140-78		RCWA	358-89		TII	358-102		FERR	293-88
			TI383	STI	140-79	TIP31#	FERR	323-98	TIP33F	TII	333-105			359-4
TD512	SPR	166-63		STI	140-80	TIP31A	SGAI	390-58			358-103			331-28
			TI384	STI	140-81		SWT	323-99	TIP34	MATJ	282-21			359-5
TD513	SPR	166-64		STI	140-81		ASI	393-28		THCS	390-61			331-29
			TI385	STI	134-47		GTC			TIIF				359-6
TD514	SPR	166-65		STI	134-48		IDI			WAB				331-30
			TI386	STI	218-6		MATJ		TIP34A	MATJ	282-22			359-7
TD517	SPR	168-5		STI	218-7		NSC			THCS	390-62			281-44
			TI481	STI	218-55		SST			TIIF				390-65
TD518	SPR	168-6		STI	218-56		TIIF			WAB				
			TI482	STI	218-55	TIP31A#	UPI	293-82	TIP34B	WAB	282-23			
TD519	SPR	168-7		STI	218-57		FERR	358-90		MATJ	282-23			
			TI483	STI	218-56			323-100	TIP34B	THCS	390-63			
TD520	SPR	168-8		STI	314-73		RCA	390-59		SWT				
			TI484	STI	314-73		SWT	390-58		TIIF				
TD521	SPR	168-9		STI	381-49		ASI	323-101		TIIF				
			TI485	STI	314-74		GTC	393-29	TIP34C	MATJ	282-24			
TD522	SPR	168-10		STI	381-50		IDI			THCS	390-64			
			TI487	STI	314-74		MATJ			TIIF				
TD525	SPR	169-70		STI	319-19		MATJ			WAB				
			TI488	STI	393-23		NSC			WAB				



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TIP42C	CEN	281-50			389-14	(cont.)	SGAI		(cont.)	SMLB		♦TII	♦TII	380-93
	IDI	390-71	TIP73B	♦TII	333-101		TIID		♦TII	TIIF		TIP560#	SODI	346-43
	♦MOTA				389-15		TIIF		♦RCA	SODI	396-35	TIP561	SMLB	346-44
	NSC		TIP73C	♦TII	333-102	TIP127□	♦RCA	396-35	TIP516	PPC	339-108		♦TII	380-94
	SST				389-16			418-51	SMLB	♦TII	339-109	STI	♦TII	
	TIID		TIP74	♦TII	282-28	TIP127%	FERB	418-31	TIIF	SODI	339-110	TIP561#	SODI	346-45
TIP42C□	♦RCA	281-52			380-46	TIP130	CEN	419-29	TIIF	PPC	340-1	TIP562	♦RCA	346-46
	SGAI	266-101	TIP74A	♦TII	282-29		NSC		♦TII	TIIF	340-3		SMLB	392-93
	♦FERB	359-11	TIP74B	♦TII	380-47		TII		TIP517#	SODI	340-2	TIP562#	♦TII	
TIP42C#		281-52			282-30	TIP131	CEN	419-30	TIP518#	PPC	340-3	TIP563	SODI	346-47
		359-12	TIP74C	♦TII	380-48		NSC		♦TII	TIIF	340-4	TIP563#	♦RCA	346-48
TIP42D	TII	281-52			380-49		SODI		TIP519	SODI	340-4		STI	392-94
		359-13	TIP75	♦TII	331-23	TIP132	TIIF	419-31	SMLB	PPC	281-18	TIP563#	♦TII	
TIP42E	TII	281-53			388-68		CEN		♦TII	STI		TIP564#	SODI	346-49
		359-13	TIP75A	♦TII	331-24		NSC		TIP519#	TIIF	281-19	TIP564	SMLB	351-97
TIP42F	TII	281-54			388-69	TIP135	SGAI	266-110	TIP520	PPC	281-20	TIP565	SMLB	351-98
		359-14	TIP75B	♦TII	331-25		TIIF	419-32	♦TII	TIIF	281-21		TIIF	
TIP47	CRI	323-107			388-70	TIP136	NSC	267-1	TIP520#	SODI	281-22	TIP575	SMLB	346-50
	♦MOTA		TIP75C	♦TII	331-26		TII	419-33	TIP521	PPC	276-102	TIP575A	♦TII	388-72
	SGAI				388-71	TIP137	NSC	267-2	TIP522#	STI	276-103		SMLB	346-51
	STI		TIP100	♦MOTA	388-98		SGAI	419-34	TIP523	PPC	272-72	TIP600	♦TII	388-73
	♦TII			♦RCA	419-106	TIP140	TII	399-16	TIP524	SMLB	272-72		TIIF	
TIP47□	♦RCA	323-108	TIP100□	♦RCA	293-23	TIP141	SGAI	423-54	PPC	TIIF	332-110	TIP601	SMLB	388-102
	SWT	383-39	TIP101	♦MOTA	388-99		TIIF	399-17	TIP525	PPC	333-1		TIIF	419-43
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	SST			NSC	419-108		TIIF	399-19	TIP529	PPC	336-84		TIIF	419-45
	SWT		TIP102□	♦RCA	293-25	TIP144	SGAI	423-57	TIP530	PPC	318-33	TIP606	SMLB	385-109
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TIP48	♦RCA	323-110		NSC	419-109	TIP145	SGAI	399-20	TIP532	PPC	355-55	TIP620	SMLB	416-104
	SWT	383-40	TIP105□	♦RCA	266-102		TIIF	423-59	TIP533	PPC	348-9		TIIF	416-105
	GTC	324-1	TIP106	♦MOTA	385-105	TIP146	SGAI	399-21	TIP534	PPC	355-57	TIP621	SMLB	416-106
	♦MOTA	383-51		NSC	419-110		TIIF	399-22	TIP535	PPC	348-10		TIIF	416-107
	STI		TIP106□	♦RCA	266-103	TIP147	TIIF	423-60	TIP536	PPC	348-15	TIP622	SMLB	416-108
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	SWT	383-40	TIP107□	♦RCA	266-104		TIIF	382-75	TIP539	PPC	348-13		TIIF	416-108
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	STI		TIP107□	♦MOTA	266-106	TIP152	TIIF	419-99	TIP542	PPC	328-16	TIP627	SMLB	416-109
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	GTC	324-3		NSC	417-6	TIP157	TIIF	414-71	TIP552	PPC	278-7	TIP632	SMLB	416-110
	♦MOTA	383-52	TIP107□	♦MOTA	266-110		TIIF	414-72	TIP553	PPC	278-8		TIIF	416-111
	STI		TIP115	NSC	417-5	TIP158	TIIF	414-73	TIP554	PPC	278-9	TIP633	SMLB	416-111
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TIP50	GTC	383-42	TIP107□	♦RCA	266-111	TIP159	TIIF	414-75	TIP556	PPC	278-11	TIP634	SMLB	416-112
	♦MOTA	383-42		NSC	417-6		TIIF	414-76	TIP557	PPC	278-12		TIIF	416-113
	SGAI	339-102	TIP107□	♦MOTA	266-112	TIP160	TIIF	414-77	TIP558	PPC	278-13	TIP635	SMLB	416-113
	♦TII	384-83		NSC	417-6		TIIF	414-78	TIP559	PPC	278-14		TIIF	416-114
TIP50□	♦RCA	324-4	TIP107□	♦RCA	266-113	TIP161	TIIF	414-79	TIP560	PPC	278-15	TIP636	SMLB	416-114
	SWT	383-42		NSC	417-6		TIIF	414-80	TIP561	PPC	278-16		TIIF	416-115
	CRI	339-102	TIP107□	♦MOTA	266-114	TIP162	TIIF	414-81	TIP562	PPC	278-17	TIP637	SMLB	416-115
	SGAI	384-83		NSC	417-6		TIIF	414-82	TIP563	PPC	278-18		TIIF	416-116
TIP51	♦TII	384-83	TIP107□	♦RCA	266-115	TIP163	TIIF	414-83	TIP564	PPC	278-19	TIP638	SMLB	416-116
	TIIF			NSC	417-6		TIIF	414-84	TIP565	PPC	278-20		TIIF	416-117
	WAB		TIP107□	♦MOTA	266-116	TIP164	TIIF	414-85	TIP566	PPC	278-21	TIP639	SMLB	416-117
	SGAI	339-103		NSC	417-6		TIIF	414-86	TIP567	PPC	278-22		TIIF	416-118
	♦TII	384-84	TIP107□	♦RCA	266-117	TIP165	TIIF	414-87	TIP568	PPC	278-23	TIP640	SMLB	416-118
TIP52(A)	♦RCA	324-4		NSC	417-6		TIIF	414-88	TIP569	PPC	278-24		TIIF	416-119
	SWT	383-42	TIP107□	♦MOTA	266-118	TIP166	TIIF	414-89	TIP570	PPC	278-25	TIP641	SMLB	416-119
	CRI	339-102		NSC	417-6		TIIF	414-90	TIP571	PPC	278-26		TIIF	416-120
	SGAI	384-83	TIP107□	♦RCA	266-119	TIP167	TIIF	414-91	TIP572	PPC	278-27	TIP642	SMLB	416-120
	♦TII			NSC	417-6		TIIF	414-92	TIP573	PPC	278-28		TIIF	416-121
TIP52(A)□	♦RCA	324-4	TIP107□	♦MOTA	266-120	TIP168	TIIF	414-93	TIP574	PPC	278-29	TIP643	SMLB	416-121
	SWT	383-42		NSC	417-6		TIIF	414-94	TIP575	PPC	278-30		TIIF	416-122
	CRI	339-102	TIP107□	♦RCA	266-121	TIP169	TIIF	414-95	TIP576	PPC	278-31	TIP644	SMLB	416-122
	SGAI	384-83		NSC	417-6		TIIF	414-96	TIP577	PPC	278-32		TIIF	416-123
	♦TII		TIP107□	♦MOTA	266-122	TIP170	TIIF	414-97	TIP578	PPC	278-33	TIP645	SMLB	416-123
TIP52(B)	♦RCA	324-4		NSC	417-6		TIIF	414-98	TIP579	PPC	278-34		TIIF	416-124
	SWT	383-42	TIP107□	♦RCA	266-123	TIP171	TIIF	414-99	TIP580	PPC	278-35	TIP646	SMLB	416-124
	CRI	339-102		NSC	417-6		TIIF	414-100	TIP581	PPC	278-36		TIIF	416-125
	SGAI	384-83	TIP107□	♦MOTA	266-124	TIP172	TIIF	414-101	TIP582	PPC	278-37	TIP647	SMLB	416-125
	♦TII			NSC	417-6		TIIF	414-102	TIP583	PPC	278-38		TIIF	416-126
TIP52(B)□	♦RCA	324-4	TIP107□	♦RCA	266-125	TIP173	TIIF	414-103	TIP584	PPC	278-39	TIP648	SMLB	416-126



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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
TIPC100	MOTA	443-8	TIS100	TIIC	221-41	TP3138	SPR	188-24	TRO8	GDC	146-87	TR382	GDC	141-74
TIPC102	MOTA	443-9		WAB				378-86		STI			HSE	STI
TIPC105	MOTA	443-10	TIS101	TIIC	221-42	TP3217	SPR	165-41	TRO9	GDC	146-78	TR383	GDC	142-48
TIPC106	MOTA	443-11		WAB		TP3218	SPR	165-42		STI			HSE	STI
TIPC107	MOTA	443-12	TIS104	TIIC	163-66	TP3219	SPR	165-43	TR10	GDC	138-27	TR396	GDC	139-104
TIPL751	♦TH	293-26	TIS105	IDI	210-66	TP3304	SPR	160-28		STI			HSE	STI
		359-56		TIIC				375-87	TR11	GDC	137-18	TR460	GDC	141-69
TIPL751A	♦TH	293-27	TIS108	IDI	191-51	TP3451	SPR	160-29		STI			HSE	STI
		359-57		TIIC				366-70	TR12	GDC	133-102	TR461	GDC	141-70
TIPL752	♦TH	293-28	TIS110	TIIC	206-80	TP3566	SPR	220-108		STI			HSE	STI
		401-40		WAB	365-3	TP3567	SPR	195-19	TR13	GDC	133-103	TR482	GDC	139-46
TIPL752A	♦TH	293-29	TIS111	TIIC	207-13	TP3568	SPR	195-20		STI			HSE	STI
		401-41		WAB	365-14	TP3569	SPR	195-21	TR14	GDC	133-104		GDC	STI
TIPL753	♦TH	293-30	TIS125	IDI	192-101	TP3638	♦SPR	170-69		STI		TR508	GDC	139-47
		359-48	TIS126	IDI	210-67			376-39	TR15	GDC	137-19		HSE	STI
TIPL753A	♦TH	293-31	TIS129	IDI	193-11	TP3638A	♦SPR	170-70		STI		TR526	GDC	139-37
		359-49	TIS130	TIIC	246-32			376-51	TR16	GDC	137-20		HSE	STI
TIPL760	♦TH	293-32	TIS150	♦TH	414-28	TP3644	SPR	175-70		STI		TR527	GDC	139-41
		359-58	TIS151	♦TH	414-25	TP3645	SPR	175-71	TR17	GDC	137-21		HSE	STI
TIPL760A	♦TH	293-33	TIS175	♦TH	414-29	TP3677	SPR	165-78		STI		TR650	GDC	139-12
		359-59	TIS176	♦TH	414-26	TP3840	SPR	165-80	TR18	GDC	133-109		HSE	STI
TIPL761	♦TH	293-34	TIS180	♦TH	176-58	TP3977	SPR	165-44		STI		TR653	GDC	139-13
		359-60	TIXP548	PTI	355-58	TP3978	SPR	165-45	TR19	GDC	137-52		HSE	STI
TIPL761A	♦TH	293-35	TIXP549	PTI	355-59	TP3979	SPR	165-46		STI		TR721	GDC	139-38
		359-61	TN1711	NSC	295-100	TP4007	SPR	165-107	TR20	GDC	135-65		HSE	STI
TIPL762	♦TH	293-36	TN219A	NSC	295-101	TP4008	SPR	165-108		STI		TR722	GDC	139-24
		359-31	TN2102	NSC	295-102	TP4208	SPR	160-36	TR21	GDC	137-22		HSE	STI
TIPL762A	♦TH	293-37	TN2102#	♦MEHK	296-85			366-74		STI		TR758A	GDC	135-70
		359-32	TN2218A	NSC	295-103	TP4384	SPR	212-32	TR34	GDC	136-74		HSE	STI
TIPL763	♦TH	293-38	TN2219	NSC	295-104	TP4386	SPR	212-33		HVS		TR759	GDC	135-103
		359-50	TN2219#	♦MEHK	296-86	TP4413	SPR	166-10		STI			HSE	STI
TIPL763A	♦TH	293-39	TN2219A	NSC	295-105	TP4413A	SPR	166-11	TR35	GDC	132-87	TR760	GDC	132-98
		359-51	TN2219A#	♦MEHK	296-87	TP4415	SPR	166-12		STI			HSE	STI
TIPL765	TH	346-54	TN2270	NSC	295-106	TP4415A	SPR	166-13	TR43	GDC	139-21	TR761	GDC	137-65
		359-54	TN2904A	NSC	268-30	TP5114	♦TSC	233-19		STI			HSE	STI
TIPL765A	TH	346-55	TN2905	NSC	268-31	TP5115	♦TSC	233-20	TR43A	GDC	138-100	TR762	GDC	137-74
		359-55	TN2905#	♦MEHK	268-106	TP5116	♦TSC	233-21		STI			HSE	STI
TIPL790A(A)	TH	419-35	TN2905A	NSC	268-32	TP5135	SPR	222-71	TR44	GDC	139-15	TR763	GDC	132-102
TIS25	THIF	242-75	TN2905A#	♦MEHK	268-107	TP5136	SPR	222-72		STI			HSE	STI
		435-70	TN3019	NSC	295-107	TP5140	SPR	153-22	TR45	GDC	139-3	TR764	GDC	140-50
TIS26	THIF	242-76	TN3019#	♦MEHK	296-88			365-36		STI			HSE	STI
		435-71	TN3020	NSC	295-108	TP5142	SPR	174-78	TR63	GDC	135-72	TR792	GDC	135-107
TIS27	THIF	242-77	TN3020#	♦MEHK	296-89			376-40		STI			HSE	STI
		435-72	TN3053	NSC	295-109	TPE5036	SPR	193-70	TR64	GDC	135-78	TR801	GDC	135-42
TIS34	NSC	246-21	TN3053#	♦MEHK	296-90	TPE5050	SPR	184-63		STI			HSE	STI
TIS37	TIIC	163-65	TN3244	NSC	268-33	TPE5051	SPR	184-64	TR65	GDC	135-92	TR802	GDC	135-43
	WAB		TN3245	NSC	268-34	TPE6020	SPR	198-59		STI			HSE	STI
	TIIC	163-63	TN3252	NSC	295-110	TPE6021	SPR	198-60	TR77	GDC	132-56	TR803	GDC	135-46
	WAB		TN3253	NSC	296-1	TPP1000	♦SPR	425-87		STI			HSE	STI
TIS41	NASG	246-22	TN3440	NSC	296-2	TPP2000	♦SPR	426-76	TR81	GDC	138-28	TR804	GDC	135-47
TIS42	TIIC	246-23	TN3444	NSC	296-3	TPP3000	♦SPR	427-18		STI			HSE	STI
TIS43	WAB	437-9	TN3467	NSC	268-35	TPP4000	♦SPR	427-81	TR87	GDC	133-110	TR-C44	GDC	139-105
TIS58	NSC	246-24	TN3468	NSC	268-36	TPQ2221	♦SPR	425-97		STI			HSE	STI
	TIIC		TN3724	NSC	296-4	TPQ2222	♦SPR	426-41	TR88	GDC	133-105	TR-C45	GDC	139-59
TIS59	NSC	246-25	TN3725	NSC	296-5	TPQ2483	♦SPR	426-21		STI			HSE	STI
	TIIC		TN3742	NSC	296-6	TPQ2484	♦SPR	426-22	TR104	GDC	138-57	TR-C70	GDC	138-29
TIS60	♦TH	193-69	TN3866	♦TIIC	302-73	TPQ2906	♦SPR	425-98		STI			HSE	STI
	TIIC		TN4030	NSC	268-37	TPQ2907	♦SPR	426-42	TR105	GDC	132-58	TR-C71	GDC	138-30
TIS60M	♦TH	430-52	TN4033	NSC	268-38	TPQ2907A	♦SPR	426-4		STI			HSE	STI
TIS61	♦TH	164-48	TN4036	NSC	268-39	TPQ3724	♦SPR	426-55	TR109	GDC	132-81	TR-C72	GDC	138-31
	TIIC		TN4036#	♦MEHK	296-91	TPQ3725	♦SPR	426-62		STI			HSE	STI
TIS62	TIIC	192-103	TN4037	NSC	268-40	TPQ3725A	♦SPR	426-1	TR123	GDC	139-103	TRF401	TIC	293-40
TIS62A	IDI	216-67	TN4037#	♦MEHK	296-92	TPQ3798	♦SPR	425-99		STI		TRF450	TIC	293-41
TIS63	TIIC	192-99	TN4234	NSC	268-41	TPQ3799	♦SPR	426-2	TR139	GDC	132-59	TRF450A	TIC	293-42
TIS63A	IDI	216-68	TN4235	NSC	268-42	TPQ3904	♦SPR	425-100		STI		TRF454	TIC	293-43
TIS64	TIIC	192-68	TN4236	NSC	268-43	TPQ3906	♦SPR	425-101	TR167	GDC	146-55	TRF454A	TIC	293-44
TIS64A	IDI	216-69	TN4314	NSC	268-44	TPQ4258	SPR	425-92		STI		TRF641	TIC	293-45
TIS73	NASG	246-26	TN5022	NSC	268-45	TPQ4354	SPR	426-5	TR182	GDC	146-84	TRF644	TIC	293-46
	♦NSC		TN5023	NSC	268-46	TPQ5400	SPR	426-10		STI		TRF648	TIC	293-47
	♦TH		TN5277	♦TSC	248-22	TPQ5401	SPR	426-6	TR183	GDC	146-95	TRF648	TIC	293-48
	♦TH		TN5278	♦TSC	248-23	TPQ5550	SPR	426-11		STI		TRL2005	GDC	307-39
TIS74	NASG	246-27	TP107A	SPR	209-50	TPQ5551	SPR	426-7	TR184	GDC	146-100		♦HSE	STI
	♦NSC		TP107B	SPR	209-51	TPQ6001	♦SPR	426-37		STI		TRL2014	GDC	295-37
	♦TH		TP108A	SPR	209-52	TPQ6002	♦SPR	426-38	TR193	GDC	146-24		HSE	STI
	♦TH		TP108B	SPR	209-53	TPQ6100	♦SPR	425-102		STI		TRL2015	GDC	357-75
TIS75	DIT	246-28	TP108C	SPR	209-54	TPQ6100A	♦SPR	425-105	TR194	GDC	146-21		STI	
	NASG	362-19	TP109B	SPR	196-102	TPQ6501	♦SPR	426-39		STI		TRL2254S	GDC	295-38
	♦NSC		TP109C	SPR	196-103	TPQ6502	♦SPR	426-40	TR211	GDC	146-25		♦HSE	STI
	♦TH		TP110	SPR	195-56	TPQ6600	♦SPR	425-103		STI		TRL2255	♦HSE	297-90
	♦TH		TP117A	SPR	157-98	TPQ6600A	♦SPR	425-106	TR212	GDC	146-29	TRL2255S	GDC	357-76
TIS78	NASG	246-29	TP177B	SPR	157-99	TPQ6700	♦SPR	425-104		STI			HSE	STI
TIS79	NASG	246-30	TP178A	SPR	157-100	TPQA05	SPR	426-8	TR213	GDC	146-46	TRL2504	GDC	295-39
TIS84	IDI	193-8	TP178B	SPR	157-101	TPQA06	SPR	426-3		STI			HSE	STI
	TIIC		TP178C	SPR	157-102	TPQA56	SPR	426-9	TR214	GDC	147-8	TRL2504S	GDC	295-40
TIS86	NSC	210-64	TP179B	SPR	157-103	TPS84	SPR	216-						

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TRL4015	GDC	357-84	TRM2504	GDC	295-58	TRS100HC	GDC	306-55	TRS375HP	HSE	302-84	TRS1405	HSE	
◆HSE	STI		◆HSE	HVS		HSE	SSI		HVS		(cont.)	HVS	HSE	
TRL4015S	GDC	297-91	TRM2504S	GDC	295-59	TRS101	GDC	219-20	TRS375MP	STI	293-104	TRS1405LP	HSE	308-73
◆HSE	STI		◆HSE	HVS		◆HSE	SSI		HVS			HVS	HSE	
TRL4504	GDC	295-47	TRM2505	GDC	297-103	TRS120	GDC	218-81	TRS401	◆HSE	218-93	TRS1604	GDC	300-41
HSE	STI		◆HSE	HVS		◆HSE	HVS		HVS			HSE	HVS	
TRL4505	GDC	297-92	TRM2505S	GDC	297-104	TRS125HC	GDC	306-56	TRS401HP	STI	302-85	TRS1604LP	HVS	300-42
◆HSE	STI		◆HSE	HVS		HSE	SSI		HVS			HSE	HVS	
TRL5014	GDC	295-48	TRM2754S	GDC	295-60	TRS140	GDC	218-82	TRS401LC	HSE	295-77	TRS1605	GDC	308-74
HSE	STI		◆HSE	HVS		◆HSE	HVS		HVS			HSE	HVS	
TRL5014S	GDC	295-49	TRM2755S	GDC	297-105	TRS140HP	GDC	302-74	TRS401MP	STI	293-105	TRS1605LP	HSE	308-75
HSE	STI		◆HSE	HVS		HSE	HVS		HVS			HSE	HVS	
TRL5015	GDC	297-93	TRM3014	GDC	295-61	TRS140MP	GDC	293-94	TRS425	◆HSE	218-94	TRS1804	GDC	300-43
◆HSE	STI		◆HSE	HVS		HSE	HVS		HVS			HSE	HVS	
TRL5015S	GDC	297-94	TRM3014S	GDC	295-62	TRS150HC	GDC	306-57	TRS425HP	STI	302-86	TRS1805	GDC	308-76
◆HSE	STI		◆HSE	HVS		HSE	SSI		HVS			HSE	HVS	
TRL5504	GDC	295-50	TRM3015	GDC	297-106	TRS160	GDC	218-83	TRS425MP	HSE	293-106	TRS1805LP	HVS	308-77
HSE	STI		◆HSE	HVS		◆HSE	HVS		HVS			HSE	HVS	
TRL5505	GDC	297-95	TRM3015S	GDC	297-107	TRS160HP	GDC	302-75	TRS450	◆HSE	218-95	TRS2004	GDC	300-45
◆HSE	STI		◆HSE	HVS		HSE	HVS		HVS			HSE	HVS	
TRL6014	GDC	295-51	TRM3504	GDC	295-63	TRS160MP	GDC	293-95	TRS451	◆HSE	218-96	TRS2004LP	STI	300-46
HSE	STI		◆HSE	HVS		SSI	HVS		SSI			STI	HVS	
TRL6015	GDC	297-96	TRM3505	GDC	297-108	TRS175HC	GDC	306-58	TRS451MP	HSE	293-107	TRS2005	GDC	308-78
◆HSE	STI		◆HSE	HVS		SSI	HVS		HVS			HSE	HVS	
TRL6504	GDC	295-52	TRM3505S	GDC	297-109	TRS180	GDC	218-84	TRS475	◆HSE	218-97	TRS2005LP	HVS	308-79
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRL6505	GDC	297-97	TRM3514S	GDC	295-64	TRS180HP	GDC	302-76	TRS475MP	STI	293-108	TRS2006	GDC	313-99
◆HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRL7014	GDC	295-53	TRM3515S	GDC	297-109	TRS180MP	GDC	293-96	TRS501	◆HSE	218-98	TRS2254	GDC	300-47
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRL7015	GDC	297-98	TRM4014	GDC	295-65	TRS200	GDC	218-85	TRS501	◆HSE	218-98	TRS2254LP	HVS	300-48
◆HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRL7504	GDC	295-54	TRM4014S	GDC	295-66	TRS200HC	GDC	306-59	TRS501LC	HSE	294-90	TRS2255	GDC	308-80
HSE	STI		◆HSE	HVS		SSI	HVS		HVS			HSE	HVS	
TRL7505	GDC	297-99	TRM4015	GDC	297-110	TRS200HP	GDC	302-77	TRS501MP	HSE	293-109	TRS2255LP	STI	308-81
◆HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRL8014	GDC	295-55	TRM4015S	GDC	298-1	TRS200MP	GDC	293-97	TRS525	◆HSE	218-99	TRS2504	GDC	300-49
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRL8015	GDC	297-100	TRM4504	GDC	295-67	TRS225	GDC	218-86	TRS525MP	STI	293-110	TRS2504LP	HVS	300-50
◆HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2004	GDC	272-44	TRM4505	GDC	298-2	TRS225HP	GDC	302-78	TRS550	◆HSE	218-100	TRS2505	GDC	308-82
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2005	GDC	272-45	TRM4505S	GDC	295-68	TRS225MP	GDC	293-98	TRS550MP	HSE	294-1	TRS2505LP	STI	308-83
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2254S	GDC	272-46	TRM5014	GDC	295-69	TRS250	GDC	218-87	TRS575	◆HSE	218-101	TRS2754	GDC	300-51
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2255S	GDC	272-47	TRM5014S	GDC	295-69	TRS250HP	GDC	302-79	TRS575MP	STI	218-101	TRS2754LP	HVS	300-52
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP2504	GDC	272-48	TRM5015	GDC	298-3	TRS250MP	GDC	293-99	TRS601	◆HSE	218-102	TRS2755LP	STI	308-85
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP2505	GDC	272-49	TRM5015S	GDC	298-4	TRS250MP	GDC	293-99	TRS601	◆HSE	218-102	TRS2804S	GDC	300-53
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2505S	GDC	272-50	TRM5504	GDC	295-70	TRS275	GDC	218-88	TRS601LC	HSE	294-91	TRS2805S	GDC	308-86
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2540S	GDC	272-51	TRM5505	GDC	298-5	TRS275HP	GDC	302-80	TRS601MP	HSE	294-3	TRS3006	GDC	313-100
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2754S	GDC	272-52	TRM6014	GDC	295-71	TRS275MP	GDC	293-100	TRS650	◆HSE	218-103	TRS3006	HVS	
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP2755S	GDC	272-53	TRM6015	GDC	298-6	TRS275MP	GDC	293-100	TRS701	◆HSE	218-104	TRS3011	GDC	194-67
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			SSI	HVS	
TRLP3004	GDC	272-54	TRM6015S	GDC	295-72	TRS301	GDC	218-89	TRS750	◆HSE	218-105	TRS3012	GDC	194-68
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP3004S	GDC	272-55	TRM6504	GDC	295-72	TRS301HP	GDC	302-81	TRS801	◆HSE	218-106	TRS3014LP	STI	300-55
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP3005	GDC	272-56	TRM6505	GDC	298-7	TRS301LC	GDC	295-76	TRS1004	◆HSE	300-35	TRS3015	GDC	308-87
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP3005S	GDC	272-57	TRM7014	GDC	295-73	TRS301MP	GDC	293-101	TRS1004LP	HSE	300-36	TRS3015LP	STI	308-88
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP3034S	GDC	268-8	TRM7015	GDC	298-8	TRS301LC	GDC	295-76	TRS1005	◆HSE	308-68	TRS3016LC	STI	298-12
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP3504	GDC	272-58	TRM7504	GDC	295-74	TRS301MP	GDC	293-101	TRS1005LP	HSE	308-69	TRS3204S	GDC	300-56
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP3504S	GDC	272-59	TRM7505	GDC	298-9	TRS325HP	GDC	302-82	TRS1204	◆HSE	300-37	TRS3205S	GDC	308-89
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP3505	GDC	272-60	TRM8014	GDC	295-75	TRS325MP	GDC	293-102	TRS1204LP	◆HSE	300-38	TRS3254	GDC	300-57
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP3505S	GDC	272-61	TRM8015	GDC	298-10	TRS325	GDC	218-90	TRS1205	◆HSE	308-70	TRS3254LP	STI	300-58
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP4004	GDC	272-62	TRM8015S	GDC	308-65	TRS325HP	GDC	302-82	TRS1205LP	HSE	308-71	TRS3255	GDC	308-90
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			HSE	HVS	
TRLP4004S	GDC	272-63	TRM8104	GDC	295-75	TRS350	GDC	218-91	TRS1404	◆HSE	300-39	TRS3255LP	STI	308-91
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			STI	HVS	
TRLP4005	GDC	272-64	TRM8105	GDC	298-10	TRS350HP	GDC	302-83	TRS1404LP	HSE	293-103	TRS3501	GDC	194-69
HSE	STI		◆HSE	HVS		HVS	HVS		HVS			SSI	HVS	
TRLP4005S	GDC	272-65	TRM8105S	GDC	308-65	TRS350MP	GDC	218-92	TRS1405	◆HSE	308-72	TRS3502	GDC	194-70
HSE	STI		◆HSE	HVS		HVS	HVS		cont.next col.			STI	HVS	
TRLP4504	GDC	272-66	TRM8105S	GDC	295-75	TRS350	GDC	218-91	cont.next col.			cont.next page	GDC	300-59
HSE	STI		◆HSE	HVS		HVS	HVS						GDC	
TRLP4504S	GDC	272-67	TRM8105S	GDC	295-75	TRS350	GDC	218-91					GDC	
HSE	STI		◆HSE	HVS		HVS	HVS						GDC	
TRLP4505	GDC	272-68	TRM8105S	GDC	295-75	TRS350	GDC	218-91					GDC	
HSE	STI		◆HSE	HVS		HVS	HVS							

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line		
TRS3504 (cont.)	HSE SSI STI HVS		TRS5011 TRS5012	SSI SSI STI	184-75 184-76	TRS8015	GDC HVS	309-12	TRSP4006 (cont.)	SSI HVS STI		TSQ-3467F/C TSQ-3725D/C TSQ-3725F/C TSQ-3782D/C uA3086DC uPA15A	TSI TSI TSI TSI FSC FSC NECJ	359-73 359-110 359-1 359-7 359-77 428-99 193-71											
TRS3504LP	HSE SSI STI HVS	300-60	TRS5014	GDC HVS SSI	300-76	TRSP15X5	SSI SSI STI	272-91	TRSP4014	GDC HVS SSI	268-19														
TRS3505	HSE SSI STI HVS	308-92	TRS5015	GDC HVS SSI	308-108	TRSP15X	SSI SSI STI	272-4	TRSP4014S	GDC HVS SSI	268-20														
TRS3505LP	HSE SSI STI HVS	308-93	TRS5015LC	GDC HVS SSI	298-15	TRSP20X5	SSI SSI STI	272-92	TRSP4015	GDC HVS SSI	269-74	uPA33A	NECJ	232-24 435-74											
TRS3604S	HSE SSI STI HVS	300-61	TRS5016LC	GDC HVS SSI	298-16	TRSP25X5	SSI SSI STI	272-93	TRSP4015S	GDC HVS SSI	269-75	uPA34A	NECJ	237-85 435-75											
TRS3605S	HSE SSI STI HVS	308-94	TRS5204S	GDC HVS SSI	300-77	TRSP25X	SSI SSI STI	272-6	TRSP4016S	GDC HVS SSI	274-92	uPA36A	NECJ	180-69 438-78											
TRS3742	HSE SSI STI HVS	307-43	TRS5205S	GDC HVS SSI	308-109	TRSP30X5	SSI SSI STI	272-94	TRSP4016S	GDC HVS SSI	274-92	uPA37A	NECJ	182-23 435-76											
TRS3754	HSE SSI STI HVS	300-62	TRS525	GDC HVS SSI	300-78	TRSP30X	SSI SSI STI	272-7	TRSP4254S	GDC HVS SSI	268-21	uPA38A	NECJ	197-81 435-77											
TRS3754LP	HSE SSI STI HVS	300-63	TRS525S	GDC HVS SSI	308-110	TRSP2006	GDC HVS SSI	274-87	TRSP4254S	GDC HVS SSI	268-9	uPA39A	NECJ	197-82 435-78											
TRS3755	HSE SSI STI HVS	308-95	TRS5404S	GDC HVS SSI	300-79	TRSP2254S	GDC HVS SSI	268-10	TRSP4255S	GDC HVS SSI	269-76	uPA46D	NECJ	428-96											
TRS3755LP	HSE SSI STI HVS	308-96	TRS5404S	GDC HVS SSI	300-79	TRSP2254S	GDC HVS SSI	268-10	TRSP4255S	GDC HVS SSI	269-76	uPA47D	NECJ	428-63											
TRS4001	HSE SSI STI HVS	194-71	TRS5405S	GDC HVS SSI	309-1	TRSP2255S	GDC HVS SSI	269-64	TRSP4297	GDC HVS SSI	274-94	uPA48D	NECJ	428-67											
TRS4002	HSE SSI STI HVS	194-72	TRS5501	GDC HVS SSI	194-77	TRSP2255S	GDC HVS SSI	269-65	TRSP4297	GDC HVS SSI	274-95	uPA49A	NECJ	159-75											
TRS4004	HSE SSI STI HVS	300-64	TRS5502	GDC HVS SSI	194-78	TRSP2504	GDC HVS SSI	268-11	TRSP4299	GDC HVS SSI	274-96	uPA53C	NECJ	427-7											
TRS4005	HSE SSI STI HVS	308-97	TRS5504	GDC HVS SSI	300-80	TRSP2504S	GDC HVS SSI	268-12	TRSP4504	GDC HVS SSI	268-22	uPA57C	NECJ	247-54											
TRS4006	HSE SSI STI HVS	313-101	TRS5505	GDC HVS SSI	309-2	TRSP2504S	GDC HVS SSI	268-12	TRSP4504S	GDC HVS SSI	268-23	uPA61A	NECJ	247-55											
TRS4006S	HSE SSI STI HVS	313-102	TRS5754	GDC HVS SSI	300-81	TRSP2505	GDC HVS SSI	269-66	TRSP4504S	GDC HVS SSI	268-23	uPA68B	NECJ	240-11											
TRS4014	HSE SSI STI HVS	300-65	TRS5754S	GDC HVS SSI	300-81	TRSP2505S	GDC HVS SSI	269-67	TRSP4505S	GDC HVS SSI	269-77	uPA70A	NECJ	240-12											
TRS4014LP	HSE SSI STI HVS	300-66	TRS5755	GDC HVS SSI	309-3	TRSP2505S	GDC HVS SSI	269-67	TRSP4505S	GDC HVS SSI	269-78	uPA71A	NECJ	240-13											
TRS4014S	HSE SSI STI HVS	300-67	TRS5804S	GDC HVS SSI	300-82	TRSP2754	GDC HVS SSI	268-13	TRSP4505S	GDC HVS SSI	269-78	uPA74V	NECJ	155-65											
TRS4015	HSE SSI STI HVS	308-98	TRS5805S	GDC HVS SSI	309-4	TRSP2754S	GDC HVS SSI	268-14	TRSP4508	GDC HVS SSI	274-97	U2T105	UNI	391-55											
TRS4015LC	HSE SSI STI HVS	298-13	TRS5805S	GDC HVS SSI	309-4	TRSP2754S	GDC HVS SSI	268-14	TRSP4508	GDC HVS SSI	274-97	U2T201	UNI	388-35											
TRS4015LP	HSE SSI STI HVS	308-99	TRS6006	GDC HVS SSI	313-107	TRSP2755	GDC HVS SSI	269-68	TRSP4508	GDC HVS SSI	268-24	U2T205	UNI	391-56											
TRS4015S	HSE SSI STI HVS	308-100	TRS6006	GDC HVS SSI	313-107	TRSP2755	GDC HVS SSI	269-68	TRSP4508	GDC HVS SSI	268-24	U2T301	UNI	384-9											
TRS4016LC	HSE SSI STI HVS	298-14	TRS6011	GDC HVS SSI	194-79	TRSP2755S	GDC HVS SSI	269-69	TRSP4508	GDC HVS SSI	268-24	U2T305	STI	388-36											
TRS4016S	HSE SSI STI HVS	313-103	TRS6012	GDC HVS SSI	194-80	TRSP2755S	GDC HVS SSI	269-69	TRSP4508	GDC HVS SSI	268-24	U2T401	UNI	414-87											
TRS4254	HSE SSI STI HVS	300-68	TRS6014	GDC HVS SSI	300-83	TRSP2755S	GDC HVS SSI	269-69	TRSP4508	GDC HVS SSI	268-24	U2T405	UNI	415-94											
TRS4254LP	HSE SSI STI HVS	300-69	TRS6015	GDC HVS SSI	309-5	TRSP3006	GDC HVS SSI	274-88	TRSP4508	GDC HVS SSI	268-24	U2T405	UNI	388-37											
TRS4255	HSE SSI STI HVS	308-101	TRS6015LC	GDC HVS SSI	298-17	TRSP3014S	GDC HVS SSI	268-15	TRSP4508	GDC HVS SSI	268-24	U2TA506	UNI	397-19											
TRS4255LP	HSE SSI STI HVS	308-102	TRS6016LC	GDC HVS SSI	298-18	TRSP3015	GDC HVS SSI	269-70	TRSP4508	GDC HVS SSI	268-24	U2TA508	UNI	397-20											
TRS4404S	HSE SSI STI HVS	300-70	TRS6204S	GDC HVS SSI	300-84	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U2TA510	UNI	397-21											
TRS4501	HSE SSI STI HVS	194-73	TRS6205S	GDC HVS SSI	309-6	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U110	NASG	233-22											
TRS4502	HSE SSI STI HVS	194-74	TRS6205S	GDC HVS SSI	309-6	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U112	NASG	233-23											
TRS4504	HSE SSI STI HVS	300-71	TRS6504	GDC HVS SSI	300-85	TRSP3014S	GDC HVS SSI	268-16	TRSP4508	GDC HVS SSI	268-24	U146	NASG	233-24											
TRS4504LP	HSE SSI STI HVS	300-72	TRS6505	GDC HVS SSI	309-7	TRSP3015	GDC HVS SSI	269-70	TRSP4508	GDC HVS SSI	268-24	U147	NASG	233-25											
TRS4505	HSE SSI STI HVS	308-103	TRS6604S	GDC HVS SSI	300-86	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U148	NASG	233-26											
TRS4505LP	HSE SSI STI HVS	308-104	TRS6605S	GDC HVS SSI	309-8	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U149	NASG	233-27											
TRS4506	HSE SSI STI HVS	313-104	TRS7006	GDC HVS SSI	313-108	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U197	SOD	242-78											
TRS4754	HSE SSI STI HVS	300-73	TRS7014	GDC HVS SSI	300-87	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U198	SOD	242-79											
TRS4754LP	HSE SSI STI HVS	300-74	TRS7014S	GDC HVS SSI	300-88	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U199	SOD	242-80											
TRS4755	HSE SSI STI HVS	308-105	TRS7015	GDC HVS SSI	309-9	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U200	SOD	242-80											
TRS4755LP	HSE SSI STI HVS	308-106	TRS7015S	GDC HVS SSI	309-10	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U201	SIX	248-85											
TRS4804S	HSE SSI STI HVS	300-75	TRS7015S	GDC HVS SSI	309-10	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U202	SIX	248-86											
TRS4805S	HSE SSI STI HVS	308-107	TRS7504	GDC HVS SSI	300-89	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U203	SIX	248-87											
TRS4926	HSE SSI STI HVS	307-44	TRS7505	GDC HVS SSI	309-11	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U221	SIX	248-5											
TRS4927	HSE SSI STI HVS	307-45	TRS8006	GDC HVS SSI	313-109	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U222	SIX	248-6											
TRS5006	HSE SSI STI HVS	313-105	TRS8014	GDC HVS SSI	300-90	TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U231	SIX	242-81											
TRS5006A	HSE SSI STI HVS	313-106	TRSP4006	GDC HVS SSI		TRSP3015S	GDC HVS SSI	269-71	TRSP4508	GDC HVS SSI	268-24	U232	SIX	435-80											

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U308Δ	INL	247-57	UC805	SOD	233-32	ULS2014R	SPR	428-24	UPT314	UNI	312-18	VNO108N4	STX	249-31
U308#	INL	247-58	UC807	SOD	234-17	ULS2015H	SPR	428-25			383-96	VNO108N5	STX	248-93
U309	MOTA	247-59	UC814	NASG	233-33	ULS2015R	SPR	428-26	UPT315	UNI	312-19	VNO108N6	STX	236-70
	NSC			SOD		ULS2021H	SPR	428-14			383-97	VNO109N1	STX	236-71
	SOD		UC851	NASG	233-34	ULS2022H	SPR	428-15	UPT321	UNI	314-75	VNO109N2	STX	248-28
U309#	INL	247-60		SOD		ULS2023H	SPR	428-16			383-98	VNO109N3	STX	242-109
U310	MOTA	247-61	UC853	NASG	233-35	ULS2024H	SPR	428-17	UPT322	UNI	314-76	VNO109N4	STX	249-32
	NSC			SOD		ULS2025H	SPR	428-18			383-99	VNO109N5	STX	248-94
	SOD		UC854	NASG	233-36	ULS2045H	SPR	426-100	UPT323	UNI	314-77	VNO109N6	STX	236-72
U310Δ	INL	247-62		SOD		ULS2083H	SPR	425-3			383-100	VNO204N1	STX	236-73
U310#	INL	247-63	UC855	NASG	233-37	ULS2801H	SPR	428-34	UPT324	UNI	314-78	VNO204N2	STX	248-29
U311	SIX	242-88		SOD		ULS2801R	SPR	428-35			383-101	VNO204N5	STX	248-95
	SOD		UC1764	SOD	233-98	ULS2802H	SPR	428-36	UPT325	UNI	314-79	VNO204N6	STX	236-74
U311#	INL	242-89	UC2139	SOD	247-69	ULS2802R	SPR	428-37			383-102	VNO206N1	STX	236-75
U311A	SOD	243-32		SOD	440-34	ULS2803H	SPR	428-38	UPT521	UNI	320-71	VNO206N2	STX	248-30
U312	NSC	247-64	UC2147	SOD	240-16	ULS2803R	SPR	428-39			383-82	VNO206N5	STX	248-96
	SOD		UC2148	SOD	440-35	ULS2804H	SPR	428-40	UPT522	UNI	320-72	VNO206N6	STX	236-76
U320	SOD	248-108	UC2149	SOD	247-70	ULS2804R	SPR	428-41			383-83	VNO208N1	STX	236-77
U321	SOD	248-109		SOD	440-36	ULS2805H	SPR	428-42	UPT523	UNI	320-73	VNO208N2	STX	248-31
U322	SOD	248-110	UC2766	SOD	233-38	ULS2805R	SPR	428-43			383-84	VNO208N5	STX	248-97
U401	INL	242-90		SOD	440-37	ULS2811H	SPR	428-59	UPT524	UNI	320-74	VNO208N6	STX	236-78
	NSC	435-86	UCX2910	SOD	210-68	ULS2811R	SPR	428-60			383-85	VNO209N1	STX	236-79
U402	INL	242-91		SOD	435-100	ULS2812H	SPR	428-61	UPT525	UNI	320-75	VNO209N2	STX	248-32
	NSC	435-87	ULN2001A	SPR	427-104	ULS2812R	SPR	428-62			383-86	VNO209N5	STX	248-98
U403	INL	242-92	ULN2001AJ	TII	427-53	ULS2813H	SPR	428-63	UPT611	UNI	306-47	VNO209N6	STX	236-80
	NSC	435-88	ULN2001AN	TII	427-54	ULS2813R	SPR	428-64			385-33	VNO330N1	STX	236-81
U404	INL	242-93	ULN2001R	SPR	428-69	ULS2814H	SPR	428-65	UPT612	UNI	306-48	VNO330N2	STX	248-33
	NSC	435-89	ULN2002A	SPR	427-105	ULS2814R	SPR	428-66			385-34	VNO330N5	STX	248-99
U405	INL	242-94	ULN2002AJ	TII	427-55	ULS2815H	SPR	428-67	UPT613	UNI	306-49	VNO335A1	STX	236-82
	NSC	435-90	ULN2002AN	TII	427-56	ULS2815R	SPR	428-68			385-35	VNO335B1	STX	236-83
U406	INL	242-95	ULN2002R	SPR	428-70	ULS2821H	SPR	428-49	UPT614	UNI	306-50	VNO335C1	STX	236-84
	NSC	435-91	ULN2003A	SPR	427-106	ULS2822H	SPR	428-50			385-36	VNO335N1	STX	236-85
U410	SIX	246-61	ULN2003AJ	TII	427-57	ULS2823H	SPR	428-51	UPT615	UNI	306-51	VNO335N2	STX	248-34
U411	SIX	246-62	ULN2003AN	TII	427-58	ULS2824H	SPR	428-52			385-37	VNO335N5	STX	248-100
U412	SIX	246-63	ULN2003N	PHIN	427-59	ULS2825H	SPR	428-53	UPT721	UNI	320-76	VNO340A1	STX	236-86
U421	SIX	247-11	ULN2003R	SPR	428-71	UMT1006	UNI	294-59			385-25	VNO340B1	STX	236-87
	NSC	435-92	ULN2004A	SPR	428-89			360-90	UPT722	UNI	320-77	VNO340C1	STX	236-88
U422	INL	247-12	ULN2004AJ	TII	427-60	UMT1007	UNI	294-60			385-26	VNO340N1	STX	236-89
	NSC	435-93	ULN2004AN	TII	427-61			360-91	UPT723	UNI	320-78	VNO340N2	STX	248-35
U423	INL	247-13	ULN2004N	PHIN	427-62	UMT1008	UNI	338-21			385-27	VNO340N5	STX	248-101
	NSC	435-94	ULN2004R	SPR	428-72	UMT1009	UNI	338-22	UPT724	UNI	320-79	VNO345A1	STX	236-90
U424	INL	247-14	ULN2005A	SPR	427-107	UMT1011	UNI	346-56			385-28	VNO345B1	STX	236-91
	NSC	435-95	ULN2005R	SPR	428-73			360-92	UPT725	UNI	320-80	VNO345C1	STX	236-92
U425	INL	247-15	ULN2011A	SPR	427-108	UMT1012	UNI	346-57			385-29	VNO345N1	STX	236-93
	NSC	435-96	ULN2011R	SPR	428-79			360-93	UPTA510	UNI	297-35	VNO345N2	STX	248-36
U426	INL	247-16	ULN2012A	SPR	427-109	UMT1203	UNI	324-5			377-102	VNO345N5	STX	248-102
	NSC	435-97	ULN2012R	SPR	428-80	UMT1204	UNI	324-6	UPTA520	UNI	297-36	VNO350A1	STX	236-94
U427	SIX	247-92	ULN2013A	SPR	427-110	UMT3584	UNI	321-34			377-103	VNO350B1	STX	236-95
U428	SIX	247-93	ULN2013R	SPR	428-81	UMT3585	UNI	321-35	UPTA530	UNI	297-37	VNO350C1	STX	236-96
U430	SIX	247-65	ULN2014A	SPR	428-1	UMT13004	UNI	294-79			377-104	VNO430N1	STX	251-102
	NSC	435-98	ULN2014R	SPR	428-82			361-73	UPTB520	UNI	297-38	VNO435N1	STX	236-97
U431	INL	247-66	ULN2015A	SPR	428-2	UMT13005	UNI	294-80			377-105	VNO440N1	STX	236-98
	NSC	435-99	ULN2015R	SPR	428-83			361-74	UPTB530	UNI	297-39	VNO445N1	STX	236-99
U440	SIX	244-65	ULN2021A	SPR	428-3	UMT13006	UNI	294-96			377-106	VNO450N1	STX	236-100
U441	SIX	244-66	ULN2022A	SPR	428-4			401-12	UPTB540	UNI	297-40	VN1204N1	STX	236-101
U1715	INL	248-7	ULN2023A	SPR	428-5	UMT13007	UNI	294-97			377-107	VN1204N2	STX	248-37
U1715A	SOD	248-24	ULN2024A	SPR	428-6			401-13	UPTB550	UNI	297-41	VN1204N5	STX	248-103
U1837E	SOD	244-67	ULN2025A	SPR	428-7	UMT13008	UNI	296-65			377-108	VN1206N1	STX	236-102
U1897	SIX	246-33	ULN2031A	SPR	427-98			401-14	V405A	SGAI	160-31	VN1206N2	STX	248-38
	NSC	435-100	ULN2032A	SPR	427-99	UMT13009	UNI	296-66			377-53	VN1206N5	STX	248-104
U1897-18	SIX	246-34	ULN2033A	SPR	427-100			401-15	V410A	SGAI	176-16	VN1208N1	STX	236-103
U1897E	INL	244-68	ULN2046A	SPR	427-95	UPI404	UPI	140-29	V741	SGAI	163-64	VN1208N2	STX	248-39
	NSC	362-20	ULN2054A	SPR	427-97	UPI404A	UPI	139-60	V745	SGAI	178-7	VN1208N5	STX	248-105
	NSC		ULN2074B	MOTA	425-81	UPI706	UPI	199-28	V761	SGAI	166-89	VN1209N1	STX	236-104
U1897J	INL	244-69	ULN2081A	SPR	427-101	UPI706A	UPI	197-83	V763	SGAI	168-25	VN1209N2	STX	248-40
U1898	SIX	246-35	ULN2082A	SPR	427-102	UPI706B	UPI	199-67			360-12	VN1209N5	STX	248-106
U1898-18	SIX	246-36	ULN2083A	SPR	425-2	UPI718A	UPI	213-29	V765	SGAI	176-5	VN1304N2	STX	248-41
U1898E	INL	244-70	ULN2086A	SPR	427-96	UPI956	UPI	213-39	VCR2N	SGAI	242-103	VN1304N3	STX	242-110
	NSC	364-83	ULN2801A	SPR	428-29	UPI1301	UPI	140-56			377-104	VN1304N6	STX	236-105
U1898J	INL	244-71	ULN2801A#	MOTA	427-91	UPI1303	UPI	138-32	VCR3P	UNI	233-39	VN1306N2	STX	248-42
U1899	SIX	246-37	ULN2801R	SPR	428-74	UPI1305	UPI	138-33			377-105	VN1306N3	STX	243-1
U1899-18	SIX	246-38	ULN2802A	SPR	428-30	UPI1307	UPI	138-34	VCR4N	UNI	242-104	VN1308N2	STX	248-43
U1899E	INL	244-72	ULN2802A#	MOTA	427-92	UPI1309	UPI	138-35			377-106	VN1308N3	STX	243-2
	NSC	369-89	ULN2802R	SPR	428-75	UPI1345	UPI	140-15	VCR5P	UNI	233-40	VN1308N6	STX	236-106
	NSC		ULN2803A	SPR	428-31	UPI1347	UPI	139-82			377-107	VN1309N2	STX	248-44
U1899J	INL	244-73	ULN2803A#	MOTA	427-93	UPI1352	UPI	139-25	VCR7N	UNI	242-105	VN1309N3	STX	243-3
U1994E	INL	244-74	ULN2803R	SPR	428-76	UPI1353	UPI	142-69			377-108	VN1309N6	STX	236-107
	NSC		ULN2804A	SPR	428-32	UPI1613	UPI	227-2	VN33AJ	SOD	249-50	VPO104N1	STX	232-1
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VP1208N6	STX	234-96	XGSA1540#	†GSE	283-52	ZT182	†FERR	157-107	ZTX300M	FERR	198-107	ZTX382CL	†FERR	203-8
VP1208N1	STX	235-11			388-106			380-65	ZTX300M	FERR	196-108	ZTX382CM	†FERR	203-7
VP1208N2	STX	234-50	XGSA3030#	†GSE	293-53	ZT183	†FERR	157-108	ZTX301K	FERR	196-109	ZTX383	†FERR	203-8
VP1208N5	STX	234-98			391-91			380-66	ZTX301L	FERR	196-110	ZTX383B	†FERR	203-9
VP1209N1	STX	235-12	XGSA3035#	†GSE	293-54	ZT184	†FERR	157-109	ZTX301M	FERR	197-1	ZTX383BK	†FERR	203-10
VP1209N2	STX	234-51			391-92			380-67	ZTX302	†FERR	197-2	ZTX383BL	†FERR	203-11
VP1209N5	STX	234-97	XGSA3040	GSE	293-55	ZT187	†FERR	157-110	ZTX302K	FERR	197-3	ZTX383BM	†FERR	203-12
VP1304N2	STX	234-40			383-2			380-68	ZTX302L	FERR	197-4	ZTX383C	†FERR	203-13
VP1304N3	STX	234-29	XGSA3040#	†GSE	391-93	ZT189	FERR	158-1	ZTX302M	FERR	197-5	ZTX383CK	†FERR	203-14
VP1306N2	STX	234-41	XGSA5030#	†GSE	293-56			380-69	ZTX303	†FERR	197-6	ZTX383CL	†FERR	203-15
VP1306N3	STX	234-30			397-78	ZT210	FERR	270-103	ZTX303K	FERR	197-7	ZTX383CM	†FERR	203-16
VP1308N2	STX	234-42	XGSA5035#	†GSE	293-57	ZT211	FERR	270-104	ZTX303L	FERR	197-8	ZTX384	†FERR	203-17
VP1308N3	STX	234-31			397-79	ZT708	FERR	207-50	ZTX303M	FERR	197-9	ZTX384B	†FERR	203-18
VP1309N2	STX	234-43	XGSA5040#	†GSE	293-58			360-13	ZTX304	FERR	197-10	ZTX384BK	†FERR	203-19
VP1309N3	STX	234-32	XGSG1530	†GSE	313-110	ZT3442	FERR	336-56	ZTX304K	FERR	197-11	ZTX384BL	†FERR	203-20
VQ1000CJ	SIX	236-108			385-30	ZTB3-12	†FERR	444-80	ZTX304L	FERR	197-12	ZTX384BM	†FERR	203-21
W4891	WAB	437-10	XGSG1535	†GSE	314-1	ZTB3-28	†FERR	444-81	ZTX304M	FERR	197-13	ZTX384C	†FERR	203-22
W4892	WAB	437-11			385-31	ZTB3-28FL	†FERR	444-82	ZTX310	FERR	197-93	ZTX384CK	†FERR	203-23
W4893	WAB	437-12	XGSG1540	†GSE	314-2	ZTB3-28ST	†FERR	307-46			359-90	ZTX384CL	†FERR	203-24
W4894	WAB	437-13			385-32	ZTB12-12	†FERR	444-83	ZTX310K	FERR	197-94	ZTX384CM	†FERR	203-25
WT635-01D	WESB	405-83	XGSG3030	†GSE	318-34	ZTB12-28	†FERR	444-84			359-91	ZTX449	FERR	294-61
		424-60			391-13	ZTB12-28FL	†FERR	444-85	ZTX310L	FERR	197-95	ZTX449K	FERR	293-59
WT635-01M	WESB	405-84	XGSG3035	†GSE	318-35	ZTB12-28ST	†FERR	314-56			359-92	ZTX449L	FERR	293-60
		412-40			391-14	ZTB25-12	†FERR	444-86	ZTX310M	FERR	197-96	ZTX449M	FERR	293-61
WT635-02D	WESB	405-85	XGSG3040	†GSE	318-36	ZTB25-28	†FERR	444-87			359-93	ZTX450	†FERR	297-42
		424-61			391-15	ZTB25-28FL	†FERR	444-88	ZTX311	FERR	197-97	ZTX451	†FERR	297-43
WT635-02M	WESB	405-86	XGSG5030	†GSE	318-37	ZTB25-28ST	†FERR	321-70			359-94	ZTX452	†FERR	297-44
		412-41			394-26	ZTB70-28FL	†FERR	444-89	ZTX311K	FERR	197-98	ZTX453	†FERR	297-45
WT4311	WESB	357-32	XGSG5035	†GSE	318-38	ZTX107	†FERR	195-58			359-95	ZTX454	FERR	293-62
WT4312	WESB	357-33			394-27	ZTX107A	†FERR	195-59	ZTX311L	FERR	197-99	ZTX455	FERR	293-63
WT4313	WESB	357-34	XGSG5040	†GSE	318-39	ZTX107B	†FERR	195-60			359-96	ZTX500	†FERR	158-2
WT4314	WESB	357-35			394-28	ZTX108	†FERR	195-61	ZTX311M	FERR	197-100	ZTX500K	†FERR	158-3
WT4315	WESB	357-36	XGSG7530	†GSE	318-40	ZTX108A	†FERR	195-62			359-97	ZTX500L	†FERR	158-4
WT4316	WESB	357-37			389-57	ZTX108B	†FERR	195-63	ZTX312	FERR	199-68	ZTX500M	†FERR	158-5
WT4321	WESB	357-38	XGSG7535	†GSE	318-41	ZTX108C	†FERR	195-64			363-70	ZTX501	†FERR	158-6
WT4322	WESB	357-39			389-58	ZTX109	†FERR	195-65	ZTX312K	FERR	199-69	ZTX501K	†FERR	158-7
WT4323	WESB	296-67	XGSG7540	†GSE	318-42	ZTX109B	†FERR	195-66			360-19	ZTX501L	†FERR	158-8
WT4324	WESB	357-40			389-59	ZTX109C	†FERR	195-67	ZTX312L	FERR	199-70	ZTX501M	†FERR	158-9
WT4325	WESB	357-41	XGSR3030	GSE	346-58	ZTX212	†FERR	171-4			360-20	ZTX502	†FERR	158-10
WT4331	WESB	357-42			391-16	ZTX212AK	†FERR	171-5	ZTX312M	FERR	199-71	ZTX502K	†FERR	158-11
WT4332	WESB	357-43	XGSR3035	GSE	346-59	ZTX212AL	†FERR	171-6			360-21	ZTX502L	†FERR	158-12
WT4333	WESB	357-44			391-17	ZTX212AM	†FERR	171-7	ZTX313	FERR	199-86	ZTX502M	†FERR	158-13
WT4334	WESB	357-45	XGSR3040	GSE	346-60	ZTX212BK	†FERR	171-8			362-99	ZTX503	†FERR	158-14
WT4411	WESB	357-12			391-18	ZTX212BL	†FERR	171-9	ZTX313K	FERR	199-87	ZTX503K	†FERR	158-15
WT4412	WESB	357-13	XGSR5030	†GSE	346-61	ZTX212BM	†FERR	171-10			360-25	ZTX503L	†FERR	158-16
WT4413	WESB	357-14			394-29	ZTX212K	†FERR	171-11	ZTX313L	FERR	199-88	ZTX503M	†FERR	158-17
WT4414	WESB	357-15	XGSR5035	†GSE	346-62	ZTX212L	†FERR	171-12			360-26	ZTX504	†FERR	158-18
WT4415	WESB	357-16			394-30	ZTX212M	†FERR	171-13	ZTX313M	FERR	199-89	ZTX504K	†FERR	158-19
WT4416	WESB	357-17	XGSR5040	†GSE	346-63	ZTX213	†FERR	171-14			360-27	ZTX504L	†FERR	158-20
WT4421	WESB	357-18			394-31	ZTX213AK	†FERR	171-15	ZTX314	FERR	199-90	ZTX504M	†FERR	158-21
WT4422	WESB	357-19	XGSR7530	†GSE	336-53	ZTX213AL	†FERR	171-16			362-100	ZTX510	†FERR	160-21
WT4423	WESB	357-20			389-60	ZTX213AM	†FERR	171-17	ZTX314K	FERR	199-91			375-84
WT4424	WESB	357-21	XGSR7535	†GSE	336-54	ZTX213BK	†FERR	171-18			360-28	ZTX510K	FERR	160-22
WT4425	WESB	357-22			389-61	ZTX213BL	†FERR	171-19	ZTX314L	FERR	199-92	ZTX510L	†FERR	160-23
WT4431	WESB	357-23	XGSR7540	†GSE	336-55	ZTX213BM	†FERR	171-20			360-29	ZTX510M	†FERR	160-24
WT4432	WESB	357-24			389-62	ZTX213CK	†FERR	171-21	ZTX314M	FERR	199-93	ZTX510	†FERR	168-100
WT4433	WESB	357-25	XGSR10025	GSE	349-97	ZTX213CL	†FERR	171-22			360-30	ZTX511	†FERR	168-101
WT4434	WESB	357-26			383-69	ZTX213CM	†FERR	171-23	ZTX325	FERR	190-26	ZTX517	†FERR	176-72
WT5301	WESB	352-62	XGSR10030	GSE	346-64	ZTX213K	†FERR	171-24	ZTX325K	FERR	190-27	ZTX517A	†FERR	176-73
		404-51			383-70	ZTX213L	†FERR	171-25	ZTX325L	FERR	190-28	ZTX517AK	†FERR	176-74
WT5303	WESB	352-63	XGSR10035	GSE	346-65	ZTX213M	†FERR	171-26	ZTX325M	FERR	190-29	ZTX517AL	†FERR	176-75
		404-52			383-71	ZTX214	†FERR	171-27	ZTX326	FERR	190-30	ZTX517AM	†FERR	176-76
WT5304	WESB	352-64	XGSR10040	GSE	346-66	ZTX214BK	†FERR	171-28	ZTX326A	FERR	190-31	ZTX517B	†FERR	176-77
		404-53			378-2	ZTX214BL	†FERR	171-29	ZTX326AK	FERR	190-32	ZTX517BK	†FERR	176-78
WT5305	WESB	352-65	XGSR50020	†GSE	349-98	ZTX214BM	†FERR	171-30	ZTX326AL	FERR	190-33	ZTX517BL	†FERR	176-79
		404-54			378-52	ZTX214CK	†FERR	171-31	ZTX326AM	FERR	190-34	ZTX517BM	†FERR	176-80
WT5306	WESB	352-66	XR2201CP	EXR	427-67	ZTX214CL	†FERR	171-32	ZTX326K	FERR	190-35	ZTX517C	†FERR	176-81
		404-55	XR2202CP	EXR	427-68	ZTX214CM	†FERR	171-33	ZTX326L	FERR	190-36	ZTX517CK	†FERR	176-82
WT5308	WESB	352-67	XR2203CP	EXR	427-69	ZTX214K	†FERR	171-34	ZTX326M	FERR	190-37	ZTX517CL	†FERR	176-83
		406-37	XR2204CP	EXR	427-70	ZTX214L	†FERR	171-35	ZTX330	†FERR	194-7	ZTX517CM	†FERR	176-84
WT5310	WESB	352-68	ZDT40	†FERR	198-72	ZTX214M	†FERR	171-36	ZTX330K	†FERR	194-8	ZTX518	†FERR	176-85
WT5503	WESB	357-27			435-101	ZTX223	†FERR	213-110	ZTX330L	†FERR	194-9	ZTX518A	†FERR	176-86
		404-56	ZDT41	†FERR	198-73	ZTX223AK	†FERR	214-1	ZTX330M	†FERR	194-10	ZTX518AK	†FERR	176-87
WT5504	WESB	357-28			435-102	ZTX223AL	†FERR	214-2	ZTX331	†FERR	194-11	ZTX518AL	†FERR	176-88
		404-57	ZDT42	†FERR	198-74	ZTX223AM	†FERR	214-3	ZTX331K	†FERR	194-12	ZTX518AM	†FERR	176-89
WT5505	WESB	357-29			435-103	ZTX223BK	†FERR	214-4	ZTX331L	†FERR	194-13	ZTX518L	†FERR	176-90
		404-58	ZDT44	†FERR	198-75	ZTX223BL	†FERR	214-5	ZTX331M	†FERR	194-14	ZTX518M	†FERR	176-91
WT5506	WESB	357-30			435-104	ZTX223BM	†FERR	214-6	ZTX337	†FERR	224-70	ZTX518BL	†FERR	176-92
		404-59	ZDT45	†FERR	198-76	ZTX223K	†FERR	214-7	ZTX337A	†FERR	224-71	ZTX518BM	†FERR	176-93
WT5510	WESB	357-31			435-105	ZTX223L	†FERR	214-8	ZTX337AK	†FERR	224-72	ZTX518C	†FERR	176-94
		406-38	ZT80	†FERR	197-84	ZTX223M	†FERR	214-9	ZTX337AL	†FERR	224-73	ZTX518CK	†FERR	176-95
WT5511	WESB	357-11			377-30	ZTX223AK	FERR	203-106	ZTX337AM	†FERR	224-74	ZTX518CL	†FERR	176-96
		406-39	ZT81	†FERR	197-85	ZTX223AL	FERR	203-107	ZTX337B	†FERR	224-75	ZTX518CM	†FERR	176-97
WT5603	†WESB	357-50			377-31	ZTX223AM	FERR	203-108	ZTX337BK	†FERR	224-76	ZTX519	†FERR	158-50
		405-87	ZT82	†FERR	197-86	ZTX223BK	FERR	203-109	ZTX337BL	†FERR	224-77	ZTX519K	†FERR	158-51
WT5604	†WESB	357-51			377-32	ZTX223BL	FERR	203-110	ZTX337BM	†FERR	224-78	ZTX519L	†FERR	158-52
		405-88	ZT83	†FERR	197-87	ZTX223BM	FERR	204-1	ZTX337C	†FERR	224-79	ZTX519M	†FERR	158-53
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ZTX652M	♦FERB	294 - 74 377 - 42												
ZTX652S	♦FERB	294 - 75 377 - 43												
ZTX653	♦FERB	294 - 76 377 - 44												
ZTX653K	♦FERB	294 - 77 377 - 45												
ZTX653L	♦FERB	294 - 78 377 - 46												
ZTX653M	♦FERB	298 - 22 377 - 47												
ZTX653S	♦FERB	298 - 23 377 - 48												
ZTX750	♦FERB	267 - 66 370 - 2												
ZTX750K	♦FERB	267 - 67 370 - 3												
ZTX750L	♦FERB	267 - 68 370 - 4												
ZTX750M	♦FERB	267 - 69 370 - 5												
ZTX750S	♦FERB	267 - 70 370 - 6												
ZTX751	♦FERB	267 - 71 370 - 7												
ZTX751K	♦FERB	267 - 72 370 - 8												
ZTX751L	♦FERB	267 - 73 370 - 9												
ZTX751M	♦FERB	267 - 74 370 - 10												
ZTX751S	FERB	267 - 75 370 - 11												
ZTX752	♦FERB	267 - 76 370 - 12												
ZTX752K	♦FERB	269 - 82 370 - 13												
ZTX752L	♦FERB	267 - 77 370 - 14												
ZTX752M	♦FERB	267 - 78 370 - 15												
ZTX752S	♦FERB	267 - 79 370 - 16												
ZTX753	♦FERB	267 - 80 370 - 17												
ZTX753K	♦FERB	267 - 81 370 - 18												
ZTX753L	♦FERB	267 - 82 370 - 19												
ZTX753M	♦FERB	267 - 83 370 - 20												
ZTX753S	♦FERB	267 - 84 370 - 21												
ZTX3866	♦FERB	217 - 48												
ZTX3903	FERB	215 - 70 369 - 11												
ZTX3904	FERB	216 - 24 369 - 40												
ZTX3905	FERB	171 - 37 368 - 69												
ZTX3906	FERB	171 - 60 369 - 12												
ZTX4400	FERB	215 - 8 368 - 70												
ZTX4401	FERB	215 - 71 369 - 13												
ZTX4402	FERB	170 - 71 368 - 30												
ZTX4403	FERB	171 - 38												



# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/C (Hz)	ABS MAX RATINGS @25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS					Cob (F)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	L C O D E		
				V Vcbo (V)	V Vceo (V)	V VcBo (V)	Ic (A)		BIAS			COMMON EMITTER							
									V Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)					hre (X.0001)	
1	GT20			25	25	25	10u	5.0	1.0m	42	500nb	15	35p	A	T05	A			
2	GT34			25	25	25	10u	5.0	1.0m	20	500nb	15	35p	A	T05	A			
3	AC180K	2.5u	2.5M	32	32	20			600m	50 Δt					X9c	A			
4	CK766	2.0m	10.M	#A	30		200m	1.0u		45			12	S	TO24	F			
5	CK766A	2.0m	10.M	#A	30		200m	1.0u		45			12	S	TO24	F			
6	2N231	9.0m*	20M*	#J	4.5	4.5	3.0m	3.0u	3.0	500m	19 Δ	5.0uZb	100 Z	5.5pZ	S	TO24	F		
7	2N232	9.0m*	30M*	#J	4.5	4.5	3.0m	6.0u	3.0	500u	9.0 Δ	5.0uZb	100 Z	6.0pZ	S	TO24	F		
8#	2SA216	15m	120M	#J	15		50	2.0m	5.0u	6.0	1.0m	40		1.0p	G	TO1	A		
9	2N1471	18m	3.0MΔ	#J	12	12	7.0	200m	5.0u	6.0	1.0m	160		1.8p	G	TO5	A		
10	JAN2N220	20m	434u	#S	30		12	12u	4.0	500u	40 Δ	800nZb	65 Z	15 Z	50pZ	Δ	TO1	A	
11	2N175	20m	850k	#J	10		10	2.0m	12u	4.0	500u	65		36p	Δ	TO40	A		
12	2N220	20m	850k	#J	10		10	2.0m	12u	4.0	500u	65	25u	3.5k	944	36p	Δ	TO1	A
13	2N344	20m†	50M*	#J	5.0	5.0	5.0	3.0u	3.0	500u	22	5.0ub	100	6.0p	SΔ	TO24	F		
14	2N345	20m†	50M*	#J	5.0	5.0	5.0	3.0u	3.0	500u	66	5.0ub	100	6.0p	SΔ	TO24	F		
15#	2SA156	20m	55M	#J	15		50	4.0m	5.0u	6.0	1.0m	50	200nb	40	2.0	1.5p	G	TO1	A
16#	2SA160	20m	55M	#J	15		50	4.0m	5.0u	6.0	1.0m	60	200nb	40	2.0	1.5p	G	TO1	A
17	2N346	20m†	75M*	#J	5.0	5.0	5.0	3.0u	3.0	500u	10 Δ	5.0ub	100	6.0p	SΔ	TO24	F		
18	2N299	20m*	110M*	#J	5.0	4.5	2.0	5.0m	3.0	500m		2.0ub	65	2.8p	S	TO30	F		
19	2N1499†	25m*	625u	#S	20	15	5.0	50m	100u	25	10m	35 t		1.5p	AD	TO9	A		
20	JAN2N240	25m	25MΔ	#J	6.0	6.0	6.0	15m	10u	3.0	500u	16 tΔ		6pZ	Δ	R143	F		
21	2N128	25m	28MΔ	#S	10	4.5	10	5.0m	3.0u	3.0	500u	19 Δ	1.5ub	75	5.0pZ	D	TO24	F	
22	2N1122†	25m*	40MΔ	#J	12	11		50m	5.0u	.25	10m	25 tΔ		6pZ	MAZ	TO24	F		
23	2N1122A†	25m*	40MΔ	#J	15	14	∅	50m	5.0u	.25	10m	25 tΔ		6pZ	MAZ	TO24	F		
24	JAN2N128	25m	45M*Δ	#A	10		10		4.0u	3.0	500u	19 Δ	4.0uZb	90 Z	5.0pZ	Δ	TO24	F	
25	2N393†	25m*	50.M‡	#J	6.0	6.0	6.0	50m	5.0u	3.0	50m	155		3.5p	MAZ	TO24	F		
26	2N1427†	25m*	60M*	#J	6.0	6.0	6.0	50m	5.0u	3.0	500u	120	1.0ub	55	20	3.5p	MEZ	TO24	A
27	2N2451	25m*	80MΔ	#S	6.0	5.0	6.0	50m	5.0u	3.0	500u	40 Δ		6.0pZ	Δ	TO24	A		
28	2N503	25m*	168MΔ	#J	20	20	5.0	100u	10	2.0m	45			1.0p	DA∅	TO9	A		
29	2N502A	25m	220M‡	#J	30	30	5.0	100u	10	2.0m	45			1.0p	DA∅	TO9	A		
30	2N252	30m		#A		16		5.0m	10u					1.0p	GD	O3e	A		
31	2N308	30m		#A	20			5.0m	10u					1.0p	GD	O3e	A		
32	2N309	30m		#A	20			5.0m	10u					1.0p	GD	O3e	A		
33	2N310	30m		#A	30			5.0m	10u					1.0p	GD	O3e	A		
34	2N1753	30m*	789u	#S	30	18	50m	15u	4.0	10m	50 tΔ		2.5pZ		TO1	A			
35	2N129	30m*	30M*	#J	10	4.5	10	5.0m	3.0u	3.0	500u	20	2.0ub	70	4.0p	S	TO24	F	
36	2N240	30m	30M*Δ	#J		6.0		15m	3.0u	3.0	500u	30	1.5ub	66	2.9p	SΔ	TO24	F	
37	TI380	30m	30.M	#J	16			5.0m	10u			20 ‡			GD	R177a	A		
38	2N1108	30m∅	35M	#J	16		1.0	5.0m	10u					1.5p		O3f	A		
39	2N1109	30m∅	35M	#J	16		1.0	5.0m	10u					1.5p		O3f	A		
40	2N1110	30m∅	35M	#J	16		1.0	5.0m	10u					1.5p		O3f	A		
41	2N1111	30m∅	35M	#J	20		1.0	5.0m	10u					1.1p		O3f	A		
42	2N1111A	30m∅	35.M	#J	20		1.0	5.0m	10u					1.5p	GD	TO22	A		
43	2N1111B	30m∅	35.M	#J	20		1.0	5.0m	10u	6.0	50m	29		1.5p	GD	TO22	A		
44	TI379	30m	35.M		16			5.0m	10u	6.0	50m	33 ‡			GD	R177a	A		
45	TI381	30m	35.M		16			5.0m	10u	6.0	50m	29 ‡			GD	R177a	A		
46	TI382	30m	35.M		20			5.0m	10u	6.0	50m	25 ‡			GD	R177a	A		
47	TI383	30m	35.M		20			5.0m	10u	6.0	50m	25 ‡			GD	R177a	A		
48	TI384	30m	35.M		27			5.0m	10u	6.0	50m	25 ‡			GD	R177a	A		
49	2N1107	30m∅	40M	#J	16		1.0	5.0m	10u					1.5p		O3f	A		
50	TI378	30m	40.M		16			5.0m	10u	6.0	50m	34 ‡			GD	R177a	A		
51	2N504	30m*	50M*Δ	#S	35	25	1.0	50m	10u	12	1.0m	16 Δ	1.0uZb	40 Z	2.5pZ	DA	TO1	A	
52	2N499	30m*	170M‡	#J	30	18	50	50m	100u					1.3p	DA	TO30	A		
53	2N588	30m*	250M*	#J	15	15	∅	50m	15u						DA∅	TO18	A		
54	2N768	35m	467m	#S	12	10	∅	100m							DA∅	TO2	A		
55	2N77	35m	700k	#A	25			15m	10u						A∅	TO2	A		
56	TR77	35m	.70M	#A	25			15m	10u	4.0	.70m	55		40p	A	TO2	A		
57	2N105	35m	750k	#A	25			15m	5.0u						A∅	TO2	A		
58	TR105	35m	.75M	#A	25			15m	5.0u	4.0	.70m	55		17p	A		A		
59	TR139	35m	4.5M	∅A	16		12	15m	6.0u	9.0	50m	45		9.5p	A		A		
60	TR218	35m	4.5M	∅A	16		12	15m	6.0u	9.0	500u	45		9.5p	A		A		
61	2N139	35m	13.M∅	∅A	16	12	50	15m	10u	9.0	1.0m	48 Z	1.0k	9.5p	AΔ	TO40	A		
62	2N218	35m	13.M∅	∅A	16	12	50	15m	10u	9.0	1.0m	48 Z	1.0k	9.5p	AΔ	TO1	A		
63	JAN2N393	35m	30MΔ	∅A	10	6.0	10	50m	5.0u	3.0	500u	40 Δ		4.0pZ	Δ	R143	F		
64	JAN2N1411	35m	30MΔ	∅A	8.0	8.0	50m	5.0u	1.0	50m	20 tΔ#			6.0pZ	Δ	R143	F		
65	2N769	35m	100MΔ	#S	12	7.0	2.0	100m	3.0u	.50	20m	25 tΔ		3.0pZ	Δ	TO18	F		
66	2N267	35m‡	132M∅	∅A	35		1.0	10m	16u			45 ‡		1.7p	Δ		A		
67	CK891	40m†		#A	12			50m	5.5u	1.5	50m	160			FA†	R18a	A		
68	CK892	40m†		#A	12			50m	5.5u	1.5	50m	160			FA∅	R18a	A		
69	2N623	40m	90.M	#J	30		1.0	50m	10u	6.0	2.0m	35		3.5p	DΔ		A		
70	2N1785	45m	50.M*	#S	10	10	∅	50m	10u	6.0	1.0m	40 tΔ	2.0u	40	3pZ	ME	TO9	A	
71	2N1786	45m	50.M*	#S	10	10	∅	50m	10u	6.0	1.0m	15 tΔ	2.0u	40	3pZ	ME	TO9	A	
72	2N1787	45m	50.M*	#S	15	15	∅	50m	10u	6.0	1.0m	25 tΔ	2.0u	40	3pZ	ME	TO9	A	
73	2N34	50m		#A	25			8.0m	10u	6.0	1.0m	40 t				O3j	AE	A	
74	2N36	50m		∅	20			8.0m	10u	6.0	1.0m	45				O14	A	A	
75	2N37	50m		∅	20			8.0m	10u	6.0	1.0m	30				TO22	A	A	
76	2N38	50m		∅	20			8.0m	10u	6.0	1.0m	15				TO22	A	A	
77	2N108	50m		∅A	20			15m		6.0	1.0m					R108	A	A	
78	2N238	50m		∅A	20				20u							O3g	A	A	
79	2N500	50m	833u	#J	20	15	50	100u						2.5pZ	DA	TO1	A		
80	2N1754†	50m	830u	#S	13	13	∅	100m	5.0u					3.0pZ	DA	TO9	A		
81	TR109	50m		#A	25			70m	10u	1.0	50m	70			A		A	A	
82	TR217	50m		#A	25			70m	10u	1.0	50m	70			A		A	A	
83	2N34A	50m	.60M	∅	25			8.0m	10u	6.0	1.0m	60			A	O3h	A	A	
84	2N506	50m	600kΔ	#J	40			100m	125u	.50	10m	25 tΔ			A	TO22	F	A	
85	TRM34	50m	600k	∅J	40			50m	5.0u	6.0	1.0m	40		15p	A		A	A	
86	2N591	50m	700k	∅A	32	32		20m	7.0u	12	2.0m	70			A	TO1	A	A	
87	TR35	50m	800k	∅A	40			50m	5.0u	6.0	1.0m	40		18p	A		A	A	
88	2N107	50m	1.0M	#A	12			10m	10u	5.0	1.0m	19	1.0ub	32	3.0	40p	D	R31	A
89#	GT115A	50m	1.0M‡	#A				30m	40u‡	1.0	25m	80 Z						A	A
9																			

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 [MAX. COLL. DISS. @ 25°C (W)		2 DERATE IN FREE AIR W/°C		T ABS MAX RATINGS @ 25°C				MAX. lcbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG #/a TO200 Ser.	L E O D E	
		fab	FREE AIR W/°C	ME	AVcbo (V)	AVceo (V)	AVeBo (V)	Ic (A)	BIAS		COMMON EMITTER							
		(Hz)	W/°C	A X P	(V)	(V)	(V)	(A)	Vcb (V)		le (A)	hfe	hoe (mhos)					hie (Ω)
1	JAN2N499	50m	120MΔ	666u	#S	30	18	50	50m	100u	9.0φ	1.0m	10 Δ					
2 #	P417	50m	200M		*A				10m	3.0u#	5.0	5.0m	100 □					
3 #	P417A	50m	200M		*A				10m	3.0u#	5.0	5.0m	200 □					
4 #	P417B	50m	200M		*A				10m	3.0u#	5.0	5.0m	250 □					
5 #	2SA377	50m	230MΔ	1.0m	φJ			20	5.0m	13uφ	6.0	1.0m	100					
6 #	2SA420	50m	300MΔ	588u	#J			20	5.0m	10uφ	6.0φ	2.0m	20					
7 #	2SA258	55m	40.M		#J	20			10m	10uφ	6.0	1.0m	45					
8 #	2SA257	55m	50.M		#J	20			10m	10uφ	6.0	1.0m	60					
9 #	2SA517	55m	55.M		#J	18			10m	10u	6.0	1.0m						
10	JAN2N501AT	60m	769u		#S	15		2.0	25u	5.0φ	5.0φ	10mφ	30 Δ					
11	2N9821	60m	800u		#S	20	15		100m	3.0uφ	5.0φ	50mφ	40 Δ					
12	2N9831	60m	800u		#S	15	15		100m	3.0uφ	5.0φ	50mφ	40 Δ					
13	2N9841	60m	800u		#S	15	10		100m	5.0uφ	5.0φ	50mφ	20 Δ					
14	2N1158	60m	769u		#S	20	20		100m	5.0uφ	10	3.0m	5.7 Δ					
15	2N1744	60m	500u		#S	20	20		50m	10uφ	10φ	2.0mφ	10 Δ					
16	2N1747	60m	800u		#S	20	20		50m	10uφ	6.0φ	1.0mφ	10 Δ					
17	2N1867	60m	800u		#S	35	35		50m	1.0uφ	1.2φ	1.0mφ	10 Δ					
18	2N2166	60m	800u		#S	20	15		100m	3.0uφ	5.0φ	50mφ	40 Δ					
19	2N2169	60m	800u		#S	15	15		100m	3.0uφ	5.0φ	50mφ	30 Δ					
20	2N2170	60m	800u		#S	15	10		100m	5.0uφ	5.0φ	50mφ	20 Δ					
21 #	2SA49	60m	1.2m		φJ	18		12	5.0m	10u	10φ	2.0mφ	10 Δ					
22 #	GT328B	60m*	1.3m		#J	20	15		30	6.0u	12φ	1.5mφ	40					
23	2N1745	60m	800u		#S	20	20		50m	10uφ	10φ	2.0mφ	10 Δ					
24	2N1868	60m	800u		#S	20	20		50m	10uφ	10φ	2.0mφ	10 Δ					
25	2N1743	60m	1.7MΔ	500u	#S	20	20		50m	10uφ	10φ	2.0mφ	10 Δ					
26 #	2SA52	60m	7.0M	1.2m	φJ	18		12	5.0m	10u	10φ	2.0mφ	10 Δ					
27 #	2N1742	60m	10.MΔ	500u	#S	20	20		50m	10uφ	10φ	2.0mφ	10 Δ					
28 #	2SA101	60m	15M	1.2m	φJ	40			10m	16uφ	6.0	1.0m	30					
29 #	2SA102	60m	25M	1.2m	φJ	40			10m	16u	6.0	1.0m	40					
30	2N2083	60m#	30MΔ	2.0m	#S	30			10m	10u	6.0φ	1.0m	25 Δ					
31 #	2SA103	60m	35M	1.2m	φJ	40			10m	16u	6.0	1.0m	50					
32	2N1748A	60m	50M*Δ	800u	#S	25	25		1.0	50m	6.0φ	1.0mφ	50 Δ	1.0u□b	40 □			
33	2N1752	60m	50M*Δ	800u	#S	12	12		2.0	50m	6.0φ	1.0mφ	50 Δ	1.0u□b	40			
34	2N1864	60m	50M*Δ	800u	#S	20	20		5.0	100u	6.0	1.0mφ	20 Δ	1.0u□b	40			
35	2N20591	60m	50MΔ	800u	#S	10	8.0		5.0	100u	6.0	1.0mφ	20 Δ					
36 #	2SA104	60m	50M	1.2m	φJ	40			10m	16uφ	6.0	1.0m	100					
37	SK3007-RT	60m	50M		#S	40	20		70	10m	12φ	1.0mφ	120 Δ					
38 #	2SA316	60m	75.M	1.2m	#J	18			20m	6.0uφ	6.0φ	1.0m	120					
39	2N1748	60m	80MΔ	800u	#S	25	25		50m	10uφ	6.0φ	1.0m	30 Δ	1.0u□b	40 □			
40 #	GT322M4	60m*	80MΔ	1.3m	#J	32	32		1.0	10m	4.0uφ	6.0φ	1.0m	200 □				
41 #	GT322M5	60m*	80MΔ	1.3m	#J	32	32		1.0	10m	4.0uφ	6.0φ	1.0m	200 □				
42 #	GT322M6	60m*	80MΔ	1.3m	#J	32	32		1.0	10m	4.0uφ	6.0φ	1.0m	200 □				
43 #	GT322M7	60m*	80MΔ	1.3m	#J	32	32		1.0	10m	4.0uφ	6.0φ	1.0m	200 □				
44	2N5011	60m	90MΔ	800u	#S	15	15		2.0	50m	100u	5.0φ	1.0m	35				
45	2N501AT	60m	90MΔ	800u	#S	15	12		2.0	50m	25u	5.0φ	10mφ	30				
46	2N9791	60m	100MΔ	769u	#S	20	20		2.0	100m	3.0uφ	5.0φ	40mφ	50 Δ				
47	2N9801	60m	100MΔ	800u	#S	20	12		2.0	100m	5.0uφ	5.0φ	40mφ	20 Δ				
48	2N1499A1	60m	100MΔ	800m	#S	20	20		2.0	100m	3.0uφ	3.0φ	10mφ	30 Δ				
49	JAN2N1499A1	60m	100MΔ	769u	#A	20	20		2.0	100m	3.0uφ	3.0φ	10mφ	30 Δ				
50	JAN2N1500T	60m	100MΔ	769u	#J	15	12		2.0	50m	10u	5.0φ	50mφ	20 Δ				
51	2N1726	60m	100M*	1.3m	#S	20	20		5.0	100u	6.0φ	1.0mφ	50 Δ	1.0u	40			
52	2N1727	60m	100M*	1.3m	#S	20	20		5.0	100u	6.0φ	1.0mφ	20 Δ	1.0u	40			
53	2N1728	60m	100M*	1.3m	#S	20	20		5.0	100u	6.0φ	1.0mφ	40 Δ	1.0u	40			
54	2N1746	60m	100M*Δ	800u	#S	20	20		1.0	50m	10uφ	6.0φ	1.0mφ	10 Δ				
55	2N1788	60m	100M*	1.3m	#S	35	35		5.0	50m	5.0u	12φ	1.0mφ	50 Δ	1.0u	40		
56	2N1789	60m	100M*	1.3m	#S	35	35		5.0	50m	7.0u	12φ	1.0mφ	20 Δ	1.0u	40		
57	2N1790	60m	100M*	1.3m	#S	35	35		5.0	50m	7.0u	12φ	1.0mφ	40 Δ	1.0u	40		
58	2N3412	60m	100MΔ	833u	#S	20	20		2.0	100m	3.0uφ	5.0φ	1.0m	25 Δ	50u□	7.0k□		
59	2N499A	60m	120MΔ	833u	#S	30	18		2.0	50m	5.0uφ	9.0φ	1.0m	20 Δ				
60	JAN2N499A	60m	120MΔ	769u	#S	30	30		2.0	50m	100u	9.0φ	1.0m	20 Δ				
61	2N1500T	60m	175M	769u	#S	15	12		2.0	50m	25u	5.0φ	10mφ	70				
62	2N588A	60m	200M*	1.0m	#S	15	15		5.0	50m	3.0uφ	3.0φ	10mφ	30 Δ				
63	2N1865	60m	200Mφ	769u	#S	20	20		5.0	50m	10uφ	6.0φ	1.0mφ	70	7.0u	2.0k	1.2	
64	2N1866	60m	200Mφ	769u	#S	35	35		5.0	50m	10uφ	12φ	1.0mφ	70	7.0u	2.0k	1.1	
65	2N502	60m	220MΔ		#J	20	20		5.0	100u	10φ	2.0m	45					
66 #	AF106	60m□	220M	1.3m	#J	25	18		3.0	10uφ	12φ	1.0mφ	50 Δ					
67 #	AF306	60m	280M	2.0m	#J	25	18		30	15m	10u							
68	2N2489	60m	300MΔ	800u	#S	20	15		2.0	100m	2.5uφ	5.0φ	10mφ	20 Δ				
69	2N7791	60m	320MΔ	800u	#S	15	15		2.0	100m	3.0uφ	5.0φ	10mφ	50 Δ				
70	2N7791T	60m	320MΔ	800u	#S	15	15		2.0	100m	3.0uφ	5.0φ	10mφ	50 Δ				
71	2N846A1	60m	320MΔ	800u	#S	15	15		2.0	100m	3.0uφ	5.0φ	10mφ	25 Δ				
72 #	2SA4470A	60m	350M		#J	20	20		5.0	30u	6.0φ	2.0mφ	55 Δ					
73	2N2487	60m	360MΔ	800u	#S	15	10		2.0	100m	3.0uφ	5.0φ	10mφ	20 Δ				
74	2N2488	60m	360MΔ	800u	#S	15	10		4.0	100m	3.0uφ	5.0φ	50mφ	20 Δ				
75 #	GT328A	60m*	400MΔ	1.3m	#J	25	18		30	10m	6.0u	12φ	1.0mφ	40 Δ				
76	2N2966	60m	500MΔ	500u	#S	20			100m	10φ	10φ	3.0mφ	8.0 Δ					
77 #	AF280	60m	550M	1.6m	#J	15	15		30	10m	15uφ	2.0mφ	25 Δ					
78 #	AF369	60m#	550M	1.6m	#J	15	15		30	10m	500uΔ	2.0mφ	10 Δ					
79 #	AF139	60m	580M	800u	#J	20	15		10	8.0u	12φ	1.5mφ	40 Δ					
80	2N3320T	60m	600MΔ	769u	#S	15	10		2.0	100m	5.0u	5.0φ	40mφ	40 Δ				
81	2N3321T	60m	600MΔ	769u	#S	12	7.0		2.0	100m	5.0uφ	5.0φ	40mφ	80 Δ				
82	2N3322T	60m*	600MΔ	769u	#S	12	7.0		2.0	100m	5.0uφ	5.0φ	40mφ	25 Δ				
83 #	GT346B	60m*	600M	1.3m	#J	20	15		3.0	10m	6.0u	12φ	1.5mφ	40				
84 #	GT346A	60m*	700M	1.3m	#J	20	15		3.0	10m	6.0uφ	10φ	2.0mφ	45				
85 #	AF239	60m	770M	800u	#J	20	15		30	10m	8.0u	12φ	1.5mφ	40 Δ				
86 #	AF279S	60m	820M		#S	20	15		30	10m								

# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE IN FREE AIR W/°C (Hz)	T M E A M P	ABS MAX RATINGS @ 25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C E O A D E	
					BVcbo (V)	BVceo (V)	BVeBo (V)	Ic (A)		BIAS			COMMON EMITTER							
					Vcb (V)	Ic (A)	hfe	hoe (mhos)		hie (Ω)	hre (X.0001)									
1	2N8251	70m	8.0M	1.2m	#J	30	20	20	400m	25u	.250	1.0mΔ	20 Δ	b		20pΔ	FA	R180a	A0	
2	2N8261	70m	8.0M	1.2m	#J	30	20	20	400m	25u	.250	1.0mΔ	20 Δ	b		20pΔ	FA	R218a	A0	
3	2N311	75m			#J	15	15	6.0		60u	5.00	1.0m	25 Δ				FA	R157	A	
4	2N502B	75m		1.0m	#S	30	30	∅	50	5.00	1.00	2.0m	20 Δ			1.6pΔ	∅	T09	A	
5	2N6951	75m		1.0m	#J	15	15	3.5	50m	3.0u	.300	1.0m	25 Δ			5.0pΔ	FA	T017	G	
6	JAN2N6951	75m		1.0m	#J	15	15	3.5	50m	3.0u	.300	1.0m	25 Δ			5.0pΔ	FA	T017	G	
7	2N700	75m		1.0m	#J	25	20	2.0	50m	2.0u	.60	2.0m	4.0 Δ	b	30 Δ	1.5pΔ	FA	T072	G	
8	2N700A	75m		1.0m	#J	25	25	2.0	50m	2.0u	.60	2.0m	4.0 Δ				FA	T072	G	
9	2N8011	75m		1.2m	#S	30	18	2.0	400m	4.0u	.250	1.0m	30 Δ			20pΔ	FA	R180	A	
10	2N8021	75m		1.2m	#S	30	18	2.0	400m	4.0u	.250	1.0m	30 Δ			20pΔ	FA	R181	Bs	
11	2N8031	75m		1.2m	#S	30	15	2.0	400m	4.0u	.250	1.0m	40 Δ			20pΔ	FA	R180	A	
12	2N8041	75m		1.2m	#S	30	15	2.0	400m	4.0u	.250	1.0m	40 Δ			20pΔ	FA	R181	Bs	
13	2N8051	75m		1.2m	#S	30	12	2.0	400m	4.0u	.250	1.0m	60 Δ			20pΔ	FA	R180	A	
14	2N8061	75m		1.2m	#S	30	12	2.0	400m	4.0u	.250	1.0m	60 Δ			20pΔ	FA	R181	Bs	
15	2N1158A	75m		1.0m	#S	20	20	∅	50	100m	5.00	1.0m	9.0 Δ			2.8p	∅	T09	A	
16#	ASY63N	75m					26	20		4.0u	.10	15m	80			17pΔ	A	T05	A	
17#	MGT108A	75m			*A				50m	10u\$	5.0	1.0m	50 Δ							
18#	MGT108B	75m			*A				50m	10u\$	5.0	1.0m	80 Δ							
19#	MGT108D	75m			*A				50m	10u\$	5.0	1.0m	250 Δ							
20#	MGT108G	75m			*A				50m	10u\$	5.0	1.0m	130 Δ							
21#	MGT108V	75m			*A				50m	10u\$	5.0	1.0m	120 Δ							
22	2N206	75m	780k	3.3m	#S	30			50m	10u\$	5.0	1.0m	47	550nb	33	3.2	A	T01	A	
23#	GT124A	75m	1.0M\$		*A				100m	15u\$	5.0	1.0m	56 Δ							
24#	GT124B	75m	1.0M\$		*A				m	15u\$	5.0	1.0m	90 Δ							
25#	GT124V	75m	1.0M\$		*A				100m	15u\$	5.0	1.0m	162 Δ							
26	2N265	75m	1.5M	2.0m	*J		25 \$		50m	16u	5.0	1.0m	115	500nb	29	4.0	A	R32	A	
27	2N809	75m	3.0MΔ	1.2m	#S	30	15	20	200m	5.00	6.0	1.0m	30 Δ			20pΔ	FA	R180	A	
28	2N810	75m	3.0MΔ	1.2m	#S	30	15	20	200m	5.00	6.0	1.0m	30 Δ			20pΔ	FA	R181	Bs	
29	CK83	75m	5.5M	1.3m	#J	12			20m	10u	6.00	1.0m	60			11p	FA	R18a	A	
30	2N8151	75m	8.0M	1.3m	#J	25	20	15	200m	10u	.750	200m	80 Δ			14p	FA	R180	A	
31	2N8161	75m	8.0M	1.3m	#J	25	20	15	200m	10u	.750	200m	80 Δ			14p	FA	R181	A	
32	CK86	75m	12.0M	1.3m	#J	12			10m	10u	6.00	1.0m	200			10p	FA	R18a	A	
33	2N8071	75m	18.0M	1.3m	#J	25	14 \$	12	100m	5.00	.200	20m	60 Δ			10p	FA	R180a	A	
34	2N8081	75m	18.0M	1.3m	#J	25	14 \$	12	100m	5.00	.200	20m	60 Δ			10p	FA	R218a	A	
35	2N1749	75m	80M\$Δ	1.0m	#S	40	40	∅	1.0	10m	10u	1.0m	30 Δ	1.0ub	40 Δ	2.5pΔ	FA	T09	A	
36	2N2199	75m	120M\$Δ	1.0m	#S	15	10	50	100m	5.00	1.00	3.0m	20 Δ			2.8pΔ	∅	T09	A	
37	2N2200	75m	120M\$Δ	1.0m	#S	15	10	50	100m	5.00	1.00	3.0m	20 Δ			2.8pΔ	∅	T09	A	
38	2N1499B1	75m	150M\$Δ	1.0m	#S	30	20	2.0	100m	3.00	.300	10m	40 Δ			3pΔ	D	T09	A	
39	2N27971	75m	150M\$Δ	1.0m	#S	40	20	2.5	100m	3.00	.300	10m	50 Δ			3.5pΔ	D	T09	A	
40#	AF178	75m	180M\$	1.6m	#J	25	25	50	10m	50u	12	1.0m	20 Δ			7.5pΔ	AD	T012	A	
41#	2SA240	75m	200M\$	1.3m	#J	20	18	∅	5.0m	10u	6.0	1.0m	120 Δ			1.5pΔ	EM	T017	G	
42#	2SA239	75m	300M	1.3m	#J	20			5.0m	10u	6.0	2.0m	10			1.5p	ME	T017	G	
43	JAN2N2996	75m	400M\$Δ	1.0m	#S	15	10	30	50m	5.00	6.00	4.0m	35 Δ			3.0p	∅	T072	G	
44	JAN2N2997	75m	400M\$Δ	1.0m	#S	30	15	30	50m	5.00	1.20	4.0m	50 Δ			1.0pΔ	∅	T072	G	
45	2N27951	75m	450M\$	1.0m	#S	25	15	2.5	100m	3.00	.300	10m	100 Δ			2.5p	D	T018	A	
46	2N27961	75m	450M\$	1.0m	#S	20	12	2.0	100m	3.00	.300	10m	60 Δ			2.5p	D	T018	A	
47	Ti390	75m	500M\$	1.0m	#S	18			30	50m	5.00	6.00	2.0m	40 Δ			EM	T018	A	
48	Ti391	75m	500M\$	1.0m	#S	18			30	50m	5.00	6.00	2.0m	20 Δ			EM	T018	A	
49	JAN2N502A	75m	600M\$Δ	1.0m	#S	30	30	∅	50	10u	1.00	2.0m	15 Δ			1.6pΔ	∅	T179t	A	
50	JAN2N502B	75m	600M\$Δ	1.0m	#S	30	30	∅	50	10u	1.00	2.0m	25 Δ			1.6pΔ	∅	T179t	A	
51	JAN2N700A	75m	800M\$Δ	1.0m	#J	25	25	30	50m	2.00	6.0	2.0m	4.0 Δ	b	30	1.4pΔ	∅	T072	A	
52	2N3267	75m	900M\$Δ	1.0m	#S	15	8.0	20	20m	5.00	6.00	3.0m	15 Δ			1.7pΔ	∅	T072	G	
53	2N1405	75m	1.1G*	1.0m	#J	30	20	50	50m	100u	6.00	2.0m	10 Δ			3.0p	ME	T012	A	
54	2N1406	75m	1.1G*	1.0m	#J	30	20	50	50m	100u	6.00	2.0m	10 Δ			3.0p	ME	T012	A	
55	2N1407	75m	1.1G*	1.0m	#J	30	20	50	50m	100u	6.00	2.0m	10 Δ			3.0p	ME	T012	A	
56	2N2363	75m	1.1G*	1.0m	#J	30	20	50	50m	5.00	6.00	2.0m	10			2.0p	ME	T072	A	
57	2N1631	80m			#S	34			50	10m	16u	6.00	40 Δ					T040	AE	
58	2N1632	80m		1.3m	#S	34			50	10m	16u	6.00	40 Δ					T01	A	
59	2N1633	80m		1.3m	#S	34			50	10m	16u	6.00	27 Δ					T040	AE	
60	2N1634	80m		1.3m	#S	34			50	10m	16u	6.00	27 Δ					T01	A	
61	2N1635	80m		1.3m	#S	34			50	10m	16u	6.00	40 Δ					T040	AE	
62	2N1636	80m		1.3m	#S	34			50	10m	16u	6.00	40 Δ					T01	A	
63	2N1637	80m		1.3m	#S	34		1.5	10m	5.00	6.00	1.0m	40 Δ					T01	A	
64	2N1638	80m		1.3m	#S	34		1.5	10m	7.00	6.00	1.0m	70 Δ					T01	A	
65	2N1639	80m		1.3m	#S	34		1.5	10m	7.00	6.00	1.0m	40 Δ					T01	A	
66#	2SB74	80m			#J	16			50	15m	10u	6.00	48				FA	T01	A	
67	CK64	80m	.80M	1.3m	#J	45	29	∅	12	100m	5.00	6.00	1.0m	25	18u	900	3.5	FA	R18a	A
68	CK64A	80m	.80M	1.3m	#J	45	29	∅	12	100m	5.00	6.00	1.0m	25	18u	900	3.5	FA	R18b	A
69	CK64B	80m	.80M	1.3m	#A	45					6.00	1.0m	22 Δ				FA	R180	A	
70	CK64C	80m	.80M	1.3m	#A	45					6.00	1.0m	22 Δ				A	R181	B	
71	2N1266	80m	1.0M		#J		10				6.00	1.0m	48			11p	A	T022	A	
72#	2SB46	80m	1.0M	1.6m	#J	25			150m	14u	6.0	1.0m	150	200nb	30	2.5	A	T01	A	
73	CK65	80m	1.0M	1.3m	#J	45	24	12	100m	5.00	6.00	1.0m	45	25u	1.8k	5.0	A	R18a	A	
74	CK65A	80m	1.0M	1.3m	#J	45	24	12	100m	5.00	6.00	1.0m	45	25u	1.8k	5.0	A	R18b	A	
75	CK65B	80m	1.0M	1.3m	#A	45					6.00	1.0m	45 Δ				A	R180	A	
76	CK65C	80m	1.0M	1.3m	#A	45					6.00	1.0m	45 Δ				FA	R181	B	
77	CK66	80m	1.2M	1.3m	#J	35	20	12	100m	5.00	6.00	1.0m	90	36u	3.6k	7.0	FA	R18a	A	
78	CK66A	80m	1.2M	1.3m	#J	35	20	12	100m	5.00	6.00	1.0m	90	36u	3.6k	7.0	FA	R18b	A	
79	CK66B	80m	1.2M	1.3m	#A	35					6.00	1.0m	90 Δ				A	R180	A	
80	CK66C	80m	1.2M	1.3m	#A	35					6.00	1.0m	90 Δ				A	R181	B	
81	CK67	80m	1.5M	1.3m	#J	35	15	12	100m	5.00	6.00	1.0m	180	50u	7.2k	95				

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) f<sub>ab</sub> & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	TEMP. M A X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L O D E
					V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	40261	80m	40M	1.3m	#J	50	.50	10m	12u	6.0	1.0m	80							
2	40487	80m	40M	1.3m	#A	50	1.5	10m	12u	6.0	1.0m	150							
3	HSE640	80m	40M	1.3m	#S	30	1.0	10m	7.0u	12.0	1.0m	20							
4	2N640	80m	42M	1.3m	#A	34	1.0	10m	5.0u	12.0	1.0m	60							
5	2N641	80m	42M	1.3m	#A	34	1.0	10m	7.0u	12.0	1.0m	60							
6	2N642	80m	42M	1.3m	#A	34	1.0	10m	7.0u	12.0	1.0m	60							
7	2N544	80m	45M	1.6m	#J	34	.50	10m	18u	12	1.0m	80							
8	SK3008-RT	80m	45M	1.6m	#J	34	.50	10m	18u	12	1.0m	150							
9#	AF114	80m	75M	1.6m	#J	20	.50	10m	8.0u	6.0	1.0m	40							
10#	AF117	80m	75M	1.6m	#J	20	.50	10m	8.0u	6.0	1.0m	40							
11#	2N1180	80m	100M		#J	20	.50	10m	12u	12	1.0m	80							
12#	2N1713	80m	100M		#S	12	30	1.0	10m	12u	6.0	1.0m	40						
13#	2SA235	80m	135M		#J	20	.50	10m	30u	6.0	1.0m	90							
14	2N1177	80m	140M		#J	40	1.0	10m	12u	12	1.0m	100							
15	2N1178	80m	140M		#J	40	1.0	10m	12u	12	1.0m	40							
16	2N1179	80m	140M		#J	40	1.0	10m	12u	12	1.0m	80							
17	2N3399	80m	400M	1.1m	#S	20	.30	7.0m	8.0u	12	1.5m	10							
18#	2SA434	80m	400M		#S	20	.50	10m	30u	6.0	3.0m	10							
19#	2SA435	80m	400M		#S	20	.50	10m	30u	6.0	3.0m	10							
20	SK3006-RT	80m	400M		#S	20	.50	10m	30u	6.0	3.0m	100							
21	2N1516	83m	75M	1.6m	#S	25	.50	10m	13u	1.0	6.0	20							
22	OC46	83m	3.0M		#J	20	20	15	125m	3.0u	5.0	3.0m	80						
23#	OC45	83m	6.0M	1.6m	#J	15	15	12	10m	10u	6.0	1.0m	50						
24#	2SA144	83m	12.0M	1.7m	#J	15	15	12	10m	12u	6.0	1.0m	100						
25	OC44	83m	15.0M	1.7m	#J	15	15	12	10m	10u	2.0	1.0m	100						
26	2N1515	83m	70.0M	1.7m	#J	20	20	10m	13u	6.0	1.0m	100							
27	2N1517	83m	70.0M	1.7m	#J	20	20	10m	13u	6.0	1.0m	67							
28#	ASZ20	83m	100M	1.7m	#J	40	.40	25m	4.5u	6.0	1.0m	45							
29#	2SA343	83m	150M	1.7m	#J	20	.50	5.0m	12u	6.0	1.0m	100							
30#	AFZ12	83m	180M	1.7m	#J	20	.50	10m	50u	6.0	1.0m	70							
31	2N130	85m	700k	2.0m	#J	25	22	12	10m	12u	6.0	1.0m	24						
32	2N131	85m	800k	2.0m	#J	25	15	12	10m	12u	6.0	1.0m	50						
33	2N133	85m	800k	2.0m	#J	25	15	12	10m	12u	6.0	1.0m	50						
34	2N132	85m	1.0M	2.0m	#J	25	12	12	10m	12u	6.0	1.0m	90						
35	2N207	85m	2.0M	1.2m	#J	12	12	12	20m	15u	5.0	1.0m	100						
36	2N207A	85m	2.0M	1.2m	#J	12	12	12	20m	10u	5.0	1.0m	100						
37	2N207B	85m	2.0M	1.2m	#J	12	12	12	20m	10u	5.0	1.0m	100						
38	JAN2N987	86m	100M	1.3m	#J	40	40	1.0	10m	8.0u	6.0	1.0m	100						
39	GT24H	90m			#J	12			50m	10u	1.0m	30							
40	GT210H	90m			#S	12			50m	25u	4.5	1.0m	120						
41	GT1604	90m	.50M	1.8m	#S	10			6.0u	5.0	1.0m	15							
42	TR801	90m	2.5M		#S	12			100m	6.0u	4.5	1.0m	25						
43	TR802	90m	5.0M		#S	10			100m	6.0u	4.5	1.0m	40						
44	GT1605	90m	6.5M	1.8m	#S	15	1.0	1.0		25u	9.0	1.0m	30						
45	GT1606	90m	10.0M	1.8m	#S	15	1.0	1.0		25u	9.0	1.0m	50						
46	TR803	90m	11.0M		#S	10			100m	6.0u	4.5	1.0m	70						
47	TR804	90m	17.0M		#S	6.0			100m	6.0u	4.5	1.0m	120						
48	2N987	100m		1.5m	#S	40	40	1.0	10m	8.0u	6.0	1.0m	40						
49	2N2496	100m		1.6m	#S	40	40	1.0	10m	6.0u	6.0	1.0m	25						
50	2N2654	100m		2.0m	#S	25	.50	10m	8.0u	6.0	1.0m	25							
51	2N2671	100m		2.0m	#S	25	1.0	10m	8.0u	6.0	1.0m	40							
52	2N2672	100m		2.0m	#S	25	1.0	10m	8.0u	6.0	1.0m	40							
53	GT14H	100m			#J	12			50m	50m		28							
54	GT20H	100m			#J	12			50m	50m		42							
55	GT81H	100m			#J	12			50m	50m		80							
56	HSE3279	100m		2.0m	#J	30	20	1.0	50m	5.0u	10	10							
57	HSE3281	100m		2.0m	#J	30	15	.50	50m	5.0u	10	10							
58	MA898	100m		1.6m	#J	25	25	10	100m	100u	6.0	1.0m	20						
59	MA899	100m		1.6m	#J	25	25	10	100m	100u	6.0	1.0m	40						
60	MA900	100m		1.6m	#J	25	25	10	100m	100u	6.0	1.0m	90						
61	MA901	100m		1.6m	#J	20	20	10	100m	100u	6.0	1.0m	20						
62	MA902	100m		1.6m	#J	15	15	10	100m	100u	6.0	1.0m	15						
63	MA903	100m		1.6m	#J	15	15	5.0	100m	100u	6.0	1.0m	20						
64	MA904	100m		1.6m	#J	15	15	5.0	100m	100u	6.0	1.0m	180						
65	TR20	100m			#S	30	200m		5.0u	15	1.0m	20							
66	2N1432	100m	.01M	1.3m	#J	45	45	.50	10m	15u	15	2.0m	60						
67#	GT11	100m	.42M		#S	9.0			10m	5.0u	4.5	1.0m	30						
68	2N519	100m	500k	1.6m	#S	15	15	10	200m	2.0u	4.5	1.0m	25						
69	GT758	100m	500k	2.0m	#S	20			200m	25u	4.5	1.0m	15						
70	TR758A	100m	.50M		#S	20			200m	5.0u	4.5	1.0m	15						
71	2N63	100m	.60M	1.7m	#J	10m	22	12	10m	20u	6.0	1.0m	22						
72	TR63	100m	.60M	1.7m	#J	10m	22	12	150m	6.0u	6.0	1.0m	22						
73	2N367	100m	700k	2.0m	#S	30		10	50m	30u	5.0	1.0m	15						
74	2N610	100m	.80M	1.7m	#J	15	15	12	10m	20u	6.0	1.0m	45						
75	2N106	100m	.80M	1.7m	#J	15	15	10m	10m	1.5	50m	45							
76	2N186	100m	.80M	3.0m	#S	25	30	10	200m	16u	5.0	1.0m	24						
77#	2SB135	100m	.80M	1.7m	#J	15	30	.50	100m	10u	6.0	1.0m	70						
78	TR6	100m	.80M	1.7m	#J	15	15	10m	150m	6.0u	6.0	1.0m	45						
79#	GT12	100m	.85M		#S	9.0			10m	5.0u	4.5	1.0m	60						
80	2N132A	100m	1.0M	1.7m	#J	25	24	12	100m	15u	6.0	1.0m	90						
81	2N187	100m	1.0M	3.0m	#S	25	5.0	200m	200m	16u	5.0	1.0m	36						
82	2N368	100m	1.0M	2.0	#S	30	10	10	50m	20u	6.0	1.0m	50						
83	2N1265	100m	1.0M	1.7m	#J	25	10	10	100m	10u	6.0	1.0m	30						
84#	2SB110	100m	1.0M	1.4m	#J	25	10	10	50m	10u	6.0	1.0m	30						
85#	2SB111	100m	1.0M	1.4m	#J	25	10	10	50m	10u	6.0	1.0m	45						
86#	2SB112	100m	1.0M	1.4m	#J	25	10	10	50m	10u	6.0	1.0m	80						
87#	2SB303	100m	1.0M	1.6m	#J	25	12	20m	15u	6.0	1.0m	100							
88#	OC65	100m	1.0M	1.5m	#J	10	10	10m	12u	2.0	3.0m	30							
89#	OC66	100m	1.0M	1.5m	#J	10	10	10m	12u	2.0	3.0m	45							
90	2N188	100m	1.2M	3.0m	#S	25	5.0	200m	200m	16u	5.0	1.0m	54						

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @ 25°C (W)	2] DERATE IN FREE AIR W/C	T M E P A M X	ABS MAX RATINGS @ 25°C			MAX. I <sub>cb0</sub> @ V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E A D E	
					V <sub>ce0</sub> (V)	V <sub>be0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	h <sub>fe</sub> (A)	h <sub>fe</sub> (A)	h <sub>re</sub> (X.0001)	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)					h <sub>re</sub> (X.0001)
1#	GT46	100m	6.0M	2.0m	ØJ	25	15	100m	15u	4.5	1.0m	60	25u	1.6k	3.0	15p	AA	R12	
2#	GT100	100m	6.0M	2.0m	ØJ	9.0	15	100m	5.0u	4.5	1.0m	60	25u	1.6k	3.0	15p	AA	R12	
3#	2N136	100m	6.5M	1.7m	#J	20	15	50m	5.0u	5.0	1.0m	40				14p	AA	R31	
4#	2N521	100m	8.0M	1.6m	#J	15	10	10	2.0u	4.5	1.0m	70	700nb	30	10	14p	AA	T05	A
5#	2SA201	100m	8.0M	1.6m	ØJ	15	15	15m	15u	6.0	1.0m	50				11p	AA	T01	A
6#	GT47	100m	9.0M	2.0m	ØJ	15	15	100m	15u	4.5	1.0m	100	30u	2.7k	3.0	15p	AA	R12	
7#	GT47	100m	9.0M	2.0m	ØJ	25	15	100m	15u	4.5	1.0m	100	30u	2.7k	3.0	15p	AA	R12	
8#	2N137	100m	10M	1.7m	#J	10	10	50m	5.0u	5.0	1.0m	60				14p	AA	R31	
9#	2N487	100m	10M	1.6m	#S	18	10	25m	15u	6.0	1.0m	20 Δ				14p	AA	T05	A
10#	GT781	100m	10M	2.0m	#S	15	15	5.0u	4.5	1.0m	70					14p	AA	T05	A
11#	2N3161	100m	12M	2.0m	ØJ	15	10	200m	2.0u	2.0	200m	30				11p	AA	T05	A
12#	2SA202	100m	12M	2.0m	ØJ	15	10	15m	10u	2.0	1.0m	55				11p	AA	T01	A
13#	2N522	100m	15M	1.6m	#S	15	8.0	10	2.0u	4.5	1.0m	120	700nb	30	14	14p	AA	T05	A
14#	GT167	100m	18M	1.7m	#S	10	10	2.0u	2.5	5.0	1.0m	60 Δ				14p	AA	T09	A
15#	2N3171	100m	20M	2.0m	#S	20	6.0	200m	2.0u	2.5	400m	30				14p	AA	T05	A
16#	GT782	100m	20M	2.0m	#S	15	15	5.0u	4.5	1.0m	120					14p	AA	T05	A
17#	2N523	100m	2.1M	1.6m	#S	15	6.0	10	2.0u	4.5	1.0m	200	700nb	30	20	14p	AA	T05	A
18#	GT784	100m	25M	2.0m	#S	15	15	200m	5.0u	4.5	1.0m	200				14p	AA	T05	A
19#	GT783	100m	30M	2.0m	#S	15	15	5.0u	4.5	1.0m	200					14p	AA	T05	A
20#	2N2089	100m	44M	1.7m	#S	20	20	1.0	11m	8.0	1.0m	40 Δ				4.0p	AD	T07	H
21#	2N2090	100m	44M	1.7m	#S	20	20	1.0	11m	8.0	1.0m	40 Δ				4.0p	AD	T07	H
22#	2N2091	100m	44M	1.7m	#S	20	20	1.0	11m	8.0	1.0m	40 Δ				2.5p	AD	T07	H
23#	2N2092	100m	44M	1.7m	#S	20	20	1.0	11m	8.0	1.0m	40 Δ				4.0p	AD	T07	H
24#	2SA69	100m	70M	2.0m	ØJ	20	20	50	10m	13u	1.0m	150				4.0p	AD	T07	
25#	2SA70	100m	70M	2.0m	ØJ	20	20	50	10m	13u	1.0m	150				3.5p	AD	T07	
26#	2N2093	100m	75M	1.7m	#J	25	25	2.0	10m	50u	1.0m	150	1.0u	4.0k	160	4.0p	AD	T07	
27#	2G417	100m	90M	1.5m	#J	20	20	1.0	10m	8.0u	1.0m	50 Δ				3.5p	AD	T018	
28#	2G413	100m	100M	1.5m	#J	40	40	1.0	25m	50u	1.0m	100				2.5p	AD	T018	A
29#	2N1699	100m	100M	1.3m	#S	40	40	1.0	1.3m	12	1.5m	100				2.5p	AD	T018	A
30#	2N223	100m	100M	1.3m	#S	25	15	1.0	100m	10u	1.0m	20 Δ				3.5p	AD	T018	A
31#	2SA71	100m	100M	2.0m	ØJ	20	20	50	10m	13u	1.0m	150				2.5p	AD	T07	
32#	2G414	100m	120M	1.7m	#J	20	20	1.0	10m	8.0u	1.0m	50 Δ				2.3p	AD	T018	
33#	2G415	100m	120M	1.7m	#J	20	20	1.0	10m	8.0u	1.0m	50 Δ				2.3p	AD	T018	
34#	2G416	100m	120M	1.7m	#J	20	20	1.0	10m	8.0u	1.0m	50 Δ				3.5p	AD	T018	
35#	2N3588	100m	200M	1.7m	#S	25	25	65	10m	5.0u	1.0m	20 Δ				3.5p	AD	T018	
36#	2N9761	100m	250M	1.3m	#S	15	10	2.0	100m	3.0u	5.0	20m	30 Δ			3.0p	AD	T018	A
37#	JAN2N2273	100m	250M	1.3m	#S	25	25	1.0	10u	10	1.0	20 Δ				4.0p	AD	T018	A
38#	2N3283	100m	250M	1.3m	#J	25	25	50	50m	10u	10	3.0m	10 Δ			1.5p	Ø	R176	G
39#	2N3284	100m	250M	1.3m	#J	25	25	50	50m	10u	10	3.0m	10 Δ			1.5p	Ø	R176	G
40#	2N3285	100m	250M	1.3m	#J	20	20	50	50m	10u	10	3.0m	5.0 Δ			2p	Ø	T072	G
41#	2N3286	100m	250M	1.3m	#J	20	20	50	50m	10u	10	3.0m	5.0 Δ			2p	Ø	T072	G
42#	40268	100m	250M	1.3m	#J	25	15	1.0	100m	10u	1.0m	20 Δ				3.5p	AD	T018	A
43#	HEPG0003-RT	100m	250M	1.3m	#J	20	20	50	50m	15u	10	85				3.5p	DM	T018	A
44#	2G101	100m	320M	1.7m	#J	15	15	1.0	20m	10u	5.0	2.0m	20			3.5p	ME	T05	A
45#	2N2717	100m	390M	2.2m	ØJ	25	25	15	15m	8.0u	1.0	3.0m	30 Δ			1.8p	ME	T018	A
46#	2G102	100m	400M	1.7m	#J	15	15	1.0	20m	10u	5.0	2.0m	20			3.5p	ME	T05	A
47#	2N3127	100m	400M	1.3m	#S	25	20	75	50m	5.0u	10	3.0m	125			1.2p	Ø	T072	G
48#	JAN2N3127	100m	400M	1.3m	#J	25	20	75	50m	5.0u	10	3.0m	20 Δ			1.2p	Ø	T072	G
49#	2N3281	100m	550M	1.3m	#J	30	15	50	50m	5.0u	10	3.0m	10 Δ			1.2p	Ø	R176	G
50#	2N3282	100m	550M	1.3m	#J	30	15	50	50m	5.0u	10	3.0m	10 Δ			1.2p	Ø	R176	G
51#	2N3279	100m	600M	1.3m	#J	30	20	1.0	50m	5.0u	10	3.0m	10 Δ			1.2p	Ø	R176	G
52#	2N3280	100m	600M	1.3m	#J	30	20	1.0	50m	5.0u	10	3.0m	10 Δ			1.2p	Ø	R176	G
53#	AF379	100m*	1.2G	2.2m	#J	13	30	20	15u	8.0	8.0m	80				600f	PL	W49	A
54#	2N130A	102m	700k	1.6m	#J	45	40	12	100m	15u	6.0	1.0m	26	17u	900	3.5	FA	O16	A
55#	2N131A	102m	800k	1.6m	#J	45	30	12	100m	15u	6.0	1.0m	45	18u	1.4k	4.3	FA	O16	A
56#	2N133A	102m	800k	1.6m	#J	35	20	12	100m	15u	6.0	1.0m	50	19u	2.5k	5.5	FA	O16	A
57#	AFY16	112m*	550M	1.3m	ØJ	30	25	50	10m	3.0u	12	1.5m	40			7.0p	FA	T072	A
58#	2N2873	115m	300M	1.5m	#S	35	35	30	10m	12u	6.0	1.0m	40			7.0p	Ø	R103	G
59#	2N605	120m	2.0m	2.0m	#S	15	15	15	10u	5.0	1.0m	40	2.0ub			7.0p	D	T05	A
60#	2N606	120m	2.0m	2.0m	#S	15	15	15	10u	5.0	1.0m	60	2.0ub			7.0p	D	T05	A
61#	2N607	120m	2.0m	2.0m	#S	15	15	15	10u	5.0	1.0m	80	2.0ub			7.0p	D	T05	A
62#	2N608	120m	2.0m	2.0m	#S	15	15	15	10u	5.0	1.0m	120	2.0ub			7.0p	D	T05	A
63#	2N1003	120m	1.7m	1.7m	#J	35	20	50	15u	9.0	1.0m	10 Δ				5.0	Ø	T05	A
64#	2N1004	120m	1.7m	1.7m	#J	35	20	50	15u	9.0	1.0m	10 Δ				5.0	Ø	T05	A
65#	2N1285	120m	1.6m	1.6m	#S	40	40	2.5	10m	12u	12	1.5m	30 Δ			3.0p	AD	T033	G
66#	2N14501	120m	2.0m	2.0m	#S	30	1.0	100m	10u	1.0	10m	20 Δ				3.0p	AD	T09	
67#	JAN2N1450M†	120m	2.0m	2.0m	#S	30	20	1.0	100m	10u	1.0	10m	20 Δ			3.0p	AD	R179f	A
68#	2N2208	120m	1.6m	1.6m	#S	40	10	50	10m	50u	12	1.5m	30 Δ			3.0p	AD	T044	A
69#	2N2953	120m#	2.6m	2.6m	#S	30	25	25	150m	5.0u	10	10m	200 Δ			3.0p	AD	T01	A
70#	2SB459	120m	800k	2.0m	#S	30	18	2.5	50m	12u	6.0	1.0m	180	78u	5.2k	1.1	A	T01	A
71#	2N564	120m	1.0M	2.0m	#S	30	25	10	300m	5.0u	5.0	1.0m	25	2.0ub	35	2.5	A	T05	A
72#	2N566	120m	1.0M	2.0m	#S	30	25	10	300m	5.0u	5.0	1.0m	55	2.0ub	30	3.5	A	T05	A
73#	2N568	120m	1.5M	2.0m	#S	30	25	10	300m	5.0u	5.0	1.0m	100	2.0ub	30	4.0	A	T05	A
74#	TR34	120m	1.6M	2.0m	#J	40	25	10	150m	20u	6.0	1.0m	15			15p	A	T05	A
75#	2N570	120m	2.0M	2.0m	#S	30	20	10	300m	5.0u	5.0	1.0m	150	2.0ub	30	5.0	A	T05	A
76#	2N572	120m	3.0M	2.0m	#S	30	10	10	300m	5.0u	5.0	1.0m	200	2.0ub	30	10	A	T05	A
77#	2N269	120m	4.0M	2.8m	ØA	20	20	9.0	100m	20u	30	20m	40			30			



# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE (Hz)	3   IN FREE AIR (W/°C)	4   M E A M P	ABS MAX RATINGS @ 25°C			MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E			
						BVcbo (V)	BVceo (V)	BVeBo (V)		Vcb (V)	le (A)	hfe					COMMON EMITTER		
						(V)	(V)	(V)		(V)	(A)	(hfe)					hoe (mhos)	hie (Ω)	hre (X.0001)
1	2N644†	120m	50M	3.0M	∅A	30	29 ∅	2.0	100m	10u∅	7.0∅	5.0m∅	45 f						
2	2N796	120m	50M	2.0m	#S	12	12 s	4.0	100m	3.0u∅	.30∅	10m∅	50 t Δ						
3	JAN2N1225	120m	50M	1.6m	#S	40	40	4.0	10m	20u	12∅	1.5m∅	30 Δ						
4	2N604	120m	60M	2.0m	#S	30	20	2.0	8.0u∅	1.0∅	1.0∅	500u∅	40 t Δ	250nb	27	3.0			
5 #	2SA474	120m	70.M	1.8m	#J	50	50	5.0	50m	12u∅	6.0∅	1.0m	50						
6	2N645†	120m	75M	3.0m	∅A	30	29 ∅	2.0	100m	10u∅	7.0∅	5.0m∅	45 t						
7	2N384	120m	100M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	60	400					
8	2N1225	120m	100M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	60						
9	2N1396	120m	100M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	90						
10	40005	120m	100M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	90						
11	2N1023	120m	120M	1.6m	#J	40	40	4.0	50	10m	12u∅	1.5m	60						
12	2N1066	120m	120M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	60						
13	2N1397	120m	120M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	90						
14	40006	120m	120M	1.6m	#A	40	40	4.0	50	10m	12u∅	1.5m	90						
15	2N2494	125m	120M	1.7m	#S	40	40 ∅	5.0	10m	6.0u∅	6.0∅	1.0m∅	25 t Δ						
16	2N2495	125m	120M	1.7m	#S	40	40 ∅	5.0	10m	6.0u∅	6.0∅	1.0m∅	25 t Δ						
17	GT14	125m		2.0m	#S	25			100m	25u	.50∅	1.0m	28	500nb	40	3.0			
18	TR11	125m			#S	100			100m	450u	4.5	1.0m	18						
19	TR15	125m			#S	25			100m	6.0u∅	4.5	1.0m	75						
20	TR16	125m			#S	25			100m	6.0u∅	4.5	1.0m	150						
21	TR17	125m			#S	25			100m	6.0u∅	4.5	1.0m	150						
22	TR21	125m			#J	12			100m	6.0u∅	4.5	1.0m	20						
23	TRM15	125m			#S	25			100m	6.0u∅	4.5	1.0m	75						
24	TRM16	125m			#S	25			100m	6.0u∅	4.5	1.0m	150						
25	TRM17	125m			#S	25			100m	6.0u∅	4.5	1.0m	150						
26	TRM21	125m			#J	12			100m	6.0u∅	4.5	1.0m	20						
27	2N279	125m	300k	2.5m	#J	12	20		10m	12u∅	2.0∅	500u∅	30	23u	2.2k	9.0			
28	2N280	125m	300k	2.5m	#J	30	20		10m	12u∅	2.0∅	3.0m∅	47	80u	800	5.0			
29 #	2SB170	125m	300k	2.5m	#J	30	20		10m	12u∅	2.0∅	500u∅	30	15u	1.8k	4.5			
30	2N281	125m	350k	2.5m	#J	16	16	10	125m	10u∅	5.4∅	1.0m	70 t						
31	2N284	125m	350k	2.5m	#J	32	32	10	125m	10u∅	6.0∅	250m	15 t Δ						
32	2N284A	125m	350k	2.5m	#J	60	60	10	125m	10u∅	6.0∅	250m	15 t Δ						
33	2N283	125m	500k	2.5m	#J	20	20		10m	6.0u∅	1.0∅	500u∅	40						
34 #	2SB171	125m	700k†	2.5m	#J	30			100m	12u∅	6.0	1.0m	60	75u	800	4.5			
35 #	2SB173	125m	700k†	2.5m	#J	20			100m	12u∅	6.0	1.0m	100						
36 #	2SB175	125m	700k†	2.5m	#J	30			100m	12u∅	6.0	1.0m	100	80u	1.3k	5.5			
37 #	GT1	125m	.80M	2.5m	#S	9.0			10m	5.0u	4.5	1.0m	20	18u	1.1k	3.5			
38 #	GT31	125m	800k	2.5m	#J	15		15	100m	10u	4.5	1.0m	40	20u	1.8k	4.0			
39 #	2SB177	125m	900k	2.5m	#J	60		10	125m	12u∅	3.0m	300m	65 t						
40 #	GT32	125m	900k	2.5m	#J	15		15	100m	10u	4.5	1.0m	40	20u	1.8k	4.0			
41	2N65	125m	1.0M	1.7m	#J	20		16	100m	10u	5.0	1.0m	75						
42 #	2SB172	125m	1.0M	2.5m	#J	32		10	300m#	12u∅	1.0∅	2.0mΔ	50 t						
43	40253	125m#	1.0M	3.5m	#S	25	25	2.5	500m	14u∅	1.0∅	400m∅	75 t						
44 #	GT2	125m	1.0M	2.5m	#S	9.0			10m	5.0u	4.5	1.0m	40	20u	1.8k	4.0			
45 #	GT33	125m	1.0M	2.5m	#J	15		15	100m	10u	4.5	1.0m	60	25u	2.5k	5.0			
46 #	OC70	125m	1.0M	2.5m	#J	30	30	10	50m	13u∅	2.0∅	500u∅	20 Δ						
47 #	OC71	125m	1.0M	1.7m	#J	30	20	10	50m	13u∅	2.0∅	3.0m∅	30 Δ						
48 #	OC77	125m	1.0M	1.6m	#J	60	60	10	250m	10u∅	5.4∅	1.0m∅	45 Δ						
49 #	GT3	125m	1.3M	2.5m	#S	9.0			10m	5.0u	4.5	1.0m	60	25u	2.5k	5.0			
50 #	2SB176	125m	1.4M	2.5m	#J	32		10	300m#	14u∅	1.0∅	2.0mΔ	57 t Δ						
51	40329	125m	1.5M	2.8m	#J	25	25 s	2.5	100m	12u∅	1.0∅	1.0m∅	75 Δ	175u	400	3.0			
52	TR19	125m	2.0M	2.5m	#J	25			50m	5.0u∅	5.0	1.0m	100						
53	2N614	125m	3.0M		#J	20	15	10	150m	6.0u	9.0	50m	4.5	80p					
54	2N615	125m	5.0M		#J	20	15	10	150m	6.0u	9.0	50m	7.5	80p					
55	2N617	125m	7.5M		#J	15	12	10	150m	6.0u	9.0	500u	15						
56	2N505	125m	8.0M		#J	40	40	4.0	250m	8.0u∅	1.0∅	10m∅	40						
57	JAN2N2084	125m	40M	1.6m	#A	40	20	1.0	10m	8.0u∅	6.0∅	1.0m∅	40 Δ						
58	2N2188	125m	60M	2.1m	#J	40	25	2.0	30m	3.0u∅	9.0∅	1.5m∅	40 Δ						
59	2N2190	125m	60M	2.1m	#J	60	25	2.0	30m	3.0u∅	9.0∅	1.5m∅	40 Δ						
60	2N2084	125m	100M	600u	#S	40	20	1.0	10m	8.0u∅	6.0∅	1.0m∅	40 Δ						
61	2N2189	125m	102M	2.1m	#J	40	25	2.0	30m	3.0u∅	9.0∅	1.5m∅	60 Δ						
62	2N2191	125m	102M	2.1m	#J	60	25	2.0	30m	3.0u∅	9.0∅	1.5m∅	60 Δ						
63 #	AC122	130m	2.0M	2.0m	#J	30	18 *	12	200m	15u∅	6.0∅	2.0m∅	100 *	52m	2.0k	5.5			
64 #	AC122-30	130m	2.0M	2.0m	#J	45	32 *	12	200m	15u∅	6.0∅	2.0m∅	100 *	52m	2.0k	5.5			
65	TR761	130m	.50M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	12						
66	CK870	130m	.50M	2.5m	#J	25	25	150m	150m	15u	6.0	1.0m	12						
67	CK871	130m	.60M	2.5m	#J	20	20	150m	150m	15u	6.0	1.0m	20						
68	2N111	130m	3.0M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	25	12p					
69	2N111A	130m	3.0M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	25	12p					
70	2N112	130m	5.0M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	30	12p					
71	2N112A	130m	5.0M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	30	12p					
72	2N113	130m	10.M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	45	12p					
73	2N114	130m	20.M	2.5m	#J	30	20	20	200m	20u	6.0	1.0m	75	12p					
74	TR762	130m	20.M	2.5m	#J	30	20	20	200m	1.0u∅	6.0	1.0m	75	12p					
75	2N1097	140m			#J		16		100m	10u	1.0∅	20m∅	34 t Δ						
76	2N1098	140m			#J		16		100m	16u	1.0∅	20m∅							





## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE			TEMP. RANGE (°C)	ABS. MAX. RATINGS @25°C				MAX. Ic @MAX Vcb	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
			fab (Hz)	IN FREE AIR W/°C	M A P		V Bvcb	V Bvceo	V BVeBo	Ic (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
							(V)	(V)	(V)	(A)		(V)	(A)								
1#	ACY32	150m*	1.5m\$	3.3m	#J	32	30	16	200m	10uφ	5.0φ	1.0mφ	100	40u	3.0k	7.0	27p	Aφ	T01	A	
2	GT88	150m	1.5M	2.0m	#S	25		10	25u	5.0φ	1.0m	80	500nb	40	5.0	35p	AΔ				
3	TR45	150m	1.5M	2.5m	#J	45		5.0	400m	16u	1.0φ	20mφ	20 ↑			20p	A	TO5			
4	MA895	150m	1.7M	2.5m	#J	30	30 φ	10	200m	100u	6.0φ	1.0m	40 Δ			25pφ	A	T05			
5	2N569	150m	2.0M	2.5m	#S	30	20	10	300m	5.0uφ	5.0φ	1.0mφ	150	2.0ub	30	5.0	30p	A	R109	A\$	
6#	2SB75	150m	2.0M	2.5m	#J	25	25 φ	12	100m	14u	6.0φ	1.0mφ	55	17u	1.7k	3.0	30p	A	T01	A	
7#	2SB77	150m	2.0M	2.5m	#J	25	25 φ	12	100m	14u	6.0φ	1.0mφ	70	26u	1.9k	3.8	30p	A	T01	A	
8#	2SB439	150m	2.0M	3.0m	φJ	30	20 \$	12	150m	14uφ	6.0φ	1.0m	130	45u	4.0k	8.0	30p	Aφ	T01	A	
9#	2SB440	150m	2.0M	3.0m	φJ	30	20 \$	12	150m	14uφ	6.0φ	1.0m	130	45u	4.0k	8.0	30p	Aφ	T01	A	
10#	ASY58N	150m	2.0MΔ	2.5m	#J	16	10	12	200m	10u	0.0	10m	40			20pφ	A	T05	A		
11	GT122	150m	2.0M	2.0m	#S	25		10	25u	5.0φ	1.0m	100	500nb	40	5.0	35p	AΔ				
12	TR650	150m	2.0M	2.5m	#J	45	25	25	400m	15uφ	6.0φ	1.0m	40			20p	A	T05	A		
13	TR653	150m	2.0M	2.5m	#J	30	15	25	400m	15uφ	6.0φ	1.0m	40			20p	A	T05	A		
14	MA896	150m	2.2M	2.5m	#J	30	30 φ	10	200m	100u	6.0φ	1.0m	90 Δ			25pφ	A	T05			
15	TR44	150m	2.2M	2.5m	#J	45		5.0	400m	16u	1.0φ	20mφ	30 ↑			20p	A	T05			
16	2N413	150m	2.4M	2.5m	#J	30	18	20	200m	5.0uφ	6.0φ	1.0m	30	600nb	25	3.0	12p	FAφ	T05	A	
17#	2G322	150m	2.5M	3.7m	#J	16	16 \$		100m	16u	5.0φ	1.0m	50		1.4k	27p	A	T05	A*		
18	2N413A	150m	2.5M	2.5m	#J	30	15	20	200m	5.0uφ	6.0φ	1.0m	30	600nb	25	3.0	12p	FA	T05	A	
19	JAN2N425†	150m	2.5MΔ	2.0m	#S	30	20	20	400m	3.0uφ	2.5φ	1.0mΔ	20 Δ			20pφ	A	T05	A		
20	2N1352	150m	2.5MΔ	2.5m	#J	30	20	15	200m	5.0u	6.0	1.0m	70 ↑			18p	A	T05	A		
21	TR43	150m	2.5M	2.5m	#J	45		5.0	400m	16u	1.0φ	20mφ	45 ↑			20p	A	T05			
22	TR320	150m	2.5MΔ	2.5m	#J	30	16	5.0	200m	16u	1.0φ	20mφ	50			20p	A	T05			
23	TR323	150m	2.5M	2.5m	#J	16		5.0	200m	16u	1.0φ	20mφ	75			20p	A	T05			
24	TR722	150m	2.5MΔ	2.5m	#J	30			200m	20u	6.0	1.0m	22			20p	A	T05			
25	UPI1352	150m	2.5M	2.5m	#J	30	20	15	200m	5.0u	6.0	1.0m	70 ↑			18p	A	O3e	A		
26	MA897	150m	2.7M	2.5m	#J	30	30 φ	10	200m	100u	6.0φ	1.0m	180 Δ			25pφ	A	T05			
27#	2G308	150m	3.0M	2.3m	#J	15		10	100m	10u	6.0	1.0m	50			12p	Aφ	R177b			
28	JAN2N44A	150m	3.0MΔ	2.5m	#J	45	30 \$	5.0	200m	16u	5.0φ	1.0m	38 Δ	1.5uZb	38 Δ	60pφ	A	R239			
29	JAN2N426†	150m	3.0MΔ	2.0m	#S	30	18	20	400m	3.0uφ	2.5φ	1.0mΔ	30 Δ			20pφ	A	T05	A		
30	2N481	150m	3.0M	2.5m	#J	12			20m	10u	6.0	1.0m	50			14p	FA	T05	A		
31	2N520A	150m	3.0MΔ	2.0m	#S	25	15	10	300m	2.0uφ	5.0φ	1.0m	40 Δ	1.5uZb		30p	A	T05	A		
32	2N571	150m	3.0M	2.5m	#J	30	10	10	300m	5.0uφ	5.0φ	1.0mφ	200	2.0ub	30	10	30p	A	R109	A\$	
33	2N1303	150m	3.0MΔ	2.5m	#J	30			300m	6.0uφ	1.0φ	1.0mφ	20 Δ			20pφ	A	T05	A\$		
34	JAN2N1303	150m	3.0MΔ	2.5m	#S	30			300m	6.0uφ	1.0φ	1.0mφ	20 Δ			20pφ	A	T05	A\$		
35	2N1404A	150m	3.0MΔ	2.5m	#J	25	15	20	300m	5.0uφ	2.0φ	24mφ	24 Δ			20pφ	A	T05	C\$		
36#	ASY54N	150m	3.0MΔ	2.5m	#J	30	20	30	500m	10uφ	1.0φ	50m	60 ↑			20pφ	Aφ	T05	A		
37	TR526	150m	3.0M	2.5m	#J	45		15	500m	10u	5.0	1.0m	73	420nb	30	6.5	25p	A	T05		
38	TR721	150m	3.0MΔ	2.5m	#J	30		10	200m	20u	6.0	1.0m	45			20p	A	T05			
39#	2G323	150m	3.1M	3.7m	#J	16	16 \$		100m	16u	5.0φ	1.0m	70		2.0k	27p	Aφ	T05			
40	TR321	150m	3.1MΔ	2.5m	#J	20	16	5.0	200m	16u	1.0φ	20mφ	80			20p	A	T05			
41	TR527	150m	3.3M		#J	45		15	500m	10u	5.0	1.0m	91	370nb	31	8.0	25p	A	T05		
42#	2G324	150m	3.4M	3.7m	#J	16	16 \$		100m	16u	5.0φ	1.0m	88		2.6k	27p	Aφ	T05			
43#	2G394	150m	3.5M	2.5m	#S	16	10	20	200m	6.0u	1.0φ	10m	25 ↑			12p	A	T05			
44	JAN2N43A	150m	3.5MΔ	2.5m	#J	45	30 \$	5.0	200m	16u	5.0φ	1.0m	66 Δ	1.5uZb	35 Δ	60pφ	A	R239			
45	2N482	150m	3.5M	2.5m	#J	12			20m	10u	6.0	1.0m	50			12p	FA	T05	A		
46	TR482	150m	3.5M	2.5m	#J	14	10	5.0	200m	10u	6.0	1.0m	20			12p	A	T05			
47	TR508	150m	3.5M	2.5m	#J	16		5.0	200m	16u	1.0φ	20mφ	25			20p	A	T05			
48#	ASY57N	150m	3.7MΔ	2.5m	#J	16	10	12	200m	10u	0.0	10m	50			20pφ	A	T05			
49	2N394	150m	4.0MΔ	2.5m	#S	10	10	10	200m	1.0φ	1.0φ	10mφ	20 Δ			20pφ	AΔ	T05	A\$		
50	JAN2N404	150m	4.0MΔ	2.5m	#J	25	24	12	200m	5.0uφ	1.5φ	12mφ	30 Δ			20pφ	A	T05	A		
51	2N404A	150m	4.0MΔ	2.0m	#J	40	35	25	150m	5.0uφ						20pφ	AΔ	T05			
52	JAN2N404A	150m	4.0MΔ	2.0m	#J	40	35	25	200m	5.0uφ	1.5φ	12mφ	30 Δ			20pφ	A	T05	A		
53	2N425†	150m	4.0M	2.5m	#J	30	20	20	400m	4.0uφ	2.5φ	1.0mΔ	20 Δ			14p	FA	T05	A		
54	2N1361	150m	4.0M	2.5m	#S	25	20	15	200m	6.0uφ	1.5φ	25mφ	40 Δ			20pφ	A	T05	C\$		
55	2N1404	150m	4.0MΔ	2.5m	#J	25		20	300m	5.0u	2.0φ	24mφ	100 ↑			8.0p	A	T05	A\$		
56	40269	150m	4.0MΔ	2.5m	φJ	25		12	100m	5.0uφ	1.5φ	12mφ	50 Δ			15p	A	T05	A		
57	GT2693	150m	4.0M	2.5m	#J	30	15	20	200m	25u	5.0φ	1.0m	50	5.0ub		15p	FA	T05			
58	GT2695	150m	4.0M	2.5m	#J	30	15	20	200m	25u	5.0φ	1.0m	20	5.0ub		15p	FA	T05			
59	TR-C45	150m	4.0M	2.5m	#J	12		9.0	150m	10u	6.0	1.0m	40			12p	A	T05			
60	UPI404A	150m	4.0M	2.0m	#J	40	35	25	150m	5.0uφ	3.0φ	40m	100			20p	A	O3e	A		
61#	2G508	150m	4.4M	3.7m	#J	16	16 \$		100m	16u	5.0φ	1.0m	112		3.2k	27p	Aφ	T05	A*		
62#	2G509	150m	4.4M	3.7m	#J	16	16 \$		100m	16u	5.0φ	1.0m	112		3.2k	27p	Aφ	T05			
63	2N395†	150m	4.5M	2.5m	#S	30	15	20	200m	6.0uφ	1.0φ	10mφ	20 Δ			12p	A	T05	A\$		
64#	2G345	150m	5.0M\$	2.3m	#J	15		10	100m	10u	6.0	1.0m	50 ↑			8.5p	A	R177b			
65#	2G371	150m	5.0M\$	2.3m	#J	20		10	100m	10u	6.0	1.0m	50 ↑			20p	A	R177b			
66#	2G374	150m	5.0M\$	2.3m	#J	20		10	100m	10u	6.0	1.0m	120			20p	A	R177b			
67#	2G376	150m	5.0M\$	2.0m	#A	30	30 \$	10	300m	10u	1.0φ	100mφ	70 ↑			20p	A	R177b			
68#	2G377	150m	5.0M\$	2.0m	#A	60	60 \$	10	300m	50u	1.0φ	100mφ	70 ↑			20p	A	R177b			
69	JAN2N123†	150m	5.0MΔ	2.5m	#J	20	15	10	300m	6.0u	5.0φ	1.0m	60 Δ			25pφ	A	R109	A		
70	2N123A	150m	5.0M\$	8m	#J	20	15		6u		10m	30 Δ				15p	A	T05			
71	JAN2N416	150m	5.0MΔ	2.0m	#J	30		12	25u	6.0	1.0m	45 Δ				20pφ	A	R179q	A		
72	JAN2N427†	150m	5.0MΔ	2.0m	#S	30	15	20	400m	3.0uφ	2.5φ	1.0mΔ	45 Δ			20pφ	A	T05	A		
73	2N1093	150m	5.0MΔ	2.5m	#S	30	15	15	300m	6.0u	5.0φ	1.0mφ	40 Δ			20p	A	T05	Aφ		
74	2N1115	150m	5.0MΔ	2.5m	#J	20	15	10	125m	6.0u						20pφ	AΔ	R109	A\$		
75	2N1305	150m	5.0MΔ	2.5m	#J	30		25	300m	6.0uφ	1.0φ	10mφ	40 Δ			20pφ	A	T05	A\$		
76	JAN2N1305	150m	5.0MΔ	2.5m	#S	30		25	300m	6.0uφ	1.0φ	10mφ	40 Δ			20pφ					

# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	T M E A M X P	ABS MAX RATINGS @25°C						TYPICAL h <sub>fe</sub> PARAMETERS										Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	Icbo @ MAX Vcb (A)	BIAS		COMMON EMITTER			hoe (mhos)	hie (Ω)	hre X.0001							
										Vcb (V)	le (A)	hfe	hfe	hfe										
1	2N271	150m	10M	2.5m	#J	30	10	20	200m	5.0m	8.0m	1.0m	45	1.0ub	25	7.0	12p	FA	03a	F				
2	2N271A	150m	10M	2.5m	#J	30	10	20	200m	5.0m	6.0m	1.0m	45	1.0ub	25	7.0	14p	FA	03a	F				
3	2N415	150m	10M	2.5m	#J	30	10	20	200m	5.0m	6.0m	1.0m	80	650nb	25	7.0	12p	FA	T05	A				
4	2N415A	150m	10M	2.5m	#J	30	10	20	200m	5.0m	6.0m	1.0m	80	650nb	25	7.0	12p	FA	T05	A				
5	2N416	150m	10M	2.5m	#J	30	12	20	200m	5.0m	6.0m	1.0m	80	650nb	25	7.0	12p	FA	T05	A				
6	JAN2N428†	150m	10MΔ	2.0m	#S	30	12	20	400m	2.5u	2.5p	1.0mΔ	60	80	25	7.0	20p	FA	T05	A				
7	2N428A†	150m	10MΔ	2.0m	#S	30	18	20	1.0 #	4.0m	2.5p	1.0mΔ	80	80	25	7.0	20p	FA	T05	A				
8	2N450	150m	10M	2.5m	#J	20	12	10	125m	6.0m	5.0p	1.0m	130	90u	4.0k	6.5	20p	Δ	R109	A				
9	2N484	150m	10M	2.5m	#J	12			20m	1.0u	1.0p	1.0m	90				20p	Δ	T05	A				
10	2N1307	150m	10MΔ	2.5m	#J	30		25	300m	6.0m	1.0p	1.0m	60	80	25	7.0	20p	Δ	T05	A				
11	JAN2N1307	150m	10MΔ	2.5m	#S	30		25	300m	6.0m	1.0p	1.0m	60	80	25	7.0	20p	Δ	T05	A				
12	2N1345†	150m	10MΔ	2.5m	#J	10	8.0	6.0	400m	6.0u	3.0p	400m	60	1			14p	A	T05	A				
13	2N1348†	150m	10MΔ	2.5m	#J	12	10	8.0	400m	5.0m	2.5p	3.5m	125	1			14p	A	T05	A				
14	2N1969†	150m	10MΔ	2.5m	#J	30	15	20	400m	2.5u	2.5p	20mΔ	50	1			20p	A	T05	A				
15	UPI1345	150m	10M	2.5m	#J	10	8.0	6.0	400m	6.0u	3.0p	400m	65	1			14p	A	T05	A				
16	2N427†	150m	11M	2.5m	#J	30	15	20	400m	4.0m	2.5p	1.0mΔ	40	1			14p	FA	T05	A				
17	2N518	150m	11M	2.5m	#J	45		30	125m	6.0u	1.0p	1.0m	60	1			12p	A	R32	A				
18 #	2G309	150m	12M	2.3m	#J	15		10	100m	1.0u	6.0p	1.0m	160				12p	A	T05	A				
19 #	2G344	150m	12M	2.3m	#J	15		10	100m	1.0u	6.0p	1.0m	100	1			8.5p	A	R177b	A				
20 #	2G397†	150m	12M	2.5m	#J	30	15	20	200m	6.0u	1.0p	1.0m	40	1			12p	A	T05	A				
21	2N397†	150m	12M	2.5m	#S	30	15	20	200m	6.0m	1.0p	1.0m	40	1			12p	A	T05	A				
22	2N486	150m	12M	2.5m	#J	12			10m	1.0u	6.0p	1.0m	100				12p	FA	T05	A				
23	3907	150m	12M	2.5m	#J	25		12	200m	2.0u	1.5p	1.2m	45	1			15p	Δ	T05	A				
24 #	ASY59N	150m	12M	2.5m	#J	16	10	12	200m	1.0u	0.0p	1.0m	100				20p	Δ	T05	A				
25	2N404†	150m	13M	2.5m	#A	25		12	100m	2.0u	2.0p	24m	40	1			12p	A	T05	A				
26	2N2621	150m	13MΔ	1.8m	#S	15		1.0	100m	1.6u	6.0p	1.0m	15	1			3.5p	Δ	T05	A				
27	2N2624	150m	13MΔ	1.8m	#S	15		1.0	100m	1.6u	6.0p	1.0m	15	1			3.5p	Δ	T05	A				
28	2N2627	150m	13MΔ	1.8m	#S	15		50	100m	2.0u	6.0p	1.0m	15	1			3.5p	Δ	T05	A				
29	UPI404	150m	13M	2.5m	#A	27	150m	12	100m	2.0u	2.0p	25m	40	1			12p	A	T05	A				
30	2N303	150m	14MΔ	2.5m	#J	30	10	20	200m	1.0u	6.0p	1.0m	75				12p	AF	03a	F				
31	ASY27	150m	14M	2.5m	#J	25	15	20	200m	7.0u	5.0p	2.0m	90	100u	1.4k	7.5	11p	A	T05	A				
32 #	ASY27-RT†	150m	14M	2.5m	#J	25	15	20	200m	7.0u	5.0p	2.0m	90	100u	1.4k	7.5	11p	A	T05	A				
33 #	JAN2N417	150m	15MΔ	2.0m	#J	30	12		25u	2.5u	6.0p	1.0m	60	1			20p	Δ	R179q	A				
34	2N522A	150m	15MΔ	2.0m	#S	25	10	10	2.0u	2.0u	5.0p	1.0m	100	1			1.5u	Δ	T05	A				
35	2N1309	150m	15MΔ	2.5m	#J	30	25	25	300m	6.0m	1.0p	1.0m	80	1			20p	Δ	T05	A				
36	JAN2N1309	150m	15MΔ	2.5m	#S	30	25	25	300m	6.0m	1.0p	1.0m	80	1			20p	Δ	T05	A				
37	2N1309A	150m	15MΔ	2.5m	#J	35	35	35	300m	6.0m	1.0p	1.0m	80	1			20p	Δ	T05	A				
38	2N2622	150m	15MΔ	1.8m	#S	24		1.0	100m	1.2u	12p	1.0m	15	1			3.5p	Δ	T05	A				
39	2N2625	150m	15MΔ	1.8m	#S	24		1.0	100m	1.2u	12p	1.0m	15	1			3.5p	Δ	T05	A				
40	2N2628	150m	15MΔ	1.8m	#S	24		50	100m	1.4u	12p	1.0m	15	1			3.5p	Δ	T05	A				
41	2N3000	150m	15M	2.5m	#J	45	15	35	400m	5.0u	5.0p	1.0m	110				10p	A	T05	A				
42 #	ACY38	150m	15M	2.5m	#S	15	15 #	9.0	100m	2.0u	6.0p	1.0m	100	*			10p	A	T05	A				
43	2N2623	150m	16MΔ	1.8m	#S	32		1.0	100m	8.0u	12p	1.0m	20	1			3.5p	Δ	T05	A				
44	2N2626	150m	16MΔ	1.8m	#S	32		1.5	100m	8.0u	12p	1.0m	20	1			3.5p	Δ	T05	A				
45	2N2629	150m	16MΔ	1.8m	#S	32		5.0	100m	1.0u	12p	1.0m	10	1			3.5p	Δ	T05	A				
46	2N428†	150m	17M	2.5m	#J	30	12	20	400m	4.0m	2.5p	1.0mΔ	60	1			14p	FA	T05	A				
47	2N417	150m	20M	2.5m	#J	30	10	20	200m	5.0m	6.0p	1.0m	140				12p	FA	T05	A				
48	2N1017	150m	20M	2.5m	#J	30	10	20	400m	2.5u	3.5p	1.0mΔ	30	1			12p	FA	T05	A				
49	2N523A	150m	21MΔ	2.0m	#S	20	6.0	10	2.0u	2.0u	5.0p	1.0m	125	1			1.5u	Δ	T05	A				
50	TR764	150m	25M	2.8m	#J	20			200m	5.0u	4.5p	1.0m	200					A	T05	A				
51	2N934	150m	35MΔ	2.5m	#S	13	12	1.0	200m	6.0u	3.0p	40m	40	1			12p	A	T05	A				
52	2N1300†	150m	40M	2.5m	#A	13	12	1.0	100m	3.0u	3.0p	1.0m	50					ME	T05	A				
53	2N1854	150m	40MΔ	2.5m	#J	18		2.0	100m	4.2u	5.0p	20m	40	1			12p	ME	T05	A				
54	JAN2N1854†	150m	40MΔ	3.7m	#S	18		2.0	100m	4.0u	7.5p	100m	25	1				Δ	T05	A				
55	2N1301†	150m	60M	2.5m	#A	13	12	4.0	100m	3.0u	3.0p	1.0m	50					DM	R179g	A				
56	UPI1301	150m	60M	2.5m	#A	13	12	4.0	100m	3.0u	3.0p	1.0m	50	1				DM	03e	A				
57	2N1683†	150m	80M	2.0m	#A	13	12	4.0	100m	3.0u	5.0p	40m	85	1			8.0p	ME	T05	A				
58 #	2G106†	150m	120M	2.0m	#A	18	15	4.0	100m	1.0u	2.5p	1.0m	30	1			5p	ME	T05	A				
59	2N512	150m	140MΔ	3.0m	#S	70	70	5	1.0	30m	5.0u	6.0p	10m	40	1			5.0p	ME	T05	A			
60	2G111A†	150m	150M	2.0m	#S	15	7.0	1.5	100m	1.5u	5.0p	1.0m	25	1			6p	ME	T05	A				
61	2N711B†	150m	150M	2.0m	#S	18	7.0	2.0	100m	1.5u	5.0p	1.0m	30	1			6p	ME	T05	A				
62	2N2048†	150m	150MΔ	2.0m	#S	20	15	2.0	100m	5.0u	5.0p	1.0m	50	1			3.0p	ME	T05	A				
63	2N2048A†	150m	150MΔ	2.0m	#S	30	20	2.5	3.0u	3.0u	5.0p	50m	40	1			3.0p	ME	T05	A				
64	2N2400†	150m	150MΔ	2.0m	#S	12	7.0	1.0	100m	3.0u	5.0p	1.0m	30	1			4p	ME	T05	A				
65	2N2635†	150m	150MΔ	2.0m	#S	30	15	2.5	100m	5.0u	5.0p	50m	45	1			5.0p	ME	T05	A				
66	2N2942†	150m	150MΔ	2.0m	#S	50	25	2.5	100m	2.5u	5.0p	50m	40	1			3.5p	ME	T05	A				
67	2N3400†	150m	150MΔ	2.0m	#S	20	20	2.0	100m	5.0u	5.0p	50m	35	1			3p	ME	T05	A				
68	2N2401†	150m	200MΔ	2.0m	#S	15	10	1.5	100m	1.5u	5.0p	1.0m	50	1			4p	ME	T05	A				
69	2N2955†	150m	200MΔ	2.0m	#S	40	25	3.5	100m	3.0u	1.0p	1.0m	20	1			4p	ME	T05	A				
70	2N3323	150m	200MΔ	2.0m	#J	35	35	3.0	100m	1.0u	10p	3.0m	30	1			3p	ME	T05	A				
71	2N3324	150m	200MΔ	2.0m	#J	35	35	3.0	100m	1.0u	10p	3.0m	30	1			3p	ME	T05	A				
72	2N3325	150m	200MΔ	2.0m	#J	35	35	3.0	100m	1.0u	10p	3.0m	30	1			3p	ME	T05	A				
73	2N6365	150m	200MΔ	2.0m	#S	30	10	1.0	100m	1.0u	6.0p	1.0m	20	1			2.0p	ME	T05	A				
74	JAN2N6365	150m	200MΔ	2.0m	#S	30	25	1.0	100m	1.0u	6.0p	1.0m	15	1			2.0p</							

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab	DERATE IN FREE AIR W/°C	T M A M X P	ABS MAX RATINGS @ 25°C				MAX. lcb0 @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L C O D E		
						BVcbo (V)	BVceo (V)	BVeBo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)						
1	2N9771	150m	400M	2.0m	#S	15	10	2.0	200m	5.0u	50	100m	40	1Δ			8p	EMΔ	TO18	A		
2	2N1865	150m	400M	2.5m	#S	15	12	.40	50m	10u	6.0	10m	5.0	Δ			3.0p		TO5	A		
3	2N2957†	150m	400M	2.0m	#J	40	18	3.5	100m	1.0	1.0	50m	130	†			4p		TO18	A		
4	HEPG0008-RT	150m	400M	2.6m	#J	35	35	2.0	100m	500n	3.0m	100	15	Δ			3.5p	D	TO18	A		
5	JAN2N1094	150m	560M	2.0m	#J	30	30	1.0	40m	5.0u	6.0	4.0m	15	Δ			3.5p		TO28	A		
6	2N2455†	150m	600M	2.0m	#S	15	8.0	2.5	200m	2.0u	2.0	2.0m	20	Δ			2.0p		TO18	A		
7	2N1094	150m	645M	2.0m	#J	30	15	1.0	40m	5.0u	6.0	4.0m	50	Δ			2.3p	D†	TO28	A		
8	2N3784	150m	700M	2.0m	#J	30	20	.50	20m	5.0u	10	3.0m	20	Δ			1p	EM	TO72	G		
9	2N3785	150m	700M	2.0m	#J	15	12	.50	20m	5.0u	10	3.0m	15	Δ			1.2p	EM	TO72	G		
10	2N3783	150m	800M	2.0m	#J	30	20	.50	20m	5.0u	10	3.0m	20	Δ			1p	EM	TO72	G		
11	HEP637-RT	150m	800M	2.0m	#J	30	15	.30	10m	5.0u	12	3.0m	30	Δ			6p		TO72	G		
12	MM5000	150m	800M	2.0m	#J	30	15	.30	10m	5.0u	12	3.0m	30	Δ			6p		TO72	G		
13	MM5001	150m	800M	2.0m	#J	30	15	.30	10m	5.0u	12	3.0m	30	Δ			6p		TO72	G		
14	MM5002	150m	800M	2.0m	#J	30	15	.30	10m	5.0u	12	3.0m	30	Δ			6p		TO72	G		
15	2N2456†	150m	1.0G	2.0m	#S	15	8.0	2.5	200m	2.0u	2.0	2.0m	20	Δ			3.0p		TO18	A		
16#	MM2550†	150m	1.0G	2.0m	#J	20	25	.50	100m	10u	5.0	10m	20	Δ			3.0p	EM	TO18	A		
17	2N44A	155m	1.0M	2.5m	#J	20	25	.50	50m	8.0u	5.0	1.0m	30	Δ			40p		R32	A		
18#	AC128	155m*	1.5M	3.3m	#J	22	32	§	1.0	1.0	0.0	300m	90	†			100p	A	TO1	F		
19	2N109	165m	2.7m	2.7m	#J	35	25	12	150m	7.0u	6.0	1.0m	50	Δ			4.0k		TO40	A		
20	2N217	165m	2.7m	2.7m	#J	35	25	12	150m	7.0u	6.0	1.0m	50	Δ			4.0k		TO1	A		
21#	2SB345	165m	17k†	3.3m	#J	32	22	10	100m	10u	5.0	2.0m	125	†			60p	A	TO1	A		
22#	2SB346	165m	17k†	3.3m	#J	32	22	10	100m	10u	5.0	2.0m	220	†			60p	A	TO1	A		
23#	OC72	165m	350k	2.5m	#J	32	16	10	125m	10u	5.4	10m	70	†			70p	A	R8	F		
24	2N2428	165m	1.2M	3.0u	#J	32	32	§	10	30m	10u	5.0	2.0m	120	†			120p	A	TO1	A	
25#	2SB371	165m	2.0M	3.3m	#J	32	30	§	10	200m	15u	5.0	5.0m	125	†			50p	A	TO1	A	
26	2N2429	165m	2.3M	3.0u	#J	32	30	§	10	100m	10u	5.0	2.0m	40	†			50p	A	TO1	A	
27	JAN2N1008B	167m	500k	2.2m	#S	60	55	§	20	300m	15u	5.0	10m	40	Δ			50p	A	TO5	A	
28	2N633	167m	800k	2.8m	#J	35	30	6.0	50m	25u	6.0	10m	60	Δ			80p	FA	TO5	A		
29	2N632	167m	1.0M	2.8m	#J	30	24	6.0	50m	25u	6.0	10m	100	Δ			80p	FA	TO5	A		
30	2N631	167m	1.2M	2.8m	#J	25	20	6.0	50m	25u	6.0	10m	150	Δ			80p	FA	TO5	A		
31	2N359	170m	2.8m	2.8m	#J	25	18	6.0	400m	15u	1.0	50m	100	Δ			100p	A	TO5	A		
32	2N360	170m	2.8m	2.8m	#J	30	30	6.0	400m	15u	1.0	50m	50	Δ			100p	A	TO5	A		
33	2N361	170m	2.8m	2.8m	#J	30	30	6.0	400m	15u	1.0	50m	50	Δ			100p	A	TO5	A		
34	2N362	170m	2.8m	2.8m	#J	25	18	6.0	200m	15u	6.0	1.0m	25	Δ			100p	A	TO5	A		
35	2N363	170m	2.8m	2.8m	#J	32	28	6.0	200m	15u	6.0	1.0m	25	Δ			100p	A	TO5	A		
36	2N1171	170m	10.M	2.8m	#J	30	12	20	400m	5.0u	25	10m	30	Δ			14p	FA	TO5	A		
37	2N655†	171m	5.0M	2.8m	#J	25	16	12	1.0	25u	35	10m	40	†			12p	FA	TO5	A		
38	2N682	171m	8.0M	2.8m	#J	25	10	12	1.0	25u	35	10m	50	†			12p	FA	TO5	A		
39	2N659	171m	10M	2.8m	#J	25	14	12	1.0	25u	35	10m	55	†			12p	FA	TO5	A		
40	2N650	171m	15M	2.8m	#J	25	11	12	1.0	25u	35	10m	65	†			12p	FA	TO5	A		
41	2N661	171m	20M	2.8m	#J	25	9.0	12	1.0	25u	35	10m	75	†			12p	FA	TO5	A		
42	MA112	175m			#J	15	15	15	200m	15u	6.0	1.0m	30	Δ					TO5	A		
43	MA113	175m			#J	15	15	15	200m	15u	6.0	1.0m	50	Δ					TO5	A		
44	MA114	175m			#J	15	15	15	200m	15u	6.0	1.0m	100	Δ					TO5	A		
45	MA115	175m			#J	15	15	15	200m	15u	6.0	1.0m	30	Δ					TO5	A		
46	MA116	175m			#J	15	15	15	200m	15u	6.0	1.0m	50	Δ					TO5	A		
47	MA117	175m			#J	15	15	15	200m	15u	6.0	1.0m	100	Δ					TO5	A		
48	MA288	175m		2.9m	#J	10	10	§	10	20m	6.0	1.0m	180	Δ					TO5	A		
49	MA890	175m	750k	2.9m	#J	40	40	∅	15	200m	100u	6.0	1.0m	30	Δ			25p	A	TO5	A	
50	MA891	175m	1.0M	2.9m	#J	40	40	∅	15	200m	100u	6.0	1.0m	30	Δ			25p	A	TO5	A	
51	MA892	175m	1.2M	2.9m	#J	40	40	∅	15	200m	100u	6.0	1.0m	100	Δ			25p	A	TO5	A	
52	MA893	175m	1.7M	2.9m	#J	40	40	∅	15	200m	100u	6.0	1.0m	190	Δ			25p	A	TO5	A	
53	2N59	180m			#J	25	20	10	200m	15u	5.0	1.0m	50	Δ					TO5	A		
54	2N60	180m			#J	25	20	10	200m	15u	5.0	1.0m	50	Δ					TO5	A		
55	2N61	180m			#J	25	20	10	200m	15u	5.0	1.0m	50	Δ					TO5	A		
56	2N291	180m		4.0m	#J	25	20	10	200m	25u	5.0	100m	45	†				A	O34	A		
57	2N403	180m			#J	25	20	10	200m	15u	9.0	1.0m	970m	†				F	TO5	A		
58	AC178	180m			#J	20	15	10	10	35u	150m	60	Δ							X9c	A	
59	2N609	180m	1.0k		#J	25	15	10	200m	15u	5.0	100	80	†					TO5	A		
60	2N610	180m	1.0k		#J	25	15	10	200m	15u	5.0	100	80	†					TO5	A		
61	2N611	180m	1.0k		#J	25	15	10	200m	15u	5.0	100	80	†					TO5	A		
62	2N402	180m	600k		#J	25	20	10	150m	15u	9.0	1.0m	960m	†				F	TO5	A		
63	2N612	180m	600k		#J	25	15	10	150m	15u	9.0	1.0m	960m	†				F	TO5	A		
64	2N613	180m	850k		#J	25	15	10	200m	15u	9.0	1.0m	960m	†				F	TO5	A		
65	2N614	180m	1.0M	3.0m	#J	40	20	10	200m	15u	100m	45	†					F	TO5	A		
66	2N61B	180m	1.0M	3.0m	#J	50	20	10	200m	15u	100m	45	†					F	TO5	A		
67	2N61C	180m	1.0M	3.0m	#J	60	20	10	200m	15u	100m	45	†					F	TO5	A		
68	TR381	180m	1.2M	2.9m	#J	60	20	10	200m	15u	100m	45	†					F	TO5	A		
69	TR460	180m	1.2M	2.9m	#J	45	25	10	400m	15u	5.0	1.0m	24	†				1.0ub	40	3.0	50p	A
70	TR461	180m	1.2M	2.7m	#J	45	25	10	400m	15u	5.0	1.0m	49	†				1.0ub	30	3.0	50p	A
71	2N60A	180m	1.5M	3.0m	#J	40	20	10	200m	15u	100m	65	†							TO5	A	
72	2N60B	180m	1.5M	3.0m	#J	50	20	10	200m	15u	100m	65	†							TO5	A	
73	2N60C	180m	1.5M	3.0m	#J	60	20	10	200m	15u	100m	65	†							TO5	A	
74	TR382	180m	1.5M	2.8m	#J	25	10	200m	10u	1.0	20m	52	†							TO5	A	
75	2N59A	180m	1.8M	3.0m	#J	40	20	10	200m	15u	100m	90	†							TO5	A	
76	2N59B	180m	1.8M	3.0m	#J	50	20	10	200m	15u	100m	90	†							TO5	A	
77	2N59C	180m	1.8M	3.0m	#J	60	20	10	200m	15u	100m	90	†							TO5	A	
78	2N168†	180m	5.0M	2.4m	#S	30	15</															

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 f <sub>β</sub> (Hz)	3 DERATE IN FREE AIR W/°C	T M E A M P X	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L C O D E				
						BV <sub>cb0</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>eb0</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER										
											V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> (X.0001)								
1	2N650	200m	750kΔ	2.7m	#S	45	30	30	500m	10u	6.0	1.0m	30	Δ							T05	A		
2	2N650A	200m	750kΔ	2.7m	#S	45	30	30	500m	10u	6.0	1.0m	30	Δ							T05	A		
3	JAN2N650A	200m	750kΔ	2.6m	#S	45	30	30	500m	50u	6.0	1.0m	30	Δ	1.0uZb	37 Zb	8.0	25pZ			T05	A		
4	2N1186	200m	750kΔ	2.7m	#S	60	45	30	500m	10u	6.0	1.0m	30	Δ							T05	A		
5	2N2043	200m	750kΔ	2.6m	#J	105	105	75	200m	25u	6.0	1.0m	180		550nb	40		25pZ			T05	A		
6	2N2043A	200m	750kΔ	2.7m	#S	105	105	75	200m	25u	6.0	1.0m	45	Δ	1.0uZb	50		25pZ			T05	A		
7#	ACY31	200m	750kΔ	3.1m	#J	40			20	25m	5.0u	1.2	1.0m	35	Δ							T01	A	
8	MA881	200m	750kΔ	2.6m	#J	60	80	15	500m	100u	6.0	1.0m	30	Δ	100nZb	40	Z	25p			T05	A		
9	MA886	200m	750kΔ	2.6m	#J	50	50	15	500m	100u	6.0	1.0m	30	Δ	1.0uZb	40	Z	25p			T05	A		
10	2N186A	200m	80M	3.3m	#J	25	25	5.0	200m	16u	1.0	100m	24	†		1.2k		40p				R32		
11	2N189	200m	800k	3.3m	#J	32	32		200m	16u	5.0	1.0m	32		1.0ub	29		4.0				R32		
12	2N187A	200m	1.0M	3.3m	#J	25	25	5.0	200m	16u	1.0	100m	36	†		2.0k		40p				R32		
13	2N190	200m	1.0M	3.3m	#J	25	25		200m	16u	5.0	1.0m	42		800nb	29		4.0				R32		
14	2N322	200m	1.0MΔ	2.0m	#J	18	18	5.0	200m	16u	1.0	20m	35	Δ				35p				T05	A	
15	2N651	200m	1.0MΔS	2.7m	#S	45	30	30	500m	10u	6.0	1.0m	50	Δ								T05	A	
16	2N651A	200m	1.0MΔS	2.7m	#S	45	30	30	500m	10u	6.0	1.0m	50	Δ	1.0uZb	37	Z	25pZ				T05	A	
17	JAN2N651A	200m	1.0MΔ	2.6m	#S	45	30	30	500m	50u	6.0	1.0m	50	Δ	700nZb	37	Z	25pZ				T05	A	
18	2N1187	200m	1.0MΔ	2.7m	#S	60	45	30	500m	10u	6.0	1.0m	50	Δ								T05	A	
19#	ZSB415	200m	1.0M	3.3m	#J	32	32	6.0	1.0	14u	0.0	300m	70	†								T01	A	
20#	ZSB495	200m	1.0M	3.3m	#J	25	18	6.0	1.0	20u	0.0	150m	110	†								T01	A	
21	HSE118-RT	200m	1.0M	2.6m	#J	20	12	3.0		10u	1.0	50m	50	Δ								T05	A	
22	MA100	200m	1.0MΔ	2.7m	#J	60	80	15	500m	100u	6.0	1.0m	50	Δ				25pZ				T05	A	
23	MA882	200m	1.0MΔ	2.6m	#J	60	80	15	500m	100u	6.0	1.0m	50	Δ	100nZb	40	Z	25p				T05	A	
24	MA887	200m	1.0MΔ	2.6m	#J	50	50	15	500m	100u	6.0	1.0m	50	Δ	1.0uZb	40	Z	25p				T05	A	
25#	OC78	200m	1.0M	3.0m	#J	20	20	10	200m	10u	1.0	25m	25	Δ				40p				T01	A	
26#	OC81N	200m	1.0M	3.3m	#J	32	16	10	500m	10u	1.5	50m	50	Δ				40p				T01	A	
27	2N188A	200m	1.2M	3.3m	#J	25	25	5.0	200m	16u	1.0	100m	54	†				40p				R32		
28	2N191	200m	1.2M	3.3m	#J	25	25		200m	16u	5.0	1.0m	87		600nb	29		4.0				R32		
29	2N460	200m	1.2M	5.0m	#J	45			400m	15u	5.0	1.0m	960m		1.0ub	30		3.0				T05	A	
30	2N461	200m	1.2M	5.0m	#J	45			400m	15u	5.0	1.0m	980m		1.0ub	30		4.0				T05	A	
31	2N652	200m	1.2MΔS	2.7m	#S	45	30	30	500m	10u	6.0	1.0m	100	Δ								T05	A	
32	2N652A	200m	1.2MΔS	2.7m	#S	45	30	30	500m	10u	6.0	1.0m	100	Δ	1.0uZb	37	Zb	25pZ				T05	A	
33	JAN2N652A	200m	1.2MΔ	2.6m	#S	45	30	30	500m	50u	6.0	1.0m	100	Δ	700nZb	37	Zb	25pZ				T05	A	
34	2N1188	200m	1.2MΔ	2.7m	#S	60	45	30	500m	10u	6.0	1.0m	100	Δ								T05	A	
35#	ACY28	200m	1.2M	3.1m	#J	40	15	30	500m	6.0u	1.2	1.0m	45	Δ								T01	A	
36#	MA983	200m	1.2MΔ	2.6m	#J	60	60	15	500m	100u	6.0	1.0m	100	Δ	100nZb	40	Z	25p				T05	A	
37	MA888	200m	1.2MΔ	2.6m	#J	50	50	15	500m	100u	6.0	1.0m	100	Δ	1.0uZb	40	Z	25p				T05	A	
38	2N241A	200m	1.3M	4.0m	#J	25	25	5.0	200m	16u	1.0	100m	73	†				4.0k				R32		
39#	ACY29	200m	1.4M	3.1m	#J	40			30	25m	12u	1.2	1.0m	45	Δ							T01	A	
40	2N192	200m	1.5M	5.0m	#J	25	25		200m	16u	5.0	1.0m	90		500nb	29		4.0				R32		
41	2N323	200m	1.5MΔ	2.0m	#J	18	18	5.0	200m	16u	1.0	20m	53	Δ				35p				T05	A	
42	2N653	200m	1.5M	2.6m	#J	30	25	25	250m	15u	6.0	1.0m	49					1.8k				T05	A	
43	2N1451	200m	1.5M	3.3m	#J	45	20	10	400m	15u	2.0	20m	45	†	1.0ub	40		3.0				T05	A	
44	2N1185	200m	1.7MΔ	2.7m	#S	45	30	30	500m	50u	6.0	1.0m	190	Δ				37	Zb			T05	A	
45	MA884	200m	1.7MΔ	2.6m	#J	60	60	15	500m	100u	6.0	1.0m	190	Δ	1.0uZb	40	Z	25p				T05	A	
46	MA889	200m	1.7MΔ	2.6m	#J	50	50	15	500m	100u	6.0	1.0m	190	Δ	1.0uZb	40	Z	25p				T05	A	
47#	ACY30	200m	1.8M	3.3m	#J	40	20	40		12u	1.2	1.0m	60	Δ				35p				T01	A	
48	TR383	200m	1.8M	3.3m	#J	25	10	10	200m	25u	1.0	150m	72	†				20p				T05	A	
49	2N324	200m	2.0MΔ	2.0m	#J	18	18	5.0	200m	16u	1.0	20m	72	Δ				35p				T05	A	
50	2N654	200m	2.0M	2.6m	#J	30	25	25	250m	15u	6.0	1.0m	80					3.1k				T05	A	
51	2N1446	200m	2.0M	3.3m	#J	45	25	15	400m	10u	6.0	1.0m	30		600nb	25		300m				T05	A	
52#	ZSB51	200m	2.0M	3.3m	#J	30		3.0	200m	16u	1.0	20m	43	†	.60u	28		8.0				T05	A	
53	HEPG0005-RT	200m	2.0M	2.6m	#J	25	25	25	200m	15u	1.0	10m	60	†								T05	A	
54	HEPG0006-RT	200m	2.0M	2.6m	#J	25	25	25	200m	15u	1.0	10m	100	†								T05	A	
55	HEPG0007-RT	200m	2.0M	2.6m	#J	25	25	25	200m	15u	1.0	10m	200	†								T05	A	
56	MA44041	200m	2.0M	2.6m	#J	25	24	12	350m	10u	6.0	1.0m	145		50u	4.0k		8.5				T05	A	
57	MA4404A	200m	2.0M	2.6m	#J	25	24	12	350m	10u	6.0	1.0m	145		50u	4.0k		8.5		4.0p			T05	A
58	2N1452	200m	2.2M	3.3m	#J	45	20	10	400m	15u	2.0	20m	60	†	100nb	40		4.0				T05	A	
59	2N508	200m	2.5MΔ	3.3m	#J	18	18	5.0	200m	7.0u	1.0	20m	99	Δ				35pZ				T05	A	
60	2N655	200m	2.5M	2.6m	#J	30	25	25	250m	15u	6.0	1.0m	130					5.7k				T05	A	
61#	ZG303	200m	3.0MΔS	3.0m	#J	30	30	10	300m	15u	6.0	1.0m	30	Δ								R177a		
62	2N381	200m	3.0M	5.0m	#J	50	25	20	400m	10u	5.0	1.0m	35	Δ	420u	300		6.6				T05	A	
63	2N1447	200m	3.0M	3.3m	#J	45	25	15	400m	10u	6.0	1.0m	45		620nb	25		500m				T05	A	
64	MA1703	200m	3.0MΔ	2.6m	#J	25	25	25	500m	15u	1.0	100m	100	Δ								T05	A	
65	MA1706	200m	3.0MΔ	2.6m	#J	15	15	4.5	500m	15u	1.0	100m	100	Δ								T05	A	
66	2N1413	200m	3.2M	3.3m	#J	35	25	10	200m	12u	5.0	1.0m	30		650nb	29		4.8				T05	A	
67	2N1189	200m	3.5M	2.6m	#J	45	30	15	500m	50u	6.0	1.0m	120		100nb	31						T05	A	
68	2N1353†	200m	3.5M	3.3m	#J	15	10	10	200m	6.0u	1.0	10m	70	†				100				T05	A	
69	UPI1353	200m	3.5M	3.3m	#J	15	10	10	200m	6.0u	1.0	10m	75	†								O3e		



## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	DERATE IN FREE AIR W/°C (Hz)	TEMP. RANGE (°C)	ABS. MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC. TURE	DWG. # TO200 Ser.	L E O D E	
					BV <sub>ceo</sub> (V)	BV <sub>ce0</sub> (V)	BV <sub>bo</sub> (V)	I <sub>c</sub> (A)	V <sub>cb</sub> (V)		I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)						
					h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>		h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>						
1	2N1318	200m	10MΔ	3.3m	#J	10	6.0	8.0	400m	7.0u	25φ	1.0mΔ	85 ↑			14p	A		A		
2#	2G140	200m	11M	3.3m	#S	15			200m	6.0u	5.0	500u			12p	A		A			
3#	2G141	200m	12M	3.3m	#S	15			200m	6.0u	5.0	500u			12p	A		A			
4#	2G304	200m	12M\$	3.0m	#A	30	30	10	300m	2.0uφ	6.0φ	1.0mφ	130					R177a	A		
5	2N1357†	200m	12M	3.3m	#J	30	15	20	200m	6.0uφ	1.0φ	10mφ	85 ↑	b				T05	A		
6#	2G306	200m	20M\$	3.0m	#A	20	20	10	300m	2.0uφ	6.0φ	1.0mφ	160					R177a	A		
7	2N1018	200m	20MΔ	2.8m	#A	30	6.0	20	400m	4.0uφ	.25φ	1.0mΔ	70 Δ			20pφ	A		T05	A	
8	HEPG0009-RT	200m	25M#	3.3m	#J	25	24	12	350m	5.0uφ		12mφ	80 ↑					T018	A		
9	2N2225†	200m	30.M	5.0m	#S	15	4.0	10	400m	25u	50φ	400mφ	60 ↑			14p	A		T05	A	
10#	2G404	200m	75.M\$	3.1m	#J	20		1.0	25m	50u	6.0	1.0m	150			2.5p	AD		T012	A	
11#	2G401	200m	80.M\$	3.1m	#J	20	20	1.0	25m	50u	6.0φ	1.0mφ	100 ↑			2.5p	AD		T05	A	
12#	2G402	200m	80.M\$	3.1m	#J	20	20	1.0	25m	50u	6.0φ	1.0mφ	100 ↑			2.5p	ADφ		T05	A	
13#	2G403	200m	130M\$	3.1m	#J	40	40	1.0	25m	100φ	6.0φ	2.0mφ	100 ↑			2.5p	ADφ		T012	A	
14	2N1204A	200m	220M\$Δ	2.6m	#S	20	15	4.0	500m	7.0uφ	.50φ	200mφ	25 Δ			8.0pφ	AD		T039	A	
15	2N1204†	200m	320M\$	2.7m	#S	20	15	4.0	500m	7.0uφ	1.5φ	400mφ	35 #			7.0p	AD		T039	A	
16#	AC131	215m		3.3m	#J	30	18 *	10	1.0	30u	2.0φ	150mφ	120 #					XXXXX		A	
17	2N2541†	215m	10M†Δ	2.9m	#J	30	14	12	1.0	20uφ	.35φ	50mφ	60 Δ			20pφ	A		T05	A	
18	HSE106-RT	220m	500k\$	2.9m	#J	45	20	30		10u	1.0φ	20mφ	30 Δ						T05	A	
19	HSE103-RT	220m	1.0M\$	2.9m	#J	20	12	5.0		10u	1.0φ	20mφ	30 Δ						T05	A	
20	HSE104-RT	220m	1.0M\$	2.9m	#J	20	12	5.0		10u	1.0φ	20mφ	50 Δ						T05	A	
21	OC74	220m	1.0M	3.3m	#J	20	20	5.0	300m	20uφ	6.0φ	5.0mφ	40 Δ			40p	A		T01	A	
22#	OC83N	220m	1.0M\$	3.3m	#J	32	32	3.0	500m	10uφ	1.0φ	50mφ	50 Δ			40p	A		T01	A	
23#	OC84N	220m	1.0M\$	3.3m	#J	32	32	10	1.0	10uφ	1.0φ	50mφ	60 Δ			40p	A		T01	A	
24#	AC138	220m	1.5M	3.3m	#J	32	32	10	1.2	14uφ	6.0φ	5.0mφ	100						T01	A	
25#	AC139	220m	1.5M	3.3m	#J	32	32	10	1.2	14uφ		400mφ	80 ↑						T01	A	
26#	AC142	220m	1.5M	3.3m	#J	32	32	10	1.2	14uφ		400mφ	80 ↑						T01	A	
27	AC193	220m	3.0M			32	15	10		15u		400mφ	90 Δ†			40p	A		T01	A	
28	2N524	225m		3.0m	#J	45	30	15	500m	10uφ	1.0φ	100mφ	23 Δ			40pφ	A		T05	A	
29	2N525	225m		3.0m	#J	45	30	15	500m	10uφ	1.0φ	100mφ	30 Δ			40pφ	A		T05	A	
30	2N526	225m		3.0m	#J	45	30	15	500m	10uφ	1.0φ	100mφ	47 Δ			40pφ	A		T05	A	
31	2N527	225m		3.0m	#J	45	30	15	500m	10uφ	1.0φ	100mφ	65 Δ			40pφ	A		T05	A	
32#	AC116	225m*φ		5.0mφ	#J	30	18 *	12	200m	20u	6.0φ	4.0mφ	55 Δ*			21p	A		X9	A	
33#	AC123	225m*φ		5.0mφ	#J	45	32 *	12	200m	18uφ	6.0φ	4.0mφ	55 Δ*			21p	A		X9	A	
34	GT81HS	225m		3.0m	#S	25		10		25u	5.0φ	1.0m	120			35p	A			A	
35#	ZSB178	225m	.70MΔ		#J	20	30	6.0	300m	20uφ	1.0φ	300m	65 ↑						R178b	A	
36	JAN2N526	225m	1.0MΔ	3.0m	#S	45	30	15	500m	10uφ	5.0	1.0m	44 Δ			40pφ	A		T05	A	
37	2N2431	225m	1.5M\$	3.4m	#J	32	32	10	1.0	10uφ	0.0	40m	90 Δ			100pφ	A		T01	A	
38#	2G319	225m	2.0M	3.7m	#J	30	20	3.0	200m	18uφ	1.0φ	20mφ	35 ↑			27p	A		T05	A	
39#	2G524†	225m	2.0M	3.7m	#J	45	30	15	500m	10uφ	5.0φ	1.0m	30			27p	A		T05	A	
40#	2G1024†	225m	2.0M	3.7m	#J	70	40	20	500m	30u	5.0φ	1.0m	30			27p	A		T05	A	
41	2N319	225m	2.0M	3.7m	#J	20	20	20	200m#	18uφ	1.0φ	20mφ	34 ↑			25p	A		T05	A	
42#	ZSB218	225m	2.0M	3.7m	#J	80	40	20	500m	10uφ	1.0φ	200mφ	50 ↑			30p	A		T05	A	
43#	ASY81	225m	2.0M	3.7m	#J	60	35	25	500m	15u	1.0φ	100mφ	80 ↑			25p	A		T05	A	
44#	2G320	225m	2.5M	3.7m	#J	30	20	3.0	200m	18uφ	1.0φ	20mφ	54 ↑			27p	A		T05	A	
45#	2G525†	225m	2.5M	3.7m	#J	45	30	15	500m	10uφ	5.0φ	1.0m	44 ↑			27p	A		T05	A	
46#	2G577	225m	2.5M	3.7m	#J	70	30	20	500m	30uφ	5.0φ	1.0m	65			27p	A		T05	A	
47#	2G1025†	225m	2.5M	3.7m	#J	70	40	20	500m	30u	5.0φ	1.0m	44 ↑			27p	A		T05	A	
48	2N320	225m	2.5M	3.7m	#J	20	20	20	200m#	18uφ	1.0φ	20mφ	50 ↑			25p	A		T05	A	
49#	ZSB225	225m	2.5M	3.7m	#J	45	30	15	500m	10uφ	1.0φ	20mφ	53 ↑			27p	A		T05	A	
50#	2G526†	225m	3.0M	3.7m	#J	45	30	15	500m	10uφ	5.0φ	1.0m	64			27p	A		T05	A	
51#	2G1026†	225m	3.0M	3.7m	#J	70	40	20	500m	30u	5.0φ	1.0m	64			27p	A		T05	A	
52	2N321	225m	3.0M	3.7m	#J	20	20	20	200m#	18uφ	1.0φ	20mφ	80 ↑			25p	A		T05	A	
53	2N1924	225m	3.0M	3.6m	#J	60	40	25	500m	10uφ	5.0φ	1.0m	44			18p	A		T05	A	
54#	AC184	225m	3.0M\$	3.0m	#S	32	24	10	500m	15uφ	1.0φ	200mφ	110 #*			18p	A		T05	A	
55#	2G321	225m	3.1M	3.7m	#J	30	20	3.0	200m	18uφ	1.0φ	20mφ	85 ↑			27p	A		T05	A	
56#	2G527†	225m	3.3M	3.7m	#J	45	30	15	500m	10uφ	5.0φ	1.0m	81			27p	A		T05	A	
57#	2G1027†	225m	3.3M	3.7m	#J	70	40	20	500m	30u	5.0φ	1.0m	87			27p	A		T05	A	
58	2N1925	225m	3.5M	3.6m	#J	60	40	25	500m	10uφ	5.0φ	1.0m	64			18p	A		T05	A	
59	2N1926	225m	4.0M	3.6m	#J	60	40	25	500m	10uφ	5.0φ	1.0m	80			18p	A		T05	A	
60	2N524A	225m	5.0Mφ	3.0m	#J	45	30	15	500m	10uφ	5.0	1.0m	41 φ			40pφ	A		T05	A	
61	2N525A	225m	5.5Mφ	3.0m	#J	45	30	15	500m	10uφ	5.0	1.0m	64 φ			40pφ	A		T05	A	
62	2N526A	225m	6.5Mφ	3.0m	#J	45	30	15	500m	10uφ	5.0	1.0m	88 φ			40pφ	A		T05	A	
63	2N527A	225m	7.0Mφ	3.0m	#J	45	30	15	500m	10uφ	5.0	1.0m	120 φ			40pφ	A		T05	A	
64	JAN2N537	225mφ	1.0G\$Δ	3.0m	#J	30	30	1.0	100u	5.0uφ	10φ	10m	10			2.8pφ	A		T029	A	
65	2N1614	240m		4.0m	#J	65	40	12	300m	25u	1.0φ	20mφ	18 Δ			60pφ	A		R32	A	
66	2N2173	240m		3.2m	#S	25	15	3.0	750m	10uφ	1.0φ	200mφ	30 Δ			60pφ	A		T039	A	
67	2N1056	240m	500kΔ	4.0m	#J	70	50	#	15	300m	25u	1.0φ	20mφ	18 Δ			60pφ	A		R32	A
68	2N1057	240m	500kΔ	4.0m	#J	45	45	#	5.0	300m	18u	1.0φ	20mφ	34 Δ			60pφ	A		R32	A
69#	2G270	240m	2.5M	4.0m	#J	30	20	20	200m	18u	1.0φ	100m	40 ↑						T05	A	
70#	2G271	240m	3.1M	4.0m	#J	30	20	20	200m	18u	1.0φ	100m	75 ↑						T05	A	
71	2N1384†	240m	35.MΔ	4.0m	#A	30	30	1.0	500m	50u	.50φ	200mφ	50 ↑						T011	A	
72	2N2181†	240m	150M\$Δ	3.2m	#S	20	12	3.5	400m	7.0uφ	.27φ	170mφ	25 Δ			10pφ	A		T05	A	
73	2N586	250m		4.2m	#J	45	25	12	250m	18u	.50	250mφ	55 ↑						R27	A	
74	JAN2N1174	250m		3.3m	#S	35	20	35	200m	10uφ	1.0φ	500u	50 Δ			2.5pφ	A		T029	A	
75	2N1273	250m		3.3m	#S	15	15	10	200m	14uφ	5.0φ	1.0m	20 Δ						T05	A	
76	2N1274	250m		3.3m																	



## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN AIR W/°C	ABS MAX RATINGS @25°C				MAX. Ic @MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG Y200 S/a TO200 Ser.	L C O D E				
				BVcbo (V)	BVceo (V)	BVeBo (V)	Vcb (V)		le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)									
				h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>		h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>									
1#	2G384	250m	1.0MΔ	3.8m	#J	50	25	12	1	10u	1.00	50m	100	Δ	A	T05	A					
2#	2G385	250m	1.0MΔ	3.8m	#J	50	25	12	1	10u	1.00	50m	100	Δ	A	T05	A					
3#	2G386	250m	1.0MΔ	3.8m	#J	40	20	12	1	10u	1.00	50m	55	Δ	A	T05	A					
4#	2G387	250m	1.0MΔ	3.8m	#J	40	20	12	1	10u	1.00	50m	100	Δ	A	T05	A					
5#	2N398B	250m	1.0M	3.3m	#A	105	105	∅	75	200m	6.0u	5.0m	20	Δ	A	T05	A					
6#	2SB476	250m	1.2M	3.8m	#J	20	10	6.0	2	500u	0.0	2.0	75	Δ	A	T039	A					
7#	2SB476S	250m	1.2M	3.8m	#J	20	10	10	2.0	500u	0.0	2.0	100	Δ	A	T039	A					
8#	2SB476W	250m	1.2M	3.8m	#J	20	10	10	2.0	500u	0.0	2.0	100	Δ	A	T039	A					
9#	2SB533	250m	1.2M	4.2m	#J	20	10	12	2.0	200u	0.0	2.0	75	Δ	A	T039	A					
10	2N597	250m	3.0MΔ	3.3m	#J	45	40	∅	45	500m	25u	1.00	100m	40	Δ	A	T05	A				
11	2N1997†	250m	3.0MΔ	3.3m	#S	45	15	45	500m	5.0u	1.00	100m	40	Δ	A	T05	A					
12	2N2930†	250m	4.0MΔ	3.3m	#J	30	12	20	500m	7.0u	.500	10m	60	Δ	A	T05	A					
13	2N598†	250m	5.6MΔ	3.3m	#S	35	35	∅	30	500m	25u	1.00	100m	70	Δ	A	T05	A				
14	JAN2N598†	250m	5.6MΔ	3.3m	#S	35	35	∅	30	500m	25u	1.00	200m	50	Δ	A	T05	A				
15	2N1998†	250m	5.6MΔ	3.3m	#S	35	15	30	500m	5.0u	1.00	100m	70	Δ	A	T05	A					
16	2N1174†	250m	7.0M	3.3m	#J	35	35	∅	30	200m	10u	1.00	500u	85	Δ	A	T029	A				
17	2N1478	250m	8.0M	3.3m	#J	30	20	20	500m	5.0u	1.00	100m	70	Δ	A	T09	A					
18	2N599†	250m	10MΔ	3.3m	#J	30	20	∅	20	500m	25u	1.00	200m	75	Δ	A	T05	A				
19	JAN2N599†	250m	10MΔ	3.3m	#S	30	20	∅	20	500m	25u	1.00	200m	75	Δ	A	T05	A				
20	2N1999†	250m	10MΔ	3.3m	#S	30	15	20	500m	5.0u	1.00	100m	100	Δ	A	T05	A					
21	2N2374	250m	15.0M	3.0m	#S	35	35	∅	35	500m	100u	1.00	12	2.0m	140	90u	3.0k	8.7	14p	A	T05	A
22	2N1495†	250m	150MΔ	3.3m	#S	40	25	4.0	500m	7.0u	.500	200m	25	Δ	A	T09	A					
23	2N1495A	250m	150MΔ	3.3m	#S	40	25	4.0	500m	2.0u	.500	200m	25	Δ	A	T09	A					
24	JAN2N1195	250m	400MΔ	3.3m	#S	30	20	1.0	40m	5.0u	1.00	10m	24	Δ	A	T05	A					
25	AC117	280m			#J	32	18	10	1.0	300m	1.00	300m	110		A	T01	A					
26#	ASY76	280m	500k	13m	#J	40	20	10	1.0	10u	1.00	600m	20	Δ	A	T05	A					
27#	ASY77	280m	500k	13m	#J	60	20	10	1.0	10u	1.00	600m	20	Δ	A	T05	A					
28#	ACY41†	280m	600k	4.0m	#J	32	18	12	500m	100u	6.00	1.0m	90		A	T05	A					
29#	ACY40†	280m	800k	4.0m	#J	32	18	12	500m	100u	6.00	1.0m	45		A	T05	A					
30#	ACY17†	280m	1.0M	4.0m	#J	70	32	12	500m	100u	6.00	1.0m	85		A	T05	A					
31#	ACY18†	280m	1.0M	4.0m	#J	50	30	12	500m	100u	6.00	1.0m	60		A	T05	A					
32#	ACY20	280m	1.0M	4.0m	#J	40	20	12	500m	100u	6.00	1.0m	85		A	T05	A					
33#	ACY22†	280m	1.0M	4.0m	#J	20	15	12	500m	100u	6.00	1.0m	75		A	T05	A					
34#	ACY39†	280m	1.0M	4.0m	#J	110	40	25	500m	100u	6.00	1.0m	85		A	T05	A					
35#	ACY44	280m	1.0M	4.0m	#J	50	30	12	500m	100u	6.00	1.0m	60		A	T05	A					
36#	ACY19†	280m	1.3M	4.0m	#J	50	30	12	500m	100u	6.00	1.0m	140		A	T05	A					
37#	ACY21	280m	1.3M	4.0m	#J	40	20	12	500m	100u	6.00	1.0m	140		A	T05	A					
38#	AC142K	280m	1.5M	4.0m	#J	32	32	∅	10	1.2	14u	400m	80	Δ	A	T01	A					
39	2N2207	280m	140MΔ	5.2m	#S	70	50	50	50m	10u	6.00	1.0m	140		A	T07	H					
40#	2SB377	270m	1.4MΔ	3.3m	#J	32	30	∅	150m	10u	6.00	.50m	134		A	T05	A					
41#	2SB383	270m	3.0M		#J	32	30	∅	500m	10u	1.00	20m	84	Δ	A	T05	A					
42	2N2706	280m	2.5M	3.3m	#J	32	32	∅	200m	10u	0.0	50m	115	Δ	A	T01	A					
43	2N672†	300m		5.0m	#J	25	25	∅	25	2.0	25u	5.00	10m	40	Δ	A	R2	A				
44	2N1008	300m		2.7m	#S	20	20	15	300m	10u	5.00	10m	40	Δ	A	T05	A					
45	2N1008A	300m		2.7m	#S	40	40	15	300m	10u	5.00	10m	40	Δ	A	T05	A					
46	2N1008B	300m		2.7m	#S	60	60	15	300m	15u	5.00	10m	40	Δ	A	T05	A					
47	2N1176	300m		5.0m	#S	10	10	∅	10	10	5.00	10m	20	Δ	A	T05	A					
48	2N1176A	300m		5.0m	#S	40	40	∅	300m	25u	5.00	10m	20	Δ	A	T05	A					
49	2N1176B	300m		5.0m	#J	60	60	∅	300m	25u	5.00	10m	20	Δ	A	T05	A					
50	2N1287	300m		2.5m	#S	25	25	∅	15	300m	15u	5.00	10m	40	Δ	A	F15	C				
51	2N1287A	300m		2.5m	#S	25	25	∅	15	300m	15u	5.00	10m	60	Δ	A	F15	C				
52	2N2100A†	300m		4.0m	#S	40	20	4.0	500m	12u	1.00	200m	30	Δ	A	T09	A					
53#	GT402D	300m			*A	25	∅	∅	500m	25u	1.0	3.0m	80	Δ	A	T05	A					
54#	GT402E	300m			*A	25	∅	∅	500m	25u	1.0	3.0m	150	Δ	A	T05	A					
55#	GT402I	300m			*A	40	∅	∅	500m	25u	1.0	3.0m	150	Δ	A	T05	A					
56#	GT402SZ	300m			*A	40	∅	∅	500m	25u	1.0	3.0m	80	Δ	A	T05	A					
57	2N674	300m	400kΔ	5.0m	#J	75	75	70	2.0	100u	1.50	1.0	40	Δ	A	R2	A					
58	2N1124	300m	400kΔ	5.0m	#J	40	35	∅	40	250m	75u	6.0	10m	40	Δ	A	R2	A				
59	2N670	300m	700k		#J	40	40	40	2.0	25u	1.50	1.0	100		A	R2	A					
60	2N1125	300m	1.0MΔ	5.0m	#J	40	40	∅	40	250m	75u	1.00	500m	50	Δ	A	R2	A				
61#	2SB22	300m	1.0M	5.0m	#J	25	25	∅	12	200m	15u	1.50	100m	100	Δ	A	T01	A				
62#	AC180	300m	1.0MΔ	4.0m	#S	32	24	∅	10	1.0	20u	1.0	600m	110	Δ	A*	R178	A				
63#	2SB461	300m	1.2M		#J	35	30	∅	12	400m	20u	1.00	400m	80	Δ	A	T05	A				
64	40396/P	300m	∅	5.5m	#J	18	18	∅	2.5	500m	14u	1.00	50m	50	Δ	A	T01	A				
65#	ACY32VI	300m	1.5M	3.3m	#J	32	30	∅	16	200m	18u	5.00	1.0m	150	Δ	A	T01	A				
66	2N2000†	300m	2.0MΔ	4.0m	#S	50	15	20	1.0	10u	.300	100m	50	Δ	A	T05	A					
67	2SB421	300m	2.5M	5.0m	#J	80	80	∅	1.0	600m	50u	1.00	150m	70	Δ	A	R177d	A				
68	GT5151	300m	2.5M	4.0m	#J	40	10	15	20	1.0	25u	.500	1.0	40	Δ	A	T05	A				
69	2N2001	300m	6.0MΔ	4.0m	#S	30	15	20	1.0	6.0u	.300	100m	100	Δ	A	T05	A					
70	2N2648†	300m	10MΔ	4.0m	#C	30	25	∅	30	1.0	100u	.500	1.0	80	Δ	A	T05	A				
71	GT5153	300m	10M	4.0m	#S	25	6.0	15	15	25u	.500	1.0	80	Δ	A	T05	A					
72	2N3443	300m	75MΔ	4.0m	#S	20	15	1.0	100m	5.0u	1.00	10m	20	Δ	A	T05	A					
73	2N331	300m	100M	3.3m	#A	30	15	12	200m	16u	6.00	1.0m	50		A	T09	A					
74	2N3883†	300m	100MΔ	4.0m	#S	25	15	3.0	250m	100u	1.00	200m	30	Δ	A	T05	A					
75#	2G110	300m	200M	5.0m	#J	36	15	2.5	50m	10u	3.0	50m	15		ME	T05	A					
76	2N705	300m	300M	4.0m	#J	15	3.5	50m	3.0u	3.0	.30	10m	25	Δ	DM	T018	A					
77	2N710	300m	300M	4.0m	#J	15	2.0	100m	3.0u	3.0	.500	10m	40	Δ	DM	T018	A					
78	2N960	300m	300M	4.0m	#J	15	7.0	2.5	100m	3.0u	.300	10m	20	Δ	DM	T018	A					
79	2N961	300m	300M	4.0m	#J	12	7.0	2.0	100m	3.0u	.300	10m	20	Δ	DM	T018	A					
80	2N962	300m	300M	4.0m	#J	12	7.0	1.2	100m	3.0u	.300	10m	20	Δ	DM	T018	A					
81	2N964	300m	300M	4.0m	#J	15	7.0	2.5	100m	3.0u	.300	10m	40	Δ	DM	T018	A					
82	2N965	300m	300M	4.0m	#J	15	7.0	2.0	100m	3.0u	.300	10m	40	Δ	DM	T018	A					
83	2N966	300m	300M	4.0m	#J	15	7.0	1.2	100m	3.0u	.300	10m	40	Δ	DM</							

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	T M E A M X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L C O D E	
					BV <sub>cb0</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>eb0</sub> (V)	I <sub>c</sub> (A)		BIAS		h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)					
					V <sub>cb</sub> (V)	V <sub>le</sub> (A)	h <sub>fe</sub>	hoe		hie	hre									
1	2N1494A	400m	220M $\Delta$	5.3m	#S	20	15	4.0	500m	7.0u $\phi$	.50 $\phi$	200m $\phi$	25 t $\Delta$			8p $\square$	AD	T031	A $\phi$	
2	2N1494T	400m	320M $\Delta$	5.3m	#S	20	15	4.0	500m	7.0u $\phi$	1.5 $\phi$	400m $\phi$	35 t $\#$			7.0p	A	T031	A $\phi$	
3#	AC132	500m*	2.0m $\Delta$	3.3m	#J	32	32	5	200m	10u $\phi$	0.0	50m	115 t $\#$			40p $\Delta$	A	T01	F	
4#	2SB347	500m $\phi$	17k $\dagger$	3.3m	$\phi$ J	32		10	100m	10u $\phi$	5.0	2.0m	125				A $\phi$	T01	A	
5#	2SB348	500m	17k $\dagger$		$\phi$ J	32		10	100m	10u $\phi$	5.0	2.0m	180				A $\phi$	T05	A $\Delta$	
6#	ASY80	500m	700k	13m		40		20	1.0	10u $\phi$	1.0 $\phi$	600m $\phi$	40			30p	A*	T05	A $\Delta$	
7#	AC132-01	500m	2.0M $\Delta$	5.2m	#J	32	12	10	200m	10u $\phi$	0.0	200m $\phi$	70 t $\#$			40p $\Delta$	A*	X9c	A	
8	2N3601T	500m	20M $\Delta$	6.7m	#S	100	40	2.5	3.5	200u $\phi$	1.5 $\phi$	1.0 $\phi$	60 t $\Delta$				A	R179q	A $\phi$	
9	2N3603T	500m	20M $\Delta$	6.7m	#S	130	55	2.5	3.5	200u $\phi$	1.5 $\phi$	1.0 $\phi$	60 t $\Delta$				A	R179q	A $\phi$	
10	2N1486T	500m	150M $\Delta$	6.7m	#J	40	25	4.0	500m	7.0u $\phi$	.50 $\phi$	200m $\phi$	25 t $\Delta$			6.5p $\square$	A	T031	A $\phi$	
11	SK3004-RT	600m	1.0M $\Delta$			32	25	1.2	1.0	1.0	1.0	150m $\phi$	90 t $\#$				A	T01	A	
12#	2SB405	720m $\phi$	700k $\Delta$		#J	25	25	5	6.0	1.0	50u	1.0 $\phi$	200m $\phi$	100 t $\#$				A	T01	A
13	2N1123	750m $\phi$	5.0M	10m	#J	45	40	4.5	500m	25u	1.0 $\phi$	100m $\phi$	70 t $\#$			15p	A $\Delta$	T80	A	
14	JAN2N600T	750m	5.6M $\Delta$	10m	#S	35	35	30	30	25u	1.0 $\phi$	200m $\phi$	150 t $\Delta$			20p $\square$	A $\Delta$	T80	A	
15	2N600	750m $\phi$	10.M	10m	#J	35	35	30	500m	25u	1.0 $\phi$	100m $\phi$	125 t $\#$			15p	A $\Delta$	T80	A	
16	2N801T	750m $\phi$	18M	10m	#J	30	20	2.0	500m	25u	5.0 $\phi$	3.0m	50 t $\#$			18p	A	T80	A $\phi$	
17	2N3602T	750m	20M $\Delta$	10m	#S	100	40	2.5	3.5	200u $\phi$	1.5 $\phi$	1.0 $\phi$	60 t $\Delta$				A	T55	F $\phi$	
18	2N3604T	750m	20M $\Delta$	10m	#S	130	55	2.5	3.5	200u $\phi$	1.5 $\phi$	1.0 $\phi$	60 t $\Delta$				A	T55	F $\phi$	
19	2N1385	750m $\phi$	250M $\Delta$	10m	#S	25	10	4.0	100m	10u $\phi$	10 $\phi$	10m $\phi$	10 t $\Delta$			2.5p $\square$	A	R179p	A $\phi$	
20	2N2929	750m $\phi$	700M $\Delta$	10m	#S	25	10	.75	100m	5.0u $\phi$	10 $\phi$	10m $\phi$	10 t $\Delta$			3p $\square$	A	T05	A $\phi$	
21#	2SB458	800m	13m $\phi$		#J	25	25	1.2	1.0	100u $\phi$	1.5 $\phi$	500m $\phi$	28 t $\Delta$				A	F9	A $\phi$	
22#	AC188K	800m	1.5M $\Delta$	13m	#J	25	15	1.0	1.0	200u	0.0	300m	200 t $\#$				A	X9d	A $\phi$	
23#	2N370	800m	30M		$\phi$ A	24		.50	10m	10u						90p $\Delta$	AD	T07	A $\phi$	
24#	AFY19	800m	350M $\Delta$	4.0m	#J	32	32	.50	300m	10u $\phi$						30p $\Delta$	AD	T039	A $\phi$	
25	JAN2N2553	900m	12m	12m	#J	60	40	20	20	70u $\phi$	1.5 $\phi$	500u $\phi$	2.0 $\Delta$			18		T27	A $\phi$	
26	JAN2N2555	900m	12m	12m	#J	100	60	20	18	70u $\phi$	1.5 $\phi$	500u $\phi$	2.0 $\Delta$			60 $\square$		T27	A $\phi$	
27#	ASY48	900m*	1.2M $\Delta$	3.3m	#J	64	45	18	300m	18u	.50 $\phi$	100m $\phi$	50 t $\#$				A	T01	A	
28#	AC121	900m*	1.5M $\Delta$	3.3m	#J	20	20	10	300m	25u	.50 $\phi$	100m $\phi$	100 t $\#$				A	T01	A	
29#	AC152	900m*	1.5M $\Delta$	3.3m	#J	32	24	10	500m	25u	.50 $\phi$	100m	75 t $\#$				A	T01	A	
30#	ASY70	900m*	1.5M $\Delta$	3.3m	#J	32	30	18	300m	18u	.50 $\phi$	100m $\phi$	80 t $\#$				A	T01	A	
31#	AC162	900m*	1.7M $\Delta$	3.3m	#J	32	24	10	200m	25u	5.0	2.0m	110 t $\#$			80u	A $\dagger$	T01	A	
32#	AC163	900m*	2.3M $\Delta$	3.3m	#J	32	24	10	200m	25u	5.0	2.0m	160 t $\#$			90u	A	T01	A	
33	2N673T	1.0 $\phi$		16m $\phi$	#J	25	25	25	2.0	75u $\phi$							A	T026	A $\square$	
34	2N875	1.0 $\phi$	400k $\Delta$	16m $\phi$	#J	75	75	70	2.0	100u $\phi$	1.5 $\phi$	1.0 $\phi$	40 $\Delta$				A $\Delta$	T026	A $\square$	
35	2N871	1.0 $\phi$	700k		#J	40	40	40	2.0m	25u $\phi$	1.5 $\phi$	1.0m $\phi$	100 t $\#$				A	T026	A $\square$	
36#	AC153K	1.0 *	1.5M $\Delta$		#J	32	32	5	10	200u	0.0	300m $\phi$	90 t $\#$				A	X9d	A	
37#	2N2095	1.0 $\phi$	500M $\Delta$	14m $\phi$	#S	30	15	1.0	300m	15u $\phi$						8.0p $\square$	A	T031	A $\phi$	
38#	AC153	1.1 *	1.5M $\Delta$	3.3m	#J	32	32	5	10	200u	0.0	300m $\phi$	90 t $\#$				A	T01	A	
39#	ACY33	1.1 *	1.5M $\Delta$	3.3m	#J	32	32	5	10	50u	0.0	300m $\phi$	90 t $\#$				A	T01	A	
40#	2SB492	6.0 $\phi$	700k $\Delta$		#J	25	25	5	6.0	2.0	50u	1.5 $\phi$	200m $\phi$	110 t $\#$				A	T039	A
41	2N96	50	.50M		*A	30		30	20m	10u	6.0 $\phi$	1.0m	35 $\Delta$							

# 3. GERMANIUM NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)		2] DERATE IN FREE AIR W/°C		T ABS MAX RATINGS @25°C				MAX. TYPICAL 'h' PARAMETERS							Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D E		
		fab	(Hz)	IN	FREE	M E	BVcbo	BVceo	BVebo	Ic	MAX. Icb0 @MAX Vcb	BIAS			COMMON EMITTER							
				AIR	AIR	A P	(V)	(V)	(V)	(A)	(A)	Vcb	Ic	hfe	hoe	hie					hre	
1	AC181K	2.5u	4.5M																			
2	2N1010	20m	2.0M	667u	*A	10	10	10	2.0m	10u	3.0∅	600m∅	50 Δ									
3	2N100	25m	5.0M		*A	25			5.0m	2.0u∅		30m	35						A∅		As	
4	2N166	25m	5.0M	1.0m	*A	6.0			20m	5.0u	6.0	1.0m	32									
5	2N170	25m	5.0M		*A	6.0			20m	5.0u∅	5.0∅	1.0m	32									
6	2N35	50m			#A	25			8.0m	6.0∅	6.0∅	1.0m	40 ↑									
7	2N213	50m	300k	714u	∅J	10	25	5.0	100m	200u∅	6.0∅	1.0m	70 Δ						A			
8	2N124	50m	300k	1.0m	∅J	20			8.0m	2.0u	5.0	1.0m∅	18						10p			
9	2N306	50m	600kΔ		∅J	20	15		2.0m	5.0u	6.0∅	1.0m∅	25 Δ						A			
10	2N507	50m	600kΔ	1.0m	#J	40			100m	125u	5.0∅	1.0m∅	50 ↑						A			
11	2N103	50m	.75M		∅J	35			10m	5.0u	4.5	1.0m	4.0						20p			
12	2N97	50m	1.0M		∅J	30			10m	2.0u	4.5	1.0m	13						19p			
13	2N98	50m	2.5M		∅J	40			10m	2.0u	4.5	1.0m	40						14p			
14	2N194	50m	3.0M	1.0m	∅J	18 s			100m	25u	6.0∅	1.0m∅	8.0						11p			
15	2N194A	50m	3.0M	1.0m	∅J	18 s			100m	50u	6.0∅	1.0m∅	8.0						11p			
16	2N211	50m	3.0M	1.0m	∅J	10			50m	20u	6.0∅	1.0m	5.0						10p			
17	2N216	50m	3.0M	1.0m	∅J	18 s			50m	50u	6.0∅	1.0m∅	7.5						11p			
18	2N515	50m	3.0M	1.0m	∅J	18			10m	50u	6.0∅	1.0m∅	7.5						11p			
19	2N516	50m	3.0M	1.0m	∅J	18 s			10m	50u	6.0∅	1.0m∅	7.5						11p			
20	2N517	50m	3.0M	1.0m	∅J	18			10m	50u	6.0∅	1.0m∅	7.5						11p			
21	TR194	50m	3.0M	1.0m	∅J	15			50m	6.0	1.0m	8.0							10p			
22	TR216	50m	3.0M	1.0m	∅J	15			50m	6.0	1.0m	8.0							11p			
23	2N99	50m	3.5M		∅J	40			10m	2.0u	4.5	1.0m	40						10p			
24	TR193	50m	3.5M	1.0m	∅J	15			50m			6.0							A			
25	TR211	50m	3.5M	1.0m	∅J	10			50m			30							10p			
26	2N125	50m	5.0M	1.4m	∅J	10		5.0	8.0m	2.0u	5.0	1.0m	20						10p			
27	2N126	50m	5.0M	1.4m	∅J	10		5.0	8.0m	2.0u	5.0	1.0m	20						14p			
28	2N1058	50m	6.0M	1.0m	∅J	20			50m	50u*	6.0∅	1.0m∅	10 Δ						10p			
29	TR212	50m	6.0M	1.0m	∅J	10			50m			1.0m	10						10p			
30	2N169	55m	4.0M	1.1m	∅A	15	15		20m	5.0u									2.4p			
31	2N169A	55m	5.0M	1.1m	∅A	25	25		20m	5.0u									2.4p			
32	2N168	55m	6.0M	1.1m	∅A	15	15		20m	5.0u									2.4p			
33	2N78A	65m		1.1m	#S	20	20	5.0	20m	3.0u∅									2.4p			
34	2N145	65m		1.4m	∅J	20			5.0m	3.0u	9.0	1.0m∅							1.0p			
35	2N146	65m		1.4m	∅J	20			5.0m	3.0u	9.0	1.0m∅							1.0p			
36	2N147	65m		1.4m	∅J	20			5.0m	3.0u	9.0	1.0m∅							1.0p			
37	2N148	65m		1.4m	∅A	16			5.0m	3.0u∅	12	500u∅	35 s						3.0p			
38	2N172	65m		1.4m	∅J	16			5.0m	3.0u	9.0	1.0m∅							1.0p			
39	2N253	65m		1.4m	∅A	12			5.0m	3.0u									1.0p			
40	2N254	65m		1.4m	∅A	20			5.0m	3.0u									1.0p			
41	JAN2N78A	65m	3.4MΔ	920u	#S	20	20	5.0	20m	3.0u∅	1.0∅	1.0m∅	45 ↑ Δ #						6.0p			
42	2N164	65m	4.0MΔ		#J	15	15	1.0	30m	5.0u	1.0∅	1.0m∅	80 ↑						10p			
43	2N165	65m	5.0M	1.1m	#J	15	15		20m	5.0u	1.0∅	.02mΔ	72 ↑						2.4p			
44	2N292	65m	5.0M	1.1m	#S	15	15		20m	5.0u	1.0∅	1.0m∅	25 ↑						2.4p			
45	2N448	65m	5.0M	1.1m	#S	15	15		20m	5.0u	1.0∅	1.0m∅	25 ↑						2.4p			
46	TR213	65m	5.0M	1.1m	#J	15	15		20m	.50u∅	5.0	1.0m	25						2.4p			
47	2N1671	65m	8.0M	1.1m	#S	30	30	5.0	75m	1.5u∅	5.0∅	1.0m	975m						4.0p			
48	2N168A	65m	8.0M	1.1m	#A	15	15		20m	5.0u									2.4p			
49	2N293	65m	8.0M	1.1m	#S	15	15		20m	5.0u	1.0∅	1.0m∅	25 ↑						67u			
50	2N449	65m	8.0M	1.1m	#J	15	15		20m	5.0u		1.0m∅	72 ↑						2.4p			
51	2N1086	65m	8.0M	1.1m	#J	9.0	9.0		20m	3.0u∅	5.0∅	1.0m∅	40						2.4p			
52	2N1086A	65m	8.0M	1.1m	#J	9.0	9.0		20m	3.0u∅	5.0∅	1.0m∅	40						2.4p			
53	2N1087	65m	8.0M	1.1m	#J	9.0	9.0		20m	3.0u∅	5.0∅	1.0m∅	40						2.4p			
54	2N1121	65m	8.0M	1.1m	#J	15	15		20m	5.0u		1.0m∅	34 ↑						2.4p			
55	TR167	65m	8.0M	1.1m	#S	30		5.0	75m	.80u∅	5.0	1.0m	25						6.0p			
56	2N78	65m	9.0M	1.1m	#S	15	15	5.0	20m	3.0u	5.0	1.0m	58						2.5p			
57	2N1198	65m	9.0M	1.1m	#J	25	25	5.0	75m	1.5u∅	1.0∅	8.0m∅	30 ↑						6.0p			
58	JAN2N167At	70m	5.0MΔ		#A	27	5.0	75m	2.0u	1.0∅	5.0m∅	17 Δ							6.0p			
59	2N312	75m			#J	15	15	6.0	60u	5.0∅	10m	25 Δ							AΔ			
60	2N1510	75m		1.3m	#J	75	70 s	8.0	20m	5.0u	1.0	1.0m∅	30 ↑						AΔ			
61	2N823	75m	4.0MΔ	1.2m	#S	25	12	12	100m	5.0u∅	.25∅	200m∅	40 Δ						20p			
62	2N167A	75m	9.0M	1.2m	#S	30	30	5.0	25m	1.5u∅	1.0	8.0m∅	30 ↑						6.0p			
63	2N1217	75m	9.0M	1.3m	#S	20	20	5.0	25m	1.5u∅	1.0	2.0m∅	60 ↑						2.5p			
64	2N1694t	75m	9.0M	1.3m	#J	20	20	10	25m	1.5u∅	1.0∅	2.0m∅	25 ↑						2.5p			
65	2N1288	75m	60.M		#J	15		5.0	50m	5.0u			100 ↑						3.0p			
66	GT905R	90m		1.8m	∅S		18			6.0u∅	4.5	1.0m	40						14p			
67	GT949R	90m		1.8m	∅S		12			6.0u∅	4.5	1.0m	120						14p			
68	2N556t	100m			#J	25		10	200m	25uΔ	20∅	1.0mΔ	30 Δ						20p			
69	2N557t	100m			#J	20			200m	25uΔ	20∅	1.0mΔ	20 Δ						20p			
70	2N558t	100m			#J	25		5.0	200m	25uΔ	20∅	1.0mΔ	60 Δ						20p			
71	2N646	100m		1.7m	#S	15	25	12	50m	14u	1.5∅	30m	50 Δ						20p			
72	2N647	100m		2.0m	∅A	25	25	12	50m	14u	1.0∅	50m∅	70 ↑						40p			
73	2N649	100m		2.0m	∅A	20	18	2.5	50m	14u∅	1.0∅	50m∅	65 ↑						A			
74	TRO3	100m			#S	20			200m	25u	20∅	1.0m∅	53						A			
75	TRO5	100m			#S	20			200m	25u	20∅	1.0m∅	30						A			
76	TRO7	100m			#S	15			200m	25u	20∅	1.0m	40						A			
77	2N444	100m	.50MΔ	2.0m	#S	15	15			2.0u∅	4.5∅	1.0m	15						13p			
78	TRO9	100m	.70M		#S	30			200m	25u	3.5∅	1.0m∅	30						A			
79	2N445	100m	2.0MΔ	2.0m	#S	15	12			2.0u∅	4.5∅	1.0m	35						13p			
80	2N438t	100m	2.5MΔ	1.7m	#J	30	25			10u∅	6.0	1.0m	25						9.0p			
81	2N1367	100m																				

### 3. GERMANIUM NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/C	M E M A X P	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y2000 s/a TO200 Ser.	# L E A D E	
						VbVco (V)	Vc (V)	Vc (V)	Ic (A)		Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre X.0001					
1	2N585	120m	5.0M	2.0m	0A	25	24	20	200m	8.0u	20	40	20	500nb	35	11	12p	AΔ	TO1	A	
2	2SC901	120m	5.0M	2.0m	#J	25		20	400m	25u	30	20	200m				25p	A	TO5	A	
3	2SC1801	120m	5.0M	2.0m	#J	25		20	400m	25u	30	20	200m				25p	A	TO1	A	
4	GT1202	120m	7.0M	2.0m	#S	45		20	400m	25u	25	30	200m				17p	A	TO9	A	
5	2N10901	120m	5.0M	2.0m	#A	25	15	20	400m	25u	30	20	200m				25p	A	TO5	A	
6	2SC911	120m	10M	2.0m	#J	25		20	400m	25u	30	20	200m				17p	A	TO5	A	
7	2N10911	120m	13M	2.0m	#A	25	12	20	400m	25u	30	20	200m				15p	A	TO5	A	
8	TR214	125m	.80M	2.5m	#J	25	10			200u		70					14p	A	TO9	A	
9	GT1608	125m	4.5M	2.0m	#S					5.0	1.0m						14p	A	TO9	A	
10	GT1609	125m	5.0M	2.0m	#S					5.0	1.0m						14p	A	TO9	A	
11	2SC1281	125m	5.5M	2.0m	#J	30	25	20	100m	3.0u	50	30	100m				45	A	TO5	A	
12	2SC1291	125m	8.0M	2.0m	#J	25		20	100m	3.0u	50	30	100m				45	A	TO5	A	
13	ASY73	140m	4.0 Δ		#J	30	15	30	400m			20	200m						TO5	A	
14	ASY74	140m	6.0 Δ		#J	30	15	30	400m			20	200m						TO5	A	
15	2N357A1	150m		2.0m	#S	30		20	20	5.0u	25	30	100m						TO5	A	
16	2N357A1	150m		2.0m	#S	30		20	20	5.0u	25	30	100m						TO5	A	
17	2N358A1	150m		2.0m	#S	30		15	20	5.0u	25	30	100m						TO5	A	
18	JAN2N358A1	150m		2.0m	#J	30		15	20	25u	25	30	300m						TO5	A	
19	2N440A	150m		2.5m	#J	30		15	25	10u	65	25	100m		2.5k		9.0p	A	TO5	A	
20	2N5871	150m			#J	40		20	40	50u	50	20	200m				30p	A	TO5	A	
21	2N791	150m		2.0m	#J	20	7.0	4.0	150m	1.0u	25	40	100m				4.0p	A	TO18	A	
22	2N17301	150m		2.5m	#J	25	15	#	20	300m	6.0u	30	100m				20p	A	TO5	A	
23	GT229	150m		2.0m	#J	12			200m	20u	50	30	100m				20p	A	TO5	A	
24	GT2884	150m		2.5m	#J	9.0	6.0	9.0	9.0	50u	60	100	100m				20p	FA	TO5	A	
25	GT2886	150m		2.5m	#J	9.0	6.0	9.0	9.0	50u	60	100	100m				20p	FA	TO5	A	
26	GT2888	150m		2.5m	#J	9.0	6.0	7.0	10	50u	60	100	100m				20p	FA	TO5	A	
27	2N1251	150m	75kΔ		#J	20	15	#	10	100m	50u	60	100m				150	A	TO22	F	
28	2N444A	150m	500kΔ	2.0m	#S	40		25	10	4.0u	50	15	1.0m		1.0u/zb		16p	AΔ	TO5	A	
29	GT949	150m	700kΔ	2.0m	#S	30			200m	25u	3.5	1.0m	1.0m		500nb			A	TO5	A	
30	GT122A	150m	1.0M	2.0m	#S	30			200m	20u	5.0	1.0m	1.0m		500nb			A	TO5	A	
31	GT122B	150m	1.0M	2.0m	#S	30			200m	20u	5.0	1.0m	1.0m		500nb			A	TO5	A	
32	GT364	150m	1.0M	2.0m	#S	30		2.0	20	10u	5.0	1.0m	1.0m		500nb	50	3.5	18p	A	TO5	A
33	GT365	150m	1.0M	2.0m	#S	30		2.0	20	10u	5.0	1.0m	1.0m		500nb	50	3.5	18p	A	TO5	A
34	GT366	150m	1.0M	2.0m	#S	30		2.0	20	10u	5.0	1.0m	1.0m		500nb	50	3.5	18p	A	TO5	A
35	2N94	150m	2.0M	2.5m	#J	20	20	#	100m	50u	6.0	1.0m	1.0m				100p	A	TO22	F	
36	2N233	150m	2.0M	1.5m	#J	10	10	5.0	100m	50u	6.0	1.0m	1.0m				11p	A	TO22	F	
37	2N233A	150m	2.0M	1.5m	#J	18	18	5.0	100m	50u	6.0	1.0m	1.0m				11p	A	TO22	F	
38	2N445A	150m	2.0M	2.0m	#S	30	18	10	10	4.0u	50	35	1.0m		1.0u/zb			A	TO5	A	
39	2SD37	150m	2.0M	2.0m	#J	30	20	12	50m	20u	5.0	1.0m	1.0m		17.u	1.7k	3.8	30p	A	TO1	A
40	GT122G	150m	2.0M	2.0m	#J	30			200m	20u	5.0	1.0m	1.0m					A	TO5	A	
41	GT122V	150m	2.0M	2.0m	#J	30			200m	20u	5.0	1.0m	1.0m					A	TO5	A	
42	SK3010-RT	150m	2.0M	2.0m	#J	30	30	12	100m	10u	1.0	50m	90					A	TO1	A	
43	2N364	150m	2.5M	2.0m	#S	30		2.0	50m	10u	5.0	1.0m	1.0m				4.5p	A	TO5	F	
44	2N438A1	150m	2.5M	2.5m	#J	30	25	25	50m	10u	6.0	1.0m	1.0m		1.0k		9.0p	A	TO5	A	
45	2SD195	150m	2.5M	2.5m	#J	20	15	15	50m	14u	1.0	50m	70					A	TO1	A	
46	2N193	150m	3.0M	2.5m	#J	18	18	5.0	50m	50u	6.0	1.0m	7.5				11p	A	TO22	A	
47	2N365	150m	3.0M	2.0m	#S	30		2.0	50m	10u	5.0	1.0m	26				4.5p	A	TO5	F	
48	2N6791	150m	3.0M	2.5m	#J	25			25	25u	3.0m	30	30					A	TO5	A	
49	2N10121	150m	3.0M	2.0m	#S	40	22	35	300m	5.0u	25	10	10				20p	A	TO5	A	
50	2N1302	150m	3.0M	2.5m	#J	25		25	300m	6.0u	1.0	10m	20				20p	A	TO5	A	
51	JAN2N1302	150m	3.0M	2.5m	#S	25		25	300m	6.0u	1.0	10m	20				20p	A	TO5	A	
52	2N1391	150m	3.0M	2.0m	#S	25	18	15	300m	4.0u	5.0	1.0m	35				20p	A	TO5	A	
53	2N19931	150m	3.0M	2.0m	#J	30	18	30	300m	10u	1.0	10m	50				20p	A	TO5	A	
54	NKT732	150m	3.0M	2.0m	#J	30	25		300m	6.0u	1.0	10m	20				20p	A	TO5	A	
55	2N366	150m	3.5M	2.0m	#J	30		2.0	50m	10u	5.0	1.0m	65				4.5p	A	TO5	F	
56	2SD77	150m	3.5M	2.0m	#J	25	25	12	100m	14u	1.5	50m	85		16.u	1.6k	3.1	85	A	TO1	A
57	2N212	150m	4.0M	1.0m	#A	18	18	5.0	100m	50u	6.0	1.0m	20				10p	A	TO22	F	
58	ASY28	150m	4.0M		#J	30	15	20	200m	3.0u	20m	30	Δ				16p	A	TO5	A	
59	GT904	150m	4.0M	2.0m	#S	20			200m	25u	20	1.0m	30		500nb		16p	A	TO5	A	
60	GT948	150m	4.0M	2.0m	#S	20		5.0	200m	20u	3.5	1.0m	30		500nb		16p	A	TO5	A	
61	2G339A	150m	5.0M	2.3m	#J	10		3.0	300m	10u	1.0	50m	150				8.0p	A	TO5	A	
62	2N944	150m	5.0M	2.5m	#J	20	20	#	100m	50u	6.0	1.0m	20				100p	A	TO22	F	
63	JAN2N3881	150m	5.0M	2.0m	#S	25	20	15	200m	10u	5.0	30m	60				20p	A	TO5	A	
64	2N439A1	150m	5.0M	2.5m	#J	30	20	25		10u	6.0	1.0m	35		1.0u/zb	1.5k	9.0p	A	TO5	A	
65	2N446A	150m	5.0M	2.0m	#S	30	15	10		4.0u	5.0	1.0m	60				9.0p	A	TO5	A	
66	2N1299	150m	5.0M	2.0m	#J	40				1.0	50m	35	Δ					A	TO5	A	
67	2N1304	150m	5.0M	2.5m	#J	25		25	300m	6.0u	1.0	10m	40				20p	A	TO5	A	
68	JAN2N1304	150m	5.0M	2.5m	#S	25		25	300m	6.0u	1.0	10m	40				20p	A	TO5	A	
69	2N16241	150m	5.0M	2.0m																	

### 3. GERMANIUM NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	TEMPERATURE °C	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L E A D E	
					V <sub>cb0</sub> (V)	V <sub>ce0</sub> (V)	V <sub>eb0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre					
1	2N2482	150m	600M $\Delta$	2.0m	#S	20	12	3.0	100m	5.0u $\emptyset$	6.0 $\emptyset$	2.0m $\emptyset$	15 $\Delta$							
2	2N9551	150m	1.0G $\Delta$	1.3m	#J	12	11	2.0	100m	5.0u $\emptyset$	5.0	30m $\emptyset$	80 $\uparrow$							
3	2N955A1	150m	1.0G $\Delta$	2.0m	#J	12	11	2.0	100m	5.0u $\emptyset$	5.0	30m $\emptyset$	50 $\uparrow$							
4	2N2354	180m		3.0m	#S	20	15 $\Delta$	10	150m	5.0u $\emptyset$	1.5 $\emptyset$	35m $\emptyset$	50 $\Delta$							
5	AC179	180m				20	15 $\Delta$	10				150m $\emptyset$	80 $\Delta$							
6	2N1059	180m	10k $\Delta$	3.6m	$\emptyset$ J	40	15 $\Delta$		100m	5.0u $\emptyset$	6.0 $\emptyset$	35m $\emptyset$	75 $\uparrow$							
7	2N1101	180m	10k $\Delta$	3.6m	$\emptyset$ J	40	15 $\Delta$		100m	5.0u $\emptyset$	1.8 $\emptyset$	35m $\emptyset$	40 $\uparrow$							
8	2N1102	180m	10k $\Delta$	3.6m	$\emptyset$ J	40	25		100m	5.0u $\emptyset$	1.8 $\emptyset$	35m $\emptyset$	40 $\uparrow$							
9	2N1431	180m	10k $\Delta$		$\emptyset$ J	20	15	10	100m	5.0u $\emptyset$	1.5 $\emptyset$	35m $\emptyset$	75 $\uparrow$							
10	2N214A	180m	100k	3.0m	J	40	25	10	100m	5.0u $\emptyset$	1.5 $\emptyset$	35m $\emptyset$	100	50u	500	10	28p	A	T05	
11	2N213A	180m	150k	2.5m	J	40	25 $\Delta$	10	100m	5.0u $\emptyset$	6.0 $\emptyset$	1.0m $\emptyset$	185	50u $\emptyset$	5.5k		10p	A	T022	
12	2N228	180m	.60M	3.3m	#J	40	15 $\Delta$	10	100m	100u	6.0 $\emptyset$	1.0m $\emptyset$	80					A	T022	
13	2N229	180m	.60M $\Delta$	3.0m	#J	10	10 $\Delta$	20	100m	100u	6.0 $\emptyset$	1.0m $\emptyset$	75					A	T022	
14	2N214	180m	.80M	3.0m	#J	40	25	10	100m	5.0u $\emptyset$	1.5 $\emptyset$	35m $\emptyset$	75 $\uparrow$	50u $\emptyset$	500	10 $\emptyset$	28p	A	T022	
15	2SD186	200m			#J	20	20		150m	15u	1.5 $\emptyset$	10m $\emptyset$	150					A	T01	
16	2SD187	200m			#J	25	25		150m	15u	1.5 $\emptyset$	30m $\emptyset$	150					A	T01	
17	HSE111-RT	200m	2.0M $\Delta$	2.6m	#J	32	15	20	10u	1.0 $\emptyset$	10u	10m $\emptyset$	40 $\Delta$					A	T05	
18	AC172	200m	2.5M $\Delta$	2.7m	#J	32	12	10	10m	10u $\emptyset$	5.0 $\emptyset$	500u $\emptyset$	45 $\Delta$					A	T01	
19	AC183	200m	3.5M $\Delta$	3.3m	#J	32	18 $\Delta$	10	150m	20u $\emptyset$	6.0 $\emptyset$	1.0m	50 $\Delta$					A	T01	
20	2N5761	200m	5.0M	2.6m	#J	20	20	15	400m	20u	4.0 $\emptyset$	400m $\emptyset$	30 $\uparrow$					A	T05	
21	HSE115-RT	200m	5.0M $\Delta$	2.6m	#J	25	15	25	10u	1.0 $\emptyset$	10u	10m $\emptyset$	100 $\Delta$					A	T05	
22	2N1805A	200m	6.0M	2.6m	#J	40		12	100m	10u	25 $\emptyset$	20m	80 $\uparrow$					A $\Delta$	T05	
23	2N576A1	200m	8.0M	2.7m	#J	40		15	400m	40u	4.0 $\emptyset$	400m $\emptyset$	30 $\uparrow$					A	T05	
24	HSE109-RT	200m	8.0M $\Delta$	2.6m	#J	40	15	25	15u	1.0 $\emptyset$	10m $\emptyset$	20 $\Delta$						A	T05	
25	HSE113-RT	200m	10M $\Delta$	2.6m	#J	40	20	20	10u	1.0 $\emptyset$	10m $\emptyset$	60 $\Delta$						A	T05	
26	AC141	220m	3.0M	3.3m	#J	32	32 $\emptyset$	10	14u $\emptyset$			400m	80 $\uparrow$					A	T01	
27	AC194	220m	5.0M		#J	32	15	10	35u			400m $\emptyset$	90 $\uparrow$					A	T01	
28	AC185	225m	4.0M $\Delta$	3.0m	#S	32	24 $\Delta$	10	500m	20u $\emptyset$	1.0 $\emptyset$	200m $\emptyset$	110 $\uparrow$					A	R178	
29	JAN2M1173	250m		3.3m	#S	35	20	35	200m	10u $\emptyset$	1.0 $\emptyset$	500m $\emptyset$	50 $\Delta$					A	T029	
30	2N1173	250m	6.0M	3.3m	#J	35		35	200m	10u $\emptyset$	1.0 $\emptyset$	500u $\emptyset$	80	190nb	56	7.0	25p $\emptyset$	A $\emptyset$	T029	
31	2N1473	250m	8.0M	4.2m	#J	40	40 $\Delta$	15	400m	5.0u $\emptyset$	6.0 $\emptyset$	400m	80 $\uparrow$					A	T05	
32	AC141K	260m	3.0M	4.0m	#J	32	32 $\emptyset$	10	1.2	14u $\emptyset$		400m	90 $\Delta$					A	T01	
33	AC194K	260m	5.0M		#J	32	15	10		35u		400m $\emptyset$	80 $\Delta$					A	T01	
34	2N2430	280m	2.5M $\Delta$	2.7m	#	32	32	10	500m	10u	0.0	50m	105					A	T01	
35	2SD30	300m			#J	25	25		200m	15u	1.5 $\emptyset$	100m	150					A	T01	
36	AC181	300m	1.0M $\Delta$	4.0m	#S	32	24 $\Delta$	10	1.0	200m	1.0 $\emptyset$	600m $\emptyset$	110 $\uparrow$					A*	R178	
37	GT404D	300m	1.0M		#A		25 $\Delta$		500m	25u $\Delta$	1.0	3.0m	80 $\Delta$							
38	GT404E	300m	1.0M		#A		25 $\Delta$		500m	25u $\Delta$	1.0	3.0m	150 $\Delta$							
39	GT404I	300m	1.0M		#A		40 $\Delta$		500m	25u $\Delta$	1.0	3.0m	150 $\Delta$							
40	GT404SZ	300m	1.0M		#A		40 $\Delta$		500m	25u $\Delta$	1.0	3.0m	80 $\Delta$							
41	4Q396/N	300m	2.0M	10m	#J	18		2.5	500m	14u $\emptyset$	1.0 $\emptyset$	50m $\emptyset$	50 $\uparrow$							
42	HA5020	300m	4.0M	2.2m	$\emptyset$ S	20		20	200m	5.0u $\emptyset$	5.0	1.0m	49					A	T01	
43	HA5022	300m	4.0M	2.2m	$\emptyset$ S	25		25	200m	4.0u $\emptyset$	5.0	1.0m	49					A		
44	HA5024	300m	4.0M	6.6m	$\emptyset$ J	20		20	200m	5.0u $\emptyset$	5.0	1.0m	49					A $\Delta$		
45	HA5021	300m	5.0M	2.2m	*A	20		20	200m	10u $\emptyset$	5.0	1.0m	49					A		
46	HA5025	300m	6.0M	6.6m	$\emptyset$ J	20		20	200m	5.0u $\emptyset$	5.0	1.0m	49					A $\Delta$		
47	HA5023	300m	8.0M	2.2m	$\emptyset$ S	20		20	200m	5.0u $\emptyset$	5.0	1.0m	49					A		
48	HA5026	300m	8.0M	6.6m	$\emptyset$ J	20		20	200m	5.0u $\emptyset$	5.0	1.0m	49					A $\Delta$		
49	2N1585	300m	400M	4.0m	#J	25		2.0	100m	100u	10 $\emptyset$	10m $\emptyset$	20 $\uparrow$					ME	T05	
50	AC127	340m*	2.5M $\Delta$	2.7m	#J	32	12	10	500m	15u $\emptyset$	0.0	20m $\emptyset$	100 $\uparrow$					A	T01	
51	AC127-01	340m*	2.5M $\Delta$	4.0m	#J	32	12	10	500m	10u $\emptyset$	0.0	500m $\emptyset$	50 $\uparrow$					A	X9c	
52	PTC134	350m	2.5M $\Delta$		#J	36		14	500m	7.0u	1.0 $\emptyset$	10m $\emptyset$	120 $\Delta$					A	T01	
53	HA5002	400m	1.0M	9.9	$\emptyset$ J	20		20	200m	20u $\emptyset$	5.0	1.0m	40					A	W152	
54	HA5005	400m	1.0M	9.9	$\emptyset$ J	10		10	200m	35u $\emptyset$	5.0	1.0m	20					A		
55	HA5012	400m	1.0M	9.9	$\emptyset$ J	20		20	200m	20u $\emptyset$	5.0	1.0m	40					A		
56	HA5016	400m	1.0M	9.9m	$\emptyset$ J	30		30	200m	5.0u $\emptyset$	5.0	1.0m	40					A		
57	HA5003	400m	1.5M	9.9	$\emptyset$ J	30		30	200m	15u $\emptyset$	5.0	1.0m	50					A	W152	
58	HA5011	400m	1.5M	9.9	$\emptyset$ J	40		30	200m	20u $\emptyset$	5.0	1.0m	50					A		
59	HA5014	400m	2.3M	9.9	$\emptyset$ J	40		30	200m	20u $\emptyset$	5.0	1.0m	80					A		
60	HA5001	400m	2.5M	9.9	$\emptyset$ J	30		20	200m	10u $\emptyset$	5.0	1.0m	60					A	W152	
61	HA5009	400m	2.5M	9.9	$\emptyset$ J	10		10	200m	30u $\emptyset$	5.0	1.0m	15					A		
62	AC178	700m	1.0M $\Delta$	25m	#J	32	32	5.0		30u $\emptyset$	0.0	500m	180 $\Delta$					A	T01	
63	2SD72	720m $\emptyset$	750k $\Delta$		#J	25	25 $\Delta$	6.0	600m	5.0u	1.0 $\emptyset$	200m $\emptyset$	80 $\uparrow$					A	T01	
64	AC187K	800m	3.0M $\Delta$	13m	#J	25	15	10	1.0	200u	0.0	300m	200 $\uparrow$					A	X9d	

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @25°C (W)	2   DERATE IN FREE AIR W/°C	3   fab (Hz)	4   M A M P	5   ABS MAX RATINGS @25°C				6   MAX. lcb0 @MAX Vcb (A)	7   TYPICAL h PARAMETERS			8   Cob (F)	9   STRUC-TURE	10   DWG Y2000 s/a TO200 Ser.	11   # C O D E						
						5   BVcbo (V)	6   BVceo (V)	7   BVebo (V)	8   Ic (A)		9   Vcb (V)	10   Ie (A)	11   hfe					12   hoe (mhos)	13   hie (Ω)	14   hre X.0001			
1	SHA7538					800k			60	60	60	100n	5.00	1.0m	28 Δ								
2	KT5394A					300k			45	45	45	100m	5.0	0.5u	120								
3	KT5394B					300k			45	45	45	100m	5.0	1.0m	300								
4	MF33041					700MΔ			18	12	5.0	0.1u#	1.0	5.0m	20 Δ			TO72					
5	BC308PAK	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	170 Δ	18u	2.7k	1.5	6.0p	PLT	B58	A
6	BC308PAL	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	170 Δ	18u	2.7k	1.5	6.0p	PLT	B58	A
7	BC308PAM	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	170 Δ	18u	2.7k	1.5	6.0p	PLT	B58	A
8	BC308PBK	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	290 Δ	30u	4.5k	2.0	6.0p	PLT	B58	A
9	BC308PBL	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	290 Δ	30u	4.5k	2.0	6.0p	PLT	B58	A
10	BC308PBM	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	290 Δ	30u	4.5k	2.0	6.0p	PLT	B58	A
11	BC308PC	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	500 Δ	60u	8.7k	3.0	6.0p	PLT	B58	A
12	BC308PCL	300n	2.3m		SJ	130M			45	45	5.0	100m	100n	5.00	2.0m	500 Δ	60u	8.7k	3.0	6.0p	PLT	B58	A
13	CK790	2.0m	.40M		SA				45			50m	20u										
14	CK793	2.0m	.50M		SA				30			50m	20u										
15	CK791	2.0m	.60M		SA				30			50m	20u										
16	CK721	4.0m			OA				15			10m		100	5.0m	50 Δ							
17	CK722	4.0m			OA				22			10m		100	4.0m	30 Δ							
18	CK725	4.0m			OA				12			10m		100	6.3m	300 Δ							
19	CK727	4.0m			OA				6.0			10m		1.5	500u	25 Δ							
20	KT207A	15m	5M		SA							10m	.05u	5.0	1.0m	9							10p
21	KT207B	15m	5M		SA							10m	.05u	5.0	1.0m	150 Δ							10p
22	KT207V	15m	5M		SA							10m	.05u	5.0	1.0m	200 Δ							10p
23	KT3104A	15m	200M	330u	J	30	30	3.5	10	1.0u	5.0	1.0m	2.0	2.0									
24	KT3104B	15m	200M	330u	J	30	30	3.5	10	1.0u	5.0	1.0m	2.0	2.0									
25	KT3104D	15m	200M	330u	J	10	10	3.5	10	1.0u	5.0	1.0m	2.0	2.0									
26	KT3104E	15m	200M	330u	J	10	10	3.5	10	1.0u	5.0	1.0m	2.0	2.0									
27	KT3104G	15m	200M	330u	J	10	10	3.5	10	1.0u	5.0	1.0m	2.0	2.0									
28	KT3104V	15m	200M	330u	J	30	30	3.5	10	1.0u	5.0	1.0m	2.0	2.0									
29	KT380A	15m	300M		SA				17	17	17	10m	1.0u	0.3	10m	90 Δ							6.0p
30	KT380B	15m	300M		SA				17	17	17	10m	1.0u	0.3	10m	150 Δ							6.0p
31	KT380V	15m	300M		SA				9.0	9	9	10m	1.0u	0.3	10m	90 Δ							6.0p
32	KT389A	15m	300M		SA				17	17	17	100m	1.0u	0.3	10m	90 Δ							6p
33	KT389B	15m	300M		SA				17	17	17	100m	1.0u	0.3	10m	150 Δ							6p
34	KT389V	15m	300M		SA				9	9	9	100m	1.0u	0.3	10m	90 Δ							6p
35	KT214A-1	25m	5.0M		J				120	120	120	40m	0.1u*	5.0m	20 Δ								20p
36	KT214B-1	25m	5.0M		J				100	100	100	40m	0.1u**	5.0m	90 Δ								20p
37	KT214D-1	25m	5.0M		J				30	30	30	40m	0.1u**	1.0	.04m	240 Δ							20p
38	KT214E-1	25m	5.0M		J				30	30	30	40m	0.1u**	1.0	.04m	40 Δ							20p
39	KT214G-1	25m	5.0M		J				60	60	60	40m	0.1u**	1.0	.04m	120 Δ							20p
40	KT214V-1	25m	5.0M		J				80	80	80	40m	0.1u**	5.0m	120 Δ								20p
41	KT210A	25m	10M	330u	A	15	15	10	20	10u*	5.0	1.0m	80 Δ										S7a
42	KT210B	25m	10M	330u	A	30	30	10	20	10u*	5.0	1.0m	80 Δ										S7a
43	KT210V	25m	10M	330u	A	60	60	10	20	10u*	5.0	1.0m	40 Δ										S7a
44	2S3280	50m	1.0M	400u	A	6.0	6.0	6.0	10	10n	3.0	1.0m	80										A
45	2S3070	50m	2.0M		A	15	15	15	10	10u	3.0	1.0m	80										A
46	2S3270	50m	2.0M		A	15	15	15	10	10u	3.0	1.0m	80										A
47	A160	50m*	90M	625u	J	20	20	5.0	50	100n	.500	200u	75	13u	12k	13	5.0p	PE					R195
48	A161	50m*	90M	625u	J	20	20	5.0	50	100n	.500	200u	140	18u	15k	25	5.0p	PE					R195
49	A162	50m*	90M	625u	J	20	20	5.0	50	100n	.500	200u	250	33u	20k	40	5.0p	PE					R195
50	BC200	50m*	90M	625u	J	20	20	5.0	50	100n	.500	200u	200 Δ	18u	15	15	5.0p	PE					R195g
51	BC200-01	50m*	90M	62u	J	20	20	5.0	50	100m	.500	200u	75	13u	12k	13	5.0p	PE					R195g
52	BC200-02	50m*	90M	62u	J	20	20	5.0	50	100m	.500	200u	140	18u	15k	25	5.0p	PE					R195g
53	BC200-03	50m*	90M	62u	J	20	20	5.0	50	100m	.500	200u	250	33u	20k	40	5.0p	PE					R195g
54	BC200G	50m*	90M	625u	J	20	20	5.0	50	100m	.500	200u	165 Δ	33u	20k	40	5.0p	PE					R195
55	BC200R	50m	90M	625u	J	20	20	5.0	50	100m	.500	200u	85 Δ	13u	12k	13	5.0p	PE					R195
56	BC200Y	50m	90M	625u	J	20	20	5.0	50	100m	.500	200u	85 Δ	18u	15k	25	5.0p	PE					R195
57	MT200	50m	90M		J	20	20	5.0	50	100m	.500	200u	50 Δ										12p
58	BC200#	50m	130M		J	20	20	4.0	100m	100n	.500	200u	50 Δ			2.0 Δ	2.5 Δ	4.0p	EPL				R195g
59	BCW63	75m	200MΔ	600u	J	45	30	5.0	200m	15n	5.00	2.0m	100 Δ										4.5p
60	2SA525	75m	250M	1.2m	J	20	18	20	5.0m	10u	6.00	1.0m	20										1.0p
61	2S306	100m	1.5MΔ	571u	SS	6.0	6.0	6.0	10m	100n	3.00	1.0m	80 Δ										22p
62	3N1230	100m	6.0MΔ	571u	SS	30	30	25	20m	10n	5.00	1.0m	20										10p
63	2N1606	100m	7.2MΔ	870u	SS	10	10	10	50m	100n	.500	15m	6.0 Δ										10p
64	2N2177	100m	8.0M	666u	SJ	6.0	6.0	6.0	50m	1.0n	1.50	20u	50 Δ										60k
65	2N2178	100m	8.0M	666u	SJ	6.0	6.0	6.0	50m	1.0n	1.50	20u	50 Δ										60k
66	2N1607	100m	10MΔ	870u	SS	10	10	10	50m	100n	.500	15m	6.0 Δ										10p
67	2N2175	100m	10MΔ	666u	SJ	6.0	6.0	6.0	50m	1.0n	1.50	20u	50 Δ										60k
68	2N2176	100m	10MΔ	666u	SJ	6.0	6.0	6.0	50m	1.0n	1.50	20u	50 Δ										60k
69	2N1428	100m	18MΔ	870u	SJ	6.0	6.0	6.0	50m	100n	3.0	1.0m	25 Δ			5.0u	70 Δ						14p
70	2N1429	100m	18MΔ	870u	SJ	6.0	6.0	6.0	50m	100n	3.0	1.0m	25 Δ			5.0u	70 Δ						14p
71	2N1608	100m	25MΔ	870u	SS	10	10	10	50m	100n	.500	15m	6.0 Δ										10p
72	MT0411	100m	30MΔ	800u	J	20	20	6.0	10n	10n	6.00	1.0m	60 Δ			1.0u	35 Δ						10 Δ
73	MT0413	100m	30MΔ	800u	J	20	20	5.0	50n	10n	6.00	1.0m	50 Δ			1.0u	40 Δ						10 Δ
74	MT0412	100m	40MΔ	800u	J	20	20	6.0	10n	10n	6.00	1.0m	150 Δ			1.0u	3						



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DEBATE IN FREE AIR W/°C (Hz)	TEMP. RAMP X	ABS. MAX. RATINGS @25°C			MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	# L O D E			
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)		BIAS							COMMON EMITTER		
									V <sub>cb</sub> (V)	I <sub>c</sub> (A)	h <sub>fe</sub>					h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001
1▼	2SA1121SC	150m	1.5m	J	35	35	4.0	500m	500n	3.0	10m	100	Δ	E	S27	E		
2▼	2SA1121SD	150m	1.5m	J	35	35	4.0	500m	500n	3.0	10m	160	Δ	E	S27	E		
3▼	2SA1122CC	150m	1.5m	J	55	55	5.0	100m	500n	12	2.0m	180	Δ	E	S27	E		
4▼	2SA1122CD	150m	1.5m	J	55	55	5.0	100m	500n	12	2.0m	250	Δ	E	S27	E		
5▼	2SA1122CE	150m	1.5m	J	55	55	5.0	100m	500n	12	2.0m	400	Δ	E	S27	E		
6▼	2SB831BB	150m	1.5m	J	25	20	5.0	700m	1.0u	1.0	150m	85	Δ	E	S27	E		
7▼	2SB831BC	150m	1.5m	J	25	20	5.0	700m	1.0u	1.0	150m	120	Δ	E	S27	E		
8#	BFV34	150m	1.1m	S	15	10	15	100m	10n	50	1.0m	80	Δ	PE	S5a	P		
9#	BFV35	150m	1.1m	S	25	20	25	100m	10n	50	1.0m	40	Δ	PE	S5a	P		
10#	BFV36	150m	1.1m	S	40	35	40	100m	10n	50	1.0m	30	Δ	PE	S5a	P		
11#	PL1031	150m	1.0m	S	60	40	5.0	20n	10n	10	1.0m	25	Δ	PE	W7	P		
12#	PL1032	150m	1.0m	S	60	60	5.0	10n	10n	10	1.0m	40	Δ	PE	W7	P		
13#	PL1033	150m	1.0m	S	60	40	5.0	20n	10n	10	1.0m	50	Δ	PE	W7	P		
14#	PL1034	150m	1.0m	S	60	60	5.0	10n	10n	10	1.0m	100	Δ	PE	W7	P		
15#	PL1101	150m	1.0m	S	25	20	5.0	20n	10n	10	1.0m	20	Δ	PE	W7	P		
16#	PL1102	150m	1.0m	S	25	20	5.0	20n	10n	10	1.0m	40	Δ	PE	W7	P		
17#	PL1103	150m	1.0m	S	25	20	5.0	20n	10n	10	1.0m	15	Δ	PE	W7	P		
18#	PL1104	150m	1.0m	S	25	20	5.0	20n	10n	10	1.0m	30	Δ	PE	W7	P		
19	2N923	150m	800kΔ	S	40	25	40	50m	50u	6.0	1.0m	21		A	TO18	A		
20	2N924	150m	800kΔ	S	40	25	40	50m	50u	6.0	1.0m	17		A	TO18	A		
21	2N925	150m	800kΔ	S	50	40	50	50m	50u	6.0	1.0m	47		A	TO18	A		
22	2N926	150m	800kΔ	S	50	40	50	50m	50u	6.0	1.0m	38		A	TO18	A		
23	2N927	150m	800kΔ	S	70	60	70	50m	50u	6.0	1.0m	15		A	TO18	A		
24	2N928	150m	800kΔ	S	70	60	70	50m	50u	6.0	1.0m	34		A	TO18	A		
25	2N2332	150m	1.0M	S	15	5.0	15	100m	50u					A	TO18	A		
26	2N2333	150m	1.0M	S	15	5.0	15	100m	50u					A	TO18	A		
27	2N2334	150m	1.0M	S	30	15	30	100m	50u					A	TO18	A		
28	2N2335	150m	1.0M	S	30	15	30	100m	50u					A	TO18	A		
29	2N2336	150m	1.0M	S	50	35	50	100m	50u					A	TO18	A		
30	2N2337	150m	1.0M	S	50	35	50	100m	50u					A	TO18	A		
31	2N2372	150m	1.0M	S	15	15	15	50m	50u	4.0	25u	15	Δ	A	TO18	A		
32	2N2373	150m	1.0M	S	15	15	15	50m	50u	4.0	25u	20	Δ	A	TO18	A		
33	2N858T	150m	5.0MΔ	S	40	40	25	50m	100n	6.0	1.0m	15	Δ	A	TO18	A		
34	2N859T	150m	6.0MΔ	S	40	40	25	50m	100n	6.0	1.0m	30	Δ	A	TO18	A		
35	2N2181	150m	6.0MΔ	S	25	25	25	50m	0.1u	5.0	5.0m	10	Δ	A	TO1	A		
36	2N2184	150m	6.0MΔ	S	15	10	15	50m	0.1u	5.0	5.0m	10	Δ	A	TO1	A		
37	2N2274	150m	6.0MΔ	S	25	25	25	50m	3.0m	5.0	5.0m	10	Δ	A	R177	A		
38	2N2275	150m	6.0MΔ	S	25	25	25	50m	3.0m	5.0	5.0m	10	Δ	A	R177	A		
39	2N2276	150m	6.0MΔ	S	15	10	10	50m	3.0m	5.0	5.0m	10	Δ	A	R177	A		
40	2N2277	150m	6.0MΔ	S	15	10	10	50m	3.0m	5.0	5.0m	10	Δ	A	R177	A		
41	BFN23R	150m	6.0MΔ	S		250								A	T0236	C		
42	2N3317	150m	6.4MΔ	S	30	30	30	50m	1.0n	6.0	1.0m	1.6		A	R177	A		
43	2N860T	150m	8.5MΔ	S	25	25	20	50m	100n	6.0	1.0m	15	Δ	A	TO18	A		
44	2N498	150m	7.2MΔ	S	10	10	10	50m	100n	6.0	1.0m	9.0	Δ	A	TO1	A		
45	JAN2N1119T	150m	7.2MΔ	S	12	10	12	50m	100n	5.0	15m	15	Δ	A	TO5	A		
46	2N2378	150m	7.2MΔ	S	10	10	10	50m	100n	5.0	15m	15	Δ	A	TO18	A		
47	JAN2N2378	150m	7.2MΔ	S	10	10	10	50m	100n	5.0	15m	15	Δ	A	TO18	A		
48	2N861T	150m	7.5MΔ	S	25	25	20	50m	100n	6.0	1.0m	30	Δ	A	TO18	A		
49	2N3318	150m	7.8MΔ	S	15	15	15	50m	1.0n	6.0	1.0m	1.9		A	R177	A		
50	2N495	150m	8.0MΔ	S	25	25	25	50m	1.0u	6.0	1.0m	15	Δ	A	TO1	A		
51	2N862T	150m	8.0MΔ	S	15	15	10	50m	100n	6.0	1.0m	20	Δ	A	TO18	A		
52	JAN2N1118	150m	8.0MΔ	S	25	25	20	50m	1.0u	6.0	1.0m	15	Δ	A	TO5	A		
53	2N2377	150m	8.0MΔ	S	25	25	10	50m	1.0u	6.0	1.0m	15	Δ	A	TO18	A		
54	JAN2N2377	150m	8.0MΔ	S	25	25	10	50m	1.0u	6.0	1.0m	15	Δ	A	TO18	A		
55	2N863T	150m	10MΔ	S	15	15	10	50m	100n	6.0	1.0m	40	Δ	A	TO18	A		
56	HSE301-RT	150m	10MΔ	S	30	20	5.0	100n	5.0	5.0	10m	40	Δ	A	R124d	A		
57	2N3319	150m	12MΔ	S	10	6.0	10	50m	3.0n	6.0	1.0m	3.0		A	R177	A		
58	2N864T	150m	16MΔ	S	6.0	6.0	6.0	50m	100n	6.0	1.0m	25	Δ	A	TO18	A		
59	2N1118A	150m	18M*	S	25	25	10	50m	1.0u	6.0	1.0m	25	Δ	A	TO5	A		
60	2N2165	150m	18M*	S	30	30	30	20n	6.0	6.0	1.0m	25	Δ	A	TO5	A		
61	2N2166	150m	18M*	S	15	15	15	20n	6.0	6.0	1.0m	25	Δ	A	TO5	A		
62	2N1119T	150m	20M*	S	10	10	10	50m	100n	5.0	15m	25	Δ	A	TO5	A		
63	2N2162	150m	20M*	S	30	30	30	10n	3.0	3.0	1.0m	35	Δ	A	TO5	A		
64	2N2163	150m	20M*	S	15	15	15	10n	3.0	3.0	1.0m	35	Δ	A	TO5	A		
65	2N1118	150m	21M*	S	25	25	10	50m	1.0u	6.0	1.0m	30	Δ	A	TO18	A		
66	2N865T	150m	24MΔ	S	10	10	6.0	50m	100n	6.0	1.0m	100	Δ	A	TO18	A		
67#	BFV25	150m	30MΔ	S	60	45	6.0	30m	50n	5.0	1.0m	80	Δ	PE	S5a	P		
68#	BFV26	150m	30MΔ	S	60	45	6.0	30m	50n	5.0	1.0m	150	Δ	PE	S5a	P		
69	2N2167	150m	36M*	S	12	12	12	20n	6.0	6.0	1.0m	38		A	TO5	A		
70	2N2164	150m	44M*	S	12	12	12	20n	3.0	3.0	1.0m	40		A	TO5	A		
71#	BFN23	150m	60MΔ	S	250	250	5.0	20m	100n	20	25m	50	Δ	PE	X156a	A		
72#	2SA1162	150m	80MΔ	S	-50	-50	-5	150m	100n	-6	-2m	70	Δ	PE	X156b	A		
73#	2SA429	150m	100M*	S	150	150	3.0	30m	1.0u	2.0	2.0m	80	Δ	PE	R67a	B		
74#	2SA628T	150m	100M*	S	30	25	4.0	100m	1.0u	6.0	1.0m	100	Δ	PE	TO92	D		
75#	2SA628AT	150m	100M*	S	60	60	4.0	100m	1.0u	6.0	1.0m	100	Δ	PE	TO92	D		
76#	2SA725	150m	100M*	S	35	35	5.0	100m	100n	6.0	1.0m	600	Δ	PE	TO92	D		
77#	2SA726	150m	100M*	S	50	50	5.0	100m	100n	6.0	1.0m	600	Δ	PE	TO92	D		
78#	2SA1163	150m	100M*	S	120	120	-5	100m	100n	-6	-2m	200	Δ	PE	X156b	A		
79#	BFV30T	150m	140MΔ	S	20	15	4.0	100m	50n	5.0	1.0m	15	Δ	PE	S5a	P		
80#	BFV33	150m	140MΔ	S	25	20	5.0	50m	1.0u	10	2.0m	30	Δ	PE	S5a	P		
81#	BCW81BA1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	200		PE	X156a	A		
82#	BCW81BB1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	280		PE	X156a	A		
83#	BCW81BC1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	330		PE	X156a	A		
84#	BCW81BD1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	520		PE	X156a	A		
85#	BCX71BG1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	200		PE	X156a	A		
86#	BCX71BH1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	260		PE	X156a	A		
87#	BCX71BJ1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	330		PE	X156a	A		
88#	BCX71BK1	150m	150M*	S	1.4m	1.4m	5.0	200m	20n	5.0	2.0m	520		PE	X156a	A		
89#	BFV20	150m	150MΔ	S	40	30	5.0	600m	50n	10	150m	40	Δ	PE	S5a	P		
90#	BFV21	150m	150MΔ	S	40	30	5.0	600m	50n	10	150m	100	Δ	PE	S5a	P		

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	fab	DERATE IN FREE AIR W/°C	T M A M X P	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX (Vc)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E
						BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	KT361SZ	150m	250M\$	1.4m	J	10	10	4.0	50m	1.0u	10	1.0m	50	Δ				X181	B	
2#	KT361V	150m	250M\$	1.4m	J	40	40	4.0	50m	1.0u	10	1.0m	20	Δ			X181	B		
3#	2SA956H3†	150m	280M\$	1.2m	J	60	40	8.0	100m	100n	1.0	10m	80	Δ*			X156b	A		
4#	2SA956H4†	150m	280M\$	1.2m	J	60	40	8.0	100m	100n	1.0	10m	110	Δ*			X156b	A		
5#	2SA956H5†	150m	280M\$	1.2m	J	60	40	8.0	100m	100n	1.0	10m	150	Δ*			X156b	A		
6#	2SA956H6†	150m	280M\$	1.2m	J	60	40	8.0	100m	100n	1.0	10m	200	Δ*			X156b	A		
7#	2SC996	150m	350M\$	1.5m	J	40	30	4.0	50m	100n	6.0	1.0m	40	Δ			B40	A		
8#	BFV31†	150m	350M\$Δ	1.1m	S	12	12	4.0	200m	150n	1.0	30m	30	Δ			S5a	P		
9#	BFV32†	150m	350M\$Δ	1.1m	S	10	10	3.5	200m	200n	1.0	30m	20	Δ			S5a	P		
10#	2N4411	150m	400M\$Δ	833u	S	15	12	5.0	25m	5.0n	5.0	500u	40	Δ			T072	G		
11#	BFV29†	150m	400M\$Δ	1.1m	S	20	15	5.0	200m	50n	5.0	10m	30	Δ			S5a	P		
12#	BF660	150m	650M\$		J	40	30	4.0	25m	50n	1.0	3.0m	30	†			Y236	C		
13#	BF272	150m	1.0G\$		J	40	35	4.0	20m	50u	10	3.0m	30	†			T072	G		
14#	2SA967	150m	4.0G\$		J	15	8.0	2.0	30m	100n	5.0	10m	25	Δ			W110a	C		
15#	BF479†	160m	1.8G\$	1.6u	J	20	20	3.0	50m	100n	10	10m	25	Δ			T050	A		
16#	BF679†	160m	1.8G\$	1.6u	J	35	30	3.0	30m	100n	10	3.0m	25	Δ			T050	A		
17#	BF679	170m	1.0G\$	1.6m	J	40	35	3.0	30m	100n	10	3.0m	35	Δ			W31	A		
18#	BFR38	175m	850M\$		J	40	35	3.0	20m	50u	10	3.0m	25	†			T072	G		
19#	BC818	180m	300M\$		J	25	5.0	100m	100n	15n							Y236	E		
20#	BC846	180m	300M\$		J	80	65	6.0	100m	15n							Y236	E		
21#	BC850	180m	300M\$		J	50	45	5.0	100m	15n							Y236	E		
22#	BF550	180m	325M\$	2.0m	J	40	40	4.0	25m	50n	10	1.0m	50	Δ			X156	A		
23#	BF550R	180m	325M\$	2.0m	J	40	40	4.0	25m	50n	10	1.0m	50	Δ			X156	A		
24#	2N4248	200m		2.0m	J	40	40	4.0	100m	10n	5.0	1.0m	50	Δ			R124e	A		
25#	2N4249	200m		2.0m	J	60	60	5.0	100m	10n	5.0	1.0m	100	Δ			R124e	A		
26#	2N4250	200m		2.0m	J	40	40	5.0	100m	10n	5.0	1.0m	250	Δ			R124e	A		
27#	2N4250A	200m		2.0m	J	60	60	5.0	100m	10n	5.0	1.0m	250	Δ			R124b	A		
28#	2N4258	200m		2.0m	J	12	12	4.5	50m	5.0n	3.0	10m	30	Δ			R124e	A		
29#	2N4917	200m		2.0m	J	30	30	5.0	100m	25n	1.0	100u	100	Δ			R124e	A		
30#	2N4957	200m		1.1m	S	30	30	3	30m			2m	20	Δ			T072	A		
31#	2N4958	200m		1.1m	S	30	30	3	30m			2m	20	Δ			T072	G		
32#	2N4959	200m		1.1m	S	30	30	3	30m			2m	20	Δ			T072	G		
33#	2N5829	200m		1.1m	S	30	30	3	30m			2m	20	Δ			T072	G		
34#	2SA530HA†	200m		1.3m	J	50	35	5.0	100m	1.0u	10	20m	2.0	Δ			T018	A		
35#	2SA530HB†	200m		1.3m	J	50	35	5.0	100m	1.0u	10	20m	2.0	Δ			T018	A		
36#	2SA1034	200m			J	35	35	5.0	50m	100n	5.0	2.0m	180	Δ			X156b	A		
37#	2SA1035	200m			J	55	55	5.0	50m	100n	5.0	2.0m	180	Δ			X156b	A		
38#	BC204	200m			J	45	45	5.0	50m	50n	5.0	2.0m	50	Δ			R110	A		
39#	BC205C	200m			J	25	20	5.0	50m	50n	5.0	2.0m	400	Δ			R110	A		
40#	BC206C	200m			J	25	20	5.0	50m	50n	5.0	2.0m	400	Δ			R110	A		
41#	BC250	200m		2.0m	J	20	20	5.0	100m	100n	1.0	1.0m	35	Δ			R204	A		
42#	BC251	200m		2.0m	J	45	45	5.0	100m	50n	5.0	2.0m	125	Δ*			R204	A		
43#	BC252	200m		2.0m	J	20	20	5.0	100m	50n	5.0	2.0m	125	Δ*			R204	A		
44#	BC253	200m		2.0m	J	20	20	5.0	100m	50n	5.0	2.0m	125	Δ*			R204	A		
45#	BCW29#	200m		1.3m	J	30	20	5.0	100m	100n	5.0	2.0	260	Δ†			X156	B		
46#	BCW29R#	200m		1.3m	J	30	20	5.0	100m	100n	5.0	2.0	260	Δ†			X156	B		
47#	BCW30#	200m		1.3m	J	30	20	5.0	100m	100n	5.0	2.0	5	Δ†			X156	B		
48#	BCW30R#	200m		1.3m	J	30	20	5.0	100m	100n	5.0	2.0	500	Δ†			X156	B		
49#	BCW69#	200m		1.3m	J	50	45	5.0	100m	100n	5.0	10u	90	†			X156	B		
50#	BCW69R#	200m		1.3m	J	50	45	5.0	100m	100n	5.0	10u	90	†			X156	B		
51#	BCW70#	200m		1.3m	J	50	45	5.0	100m	100n	5.0	10u	150	†			X156	B		
52#	BCW70R#	200m		1.3m	J	50	45	5.0	100m	100n	5.0	10u	150	†			X156	B		
53#	KT326AM	200m			J	50	15	5.0	50m	0.5u	2.0	10m	70	Δ†			X156	B		
54#	KT326BM	200m			J	15	15	5.0	50m	0.5u	2.0	10m	160	Δ†			X156	B		
55#	2SC372#	200m	200m\$	2.0m	J	35	30	4.0	50m	500n	12	2.0m	707	Δ*			T092	B		
56#	2SC373#	200m	200m\$	2.0m	J	35	30	4.0	50m	500n	12	2.0m	200	Δ			T092	B		
57#	BC153	200m	40	2.0m	J	40	40	5.0	50m	500p	5.0	1.0m	135	†			R97a	A		
58#	MPS4250A	200m	250k\$Δ	2.0m	J	60	60	5.0	10m	10n	5.0	1.0m	250	Δ			T092	A		
59#	2N2370	200m	1.0M	1.1m	J	15	15	15	50m	50u	4.0	25m	15	Δ			T05	A		
60#	2N2371	200m	1.0M	1.1m	J	15	15	15	50m	50u	4.0	25m	20	Δ			T05	A		
61#	KT209A	200m	5.0M\$Δ	2.2m	J	15	15	10	300m	1.0	1.0	30m	20	Δ			S14	A		
62#	KT209B	200m	5.0M\$Δ	2.2m	J	15	15	10	300m	1.0	1.0	30m	40	Δ			S14	A		
63#	KT209D	200m	5.0M\$Δ	2.2m	J	30	30	10	300m	1.0	1.0	30m	40	Δ			S14	A		
64#	KT209E	200m	5.0M\$Δ	2.2m	J	30	30	10	300m	1.0	1.0	30m	80	Δ			S14	A		
65#	KT209G	200m	5.0M\$Δ	2.2m	J	30	30	10	300m	1.0	1.0	30m	20	Δ			S14	A		
66#	KT209†	200m	5.0M\$Δ	2.2m	J	45	45	10	300m	1.0	1.0	30m	40	Δ			S14	A		
67#	KT209K	200m	5.0M\$Δ	2.2m	J	45	45	10	300m	1.0	1.0	30m	80	Δ			S14	A		
68#	KT209L	200m	5.0M\$Δ	2.2m	J	60	60	10	300m	1.0	1.0	30m	20	Δ			S14	A		
69#	KT209M	200m	5.0M\$Δ	2.2m	J	60	60	10	300m	1.0	1.0	30m	40	Δ			S14	A		
70#	KT209S	200m	5.0M\$Δ	2.2m	J	45	45	10	300m	1.0	1.0	30m	20	Δ			S14	A		
71#	KT209V	200m	5.0M\$Δ	2.2m	J	15	15	10	300m	1.0	1.0	30m	80	Δ			S14	A		
72#	TD400*	200m	2.0M\$Δ	1.6m	J	40	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PN		
73#	TD401*	200m	2.0M\$Δ	1.6m	J	40	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PN		
74#	TD402*	200m	2.0M\$Δ	1.6m	J	40	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PN		
75#	TD500*	200m	2.0M\$Δ	1.6m	J	60	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PL		
76#	TD501*	200m	2.0M\$Δ	1.6m	J	40	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PL		
77#	TD502*	200m	2.0M\$Δ	1.6m	J	40	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PL		
78#	TD550*	200m	2.0M\$Δ	1.6m	J	40	30	5.0	500m	10n	5.0	1.0m	120	Δ			R138	PL		
79#	2N5138	200m	30M\$Δ	2.0m	J	30	30	5.0	100m	50n	10	1.0m	40	Δ			T0106	A		
80#	2SA845AH	200m	40M\$		J	180	180	5.0	50m	1.0u	3.0	15m	80	†			T018	A		
81#	2SA845H	200m	40M\$		J	150	150	5.0	50m	1.0u	3.0	15m	80	†			T018	A		
82#	BC154	200m	40M\$Δ	2.0m	J	40	40	5.0	500p	5.0	1.0m	330	†	#			R97a	A		
83#	2SA778AK†	200m	50M\$	2.0m	J	180	180	5.0	50m	1.0u	3.0	15m	100	†			S8	B		
84#	2SA778K†	200m	50M\$	2.0m	J	150	150	5.0	50m	1.0u	3.0	15m	100							

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @25°C (W)	2   DERATE IN FREE AIR W/C (Hz)	M E M P	ABS MAX RATINGS @25°C			MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E			
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)							
1	S05400	200m	100mΔ	1.8m	Δ	Δ	120	1.8m	10mΩ	40 Δ				6.0pΩ		TO236	A				
2	S05400R	200m	100mΔ	1.8m	Δ	Δ	120	1.8m	10mΩ	40 Δ			6.0pΩ		TO236	A					
3	S05401	200m	100mΔ	1.8m	Δ	Δ	150	1.8m	10mΩ	60 Δ			6.0pΩ		TO236	A					
4	S05401R	200m	100mΔ	1.8m	Δ	Δ	150	1.8m	10mΩ	60 Δ			6.0pΩ		TO236	A					
5	2SA569	200m	120mS	2.0m	Δ	Δ	50	4.0	150mΩ	100 †			10p	PE†	TO92	C					
6	2SA978	200m	125mS	2.0m	Δ	Δ	40	5.0	100mΩ	150 †Δ			13p	PE†	TO92	D					
7	2SA847	200m	150mS	2.0m	Δ	Δ	90	4.0	50m	100mΩ	6.0	1.0m	500 †	20u	14k	3.4	2.5p	PE†	TO92	D	
8	2SA847A	200m	150mS	2.0m	Δ	Δ	120	120	5.0	50m	100mΩ	6.0	1.0m	250 †Δ	19u	14k	800m	2.5p	PE†	TO92	D
9	2SA904	200m	150mS	2.0m	Δ	Δ	90	5.0	50m	100mΩ	6.0	1.0m	250 †Δ	19u	14k	800m	2.5p	PE†	TO92	D	
10	2SA904A	200m	150mS	2.0m	Δ	Δ	120	120	5.0	50m	100mΩ	6.0	1.0m	250 †Δ	19u	14k	800m	2.5p	PE†	TO92	D
11	2SA1022	200m	150mS	2.0m	Δ	Δ	30	20	5.0	30m	100mΩ	10	1.0m	50 †Δ				1.2p†	PE	X156b	A
12	2SB779	200m	150mS	2.0m	Δ	Δ	25	20	7.0	0.5	100m	2.0	500mΩ	350 †Ω				15p	PE	X156A	A
13	BCF29	200m	150mS	1.6m	Δ	Δ	20	0.2										7.0pΩ		TO236	A
14	BCF29R	200m	150mS	1.6m	Δ	Δ	20	0.2										7.0pΩ		TO236	A
15	BCF30	200m	150mS	1.6m	Δ	Δ	20	0.2										7.0pΩ		TO236	A
16	BCF30R	200m	150mS	1.6m	Δ	Δ	20	0.2										7.0pΩ		TO236	A
17	BCF70	200m	150mS	1.6m	Δ	Δ	45	0.2										4.0pΩ		TO236	A
18	BCF70#	200m	150mS	1.6m	Δ	Δ	45	0.2										4.0pΩ		TO236	A
19	BCF70R	200m	150mS	1.6m	Δ	Δ	50	-45	-5	100m	100m	-5	-10u	150 †				7.0pΩ	PE	X156A	A
20	BCW29	200m	150mS	1.6m	Δ	Δ	30	20	5.0	100m	100mΩ	5.0	10u	90 †				7.0pΩ		X156	A
21	BCW29R	200m	150mS	1.6m	Δ	Δ	30	20	5.0	100m	100mΩ	5.0	10u	90 †				7.0pΩ	PE†	X156	A
22	BCW30	200m	150mS	1.6m	Δ	Δ	30	20	5.0	100m	100mΩ	5.0	10u	150 †				7.0pΩ		X156	A
23	BCW30R	200m	150mS	1.6m	Δ	Δ	30	20	5.0	100m	100mΩ	5.0	10u	150 †				7.0pΩ	PE†	X156	A
24	BCW69	200m	150mS	1.6m	Δ	Δ	50	45	5.0	100m	100mΩ	5.0	10u	90 †				7.0pΩ	PE	X156	A
25	BCW89R	200m	150mS	1.6m	Δ	Δ	50	45	5.0	100m	100mΩ	5.0	10u	90 †				7.0pΩ	PE†	X156	A
26	BCW70	200m	150mS	1.6m	Δ	Δ	50	45	5.0	100m	100mΩ	5.0	10u	150 †				7.0pΩ	PE	X156	A
27	BCW70R	200m	150mS	1.6m	Δ	Δ	50	45	5.0	100m	100mΩ	5.0	10u	150 †				7.0pΩ	PE†	X156	A
28	BCW89	200m	150mS	1.6m	Δ	Δ	60	60	0.2									7pΩ		TO236	A
29	BCW89R	200m	150mS	1.6m	Δ	Δ	60	60	0.2									7pΩ		TO236	A
30	EN2907†	200m	150mSΔ	2.0m	Δ	Δ	60	40	5.0	800m	50nS	10	150mΩ	100 †#Δ				8.0pΩ	DPE	TO106	A
31	EN3504†	200m	150mSΔ	2.0m	Δ	Δ	45	45	5.0	800m	10nS	10	10mΩ	135 †	1.2m	2.3k	15	8.0pΩ	DPE	TO106	A
32	SF104	200m	150mS	1.6m	Δ	Δ	20	18	4.0	200m	100n	4.0	1.0m	50 †Δ				4.0p		R110	A
33	SF118	200m	150mS	1.6m	Δ	Δ	30	20	4.0	200m	100n	4.0	1.0m	200 †Δ				4.0p		R110	A
34	SF157	200m	150mS	1.6m	Δ	Δ	50	45	5.0	200m	50n	5.0	2.0m	75 †Δ				4.0p		R110	A
35	SF158	200m	150mS	1.6m	Δ	Δ	30	25	5.0	200m	100n	5.0	2.0m	75 †Δ				4.0p		R110	A
36	2SB624	200m	160mS	1.8m	Δ	Δ				700m	100n	1.0	100mΩ	180 †Ω				17p		X156h	A
37	2SB624BV1	200m	160mS	1.8m	Δ	Δ				700m	100n	1.0	100mΩ	180 †Ω				17p		X156h	A
38	2SB624BV2	200m	160mS	1.8m	Δ	Δ				700m	100n	1.0	100mΩ	220 †Ω				17p		X156h	A
39	2SB624BV3	200m	160mS	1.8m	Δ	Δ				700m	100n	1.0	100mΩ	270 †Ω				17p		X156h	A
40	2SB624BV4	200m	160mS	1.8m	Δ	Δ				700m	100n	1.0	100mΩ	320 †Ω				17p		X156h	A
41	2SB624BV5	200m	160mS	1.8m	Δ	Δ				700m	100n	1.0	100mΩ	400 †Ω				17p		X156h	A
42	BC205	200m	160mS	5.0m	Δ	Δ	25	20	5.0	50n	5.0	5.0	2.0m	110 †Δ				4.0p	PE	TO106	A
43	BC206	200m	160mS	5.0m	Δ	Δ	25	20	5.0	50n	5.0	5.0	2.0m	200 †				4.0p	PE	TO106	A
44	2SA608SP	200m	180mS		Δ	Δ	40	30	5.0	1.0u	6.0	1.0m	150 †*				7.0p	PE	B40	A	
45	2SA1179	200m	180mS		Δ	Δ	55	30	5	150m	0.1u	6	1m	560 †Ω				7p	PE	S27	B
46	JAN2N4261†	200m	200mSΔ	1.1m	Δ	Δ	15	15	4.5	30m	50n#	1.0	10mΩ	30 †Δ				2.5pΩ		TO72	G
47	2N4971†	200m	200mSΔ	2.0m	Δ	Δ	50	40	5.0	500m	25nS	1.0	150mΩ	120 †#				8.0pΩ		TO106	A
48	2N4972†	200m	200mSΔ	2.0m	Δ	Δ	50	40	5.0	500m	25nS	1.0	150mΩ	300 †#				8.0pΩ		TO106	A
49	2SA493	200m	200mS	2.0m	Δ	Δ	50	50	5.0	50m	100n	6.0	2.0	200 †				10pΩ	PE	R67a	B
50	2SA495	200m	200mS	2.0m	Δ	Δ	35	30	5.0	100m	500n	1.0	10mΩ	40 †*				4.0p	PE	R67a	B
51	2SA530H†	200m	200mSΔ	1.3m	Δ	Δ	50	35	5.0	100m	1.0u	1.0	10mΩ	120 †				8.0pΩ	PE	TO18	A
52	2SA555†	200m	200mS	2.0m	Δ	Δ	50	50	5.0	200m	1.0u	1.0	10mΩ	80 †				5.5p	PEΔ	R195d	B
53	2SA838C	200m	200mS	2.0m	Δ	Δ	55	55	5.0	100m	100mΩ	12	2.0m	180 †Δ				1.8p		S8	B
54	2SA838D	200m	200mS	2.0m	Δ	Δ	55	55	5.0	100m	100mΩ	12	2.0m	250 †Δ				1.8p		S8	B
55	2SA1029B	200m	200mSΔ	2.0m	Δ	Δ	30	30	5.0	100m	500n	12	2.0m	200 †Ω				4.0pΩ		TO92	B
56	2SA1029C	200m	200mSΔ	2.0m	Δ	Δ	30	30	5.0	100m	500n	12	2.0m	320 †Ω				4.0pΩ		TO92	B
57	2SA1029D	200m	200mSΔ	2.0m	Δ	Δ	30	30	5.0	100m	500n	12	2.0m	500 †Ω				4.0pΩ		TO92	B
58	2SA1030B	200m	200mSΔ	2.0m	Δ	Δ	55	50	5.0	100m	500n	12	2.0m	200 †Ω				4.0pΩ		TO92	B
59	2SA1030C	200m	200mSΔ	2.0m	Δ	Δ	55	50	5.0	100m	500n	12	2.0m	320 †Ω				4.0pΩ		TO92	B
60	2SA1031B	200m	200mSΔ	2.0m	Δ	Δ	30	30	5.0	100m	500n	12	2.0m	200 †Ω				4.0pΩ		TO92	B
61	2SA1031C	200m	200mSΔ	2.0m	Δ	Δ	30	30	5.0	100m	500n	12	2.0m	320 †Ω				4.0pΩ		TO92	B
62	2SA1031D	200m	200mSΔ	2.0m	Δ	Δ	30	30	5.0	100m	500n	12	2.0m	500 †Ω				4.0pΩ		TO92	B
63	2SA1032B	200m	200mSΔ	2.0m	Δ	Δ	55	50	5.0	100m	500n	12	2.0m	200 †Ω				4.0pΩ		TO92	B
64	2SA1032C	200m	200mSΔ	2.0m	Δ	Δ	55	50	5.0	100m	500n	12	2.0m	320 †Ω				4.0pΩ		TO92	B
65	2SB710	200m	200mS	2.0m	Δ	Δ	30	25	5.0	500m	100n	10	150mΩ	60 †#Δ				6.0p	PE	X156b	A
66	2SB710A	200m	200mS	2.0m	Δ	Δ	80	50	5	500m	0.1u	10	150mΩ	180				6p	PE	S27	A
67	2SB792	200m	200mS	2.0m	Δ	Δ	150	150	5.0	50m	1.0u	5.0	10mΩ	150 †Ω				4.0p	PE	X156	A
68	2SC2724	200m	200mS		Δ	Δ	30	25	4.0	30m	1.0u	6.0	1.0m	300 †				2.0p			A
69	BCX69#†	200m	200mSΔ	1.3m	Δ	Δ	40	40	5.0	200m	50nS†	1.0	50mΩ	110 †Δ				4.5pΩ	PL	X156a	B
70	BCX69R†	200m	200mSΔ	1.3m	Δ	Δ	40	40	5.0	200m	50nS†	1.0	50mΩ	110 †Δ				4.5pΩ	PL	X156a	B
71	BSR16R†	200m	200mSΔ	1.6m	Δ	Δ	60	60	5.0	100m	50nS	1.0	150mΩ	100				4.5pΩ	PL	TO236	B
72	BSS69†	200m	200mSΔ	1.6m	Δ	Δ	40	40	5.0	100m	50nS	1.0	10mΩ	50 †Δ				4.5pΩ	PL	X156a	A
73	BSS69R	200m	200mSΔ	1.6m	Δ	Δ	40	40	5.0	100m	50nS	1.0	10mΩ	50 †Δ							

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. @ 25°C (W)	2   DERATE IN FREE AIR W/°C	T M E A M P	ABS MAX RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E
					V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>eb</sub> (V)	I <sub>c</sub> (A)	I <sub>cb</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>				
1	SO3906R	200m	250mΔ	1.6m	Δ	Δ	60	40	5.0	1.6m	100	100	Δ	4.5p	AN	T0236	C
2	MMCM2907†	200m	280mΔ	1.1m	Δ	Δ	40	40	5.0	600m	50n	100	Δ	4.8p	AN	W10	C
3	2N3307	200m	300mΔ	1.1m	Δ	Δ	40	35	3.0	50m	100	100	Δ	1.3p	Δ	R176a	G
4	2N3308	200m	300mΔ	1.1m	Δ	Δ	30	25	3.0	50m	100	100	Δ	1.6p	Δ	R176a	A
5	2N5139†	200m	300mΔ	2.0m	Δ	Δ	20	20	5.0	100m	50n	100	Δ	5.0p	Δ	T0106	A
6	2N5141†	200m	300mΔ	2.0m	Δ	Δ	6.0	6.0	4.0	100m	100n	2.0	1.0p	Δ	T0106	A	
7	MPS3639†	200m	300mΔ	2.0m	Δ	Δ	6.0	6.0	4.0	80m	10n	1.0	50m	Δ	20	R196a	A
8	MPS4248	200m	300m	2.0m	Δ	Δ	40	40	4.0	200m	10n	5.0	10m	Δ	50	T092	A
9	MPS4249	200m	300m	2.0m	Δ	Δ	60	60	5.0	200m	10n	5.0	10m	Δ	100	T092	A
10#	2SC995	200m	350mΔ	2.0m	Δ	Δ	40	30	4.0	50m	100n	6.0	1.0m	Δ	40	B40	A
11	GES4121	200m	350mΔ	2.0m	Δ	Δ	40	40	4.0	100m	25n	1.0	1.0m	Δ	50	T092	A
12	2N4121†	200m	400mΔ	2.0m	Δ	Δ	40	40	5.0	100m	25n	1.0	1.0m	Δ	50	R140	A
13	2N4389†	200m	400mΔ	2.0m	Δ	Δ	12	12	4.0	100m	100n	1.0	1.0m	Δ	180	R124b	A
14	2N4916†	200m	400mΔ	2.0m	Δ	Δ	30	30	5.0	100m	25n	1.0	1.0m	Δ	60	R124	A
15	2N5140†	200m	400mΔ	2.0m	Δ	Δ	5.0	5.0	4.0	50m	50n	1.0	1.0m	Δ	140	T0106	A
16#	2SA1164	200m	400mΔ	2.0m	Δ	Δ	35	30	5.0	100m	100n	1.0	2.0m	Δ	70	T092	A
17#	2SA1226	200m	400mΔ	2.5m	Δ	Δ	40	40	5.0	30m	100n	1.0	1.0m	Δ	90	X156b	A
18	GES4122	200m	400mΔ	2.0m	Δ	Δ	40	40	5.0	100m	25n	1.0	1.0m	Δ	150	T092	A
19	HSE319-RT	200m	400mΔ	3.0m	Δ	Δ	40	40	4.0	1.0u	1.0	1.0	1.0m	Δ	40	R124d	A
20	SO2894†	200m	400mΔ	1.6m	Δ	Δ	12	12	4.0	1.0u	1.0	1.0	1.0m	Δ	40	T0236	A
21	SO2894R†	200m	400mΔ	1.6m	Δ	Δ	12	12	4.0	1.0u	1.0	1.0	1.0m	Δ	40	T0236	A
22	TP5140	200m	400m	2.0m	Δ	Δ	5.0	5.0	4.0	200m	50n	1.0	1.0m	Δ	40	T092	A
23	2N4122†	200m	450mΔ	2.0m	Δ	Δ	40	40	5.0	100m	25n	1.0	1.0m	Δ	150	R110	A
24	2N3639†	200m	500mΔ	2.0m	Δ	Δ	6.0	6.0	4.0	80m	50n	1.0	50m	Δ	20	R110	A
25	2N3640†	200m	500mΔ	2.0m	Δ	Δ	12	12	4.0	80m	50n	1.0	50m	Δ	20	R110	A
26	2N4257A†	200m	500mΔ	2.0m	Δ	Δ	6.0	6.0	4.5	50m	10n	3.0	10m	Δ	30	R124b	A
27	BSV52†	200m	500m	2.0m	Δ	Δ	20	12	5.0	100m	100n	1.0	1.0m	Δ	25	X156c	Δ
28	2N5055†	200m	550mΔ	2.0m	Δ	Δ	12	12	4.5	100m	50n	5.0	1.0m	Δ	12	R124b	A
29#	2SA781K†	200m	550mΔ	2.0m	Δ	Δ	20	15	4.0	200m	200n	5.0	30m	Δ	20	S8	A
30#	BF316A	200m	600mΔ	1.0m	Δ	Δ	40	35	3.0	20m	100n	1.0	3.0m	Δ	50	T072	A
31	2N4258A†	200m	700mΔ	2.0m	Δ	Δ	12	12	4.5	50m	10n	3.0	1.0m	Δ	30	R124b	A
32#	BF272A	200m	850mΔ	1.0m	Δ	Δ	40	35	3.0	20m	100n	1.0	3.0m	Δ	50	T072	A
33#	BF272S	200m	850mΔ	1.0m	Δ	Δ	40	35	3.0	20m	100n	1.0	3.0m	Δ	60	T072	A
34	SO679	200m	850mΔ	1.6m	Δ	Δ	35	35	4.0	1.0u	1.0	1.0	1.0m	Δ	40	T0236	A
35#	2SA983	200m	1.0GΔ	2.0m	Δ	Δ	-30	-25	-4	-20m	-1.0u	-10	-3m	Δ	40	XXXXX	A
36	BT4261	200m	1.2GΔ	1.1m	Δ	Δ	15	15	4.5	30m	50n	1.0	1.0m	Δ	16	C15	AE
37	BSR12†	200m	1.5GΔ	1.6m	Δ	Δ	15	15	3.0	100m	50n	1.0	1.0m	Δ	30	X156e	A
38	BSR12R†	200m	1.5GΔ	1.6m	Δ	Δ	15	15	3.0	100m	50n	1.0	1.0m	Δ	30	X156e	A
39	BT4260	200m	1.5GΔ	1.1m	Δ	Δ	15	15	4.5	30m	50n	1.0	1.0m	Δ	16	C15	AE
40	2N4260	200m	1.6GΔ	1.1m	Δ	Δ	15	15	4.5	30m	5.0n	1.0	1.0m	Δ	25	T072	A
41	MMBR4957	200m	1.6GΔ	2.0m	Δ	Δ	30	30	4.0	100n	1.0	2.0m	40	Δ	40	X156d	A
42	2N4261	200m	2.0GΔ	1.1m	Δ	Δ	15	15	4.5	30m	5.0n	1.0	1.0m	Δ	25	T072	A
43#	MM4049	200m	4GΔ	1.1m	Δ	Δ	15	10	4.5	30m	10n	2.0	25m	Δ	20	Y206†	A
44#	BFT95	200m	5.0GΔ	2.2m	Δ	Δ	15	15	3.0	50m	100n	5.0	5.0m	Δ	80	W31	C
45	MMT71	225m	2.0m	2.0m	Δ	Δ	25	20	4.0	50m	50n	5.0	2.0m	Δ	150	W6	C
46	MMT75†	225m	2.0m	2.0m	Δ	Δ	30	20	5.0	200m	100n	1.0	50m	Δ	20	W6	C
47	MMT3798	225m	40mΔ	2.0m	Δ	Δ	60	60	3.0	50m	50n	1.0	1.0m	Δ	275	W6	D
48	MMT3799	225m	40mΔ	2.0m	Δ	Δ	60	60	3.0	50m	50n	1.0	1.0m	Δ	475	W6	D
49	MMT3905	225m	200mΔ	1.8m	Δ	Δ	40	40	5.0	200m	50n	1.0	10m	Δ	50	W6a	C
50	MMT3906	225m	250mΔ	1.8m	Δ	Δ	40	40	5.0	200m	50n	1.0	10m	Δ	100	W6a	C
51	MMT2907†	225m	340mΔ	1.8m	Δ	Δ	60	40	5.0	300m	50n	1.0	1.0m	Δ	50	W6a	C
52	MMT73†	225m	400mΔ	2.0m	Δ	Δ	8.0	4.0	200m	100n	1.0	1.0m	30	Δ	30	W6a	C
53	MMT3546†	225m	700mΔ	2.0m	Δ	Δ	15	12	4.5	250m	100n	1.0	1.0m	Δ	30	W6	C
54#	BCY29	230m*	500k	2.2m	Δ	Δ	60	60	3.0	50m	100m	1.0	1.0m	Δ	25	T05	A
55	2N2709	240m	2.0MΔ	1.8m	Δ	Δ	50	35	2.0	50m	1.0u	1.0	2.0m	Δ	10	T05	A
56#	BC415	240m	2.0MΔ	3.0m	Δ	Δ	45	30	1.0	100m	5.0	5.0	2.0m	Δ	125	R221a	F
57#	BC416	240m	2.0MΔ	3.0m	Δ	Δ	50	45	1.0	100m	5.0	5.0	2.0m	Δ	125	R221a	F
58	2N935	250m	3.0m	1.8m	Δ	Δ	50	40	2.0	50m	100n	5.0	100u	Δ	9.0	T018	A
59	2N936	250m	3.0m	1.8m	Δ	Δ	50	35	2.0	50m	100n	5.0	100u	Δ	18	T018	A
60	2N937	250m	3.0m	1.8m	Δ	Δ	50	30	2.0	50m	100n	5.0	100u	Δ	36	T018	A
61	2N3342†	250m	1.6m	1.6m	Δ	Δ	20	8.0	2.0	50m	20n	1.0	5.0m	Δ	30	T05	A
62	2N3794	250m	2.0m	2.0m	Δ	Δ	40	20	5.0	500m	500n	1.0	10m	Δ	100	X149	B
63#	2SA539	250m	2.5m	2.5m	Δ	Δ	60	45	5.0	200m	100n	1.0	50m	Δ	80	R182b	B
64#	2SA564	250m	2.5m	2.5m	Δ	Δ	25	25	5.0	50m	1.0u	5.0	2.0m	Δ	250	T092	B
65#	2SA564A	250m	2.5m	2.5m	Δ	Δ	45	45	5.0	50m	1.0u	5.0	2.0m	Δ	250	T092	B
66#	2SA723	250m	2.5m	2.5m	Δ	Δ	40	20	5.0	500m	200n	1.0	100m	Δ	120	R182b	B
67#	2SA973	250m	2.5m	2.5m	Δ	Δ	60	55	5.0	50m	100n	5.0	2.0m	Δ	180	T092	B
68#	2SA1092	250m	2.5m	2.5m	Δ	Δ	60	55	5.0	50m	0.1u	5.0	2m	Δ	260	T092	B
69	2N1275	250m	100kΔ	1.8m	Δ	Δ	100	80	60	50m	1.0u	5.0	1.0m	Δ	9.0	T05	A
70	2N3401†	250m	100kΔ	2.0m	Δ	Δ	25	25	25	100m	100n	5.0	1.0m	Δ	4.0	T05	A
71	2N1034	250m	200k	1.8m	Δ	Δ	50	40	2.0	50m	1.0u	6.0	1.0m	Δ	15	T05	A
72	2N1655	250m	200k	1.8m	Δ	Δ	125	100	125	50m	1.0u	5.0	1.0m	Δ	15	T05</	



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE IN FREE AIR W/C (Hz)	M E P	ABS MAX RATINGS @ 25°C				MAX. I <sub>c</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E				
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>eb</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					hoe (mhos)	hie (Ω)	hre (X.0001)	
1	2N1220	250m	2.0MΔ	1.6m	Δ	30	25	20	100m	100m	25	5.0m	9.0 Δ	18pZ	A	T05	A			
2	2N1222	250m	2.0MΔ	1.7m	Δ	30	25	10	100m	100m	6.0	1.0m	9.0 Δ	18pZ	A	T05	A			
3	2N1223	250m	2.0MΔ	1.7m	Δ	40	40	10	100m	100m	6.0	1.0m	6.0 Δ	15pZ	A	T05	A			
4	1N1489	250m	2.0MΔ	1.6m	Δ	40	35	40	100m	25n	8.0	1.0m	36 Δ	2.5uZb	75 Z	20 Z	12pZ	T05	A	
5	2N1489	250m	2.0MΔ	1.4m	Δ	40	35	40	100m	25n	8.0	1.0m	36 Δ	2.5uZb	75 Z	20 Z	12pZ	T05	A	
6	2N1474A	250m	2.0MΔ	1.6m	Δ	60	60	60	100m	50n	8.0	1.0m	18 Δ	2.5uZb	75 Z	20 Z	12pZ	T05	A	
7	2N1917Z	250m	2.0MΔ	1.7m	Δ	25	8.0	25	50m	2.5n	8.0	1.1m	50	7.0p	Δ	Δ	Δ	T05	A	
8	2N3343Z	250m	2.0MΔ	1.7m	Δ	25	8.0	25	50m	3n	5.0	2.5m	20	25pZ	Δ	Δ	Δ	T05	A	
9	2N3344Z	250m	2.0MΔ	1.7m	Δ	30	30	30	50m	2n	5.0	2.0m	25	25pZ	Δ	Δ	Δ	T05	A	
10	2N3345Z	250m	2.0MΔ	1.7m	Δ	50	50	50	50m	5n	5.0	1.0m	15	25pZ	Δ	Δ	Δ	T05	A	
11	2N3346Z	250m	2.0MΔ	1.7m	Δ	50	50	50	50m	5n	5.0	1.0m	25	25pZ	Δ	Δ	Δ	T05	A	
12#	BCY34	250m	2.4MΔ	2.0m	Δ	32	32	16	100m	0.5u	8.0	1.0m	35	25pZ	Δ	Δ	Δ	T05	A	
13#	BCY32	250m	2.5MΔ	2.0m	Δ	64	64	32	100m	0.5u	8.0	1.0m	55	30u	1.7k	5.0	7 Z	T05	A	
14#	OC201	250m	3.2MΔ	2.0m	Δ	25	20	20	50m	50u	8.0	1.0m	40	80uZ	2.5kZ	6.0	7 Z	R8	A	
15#	OC202	250m	3.2MΔ	2.0m	Δ	15	10	10	50m	50u	8.0	1.0m	70	42u	2.1k	6.0	7 Z	R8	A	
16	2N1027	250m	4.0MΔ	1.6m	Δ	18	15	18	100m	25n	6.0	1.0m	18 Δ	15pZ	A	Δ	Δ	T05	A	
17	2N1219	250m	5.0MΔ	1.7m	Δ	30	25	20	100m	10u	2.5	5.0m	18 Δ	15pZ	A	Δ	Δ	T05	A	
18	2N1221	250m	5.0MΔ	1.7m	Δ	30	25	10	100m	10u	6.0	1.0m	18 Δ	15pZ	A	Δ	Δ	T05	A	
19	2N4285	250m	7.0MΔ	2.0m	Δ	35	35	35	50m	10n	5.0	1.0m	800 Z	1.2uZb	40 Z	10	10pZ	X149	A	
20	2N1028	250m	7.2MΔ	1.6m	Δ	12	10	12	100m	25n	8.0	1.0m	9.0 Δ	14pZ	Δ	Δ	Δ	T05	A	
21	2N942Z	250m	10MΔ	1.6m	Δ	25	8.0	25	50m	2.5n	8.0	1.0m	25 Δ	14pZ	Δ	Δ	Δ	T05	A	
22	2N1918Z	250m	10MΔ	1.7m	Δ	25	8.0	25	50m	2.5n	8.0	1.0m	50	7.0p	Δ	Δ	Δ	T05	A	
23	2N941Z	250m	16MΔ	1.6m	Δ	25	8.0	25	50m	2.5n	8.0	1.0m	25 Δ	14pZ	Δ	Δ	Δ	T05	A	
24	HA90541	250m	25MΔ	1.8m	Δ	15	15	5.0	200n	10	2.0m	25	b	10pZ	ME	ME	ME	T05	A	
25	HA90581	250m	25MΔ	1.8m	Δ	30	30	5.0	200n	10	2.0m	25	b	10pZ	ME	ME	ME	T05	A	
26	HA90581	250m	25MΔ	1.8m	Δ	50	50	5.0	200n	10	2.0m	25	b	10pZ	ME	ME	ME	T05	A	
27	2N3812*	250m	30MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	60uZ	15kZ	25	4pZ	X22	A	
28	2N3813*	250m	30MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	X22	A	
29	2N3814*	250m	30MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	80uZ	15kZ	25	4pZ	X22	A	
30	2N3815*	250m	30MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	X22	A	
31	2N3818*	250m	30MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	80uZ	15kZ	25	4pZ	X22	A	
32	2N3817*	250m	30MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	X22	A	
33	2N4288	250m	40MΔ	2.0m	Δ	30	25	6.0	100m	50n	5.0	1.0m	80 Δ	10uZb	40 Z	1.2 Z	8.0pZ	X149	B	
34	2N4289	250m	40MΔ	2.0m	Δ	30	25	7.0	100m	10n	5.0	1.0m	80 Δ	10uZb	40 Z	1.2 Z	8.0pZ	X149	B	
35#	2SA749	250m	40MΔ	1.8m	Δ	100	100	4.0	100m	100n	1.0	2.0m	80 Δ	3.5p	PE	PE	PE	T092	B	
36	HA90551	250m	40MΔ	1.8m	Δ	15	15	5.0	200n	10	2.0m	55	b	10pZ	ME	ME	ME	T05	A	
37	HA90571	250m	40MΔ	1.8m	Δ	30	30	5.0	200n	10	2.0m	55	b	10pZ	ME	ME	ME	T05	A	
38	HA90591	250m	40MΔ	1.8m	Δ	50	50	5.0	200n	10	2.0m	55	b	10pZ	ME	ME	ME	T05	A	
39	HA7206	250m	45MΔ	2.0m	Δ	70	70	4.0	250n	10	2.0m	55	300nb	30 Z	20	600m	3.0p	T092	A	
40#	2SA675	250m	50MΔ	2.5m	Δ	80	80	5.0	100m	1.0u	3.0	2.0m	120 Δ	11u	3.2k	900m	10pZ	T092	A	
41#	2SC900	250m	50MΔ	2.5m	Δ	40	35	5.0	100m	50n	3.0	0.1m	170 Δ	5.0pZ	E	E	E	T092	A	
42#	BSV68Z	250m	50MΔ	2.5m	Δ	100	100	5.0	100m	10u	5.0	2.5m	30 Δ	5.0pZ	E	E	E	T05	A	
43	HA7207	250m	55MΔ	2.0m	Δ	70	70	4.0	250n	10	2.0m	10	300nb	20	600m	3.0p	ME	T05	A	
44	2N2802*	250m	60MΔ	1.6m	Δ	25	20	5.0	30m	10n	5.0	1.0m	20 Δ	1.0uZb	32 Z	12 Z	8.0pZ	R131c	PA	
45	2N2803*	250m	60MΔ	1.6m	Δ	25	20	5.0	30m	10n	5.0	1.0m	20 Δ	1.0uZb	32 Z	12 Z	8.0pZ	R131c	PA	
46	2N2804*	250m	60MΔ	1.6m	Δ	25	20	5.0	30m	10n	5.0	1.0m	20 Δ	1.0uZb	32 Z	12 Z	8.0pZ	R131c	PA	
47	2N2805*	250m	60MΔ	1.6m	Δ	25	20	5.0	30m	10n	5.0	1.0m	40 Δ	1.0uZb	32 Z	12 Z	8.0pZ	R131c	PA	
48	2N2806*	250m	60MΔ	1.6m	Δ	25	20	5.0	30m	10n	5.0	1.0m	40 Δ	1.0uZb	32 Z	12 Z	8.0pZ	R131c	PA	
49	2N2807*	250m	60MΔ	1.6m	Δ	25	20	5.0	30m	10n	5.0	1.0m	40 Δ	1.0uZb	32 Z	12 Z	8.0pZ	R131c	PA	
50	2N3049*	250m	60MΔ	1.6m	Δ	25	20	5.0	100m	10n	5.0	1.0m	30 Δ	50uZ	4.5kZ	8.0pZ	8.0pZ	T089	B	
51	2N3050*	250m	60MΔ	1.6m	Δ	25	20	5.0	100m	10n	5.0	1.0m	30 Δ	50uZ	4.5kZ	8.0pZ	8.0pZ	T089	B	
52	2N3051†	250m	60MΔ	1.6m	Δ	25	20	5.0	100m	10n	5.0	1.0m	30 Δ	50uZ	4.5kZ	8.0pZ	8.0pZ	T089	B	
53#	BC201	250m	80MΔ	1.0m	Δ	5.0	5.0	5.0	75m	100n	5.0	250u	900 *Z	PE	PE	PE	PE	X151	B	
54#	BSV68	250m	95MΔ	2.0m	Δ	110	100	6.0	100m	10u	5.0	1.0m	30 Δ	5.0pZ	E	E	E	T05	A	
55	2N3800*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	80uZ	30kZ	25	4pZ	T071	PM	
56	2N3801*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	T071	PM	
57	2N3802*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	80uZ	30kZ	25	4pZ	T071	PM	
58	2N3803*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	T071	PM	
59	2N3804*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	80uZ	30kZ	25	4pZ	T071	PM	
60	2N3804A*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	10n	10	1.0m	150 Δ	80uZ	30kZ	25	4.0pZ	T071	PM	
61	2N3805*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	T071	PM	
62	2N3805A*	250m	100MΔ	1.4m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	T071	PM	
63	2N3816A*	250m	100MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	150 Δ	80uZ	15kZ	25	4pZ	X22	A	
64	2N3817A*	250m	100MΔ	1.5m	Δ	60	60	5.0	50m	0.1u	10	1.0m	300 Δ	80uZ	40kZ	25	4pZ	X22	A	
65	2N4290	250m	100MΔ	2.0m	Δ	30	20	5.0	600m	500n	5.0	1.0m	60 Δ	10uZb	40 Z	1.2 Z	10pZ	X149	B	
66	2N4291	250m	100MΔ	2.0m	Δ	40	30	6.0	600m	200n	5.0	1.0m	60 Δ	10uZb	40 Z	1.2 Z	10pZ	X149	B	
67#	2SA640	250m	100MΔ	2.5m	Δ	50	50	5.0	50m	50n	3.0	1.0m	450 *	50u	11k	15	6.5p	E	R182b	B
68#	2SA641	250m	100MΔ	2.5m	Δ	50	50	5.0	50m	50n	3.0	1.0m	450 *	50u	11k	15	6.5p	E	R182b	B
69#	2SA750	250m	100MΔ	2.5m	Δ	50	50	5.0	50m	50n	3.0	1.0m	450 *	50u	11k	15	6.5p	E	R182b	B
70#	2SA6385	250m	130MΔ	2.5m	Δ	150	150	5.0	50m	1.0u	3.0	1.0m	120 *	4.5p	E	E	E	T092	A	
71#	2SA6395	250m	130MΔ	2.5m	Δ	180	180	5.0	50m	1.0u	3.0	1.0m	120 *	4.5p	E	E	E	T092	A	
72#	BF540	250m	130MΔ	2.5m	Δ	50	45	5.0	50m	100n	9.0	1.0m	30 Δ	1.0pZ	PE	PE	PE	R203c	C	
73#	BF541	250m	130MΔ	2.5m	Δ	50	45	5.0	50m	100n	9.0	1.0m								

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	M E A M X P	T ABS MAX RATINGS @25°C				MAX. Icbo @MAX Vcb (A)	TYPICAL h PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L E A O D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	2SA1151	250m	180m	2.5m	SJ	60	50	5.0	100m	100n	6.0	1.0m	200 f			4.5p	E	TO92 B	B	
2#	2SA1175	250m	180m	2.5m	SJ	60	50	5.0	100m	100n	6.0	1.0m	200 f			4.5p	E	TO92 B	B	
3#	2SA522	250m	200m	1.7m	SJ	25	20	5.0	100m	10u	10	10m	50			4.0p	PE	TO18	B	
4#	2SA522A	250m	200m	1.7m	SJ	50	40	5.0	100m	10u	10	10m	50			4.0p	PE	TO18	B	
5#	2SA553	250m	200m	1.6m	SJ	40		3.0	300m	100n	10	10m	60		50	4.5p	PE	TO18	A	
6#	2SA554	250m	200m	1.6m	SJ	25		3.0	300m	10u	10	10m	60		50	4.5p	PE	TO18	A	
7#	2SA554A	250m	200m	1.6m	SJ	40		3.0	300m	10u	10	10m	60		50	4.5p	PE	TO18	A	
8#	2SB759	250m	200m	1.5m	SJ	25	25	5.0	50m	1.0u	5.0	2.0m	700			8.0p	PE	TO18 S9	A	
9	SO29061	250m	200m		SJ		40		0.8			150m	40			8.0p		TO236 A	A	
10	SO2906AT	250m	200m		SJ		40		0.8			150m	40			8.0p		TO236 A	A	
11	SO2906RT	250m	200m		SJ		40		0.8			150m	40			8.0p		TO236 C	A	
12	SO29071	250m	200m		SJ		40		0.8			150m	100			8.0p		TO236 A	A	
13	SO2907AT	250m	200m		SJ		60		0.8			150m	100			8.0p		TO236 A	A	
14	SO2907RT	250m	200m		SJ		60		0.8			150m	100			8.0p		TO236 A	A	
15#	2SA4991	250m	250m	1.6m	SJ	50	40	5.0	100m	500n	1.0	10m	30			5.0p	PE	TO18 A	A	
16#	2SA5001	250m	250m	1.6m	SJ	30	20	5.0	100m	500n	1.0	10m	30			5.0p	PE	TO18 A	A	
17#	2SB808	250m	250m		SJ	20	15	5.0	70	1.0u	2.0	50m	300			13p	PE	TO18 A	A	
18#	2SC923#	250m	250m	2.5m	SJ	50	35	5.0	50m	100n	3.0	500m	100			2.0p	PE	TO92 B	B	
19	0463	250m	250m		SJ	30	20	5.0	10m		1.0	10m	50			8.0p		TO106	B	
20	2N4940*	250m	300m	1.5m	SS	50	40	5.0	50m	0.2u	10	1.0m	50		50u	10k	10	5p	TO89 PB	PB
21	2N4941*	250m	300m	1.5m	SS	50	40	5.0	50m	0.2u	10	1.0m	50		50u	10k	10	5p	TO89 PB	PB
22#	2SA838	250m	300m		SJ	30	20	5.0	30m	100n	10	10m	100			1.2p	PE	TO92 B	B	
23	0461	250m	300m		SJ	60	50	6.0	10m		1.0	10m	50			6.0p		TO106	B	
24#	BF450	250m	325m	2.3m	SJ	40	40	4.0	25m	10u	10	1.0m	60			350ft	PE	R204d C	C	
25#	BF451	250m	325m	2.3m	SJ	40	40	4.0	25m	10u	10	1.0m	30			350ft	PE	R204d C	C	
26#	BF936	250m	350m	2.3	SJ	30	20	25m											R221a C	F
27#	2SA925-1	250m	500m	5.0m	SJ	30	30	5.0	30m	200n	3.0	1.0m	200			3.5p		R210c B	B	
28#	2SA925-2	250m	500m	5.0m	SJ	45	45	5.0	30m	200n	3.0	1.0m	200			3.5p		R210c B	B	
29#	BF324	250m	550m	2.3m	SJ	30	30	4.0	25m	50n	10	4.0m	50			1.6p		R204c A	A	
30	MM439	250m	1.0G	1.4m	SJ	30	15	3.0	50m		12	3.0m	50			400n	AN	TO72 A	G	
31#	2SA800	250m	1.5G	1.4m	SJ	25	12	3.0	30m	100n	10	10m	60			900f	E	TO72 G	C	
32#	MMT4261	250m	1.5G	2m	SJ	15	10	3	30m	50n	1	1m	25			25		W6a B	B	
33#	BC202	260m	100m	1.2m	SJ	30	20	5.0	50m	10u	5.0	25m	630			630	PE	X151 B	B	
34#	BC203	260m	100m	1.2m	SJ	45	30	5.0	50m	10u	5.0	25m	630			630	PE	X151 B	B	
35	BCY27	275m	1.0M	2.2m	SJ	30	25	30	50m	10u	6.0	1.0m	15		30u	1.0k	3.0	45p	TO5	A
36	BCY28	275m	1.5M	2.2m	SJ	30	25	30	50m	10u	6.0	1.0m	25		40u	1.4k	4.0	45p	TO5	A
37	HA9048	275m	25m	1.8m	SJ	25	25	5.0	100m	200n	1.0	10m	20		350nb	15	4.0	8.0p	TO5	ME
38	HA9049	275m	25m	1.8m	SJ	25	25	5.0	100m	200n	1.0	10m	60		350nb	15	4.0	8.0p	TO5	ME
39	HA9078	275m	25m	1.8m	SA	25	25	5.0	100m	300n	1.0	10m	20		350nb	15	4.0	8.0p	TO18	ME
40	HA9079	275m	25m	1.8m	SA	25	25	5.0	100m	200n	1.0	10m	60		350nb	15	4.0	8.0p	TO18	ME
41	2N1254†	275m	30m	1.8m	SS	30	30	5.0	100m	200n	1.0	10m	25			10p		TO5	A	
42	2N1256†	275m	30m	1.8m	SS	40	40	5.0	100m	200n	1.0	10m	25			10p		TO5	A	
43	2N1259†	275m	40m	1.8m	SS	50	50	5.0	100m	200n	1.0	10m	25			10p		TO5	A	
44	2N1255†	275m	50m	1.8m	SS	30	30	5.0	100m	200n	1.0	10m	40			10p		TO5	A	
45	2N1257†	275m	50m	1.8m	SS	40	40	5.0	100m	200n	1.0	10m	40			10p		TO5	A	
46	2N1258†	275m	50m	1.8m	SS	30	30	5.0	100m	200n	1.0	10m	75			10p		TO5	A	
47#	BC307Z	280m	130m	2.2m	SJ	50	45	5.0	100m	100n	5.0	2.0m	75			4.0p	PE1	R183 F	F	
48#	BC308Z	280m	130m	2.2m	SJ	30	25	5.0	100m	100n	5.0	2.0m	75			4.0p	PE1	R183 F	F	
49#	BC309Z	280m	130m	2.2m	SJ	25	20	5.0	100m	100n	5.0	2.0m	125			4.0p	PE1	R183 F	F	
50	2N917	300m		1.7m	SJ	30	15	3.0		1.0n	10	4.0m	50			1.7p		TO72 G	A	
51#	2S021	300m			SA	80	40				10	10m	25							
52#	2SB745	300m			SJ	35	35	5.0	50m	100n	5.0	2.0m	1.0k						B37 D	D
53#	2SB745A	300m			SJ	55	55	5.0	50m	100n	5.0	2.0m	1.0k						B37 D	D
54#	BC181	300m		2.4m	SS	40	25	5.0	200m	100n	5.0	2.5m	60				PE1	R203c A	A	
55#	BC261	300m		2.0m	SJ	45	45	5.0	100m	50n	5.0	2.0m	125				PE	R179a A	A	
56#	BC263	300m		2.0m	SJ	20	20	5.0	100m	50n	5.0	2.0m	125				PE	R179x A	A	
57#	BC315	300m		2.4m	SS	45	35	5.0	100m	15n	5.0	2.0m	125				PE	R203c A	A	
58#	BC455Z	300m			SJ	30	30	5.0	100m	100n	5.0	2.0m	125			5.0p	PE	TO92 F	F	
59#	BC456Z	300m			SJ	30	30	5.0	100m	100n	5.0	2.0m	125			6.0p		TO92 F	F	
60#	KT384A	300m		5.0m	SJ	30	30	4.0	300m	10u	1.0	150m	30					X182 D	D	
61#	KT385A	300m		5.0m	SJ	60	40	4.0	300m	10u	1.0	150m	20					X182 D	D	
62#	KTS3103A	300m			SJ	15	15		20m	0.2u	1.0	1.0m	200			2.5p				
63#	KTS3103B	300m			SJ	15	15		20m	0.2u	1.0	1.0m	200			2.5p				
64	ST8709	300m		1.6m	SJ	50	30	5.0	20m	20n	5.0	10m	80			10p	PE	TO18		
65#	uPA74V	300m			SJ	80	80	5.0	50m	1.0u	6.0	0.1	150			2.5p	*	B75		
66#	uPA76V	300m			SJ	60	60	5.0	50m	1.0u	6.0	0.1	150			2.5p	*	B75		
67#	uPA77V	300m			SJ	60	60	5.0	50m	1.0u	6.0	0.1	150			4.0p	Si*	B75		
68#	BC260	300m	100		SJ	20	20	5.0	100m	100n	5.0	1.0m	35			6.0p		TO18 A	A	
69#	BCW86Z	300m	200		SJ	50	50	5.0	200m	100n	5.0	2.0m	150			5.0p		TO92 A	F	
70#	2S3210	300m	10m		SA	40	40	20	100m			10m	10				A	R177b A	A	
71#	2S3220	300m	15m		SA	40	40	20	100m			10m	15				A	R177b A	A	
72#	2S3221	300m	15m		SA	15	15	10	100m			10m	15				A	R177b A	A	
73#	2CY30	300m	25m	1.7m	SA	64	64	45	100m	20u	6.0	1.0m	15			80p	A	TO5	A	
74#	2CY31	300m	25m	1.7m	SA	64	64	45	100m	20u	6.0	1.0m	25			80p	A	TO5	A	
75	2S305	300m	250k	1.7m	SS	125	125	50	150m	100n	5.0	10m	10			70p	A	TO5	A	
76#	2S3230	300m	25m		SA	25	25	10	100m			10m	25				A	R177b A	A	
77#	2S022	300m	30m		SA	40	20	30				10	33				A			
78#	2S322A	300m	35m		SA	25	25	20	50m			10m	15				A	R177b A	A	
79#	2CY32	300m	40m	1.7m	SA	64	64	45	100m	20u	6.0	1.0m	35			80p	A	TO5	A	
80#	2CY33	300m	40m	1.7m	SA	32	32	16	100m	20u	6.0	1.0m	15			80p	A	TO5	A	
81#	2S3240	300																		



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre				
1	3N128	300m	8.0M	1.6m	SS	20	10	20	1.0n							10p	Δ	T072	GC	
2	3N130	300m	8.0M	1.6m	SS	30	20	20	1.0n							10p	Δ	T072	GC	
3	3N131	300m	8.0M	1.6m	SS	40	30	20	1.0n							10p	Δ	T072	GC	
4	3N132	300m	8.0M	1.6m	SS	50	40	20	1.0n							10p	Δ	T072	GC	
5	3N133	300m	8.0M	1.6m	SS	60	50	20	1.0n							10p	Δ	T072	GC	
6	3N134	300m	8.0M	1.7m	SS	20	15	20	0.1u							12p	Δ	T072	GC	
7	3N135	300m	8.0M	1.7m	SS	40	30	20	0.1u							12p	Δ	T072	GC	
8	3N136	300m	8.0M	1.7m	SS	60	50	20	0.1u							12p	Δ	T072	GC	
9	2N864A	300m	12M	1.6m	SS	6.0	6.0	6.0	100m	6.0	1.0m	25		700	9.0p	Δ	T018	GC		
10	JAN3N108	300m	12M	1.6m	SS	50		20	250p						10p		T072	GC		
11	3N114	300m	12M	1.7m	SS	30		12	0.1u						10p		T072	GC		
12	3N115	300m	12M	1.7m	SS	30		12	0.1u						10p		T072	GC		
13	3N116	300m	12M	1.7m	SS	30		12	0.1u						10p		T072	GC		
14	3N117	300m	12M	1.6m	SS	50		20	1.0n						10p		T072	GC		
15	3N118	300m	12M	1.7m	SS	50		20	0.1u						10p		T072	GC		
16	3N119	300m	12M	1.7m	SS	50		20	0.1u						10p		T072	GC		
17#	2H1254	300m	25M	2.0m	SA	25		5.0	200n	10	2.0m	25	b	30	10p	ME	T018	GC		
18#	2H1256	300m	25M	2.0m	SA	35		5.0	200n	10	2.0m	25	b	30	10p	ME	T018	GC		
19#	2H1258	300m	25M	2.0m	SA	25		5.0	200n	10	2.0m	25	b	30	10p	ME	T018	GC		
20	ST8700	300m	30M	1.6m	SJ	50	30		20n	5.0	100u	1Δ	1.0u	32	10p	PE	T018	GC		
21#	2H1255	300m	40M	2.0m	SA	25		5.0	200n	10	2.0m	55	b	30	10p	ME	T018	GC		
22#	2H1257	300m	40M	2.0m	SA	35		5.0	200n	10	2.0m	55	b	30	10p	ME	T018	GC		
23#	2H1259	300m	40M	2.0m	SA	25		5.0	200n	10	2.0m	55	b	30	10p	ME	T018	GC		
24#	2SA637	300m	40M	2.0m	SJ	150		150	1.0u	3.0	15m	30	b	30	10p	DPL	T018	GC		
25#	2SA685	300m	40M	3.0m	J	150		150	1.0u	3.0	15m	30	b	30	10p	D	T092	BA		
26#	BFS92	300m	40M	2.0m	SJ	60		60	200m	5.0	150m	30	b	30	20p		T039	BA		
27	2N2862	300m	45M	1.7m	SS	25	20	5.0	100m	0.1u	1.0m	25		50u	6p		T018	BA		
28#	2SA578	300m	50M	2.4m	SJ	50	40	5.0	30m	50n	1.0m	350	33u	9.0k	10p	E	T018	BA		
29#	2SA579	300m	50M	2.4m	SJ	50	40	5.0	30m	50n	1.0m	350	33u	9.0k	10p	E	T018	BA		
30#	2SA970	300m	50M	3.0m	SJ	120	120	5.0	100m	100n	1.0m	400	15u	10k	4.0p	E	T092	BA		
31#	BSS83	300m	50M	2.0m	SJ	110	100	6.0	100m	1.0u	1.0m	30			3.0p	PLT	X156	BA		
32#	BSS63R	300m	50M	2.0m	SJ	110	100	6.0	100m	1.0u	1.0m	30			3.0p	PLT	X156	BA		
33	HSE459-RT	300m	50M	3.0m	SJ	30	30	4.0	100m	1.0u	5.0	20m	100		10p	PLT	T098	BA		
34	K9015	300m	50M			-20			100m	-5	-1m	60			6.0p		T092	BA		
35#	SCA92	300m	50M	2.4m	SJ	300	300	6	500m	250n	10	30m	25		10p	PE	R204	BA		
36#	SCA93	300m	50M	2.4m	SJ	200	200	6	500m	250n	10	30m	25		10p	PE	R204	BA		
37#	SCA94	300m	50M	2.4m	SJ	150	150	6	500m	250n	10	10	180		10p	PE	R204	BA		
38#	SCA95	300m	50M	2.4m	SJ	120	120	6	500m	250n	10	240			10p	PE	R204	BA		
39	2N2861	300m	60M	1.7m	SS	25	20	5.0	100m	0.1u	5.0	1.0m	50	50u	6p		T018	BA		
40	2N3347*	300m	60M	2.0m	SS	60	45	6.0	10n	5.0	1.0m	60	100u	1.5k	6.0p		R131c	BA		
41	2N3348*	300m	60M	2.0m	SS	60	45	6.0	10n	5.0	1.0m	60	100u	1.5k	6.0p			BA		
42	2N3349*	300m	60M	2.0m	SS	60	45	6.0	10n	5.0	1.0m	60	100u	1.5k	6.0p			BA		
43	2N3350*	300m	60M	2.0m	SS	60	45	6.0	10n	5.0	1.0m	150	100u	3.7k	6.0p			BA		
44	2N3351*	300m	60M	2.0m	SS	60	45	6.0	10n	5.0	1.0m	150	100u	3.7k	6.0p			BA		
45	2N3352*	300m	60M	2.0m	SS	60	45	6.0	10n	5.0	1.0m	150	100u	3.7k	6.0p			BA		
46#	BC137	300m	60M	3.0m	J	40	40	4.0	600m	0.5u	10	85	130u	400	10p	DPE	R97	BA		
47	EN1132	300m	60M	3.0m	J	50	35	5.0	1.0u	10	150m	30	1.0u	35	45p	DPE	T0106	BA		
48	PN3548	300m	60M	3.0m	J	-45			100m	-5	-10m	100			8.0p		T092	BA		
49#	2SA561	300m	70M	3.0m	J	50	50	5.0	150m	100n	1.0	20m	40		13p	PE	R67	BA		
50#	ZTX541	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
51#	ZTX541K	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
52#	ZTX541L	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
53#	ZTX541M	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
54#	ZTX542	300m	80M	2.0m	SS	120	120	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
55#	ZTX542K	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
56#	ZTX542L	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
57#	ZTX542M	300m	80M	2.0m	SS	100	100	5.0	100m	50u	1.0	2.0m	30		10p	PLT	B58	BA		
58#	2SA659	300m	90M	3.0m	J	50	50	4.0	200m	10u	6.0	50m	80		30	PE	R189	BA		
59#	BS368	300m	95M	4.0m	J	110	100	6.0	100m	10u	6.0	10m	30		30	PE	R189	BA		
60	2N638T	300m	100M	3.0m	J	25	25	4.0	500m	35n	10	25	1.2m	2.0k	26		R110	BA		
61	2N5120*	300m	100M	1.7m	SS	45	45	7.0	10m	100p	5.0	500u	100		800		T071	FA		
62	2N5121*	300m	100M	1.7m	SS	45	45	7.0	10m	100p	5.0	500u	100		800		T071	FA		
63	2N5122*	300m	100M	1.7m	SS	45	45	7.0	10m	100p	5.0	500u	100		800		T071	FA		
64	2N5142†	300m	100M	3.0m	J	20	20	4.0	500m	50n	1.0	50m	30		10p		T0105	BA		
65#	2SA1177C	300m	100M	3.0m	J	-60	-60	-5	50m	-50n	5.0	500	500		2.0p		X189	BA		
66#	BC177C	300m	100M			50		5.0	200m		5.0	2.0m	100		6.0p		X156	D		
67#	BCW67#	300m	100M			32		5.0	800m		1.0	100m	100		12p	EPL	X156	D		
68#	BCW68#	300m	100M			45		5.0	800m		1.0	100m	100		12p	EPL	X156	D		
69	HA9531A	300m	100M	2.0m	SJ	50		5.0	100m	1.0u	10	150m	25		35p	ME	T018	BA		
70	HA9531A	300m	100M	2.0m	SJ	60		5.0	500m	100	150m	25	1.0ub	30	8.0	35p	ME	T018	BA	
71	HA9532A	300m	100M	2.0m	SJ	50		5.0	100m	1.0u	10	150m	40		35p	ME	T018	BA		
72	HA9532A	300m	100M	2.0m	SJ	60		5.0	500m	100	150m	40	1.0ub	30	8.0	35p	ME	T018	BA	
73	ST8704	300m	100M	1.6m	SJ	45	30	6.0	10n	5.0	500u	60			10p	PE	T018	BA		
74	ST8705	300m	100M	1.6m	SJ	45	30	6.0	10n	5.0	500u	150			10p	PE	T018	BA		
75#	2SA872AD	300m	120M	3.0m	J	120	120	5.0	50m	500n	120	2.0m	250		1.8p	E	T092	BA		
76#	2SA872AE	300m	120M	3.0m	J	120	120	5.0	50m	500n	120	2.0m	400		1.8p	E	T092	BA		
77#	2SA872D	300m	120M	3.0m	J	90	90	5.0	50m	500n	120	2.0m	250		1.8p	E	T092	BA		
78#	2SA872E	300m	120M	3.0m	J	90	90	5.0	50m	500n	120	2.0m	400		1.8p	E	T092	BA		
79#	2SA893AD	300m	120M		J	120	120	5.0	50m	500n	120	2.0m	500		1.8p	E	T092	BA		
80#	2SA893AE	300m	120M		J	120	120	5.0	50m	500n	120	2.0m	800		1.8p	E	T092	BA		
81#	2SA893D	300m	120M		J	90	90	5.0	50m	500n	120	2.0m	500		1.8p	E	T092	BA		
82#	2SA893E	300m	120M		J	90														

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/C (Hz)	M A M P	ABS MAX RATINGS @25°C				MAX. lcco @MAX Vc (V)	TYPICAL h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUCTURE	DWG Y200 s/a TO200 Ser.	# L E O D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
																				hfe
1#	BC178PCM	300m	130M	2.0m	5J	25	5.0	100m	100n	5.0	2.0	500	60u	8.7k	3.0	4.5p	PLT	B58	A	
2#	BC179B#	300m	130M	2.0m	5S	25	5.0	50m	100n	5.0	2.0	330	30u	4.5k	2.0	4.5p	PL	TO18	A	
3#	BC179C	300m	130M	2.0m	5J	25	5.0	50m	100n	5.0	2.0	500	30u	4.5k	2.0	4.5p	PE	TO18	A	
4#	BC179PB	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	290	35u	4.5k	2.0	4.5p	PLT	B58	A	
5#	BC179PBK	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	290	35u	4.5k	2.0	4.5p	PLT	B58	A	
6#	BC179PBL	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	290	35u	4.5k	2.0	4.5p	PLT	B58	A	
7#	BC179PBM	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	290	35u	4.5k	2.0	4.5p	PLT	B58	A	
8#	BC179PC	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	290	60u	8.7k	3.0	4.5p	PLT	B58	A	
9#	BC179PCK	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	4.5p	PLT	B58	A	
10#	BC179PCL	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	4.5p	PLT	B58	A	
11#	BC179PCM	300m	130M	2.0m	5J	20	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	4.5p	PLT	B58	A	
12#	BC257	300m	130M	2.2m	5J	50	45	5.0	100m	100n	5.0	2.0	260	50u	4.5k	3.0	7.0p	PE	TO92	B
13#	BC257A	300m	130M	2.4m	5J	50	45	5.0	100m	100n	5.0	2.0	180	25u	2.7k	3.0	7.0p	PE	TO92	B
14#	BC257B	300m	130M	2.4m	5J	50	45	5.0	100m	100n	5.0	2.0	290	35u	4.5k	3.5	6.0p	PE	TO92	D
15#	BC257VI	300m	130M	2.4m	5J	50	45	5.0	100m	100n	5.0	2.0	100	20u	1.2k	2.5	7.0p	PE	TO92	B
16#	BC258	300m	130M	2.2m	5J	30	25	5.0	100m	100n	5.0	2.0	500	70u	8.0k	3.5	7.0p	PE	TO92	B
17#	BC258A	300m	130M	2.2m	5J	30	25	5.0	100m	100n	5.0	2.0	180	25u	2.7k	3.0	7.0p	PE	TO92	B
18#	BC258B	300m	130M	2.4m	5J	30	25	5.0	100m	100n	5.0	2.0	300	35u	4.5k	3.5	7.0p	PE	TO92	B
19#	BC258C	300m	130M	2.4m	5J	30	25	5.0	100m	40n	5.0	2.0	500	30u	4.5k	3.0	7.0p	PE	XXXXA	A
20#	BC258VI	300m	130M	2.4m	5J	30	25	5.0	100m	100n	5.0	2.0	100	20u	1.2k	2.5	7.0p	PE	TO92	B
21#	BC259	300m	130M	2.2m	5J	25	20	5.0	100m	100n	5.0	2.0	500	70u	8.0k	3.5	7.0p	PE	TO92	B
22#	BC259A	300m	130M	2.2m	5J	25	20	5.0	100m	100n	5.0	2.0	180	25u	2.7k	3.0	7.0p	PE	TO92	B
23#	BC259B	300m	130M	2.4m	5J	25	20	5.0	50m	100n	5.0	2.0	300	35u	4.5k	3.5	7.0p	PE	TO92	B
24#	BC262	300m	130M	2.0m	5J	45	30	5.0	50m	50n	5.0	2.0	125	15u	1.2k	2.5	7.0p	PE	TO18	A
25#	BC307#	300m	130M	2.2m	5J	45	45	5.0	100m	100n	5.0	2.0	222	25u	2.7k	3.0	7.0p	PE	R204	A
26#	BC307A	300m	130M	2.4m	5J	45	45	5.0	100m	100n	5.0	2.0	180	18u	2.7k	1.5	7.0p	PE	TO92	A
27#	BC307B	300m	130M	2.4m	5J	45	45	5.0	100m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PE	TO92	A
28#	BC307C	300m	130M	2.3m	5J	45	5.0	100m	15n	5.0	2.0	600	110u	8.7k	3.0	6.0p	PE	TO92	A	
29#	BC307PA	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	170	18u	2.7k	1.5	6.0p	PLT	B58	A	
30#	BC307PAK	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	170	18u	2.7k	1.5	6.0p	PLT	B58	A	
31#	BC307PAL	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	170	18u	2.7k	1.5	6.0p	PLT	B58	A	
32#	BC307PAM	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	170	18u	2.7k	1.5	6.0p	PLT	B58	A	
33#	BC307PB	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
34#	BC307PBK	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
35#	BC307PBL	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
36#	BC307PBM	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
37#	BC307PC	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
38#	BC307VI	300m	130M	2.4m	5J	45	5.0	100m	100n	5.0	2.0	100	20u	1.2k	2.5	7.0p	PE	R204	A	
39#	BC308#	300m	130M	2.2m	5J	30	25	5.0	100m	100n	5.0	2.0	222	25u	2.7k	3.0	7.0p	PE	R204	A
40#	BC308C	300m	130M	2.4m	5J	25	5.0	100m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PE	TO92	A	
41#	BC308PA	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	170	18u	2.7k	1.5	6.0p	PLT	B58	A	
42#	BC308PB	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
43#	BC308PCK	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
44#	BC308PCM	300m	130M	2.3m	5J	45	5.0	100m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
45#	BC308VI	300m	130M	2.4m	5J	30	25	5.0	100m	100n	5.0	2.0	200	20u	1.2k	2.5	7.0p	PE	R204	A
46#	BC309#	300m	130M	2.2m	5J	25	20	5.0	50m	100n	5.0	2.0	222	25u	2.7k	3.0	7.0p	PE	R204	A
47#	BC309C	300m	130M	2.4m	5J	20	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PE	TO92	A	
48#	BC309PB	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
49#	BC309PBK	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
50#	BC309PBL	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
51#	BC309PBM	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	290	30u	4.5k	2.0	6.0p	PLT	B58	A	
52#	BC309PC	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
53#	BC309PCK	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
54#	BC309PCL	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
55#	BC309PCM	300m	130M	2.3m	5J	45	5.0	50m	100n	5.0	2.0	500	60u	8.7k	3.0	6.0p	PLT	B58	A	
56#	2N726	300m	140M	2.0m	5J	25	20	5.0	50m	1.0u	1.0	10m	30	#	5p	ME	TO18	A		
57#	2N727	300m	140M	2.0m	5J	25	20	5.0	50m	1.0u	1.0	10m	60	#	5p	ME	TO18	A		
58#	2N2411t	300m	140M	1.7m	5J	25	20	5.0	100m	10n	5.0	50u	10	Δ	5.0p		TO18	A		
59#	2N2412t	300m	140M	1.7m	5J	25	20	5.0	100m	10n	5.0	50u	20	Δ	5.0p		TO18	A		
60#	BFV82	300m	140M	500u	5J	25	20	5.0	50m	1.0u	1.0	10m	15	Δ	5p	Δ	W5a	B		
61#	BFV82A	300m	140M	500u	5J	25	20	5.0	50m	1.0u	1.0	10m	30	Δ	5p	Δ	W5a	B		
62#	BFV82Bt	300m	140M	588u	5J	25	20	5.0	100m	10u	5.0	10m	20	Δ	5p	PE	W5a	B		
63#	BFV82Ct	300m	140M	588u	5J	25	20	5.0	100m	10u	5.0	10m	40	Δ	5p	PE	W5a	B		
64#	2N3638At	300m	150M	3.0m	5J	25	25	4.0	500m	35n	1.0	10m	100	Δ	10p	PE	R110a	A		
65#	2SA550	300m	150M	2.0m	5J	25	25	5.0	100m	1.0u	5.0	2.0m	250	#	5.0p	PE	TO18	A		
66#	2SA550A	300m	150M	2.0m	5J	45	45	5.0	100m	1.0u	5.0	2.0m	250	#	5.0p	PE	TO18	A		
67#	2SA603	300m	150M	2.4m	5J	60	40	8.0	200m	50u	1.0	10m	80	Δ	7p	PE	TO18	A		
68#	2SA941	300m	150M	3.0m	5J	120	120	5.0	50m	100n	6.0	2.0m	200	Δ	5.0p	PE	TO92	B		
69#	2SA942	300m	150M	3.0m	5J	90	90	5.0	50m	100n	6.0	2.0m	200	Δ	5.0p	PE	TO92	B		
70#	2SA1090	300m	150M	2.0m	5J	60	50	8.0	200m	100n	1.0	10m	70	#	4.0p	PE	TO18	A		
71#	BC177Z	300m	150M	5.0m	5J	50	45	5.0	100m	100n	5.0	2.0	75	Δ		PE	TO18	A		
72#	BC178Z	300m	150M	5.0m	5J	30	25	5.0	100m	100n	5.0									

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @ 25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	M E A M P X	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L O D E	
					V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>eb</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER							
										V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001					
1#	ZT189T	300m	150mΔ	3.0m	\$J	25	25	5.0	500m	6.0	1.0m	90				15pZ	PLT	T018	A	
2#	ZTX500	300m	150mΔ	3.0m	\$S	25	25	5.0	500m	200n	6.0	10m	50	Δ		6.0pZ	PLT	X59a	F	
3#	ZTX500K	300m	150mΔ	3.0m	\$S	25	25	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
4#	ZTX500L	300m	150mΔ	3.0m	\$S	25	25	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
5#	ZTX500M	300m	150mΔ	3.0m	\$S	25	25	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
6#	ZTX501	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	200n	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
7#	ZTX501K	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
8#	ZTX501L	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
9#	ZTX501M	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
10#	ZTX502	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	200n	6.0	10m	100	Δ		6.0pZ	PLT	B58	A	
11#	ZTX502K	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	2.0u	6.0	10m	100	Δ		6.0pZ	PLT	B58	A	
12#	ZTX502L	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	2.0u	6.0	10m	100	Δ		6.0pZ	PLT	B58	A	
13#	ZTX502M	300m	150mΔ	3.0m	\$S	35	35	5.0	500m	2.0u	6.0	10m	100	Δ		6.0pZ	PLT	B58	A	
14#	ZTX503	300m	150mΔ	3.0m	\$S	45	45	5.0	500m	200n	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
15#	ZTX503K	300m	150mΔ	3.0m	\$S	45	45	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
16#	ZTX503L	300m	150mΔ	3.0m	\$S	45	45	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
17#	ZTX503M	300m	150mΔ	3.0m	\$S	45	45	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
18#	ZTX504	300m	150mΔ	3.0m	\$S	70	70	5.0	500m	200n	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
19#	ZTX504K	300m	150mΔ	3.0m	\$S	70	70	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
20#	ZTX504L	300m	150mΔ	3.0m	\$S	70	70	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
21#	ZTX504M	300m	150mΔ	3.0m	\$S	70	70	5.0	500m	2.0u	6.0	10m	50	Δ		6.0pZ	PLT	B58	A	
22	2N4888	300m	180mΔ	3.0m	\$J	150	150	6.0	100m	.05u	10	1.0m	500	Δ		40uZ	20kZ	R124bb	A	
23	2N4889	300m	180mΔ	3.0m	\$J	150	150	6.0	100m	.01u	10	1.0m	400	Δ		25uZ	12kZ	R124bb	A	
24#	BC186	300m	180mΔ	2.0m	\$J	40	25	5.0	100m	100n	5.0	2.0m	100			21u	1.4k	5	Δ	
25#	BC250A	300m	180mΔ	3.0m	\$J	20	20	5.0	100m	.10u	1.0	1.0m	35	Δ		4.0pZ	PE	R204	A	
26#	BC250B	300m	180mΔ	3.0m	\$J	20	20	5.0	100m	100n	1.0	1.0m	80	Δ		4.0pZ	PE	R204	A	
27#	BC250C	300m	180mΔ	3.0m	\$J	20	20	5.0	100m	100n	1.0	1.0m	200	Δ		4.0pZ	PE	R204	A	
28#	BC260A	300m	180mΔ	2.0m	\$J	20	20	5.0	100m	.10u	1.0	1.0m	35	Δ		4.0pZ	PE	T018	A	
29#	BC260B	300m	180mΔ	2.0m	\$J	20	20	5.0	100m	.10u	1.0	1.0m	80	Δ		4.0pZ	PE	T018	A	
30#	BC260C	300m	180mΔ	2.0m	\$J	20	20	5.0	100m	.10u	1.0	1.0m	200	Δ		4.0pZ	PE	T018	A	
31	MPSH54	300m	185mΔ	2.7m	TJ	80	80	4.0	100m	50n	10	1.5m	70	↑		6.0u		AN	T092	A
32	MPSH55	300m	185mΔ	2.7m	TJ	80	80	4.0	100m	50n	10	1.5m	70	↑		6.0u		AN	T092	A
33#	BC187	300m	191mΔ	2.0m	\$J	30	25	5.0	100m	100n	5.0	2.0m	140			4.5pZ	PE	T018	A	
34	2N3644T	300m	200mΔ	3.0m	\$J	45	45	5.0	500m	35n	10	1.0m	80	Δ		8.0pZ	PE	R110a	A	
35	2N3645T	300m	200mΔ	3.0m	\$J	60	60	5.0	500m	35n	10	1.0m	80	Δ		8.0pZ	PE	R110a	A	
36	2N4142T	300m	200mΔ	3.0m	\$J	60	40	5.0	200m	50n	10	150m	120	Δ		8.0pZ	PE	R110	A	
37	2N4143T	300m	200mΔ	3.0m	\$J	60	40	5.0	200m	50n	10	150m	300	Δ		8.0pZ	PE	R110	A	
38	2N4228	300m	200mΔ	3.0m	\$J	60	40	5.0	200m	50n	10	150m	150	Δ		8.0pZ	PE	R110	A	
39#	2SA844C	300m	200mΔ	3.0m	\$J	55	55	5.0	100m	100n	12	2.0m	320	Δ		1.8pZ	PE	X172	B	
40#	2SA844D	300m	200mΔ	3.0m	\$J	55	55	5.0	100m	100n	12	2.0m	500	Δ		1.8pZ	PE	X172	B	
41#	2SA918	300m	200mΔ	2.4m	\$J	40	40	5.0	300m	100n	10	1.0m	60			4.5pZ	PE	R225	A	
42#	2SA999	300m	200mΔ	3.0m	\$J	50	50	6.0	200m	100n	6.0	1.0m	300	↑		7.0pZ	PE	T092	A	
43#	2SA999L	300m	200mΔ	3.0m	\$J	50	50	6.0	200m	1.0n	6.0	1.0m	500	Δ		7.0pZ	PE	T092	A	
44#	2SA1100	300m	200mΔ	3.0m	\$J	50	50	6.0	200m	1.0n	6.0	1.0m	500	Δ		7.0pZ	PE	T092	A	
45#	2SA1100L	300m	200mΔ	3.0m	\$J	50	50	6.0	200m	1.0n	6.0	1.0m	500	Δ		7.0pZ	PE	T092	A	
46#	2SA1115	300m	200mΔ	3.0m	\$J	50	50	6.0	200m	100n	6.0	1.0m	90	Δ		7.0pZ	PE	X186	B	
47#	2SB637KC	300m	200mΔ	3.0m	\$J	50	50	5.0	100m	100n	12	2.0m	160	Δ		1.8pZ	PE	T092	B	
48#	2SB637KD	300m	200mΔ	3.0m	\$J	50	50	5.0	100m	100n	12	2.0m	250	Δ		1.8pZ	PE	T092	B	
49#	2SB637KE	300m	200mΔ	3.0m	\$J	50	50	5.0	100m	100n	12	2.0m	400	Δ		1.8pZ	PE	T092	B	
50#	BC116	300m	200mΔ	3.0m	\$J	45	40	5.0	50n	50n	10	100u	20	Δ		5.0pZ	DPE	R97	A	
51#	BC126	300m	200mΔ	3.0m	\$J	35	30	5.0	600m	.05u	10	1.0m	20	Δ		5.0pZ	DPE	R105	A	
52	BC126A	300m	200mΔ	3.0m	\$J	40	40	5.0	500m	50p	1.0	50m	50	Δ		7.0pZ	PE	T018	A	
53#	BC177	300m	200mΔ	2.0m	\$J	45	45	5.0	100m	.05u	5.0	2.0m	240	Δ		4.0pZ	PE	T018	A	
54#	BC177-6	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	50n	5.0	2.0m	110			4.0pZ	PE	T018	A	
55#	BC177A	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	50n	5.0	2.0m	180	↑		4.0pZ	PE	T018	A	
56#	BC177B	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	.05u	5.0	2.0m	290			4.0pZ	PE	T018	A	
57#	BC177V	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	.05u	5.0	2.0m	75			4.0pZ	PE	T018	A	
58#	BC177VI	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	50n	5.0	2.0m	75	Δ		4.0pZ	PE	T018	A	
59#	BC178	300m	200mΔ	2.0m	\$J	20	20	5.0	100m	.10u	5.0	2.0m	240	Δ		4.0pZ	PE	T018	A	
60#	BC178A	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	100n	5.0	2.0m	180	↑		4.0pZ	PE	T018	A	
61#	BC178B	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	100n	5.0	2.0m	290	↑		4.0pZ	PE	T018	A	
62#	BC178V	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	.10u	5.0	2.0m	75	Δ		4.0pZ	PE	T018	A	
63#	BC178VI	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	100n	5.0	2.0m	75	Δ		4.0pZ	PE	T018	A	
64#	BC179	300m	200mΔ	2.0m	\$J	20	20	5.0	100m	.05u	5.0	2.0m	240	Δ		4.0pZ	PE	T018	A	
65#	BC179B	300m	200mΔ	2.0m	\$J	25	20	5.0	100m	50n	5.0	2.0m	290	↑		4.0pZ	PE	T018	A	
66#	BC204-6	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	50n	5.0	2.0m	75	Δ		4.0pZ	PE	R110	A	
67#	BC204A	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	50n	5.0	2.0m	125	Δ		4.0pZ	PE	R110	A	
68#	BC204B	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	50n	5.0	2.0m	240	Δ		4.0pZ	PE	R110	A	
69#	BC204VI	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	50n	5.0	2.0m	75	Δ		4.0pZ	PE	R110	A	
70#	BC205A	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0	2.0m	125	Δ		4.0pZ	PE	R110	A	
71#	BC205B	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0	2.0m	240	Δ		4.0pZ	PE	R110	A	
72#	BC205VI	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0	2.0m	75	Δ		4.0pZ	PE	R110	A	
73#	BC208A	300m	200mΔ	3.0m	\$J	25	20	5.0	100m	50n	5.0	2.0m	100	Δ		4.0pZ	PE	T018	A	
74#	BC208B	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	50n	5.0	2.0m	240	Δ		4.0pZ	PE	R110	A	
75#																				

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E
						V <sub>ce</sub> (V)	V <sub>ce</sub> (V)	V <sub>ce</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001				
1#	BC214KB1	300m	200M	3.0m	J	45	30	5.0	200m	15n	5.0	2.0m	200 Δ				10p	PE	R204a	A
2#	BC214KC1	300m	200M	3.0m	J	45	30	5.0	200m	15n	5.0	2.0m	350 Δ				10p	PE	R204a	A
3#	BC214L1	300m	200M	2.4m	S	45	30	5.0	200m	15n	5.0	2.0m	140 Δ				10p	PE	T092	B
4#	BC214LA	300m	200M	2.4m	S	45	30	5.0	200m	15n	5.0	2.0m	300 Δ				10p	PE	T092	B
5#	BC214LB1	300m	200M	2.4m	S	45	30	5.0	200m	15n	5.0	2.0m	400 Δ				10p	PE	T092	B
6#	BC214LC1	300m	200M	2.4m	S	45	30	5.0	200m	15n	5.0	2.0m	600 Δ				10p	PE	T092	B
7#	BC214P	300m	200M	2.4m	S	45	30	5.0	200m	15n	5.0	2.0m	140 Δ				5.0p	PLT	S14a	F
8#	BC251A	300m	200M	3.0m	J	45	45	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE1	R204	A
9#	BC251B	300m	200M	3.0m	J	45	45	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE1	R204	A
10#	BC251C	300m	200M	3.0m	J	45	45	5.0	100m	0.5u	5.0	2.0m	450 Δ	60u	8.7k	3.0	4.0p	PE1	R204	A
11#	BC252A	300m	200M	3.0m	J	20	20	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE1	R204	A
12#	BC252B	300m	200M	3.0m	J	20	20	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE1	R204	A
13#	BC252C	300m	200M	3.0m	J	20	20	5.0	100m	0.5u	5.0	2.0m	450 Δ	60u	8.7k	3.0	4.0p	PE1	R204	A
14#	BC253A	300m	200M	3.0m	J	20	20	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE1	R204	A
15#	BC253B	300m	200M	3.0m	J	20	20	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE1	R204	A
16#	BC253C	300m	200M	3.0m	J	20	20	5.0	100m	0.5u	5.0	2.0m	450 Δ	60u	8.7k	3.0	4.0p	PE1	R204	A
17#	BC256A	300m	200M	3.0m	J	64	64	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE1	R204	A
18#	BC256B	300m	200M	3.0m	J	64	64	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE1	R204	A
19#	BC259C	300m	200M	2.4m	S	30	25	5.0	50m	4.0n	5.0	2.0m	500 Δ				PE	XXXXA	A	
20#	BC261A	300m	200M	2.0m	S	45	45	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE	T018	A
21#	BC261B	300m	200M	2.0m	S	45	45	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE	T018	A
22#	BC261C	300m	200M	2.0m	S	45	45	5.0	100m	0.5u	5.0	2.0m	450 Δ	60u	8.7k	3.0	4.0p	PE	T018	A
23#	BC262A	300m	200M	2.0m	S	20	20	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE	T018	A
24#	BC262B	300m	200M	2.0m	S	20	20	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE	T018	A
25#	BC262C	300m	200M	2.0m	S	20	20	5.0	100m	0.5u	5.0	2.0m	450 Δ	60u	8.7k	3.0	4.0p	PE	T018	A
26#	BC263A	300m	200M	2.0m	S	20	20	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE	T018	A
27#	BC263B	300m	200M	2.0m	S	20	20	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE	T018	A
28#	BC263C	300m	200M	2.0m	S	20	20	5.0	100m	0.5u	5.0	2.0m	450 Δ	60u	8.7k	3.0	4.0p	PE	T018	A
29#	BC266A	300m	200M	2.0m	S	64	64	5.0	100m	0.5u	5.0	2.0m	125 Δ	18u	2.7k	1.5	4.0p	PE	T018	A
30#	BC266B	300m	200M	2.0m	S	64	64	5.0	100m	0.5u	5.0	2.0m	240 Δ	30u	4.5k	2.0	4.0p	PE	T018	A
31#	BC315L	300m	200M	2.5m	J	45	35	5.0	100m	15n	5.0	2.0m	100 Δ				5.0p	PE	T092	B
32#	BC415A	300m	200M	2.5m	J	45	35	5.0	100m	15n	5.0	2.0m	222	18u	2.7k	1.5	4.5p	PE	R204c	A
33#	BC415AP	300m	200M	3.0m	J	45	30	5.0	100m	15n	5.0	2.0m	220	18u	2.7k	1.5	4.5p	PE	B58	A
34#	BC415B	300m	200M	2.5m	J	45	35	5.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	4.5p	PE	R204c	A
35#	BC415BP	300m	200M	3.0m	J	45	30	5.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	4.5p	PE	B58	A
36#	BC415C	300m	200M	2.5m	J	45	35	5.0	100m	15n	5.0	2.0m	600	60u	8.7k	3.0	4.5p	PE	R204c	A
37#	BC415CP	300m	200M	3.0m	J	45	30	5.0	100m	15n	5.0	2.0m	800	80u	8.7k	3.0	4.5p	PE	B58	A
38#	BC416A	300m	200M	2.5m	J	50	45	5.0	100m	15n	5.0	2.0m	222	18u	2.7k	1.5	4.5p	PE	R204c	A
39#	BC416AP	300m	200M	3.0m	J	50	45	5.0	100m	15n	5.0	2.0m	220	18u	2.7k	1.5	4.5p	PE	B58	A
40#	BC416B	300m	200M	2.5m	J	50	45	5.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	4.5p	PE	R204c	A
41#	BC416BP	300m	200M	3.0m	J	50	45	5.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	4.5p	PE	B58	A
42#	BC416C	300m	200M	2.5m	J	50	45	5.0	100m	15n	5.0	2.0m	600	60u	8.7k	3.0	4.5p	PE	R204c	A
43#	BC416CP	300m	200M	3.0m	J	50	45	5.0	100m	15n	5.0	2.0m	800	80u	8.7k	3.0	4.5p	PE	B58	A
44#	BC512	300m	200M	2.4m	S	50	45	5.0	200m	15n	5.0	2.0m	60 Δ				5.0p	PE1	R203c	A
45#	BC512Z	300m	200M	2.4m	S	50	45	5.0	200m	15n	5.0	2.0m	60 Δ*				5.0p	PE1	T092	F
46#	BC513	300m	200M	2.4m	S	30	25	5.0	200m	15n	5.0	2.0m	80 Δ				5.0p	PE1	R203c	A
47#	BC513Z	300m	200M	2.4m	S	30	25	5.0	200m	15n	5.0	2.0m	80 Δ*				5.0p	PE1	T092	F
48#	BC514	300m	200M	2.4m	S	30	20	5.0	200m	15n	5.0	2.0m	140 Δ				5.0p	PE1	R203c	A
49#	BC514Z	300m	200M	2.4m	S	30	20	5.0	200m	15n	5.0	2.0m	140 Δ*				5.0p	PE1	T092	F
50#	BC612	300m	200M	2.4m	S	75	70	5.0	200m	15n	5.0	2.0m	100				10p	PE	T015	F
51#	BC612Z	300m	200M	2.4m	S	75	70	5.0	200m	15n	5.0	2.0m	60 Δ				10p	PE	T092	F
52#	BC612L	300m	200M	2.4m	S	70	70	5.0	200m	15n	5.0	2.0m	60 Δ				10p	PE	T092	F
53#	BCW851	300m	200M	2.4m	S	90	60	6.0	200m	15n	5.0	2.0m	150 Δ	25u	3.5k	2.0	5.0p	PE1	R203c	A
54#	BCW861	300m	200M	2.4m	S	70	50	6.0	200m	15n	5.0	2.0m	150 Δ	25u	6.0k	2.0	5.0p	PE1	R203c	A
55#	BCY78	300m	200M	2.0m	S	32	32	5.0	200m	15n	5.0	2.0m	125 Δ*				4p	PE	T018	A
56#	BCY79	300m	200M	2.0m	S	45	45	5.0	200m	15n	5.0	2.0m	125 Δ*				4p	PE	T018	A
57#	KT313A	300m	200M	3.0m	A	60	50	5.0	350m	500n	1.0	1.0m	30 Δ				PE	T018	A	
58#	KT313B	300m	200M	3.0m	A	60	50	5.0	350m	500n	1.0	1.0m	80 Δ				PE	T018	A	
59#	KT317A	300m	200M	2.3m	S	50	45	5.0	100m	100n	5.0	2.0m	70 Δ				PE	T237	A	
60#	KT317B	300m	200M	2.3m	S	50	45	5.0	100m	100n	5.0	2.0m	120 Δ				PE	T237	A	
61#	KT317D	300m	200M	2.3m	S	30	25	5.0	100m	100n	5.0	2.0m	120 Δ				PE	T237	A	
62#	KT317E	300m	200M	2.3m	S	25	20	5.0	100m	100n	5.0	2.0m	120 Δ				PE	T237	A	
63#	KT317G	300m	200M	2.3m	S	25	20	5.0	100m	100n	5.0	2.0m	120 Δ				PE	T237	A	
64#	KT317SZ	300m	200M	2.3m	S	25	20	5.0	100m	100n	5.0	2.0m	180 Δ				PE	T237	A	
65#	KT317V	300m	200M	2.3m	S	30	25	5.0	100m	100n	5.0	2.0m	70 Δ				PE	T237	A	
66#	PN2904	300m	200M	3.3m	J	60	40	5.0	600m	50n	1.0	1.0m	150m				8.0p	PL	T0105	A
67#	PN2905	300m	200M	3.3m	J	60	40	5.0	600m	50n	1.0	1.0m	100 Δ				8.0p	PL	T0105	A
68#	BFX12	300m	210M	2.0m	S	20	15	5.0	100m	0.1u	3.5	10m	20 Δ				PE	T018	A	
69#	BSY401	300m	210M	2.0m	S	25	20	5.0	100m	0.1u	3.5	10m	20 Δ				PE	T018	A	
70#	BFX13	300m	230M	2.0m	S	25	15	5.0	100m	0.1u	3.5	10m	50 Δ				PE	T018	A	
71#	BSY411	300m	230M	2.0m	S	25	20	5.0	100m	0.1u	3.5	10m	80 Δ				PE	T018	A	
72#	2SA7181	300m	250M	2.4m	S	60	40	8.0	200m	100n	1.0	1.0m	140 Δ							



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. MAX. °C	ABS. MAX. RATINGS @25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #	# L C O D E
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	BC308B	300m	320M	2.4m	50	25	5.0	100m	100m	5.0	2.0m	330	30u	4.5k	3.5	6.0p	AN	R210a	F A	
2	BC308V15	300m	320M	2.4m	50	25	5.0	100m	100m	5.0	2.0m	110	20u	2.0k	2.0	6.0p	AN	R207	F A	
3	BC308V118	300m	320M	2.4m	50	25	5.0	100m	100m	5.0	2.0m	110	20u	2.0k	2.0	6.0p	AN	R204e	F A	
4	BC308V12	300m	320M	2.4m	50	25	5.0	100m	100m	5.0	2.0m	110	20u	2.0k	2.0	6.0p	AN	R210a	F A	
5#	BF506A	300m*	350M	2.3m	50	20	3.0	25m	100m	1.0	1.2m	25	1.0p	1.0k	1.0	1.0p	PE	T092	F A	
6	BC309	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	120	20u	2.0k	2.0	6.0p	AN	R210a	F A	
7	BC309-5	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	120	20u	2.0k	2.0	6.0p	AN	R207	F A	
8	BC309-18	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	120	20u	2.0k	2.0	6.0p	AN	R204e	F A	
9	BC309A5	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	220	25u	2.7k	3.0	6.0p	AN	R207	F A	
10	BC309A18	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	220	25u	2.7k	3.0	6.0p	AN	R204e	F A	
11	BC309A	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	220	25u	2.7k	3.0	6.0p	AN	R210a	F A	
12	BC309B5	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	330	30u	4.5k	3.5	6.0p	AN	R207	F A	
13	BC309B18	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	330	30u	4.5k	3.5	6.0p	AN	R204e	F A	
14	BC309B	300m	360M	2.4m	50	20	5.0	100m	100m	5.0	2.0m	330	30u	4.5k	3.5	6.0p	AN	R210a	F A	
15	2N44511	300m	400M	1.7m	50	12	4.0	100m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	AN	T046	A	
16	2N44531	300m	400M	1.7m	50	12	4.0	100m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	AN	T046	A	
17	JAN2N44531	300m	400M	1.7m	50	12	4.0	100m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	AN	T046	A	
18#	BFV811	300m	400M	588u	50	12	4.0	200m	100m	3.0	1.0m	30	30u	1.0k	1.0	6.0p	PE	W5a	B B	
19#	BFV81A1	300m	400M	588u	50	12	4.0	200m	100m	3.0	1.0m	30	30u	1.0k	1.0	6.0p	PE	W5a	B B	
20#	BFV81B1	300m	400M	588u	50	12	4.0	200m	100m	3.0	1.0m	30	30u	1.0k	1.0	6.0p	PE	W5a	B B	
21#	ZTX5101	300m	400M	2.0m	50	12	4.0	200m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	PLT	X59a	F A	
22#	ZTX510K1	300m	400M	2.0m	50	12	4.0	200m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	PLT	B58	A	
23#	ZTX510L1	300m	400M	2.0m	50	12	4.0	200m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	PLT	B58	A	
24#	ZTX510M1	300m	400M	2.0m	50	12	4.0	200m	100m	5.0	3.0m	40	30u	4.5k	3.5	6.0p	PLT	B58	A	
25	2N3304T	300m	500M	1.7m	50	6.0	6.0	4.0	100m	0.1u	5.0	10m	63	1.0p	1.0	3.5p	PE	T018	A	
26	2N5040	300m	500M	3.0m	50	25	25	4.0	1.0	50m	1.0	150m	30	1.0p	1.0	3.5p	PE	R124b	A	
27	2N5041	300m	500M	3.0m	50	25	25	4.0	1.0	50m	1.0	150m	30	1.0p	1.0	3.5p	PE	R124b	A	
28	TP3304	300m	500M	3.0m	50	6.0	6.0	4.0	200m	10n	3.0	10m	63	1.0p	1.0	3.5p	PE	T092	A	
29	TP3451	300m	500M	3.0m	50	6.0	6.0	4.0	200m	10n	3.0	10m	30	1.0p	1.0	3.5p	PE	T092	A	
30#	BF506	300m	550M	2.8m	50	40	35	4.0	30m	100m	2.0	3.0m	25	1.0p	1.0	8.0p	PE	T092	A	
31#	V405A1	300m	550M	2.0m	50	12	12	4.0	100m	2.0	5.0m	35	1.0p	1.0	8.0p	PE	T018	A		
32#	BF414	300m*	560M	2.9m	50	40	30	4.0	25m	60n	1.0	1.0m	80	1.0p	1.0	8.0p	PE	R185	A	
33#	BF925	300m	600M	3.0m	50	40	30	4.0	25m	60n	1.0	1.0m	80	1.0p	1.0	8.0p	PE	R22	A	
34	2N42071	300m	650M	1.7m	50	6.0	6.0	4.5	50m	0.1u	3.0	10m	50	1.0p	1.0	3.0p	PE	T018	A	
35	2N42081	300m	700M	1.7m	50	12	12	4.5	50m	0.1u	3.0	10m	30	1.0p	1.0	3.0p	PE	T092	A	
36	TP4208	300m	700M	1.7m	50	12	12	4.5	200m	10n	1.0	50m	30	1.0p	1.0	3.0p	PE	T092	A	
37#	2SA7111	300m	800M	2.4m	50	50	40	5.0	100m	1.0	1.0m	70	4.0p	1.0	1.0	4.0p	EPL	T018	A	
38#	BF509S	300m	800M	2.4m	50	40	35	4.0	100m	1.0	3.0m	70	1.2p	1.0	1.0	4.0p	EPL	T092	A	
39	CX954	300m	800M	2.4m	50	40	35	4.0	100m	1.0	3.0m	70	1.2p	1.0	1.0	4.0p	EPL	T092	A	
40	2N42091	300m	850M	1.7m	50	15	15	4.5	50m	0.1u	3.0	10m	50	1.0p	1.0	3.0p	PE	T018	A	
41#	BF914	300m	850M	2.8m	50	40	35	4.0	25m	100n	1.0	3.0m	25	1.0p	1.0	5.0p	PE	T092	A	
42	MD5000*	300m	900M	1.9m	50	20	15	5.0	50m	1.0	1.0	3.0m	50	1.0p	1.0	1.7p	AN	T099	PA	
43	MD5000A*	300m	900M	1.9m	50	20	15	5.0	50m	1.0	1.0	3.0m	50	1.0p	1.0	1.7p	AN	T099	PA	
44	MD5000B*	300m	900M	1.9m	50	20	15	5.0	50m	1.0	1.0	3.0m	50	1.0p	1.0	1.7p	AN	T099	PA	
45	2N4080	300m	1.0G	1.7m	50	40	35	4.0	50m	0.1u	3.0	3.0m	20	1.0p	1.0	1.7p	AN	T072	G	
46#	BF506Z	300m	1.8G	1.6u	50	40	35	4.0	30m	10n	1.0	3.0m	25	1.0p	1.0	6.0p	EPL	T092	A	
47#	2SA807	300m	4.0G	3.0m	50	-20	-12	3	50m	10n	-10	-15m	90	1.0p	1.0	1.0p	EPL	XXXXX	S S	
48#	2SA10571	300m	4G	1.7m	50	20	12	3	50m	10n	10	15m	20	1.0p	1.0	1.0p	EPL	W18c	QM	
49#	2SA12291	300m	4G	1.7m	50	20	12	3	50m	10n	10	15m	20	1.0p	1.0	1.0p	EPL	W18c	QM	
50#	MRF534	300m	4G	1.1m	50	15	10	4.5	30m	10n	2	25m	20	1.3p	1.0	1.3p	EPL	Y206a	V	
51#	MRF536	300m	4G	1.1m	50	15	10	4.5	30m	10n	2	25m	20	1.3p	1.0	1.3p	EPL	W179	V	
52	HEPS0032-RT	310m	4.0M	2.8m	50	40	35	2.5	100m	100m	5.0	100m	100	4.0p	1.0	4.0p	AN	T092	F A	
53#	BC334	310m	50M	2.8m	50	25	25	2.5	50m	5.0	100m	100	4.0p	1.0	4.0p	AN	T092	F A		
54#	BC336	310m	50M	2.8m	50	25	25	2.5	50m	5.0	100m	100	4.0p	1.0	4.0p	AN	T092	F A		
55	C59015	310m	50M	2.8m	50	18	18	2.5	100m	5.0	100m	100	4.0p	1.0	4.0p	AN	T092	F A		
56	ME5L51	310m	60M	2.8m	50	100	100	2.5	600m	1.0u	100m	200	8.0p	1.0	8.0p	AN	T092	F A		
57	HEPS0031-RT	310m	80M	2.8m	50	50	50	2.5	50m	5.0	100m	400	8.0p	1.0	8.0p	AN	T092	F A		
58	HSE414-RT	310m	80M	3.1m	50	30	30	2.5	500m	100m	5.0	100m	200	8.0p	1.0	8.0p	PE	X156a	A	
59#	BCX17	310m	100M	2.5m	50	45	45	2.5	500m	100m	1.0	100m	100	8.0p	1.0	8.0p	PE	X156a	A	
60#	BCX17R	310m	100M	2.5m	50	45	45	2.5	500m	100m	1.0	100m	100	8.0p	1.0	8.0p	PE	X156a	A	
61#	BCX18	310m	100M	2.5m	50	30	25	2.5	500m	100m	1.0	100m	100	8.0p	1.0	8.0p	PE	X156a	A	
62#	BCX18R	310m	100M	2.5m	50	30	25	2.5	500m	100m	1.0	100m	100	8.0p	1.0	8.0p	PE	X156a	A	
63	MPS36381	310m	100M	2.8m	50	25	25	2.5	500m	0.4u	5.0	10m	20	1.2p	1.0	2.0p	EA	T092	A	
64	MPS3702	310m	100M	2.8m</																

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	f <sub>β</sub> (Hz)	DERATE IN FREE AIR W/°C	TEMP. R. M. P.	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>c</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #	L C O D E	
						V <sub>bcbo</sub> (V)	V <sub>ceo</sub> (V)	V <sub>bevo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre					
1	2N5455†	340m	450MΔ	1.9m	Δ	15	15	4.5	300m	50n	1.0	100m	30	1Δ	30u	4.5k	2.0	6.0p	PE	T052	A0
2	2N5456	340m	450MΔ	1.9m	Δ	25	25	4.5	300m	50n	1.0	100m	30	1Δ	30u	4.5k	2.0	6.0p	PE	T052	A0
3#	BCY781X†	345m*	180M	2.2m	Δ	32	32	5.0	200m	100n	5.0	2.0m	350	†	18u	2.7k	1.5	4.5p	PE	T018	A0
4#	BCY78VII†	345m*	180M	2.2m	Δ	32	32	5.0	200m	100n	5.0	2.0m	170	†	24u	3.6k	2.0	4.5p	PE	T018	A0
5#	BCY78VIII†	345m*	180M	2.2m	Δ	32	32	5.0	200m	100n	5.0	2.0m	250	†	50u	7.5k	3.0	4.5p	PE	T018	A0
6#	BCY78X†	345m*	180M	2.2m	Δ	32	32	5.0	200m	100n	5.0	2.0m	500	†	30u	4.5k	2.0	4.5p	PE	T018	A0
7#	BCY79IX†	345m*	180M	2.2m	Δ	45	45	5.0	200m	100n	5.0	2.0m	350	†	30u	4.5k	2.0	4.5p	PE	T018	A0
8#	BCY79VII†	345m*	180M	2.2m	Δ	45	45	5.0	200m	100n	5.0	2.0m	170	†	18u	2.7k	1.5	4.5p	PE	T018	A0
9#	BCY79VIII†	345m*	180M	2.2m	Δ	45	45	5.0	200m	100n	5.0	2.0m	250	†	24u	3.6k	2.0	4.5p	PE	T018	A0
10	2N1196	350m		2.0m	Δ	70	70	4.0	100m	250n	1.0	2.0m	5.0	1Δ				4.0p	PE	T05	A
11	2N1197	350m		2.0m	Δ	70	70	4.0	100m	250n	1.0	2.0m	5.0	1Δ				4.0p	PE	T05	A
12	JAN2N1197	350m		2.0m	Δ	70	70	4.0	100m	250n	1.0	2.0m	5.0	1Δ				4.0p	PE	T05	A
13#	2SA558†	350m		2.3m	Δ	40	35	5.0	200m	1.0u	1.0	10m	50	†				4.0p	PE	T018	A0
14#	2SA559†	350m		2.3m	Δ	20	20	5.0	200m	500n	1.0	10m	50	†				4.0p	PE	T018	A0
15#	2SA559A†	350m		2.3m	Δ	40	35	5.0	200m	500n	1.0	10m	50	†				4.0p	PE	T018	A0
16#	BC586	350m				20	20	4.0	100m	50n	5.0	500u	120	1Δ				4.0p	PE	T092	A
17#	MMBA812M3	350m		2.8m	Δ	50	40	4.0	100m	100n	6.0	1m	80	Δ				4.0p	PE	X156d	F
18#	MMBA812M4	350m		2.8m	Δ	50	40	4.0	100m	100n	6.0	1m	90	Δ				4.0p	PE	X156d	F
19#	MMBA812M5	350m		2.8m	Δ	50	40	4.0	100m	100n	6.0	1m	135	Δ				4.0p	PE	X156d	C
20#	MMBA812M6	350m		2.8m	Δ	50	40	4.0	100m	100n	6.0	1m	200	Δ				4.0p	PE	X156d	C
21#	MMBA812M7	350m		2.8m	Δ	50	40	4.0	100m	100n	6.0	1m	300	Δ				4.0p	PE	X156d	C
22#	MMBA813S2	350m		2.8m	Δ	60	45	4.0	200m	100n	1.0	50m	50	Δ				4.0p	PE	X156d	C
23#	MMBA813S3	350m		2.8m	Δ	60	45	4.0	200m	100n	1.0	50m	75	Δ				4.0p	PE	X156d	C
24#	MMBA813S4	350m		2.8m	Δ	60	45	4.0	200m	100n	1.0	50m	100	Δ				4.0p	PE	X156d	C
25#	MPS9460	350m			Δ	20	12	4.0	500m	50n	1.0	50m	80	Δ				4.0p	PE	T092	A
26#	MPS9461	350m			Δ	25	18	4.0	500m	50n	1.0	50m	80	Δ				4.0p	PE	T092	A
27#	MPS9462	350m			Δ	20	12	4.0	500m	50n	1.0	50m	80	Δ				4.0p	PE	T092	A
28#	MPS9680	350m		2.8m	Δ	30	12	4.0	100m	50n	5.0	1.0m	45	1Δ				4.0p	PE	T092	A
29	SWT1032	350m	40mΔ	2.8m	Δ	30	30	4.0	50m	500p	1.0	10u	200	1Δ				4.0p	PE	T092	A
30#	BCY21	350m	500k	2.7m	Δ	50	50	3.0	50m	20n	6.0	1.0m	10	Δ				4.0p	PE	T05	A
31#	BCY23	350m	500k	2.7m	Δ	30	30	3.0	50m	20n	6.0	1.0m	20	Δ				4.0p	PE	T05	A
32#	BCY26	350m	600k	2.7m	Δ	30	30	3.0	50m	20n	6.0	1.0m	10	Δ				4.0p	PE	T05	A
33#	BCY19	350m	70M	2.8m	Δ	50	50	3.0	50m	0.2u	6.0	1.0m	20	Δ				4.0p	PE	T05	A
34#	BCY24	350m	1.0M	2.7m	Δ	30	30	3.0	50m	20n	6.0	1.0m	10	Δ				4.0p	PE	T05	A
35	BCY17	350m	1.2M	2.8m	Δ	30	30	3.0	50m	0.2u	6.0	1.0m	20	Δ				4.0p	PE	T05	A
36	BCY18	350m	2.0M	2.8m	Δ	30	30	3.0	50m	0.2u	6.0	1.0m	40	Δ				4.0p	PE	T05	A
37#	BCY25	350m	2.5M	2.7m	Δ	30	10	3.0	50m	20n	6.0	1.0m	40	Δ				4.0p	PE	T05	A
38	MPS404†	350m	4.0MΔ	2.8m	Δ	25	24	4.0	150m	100n	1.5	12m	100	†				4.0p	PE	T092	A
39	MPS404A†	350m	4.0MΔ	2.8m	Δ	40	35	4.0	120m	100n	1.5	12m	100	†				4.0p	PE	T092	A
40#	KT501A	350m	5.0MΔ	2.8m	Δ	15	15	5.0	500m	1.0	30m	20	1Δ					4.0p	PE	R216d	C
41#	KT501B	350m	5.0MΔ	2.9m	Δ	15	15	5.0	500m	1.0	30m	20	1Δ					4.0p	PE	R216d	C
42#	KT501D	350m	5.0MΔ	2.8m	Δ	30	30	5.0	500m	1.0	30m	40	1Δ					4.0p	PE	R216d	C
43#	KT501E	350m	5.0MΔ	2.8m	Δ	30	30	5.0	500m	1.0	30m	80	1Δ					4.0p	PE	R216d	C
44#	KT501G	350m	5.0MΔ	2.8m	Δ	30	30	5.0	500m	1.0	30m	80	1Δ					4.0p	PE	R216d	C
45#	KT501I	350m	5.0MΔ	2.8m	Δ	30	30	5.0	500m	1.0	30m	20	1Δ					4.0p	PE	R216d	C
46#	KT501K	350m	5.0MΔ	2.8m	Δ	45	45	5.0	500m	1.0	30m	40	1Δ					4.0p	PE	R216d	C
47#	KT501L	350m	5.0MΔ	2.8m	Δ	45	45	5.0	500m	1.0	30m	80	1Δ					4.0p	PE	R216d	C
48#	KT501M	350m	5.0MΔ	2.8m	Δ	60	60	5.0	500m	1.0	30m	20	1Δ					4.0p	PE	R216d	C
49#	KT501S	350m	5.0MΔ	2.8m	Δ	60	60	5.0	500m	1.0	30m	40	1Δ					4.0p	PE	R216d	C
50#	KT501V	350m	5.0MΔ	2.8m	Δ	45	45	5.0	500m	1.0	30m	20	1Δ					4.0p	PE	R216d	C
51#	BCY90	350m	5.0MΔ	2.8m	Δ	15	15	5.0	500m	1.0	30m	80	1Δ					4.0p	PE	R216d	C
52#	BCY81	350m	15.0M	2.9m	Δ	40	40	2.0	50m	2n	6.0	1.0m	25	Δ				4.0p	PE	T018	A0
53#	BCY92†	350m	15.0M	2.9m	Δ	40	40	2.0	50m	2n	6.0	1.0m	42	Δ				4.0p	PE	T018	A0
54#	BCY93	350m	15.0M	2.9m	Δ	70	70	3.0	50m	2n	6.0	1.0m	25	Δ				4.0p	PE	T018	A0
55#	BCY94	350m	15.0M	2.9m	Δ	70	70	3.0	50m	2n	6.0	1.0m	42	Δ				4.0p	PE	T018	A0
56#	BCY95†	350m	15.0M	2.9m	Δ	70	70	3.0	50m	2n	6.0	1.0m	42	Δ				4.0p	PE	T018	A0
57#	TCH98†	350m	15.0M	2.9m	Δ	40	40	2.0	50m	2n	6.0	1.0m	125	Δ				4.0p	PE	T018	A0
58#	TCH99†	350m	15.0M	2.9m	Δ	70	70	3.0	50m	2n	6.0	1.0m	125	Δ				4.0p	PE	T018	A0
59#	BCY77	350m	3.0M	2.9m	Δ	45	45	5.0	200m	50n	1.0	10m	325	Δ				4.0p	PE	T018	A0
60	2N5086	350m	4.0MΔ	2.8m	Δ	50	50	3.0	50m	0.5u	5.0	1.0m	250	Δ				4.0p	PE	T092	A
61	2N5087	350m	4.0MΔ	2.8m	Δ	50	50	3.0	50m	0.5u	5.0	1.0m	250	Δ				4.0p	PE	T092	A
62	2N5254*	350m	4.0MΔ	2.8m	Δ	40	40	5.0	50m	0.1u	5.0	1.0m	70	Δ				4.0p	PE	R137	FA
63	2N5255*	350m	4.0MΔ	2.8m	Δ	40	40	5.0	50m	0.1u	5.0										



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. MAX	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	Y200 s/a TO200 Ser.	DWG #	L E O D E
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>beo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	MPS6517Z	350m	100MSΔ	2.8m	SJ	25	25	40	100m	1.0uφ	5.0φ	2.0mφ	90	1Δ			4.0pφ	AN	T092	A	A
2#	MPS6518Z	350m	100MSΔ	2.8m	SJ	25	25	40	100m	1.0uφ	5.0φ	2.0mφ	150	1Δ		4.0pφ	AN	T092	A	A	
3#	MPS6519Z	350m	100MSΔ	2.8m	SJ	25	25	40	100m	1.0uφ	5.0φ	2.0mφ	250	1Δ		4.0pφ	AN	T092	A	A	
4#	MPSD55	350m	100MSΔ	2.8m	SJ	25	25	40	500m	1.0uφ	5.0φ	50mφ	50	1Δ			AN	T082	A	A	
5#	MPSD55Z	350m	100MSΔ	2.8m	SJ	25	25	40	500m	1.0uφ	5.0φ	50mφ	50	1Δ			AN	T082	A	A	
6#	MPSD55#	350m	100MSΔ	2.8m	SJ	25	25	40	500m	1.0uφ	5.0φ	100mφ	80	1Δ			PE	T092	A	A	
7#	MPSD56	350m	100MSΔ	2.8m	SJ	25	25	40	50m	1.0uφ	5.0φ	1.0mφ	40	1Δ			AN	T092	A	A	
8#	MPSD56Z	350m	100MSΔ	2.8m	SJ	25	25	40	50m	1.0uφ	5.0φ	50mφ	50	1Δ			AN	T082	A	A	
9#	MPSD56#	350m	100MSΔ	2.8m	SJ	25	25	40	50m	1.0uφ	5.0φ	50mφ	50	1Δ			PE	T092	A	A	
10#	MPS617Z	350m	120MSΔ	2.8m	SJ	25	25	50	100m	100n	10φ	100	100	1Δ		13pφ	AN	T092	C	A	
11#	BC350	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
12#	BC350A	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
13#	BC350B	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
14#	BC350L	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
15#	BC351	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
16#	BC351A	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
17#	BC351B	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
18#	BC351L	350m	125MSΔ	2.8m	SJ	25	25	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
19#	BC352	350m	125MSΔ	2.8m	SJ	20	20	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
20#	BC352A	350m	125MSΔ	2.8m	SJ	20	20	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
21#	BC352B	350m	125MSΔ	2.8m	SJ	20	20	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
22#	BC352L	350m	125MSΔ	2.8m	SJ	20	20	50	100m	100nφ	5.0φ	2.0mφ	40	1Δ		4.0pφ	AN	R210b	A	A	
23#	HEPS0037-RT	350m	125MSΔ	2.8m	SJ	40	40	40	100m	80nφ	10φ	5.0mφ	200	1		4.0pφ	AN	T092	A	A	
24#	MMBT-A70	350m	125MSΔ	2.8m	S	40	40	40	100m	100nφ	10φ	5.0mφ	40	1Δ		4.0pφ	AN	X156d	A	A	
25#	2N4402T	350m	150MSΔ	2.8m	SJ	40	40	50	600m	100nφ	10φ	1.0mφ	30	Δ	100uφ	7.5kφ	8.0	8.5pφ	PE	T092	A
26#	BC157	350m	150MS	3.5m	J	50	45	50	100m	15nφ	5.0φ	2.0mφ	75	Δ		4.5pφ	PE	XXXX	A	A	
27#	BC158	350m	150MS	3.5m	J	30	25	50	100m	100nφ	5.0φ	2.0mφ	75	Δ		4.5pφ	PE	XXXX	A	A	
28#	BC158A	350m	150MS	3.5m	J	30	25	50	100m	100nφ	5.0φ	2.0mφ	125	Δ		4.5pφ	PE	XXXX	A	A	
29#	BC158B	350m	150MS	3.5m	J	30	25	50	100m	100nφ	5.0φ	2.0mφ	240	Δ		4.5pφ	PE	XXXX	A	A	
30#	BC159	350m	150MS	3.5m	J	25	20	50	100m	15nφ	5.0φ	2.0mφ	125	Δ		4.5pφ	PE	XXXX	A	A	
31#	BC159A	350m	150MS	3.5m	J	25	20	50	100m	15nφ	5.0φ	2.0mφ	125	Δ		4.5pφ	PE	XXXX	A	A	
32#	BC159B	350m	150MS	3.5m	J	25	20	50	100m	15nφ	5.0φ	2.0mφ	240	Δ		4.5pφ	PE	XXXX	A	A	
33#	BCF29#	350m	150MS	2.3m	SJ	32	32	50	100m	100n	5.0φ	2.0mφ	120	†		4.5pφ	PE	X156a	C	A	
34#	BCF29R#	350m	150MS	2.3m	SJ	32	32	50	100m	100n	5.0φ	2.0mφ	120	†		4.5pφ	PE	X156a	C	A	
35#	BCF30#	350m	150MS	2.3m	SJ	32	32	50	100m	100n	5.0φ	2.0mφ	215	†		4.5pφ	PE	X156a	C	A	
36#	BCF30R#	350m	150MS	2.3m	SJ	32	32	50	100m	100n	5.0φ	2.0mφ	215	†		4.5pφ	PE	X156a	C	A	
37#	BCF70R#	350m	150MS	2.3m	SJ	50	45	50	100m	100n	5.0φ	2.0mφ	215	†		7.0p	PE	X156a	C	A	
38#	BCW89#	350m	150MS	2.3m	SJ	80	60	50	100m	100n	5.0φ	2.0mφ	120	†		7.0p	PE	X156a	C	A	
39#	BCW89R#	350m	150MS	2.3m	SJ	80	60	50	100m	100n	5.0φ	2.0mφ	120	†		7.0p	PE	X156a	C	A	
40#	MMBA958H31	350m	150MSΔ	2.8m	SJ	60	40	40	100m	100n	1φ	10mφ	80	Δ		10pφ	AN	X156d	C	A	
41#	MMBA958H41	350m	150MSΔ	2.8m	SJ	60	40	40	100m	100n	1φ	10mφ	110	Δ		10pφ	AN	X156d	C	A	
42#	MMBA958H51	350m	150MSΔ	2.8m	SJ	60	40	40	100m	100n	1φ	10mφ	150	Δ		10pφ	AN	X156d	C	A	
43#	MMBA958H61	350m	150MSΔ	2.8m	SJ	60	40	40	100m	100n	1φ	10mφ	200	Δ		10pφ	AN	X156d	C	A	
44#	MMBT4402T	350m	150MSΔ	2.8m	SJ	40	40	50	500m	100nφ	1φ	1mφ	30	Δ		8.5pφ	AN	X156d	C	A	
45#	MPS8598	350m	150MSΔ	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	100	Δ		8.0pφ	AN	T092	A	A	
46#	MPS8599	350m	150MSΔ	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	100	Δ		8.0pφ	AN	T092	A	A	
47#	2SB810	350m	180MS	2.8m	SJ	30	-25	-5	100m	100nφ	-1φ	-1φ	200	†		17p	AN	X189	B	A	
48#	2N3673T	350m	200MSΔ	2.0m	S	60	50	50	600m	100nφ	10φ	10mφ	55	Δ		9p	AN	T046	A	A	
49#	2N3905T	350m	200MSΔ	2.8m	SJ	40	40	50	200m	50nφ	10φ	1.0mφ	50	Δ	40uφ	8.0kφ	5.0	4.5pφ	AN	T092	A
50#	2N4125	350m	200MSΔ	2.8m	SJ	30	30	40	200m	0.5uφ	10φ	2.0mφ	50	Δ	100uφ	15kφ	8.0	4.5pφ	AN	T092	A
51#	2N4403T	350m	200MSΔ	2.8m	SJ	40	40	50	600m	100nφ	10φ	1.0mφ	50	Δ	800uφ	2.3kφ	15	8.5pφ	AN	T046	A
52#	2N4452T	350m	200MSΔ	2.0m	SJ	45	45	50	600m	0.1uφ	10φ	1mφ	135	Δ		8.5pφ	AN	T092	A	A	
53#	2SA876HA1	350m	200MS	2.8m	SJ	70	50	50	500m	300nφ	3.0φ	10mφ	130	†		10p	PE	XXXX	A	A	
54#	2SA876HB1	350m	200MS	2.8m	SJ	70	50	50	500m	300nφ	3.0φ	10mφ	130	†		10p	PE	XXXX	A	A	
55#	2SA876HC1	350m	200MS	2.8m	SJ	70	50	50	500m	300nφ	3.0φ	10mφ	240	†		10p	PE	XXXX	A	A	
56#	BC448	350m	200MS	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R210a	F	A	
57#	BC448-5	350m	200MS	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R207	A	A	
58#	BC448-18	350m	200MS	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R204a	F	A	
59#	BC448	350m	200MS	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R210a	F	A	
60#	BC448-5	350m	200MS	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R207	A	A	
61#	BC448-18	350m	200MS	2.8m	SJ	60	60	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R204a	F	A	
62#	BC450	350m	200MS	2.8m	SJ	100	100	50	200m	100nφ	5.0φ	1.0mφ	150	†		3.0p	AN	R210a	F	A	
63#	BC450-5	350m	200MS	2.																	

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 [MAX. COLL. DISS. @ 25°C (W)		2 [DERATE fab IN FREE AIR W/°C		M E M X P	ABS MAX RATINGS @ 25°C				MAX. lobo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
		Vcbo (V)	Vceo (V)	Vbeo (V)	Ic (A)		BIAS		COMMON EMITTER									
							Vcb (V)	Ie (A)	hfe	hoe (mhos)		hie (Ω)	hre (X.0001)					
1	MD3250AF*	350m	600mS	2.0m	2.0m	Δ	50	40 *	5.0	50m	10n	5.0	10	75	† #	AN*	X22	
2	MD3250F*	350m	600mS	2.0m	2.0m	Δ	50	40 *	5.0	50m	10n	5.0	10	75	† #	AN*	X22	
3	MD3251AF*	350m	600mS	2.0m	2.0m	Δ	50	40 *	5.0	50m	10n	5.0	10	100	† #	AN*	X22	
4	MD3251F	350m	600mS	2.0m	2.0m	Δ	50	40 *	5.0	50m	10n	5.0	10	100	† #	AN*	X22	
5	MMBTH81	350m	600mS	2.8m	2.8m	Δ	20	20	5.0	30m	10n	2.0	5	60	† #	AN	X156d	C
6	MD7004F	350m	675mS	2.0m	2.0m	Δ	30	13 *	4.0	200m	10n	2.0	10	100	† #	AN	X22	
7	MPS4258†	350m	700mS	2.8m	2.8m	Δ	12	12	4.5	80m	10n	5.0	1.0	15	† Δ #	AN	R211	A
8	BF939	350m	750M	2.8m	2.8m	Δ	30	30	3.0	20m	10n	1.0	2.0	50		PL†	T092	A
9	MMBT4260†	350m	1.2GΔ	2.8m	2.8m	Δ	15	10	3	30m	10n	1.0	1m	25	† Δ	AN	X156d	C
10	MPSH81	350m	1.2GΔ	2.8m	2.8m	Δ	20	20	3.0	30m	10n	1.0	1m	25	† Δ	E	T092	C
11	MMBT4261†	350m	1.5GΔ†	2.8m	2.8m	Δ	15	10	3	30m	10n	1.0	1m	25	† Δ	E	X156d	C
12	2N4058	360m		2.8m	2.8m	Δ	30	30	6.0	30m	10n	5.0	100	100	Δ	∅	T092	B
13	2N4059	360m		2.8m	2.8m	Δ	30	30	6.0	30m	10n	5.0	1.0	45	Δ	∅	T092	B
14	2N4060	360m		2.8m	2.8m	Δ	30	30	6.0	30m	10n	5.0	1.0	45	Δ	∅	T092	B
15	2N4061	360m		2.8m	2.8m	Δ	30	30	6.0	30m	10n	5.0	1.0	90	Δ	∅	T092	B
16	2N4062	360m		2.8m	2.8m	Δ	30	30	6.0	30m	10n	5.0	1.0	180	Δ	∅	T092	B
17	2N5354	360m		3.6m	3.6m	Δ	25	25	4.0	500m	10n	1.0	2.0	32	Δ	∅	T098	B
18	2N5355	360m		3.6m	3.6m	Δ	25	25	4.0	500m	10n	1.0	2.0	80	Δ	∅	T098	B
19	2N5356	360m		3.6m	3.6m	Δ	40	40	4.0	500m	10n	1.0	2.0	32	Δ	∅	T098	B
20	2N5365	360m		3.6m	3.6m	Δ	40	40	4.0	500m	10n	1.0	2.0	32	Δ	∅	R67b	B
21	2N5366	360m		3.6m	3.6m	Δ	40	40	4.0	500m	10n	1.0	2.0	80	Δ	∅	T098	B
22	2N5367	360m		3.6m	3.6m	Δ	40	40	4.0	500m	10n	1.0	2.0	200	Δ	∅	T098	B
23	2N6076	360m		3.6m	3.6m	Δ	25	25	4.0	100m	10n	1.0	10	100	Δ	∅	T098	B
24	2N6223	360m		2.8m	2.8m	Δ	60	60	5.0	100m	50n	5.0	2.0	75	Δ	∅	R207b	A
25	2N6225	360m		2.8m	2.8m	Δ	60	60	5.0	100m	50n	5.0	2.0	150	Δ	∅	R207b	A
26	2SA741H†	360m		2.4m	2.4m	Δ	20	20	4.0	100m	200n	5.0	30	30	† Δ	PE	T018	A
27	A5T4058	360m		2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	100	100	Δ	PE	R203	A
28	A5T4059	360m		2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	45	Δ	PE	R203	A
29	A5T4060	360m		2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	45	Δ	PE	R203	A
30	A5T4061	360m		2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	90	Δ	PE	R203	A
31	A5T4062	360m		2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	180	Δ	PE	R203	A
32	BC479†	360m				Δ	30	40	4.0	150m	10n	5.0	2.0	220	† Δ *	∅	T018	A
33	D29A4	360m				Δ	35	25	4.0		10n	4.5	50	120	† Δ	∅	T092	B
34	D29A5	360m				Δ	35	25	4.0		10n	4.5	50	300	† Δ	∅	T092	B
35	LDS257	360m		2.9m	2.9m	Δ	20	15	10	30m	10n	5.0	1.0	60	† Δ	PE	T0122	P
36	PET4058	360m		3.6m	3.6m	Δ	30	30	5.0	100m	100n	5.0	100	100	† Δ	PE	R110	A
37	PET4059	360m		3.6m	3.6m	Δ	30	30	5.0	100m	100n	5.0	1.0	45	† Δ	PE	R110	A
38	PET4060	360m		3.6m	3.6m	Δ	30	30	5.0	100m	100n	5.0	1.0	45	† Δ	PE	R110	A
39	PET4061	360m		3.6m	3.6m	Δ	30	30	5.0	100m	100n	5.0	1.0	90	† Δ	PE	R110	A
40	PET4062	360m		3.6m	3.6m	Δ	30	30	5.0	100m	100n	5.0	1.0	180	† Δ	PE	R110	A
41	PN5447	360m		2.8m	2.8m	Δ	40	25	5.0	1.5	100n	5.0	100	60	† Δ	PE	T092	A
42	SS29A4	360m				Δ	25	25				4.5	50	30	† Δ			
43	SS29A5	360m				Δ	25	25				4.5	50	75	† Δ			
44	2N869A†	360m	400mS	2.1m	2.1m	Δ	25	25	∅	5.0	200m	25u†	0.5	30	40	† Δ #		
45	BC326	360m	12MΔ	2.0m	2.0m	Δ	60	60	6.0	50m	10n	5.0	1.0	150	Δ			
46	BC325	360m	15MΔ	2.0m	2.0m	Δ	60	60	6.0	50m	10n	5.0	1.0	80	Δ	40u	24k	8.0
47	2N3798A	360m	30MΔ	2.0m	2.0m	Δ	90	90	5.0	50m	10n	5.0	1.0	150	Δ	30u	13k	8.0
48	2N3799A	360m	30MΔ	2.0m	2.0m	Δ	90	90	5.0	50m	10n	5.0	1.0	300	Δ	60u	30k	25
49	2N3962	360m	40MΔ	2.0m	2.0m	Δ	60	60	6.0	200m	0.1u	5.0	1.0	100	Δ	60u	40k	25
50	2N3963	360m	40MΔ	2.0m	2.0m	Δ	80	80	6.0	200m	0.1u	5.0	1.0	100	Δ	60u	40k	25
51	BFW20	360m	40MΔ	2.0m	2.0m	Δ	60	60	6.0	200m	0.1u	5.0	1.0	300	†	19u	8k	10
52	BFW21	360m	40MΔ	2.0m	2.0m	Δ	80	80	6.0	200m	0.1u	5.0	1.0	300	†	19u	8k	10
53	BFX37	360m	40MΔ	2.0m	2.0m	Δ	60	60	∅	50m	0.02u	5.0	1.0	200	†	19u	7.0k	3.0
54	BFX65	360m	40MΔ	2.7m	2.7m	Δ	45	45	6.0	50m	10n	5.0	1.0	200	†	19u	7.0k	3.0
55	2N3039†	360m	50MΔ	2.4m	2.4m	Δ	50	35	5.0	500m	0.02u	1.0	10	20	† Δ	250u	600	10
56	2N3040†	360m	50MΔ	2.4m	2.4m	Δ	40	30	5.0	500m	0.02u	1.0	10	40	† Δ	500u	1.2k	10
57	2N3964	360m	50MΔ	2.0m	2.0m	Δ	45	45	6.0	200m	0.1u	5.0	1.0	250	Δ	50u	20k	10
58	2N3965	360m	50MΔ	2.0m	2.0m	Δ	60	60	6.0	200m	0.1u	5.0	1.0	250	Δ	50u	20k	10
59	BFW22	360m	50MΔ	2.0m	2.0m	Δ	45	45	6.0	200m	0.1u	5.0	1.0	360	†	25u	10k	10
60	BFW22†	360m	50MΔ	2.0m	2.0m	Δ	45	45	6.0	100m	0.1u	5.0	1.0	250	† Δ	25u	10k	10
61	BFW23	360m	50MΔ	2.0m	2.0m	Δ	60	60	6.0	200m	0.1u	5.0	1.0	360	†	25u	10k	10
62	MPS6076	360m	50M	3.6m	3.6m	Δ	25	25	5.0	100m	10n	1.0	10	100	† Δ	6p	13p	10
63	TIS38	360m	50MΔ	2.9m	2.9m	Δ	35	32	4.0	50m	10n	9.0	1.0	25	† Δ	1.7p	10p	10
64	V741	360m	60M	6.8m	6.8m	Δ	30	30	6.0	50m	50n	5.0	5.0	180	†	22u	6.6	3.8
65	TIS37	360m	80MΔ	2.9m	2.9m	Δ	35	32	6.0	50m	10n	9.0	1.0	45	† Δ	1.7p	10p	10
66	TIS104	360m	90MΔ	2.8m	2.8m	Δ	60	60	6.0	50m	50n	5.0	1.0	210	†	15u	6.0k	1.3
67	2N869	360m	100MΔ	2.0m	2.0m	Δ	25	18	5.0	50m	0.1u	5.0	1.0	20	† # Δ			
68	2N995	360m	100MΔ	2.0m	2.0m	Δ	20	15	4.0	50m	50n	1.0	20	35	† # Δ			
69	2N995A†	360m	100MΔ	2.0m	2.0m	Δ	20	15	4.0	50m	50n	1.0	20	35	† # Δ			
70	2N2695†	360m	100MΔ	2.0m	2.0m	Δ	25	25	4.0	500m	0.02u	1.0	50	30	† # Δ	1.2m	1.5k	26
71	2N2696	360m	100MΔ	2.0m	2.0m	Δ	25	25	4.0	500m	25n	1.0	10	25	† Δ	1.2m	1.5k	26
72	2N3702	360m	100MΔ	2.8m	2.8m	Δ	40	25	5.0	200m	100n	5.0	50	60	† # Δ			
73	2N3703	360m	100MΔ	2.8m	2.8m	Δ	50	30	5.0	200m	100n	5.0	50	30	† # Δ			
74	2N5447	360m	100MΔ	2.9m	2.9m	Δ	40	25	5.0	200m	100n	5.0	50	60	† # Δ			
75	2N5448	360m	100MΔ	2.9m	2.9m	Δ	50	30	5.0	200m	100n	5.0	50	30	† # Δ			
76	BCW67RA	360m	100MΔ	2.0m	2.0m	Δ	45	32	5.0	800m	20n	1.0	100	170	†	EPLΔ	Y236	C
77	BCW68RH	360m	100MΔ	2.0m	2.0m	Δ	60	45	5.0	800m	20n	1.0	100	350	†	EPLΔ	Y236	C
78	BFT69	360m	100MΔ	2.0m	2.0m	Δ	90	80	5.0	1.0	100n	1.0	100	50	† Δ	PE	T018	A
79	BFT70	360m	100MΔ	2.0m	2.0m	Δ	70	60	5.0	1.0	100n	1.0	100	75	† Δ	PE	T018	A
80	BFT71	360m	100MΔ	2.0m														

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/C (Hz)	M E M P	ABS MAX RATINGS @25°C				MAX. lcbo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
					Vcbo (V)	Vceo (V)	Vbebo (V)	Ic (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	GE5373	360m	150m	2.8m	5	50	30	5.0	500m	50n	100	150m	100	1Δ#	10p	PE	T092	A	
2	GE5374	360m	150m	2.8m	5	50	30	5.0	500m	50n	100	150m	150	1Δ#	10p	PE	T092	A	
3	GE5375	360m	150m	2.8m	5	40	30	5.0	500m	50n	100	150m	40	1Δ#	10p	PE	T092	A	
4	SS3838A	360m	150m	2.0m	5	15	12	4.0	50m	5n	1.0	50m	100	1Δ#	10p	PE	T018	A	
5	2N9961	360m	160m	2.0m	5	45	45	5.0	50m	.01u	5.0	1.0m	75	1Δ#	6p	PE	T018	A	
6	2N4359	360m	200m	2.0m	5	45	45	5.0	50m	.01u	5.0	1.0m	700	1Δ#	6p	PE	T018	A	
7	2N5378	360m	200m	2.8m	5	40	30	5.0	500m	10n	5.0	1.0m	120	1Δ#	500n	PE	R207	A	
8	2N5379	360m	200m	2.8m	5	40	30	5.0	500m	10n	5.0	1.0m	100	1Δ#	500n	PE	R207	A	
9	2N5382	360m	200m	2.8m	5	40	40	5.0	200m	50n	1.0	1.0m	50	1Δ#	40u	PE	R207	A	
10	0401	360m	200m	2.8m	5	60	50	5.0	500m	10n	1.0	150m	40	1Δ#	10p	PE	T0106	A	
11	A5T3905†	360m	200m	2.8m	5	40	40	5.0	200m	1.0	1.0	10m	100	1Δ#	4.5p	PE	R203	A	
12#	BFV86†	360m	200m	500u	5	60	40	5.0	600m	.02u	1.0	1.0m	50	1Δ#	8p	PE	W5a	B	
13#	BFV86A†	360m	200m	500u	5	60	60	5.0	600m	.01u	1.0	1.0m	100	1Δ#	8p	PE	W5a	B	
14#	BFV86B†	360m	200m	500u	5	60	40	5.0	600m	.02u	1.0	1.0m	25	1Δ#	8p	PE	W5a	B	
15#	BFV86C†	360m	200m	500u	5	60	60	5.0	600m	.01u	1.0	1.0m	40	1Δ#	8p	PE	W5a	B	
16#	BFX35†	360m	200m	2.4m	5	40	40	5.0	500m	10n	1.0	10m	80	1Δ#	10p	PE	T018	A	
17	BSX36†	360m	200m	2.0m	5	40	40	5.0	500m	.01u	1.0	0.1m	50	1Δ#	8p	DPE	T018	A	
18	GES2906	360m	200m	3.6m	5	60	40	5.0	350m	.20n	1.0	150m	40	1Δ#	8.0p	PE	T092	A	
19	GES2907	360m	200m	3.6m	5	60	40	5.0	350m	.50n	1.0	150m	100	1Δ#	8.0p	PE	T092	A	
20	LDA450	360m	200m	2.9m	5	45	30	5.0	10n	10n	1.0	1.0m	35	1Δ#	8p	PE	S5	P	
21	LDA451	360m	200m	2.9m	5	45	30	5.0	10n	10n	1.0	1.0m	75	1Δ#	8p	PE	S5	P	
22	LDA452†	360m	200m	2.9m	5	45	30	5.0	300m	10n	1.0	150m	40	1Δ#	8p	PE	S5	P	
23	LDA453†	360m	200m	2.9m	5	45	30	5.0	300m	10n	1.0	150m	100	1Δ#	8p	PE	S5	P	
24	MM3905†	360m	200m	2.0m	5	40	40	5.0	200m	50n	1.0	1.0m	50	1Δ#	5.0p	AN	T052	A	
25	NS3905	360m	200m	2.0m	5	40	40	5.0	200m	50n	1.0	1.0m	50	1Δ#	4.5p	PE	T018	A	
26	PET3905	360m	200m	3.5m	5	40	40	5.0	200m	50n	1.0	1.0m	50	1Δ#	4.5p	PE	R110	A	
27	PET4125	360m	200m	3.5m	5	30	30	4.0	200m	50n	1.0	2.0m	50	1Δ#	4.5p	PE	R110	A	
28#	PL4031†	360m	200m	2.4m	5	60	40	5.0	600m	20n	1.0	1.0m	25	1Δ#	8p	PE	S6	B	
29#	PL4032†	360m	200m	2.4m	5	60	60	5.0	600m	10n	1.0	1.0m	40	1Δ#	8p	PE	S6	B	
30#	PL4033†	360m	200m	2.4m	5	60	40	5.0	600m	20n	1.0	1.0m	50	1Δ#	8p	PE	S6	B	
31#	PL4034†	360m	200m	2.4m	5	60	60	5.0	600m	10n	1.0	1.0m	100	1Δ#	8p	PE	S6	B	
32	2N3248†	360m	250m	2.0m	5	15	12	5.0	200m	.05u	1.0	.10m	50	1Δ#	8p	PE	T018	A	
33	2N3250†	360m	250m	2.0m	5	50	40	5.0	200m	.02u	1.0	1.0m	50	1Δ#	8p	PE	T018	A	
34	2N3250A†	360m	250m	2.0m	5	60	60	5.0	200m	.02u	1.0	1.0m	50	1Δ#	40u	EA	T018	A	
35	JAN2N3250A†	360m	250m	2.0m	5	60	60	5.0	200m	20n	1.0	1.0m	50	1Δ#	40u	EA	T018	A	
36	2N3545†	360m	250m	2.0m	5	20	20	5.0	200m	.01u	1.0	1.0m	40	1Δ#	8p	PE	T018	A	
37	2N5383†	360m	250m	2.8m	5	40	40	5.0	200m	50n	1.0	1.0m	100	1Δ#	80u	PE	R207	A	
38	0402	360m	250m	2.8m	5	40	40	5.0	500m	10n	1.0	150m	100	1Δ#	10p	PE	T0106	A	
39	0404	360m	250m	2.8m	5	25	25	5.0	500m	1.0	1.0	50m	30	1Δ#	12p	PE	T0106	A	
40	0404-1	360m	250m	2.8m	5	40	30	5.0	500m	1.0	1.0	50m	30	1Δ#	10p	PE	T0106	A	
41	0404-2	360m	250m	2.8m	5	40	30	5.0	500m	1.0	1.0	50m	75	1Δ#	10p	PE	T0106	A	
42	A5T3906†	360m	250m	2.8m	5	40	40	5.0	200m	1.0	1.0	10m	50	1Δ#	40u	PE	R203	A	
43	LDS202†	360m	250m	2.9m	5	50	40	5.0	200m	1.0	1.0	100u	40	1Δ#	6.0p	PE	T0122	P	
44	MM3906†	360m	250m	2.0m	5	40	40	5.0	200m	50n	1.0	1.0m	100	1Δ#	5.0p	AN	T052	A	
45	NS3906	360m	250m	2.0m	5	40	40	5.0	200m	50n	1.0	1.0m	100	1Δ#	4.5p	PE	T018	A	
46	PET3906	360m	250m	3.5m	5	40	40	5.0	200m	50n	1.0	1.0m	100	1Δ#	4.5p	PE	R110	A	
47	PET4126	360m	250m	3.5m	5	25	25	4.0	200m	50n	1.0	2.0m	120	1Δ#	4.5p	PE	R110	A	
48	TIS61	360m	250m	2.9m	5	40	25	5.0	400m	.05u	2.0	50m	155	1Δ#	4.5p	PE	T092	A	
49	2N3249†	360m	300m	2.0m	5	15	12	5.0	200m	.05u	1.0	.10m	100	1Δ#	8p	PE	T018	A	
50	2N3251†	360m	300m	2.0m	5	50	40	5.0	200m	.02u	1.0	1.0m	100	1Δ#	6p	PE	T018	A	
51	2N3251A†	360m	300m	2.0m	5	60	60	5.0	200m	20n	1.0	1.0m	100	1Δ#	6.0p	EA	T018	A	
52	JAN2N3251A†	360m	300m	2.0m	5	60	60	5.0	200m	20n	1.0	1.0m	100	1Δ#	6.0p	EA	T018	A	
53	0462	360m	300m	2.8m	5	50	40	6.0	10m	1.0	1.0	10m	100	1Δ#	6.0p	PE	T0106	A	
54	LDS203†	360m	300m	2.9m	5	50	40	5.0	200m	1.0	1.0	100u	80	1Δ#	6.0p	PE	T0122	P	
55	2N3829†	360m	350m	2.4m	5	35	35	5.0	200m	.3u	4.0	30m	30	1Δ#	6p	PE	T052	A	
56	JAN2N869A†	360m	400m	2.1m	5	25	18	5.0	10n	5.0	5.0	10m	40	1Δ#	6.0p	PE	T018	A	
57	2N2894†	360m	400m	2.0m	5	12	12	4.0	200m	.08u	5.0	30m	40	1Δ#	6p	PE	T018	A	
58	2N3576†	360m	400m	2.4m	5	20	15	5.0	200m	.01u	5.0	10m	40	1Δ#	4.6p	PE	T018	A	
59	2N4423†	360m	400m	2.8m	5	12	12	4.0	200m	80n	5.0	30m	40	1Δ#	6.0p	PE	R203	A	
60#	BSV21†	360m	400m	2.0m	5	12	12	5.0	200m	80n	3.0	10m	25	1Δ#	6p	PE	T018	A	
61	2N4035†	360m	450m	2.0m	5	40	40	5.0	100m	15n	1.0	1.0m	150	1Δ#	40u	PE	T018	A	
62	2N3798	360m	500m	2.0m	5	60	60	5.0	50m	.01u	5.0	10m	125	1Δ#	60u	PE	T018	A	
63	2N3799	360m	500m	2.0m	5	60	60	5.0	50m	.01u	5.0	10m	250	1Δ#	60u	PE	T018	A	
64	MM4257†	360m	500m	2.0m	5	6.0	6.0	4.5	80m	10n	3.0	10m	30	1Δ#	3.0p	AN	T018	A	
65#	BFX48†	360m	550m	2.0m	5	30	30	5.0	100m	15n	1.0	100u	130	1Δ#	2.2p	DPE	T018	A	
66	2N5056†	360m	600m	2.1m	5	15	15	4.5	100m	.05u	5.0	1.0m	12	1Δ#	4.5p	PE	T018	A	
67	2N3209†	360m	640m	2.0m	5	20	20	4.0	200m	.08u	5.0	30m	75	1Δ#	5p	PE	T018	A	
68	2N3546†	360m	700m	2.0m	5	15	12	4.5	200m	.01u	5.0	10m	30	1Δ#	6p	PE	T018	A	
69	MM4258†	360m	700m	2.0m	5	12	12	4.5	80m	10n	3.0	10m	30	1Δ#	3.0p	AN	T018	A	
70	2N5057†	360m	800m	2.1m	5	15	15	4.5	100m	.05u	5.0	1.0m	20	1Δ#	4.5p	PE	T018	A	
71#	BSW25†	360m	1.2G	2.0m	5	12	12	4.5	5.0u	.05u	5.0	30m	63	1Δ#	3.3p	DPE	T018	A	
72	LDA417	360m	1.6G	2.9m	5	30	30	3.0	30m	100n	1.0	2.0m	40	1Δ#	400p	PE	T0122	P	
73	2N2425†	375m	10.M	3.0m	5	50	10	30	50m	.10u	5.0	5.0m	25	1Δ#	14p	A	T05	A	
74	2N2424†	375m	15.M	3.0m	5	40	5.0	20	50m	.10u	5.0	5.0m	30	1Δ#	14p	A	T05	A	
75	BC167†	375m	85M	2.8m	5	45	45	6.0	200m	1.0	5.0	2.0m	120	1Δ#	4.5p	PE	T092	A	
76#	BC297	375m	150m	2.5m	5	50	50	5.0	1.0	100n	1.0	100m	75	1Δ#	12p	PE	T018	A	
77#	BC298	375m	150m	2.5m	5	30	30	5.0	1.0	100n	1.0	100m	75	1Δ#	12p	PE	T018	A	
78	HA7597	385m	1.0M	2.9m	5	50	40	5.0	20										

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E M P	T ABS MAX RATINGS @25°C			MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E				
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)								
1	1T136*	400m∅	2.3m∅	∅	60	60	7.0	100m	100p	5.0∅	1.0m∅	150	1∆			3.0p∅	T078	PA				
2	1T137*	400m∅	2.3m∅	∅	60	60	7.0	100m	100p	5.0∅	1.0m∅	150	1∆			3.0p∅	T078	PA				
3	1T138*	400m∅	2.3m∅	∅	55	55	7.0	100m	100p	5.0∅	1.0m∅	100	1∆			3.0p∅	T078	PA				
4	1T139*	400m∅	2.3m∅	∅	45	45	7.0	100m	100p	5.0∅	1.0m∅	70	1∆			3.0p∅	T078	PA				
5	TP3059	400m			10	10		100	100p	3.0∅	10u∅	300	1∆			10p∅	T092	A				
6	JAN2N328A	400m	200k∆	2.2m	∅	50	40	30	100n	5.0∅	3.0m∅	18	1∆			110p∅	T05	A				
7	JAN2N329A	400m	250k∆	2.2m	∅	50	35	30	100n	5.0∅	3.0m∅	36	1∆			110p∅	T05	A				
8	JAN2N1234	400m	300k∆	3.0m	∅	110	110	110	100m	100n	5.0	1.0m	14	∆	2.0u	60	10	T05	A			
9	2N2872∅	400m	500k∆	2.8m	∅	110	110	110	200m#	100n	5.0∅	1.0m∅	15	∆			70p∅	T05	A			
10	2N1234	400m	800k∆	3.0m	∅	110	110	110	100n	5.0	1.0m	14	∆			95p	F	T05	A			
11	HA7535	400m	800k	2.9m	∅	110	110	110	100n	5.0	1.0m	20				1.2ub	30	4.0	95p	A		
12	HA7540	400m	800k	2.9m	∅	150		150	100n	5.0	1.0m	20				1.2ub	30	4.0	95p	A		
13	HA7541	400m	800k	2.9m	∅	90			100n	5.0	1.0m	45				1.2ub	30	4.0	95p	A		
14	HA7542	400m	800k	2.9m	∅	110		110	100n	5.0	1.0m	45				1.2ub	30	4.0	95p	A		
15	HA7543	400m	800k	2.9m	∅	60		60	100n	5.0	1.0m	90				1.2ub	30	4.0	95p	A		
16	2N1232	400m	1.0M	3.0m	∅	60	60	60	100n	5.0	1.0m	14	∆			1.2ub	30	4.0	95p	F		
17	2N1233	400m	1.0M	3.0m	∅	60	60	60	100n	5.0	1.0m	28	∆			1.2ub	30	4.0	95p	F		
18	2N1439	400m	1.0M∆	2.3m	∅	50		50	100m	0.2u	6.0	1.0m	9.0			35u	1.0k		5.0p	A		
19	2N1440	400m	1.0M∆	2.2m	∅	60	50	60	100m	5.0u	6.0∅	1.0m∅	15			1.7ub	60	16	5.0p	A		
20	2N1441	400m	1.0M∆	2.2m	∅	50	35	50	100m	5.0u	6.0∅	1.0m∅	27			1.7ub	60	16	5.0p	A		
21	2N1442	400m	1.0M∆	2.2m	∅	50	30	50	100m	5.0u	6.0∅	1.0m∅	43			1.2ub	60	16	5.0p	A		
22	2N1443	400m	1.0M	2.3m	∅	50		50	100m	0.2u	6.0	1.0m∅	65			35u	1.0k		5.0p	A		
23	2N3977∅	400m	1.0M∆	2.3m	∅	15	10	15	100m	1.0n	5.0∅	5.0m∅	40	∆				14p∅	T046	A∅		
24	2N3978∅	400m	1.0M∆	2.3m	∅	25	20	25	100m	1.0n	5.0∅	5.0m∅	30	∆				14p∅	T046	A∅		
25	2N3979∅	400m	1.0M∆	2.3m	∅	40	35	40	100m	1.0n	5.0∅	5.0m∅	20	∆				14p∅	T046	A∅		
26	HA7534	400m	1.0M	2.9m	∅	60		60	100n	5.0	1.0m	20				1.2ub	30	4.0	95p	F		
27	HA7538	400m	1.0M	2.9m	∅	60		60	100n	5.0	1.0m	42				1.2ub	30	4.0	95p	F		
28	HA7630	400m	1.0M		∅	40		40	5.0u	10	5.0m	22				1.5u	10	4.0		A		
29	HA7631	400m	1.0M		∅	80		80	2.0u	10	5.0m	22				1.5u	10	4.0		A		
30	HA7632	400m	1.0M		∅	40		40	5.0u	10	5.0m	60				1.5u	10	4.0		A		
31	HA7633	400m	1.0M		∅	80		80	2.0u	10	5.0m	60				1.5u	10	4.0		A		
32	HA7804∅	400m	1.0M	2.8m	∅	10	10	10	100m	50n						70p∅	A			T05	A	
33	HA7806∅	400m	1.0M	2.8m	∅	15	15	15	100m	50n∅						90p∅	A			T05	A	
34	HA7808∅	400m	1.0M	2.8m	∅	15	15	15	100m	50n∅						70p∅	A			T05	A	
35	HA7810∅	400m	1.0M	2.8m	∅	10	10	10	100m	50n∅						90p∅	A			T05	A	
36	HA7815∅	400m	1.0M	2.8m	∅	30	30	30	100m	50n∅						70p∅	A			T05	A	
37	MA7811∅	400m	1.0M	2.8m	∅	10	10	10	100m	50n∅						90p∅	A			T05	A	
38	MA7817∅	400m	1.0M	2.8m	∅	30	30	30	100m	50n∅						70p∅	A			T05	A	
39	TP3060	400m	1.0M		∅	70	60	30	100m	5.0n	6.0∅	1.0m∅	30	∆				10p	∆	T092	A	
40	TP3061	400m	1.0M		∅	70	60	30	100m	5.0n	6.0∅	1.0m∅	60	∆				10p	∆	T092	A	
41	TP3217	400m	1.0M		∅	15	10	15	100m	1.0n	6.0∅	1.0m∅	1.0	∆				14p	∆	T092	A	
42	TP3218	400m	1.0M		∅	25	20	25	100m	1.0n	6.0∅	1.0m∅	1.0	∆				14p	∆	T092	A	
43	TP3219	400m	1.0M		∅	40	35	40	100m	1.0n	6.0∅	1.0m∅	1.0	∆				14p	∆	T092	A	
44	TP3977	400m	1.0M		∅	15	10	15	100m	1.0n	5.0∅	5.0m∅	40	∆				14p	∆	T092	A	
45	TP3978	400m	1.0M		∅	25	20	25	100m	1.0n	5.0∅	5.0m∅	30					14p	∆	T092	A	
46	TP3979	400m	1.0M		∅	40	35	40	100m	1.0n	5.0∅	5.0m∅	20	∆				14p	∆	T092	A	
47	2N1228	400m	1.2M	3.0m	∅	15	15	15	100n	5.0	1.0m	14	∆			1.2ub	30	15	95p	F	T05	A
48	2N1229	400m	1.2M	3.0m	∅	15	15	15	100n	5.0	1.0m	28	∆			1.2ub	30	15	95p	F	T05	A
49	2N1230	400m	1.2M	3.0m	∅	35	35	35	100n	5.0	1.0m	14	∆			1.2ub	30	8.0	95p	F	T05	A
50	2N1231	400m	1.2M	3.0m	∅	35	35	35	100n	5.0	1.0m	28	∆			1.2ub	30	8.0	95p	F	T05	A
51	HA7530	400m	1.2M	2.9m	∅	35		35	100m	1.0u	5.0	1.0m	12			1.2u	30	10	95p	F	T05	A
52	HA7531	400m	1.2M	2.9m	∅	60		60	100m	1.0u	5.0	1.0m	12			1.2u	30	10	95p	F	T05	A
53	HA7532	400m	1.2M	2.9m	∅	15	15	15	100m	1.0u	5.0	1.0m	20			1.2u	30	15	95p	F	T05	A
54	HA7533	400m	1.2M	2.9m	∅	35		35	100m	1.0u	5.0	1.0m	20			1.2u	30	8.0	95p	F	T05	A
55	HA7536	400m	1.2M	2.9m	∅	15	15	15	100m	1.0u	5.0	1.0m	42			1.2u	30	15	95p	F	T05	A
56	HA7537	400m	1.2M	2.9m	∅	35		35	100m	1.0u	5.0	1.0m	42			1.2u	30	8.0	95p	F	T05	A
57	2N327B	400m	2.0M∆	2.3m	∅	50	40	20	100m	1n∅	5.0∅	1.0m∅	14			10u	1.0k		9.0p	PE∆	T05	A
58	2N1026A	400m	2.0M∆	500u∅	∅	35	35	35	100m	0.2u	6.0∅	1.0m∅	36			7.0p			10p∅	E	T05	A
59	2N3064	400m	2.0M	2.3m	∅	110	100	50	100m	0.1u∅	6.0∅	1.0m∅	15	∆				10p∅	E	T046	A	
60	2N328B	400m	3.0M∆	2.3m	∅	50	35	20	100m	1n∅	5.0∅	1.0m∅	28			9.0p			9.0p	PE∆	T05	A
61	2N3062	400m	3.0M	2.3m	∅	90	80	40	100m	0.1u∅	6.0∅	1.0m∅	20	∆				10p∅	E	T046	A	
62	2N3219∅	400m	3.0M∆	2.3m	∅	40	35	40	100m	1.0n	6.0∅	1.0m∅	1.0	∆				14p∅	E	T046	A	
63	2N4982∅	400m	3.0M∆	2.2m	∅	70		70	100m	5.0n	5.0∅	1.0m∅	30	∆				10p∅	E	T046	A	
64	2N6567†	400m	3.0M∆	2.3m	∅	30	30	∅	30	100m	500p	6.0∅	1.0m	30	∆				10p∅	E	T046	A
65	2N3065	400m	4.0M	2.3m	∅	110	100	50	100m	0.1u∅	6.0∅	1.0m∅	30	∆				10p∅	E	T046	A	
66	2N3913∅	400m	4.0M∆	2.3m	∅	60	50	50	200m	5n∅	5.0∅	1.0m∅	40	∆				8p∅	E	T018	A	
67	2N329B	400m	5.0M∆	2.3m	∅	50	30	20	100m	1n∅	5.0∅	1.0m∅	60			15u	3.0k		9.0p	PE∆	T05	A
68	2N2946∅	400m	5.0M∆	4.3m	∅	40	35	40	100m	5.0n	5.0∅	1.0m∅	70	∆				10p∅	E	T046	A	
69	2N2946A∅	400m	5.0M∆	2.3m	∅	40	35	40	100m	5.0u	5.0∅	1.0m∅	50	∆				10p∅	E	T046	A	
70	JAN2N2946A∅	400m	5.0M∆	2.3m	∅	40	35	40	100m	500p	5.0∅	1.0m∅	50	∆				10p∅	E	T046	A	
71	2N3060	400m	5.0M	2.3m	∅	70	60	30	100m	5n∅	6.0∅	1.0m∅	30	∆				10p∅	E	T046	A	
72	2N3063	400m	5.0M	2.3m	∅	90	80	40	100m	0.1u∅	6.0∅	1.0m∅	50	∆				10p∅				



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/C (Hz)	T M E A M P X	ABS MAX RATINGS @25°C			MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E		
					V <sub>bc0</sub> (V)	V <sub>ce0</sub> (V)	V <sub>be0</sub> (V)		I <sub>c</sub> (A)	V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)					hre (Ω)	
1	2N4413	400m	20MΔ	2.3m	SS	40	30	5.0	800m	10n	1.0m	120 Δ	500nb	32 Ω	10p	+	TO18	A		
2	2N4413A	400m	20MΔ	2.3m	SS	60	60	5.0	600m	10n	5.0m	120 Δ	500nb	32 Ω	10p	+	TO18	A		
3	2N4415	400m	20MΔ	2.3m	SS	40	30	5.0	600m	10n	5.0m	100 Δ	500nb	32 Ω	10p	+	TO18	A		
4	2N4415A	400m	20MΔ	2.3m	SS	60	60	5.0	800m	10n	5.0m	100 Δ	500nb	32 Ω	10p	+	TO18	A		
5	CT764	400m	20M			20	20	5.0	500m	10n	5.0m	150m Δ			8.0p	+	TO92	A		
6	CT767	400m	20MΔ			40	30	5.0		10n	100u	500 Δ			10p	+	TO92	A		
7	CT768	400m	20MΔ			60	60	5.0		10n	100u	500 Δ			10p	+	TO92	A		
8	CT769	400m	20MΔ			40	30	5.0		10n	100u	500 Δ			10p	+	TO92	A		
9	CT770	400m	20MΔ			60	60	5.0		10n	100u	500 Δ			10p	+	TO92	A		
10	TP4413	400m	20M			40	30	5.0	500m	10n	1.0	10u			8.0p	+	TO92	A		
11	TP4413A	400m	20M			60	60	5.0	500m	10n	1.0	10u			8.0p	+	TO92	A		
12	TP4415	400m	20M			40	30	5.0	500m	10n	1.0	10u			8.0p	+	TO92	A		
13	TP4415A	400m	20M			60	60	5.0	500m	10n	1.0	10u			8.0p	+	TO92	A		
14	2N2595	400m	30MΔ	2.2m	SS	80	60	6.0	50m	25n	5.0m	1.0m	15 Δ	1.2kΩ	6.0p	+	TO46	A		
15	2N2598	400m	30MΔ	2.2m	SS	125	80	7.0	50m	25n	5.0m	2.0m	20 Δ	1.2kΩ	6.0p	+	TO46	A		
16	2N2604	400m	30MΔ	2.2m	SS	60	45	6.0	30m	10n	5.0	1.0m	60 Δ	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
17	JAN2N2604	400m	30MΔ	2.2m	SS	80	60	6.0	30m	10n	5.0m	1.0m	60 Δ	40uZb	10kΩ	10 Ω	6.0p	+	TO46	A
18	2N2605	400m	30MΔ	2.2m	SS	60	45	6.0	30m	10n	5.0	1.0m	150 Δ	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
19	JAN2N2605	400m	30MΔ	2.2m	SS	70	60	6.0	30m	10n	5.0m	1.0m	150 Δ	60uZb	20kΩ	10 Ω	6.0p	+	TO46	A
20	2SC2878	400m	30M	4.0m	SS	50	20	2.5	300m	10n	2.0m	4.0m	200 Δ		4.8p	+	TO92	B		
21	ST8035	400m	30MΔ			40	40	5.0		1.0u	5.0m	1.0m	30		45p	+	TO18	A		
22	2N2596	400m	40MΔ	2.2m	SS	80	60	6.0	50m	25n	5.0m	1.0m	30 Δ	1.5kΩ	6.0p	+	TO46	A		
23	2N2599	400m	40MΔ	2.2m	SS	125	80	7.0	50m	25n	5.0m	5.0m	40 Δ	1.5kΩ	6.0p	+	TO46	A		
24	2N2599A	400m	40MΔ	2.2m	SS	125	100	7.0	50m	25n	5.0m	5.0m	40 Δ		6.0p	+	TO46	A		
25	2N2602	400m	40MΔ	2.2m	SS	60	60	6.0	50m	25n	5.0	1.0m	38 Δ	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
26	2N3930	400m	40MΔ	2.3m	SS	180	180	6.0	100m	10n	10	1.0m	80 Δ	25uZb	12kΩ	10 Ω	7.0p	+	TO18	A
27	2N4017*	400m	40MΔ	2.2m	SS	45	45	6.0	200m	10n	5.0m	1.0m	250 Δ	50uZb	20kΩ	10 Ω	6.0p	+	R131a	PA
28	2N4018*	400m	40MΔ	2.2m	SS	80	80	6.0	200m	10n	5.0m	1.0m	100 Δ	40uZb	17kΩ	10 Ω	6.0p	+	R131a	PA
29	2N4019*	400m	40MΔ	2.2m	SS	60	60	6.0	200m	10n	5.0m	1.0m	100 Δ	50uZb	20kΩ	10 Ω	6.0p	+	R131a	PA
30	2N4021*	400m	40MΔ	2.3m	SS	60	60	6.0	200m	0.1u	5.0m	1.0m	100 Δ	40uZb	17kΩ	10 Ω	6.0p	+	R131c	PA
31	2N4024*	400m	40MΔ	2.3m	SS	60	60	6.0	200m	0.1u	5.0m	1.0m	100 Δ	40uZb	17kΩ	10 Ω	6.0p	+	R131c	PA
32	2N4357	400m	40MΔ	2.3m	SS	240	240	6.0	100m	0.2u	10	1.0m	100 Δ	25uZb	12kΩ	10 Ω	7.0p	+	TO18	A
33	2SA1091	400m	40MΔ	3.2m	SS	300	300	8.0	100m	1.0m	-1.0m	2.0m	30 * Δ		6.0p	+	TO92	B		
34	GES4248	400m	40M	4.0m	SS	40	40	5.0	500m	10n	5.0m	1.0m	50 Δ		8.0p	+	TO92	A		
35	ST8036	400m	40MΔ			40	40	5.0		1.0u	5.0m	1.0m	60		45p	+	TO18	A		
36	ST610000	400m	40MΔ	4.3m		40	35	4.0	100m	20n	6.0m	1.0m	100 Δ		7.0p	+	TO46	A		
37	2N2605A	400m	45M	2.2m	SS	60	45	6.0	30m	2.0n	5.0m	1.0m	600 Δ	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
38	2N3547	400m	45MΔ	2.2m	SS	60	60	6.0	30m	25n	5.0m	1.0m	100 Δ	1.0uZb	35 Ω	10 Ω	8.0p	+	TO18	A
39	2N721	400m	50MΔ	2.7m	SS	50	35	5.0		1.0u	5.0m	1.0m	15 Δ	1.0uZb	35 Ω	8.0 Ω	45p	+	TO18	A
40	2N721A	400m	50MΔ	2.2m	SS	50	35	5.0		100n	10	5.0m	15 Δ	5.0uZb	10 Ω	8.0 Ω	40p	+	TO18	A
41	2N2590	400m	50MΔ	2.2m	SS	100	60	7.0	50m	25n	5.0m	5.0m	40 Δ	1.5uZb	10 Ω		15p	+	TO46	A
42	2N3341†	400m	50MΔ	2.7m	SS	30	20	5.0	30m	0.1u	1.0m	0.1m	40 Δ		6.0p	+	TO46	A		
43	2N4020*	400m	50MΔ	2.3m	SS	45	45	6.0	200m	0.1u	5.0m	1.0m	250 Δ	50uZb	20kΩ	10 Ω	6.0p	+	R131c	PA
44	2N4022*	400m	50MΔ	2.3m	SS	60	60	6.0	200m	0.1u	5.0m	1.0m	250 Δ	50uZb	20kΩ	10 Ω	6.0p	+	R131c	PA
45	2N4023*	400m	50MΔ	2.3m	SS	45	45	6.0	200m	0.1u	5.0m	1.0m	250 Δ	50uZb	20kΩ	10 Ω	6.0p	+	R131c	PA
46	2N4025*	400m	50MΔ	2.3m	SS	60	60	6.0	200m	0.1u	5.0m	1.0m	250 Δ	50uZb	20kΩ	10 Ω	6.0p	+	R131c	PA
47	BC393Z	400m	50MΔ			180	180	6.0	100m	1.0u	10	1.0m	50 Δ		7.0p	+	TO18	A		
48	2N722	400m	60MΔ	2.6m	SS	50	35	5.0		1.0u	5.0m	1.0m	25 Δ	1.0uZb	35 Ω	8.0 Ω	45p	+	TO18	A
49	2N2597	400m	60MΔ	2.2m	SS	80	60	6.0	50m	25n	5.0m	1.0m	60 Δ	1.8kΩ	6.0p	+	TO46	A		
50	2N2600	400m	60MΔ	2.2m	SS	125	80	7.0	50m	25n	5.0m	5.0m	60 Δ	1.8kΩ	6.0p	+	TO46	A		
51	2N2600A	400m	60MΔ	2.2m	SS	125	100	7.0	50m	25n	5.0m	5.0m	80 Δ		6.0p	+	TO46	A		
52	2N2603	400m	60MΔ	2.2m	SS	60	60	6.0	50m	25n	5.0	1.0m	78 Δ	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
53	2N3548	400m	60MΔ	2.2m	SS	60	45	6.0	100m	10n	5.0	1.0u	100 Δ	1.0uZb	35 Ω	10 Ω	8.0p	+	TO18	A
54	2N3549	400m	60MΔ	2.2m	SS	60	60	6.0	100m	10n	5.0	1.0u	100 Δ	1.0uZb	35 Ω	10 Ω	8.0p	+	TO18	A
55	2N3550	400m	60MΔ	2.2m	SS	60	45	6.0	100m	1.0n	5.0	1.0u	200 Δ	1.0uZb	35 Ω	10 Ω	8.0p	+	TO18	A
56	2N3726	400m	60MΔ	2.2m	SS	45	45	5.0	300m	10n	10	1.0m	135 Δ	80uZb	11kΩ	15 Ω	8.0p	+	R131c	PA
57	2N3727	400m	60MΔ	2.2m	SS	45	45	5.0	300m	10n	10	1.0m	135 Δ	80uZb	11kΩ	15 Ω	8.0p	+	R131c	PA
58	BFW43	400m	60M	2.3m	SS	150	150	6.0		0.1u	10	1.0m	40 * Δ		7.0p	+	TO18	A		
59	BFX90	400m	60M	2.3m	SS	180	180	6.0		0.1u	10	1.0m	170 * Δ		5.0p	+	TO18	A		
60	TD509*	400m	60M			25	20	5.0	500m	10n	5.0	10u	15		8.0p	+	R131c	PA		
61	TD510*	400m	60M			25	20	5.0	500m	10n	5.0	10u	20		8.0p	+	R131c	PA		
62	TD511*	400m	60M			25	20	5.0	500m	10n	5.0	10u	20		8.0p	+	R131c	PA		
63	TD512*	400m	60M			25	20	5.0	500m	10n	5.0	10u	40		8.0p	+	R131c	PA		
64	TD513*	400m	60M			25	20	5.0	500m	10n	5.0	10u	40		8.0p	+	R131c	PA		
65	TD514*	400m	60M			25	20	5.0	500m	10n	5.0	10u	40		8.0p	+	R131c	PA		
66	2N2591	400m	70MΔ	2.2m	SS	100	60	7.0	50m	25n	5.0m	5.0m	70 Δ	1.5uZb	10 Ω	15p	+	TO46	A	
67	2N3579	400m	80MΔ	2.2m	SS	60	60	6.0	30m	50n	5.0m	1.0m	120 †	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
68	2N3580	400m	80MΔ	2.2m	SS	60	60	6.0	30m	50n	5.0m	1.0m	240 †	1.0uZb	35 Ω	10 Ω	6.0p	+	TO46	A
69	2SA493G	400m	80M	4.0m	SS	50	50	5.0	150m	100n	6.0m	2.0m	120 †		6.0p	+	TO92	B		
70	2SA1015	400m	80MΔ	4.0m	SS	50	50	5.0	150m	100n	6.0m	2.0m	70 * Δ		4.0p	+	TO92	B		
71	O801	400m	80MΔ			50	45	5.0	500m	1.0m	1.0m	100 Δ			15p	+	TO105	A		
72	O802	400m	80MΔ			100	80	5.0	500m	1.0m	1.0m	100 Δ			15p	+	TO105	A		
73	O803	400m	80MΔ			80	60	5.0	500m	1.0m	1.0m	100 Δ			15p	+	TO105	A		
74	2N2592	400m	90MΔ	2.2m	SS	100	60	7.0	50m	25n	5.0m	5.0m	115 Δ	1.5uZb	10 Ω	15p	+	TO46	A	
75	2SA1025D	400m	90M	4.0m	SS	60	60	5.0	100m	100n	12	2.0m	250 Δ							

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	T M E A M P X	ABS MAX RATINGS @25°C				MAX. lcbo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O D E	
					Vcbo (V)	Vceo (V)	Vbebo (V)	lc (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	ST8182	400m	100mΔ	2.2m	50	35	5.0	1.0	50n	100	150m	100	Δ				11pZ	PE	T018	∅
2	TD523*	400m	100M		60	60	5.0	500m	10n	5.0	100m	150				4.0p	↑	R131c	PA	
3	TD526*	400m	100M		60	60	5.0	500m	10n	5.0	100u	150				8.0p	↑	R131c	PA	
4	TD528*	400m	100M		60	60	5.0	500m	10n	5.0	100u	300				8.0p	↑	R131c	PA	
5	2N2593	400m	110MΔ	2.2m	100	60	7.0	50m	25n	5.0	5.0m	160	Δ	1.5uZ	10	15pZ	PE	T046	∅	
6#	2SA1016	400m	110M		120	100	5.0	50m	1.0u	6.0	1.0m	300	*			2.2p	PE	T092	B	
7#	2SA1016K	400m	110M		150	120	5.0	50m	1.0u	6.0	1.0m	300	*			2.2p	PE	T092	B	
8	IT130*	400m	110MΔ	2.3m	45	45	7.0	50m	1.0n	5.0	1.0m	225	Δ			2.0pZ	PL	T078	PA	
9	IT130A*	400m	110MΔ	2.3m	45	45	7.0	50m	1.0n	5.0	1.0m	225	Δ			2.0pZ	PL	T078	PA	
10	2N2801/46	400m	120MΔ	2.3m	50	35	5.0	800	100n	100	100m	30	Δ			25pZ	PE	T046	∅	
11#	2SA673AKB	400m	120M	4.0m	50	50	4.0	500m	500n	3.0	10m	60	Δ				PE	T092	B	
12#	2SA673AKC	400m	120M	4.0m	50	50	4.0	500m	500n	3.0	10m	100	Δ				PE	T092	B	
13#	2SA673AKD	400m	120M	4.0m	50	50	4.0	500m	500n	3.0	10m	160	Δ				PE	T092	B	
14#	BC393	400m	120M	8.0m	180	180	6.0	100m	50n	10	2.0m	50	↑			4.0p	PE	T018	∅	
15#	2SA1188D	400m	130M	4.0m	90	90	5.0	100m	100n	12	2.0m	250	Δ			3.2p	PE	T092	A	
16#	2SA1188E	400m	130M	4.0m	90	90	5.0	100m	100n	12	2.0m	400	Δ			3.2p	PE	T092	A	
17#	2SA1189D	400m	130M	4.0m	120	120	5.0	100m	100n	12	2.0m	250	Δ			3.2p	PE	T092	A	
18#	2SA1189E	400m	130M	4.0m	120	120	5.0	100m	100n	12	2.0m	400	Δ			3.2p	PE	T092	A	
19#	2SA1190D	400m	130M	4.0m	90	90	5.0	100m	100n	12	2.0m	250	Δ			3.2p	PE	T092	B	
20#	2SA1190E	400m	130M	4.0m	90	90	5.0	100m	100n	12	2.0m	400	Δ			3.2p	PE	T092	B	
21#	2SA1191D	400m	130M	4.0m	120	120	5.0	100m	100n	12	2.0m	250	Δ			3.2p	PE	T092	B	
22#	2SA1191E	400m	130M	4.0m	120	120	5.0	100m	100n	12	2.0m	400	Δ			3.2p	PE	T092	B	
23	2N3497†	400m	150MΔ	2.3m	120	120	4.5	100m	100u	10	10m	40	Δ	300uZ	1.2kZ	2	3.2pZ	PE	T018	∅
24#	BC215	400m	150MΔ		120	30	↓	500m		10	150m	40	Δ*			8.0pZ	PE	T018	A	
25#	BC420VI	400m	150M	2.3m	180	180	6.0	100m	20u	10	2.0m	70	↑			4.0p	PE	T018	∅	
26	HSE226-RT	400m	150MΔ	3.2m	60	50	5.0		500n	10	150m	100	Δ				PE	T018	A	
27	HSE302-RT	400m	150MΔ	4.0m	50	40	5.0		500n	2.0	2.0m	100	Δ				PE	R124d	A	
28	HSE306-RT	400m	150MΔ	4.0m	60	50	5.0		500n	10	150m	100	Δ				PE	R124d	A	
29	ST8229	400m	150MΔ	2.2m	50	30	5.0	1.0	50n	10	150m	40	Δ			11pZ	PE	T018	∅	
30#	TS2906	400m	150MΔ	2.3m	60	30	5.0	600m	20n	10	10m	35	↑			12pZ	PE	T018	∅	
31#	TS2907	400m	150MΔ	2.3m	60	30	5.0	600m	20n	10	10m	75	↑			12pZ	PE	T018	∅	
32#	BCY77A†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	200		18u	2.7k	1.5	4.5p	PL	T018	A
33#	BCY77B†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	260		24u	3.6k	2.0	4.5p	PL	T018	A
34#	BCY77C†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	330		30u	4.5k	2.0	4.5p	PL	T018	A
35#	BCY77PA†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
36#	BCY77PAK†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
37#	BCY77PAL†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
38#	BCY77PAM†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
39#	BCY77PB†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
40#	BCY77PBK†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
41#	BCY77PBL†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
42#	BCY77PBM†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
43#	BCY77PC†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
44#	BCY77PCK†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
45#	BCY77PCL†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
46#	BCY77PCM†	400m	180M	2.2m	60	50	5.0	100m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
47#	BCY78A#†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	200		18u	2.7k	1.5	4.5p	PL	T018	A
48#	BCY78B#†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	260		24u	3.6k	2.0	4.5p	PL	T018	A
49#	BCY78C#†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	330		30u	4.5k	2.0	4.5p	PL	T018	A
50#	BCY78D#†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	520		50u	7.5k	3.0	4.5p	PL	T018	A
51#	BCY78PA†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
52#	BCY78PAK†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
53#	BCY78PAL†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
54#	BCY78PAM†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
55#	BCY78PB†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
56#	BCY78PBK†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
57#	BCY78PBL†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
58#	BCY78PBM†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	250	↑	24u	3.6k	2.0	4.5p	PL	B58	A
59#	BCY78PC†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
60#	BCY78PCK†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
61#	BCY78PCL†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
62#	BCY78PCM†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	350	↑	30u	4.5k	2.0	4.5p	PL	B58	A
63#	BCY78PD†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	500	↑	50u	7.5k	3.0	4.5p	PL	B58	A
64#	BCY78PDK†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	500	↑	50u	7.5k	3.0	4.5p	PL	B58	A
65#	BCY78PDL†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	500	↑	50u	7.5k	3.0	4.5p	PL	B58	A
66#	BCY78PDM†	400m	180M	2.2m	32	50	5.0	200m	20n	5.0	2.0m	500	↑	50u	7.5k	3.0	4.5p	PL	B58	A
67#	BCY79A#†	400m	180M	2.2m	45	50	5.0	200m	20n	5.0	2.0m	200		18u	2.7k	1.5	4.5p	PL	T018	A
68#	BCY79B#†	400m	180M	2.2m	45	50	5.0	200m	20n	5.0	2.0m	260		24u	3.6k	2.0	4.5p	PL	T018	A
69#	BCY79C#†	400m	180M	2.2m	45	50	5.0	200m	20n	5.0	2.0m	330		30u	4.5k	2.0	4.5p	PL	T018	A
70#	BCY79PA†	400m	180M	2.2m	45	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
71#	BCY79PAK†	400m	180M	2.2m	45	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5	4.5p	PL	B58	A
72#	BCY79PAL†	400m	180M	2.2m	45	50	5.0	200m	20n	5.0	2.0m	170	↑	18u	2.7k	1.5</				



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 [MAX. COLL. DISS. @25°C (W)	2 [DERATE IN FREE AIR W/C	M E M P	ABS MAX RATINGS @25°C			MAX. lcbco	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E				
					[BVcbo (V)	[BVceo (V)	[Ic (A)		[Vcb (V)	[Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)								
1#	PH2907A	400m	200mS	3.2m	§	80	60	5.0	800m	10n	100					EPL	R191	B				
2#	SF1051	400m	200mS		§	20	20	5.0	500m	20n	100						TO18	A				
3#	SF1081	400m	200mS		§	40	40	5.0	500m	20n	100						TO18	A				
4#	SF1077	400m	200mS		§	60	60	5.0	500m	20n	100						TO18	A				
5#	TDE17*	400m	200m		§	50	40	5.0	500m	10n	5.0	10u	25			†	R131f	PA				
6#	TDE18*	400m	200m		§	50	40	5.0	500m	10n	5.0	10u	50			†	T099	PA				
7#	TDE19*	400m	200m		§	60	40	5.0	500m	20n	10	100m	20			†	R131b	PA				
8#	TDE20*	400m	200m		§	60	60	5.0	500m	10n	10	100m	40			†	R131b	PA				
9#	TDE21*	400m	200m		§	60	40	5.0	500m	20n	10	100m	35			†	R131b	PA				
10#	TDE22*	400m	200m		§	60	60	5.0	500m	10n	10	100m	75			†	R131b	PA				
11#	TD711	400m	200m		§	50	30	5.0	500m	30n	10	1.0m	40									
12#	TP2906	400m	200m		§	60	40	5.0	500m	20n	100	150m	40			†	T092	A				
13#	TP2906A	400m	200m		§	60	60	5.0	500m	10n	100	150m	40			†	T092	A				
14#	TP2907	400m	200m		§	60	40	5.0	500m	20n	100	150m	100			†	T092	A				
15#	TP2907A	400m	200m		§	60	60	5.0	500m	10n	100	150m	100			†	T092	A				
16#	TP31351	400m	200m		§	50	35	4.0	500m	50n	100	150m	40	†#			T092	A				
17#	GES6001	400m	225mS	4.0m	§	35	25	5.0	500m	10n	1.00	10m	100	†#	100u	17k	10	8.0p	PE	T092	A	
18#	GES6005	400m	225mS	4.0m	§	50	40	5.0	500m	10n	1.00	10m	100	†#	80u	17k	12	8.0p	PE	T092	A	
19#	GES6003	400m	240mS	4.0m	§	35	25	5.0	500m	10n	1.00	10m	200	†#	150u	25k	20	8.0p	PE	T092	A	
20#	GES6007	400m	240mS	4.0m	§	50	40	5.0	500m	10n	1.00	10m	200	†#	150u	25k	24	8.0p	PE	T092	A	
21#	BF249	400m	250mS	2.7m	§	30	25	3.0	600m		10	10m	30	†				8.0p	PE	TO18	A	
22#	HSE223-RT	400m	250mS	3.2m	§	30	30	4.0	200n	1.00	150m	60	†					8.0p	PE	TO18	A	
23#	SF103	400m	250mS		§	30	24	5.0	250m	1.0u	5.00	150m	40	†				8.0p	PE	TO18	A	
24#	TP31361	400m	300m		§	50	35	4.0	50m	50n	100	150m	100	†#				8.0p	PE	T092	A	
25#	V7631	400m	300mS		§						1.00	50m	100	†				8.0p	PL	TO18	A	
26#	2N60011	400m	700mS	4.0m	§	35	25	5.0	500m	10n	100	1.0m	85	†	100u	12k		8.0p	PE	R203a	A	
27#	2N60051	400m	700mS	4.0m	§	50	40	5.0	500m	10n	100	1.0m	85	†	100u	12k		8.0p	PE	R203a	A	
28#	2N60031	400m	800mS	4.0m	§	35	25	5.0	500m	10n	100	1.0m	235	†	150u	17k		8.0p	PE	R203a	A	
29#	2N60071	400m	800mS	4.0m	§	50	40	5.0	500m	10n	100	1.0m	235	†	150u	17k		8.0p	PE	R203a	A	
30#	2CY38	410m	1.5mS	3.3m	§	32	32	12	500m	20u	6.00	10m	15	†				8.0p	PE	TO5	A	
31#	2CY39	410m	1.5mS	3.3m	§	64	64	12	500m	20u	6.00	10m	15	†								
32#	BCY38	410m	1.5mS	3.3m	§	32	32	12	250m	100n	6.00	10m	27	†								A5
33#	BCY39	410m	1.5mS	3.3m	§	64	64	12	250m	100n	6.00	10m	35	†								A5
34#	BCY54	410m	2.0mS	3.3m	§	50	50	12	250m	100n	6.00	10m	50	†								A5
35#	BCY40	410m	2.5mS	3.3m	§	32	32	12	250m	100n	6.00	10m	50	†								A5
36#	2N2393	450m	50mS	3.0m	§	50	35	5.0	300m	1.0u	5.00	1.0m	15	†	1.0u	35	8.0	45p	PL	W4		
37#	2N2394	450m	60mS	3.0m	§	50	35	5.0	300m	1.0u	5.00	1.0m	25	†	1.0u	35	8.0	45p	PL	W4		
38#	BCW75	450m	100mS		§				800m	1.00	1.00	100m	63	†				18p	PE	TO18	A	
39#	BCW76	450m	100mS		§				800m	1.00	1.00	100m	63	†				18p	PE	TO18	A	
40#	BCX23	450m	100mS	2.5m	§	125	5.0	800m		1.00	100m	63	†					12p	PE	R179z	A	
41#	BCX39	450m	100mS	2.5m	§	100	7.0	800m	100n									12p	PE	TO18	A	
42#	BCX78	450m	100mS		§			100m										4.5p	PE	T092	F	
43#	BCX79	450m	100mS		§			100m										4.5p	PE	T092	F	
44#	BCX94	450m	100mS	2.6m	§	100	5.0	800m	100n	1.00	100m	63	†					12p	PE	T078	A	
45#	BCX78IX1	450m	200mS	3.5m	§	32	5.0	100m	10n	5.00	2.0m	250	†					4.5p	PE	R204d	A	
46#	BCX78VII1	450m	200mS	3.5m	§	32	5.0	100m	10n	5.00	2.0m	120	†					4.5p	PE	R204d	A	
47#	BCX78VIII1	450m	200mS	3.5m	§	32	5.0	100m	10n	5.00	2.0m	180	†					4.5p	PE	R204d	A	
48#	BCX78XI1	450m	200mS	3.5m	§	32	5.0	100m	10n	5.00	2.0m	380	†					4.5p	PE	R204d	A	
49#	BCX79IX1	450m	200mS	3.5m	§	45	5.0	100m	10n	5.00	2.0m	250	†					4.5p	PE	R204d	A	
50#	BCX79VII1	450m	200mS	3.5m	§	45	5.0	100m	10n	5.00	2.0m	120	†					4.5p	PE	R204d	A	
51#	BCX79VIII1	450m	200mS	3.5m	§	45	5.0	100m	10n	5.00	2.0m	180	†					4.5p	PE	R204d	A	
52#	BCX79XI1	450m	200mS	3.5m	§	45	5.0	100m	10n	5.00	2.0m	380	†					4.5p	PE	R204d	A	
53#	2SA761	475m	80mS	5.0m	§	110	110	5.0	2.0	100u	2.00	40m	50	†				55p	E	TO5	A	
54#	2N3764A1	500m	2.8m	§	§	50	5.0	150u	1.50	1.0	2.0	20	†					15p	E	TO46	A	
55#	2N5811	500m	4.5m	§	§	35	25	5.0	750m	100n	2.00	2.0m	60	†				15p	PE	R203a	A	
56#	2N5813	500m	4.5m	§	§	35	25	5.0	750m	100n	2.00	2.0m	150	†				15p	PE	R203a	A	
57#	2N5815	500m	4.5m	§	§	50	40	5.0	750m	100n	2.00	2.0m	60	†				15p	PE	R203a	A	
58#	2N5817	500m	4.5m	§	§	50	40	5.0	750m	100n	2.00	2.0m	100	†				15p	PE	R203a	A	
59#	2N5819	500m	4.5m	§	§	50	40	5.0	750m	100n	2.00	2.0m	150	†				15p	PE	R203a	A	
60#	2N5821	500m	4.5m	§	§	70	60	5.0	750m	100n	2.00	2.0m	60	†				15p	PE	R203a	A	
61#	2N5823	500m	4.5m	§	§	70	60	5.0	750m	100n	2.00	2.0m	100	†				15p	PE	R203a	A	
62#	2SA643	500m	2.5m	§	§	40	20	5.0	500m	200n	1.00	100m	120	†								B
63#	BFW311	500m			§	30	30	700m			100	100m	70	†				12p	PE	TO18	A	
64#	BFX30	500m	3.4m	§	§	65	65	5.0	600m	70u	4.00	10m	50	†				12p	PE	TO5	A	
65#	MPS3644K1	500m	3.3m	§	§	45	45	5.0	500m	35n	100	10m	100	†				4.5p	PL	X167	A	
66#	MPS3644L1	500m	3.3m	§	§	45	45	5.0	500m	35n	100	10m	100	†				4.5p	PL	X168	A	
67#	MPS3644M1	500m	3.3m	§	§	45	45	5.0	500m	35n	100	10m	100	†				4.5p	PL	X169	A	
68#	MPS3645K1	500m	3.3m	§	§	60	60	5.0	500m	35n	100	10m	100	†				4.5p	PL	X167	A	
69#	MPS3645L1	500m	3.3m	§	§	60	60	5.0	500m	35n	100	10m	100	†				4.5p	PL	X168	A	
70#	MPS3645M1	500m	3.3m	§	§	60	60	5.0	500m	35n	100	10m	100	†				4.5p	PL	X169	A	
71#	HA7501	500m	70M	4.0m	§	60	60	5.0		1.0u	5.0	1.0m	8.0									
72#	HA7506	500m	90M	4.0m	§	35	35			50u	5.0	1.0m	12									
73#	2N5110	500m	1.0M	3.3m	§	40	40	10	1	75u	100	100m	10	†				500p	F	TO5	A	
74#	2N5111	500m	1.0M	3.3m	§	80	80	10	1	75u	100	100m	10	†				500p	F	TO5	A	
75#	HA7502	500m	1.0M	4.0m	§	60	60			10u	5.0	1.0m	16									
76#	HA7510	500m	1.2M	4.0m	§	35	35			50u	5.0	1.0m</										

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 f <sub>ab</sub> (Hz)	3 DERATE IN FREE AIR W/°C	T ABS MAX RATINGS @ 25°C	TYPICAL h <sub>FE</sub> PARAMETERS										Cob (F)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	# L C O A D E		
						M A P	V <sub>cbco</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ce</sub> (V)	I <sub>c</sub> (A)	I <sub>cb</sub> (A)	I <sub>c</sub> (A)	V <sub>cb</sub> (V)	V <sub>le</sub> (V)	h <sub>fe</sub>					h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)
1	D39J4	500m	60MΔ	4.0m	Δ	80	80	5.0	500m	25nΩ	1.0Ω	10mΩ	60	1Δ#	20pΩ	PE	T092	A			
2	D39J5	500m	60MΔ	4.0m	Δ	80	80	5.0	500m	25nΩ	1.0Ω	10mΩ	100	1Δ#	20pΩ	PE	T092	A			
3	D39J6	500m	60MΔ	4.0m	Δ	80	80	5.0	500m	25nΩ	1.0Ω	10mΩ	200	1Δ#	20pΩ	PE	T092	A			
4	D39J7	500m	60MΔ	4.0m	Δ	100	100	5.0	500m	25nΩ	1.0Ω	10mΩ	60	1Δ#	20pΩ	PE	T092	A			
5	D39J8	500m	60MΔ	4.0m	Δ	100	100	5.0	500m	25nΩ	1.0Ω	10mΩ	100	1Δ#	20pΩ	PE	T092	A			
6	D39J9	500m	60MΔ	4.0m	Δ	100	100	5.0	500m	25nΩ	1.0Ω	10mΩ	200	1Δ#	20pΩ	PE	T092	A			
7	GES6011	500m	75MΔ	4.0m	Δ	50	40	5.0	800m	10nΩ	1.0Ω	10mΩ	100	1Δ#	50uΩ	15kΩ	15pΩ	PE	T092	A	
8	GES6015	500m	75MΔ	4.0m	Δ	70	60	5.0	800m	10nΩ	1.0Ω	10mΩ	100	1Δ#	50uΩ	15kΩ	15pΩ	PE	T092	A	
9	CX956	500m	80MΔ	4.0m	Δ	40	40	5.0	800m	10nΩ	1.0Ω	10mΩ	50	1Δ	8.0pΩ	PE	T092	A			
10	D29E4	500m	80M	4.5m	Δ	50	40	5.0	750m	100nΩ	2.0Ω	2.0m	80	100	15pΩ	PE	T098	B			
11	D29E5	500m	80M	4.5m	Δ	50	40	5.0	750m	100nΩ	2.0Ω	2.0m	100	100	15pΩ	PE	T098	B			
12	D29E9	500m	80MΔ	4.0m	Δ	70	60	5.0	750m	100nΩ	2.0Ω	2.0m	60	1Δ	15pΩ	PE	T098	B			
13#	2SA532	500m	90MΔ	5.0m	Δ	50	50	4.0	200m	10u	6.0Ω	5.0mΩ	80	100	5.5p	PL	T039	B			
14#	2SA991	500m	90MΔ	5.0m	Δ	60	60	5.0	100m	50n	6.0Ω	1.0mΩ	400	1*	4pΩ	PE	T092	A			
15	2N3806*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	150	Δ	60uΩ	30kΩ	25	4pΩ	PE	R131c	PA
16	2N3807*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	300	Δ	60uΩ	40kΩ	25	4pΩ	PE	R131c	PA
17	2N3808*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	150	Δ	60uΩ	30kΩ	25	4pΩ	PE	R131c	PA
18	2N3809*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	300	Δ	60uΩ	40kΩ	25	4pΩ	PE	R131c	PA
19	2N3810*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	150	Δ	60uΩ	30kΩ	25	4pΩ	PE	R131c	PA
20	2N3810A*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	150	Δ	60uΩ	30kΩ	25	4pΩ	PE	R131a	PA
21	2N3811*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	300	Δ	60uΩ	40kΩ	25	4pΩ	PE	R131c	PA
22	2N3811A*	500m	100MΔ	2.9m	Δ	60	60	5.0	50m	0.1uΩ	100	1.0mΩ	300	Δ	60uΩ	40kΩ	25	4pΩ	PE	R131a	PA
23	2N4026†	500m	100MΔ	2.9m	Δ	60	60	5.0	1	0.5uΩ	5.0Ω	10mΩ	30	1Δ	20pΩ	PE	T018	A			
24	2N4027†	500m	100MΔ	2.9m	Δ	80	80	5.0	1	0.5uΩ	5.0Ω	10mΩ	30	1Δ	20pΩ	PE	T018	A			
25#	2SA853	500m	100MΔ	4.0m	Δ	35	35	5.0	100m	100nΩ	5.0Ω	2.0mΩ	500	†	3.0p	PE	T092	A			
26#	2SA857	500m	100MΔ	4.0m	Δ	150	120	5.0	50m	1.0uΩ	5.0Ω	10mΩ	150	†	3.0p	PE	R195d	B			
27#	2SA858	500m	100MΔ	4.0m	Δ	150	150	5.0	50m	1.0uΩ	5.0Ω	10mΩ	150	†	3.0p	PE	R195d	B			
28#	2SA992	500m	100MΔ	5.0m	Δ	120	120	5.0	50m	50n	6.0Ω	1.0mΩ	500	†*	2.0p	PE	T092	B			
29	BC327	500m	100MΔ	4.0m	Δ	45	45	5.0	500m	100n	1.0Ω	100mΩ	100	†	8.0p	PE	T092	F			
30	BC328	500m	100MΔ	4.0m	Δ	25	25	5.0	500m	100n	1.0Ω	100mΩ	100	†	8.0p	PE	T092	F			
31#	BC432	500m	100MΔ	4.0m	Δ	70	60	5.0	500m	100nΩ	1.0Ω	100mΩ	63	Δ	12p	PE	T092	A			
32	D29E1	500m	100MΔ	4.0m	Δ	35	25	5.0	750m	100nΩ	2.0Ω	2.0mΩ	60	1Δ	15pΩ	PE	T098	A			
33	GES5811	500m	100MΔ	4.5m	Δ	35	25	5.0	750m	100nΩ	2.0Ω	2.0mΩ	60	1Δ	15pΩ	PE	T092	A			
34	GES5815	500m	100MΔ	4.5m	Δ	50	40	5.0	750m	100nΩ	2.0Ω	2.0mΩ	60	1Δ	15pΩ	PE	T092	A			
35	GES5821	500m	100MΔ	4.5m	Δ	70	60	5.0	750m	100nΩ	2.0Ω	2.0mΩ	60	1Δ	15pΩ	PE	T092	A			
36	GES6013	500m	100MΔ	4.0m	Δ	50	40	5.0	800m	10nΩ	1.0Ω	10mΩ	200	1Δ#	150uΩ	30kΩ	25	4pΩ	PE	T092	A
37	GES6017	500m	100MΔ	4.0m	Δ	70	60	5.0	800m	10nΩ	1.0Ω	10mΩ	200	1Δ#	150uΩ	30kΩ	25	4pΩ	PE	T092	A
38	MP350	500m	100MΔ	4.3m	Δ	25	25	6.0	20m	0.2n	5.0Ω	100uΩ	100	Δ†	2.0p	PE	T052	A			
39	MP350#1	500m	100MΔ	4.3m	Δ	25	25	6.0	20m	0.2n	5.0Ω	100uΩ	100	Δ†	2.0p	PE	T078	A			
40	MP351	500m	100MΔ	4.3m	Δ	45	45	6.5	20m	0.2n	5.0Ω	100uΩ	150	Δ†	2.0p	PE	T052	A			
41	MP351#1	500m	100MΔ	4.3m	Δ	45	45	6.5	20m	0.2n	5.0Ω	100uΩ	150	Δ†	2.0p	PE	T078	A			
42	MP352	500m	100MΔ	4.3m	Δ	60	60	6.5	20m	0.2n	5.0Ω	100uΩ	200	Δ†	2.0p	PE	T052	A			
43	MP352#1	500m	100MΔ	4.3m	Δ	60	60	6.5	20m	0.2n	5.0Ω	100uΩ	200	Δ†	2.0p	PE	T078	A			
44	MP358	500m	100MΔ	4.3m	Δ	20	20	6.5	20m	0.2n	5.0Ω	100uΩ	100	Δ†	2.0p	PE	T052	A			
45	MP358#1	500m	100MΔ	4.3m	Δ	20	20	6.5	20m	0.2n	5.0Ω	100uΩ	100	Δ†	2.0p	PE	T078	A			
46	MP360	500m	100MΔ	4.3m	Δ	25	25	6.0	20m	0.2n	5.0Ω	100uΩ	100	Δ†	1.0p	PE	T052	A			
47	MP360#1	500m	100MΔ	4.3m	Δ	25	25	6.0	20m	0.2n	5.0Ω	100uΩ	100	Δ†	1.0p	PE	T078	A			
48	MP361	500m	100MΔ	4.3m	Δ	45	45	6.5	20m	0.2n	5.0Ω	100uΩ	150	Δ†	1.0p	PE	T052	A			
49#	MP361#1	500m	100MΔ	4.3m	Δ	45	45	6.5	20m	0.2n	5.0Ω	100uΩ	150	Δ†	1.0p	PE	T078	A			
50#	MP362	500m	100MΔ	4.3m	Δ	60	60	6.5	20m	0.2n	5.0Ω	100uΩ	200	Δ†	1.0p	PE	T052	A			
51#	MP362#1	500m	100MΔ	4.3m	Δ	60	60	6.5	20m	0.2n	5.0Ω	100uΩ	200	Δ†	1.0p	PE	T078	A			
52#	MPS3638K†	500m	100MΔ	3.3m	Δ	25	25	4.0	500m	35nΩ	100	10mΩ	25	Δ	1.2uΩ	1.5kΩ	26	20pΩ	PL	X167	A
53#	MPS3638L†	500m	100MΔ	3.3m	Δ	25	25	4.0	500m	35nΩ	100	10mΩ	25	Δ	1.2uΩ	1.5kΩ	26	20pΩ	PL	X168	A
54#	MPS3638M†	500m	100MΔ	3.3m	Δ	25	25	4.0	500m	35nΩ	100	10mΩ	25	Δ	1.2uΩ	1.5kΩ	26	20pΩ	PL	X169	A
55#	MPS3702K	500m	100MΔ	3.3m	Δ	40	25	5.0	200m	100nΩ	5.0Ω	50mΩ	60	1Δ#	12pΩ	PL	X167	A			
56#	MPS3702L	500m	100MΔ	3.3m	Δ	40	25	5.0	200m	100nΩ	5.0Ω	50mΩ	60	1Δ#	12pΩ	PL	X168	A			
57#	MPS3702M	500m	100MΔ	3.3m	Δ	40	25	5.0	200m	100nΩ	5.0Ω	50mΩ	60	1Δ#	12pΩ	PL	X169	A			
58#	MPS3703K	500m	100MΔ	3.3m	Δ	50	30	5.0	200m	100nΩ	5.0Ω	50mΩ	60	1Δ#	12pΩ	PL	X167	A			
59#	MPS3703L	500m	100MΔ	3.3m	Δ	50	30	5.0	200m	100nΩ	5.0Ω	50mΩ	60	1Δ#	12pΩ	PL	X168	A			
60#	MPS3703M	500m	100MΔ	3.3m	Δ	50	30	5.0	200m	100nΩ	5.0Ω	50mΩ	60	1Δ#	12pΩ	PL	X169	A			
61#	MPS3704K	500m	100MΔ	3.3m	Δ	50	30	5.0	600m	100nΩ	2.0Ω	50mΩ	100	1Δ#	12pΩ	PL	X167	A			
62#	MPS3704L	500m	100MΔ	3.3m	Δ	50	30	5.0	600m	100nΩ	2.0Ω	50mΩ	100	1Δ#	12pΩ	PL	X168	A			
63#	MPS3704M	500m	100MΔ	3.3m	Δ	50	30	5.0	600m	100nΩ	2.0Ω	50mΩ	100	1Δ#	12pΩ	PL	X169	A			
64#	MPS3705K	500m	100MΔ	3.3m	Δ	50	30	5.0	800m	100nΩ	2.0Ω	50mΩ	50	1Δ#	12pΩ	PL	X167	A			
65#	MPS3705L	500m	100MΔ	3.3m	Δ	50	30	5.0	800m	100nΩ	2.0Ω	50mΩ	50	1Δ#	12pΩ	PL	X168	A			
66#	MPS3705M	500m	100MΔ	3.3m	Δ	50	30	5.0	800m	100nΩ	2.0Ω	50mΩ	50	1Δ#	12pΩ	PL	X169	A			
67#	MPS3706K	500m	100MΔ	3.3m	Δ	40	20	5.0	800m	100nΩ	2.0Ω	50mΩ	30	1Δ#	12pΩ	PL	X167	A			
68#	MPS3706L	500m	100MΔ	3.3m	Δ	40	20	5.0	800m	100nΩ	2.0Ω	50mΩ	30	1Δ#	12pΩ	PL	X168	A			
69#	MPS3706M	500m	100MΔ	3.3m	Δ	40	20	5.0	800m	100nΩ	2.0Ω	50mΩ	30	1Δ#	12pΩ	PL	X169	A			
70	TD524*	500m	100MΔ	4.0m	Δ	60	60	5.0	10nΩ	1.0Ω	5.0Ω	1.0mΩ	900	1Δ	4.0p	PE	R131c	PA			
71	TD525*	500m	100MΔ	4.0m	Δ	60	60	5.0	10nΩ	1.0Ω	5.0Ω	100uΩ	100	1Δ	8.0p	PE	R131c	PA			
72	TD527*	500m	100MΔ	4.0m	Δ	60	60	5.0	10nΩ	1.0Ω	5.0Ω	1.0mΩ	450	1Δ	8.0p	PE	R131c	PA			
73#	2SA1017	500m	110MΔ	2.9m	Δ	120	100	5.0	50m	1.0uΩ	6										

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C (Hz)	TEMP. RANG. (°C)	ABS. MAX. RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O D E
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> (X.0001)				
1#	BC556PVM	500m	150M	4.0	50	65	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
2#	BC556VI	500m	150M	4.0m	50	65	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PE	R183 A	F
3#	BC557	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	140	18u	2.7k	1.5	4.5p	PE	R189a A	F
4#	BC557A	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	180	30u	4.5k	2.0	4.5p	PE	R189 A	F
5	BC557A#	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	220	30u	4.5k	2.0	4.5p	PE	T092 A	F
6#	BC557B	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	4.5p	PE	R183 A	F
7	BC557B#	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	220	30u	4.5k	2.0	4.5p	PE	T092 A	F
8#	BC557PA	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
9#	BC557PAK	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
10#	BC557PAL	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
11#	BC557PAM	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
12#	BC557PB	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
13#	BC557PBK	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
14#	BC557PBL	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
15#	BC557PBM	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
16#	BC557PVI	500m	150M	4.0	50	45	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
17#	BC557PVIK	500m	150M	4.0	50	45	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
18#	BC557PVI L	500m	150M	4.0	50	45	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
19#	BC557PVI M	500m	150M	4.0	50	45	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
20#	BC557VI	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PE	R183 A	F
21#	BC558	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	75	18u	2.7k	1.5	4.5p	PE	R189 A	F
22#	BC558A	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	180	30u	4.5k	2.0	4.5p	PE	R189a A	F
23#	BC558B	500m	150M	4.0m	50	25	5.0	100m	15n	5.0	2.0m	220	30u	4.5k	2.0	4.5p	PE	R189 A	F
24#	BC558C	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	600	60u	8.7k	3.0	4.5p	PE	R183 A	F
25#	BC558PA	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
26#	BC558PAK	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
27#	BC558PAL	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
28#	BC558PAM	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	120	18u	2.7k	1.5	4.5p	PLT	B58 A	F
29#	BC558PB	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
30#	BC558PBK	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
31#	BC558PBL	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
32#	BC558PBM	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	200	30u	4.5k	2.0	4.5p	PLT	B58 A	F
33#	BC558PC	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	400	60u	8.7k	3.0	4.5p	PLT	B58 A	F
34#	BC558PCK	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	400	60u	8.7k	3.0	4.5p	PLT	B58 A	F
35#	BC558PCL	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	400	60u	8.7k	3.0	4.5p	PLT	B58 A	F
36#	BC558PCM	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	100m	400	60u	8.7k	3.0	4.5p	PLT	B58 A	F
37#	BC558PVI	500m	150M	4.0	50	30	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
38#	BC558PVIK	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
39#	BC558PVI L	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
40#	BC558PVI M	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PLT	B58 A	F
41#	BC558VI	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	110	20u	1.2k	2.5	4.5p	PE	R183 A	F
42#	BC559	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	125	18u	2.7k	1.5	4.5p	PE	R189 A	F
43#	BC559A	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	180	30u	4.5k	2.0	4.5p	PE	R189a A	F
44#	BC559B	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	290	30u	4.5k	2.0	4.5p	PE	R189a A	F
45#	BC559C	500m	150M	4.0m	50	30	5.0	100m	15n	5.0	2.0m	600	60u	8.7k	3.0	4.5p	PE	R183 A	F
46#	BC560#	500m	150M	4.0m	50	45	5.0	200m	15n	5.0	2.0m	125	18u	2.7k	1.5	4.5p	PE	T092 F	F
47#	BC560A	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	125	18u	2.7k	1.5	4.5p	PE	T092 F	F
48#	BC560B	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	220	30u	4.5k	2.0	4.5p	PE	T092 F	F
49#	BC560C	500m	150M	4.0m	50	45	5.0	100m	15n	5.0	2.0m	600	60u	8.7k	3.0	4.5p	PE	R183 F	F
50#	BFS96	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
51#	BFS96K	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
52#	BFS96L	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
53#	BFS96M	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
54#	BFS97	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	100	100u	1.0k	10	15p	PLT	B58 A	F
55#	BFS97K	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	100	100u	1.0k	10	15p	PLT	B58 A	F
56#	BFS97L	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	100	100u	1.0k	10	15p	PLT	B58 A	F
57#	BFS97M	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	100	100u	1.0k	10	15p	PLT	B58 A	F
58#	BFS98	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
59#	BFS98K	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
60#	BFS98L	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
61#	BFS98M	500m	150M	3.3m	50	30	5.0	1.0	100n	10	150m	40	100u	1.0k	10	15p	PLT	B58 A	F
62	D29E7	500m	150M	4.5m	50	40	5.0	750m	100n	2.0	2.0m	200	100u	1.0k	10	15p	PE	T098 B	F
62#	MPS3638AKT	500m	150M	3.3m	50	25	4.0	500m	35n	10	10m	100	1.2u	2.0k	15	10p	PL	X167 A	A
64#	MPS3638ALT	500m	150M	3.3m	50	25	4.0	500m	35n	10	10m	100	1.2u	2.0k	15	10p	PL	X168 A	A
65#	MPS3638AMT	500m	150M	3.3m	50	25	4.0	500m	35n	10	10m	100	1.2u	2.0k	15	10p	PL	X169 A	A
66#	PB6013	500m	150M	4.0m	50	15	4.0	800m	500n	2.0	50m	130	12p	100u	10	15p	PE	T092 A	F
67#	PB6013A	500m	150M	4.0m	50	15	4.0	800m	500n	2.0	50m	220	12p	100u	10	15p	PE	T092 A	F
68#	PB6013B	500m	150M	4.0m	50	15	4.0	800m	500n	2.0	50m	450	12p	100u	10	15p	PE	T092 A	F
69	TP3638	500m	150M	4.0m	50	25	4.0	500m	100n	10	10m	25	8.0p	100u	10	15p	PE	R203a A	F
70	TP3638A	500m	150M	4.0m	50	25	4.0	500m	100n	10	10m	100	8.0p	100u	10	15p	PE	R203a A	F
71#	ZTX4402T	500m	150M	3.3m	50	40	5.0	600m	100n	10	1.0m	30	100u	75					

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/C (Hz)	M E M P	ABS MAX RATINGS @25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O D E			
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS			COMMON EMITTER									
										Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)							
1#	PB6014B	500m	200MΔ	4.0m	J	60	60	4.0	800m	500m	5.0	5.0	50m	450	100	100	30p	PE	T092	A		
2	PTC103	500m	200MΔ		J	70	70	5.5	600m	500m	1.0	1.0	1.0	100	100				TO105	A		
3	SK3118-RT	500m	200MΔ		J	50	40	5.0	750m	500m	2.0	2.0	2.0	100	100				R203a	A		
4#	ZTX212	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	60	10	10			PLT	B58	A		
5#	ZTX212AK	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
6#	ZTX212AL	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
7#	ZTX212AM	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
8#	ZTX212BK	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
9#	ZTX212BL	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
10#	ZTX212BM	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
11#	ZTX212K	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	60	10	10			PLT	B58a	A		
12#	ZTX212L	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	60	10	10			PLT	B58a	A		
13#	ZTX212M	500m	200MΔ	3.3m	SS	60	50	5.0	200m	15n	5.0	2.0	60	10	10			PLT	B58a	A		
14#	ZTX213	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	80	10	10			PLT	B58	A		
15#	ZTX213AK	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	80	10	10			PLT	B58a	A		
16#	ZTX213AL	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
17#	ZTX213AM	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
18#	ZTX213BK	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
19#	ZTX213BL	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	125	10	10			PLT	B58a	A		
20#	ZTX213BM	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
21#	ZTX213CK	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	350	10	10			PLT	B58a	A		
22#	ZTX213CL	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	350	10	10			PLT	B58a	A		
23#	ZTX213CM	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	350	10	10			PLT	B58a	A		
24#	ZTX213K	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	80	10	10			PLT	B58a	A		
25#	ZTX213L	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	80	10	10			PLT	B58a	A		
26#	ZTX213M	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	80	10	10			PLT	B58a	A		
27#	ZTX214	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	140	10	10			PLT	B58	A		
28#	ZTX214BK	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
29#	ZTX214BL	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
30#	ZTX214BM	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	200	10	10			PLT	B58a	A		
31#	ZTX214CK	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	350	10	10			PLT	B58a	A		
32#	ZTX214CL	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	350	10	10			PLT	B58a	A		
33#	ZTX214CM	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	350	10	10			PLT	B58a	A		
34#	ZTX214K	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	140	10	10			PLT	B58a	A		
35#	ZTX214L	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	140	10	10			PLT	B58a	A		
36#	ZTX214M	500m	200MΔ	3.3m	SS	45	30	5.0	200m	15n	5.0	2.0	140	10	10			PLT	B58a	A		
37#	ZTX3905†	500m	200MΔ	3.3m	J	40	40	5.0	200m	50n	1.0	1.0	50	40	40	40u	500	5.0	4.5p	PL	B58	A
38#	ZTX4403†	500m	200MΔ	3.3m	J	40	40	5.0	600m	100n	1.0	1.0	60	100	1.5k	8.0	8.5p	PL	B58	A		
39#	2SA927	500m	220M		J	60	40	6.0	250m	500n	1.0	1.0	100	100		7.0p	PE	R219	B			
40	2N6011†	500m	240MΔ	4.0m	J	50	40	5.0	800m	10n	1.0	1.0	90	120	12k	15p	∅	R203a	A			
41	2N6015†	500m	240MΔ	4.0m	J	70	60	5.0	800m	10n	1.0	1.0	90	120	12k	15p	∅	R203a	A			
42	2N5844*	500m	250MΔ	2.9m	SS	50	40	5.0	50m	10n	1.0	1.0	100	60	12k	20	6.0p	*	L2g	A		
43#	2SB698	500m	250M		J	25	20	5.0	700m	1.0u	2.0	5.0	230	10	10	13p	PE	T092	B			
44	BT3250	500m	250MΔ	2.8m	J	50	40	5.0	20n	20n	1.0	1.0	50	50	50	6.0p	∆	C14	AA			
45	BT3250A	500m	250MΔ	2.8m	J	60	60	5.0	20n	20n	1.0	1.0	50	50	50	6.0p	∆	C14	AA			
46	BT3250AT	500m	250MΔ	2.8m	J	60	60	5.0	20n	20n	1.0	1.0	50	50	50	6.0p	∆	T018	A			
47	BT3250T	500m	250MΔ	2.8m	J	50	40	5.0	20n	20n	1.0	1.0	50	50	50	6.0p	∆	T018	A			
48	BT3906	500m	250MΔ	2.8m	J	40	40	5.0	20n	20n	1.0	1.0	40	40	40	4.5p	∆	C14	AA			
49	BT3906T	500m	250MΔ	2.8m	J	40	40	5.0	20n	20n	1.0	1.0	40	40	40	4.5p	∆	T018	A			
50	MPS4249†	500m	250MΔ	4.0m	J	60	60	5.0	200m	10n	5.0	100u	100	250	6.0p	∅	DPE	T092	A			
51	MPS4250†	500m	250MΔ	4.0m	J	40	40	5.0	200m	10n	5.0	100u	250	250	6.0p	∅	DPE	T092	A			
52#	PC107	500m	250M	4.0m	J	50	45	4.0	100m	200n	5.0	2.0	130	100	100	5.0p	PE	R222	F			
53#	PC107A	500m	250M	4.0m	J	50	45	4.0	100m	200n	5.0	2.0	220	100	100	5.0p	PE	R222	F			
54#	PC108	500m	250M	4.0m	J	30	25	4.0	100m	200n	5.0	2.0	130	100	100	5.0p	PE	R222	F			
55#	PC108A	500m	250M	4.0m	J	30	25	4.0	100m	200n	5.0	2.0	220	100	100	5.0p	PE	R222	F			
56#	PC108B	500m	250M	4.0m	J	30	25	4.0	100m	200n	5.0	2.0	450	100	100	5.0p	PE	R222	F			
57	PN3250T	500m	250MΔ	4.0m	J	50	40	5.0	200m	20n	1.0	1.0	40	40	40	6.0p	∅	DPE	T092	A		
58	PN3250AT	500m	250MΔ	4.0m	J	60	60	5.0	200m	20n	1.0	1.0	40	40	40	6.0p	∅	DPE	T092	A		
59	SE8540	500m	250M	5.0m	J	30	30	5.0	1.0	50n	1.0	150m	70	70	20p	∅	DPL	R124c	A			
60#	ZTX3906†	500m	250MΔ	3.3m	J	40	40	5.0	200m	50n	1.0	1.0	100	60	2.0k	10	4.5p	PL	B58	A		
61#	MPS6533K	500m	260M	3.3m	A	40	40	4.0	600m	50n	1.0	1.0	85	85	85	4.8p	PL	X167	A			
62#	MPS6533L	500m	260M	3.3m	A	40	40	4.0	600m	50n	1.0	1.0	85	85	85	4.8p	PL	X168	A			
63#	MPS6533M	500m	260M	3.3m	A	40	40	4.0	600m	50n	1.0	1.0	85	85	85	4.8p	PL	X169	A			
64#	MPS6534K	500m	260M	3.3m	A	40	40	4.0	600m	50n	1.0	1.0	140	140	140	4.8p	PL	X167	A			
65#	MPS6534L	500m	260M	3.3m	A	40	40	4.0	600m	50n	1.0	1.0	140	140	140	4.8p	PL	X168	A			
66#	MPS6535K	500m	260M	3.3m	A	30	30	4.0	600m	100n	1.0	1.0	30	30	30	4.8p	PL	X167	A			
67#	MPS6535L	500m	260M	3.3m	A	30	30	4.0	600m	100n	1.0	1.0	30	30	30	4.8p	PL	X168	A			
68	2N4937*	500m	300MΔ	2.9m	SS	50	40	5.0	50m	0.2u	10	1.0	50	50	50	5p	*	R131c	PA			
69	2N4938*	500m	300MΔ	2.9m	SS	50	40	5.0	50m	0.2u	10	1.0	50	50	50	5p	*	R131c	PA			
70#	BC556B	500m	300M	4.0m	J	80	80	5.0	100m	15n	5.0	2.0	290	30	4.5k	2.0	2.5p	PL	T092	A		
71#	BC559PA	500m	300M	4.0m	J	30	30	5.0	100m	15n	5.0	2.0	180	18	2.7k	1.5	2.5p	PL	B58	A		
72#	BC559PAK	500m	300M	4.0m	J	30	30	5.0	100m	15n	5.0	2.0	180	18	2.7k	1.5	2.5p	PL	B58	A		
73#	BC559PAL	500m	300M	4.0m	J	30	30	5.0	100m	15n	5.0	2.0	180	18	2.7k	1.5	2.5p	PL	B58	A		
74#	BC559PAM	500m																				



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 f <sub>ab</sub> (Hz)	DERATE IN FREE AIR W/°C	M A M P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L C O A D E
						V <sub>bc0</sub> (V)	V <sub>ce0</sub> (V)	V <sub>ce</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	h <sub>fe</sub> (A)	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> (X.0001)					
1#	BCW96B	540m	135MΔ	4.3m	Δ	50	40	5.0	400m	30nΩ	2.0Ω	2.0mΩ	100 Δ*			10pΩ	PEΔ	T092	F	
2	BCW96A	540m	135MΔ	4.3m	Δ	50	40	5.0	400m	30nΩ	2.0Ω	2.0mΩ	70 Δ#		5.0p	PEΔ	R203a			
3	BCW96B	540m	135MΔ	4.3m	Δ	50	40	5.0	400m	30nΩ	2.0Ω	2.0mΩ	100 Δ#		5.0p	PEΔ	R203a			
4	BCW96KA	540m	135MΔ	4.3m	Δ	50	40	5.0	400m	30nΩ	2.0Ω	2.0mΩ	70 Δ#		5.0p	PEΔ	R203a			
5	BCW96KB	540m	135MΔ	4.3m	Δ	50	40	5.0	400m	30nΩ	2.0Ω	2.0mΩ	100 Δ#		5.0p	PEΔ	R203a			
6#	BCW97	540m	135MΔ	4.3m	Δ	70	60	5.0	400m	30nΩ	2.0Ω	5.0mΩ	100 Δ*		10pΩ	PE	R203a	A		
7#	BCW97L	540m	135MΔ	4.3m	Δ	70	60	5.0	400m	30nΩ	2.0Ω	5.0mΩ	100 Δ*		10pΩ	PE	T092	F		
8	BCW97A	540m	135MΔ	4.3m	Δ	70	60	5.0	400m	30nΩ	2.0Ω	2.0mΩ	70 Δ#		5.0p	PEΔ	R203a			
9	BCW97B	540m	135MΔ	4.3m	Δ	70	60	5.0	400m	30nΩ	2.0Ω	2.0mΩ	100 Δ#		5.0p	PEΔ	R203a			
10	BCW97KA	540m	135MΔ	4.3m	Δ	70	60	5.0	400m	30nΩ	2.0Ω	2.0mΩ	70 Δ#		5.0p	PEΔ	R203a			
11	BCW97KB	540m	135MΔ	4.3m	Δ	70	60	5.0	400m	30nΩ	2.0Ω	2.0mΩ	100 Δ#		5.0p	PEΔ	R203a			
12#	BFS37	550m	30MΔ	3.6m	Δ	45	45	5.0	500m	10n	5.0Ω	1.0uΩ	100 Δ†		8.0pΩ	PEΔ	X155	F		
13#	BFS37A	550m	30MΔ	3.6m	Δ	45	45	5.0	500m	10n	5.0Ω	1.0uΩ	100 Δ†		8.0pΩ	PEΔ	X155	F		
14#	BFS40	550m	150MΔ	3.6m	Δ	30	30	5.0	500m	50n	6.0Ω	10uΩ	50 Δ†		5.0pΩ	PL†	X156†	C		
15#	BFS40A	550m	150MΔ	3.6m	Δ	25	25	5.0	500m	50n	6.0Ω	10uΩ	50 Δ†		5.0pΩ	PL†	X156†	C		
16#	BFS41	550m	150MΔ	3.6m	Δ	45	45	5.0	500m	50n	6.0Ω	10uΩ	40 Δ†		5.0pΩ	PL†	X156†	C		
17#	BSV37†	550m	400MΔ	3.6m	Δ	12	12	4.0	500m	100n	.50Ω	30mΩ	40 Δ†		6.0pΩ	PL	X156†	C		
18	MD7004	550m	675MΔ	3.1m	Δ	13	13	4.0	200m	100n	2.0Ω	10mΩ	100 Δ†		2.5p	AN	T099	PA		
19	MD4260*	550m	1.0GΔ	3.1m	Δ	12	12	4.0	50m	10n	1.0Ω	10mΩ	30 Δ†		2.5p	AN	R131b	PA		
20	MD4261*	550m	1.0GΔ	3.1m	Δ	12	12	4.0	50m	10n	1.0Ω	10mΩ	30 Δ†		2.5p	AN	R131b	PA		
21	MD2904*	575m	320MΔ	3.2m	Δ	60	40	5.0	600m	20n	10Ω	1.0mΩ	25 Δ#		8.0pΩ	AN	R131b	PA		
22	MD2904A*	575m	320MΔ	3.2m	Δ	60	60	5.0	600m	20n	10Ω	1.0mΩ	40 Δ#		8.0pΩ	AN	R131b	PA		
23	MD2905*	575m	320MΔ	3.2m	Δ	60	40	5.0	600m	20n	10Ω	1.0mΩ	50 Δ#		8.0pΩ	AN	R131b	PA		
24	MD2905A*	575m	320MΔ	3.2m	Δ	60	60	5.0	600m	20n	10Ω	1.0mΩ	100 Δ#		8.0pΩ	AN	R131b	PA		
25	MD3250*	575m	600MΔ	3.2m	Δ	50	40	5.0	50m	10n	5.0Ω	10uΩ	75 Δ#		2.5p	AN	T099	PA		
26	MD3250A*	575m	600MΔ	3.2m	Δ	50	40	5.0	50m	10n	5.0Ω	10uΩ	75 Δ#		2.5p	AN	T099	PA		
27	MD3251	575m	600MΔ	3.2m	Δ	50	40	5.0	50m	10n	5.0Ω	10uΩ	100 Δ#		2.5p	AN	T099	PA		
28	MD3251A*	575m	600MΔ	3.2m	Δ	50	40	5.0	50m	10n	5.0Ω	10uΩ	100 Δ#		2.5p	AN*	T099	PA		
29#	ZSB843	600m		5.4m	†	30	25	7.0	100m	10n	10Ω	10mΩ	60 Δ†		6.0p	PE	B37	D		
30#	ZSB844	600m		5.4m	†	60	50	7.0	100m	10n	10Ω	10mΩ	60 Δ†		6.0p	PE	B37	D		
31#	ZSC2407	600m			Δ	35	18	3.0	150m	0.5u	10Ω	50mΩ	200 Δ†		2.0pΩ	PE	T092	C		
32#	BFX30†	600m		3.4m	†	-65	-65	5.0	600m	50n	-4Ω	-10mΩ	50 Δ†		5.0p	PE	T092	A		
33	CS900†	600m		3.6m	†	25	25	3.0	1.0	500n	1.0Ω	50mΩ	64 Δ†		5.0p	PE	T092	A		
34	CS9012E	600m		3.6m	†	25	25	3.0	1.0	500n	1.0Ω	50mΩ	78 Δ†		5.0p	PE	T092	A		
35	CS9012F	600m		3.6m	†	25	25	3.0	1.0	500n	1.0Ω	50mΩ	98 Δ†		5.0p	PE	T092	A		
36	CS9012G	600m		3.6m	†	25	25	3.0	1.0	500n	1.0Ω	50mΩ	118 Δ†		5.0p	PE	T092	A		
37	CS9012H	600m		3.6m	†	25	25	3.0	1.0	500n	1.0Ω	50mΩ	144 Δ†		5.0p	PE	T092	A		
38	CS9015A	600m		2.8m	†	20	18	3.0	100m	50n	5.0Ω	1.0mΩ	60 Δ†		5.0p	PE	T092	A		
39	CS9015B	600m		2.8m	†	20	18	3.0	100m	50n	5.0Ω	1.0mΩ	100 Δ†		5.0p	PE	T092	A		
40	CS9015C	600m		2.8m	†	20	18	3.0	100m	50n	5.0Ω	1.0mΩ	200 Δ†		5.0p	PE	T092	A		
41	CS9015D	600m		2.8m	†	20	18	3.0	100m	50n	5.0Ω	1.0mΩ	400 Δ†		5.0p	PE	T092	A		
42	ED1602A	600m		2.08u	Δ	35	30	4.0	100m	10n	5.0Ω	2.0mΩ	70 Δ†		5.0p	PE	T092	A		
43	ED1602B	600m		2.08u	Δ	35	30	4.0	100m	10n	5.0Ω	2.0mΩ	90 Δ†		5.0p	PE	T092	A		
44	ED1602C	600m		2.08u	Δ	35	30	4.0	100m	10n	5.0Ω	2.0mΩ	125 Δ†		5.0p	PE	T092	A		
45	ED1602D	600m		2.08u	Δ	35	30	4.0	100m	10n	5.0Ω	2.0mΩ	170 Δ†		5.0p	PE	T092	A		
46	ED1602E	600m		2.08u	Δ	35	30	4.0	100m	10n	5.0Ω	2.0mΩ	223 Δ†		5.0p	PE	T092	A		
47	ED1802K	600m		2.08u	Δ	30	30	5.0	150m	10n	1.0Ω	100mΩ	108 Δ†		5.0p	PE	T092	A		
48	ED1802L	600m		2.08u	Δ	30	30	5.0	150m	10n	1.0Ω	100mΩ	132 Δ†		5.0p	PE	T092	A		
49	ED1802M	600m		2.08u	Δ	30	30	5.0	150m	10n	1.0Ω	100mΩ	170 Δ†		5.0p	PE	T092	A		
50	ED1802N	600m		2.08u	Δ	30	30	5.0	150m	10n	1.0Ω	100mΩ	213 Δ†		5.0p	PE	T092	A		
51	MM4000	600m		3.4m	Δ	100	100	5.0	100m	1.0u	10Ω	100mΩ	20 Δ†		6pΩ	PE	T092	A		
52	PN4248	600m		4.8m	Δ	60	40	5.0	50m	10n	5.0Ω	100uΩ	50 Δ†		6.0pΩ	PL	T092	A		
53	PN4249	600m		4.8m	Δ	60	40	5.0	50m	10n	5.0Ω	100uΩ	100 Δ†		6.0pΩ	PL	T092	A		
54	PN4250	600m		4.8m	Δ	40	40	5.0	50m	10n	5.0Ω	100uΩ	250 Δ†		6.0pΩ	PL	T092	A		
55	PN4250A	600m		4.8m	Δ	60	60	5.0	50m	10n	5.0Ω	100uΩ	250 Δ†		6.0pΩ	PL	T092	A		
56	ST8014	600m		3.45u	Δ	40	30	5.0	600m	1.0u	10Ω	15mΩ	85 Δ†		6.0pΩ	PL	T05	A		
57	ST8500	600m		5.9m	Δ	40	40	5.0	3.0	500n	10Ω	500mΩ	100 Δ†		5.0p	ME	T05	A		
58#	BCY30A	600m	2.0MΔ	4.8m	Δ	64	64	4.5	50m	50n	6.0Ω	1.0mΩ	25 Δ†	17	1.1	3.0	∅	T05	A	
59#	BCY31A	600m	2.0MΔ	4.8m	Δ	64	64	4.5	50m	50n	6.0Ω	1.0mΩ	25 Δ†	17	1.4	8.0	∅	T05	A	
60#	BCY32A	600m	2.0MΔ	4.8m	Δ	64	64	4.5	50m	50n	6.0Ω	1.0mΩ	55 Δ†	30	1.7	3.0	∅	T05	A	
61#	BCY33A	600m	2.0MΔ	4.8m	Δ	32	32	3.2	50m	50n	6.0Ω	1.0mΩ	25 Δ†	17	1.1	3.0	∅	T05	A	
62#	BCY34A	600m	2.0MΔ	4.8m	Δ	32	32	3.2	50m	50n	6.0Ω	1.0mΩ	35 Δ†	25	1.4	6.0	∅	T05	A	
63#	HSE193-RT	600m	1.0MΔ	4.8m	Δ	200	200	5.0	50m	50n	10Ω	20mΩ	30 Δ†		5.0p	∅	T05	A		
64	HSE194-RT	600m	1.0MΔ	4.8m	Δ	350	250	4.0	50m	50n	10Ω	20mΩ	30 Δ†		5.0p	∅	T05	A		
65	2N3305	600m	20MΔ	4.0m	Δ	50	40	6.0	60m	50n	5.0Ω	1.0mΩ	40 Δ†	50uΩ	30kΩ	6.0	∅	T05	A	
66	2N3306	600m	20MΔ	4.0m	Δ	50	40	6.0	60m	50n	5.0Ω	1.0mΩ	70 Δ†	80uΩ	60kΩ	10	∅	T05	A	
67	2N3857	600m	20MΔ	3.4m	Δ	45	45	3.0	500m	50n	6.0Ω	1.0mΩ	45 Δ†	1.5uΩ	35	20	∅	T05	A	
68	2N4412	600m	20MΔ	3.4m	Δ	40	30	5.0	600m	10n	5.0Ω	1.0mΩ	120 Δ†	500nb	32	∅	T05	A		
69	2N4412A	600m	20MΔ	3.4m	Δ	60	60	5.0	600m	10n	5.0Ω	1.0mΩ	120 Δ†	500nb	32	∅	T05	A		
70	2N4414	600m	20MΔ	3.4m	Δ	40	30	5.0	600m	10n	5.0Ω	1.0mΩ	100 Δ†	500nb	32	∅	T05	A		
71	2N4414A	600m	20MΔ	3.4m	Δ	60	60	5.0	600m	10n	5.0Ω	1.0mΩ	100 Δ†	500nb	32	∅	T05	A		
72	ST8065	600m	25MΔ	5.9m	Δ	60	50	5.0	1.0u	10Ω	10Ω	500mΩ	40 Δ†		5.0p	∅	T05	A		
73	ST8190	600m	25MΔ	1.5m	Δ	40	30	5.0	10u	10Ω	10Ω	500mΩ	25 Δ†		75pΩ	PE	T05	A		
74	ST8191	600m	25MΔ	1.5m	Δ	60	50	5.0	10u	10Ω	10Ω	500mΩ	25 Δ†		75pΩ	PE	T05	A		
75	ST8509	600m	25MΔ	5.9m	Δ	80	60	5.0	1.0u	10Ω	10Ω	500mΩ	20 Δ†		5.0p	∅	T05	A		
76	ST8033	600m	30MΔ		Δ	40	40	2.0	1.0u	5.0Ω	1.0mΩ	30 Δ†		45p	PL	T05	A			
77	2N1991	600m	40MΔ	4.8m	Δ	30	20	5.0	5											

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	M T E A M P X	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/A TO200 Ser.	L C O A D E
					Vcbo (V)	Vceo (V)	Vc (V)	Ic (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	2SA950	600m	120m	4.8m	180	160	5.0	800m	100n	1.0	100m	320	12					T092	A
2#	2SA509	600m	140m	4.8m	35	30	5.0	50m	100n	2.0	50m	100	†					T092	A
3#	2SA509G†	600m	140m	4.8m	35	30	5.0	500m	100n	2.0	50m	100	†					X161	B
4	2N3081	600m	150m	3.4m	70	50	6.0	600m	0.1u	100	150m	30	Δ					T05	A
5	2N3495†	600m	150m	3.4m	120	120	4.5	100m	10u	100	10m	40	Δ					T05	A
6#	2SA1128	600m	150m		25	20	5.0	500m	10u	200	500m	65	Δ					T092	A
7#	2SA1207	600m	150m		180	160	5.0	70m	0.1u	100	10m	250	†					T092	B
8#	2SB790	600m	150m	5.2m	25	20	7.0	0.5	100	2.0	500m	350	†					T092	B
9	HEP50012-RT	600m	150m	4.0m	60	40	4.0	600m	1.0u	100	150m	80	†					B37	D
10	HSE140-RT	600m	150m	4.8m	30	25	4.0		1.0u	100	150m	50	†					T05	A
11	HSE224-RT	600m	150m	4.8m	60	60	5.0		200n	100	150m	80	†					T05	A
12	PN3638A	600m	150m	4.8m	25	25	4.0	500m	25n	1.0	50m	100	†					T092	A
13	ST8230	600m	150m	3.4m	50	30	5.0	1	0.5u	100	15m	40	†					T05	A
14#	TS2904	600m	150m	3.4m	60	30	5.0	600m	20n	100	10m	35	†					T039	A
15#	TS2905	600m	150m	3.4m	60	30	5.0	600m	20n	100	10m	35	†					T039	A
16#	BFX36*	600m	180m	2.2m	60	60	6.0	200m	10n	5.0	1.0m	700	†					T077	A
17	2N2904†	600m	200m	3.4m	60	40	5.0	600m	0.2u	100	1.0m	25	†					T05	A
18	JAN2N2904†	600m	200m	3.4m	60	40	5.0	600m	20n	100	1.0m	25	†					T05	A
19	2N2904A†	600m	200m	3.4m	60	60	5.0	600m	0.1u	100	1.0m	40	†					T05	A
20	JAN2N2904A†	600m	200m	3.4m	60	60	5.0	600m	0.1u	100	1.0m	40	†					T05	A
21	2N2905†	600m	200m	3.4m	60	40	5.0	600m	0.2u	100	1.0m	50	†					T05	A
22	JAN2N2905†	600m	200m	3.4m	60	40	5.0	600m	0.2u	100	1.0m	50	†					T05	A
23	2N2905A†	600m	200m	3.4m	60	60	5.0	600m	0.1u	100	1.0m	100	†					T05	A
24	JAN2N2905A†	600m	200m	3.4m	60	60	5.0	600m	10n	100	1.0m	100	†					T05	A
25	2N3133†	600m	200m	3.4m	50	35	4.0	600m	0.5u	100	150m	40	†					T05	A
26	2N3134†	600m	200m	3.4m	50	35	4.0	600m	0.5u	100	150m	40	†					T05	A
27	2N3494†	600m	200m	3.4m	80	80	4.5	100m	10u	100	10m	40	†					T05	A
28	2N3671†	600m	200m	3.4m	60	50	5.0	600m	10n	100	10m	55	†					T05	A
29#	2SA730	600m	200m	6.0m	30	25	5.0	500m	100n	100	500m	90	†					T092	B
30#	2SA731	600m	200m	6.0m	30	25	5.0	500m	100n	100	500m	90	†					T092	B
31#	2SB621	600m	200m	5.4m	30	25	5.0	1.5	100n	100	500m	60	†					T092	B
32	PN2906	600m	200m	4.8m	60	40	5.0	600m	20n	100	1.0m	25	†					T092	A
33	PN2906A	600m	200m	4.8m	60	60	5.0	600m	10n	100	1.0m	40	†					T092	A
34	PN2907	600m	200m	4.8m	60	60	5.0	600m	20n	100	1.0m	50	†					T092	A
35	PN2907A	600m	200m	4.8m	60	60	5.0	600m	10n	100	1.0m	100	†					T092	A
36	PN3644	600m	200m	4.8m	45	45	5.0	500m	35n	100	1.0m	80	†					T092	A
37	PN3645	600m	200m	4.8m	60	60	5.0	500m	35n	100	1.0m	80	†					T092	A
38	MD982	600m	320m	3.4m	60	50	5.0	600m	20n	100	150m	60	†					T099	P
39	MD7001*	600m	320m	3.4m	50	30	5.0	600m	100n	100	1.0m	50	†					T099	P
40	PN4916	600m	400m	4.8m	30	30	5.0	100m	25n	1.0	1.0m	60	†					T092	A
41	PN4917	600m	450m	4.8m	30	30	5.0	100m	25n	1.0	1.0m	150	†					T092	A
42	PN3639	600m	500m	4.8m	6.0	6.0	4.0	80m	10n	1.0	50m	20	†					T092	A
43	PN3640	600m	500m	4.8m	12	12	4.0	80m	10n	1.0	50m	20	†					T092	A
44	PN4258	600m	700m	4.8m	12	12	4.5	50m	10n	3.0	10m	30	†					T092	A
45	PN4258A	600m	700m	4.8m	12	12	4.5	50m	10n	3.0	10m	30	†					T092	A
46	PN5910	600m	700m	4.8m	20	20	4.5	50m	10n	5.0	1.0m	15	†					T092	A
47#	BCW92	610m	135m	4.3m	50	40	5.0	800m	30n	2.0	150m	100	†					R203a	A
48#	BCW92Z	610m	135m	4.3m	60	60	5.0	800m	30n	2.0	150m	100	†					T092	F
49	BCW92A	610m	135m	4.8m	50	40	5.0	800m	30n	2.0	2.0m	60	†					R203a	A
50	BCW92B	610m	135m	4.8m	50	40	5.0	800m	30n	2.0	2.0m	80	†					R203a	A
51	BCW92KA	610m	135m	4.8m	50	40	5.0	800m	30n	2.0	2.0m	60	†					R203a	A
52	BCW92KB	610m	135m	4.8m	50	40	5.0	800m	30n	2.0	2.0m	80	†					R203a	A
53#	BCW93	610m	135m	4.3m	70	60	5.0	800m	30n	2.0	140m	100	†					R203a	A
54#	BCW93Z	610m	135m	4.3m	60	60	5.0	800m	30n	2.0	150m	100	†					T092	F
55	BCW93A	610m	135m	4.8m	70	60	5.0	800m	30n	2.0	2.0m	60	†					R203a	A
56	BCW93B	610m	135m	4.8m	70	60	5.0	800m	30n	2.0	2.0m	80	†					R203a	A
57	BCW93KA	610m	135m	4.8m	70	60	5.0	800m	30n	2.0	2.0m	60	†					R203a	A
58	BCW93KB	610m	135m	4.8m	70	60	5.0	800m	30n	2.0	2.0m	80	†					R203a	A
59#	2SA923-1†	625m	5.0m	5.0m	200	150	5.0	200m	200n	5.0	3.0m	150	†					R179e	A
60#	2SA923-2†	625m	5.0m	5.0m	200	175	5.0	200m	200n	5.0	3.0m	150	†					R179e	A
61	A8T4058	625m	5.0m	5.0m	30	30	6.0	30m	100n	5.0	100u	100	†					T092	A
62	A8T4059	625m	5.0m	5.0m	30	30	6.0	30m	100n	5.0	1.0m	45	†					T092	A
63	A8T4060	625m	5.0m	5.0m	30	30	6.0	30m	100n	5.0	1.0m	45	†					T092	A
64	A8T4061	625m	5.0m	5.0m	30	30	6.0	30m	100n	5.0	1.0m	90	†					T092	A
65	A8T4062	625m	5.0m	5.0m	30	30	6.0	30m	100n	5.0	1.0m	180	†					T092	A
66#	BC231A	625m	5.0m	5.0m	40	30	5.0	400m	100n	5.0	50m	100	†					T092	B
67#	BC231B	625m	5.0m	5.0m	40	30	5.0	400m	100n	5.0	50m	200	†					T092	B
68	BC327-10	625m	5.4m	5.4m	45	45	5.0	800m	100n	1.0	100m	63	†					T092	F
69	BC328-10	625m	5.4m	5.4m	20	20	5.0	800m	100n	1.0	100m	63	†					T092	F
70#	BC381	625m	5.0m	5.0m	40	25	5.0	200m	100n	5.0	2.5m	60	†					T092	A
71#	BF397	625m	5.0m	5.0m	90	90	6.0	100m	50n	100	100u	20	†					R203c	A
72#	BF397Z	625m	5.0m	5.0m	90	90	6.0	100m	50n	100	100u	40	†					T092	F
73#	BF398	625m	5.0m	5.0m	150	150	6.0	100m	50n	100	10m	25	†					R203c	A
74#	BF398Z	625m	5.0m	5.0m	150	150	6.0	100m	50n	100	10m	30	†					T092	F
75#	JE9012D	625m	5.0m	5.0m	40	20	5.0	500m	200n	1.0	50m	64	†					T092	A
76#	JE9012E	625m	5.0m	5.0m	40	20	5.0	500m	200n	1.0	50m	78	†					T092	A
77#	JE9012F	625m	5.0m	5.0m	40	20	5.0	500m	200n	1.0	50m	96	†					T092	A
78#	JE9012G	625m	5.0m	5.0m	40	20	5.0	500m	200n	1.0	50m	118	†					T092	A
79#	JE9012H	625m	5.0m	5.0m	40	20	5.0	500m	200n	1.0	50m	144	†					T092	A
80	JE9015	625m			-50	-45	5.0	100m	200n	-5	-1m	200	†					T092	A
81	MPS9466	625m			-18	-6	5.0	100											



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	T M E A P X	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #200 s/a TO200 Ser.	# L O A D E		
					V <sub>bc0</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001						
1	A5T4250	825m	50MΔ	5.0m	Δ	40	40	5.0	100m	10n	5.0	1.0m	250 Δ	50u	20k	10	PE	R203	A		
2	A5T5228	825m	50MΔ	5.0m	Δ	25	25	4.0	500m	300n	10	50m	30 Δ				PE	R203	A		
3	BC530	825m	50MΔ			130	120	6.0		100n	10	1.0m	200 Δ					T092	A		
4	BC531	825m	50MΔ			160	150	6.0		50n	10	1.0m	200 Δ					T092	A		
5	BC534	825m	50MΔ			80	80	6.0		100n	1.0	100m	50 Δ					T092	A		
6#	BF491	825m	50MΔ			200	200	6.0	100m	100n	10	1.0m	25 Δ					T092	A		
7#	BF492	825m	50MΔ	1.2m	Δ	250	250	8.0	500m	100n	10	1.0m	25 Δ			2.0p	PL	T092	A		
8#	BF493	825m	50MΔ	1.2m	Δ	300	300	8.0	500m	100n	10	1.0m	25 Δ				PL	T092	A		
9#	BFP26	825m	50MΔ			300	300	5.0	500m	100n	10	1.0m	25 Δ			7.0p	PE	T092	A		
10#	FSM892	825m	50MΔ			300	300				10	30m	40 Δ					T092	A		
11#	FSM893	825m	50MΔ			200	200				10	30m	50 Δ					T092	A		
12	HEPS0028-RT	825m	50MΔ	5.0m	Δ	300	300	5.0	500m	250n	10	10m	40 Δ					T092	A		
13	MP5A92	825m	50MΔ	5.0m	Δ	300	300	5.0	500m	250n	10	30m	25 Δ			6.0p	AN	T092	A		
14	MP5A93	825m	50MΔ	5.0m	Δ	200	200	5.0	500m	250n	10	30m	30 Δ			8.0p	AN	T092	A		
15#	BCX46	825m	60MΔ			45			1.0		2.0	100m	50 Δ					T092	F		
16#	BCX48	825m	60MΔ			60			1.0		2.0	100m	50 Δ					T092	F		
17#	BCX50	825m	60MΔ			80			1.0		2.0	100m	50 Δ					T092	F		
18	GES6562	825m	60MΔ	5.0m	Δ	25	25	5.0	500m	100n	2.0	500m	50 Δ				PE	T092	A		
19	GES6563	825m	60MΔ	5.0m	Δ	25	20	5.0	600m	100n	1.0	350m	50 Δ					T092	A		
20	MP56562	825m	60MΔ	5.0m	Δ	25	25	5.0	500m	100n	1.0	10m	35 Δ				AN	T092	A		
21	MP56562	825m	60MΔ	5.0m	Δ	25	25	5.0	500m	100n	1.0	10m	35 Δ				DPE	T092	A		
22	MP56563	825m	60MΔ	5.0m	Δ	25	20	5.0	600m	100n	1.0	10m	35 Δ				AN	T092	A		
23#	2SA817	825m	80MΔ	5.0m	Δ	80	80	5.0	300m	100n	2.0	50m	200 Δ			12p	E	R67A	B		
24#	BF435	825m	80MΔ	5.0m	Δ	160	160	5.0	200m	50n	5.0	10m	50 Δ			1.8p	PL	T092	B		
25#	BF436	825m	80MΔ	5.0m	Δ	250	250	5.0	200m	50n	5.0	10m	40 Δ			1.8p	PL	T092	B		
26#	BF437	825m	80MΔ	5.0m	Δ	300	300	5.0	200m	50n	5.0	10m	30 Δ			1.8p	PL	T092	B		
27	A5T3638T	825m	100MΔ	5.0m	Δ	25	25	4.0	500m	35n	10	10m	25 Δ			1.2u	2.0k	15	PE	R203	A
28	A5T4026T	825m	100MΔ	5.0m	Δ	60	60	5.0	1.0	50n	5.0	100m	40 Δ					T092	A		
29	A5T4027T	825m	100MΔ	5.0m	Δ	80	80	5.0	1.0	50n	5.0	100m	40 Δ					T092	A		
30	A5T5221	825m	100MΔ	5.0m	Δ	15	15	3.0	500m	100n	10	50m	30 Δ					T092	A		
31	A5T5227	825m	100MΔ	5.0m	Δ	30	30	3.0	50m	100n	10	2.0m	50 Δ			5.0p	PE	R203	A		
32	A5T5400	825m	100MΔ	5.0m	Δ	130	120	5.0	600m	100n	10	1.0m	30 Δ			6.0p	PE	R203	A		
33	A5T5401	825m	100MΔ	5.0m	Δ	160	150	5.0	600m	50n	10	1.0m	40 Δ			6.0p	PE	R203	A		
34	A8T3702	825m	100MΔ	5.0m	Δ	40	25	5.0	200m	100n	5.0	50m	60 Δ			12p	PE	T092	A		
35	A8T3703	825m	100MΔ	5.0m	Δ	50	30	5.0	200m	100n	5.0	50m	30 Δ			12p	PE	T092	A		
36	BC231	825m	100MΔ			30			400m		-5	-50m	100 Δ					T092	B		
37#	BC327AP	825m	100MΔ	5.0m	Δ	45		5.0	800m	100n	1.0	100m	180 Δ			12p	PL	B58	A		
38#	BC327BP	825m	100MΔ	5.0m	Δ	45		5.0	800m	100n	1.0	100m	250 Δ			12p	PL	B58	A		
39#	BC327CP	825m	100MΔ	5.0m	Δ	45		5.0	800m	100n	1.0	100m	400 Δ			12p	PL	B58	A		
40#	BC328AP	825m	100MΔ	5.0m	Δ	25		5.0	800m	100n	1.0	100m	180 Δ			12p	PL	B58	A		
41#	BC328BP	825m	100MΔ	5.0m	Δ	25		5.0	800m	100n	1.0	100m	250 Δ			12p	PL	B58	A		
42#	BC328CP	825m	100MΔ	5.0m	Δ	25		5.0	800m	100n	1.0	100m	400 Δ			12p	PL	B58	A		
43	BC337-16#	825m	100MΔ			45	45	5.0			1.0	100m	250 Δ			12p	↑	T092	F		
44	BC337-25#	825m	100MΔ			45	45	5.0			1.0	100m	400 Δ			12p	↑	T092	F		
45	BC337-40#	825m	100MΔ			45	45	5.0			1.0	100m	630 Δ			12p	↑	T092	F		
46#	BC381	825m	100MΔ			25			200m		5.0	2.5m	60 Δ			10p		T092	F		
47#	BC432	825m	100MΔ			60			800m		1.0	100m	63 Δ			17p		T092	F		
48#	BC446	825m	100MΔ			60			300m		5.0	2.0m	50 Δ			3.0p		T092	F		
49	BC526	825m	100MΔ			50			200m		-5	-2m	60 Δ			5.0p		T092	A		
50	BC527	825m	100MΔ			60	60	6.0		100n	1.0	100m	400 Δ			15p	PE	T092	A		
51#	BC528	825m	100MΔ	5.0m	Δ	80	80	6.0	1.0	100n	10	10m	50 Δ			15p	PE	T092	A		
52#	BCX75	825m	100MΔ			32			800m		1.0	100m	100 Δ			18p		T092	F		
53#	BCX75-16T	825m	100MΔ	5.0m	Δ	32		5.0	800m	20n	1.0	100m	100 Δ			18p	PE	R204d	A		
54#	BCX75-25T	825m	100MΔ	5.0m	Δ	32		5.0	800m	20n	1.0	100m	160 Δ			18p	PE	R204d	A		
55#	BCX75-40T	825m	100MΔ	5.0m	Δ	32		5.0	800m	20n	1.0	100m	250 Δ			18p	PE	R204d	A		
56#	BCX76	825m	100MΔ			45			800m		1.0	100m	100 Δ			18p		T092	F		
57#	BCX76-16	825m	100MΔ			75	45	5.0	800m	20n	1.0	10m	75 Δ				EPL	R224	A		
58#	BCX76-25T	825m	100MΔ	5.0m	Δ	45		5.0	800m	20n	1.0	100m	160 Δ			18p	PE	R204d	A		
59#	BCX76-40T	825m	100MΔ	5.0m	Δ	45		5.0	800m	20n	1.0	100m	250 Δ			18p	PE	R204d	A		
60	GES93	825m	100MΔ	5.0m	Δ	40	40	5.0	400m	100n	2.0	50m	100 Δ			15p		T092	A		
61	MP53638T	825m	100MΔ	5.0m	Δ	25	25	4.0	500m	35n	10	10m	20 Δ			20p	DPE	T092	A		
62	MP54354T	825m	100MΔ	5.0m	Δ	60	60	5.0	1.0	50u	10	10u	50 Δ			30p	AN	T092	A		
63#	MP54354Z	825m	100MΔ			60			1.0		10	10u	50 Δ			30p	AN	T092	A		
64	MP54355T	825m	100MΔ	5.0m	Δ	60	60	5.0	1.0	50n	10	10m	200			30p	AN	T092	A		
65#	MP54355Z	825m	100MΔ			60			1.0		10	10m	100 Δ			30p	AN	T092	A		
66	MP54356T	825m	100MΔ	5.0m	Δ	80	80	5.0	1.0	50u	10	10u	50 Δ			30p	AN	T092	A		
67#	MP54356Z	825m	100MΔ			80			1.0		10	10m	50 Δ			30p	AN	T092	A		
68	MP55142T	825m	100MΔ	5.0m	Δ	20	20	4.0	500m	50n	3.0	50m	1.0 Δ			10p		T092	A		
69	MP55143T	825m	100MΔ	5.0m	Δ	20	20	4.0	500m	50n	3.0	50m	1.0 Δ			10p		T092	A		
70	MP55855	825m	100MΔ	5.0m	Δ	60	60	5.0	1.0	100n	10	50m	1.0 Δ			15p		T092	A		
71	MP55857	825m	100MΔ	5.0m	Δ	60	60	5.0	1.0	100n	10	50m	1.0 Δ			15p		T092	A		
72	MP5A55	825m	100MΔ	5.0m	Δ	60	60	4.0	500m	100n	1.0	10m	50 Δ			15p	AN	T092	A		
73	MP5A56	825m	100MΔ	5.0m	Δ	80	80	4.0	500m	100n	1.0	10m	50 Δ			15p	AN	T092	A		
74	PN5142	825m	100MΔ	5.0m	Δ	20	20	4.0	500m	50n	1.0	50m	30 Δ			10p		T092	A		
75	PN5143	825m	100MΔ	5.0m	Δ	20	20	4.0	500m	50n	1.0	300m	15 Δ			10p		T092	A		
76#	TBC327	825m	100MΔ			50	45	5.0	500m	100n	1.0	100m	600 Δ			22p	E	T092	A		
77#	TBC328	825m	100MΔ			30	25	5.0	500m	100n	1.0	100m	600 Δ			22p	E	T092	A		
78	TP5142	825m	100MΔ			20	20	4.0	500m	50n	1.0	50m	30 Δ			10p	PE	T092	A		
79#	2SA922T	825m	120MΔ	5.0m	Δ	80	80	8.0	1.0	100n	2.0	100m	150 Δ			20p	PE	R179e	A		
80#	BC727	825m	120MΔ	5.0m	Δ	50	40	5.0	1.5	100n											

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 f (Hz)	DERATE IN FREE AIR W/°C	T M E A M P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L O D E	
						V <sub>cb0</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ce0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>					hoe (mhos)
1	BC488B5	625m	150M	5.0m	SJ	60	60	4.0	1.0	100n	2.0	100m	260	1#		AN	R207	A
2	BC488B 18	625m	150M	5.0m	SJ	60	60	4.0	1.0	100n	2.0	100m	260	1#		AN	R204e	A
3	BC488B	625m	150M	5.0m	SJ	60	60	4.0	1.0	100n	2.0	100m	260	1#		AN	R210a	F
4	BC488L5	625m	150M	5.0m	SJ	60	60	4.0	1.0	100n	2.0	100m	100	1#		AN	R207	A
5	BC488L 18	625m	150M	5.0m	SJ	60	60	4.0	1.0	100n	2.0	100m	100	1#		AN	R204e	A
6	BC488L	625m	150M	5.0m	SJ	60	60	4.0	1.0	100n	2.0	100m	100	1#		AN	R210a	F
7	BC490	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	60	1#		AN	R210a	F
8#	BC490-5	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	60	1#		AN	T092	F
9	BC490-5	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	60	1#		AN	R207	A
10	BC490-18	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	60	1#		AN	R204e	A
11	BC490A5	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	140	1#		AN	R207	A
12	BC490A 18	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	140	1#		AN	R204e	A
13	BC490A	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	140	1#		AN	R210a	F
14	BC490B5	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	260	1#		AN	R207	A
15	BC490B 18	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	260	1#		AN	R204e	A
16	BC490B	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	260	1#		AN	R210a	F
17	BC490L5	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	100	1#		AN	R207	A
18	BC490L 18	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	100	1#		AN	R204e	A
19	BC490L	625m	150M	5.0m	SJ	80	80	4.0	1.0	100n	2.0	100m	100	1#		AN	R210a	F
20	MPS3638A	625m	150M	5.0m	SJ	25	25	5.0	500m	35n	1.0	1.0m	80	1#		DPE	T092	A
21	TPS91	625m	150M	5.0m	SJ	40	40	5.0	500m	10n	2.0	5.0m	100	1#	*	T092	B	
22	TPS93	625m	150M	5.0m	SJ	40	40	5.0	500m	10n	2.0	5.0m	100	1#	*	T092	B	
23	TPS112	625m	150M	5.0m	SJ	60	60	5.0	500m	20n	1.0	150m	100	1#	†	T092	F	
24	MPS4889	625m	160M	5.0m	SJ	150	150	6.0	100m	10n	1.0	1.0m	8.0	1#	∅	T092	A	
25	HEPS0026-RT	625m	175M	5.0m	TJ	80	80	4.0	500m	100n	1.0	100m	125	1#		T092	C	
26#	BC556A	625m	190M	5.0m	SJ	80	65	5.0	100m	15n	5.0	2.0m	180	1#		E	R189b	A
27#	BC556B	625m	190M	5.0m	SJ	80	65	5.0	100m	15n	5.0	2.0m	290	1#		E	R189b	A
28#	BC557A	625m	190M	5.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	180	1#		E	R189b	A
29#	BC557B	625m	190M	5.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	290	1#		E	R189b	A
30#	BC558A	625m	190M	5.0m	SJ	30	30	5.0	100m	15n	5.0	2.0m	180	1#		E	R189b	A
31#	BC558B	625m	190M	5.0m	SJ	30	30	5.0	100m	15n	5.0	2.0m	290	1#		E	R189b	A
32#	BC559A	625m	190M	5.0m	SJ	30	30	5.0	100m	15n	5.0	2.0m	180	1#		E	R189b	A
33#	BC559B	625m	190M	5.0m	SJ	30	30	5.0	100m	15n	5.0	2.0m	290	1#		E	R189b	A
34#	BC560A	625m	190M	5.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	180	1#		E	R189b	A
35#	BC560B	625m	190M	5.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	290	1#		E	R189b	A
36#	JE9015A	625m	190M	5.0m	SJ	50	45	5.0	100m	50n	5.0	1.0m	60	1#	*	T092	A	
37#	JE9015B	625m	190M	5.0m	SJ	50	45	5.0	100m	50n	5.0	1.0m	100	1#	*	T092	A	
38#	JE9015C	625m	190M	5.0m	SJ	50	45	5.0	100m	50n	5.0	1.0m	200	1#	*	T092	A	
39#	2SA719NC	625m	200M	5.0m	SJ	30	25	5.0	500m	0.1u	1.0	150m	160	1#		PE	T092	B
40#	2SA890	625m	200M	5.7m	TJ	30	25	5.0	1.0	100n	1.0	150m	160	1#		PE	T092	A
41#	2SA891	625m	200M	5.7m	TJ	60	50	5.0	1.0	100n	1.0	150m	160	1#		PE	T092	A
42#	2906	625m	200M	5.0m	SJ	60	40	5.0	0.8	20n	1.0	150m	40	1#		EPL	T092	F
43#	2906A	625m	200M	5.0m	SJ	60	60	5.0	0.8	10n	1.0	150m	40	1#		EPL	T092	F
44#	2907	625m	200M	5.0m	SJ	60	40	5.0	0.8	20n	1.0	150m	100	1#		EPL	T092	F
45#	2907A	625m	200M	5.0m	SJ	60	60	5.0	0.8	10n	1.0	150m	100	1#		EPL	T092	F
46	A5T2907T	625m	200M	5.0m	SS	60	40	5.0	600m	20n	1.0	100m	35	1#		†	R203	A
47	A5T2907AT	625m	200M	5.0m	SS	60	60	5.0	600m	10n	1.0	100m	75	1#		†	R203	A
48	A5T3496T	625m	200M	5.0m	SS	80	80	4.5	100m	100n	1.0	10m	40	1#		PE	R203	A
49	A5T3504T	625m	200M	5.0m	SS	45	45	5.0	600m	10n	1.0	10m	135	1#		PE	R203	A
50	A5T3505T	625m	200M	5.0m	SS	60	60	5.0	600m	10n	1.0	10m	135	1#		PE	R203	A
51	A5T4403T	625m	200M	5.0m	SS	40	40	5.0	600m	100n	1.0	1.0m	60	1#		PE	R203	A
52	A8T3644T	625m	200M	5.0m	SS	45	45	5.0	600m	35n	1.0	10m	100	1#		†	R210a	A
53	A8T3645T	625m	200M	5.0m	SS	60	60	5.0	600m	35n	1.0	10m	100	1#		†	R210a	A
54	MPS2907T	625m	200M	5.0m	SJ	60	40	5.0	600m	20n	1.0	100m	35	1#		AN	R211	A
55	MPS2907Δ	625m	200M	5.0m	SJ	60	40	5.0	600m	50n	1.0	150m	100	1#		PE	T092	A
56	MPS2907AT	625m	200M	5.0m	SJ	60	60	5.0	600m	10n	1.0	100m	75	1#		AN	R211	A
57	MPS3905T	625m	200M	5.0m	SJ	40	40	5.0	200m	50n#	1.0	1.0m	50	1#		AN	T092	A
58	MPS9468	625m	200M	5.0m	SJ	60	40	5.0	600m	20n	1.0	100m	80	1#		Δ	T092	A
59#	NT2907T	625m	200M	5.0m	SJ	60	40	5.0	600m	20n	1.0	150m	100	1#		EΔ	T092	A
60#	NT2907AT	625m	200M	5.0m	SJ	60	60	5.0	600m	10n	1.0	150m	100	1#		EΔ	T092	A
61#	PH2907AR	625m	200M	5.0m	SJ	60	60	5.0	600m	10n	1.0	10m	100	1#		PE	T092	F
62#	PH2907R	625m	200M	5.0m	SJ	60	40	5.0	600m	20n	1.0	1.0m	50	1#		PE	T092	F
63#	PN2904A	625m	200M	8.0m	SJ	60	60	5.0	600m	10n	1.0	150m	40	1#		PE	R185	A
64#	PN2905A	625m	200M	8.0m	SJ	60	60	5.0	600m	10n	1.0	150m	100	1#		PE	R185	A
65	PN2906Δ	625m	200M	5.0m	SJ	60	40	5.0	800m	20n	1.0	100m	40	1#		DPE	T092	A
66	PN2907Δ	625m	200M	5.0m	SJ	60	40	5.0	800m	20n	1.0	100m	35	1#		DPE	T092	A
67	PN2907#	625m	200M	5.0m	SJ	60	40	5.0	600m	50n	1.0	150m	10	1#		PE	T092	A
68	PN4142	625m	200M	5.0m	SS	60	40	5.0	200m	50n#	1.0	150m	120	1#		PE	T092	A
69	PN4143	625m	200M	5.0m	SS	60	40	5.0	200m	50n#	1.0	150m	300	1#		PE	T092	A
70	TP3644	625m	200M	5.0m	SJ	45	45	5.0	500m	35n	1.0	50m	80	1#		Δ	T092	A
71	TP3645	625m	200M	5.0m	SJ	60	60	5.0	500m	35n	1.0	1.0m	80	1#		Δ	T092	A
72	MPS3906T	625m	250M	5.0m	SJ	40	40	5.0	200m	50n#	1.0	1.0m	100	1#		AN	T092	A
73	BC327-5	625m	260M	5.0m	SJ	50	45	5.0	500m	100n	1.0	50m	100	1#		AN	R207	A
74	BC327-18	625m	260M	5.0m	SJ	50	45	5.0	500m	100n	1.0	50m	100	1#		AN	R204e	A
75	BC328-5	625m	260M	5.0m	SJ	30	25	5.0	500m	100n	1.0	50m	100	1#		AN	R207	A
76	BC328-18	625m	260M	5.0m	SJ	30	25	5.0	500m	100n	1.0	50m	100	1#		AN	R204e	A
77	MPS6533M	625m	260M	5.0m	SJ	40	40	4.0	600m	50n	1.0	100m	40	1#		PE	T092	A
78	MPS6534M	625m	260M	5.0m	SJ	40	40	4.0	600m	50n	1.0	100m	90	1#		PE	T092	A
79	MPS6535M	625m	260M	5.0m	SJ	30	30	4.0	600m	100n	1.0	100m	30	1#		PE	T092	A
80	MPS5139T	625m	300M	5.0m	SJ													

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	TEMP. RANGE °C	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E	
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001					
1#	BFX91	700m	80mS	4.0m	5J	180	180	8.0	0.10μ	100	1.0m	170	1#			5.0p	PE	T039	A0	
2	2N3225	700m	80mS	4.6m	5S	100	100	6.0	100n	5.0	1.0m	40	Δ			20p	PE	T05	A0	
3	D29E4J1	700m	80mS	5.6m	5J	50	40	5.0	750m	100n	2.0	1.0m	60	Δ		15p	PE	R198	B	
4	D29E9J1	700m	80mS	5.6m	5J	70	60	5.0	750m	100n	2.0	2.0m	60	Δ		15p	PE	R198	B	
5#	V765	700m	80mS	4.5m	5	120	120	5.0	500m	100n	1.0	25m	140	†		3.0p	PE	T039	A	
6#	2SA625	700m	100mS	4.6m	5J	100	70	6.0	500m	1.0μ	6.0	1.0m	150			18p	PE	T039	A	
7#	BC143	700m	100mS	4.0m	5J	60	60	5.0	0.5μ	2.0	200m	20	Δ			20p	PE	T05	A	
8	D29E1J1	700m	100mS	5.6m	5J	35	25	5.0	750m	100n	2.0	2.0m	60	Δ		15p	PE	R198	B	
9	D29E5J1	700m	120mS	5.6m	5J	50	40	5.0	750m	100n	2.0	2.0m	100	Δ		15p	PE	R198	B	
10	D29E10J1	700m	120mS	5.6m	5J	70	60	5.0	750m	100n	2.0	2.0m	100	Δ		15p	PE	R198	B	
11#	BCW96K	700m	135mS	5.6m	5J	50	40	5.0	400m	30n	2.0	5.0m	100	Δ		10p	PE	R198	A	
12#	BCW97K	700m	135mS	5.6m	5J	70	60	5.0	400m	30n	2.0	5.0m	100	Δ		10p	PE	R198	A	
13	D29E2J1	700m	135mS	5.6m	5J	35	25	5.0	750m	100n	2.0	2.0m	150	Δ		15p	PE	R198	B	
14	D29E6J1	700m	135mS	5.6m	5J	50	40	5.0	750m	100n	2.0	2.0m	150	Δ		15p	PE	R198	B	
15	D29E7J1	700m	150mS	5.6m	5J	50	40	5.0	750m	100n	2.0	2.0m	200	Δ		15p	PE	R198	B	
16#	V410A	700m	170mS	4.0m	5J	35	35	4.0	1.0μ	1.0	50m	40	†	Δ		20p	PE	T039	A0	
17	2N3502†	700m	200mS	4.0m	5J	45	45	5.0	600m	0.1μ	1.0	35	Δ		800u	23k	15	Δ	T05	A0
18	2N3503†	700m	200mS	4.0m	5J	60	60	5.0	600m	0.1μ	1.0	35	Δ		800u	23k	15	Δ	T05	A0
19	2SA742H†	700m	200mS	4.6m	5J	60	60	5.0	500m	100n	1.6	100m	40	†		8.0p	PE	T039	A0	
20#	BSW23†	700m	200mS	4.0m	5J	40	40	5.0	500m	100n	1.0	150m	40	†		8.0p	PE	T05	A0	
21#	BFY64†	700m	250mS	4.0m	5J	40	40	5.0	500m	0.3μ	1.0	100m	200		110u	1.0k	2.4		T05	A0
22	2N4872†	700m	900mS	4.0m	5J	12	12	4.5	50m	0.1μ	3.0	10m	120	†		3.0p	PE	T018	A0	
23#	2SA537AHB†	750m	4.0m	5J	100	80	5.0	700m	1.0μ	1.0	100	20m	1.0	Δ		35p	PE	T039	A0	
24#	2SA537AHC†	750m	4.0m	5J	100	80	5.0	700m	1.0μ	1.0	100	20m	1.0	Δ		35p	PE	T039	A0	
25#	2SA537HBT	750m	4.0m	5J	80	50	5.0	700m	1.0μ	1.0	100	20m	1.0	Δ		35p	PE	T039	A0	
26#	2SA537HCT	750m	4.0m	5J	60	50	5.0	700m	1.0μ	1.0	100	20m	1.0	Δ		35p	PE	T039	A0	
27#	2SB715D	750m	150mS	6.0m	5J	100	100	5.0	50m	500n	12	2.0m	250	Δ		1.8p	PE	R245	B	
28#	2SB715E	750m	150mS	6.0m	5J	100	100	5.0	50m	500n	12	2.0m	400	Δ		1.8p	PE	R245	B	
29#	2SB716D	750m	150mS	6.0m	5J	120	120	5.0	50m	500n	12	2.0m	250	Δ		1.8p	PE	R245	B	
30#	2SB716E	750m	150mS	6.0m	5J	120	120	5.0	50m	500n	12	2.0m	400	Δ		1.8p	PE	R245	B	
31	JAN2N5415	750m	15mS	4.2m	5J	200	200	6.0	1.0	500u	100	5.0m	25	Δ		15p	PE	T05	A0	
32	JAN2N5416	750m	15mS	4.2m	5J	350	300	6.0	1.0	500u	100	5.0m	25	Δ		15p	PE	T05	A0	
33#	2SA840	750m	45mS	8.0m	5J	140	140	8.0	500m	200n	2.0	100m	150	†		30p	PE	R232	B	
34#	2SA1018	750m	50mS	5.0m	5J	250	200	5	70m	1.0	5m	30	Δ		10p	PE	T092	B		
35#	BC160-6*	750m	50mS	5.0m	5J	40	40	5.0	1.0	100n	1.0	100m	40	Δ		30p	PE	T039	A0	
36#	BC160-10*	750m	50mS	5.0m	5J	40	40	5.0	1.0	100n	1.0	100m	63	Δ		30p	PE	T039	A0	
37#	BC160-16*	750m	50mS	5.0m	5J	40	40	5.0	1.0	100n	1.0	100m	100	Δ		30p	PE	T039	A0	
38#	BC161-6*	750m	50mS	5.0m	5J	60	60	5.0	1.0	100n	1.0	100m	40	Δ		30p	PE	T039	A0	
39#	BC161-10*	750m	50mS	5.0m	5J	60	60	5.0	1.0	100n	1.0	100m	63	Δ		30p	PE	T039	A0	
40#	BC161-16*	750m	50mS	5.0m	5J	60	60	5.0	1.0	100n	1.0	100m	100	Δ		30p	PE	T039	A0	
41#	2SA773-1	750m	55mS	7.9m	5J	60	50	6.0	1.0	200n	2.0	100m	98	†		30p	PE	R232	B	
42#	2SA773-2	750m	55mS	7.9m	5J	70	70	6.0	1.0	200n	2.0	100m	98	†		30p	PE	R232	B	
43#	2SA896-1	750m	70mS	7.9m	5J	200	150	5.0	100m	200n	5.0	3.0m	150	†		3.0p	PE	R232	B	
44#	2SA896-2	750m	70mS	7.9m	5J	200	175	5.0	100m	200n	5.0	3.0m	150	†		3.0p	PE	R232	B	
45#	2SA917	750m	70mS	8.0m	5J	120	120	5.0	100m	200n	5.0	3.0m	150	†		3.0p	PE	R232	B	
46#	2SA546	750m	80mS	5.0m	5J	70	60	5.0	1	3.0μ	3.0	1	25	Δ		50p	PE	T039	A0	
47#	2SA546A	750m	80mS	5.0m	5J	80	80	5.0	1	3.0μ	3.0	1	25	Δ		50p	PE	T039	A0	
48#	2SA772-1	750m	80mS	7.9m	5J	20	16	6.0	2.0	200n	2.0	100m	140	†		50p	PE	R232	B	
49#	2SA772-2	750m	80mS	7.9m	5J	20	20	6.0	2.0	200n	2.0	100m	140	†		50p	PE	R232	B	
50	2N5855	750m	100mS	6.8m	5S	60	60	5.0	1.0	100n	1.0	10m	50	Δ		15p	PE	T0105	A	
51	2N5857	750m	100mS	6.8m	5S	80	80	5.0	1.0	100n	1.0	10m	50	Δ		15p	PE	T0105	A	
52#	2SB560	750m	100mS	6.8m	5S	100	80	5.0	700m	1.0μ	5.0	50m	320	†		15p	PE	R195e	B	
53	HA9500	750m	100mS	6.8m	5S	40	40	5.0	1.0μ	200	150m	45	†		15p	PE	ME	T05	A	
54	HA9501	750m	100mS	6.8m	5S	40	40	5.0	1.0μ	200	150m	90	†		15p	PE	ME	T05	A	
55	HA9502	750m	100mS	6.8m	5S	40	40	5.0	1.0μ	200	150m	100	†		15p	PE	ME	T05	A	
56#	MPSA55K	750m	100mS	5.0m	5A	60	60	4.0	500m	100n	1.0	10m	50	Δ		50p	PE	B58	A	
57#	MPSA56K	750m	100mS	5.0m	5A	80	80	4.0	500m	100n	1.0	10m	50	Δ		50p	PE	B58	A	
58	T1S180	750m	100mS	6.0m	5S	200	200	5.0	100m	100n	1.0	4.0m	20	Δ		3.5p	PE	Y226a	A	
59#	2SA1019	750m	110mS	10m	5J	150	120	5.0	50m	1.0μ	6.0	1.0m	250	†		2.2p	PE	R195e	A	
60	C055P	750m	120mS	10m	5J	150	-20	5.0	-1	-1	-1	50	Δ					Y237a	A	
61	C155P	750m	120mS	10m	5J	150	-25	5.0	-2	-2	-2	50	Δ					Y237a	A	
62	SK3450-RT	750m	120mS	10m	5J	80	80	5.0	500m	1.0μ	10	150m	160	†		1.8p	PE	R182d	B	
63#	2SB716AD	750m	150mS	6.0m	5J	140	140	5.0	50m	500n	12	2.0m	250	Δ		1.8p	PE	R245	B	
64#	2SA544†	750m	160mS	5.0m	5J	60	45	5.0	200m	100n	1.0	10m	40	Δ		7.0p	PE	T039	A0	
65#	2SA552†	750m	160mS	5.0m	5J	60	45	5.0	200m	100n	1.0	10m	40	Δ		7.0p	PE	T039	A0	
66#	2SB544	750m	180mS	5.0m	5J	25	25													

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @25°C (W)	2   DERATE IN FREE AIR W/°C	ABS MAX RATINGS @25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG Y200 S/a TO200 Ser.	# L E O A D E	
				BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS			COMMON EMITTER							
									Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	2N2105	800m	50M\$	4.5m	\$J	50	35	6.0	600m	0.2u\$	10	150m	33 t#			35p\$	PLΔ	T05	A
2	2SA510	800m	50M\$	6.4m	\$J	110	100	5.0	1.0	1.0u\$	10	50m	50			60p\$	PL	T039	A
3	2SA512	800m	50M\$	6.4m	\$J	70	60	5.0	1.0	1.0u\$	10	50m	50			60p\$	PL	T039	A
4	2SA915	800m	50M\$Δ	6.4m	\$J	120	120	5.0	50m	100n	10	10m	50 t*			2.5p	E	S9a	B
5	2SA916	800m	50M\$Δ	6.4m	\$J	160	160	5.0	50m	100n	10	1.0m	50 t*			2.5p	E	S9a	B
6	2SB510S	800m	50M\$	6.4m	\$J	80	60	7.0	1.0	1.0u\$	2.0	5.0m	40 t*#				E	T039	A
7	BC160-25	800m	50M\$Δ			40	40	4.0		100n\$	1.0	100m	150 tΔ			30p\$	PE	T039	A
8	BC161-25	800m	50M\$Δ			60	40	5.0		100n\$	1.0	100m	150 tΔ			30p\$	PE	T039	A
9	BC313Z	800m	50M\$Δ			60	40	5.0		1.0	2.0	150m	40 t*#			30p\$	PE	T039	A
10	BC313-6	800m	50M\$Δ			60	40	5.0	1.0		2.0	150m	100 tΔ			30p\$	PE	T039	A
11	BC313-10	800m	50M\$Δ			60	40	5.0	1.0		2.0	150m	160 tΔ			30p\$	PE	T039	A
12	BC313-16	800m	50M\$Δ			60	40	5.0	1.0		2.0	150m	250 tΔ			30p\$	PE	T039	A
13	BC313A	800m	50M\$Δ			60	60	5.0	1.0		2.0	150m	40 t*#			30p\$	PE	T039	A
14	BC313A-6	800m	50M\$Δ			80	60	5.0	1.0		2.0	150m	100 tΔ			30p\$	PE	T039	A
15	BC313A-10	800m	50M\$Δ			80	60	5.0	1.0		2.0	150m	160 tΔ			30p\$	PE	T039	A
16	BC313A-16	800m	50M\$Δ			80	60	5.0	1.0		2.0	150m	250 tΔ			30p\$	PE	T039	A
17	BC636	800m	50M\$	6.0m	\$	45	45	5.0	1.0	100n\$	2.0	150m	40 tΔ				PE	T092	D
18	BC636Z	800m	50M\$	6.4m	\$J	45	45	5.0	1.0	10u\$	2.0	150m	40 tΔ				PE	R221a	B
19	BC638	800m	50M\$	6.0m	\$	60	60	5.0	1.0	100n\$	2.0	150m	40 tΔ				PE	T092	D
20	BC638Z	800m	50M\$	6.4m	\$J	60	60	5.0	1.0	10u\$	2.0	150m	40 tΔ				PE	R221a	B
21	BC640	800m	50M\$	6.0m	\$	100	80	5.0	1.0	100n\$	2.0	150m	40 tΔ				PE	T092	D
22	BC640Z	800m	50M\$	6.4m	\$J	100	80	5.0	1.0	10u\$	2.0	150m	40 tΔ				PE	R221a	B
23	BFR611	800m	50M\$Δ	6.4m	\$J	60	60	6.0	1.0	50n\$	6.0	1.0m	30 tΔ			8.0p\$	PE	R188	B
24	BFR621	800m	50M\$Δ	6.4m	\$J	40	40	6.0	1.0	50n\$	6.0	1.0m	30 tΔ			8.0p\$	PE	R188	B
25	C855	800m	50M\$			-60	-1			-2	-1	50 tΔ					PE	T092	A
26	ESM636	800m	50M\$	6.0m	\$J	45	45	5.0	1.0	100n\$	2.0	500m	25 tΔ				PE	T05	A
27	ESM638	800m	50M\$	6.0m	\$J	60	60	5.0	1.0	100n\$	2.0	500m	25 tΔ				PE	T05	A
28	ESM640	800m	50M\$	6.0m	\$J	100	80	5.0	1.0	100n\$	2.0	500m	25 tΔ				PE	T05	A
29	HSE185-RT	800m	50M\$Δ	6.4m	\$J	100	80	5.0		1.0u\$	4.0	400m	40 tΔ				PE	T05	A
30	HSE191-RT	800m	50M\$Δ	6.4m	\$J	100	80	5.0		1.0u\$	1.0	150m	50 tΔ				PE	T05	A
31	TCS101	800m	50M\$Δ	6.4m	\$S	60	60	5.0	1.0	100n\$	5.0	150m	50 #Δ			10p\$	PE	R203a	A
32	TCS103	800m	50M\$Δ	6.4m	\$S	60	60	5.0	1.0	100n\$	5.0	150m	100 #Δ			10p\$	PE	R203a	A
33	2N2104	800m	60M\$	4.5m	\$J	50	35	6.0	600m	0.2u\$	10	150m	60 t#			35p\$	PE	T05	A
34	BFR601	800m	60M\$Δ	6.4m	\$J	80	80	6.0	1.0	50n\$	6.0	1.0m	10 tΔ			8.0p\$	PE	R188	B
35	BFT60	800m	60M\$Δ	4.5m	\$A	80	35	6.0	1.0	2.5u\$	6.0	1.0m	10 tΔ			8.0p\$	PE	T039	A
36	BFT61	800m	60M\$Δ	4.5m	\$A	60	30	6.0	1.0	2.5u\$	6.0	1.0m	30 tΔ			8.0p\$	PE	T039	A
37	BFT62	800m	60M\$Δ	4.5m	\$A	40	20	6.0	1.0	2.5u\$	6.0	1.0m	30 tΔ			8.0p\$	PE	T039	A
38	CX958	800m	60M\$Δ			40	-1			-1	-1	80 tΔ					PE	T092	A
39	BC369	800m	65M\$	6.4m	\$J	20	20	1.0		10u	1.0	500m	375 tΔ			18p\$	PE	R204e	D
40	BC369Z	800m	65M\$			20	20	1.0		1.0	1.0	500m	85 tΔ				PE	T092	B
41	BCX69	800m	65M\$	6.4m	\$J	25	20	5.0		10u	1.0	500m	300				PE	X166	B
42	BFO35	800m	80M\$	4.5m	\$J	160	160	5.0	200m	50n	5.0	10m	50 tΔ			12p\$	PL	T039	A
43	BFO36	800m	80M\$	4.5m	\$J	250	250	5.0	200m	50n	5.0	10m	40 tΔ			12p\$	PL	T039	A
44	BFO37	800m	80M\$	4.5m	\$J	300	300	5.0	200m	50n	5.0	10m	30 tΔ			12p\$	PL	T039	A
45	2N2927Z	800m	100M\$Δ	4.5m	\$J	25	25	4.0	200m	0.2u\$	10	10m	25 tΔ			20p\$	PE	T05	A
46	2N4030T	800m	100M\$Δ	4.5m	\$J	60	60	5.0	1	0.5u\$	5.0	10m	30 tΔ			20p\$	PE	T05	A
47	2N4031T	800m	100M\$Δ	4.5m	\$J	80	80	5.0	1	0.5u\$	5.0	10m	30 tΔ			20p\$	PE	T05	A
48	2SA580	800m	100M\$	5.3m	\$J	60	40	6.0	600m	1.0u\$	2.0	200m	120 t			18p\$	PE	T039	A
49	2SA581	800m	100M\$	5.3m	\$J	100	70	6.0	600m	1.0u\$	2.0	200m	120 t			18p\$	PE	T039	A
50	2SA682	800m	100M\$			80	80	5.0	750m	500n\$	2.0	150m	120 t			15p\$	PE	B7	A
51	2SA708	800m	100M\$	6.4m	\$J	80	60	8.0	700m	100n\$	2.0	50m	80 t#Δ			25p\$	PE	T039	A
52	2SA708A	800m	100M\$	6.4m	\$J	100	80	8.0	700m	100n\$	2.0	50m	80 t#Δ			25p\$	PE	T039	A
53	2SA793	800m	100M\$	5.3m	\$J	80	60	6.0	600m	1.0u\$	2.0	200m	120 t			18p\$	PE	T039	A
54	2SA817A	800m	100M\$	6.4m	\$J	80	80	5.0	400m	100n\$	5.0	50m	130 t			14p\$	PE	R195e	B
55	2SB525	800m	100M\$	6.9m	\$J	30	25	4.0	1.0	1.0u\$	1.0	500m	100 t#				PE	T092	A
56	BC343	800m	100M\$Δ			60	60	1.0		1.0	1.0	500m	20 tΔ			20p\$	PE	T039	A
57	BC345	800m	100M\$Δ			80	80	1.0		1.0	1.0	150m	20 tΔ			20p\$	PE	T039	A
58	BFT79	800m	100M\$Δ	4.5m	\$A	90	80	5.0	1.0	100n\$	10	100m	50 tΔ			10p\$	PE	T039	A
59	BFT80	800m	100M\$Δ	4.5m	\$A	70	60	5.0	1.0	100n\$	10	100m	75 tΔ			10p\$	PE	T039	A
60	BFT81	800m	100M\$Δ	4.5m	\$A	60	50	5.0	1.0	100n\$	10	100m	100 tΔ			10p\$	PE	T039	A
61	BFX38	800m	100M\$Δ	4.5m	\$J	55	55	5.0	1.0	50n\$	5.0	100u\$	65 t			15p\$	DPE	T05	A
62	BFX39	800m	100M\$Δ	4.5m	\$J	55	55	5.0	1.0	50n\$	5.0	100u\$	65 t			15p\$	DPE	T05	A
63	BFX40	800m	100M\$Δ	4.5m	\$J	75	75	5.0	1.0	50n\$	5.0	100u\$	125 t			15p\$	DPE	T05	A
64	BFX41	800m	100M\$Δ	4.5m	\$J	75	75	5.0	1.0	50n\$	5.0	100u\$	125 t			15p\$	DPE	T05	A
65	BSX40	800m	100M\$Δ	4.5m	\$J	30	30	5.0	500m	25n\$	10	10m	40 tΔ			10p\$	PE	T039	A
66	HSE127-RT	800m	100M\$Δ	6.4m	\$J	70	50	5.0		200n\$	5.0	150m	50 tΔ				PE	T05	A
67	HSE149-RT	800m	100M\$Δ	6.4m	\$J	60	40	3.0		1.0u\$	1.0	150m	30 tΔ				PE	T05	A
68	HSE168-RT	800m	100M\$Δ	6.4m	\$J	60	40	4.0		1.0u\$	5.0	150m	30 tΔ				PE	T05	A
69	HSE174-RT	800m	100M\$Δ	6.4m	\$J	100	90	5.0		500n\$	10	150m	75 tΔ				PE	T05	A
70	MSB492	800m	100M\$			-25	-2			-1	-1	80 tΔ					PE	T092	A
71	SK100	800m	100M\$Δ			60	50	5.0	500m	1.0u	5.0	150m	40 tΔ			28p\$	PE	T039	A
72	SK101	800m	100M\$Δ			40	30	5.0	500m	1.0u	5.0	150m	40 tΔ			20p\$	PE	T039	A
73	SK102	800m	100M\$Δ			30	30	3.5	1.0	1.0u	5.0	500m	40 tΔ			20p\$	PE	T039	A
74	2SB564	800m	110M\$	6.4m	\$J	30	25	5.0	1.0	100n	1.0	100m	200 t			36p\$	E		
75	2N2800T	800m	120M\$Δ	4.5m	\$S	50	35	5.0	800m	10u\$	10	10m	20 tΔ			25p\$	PE	T05	A
76	2N2800S	800m	120M\$Δ	4.5m	\$S	50	35	5.0	800m	100n\$	10	100u\$	20 tΔ			25p\$	PE	T039	A
77	2N2801T	800m	120M\$Δ	4.5m	\$S	50	35	5.0	800m	10u\$	10	10m	30 tΔ			25p\$	PE	T05	A
78	2SA949	800m	120M\$	6.4m	\$J	150	150	5.0	50m	100n\$	5.0	10m	130 t			5.0p\$	D	R195e	B
79	2SA1154	80																	



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	T <sub>M</sub> °C	ABS MAX RATINGS @25°C			MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L O A D E			
					V <sub>bc</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001
1#	BC287	800m	240MΔ	4.5m	5J	60	60	5.0	1.0	500n	2.0	500m	20 Δ	DPE	T05	A		
2#	BCW45	800m	200M	4.5m	5J	70	55	5.0	1.0	100n	1.0	200m	40 †	PE	T039	A		
3#	HSE175-RT	800m	200MΔ	6.4m	5J	120	80	5.0		500n	1.0	150m	150 Δ	PE	T05	A		
4#	MM16141	800m	200MΔ	4.5m	5J	60	50	5.0		50n	1.0	150m	40 Δ	EΔ	T05	A		
5#	PBM6004	800m	200MΔ	4.5m	5J	60	60	5.0		800m	5.0	50m	40 Δ	PE	R216g	A		
6#	PTC127	800m	200MΔ		5J	90	90	5.5		500m	5.0	10m	230 †	PE	T05	A		
7#	V745	800m	240MΔ	8.0m	5J	50	40	5.0		100u	1.0	50m	95 †	PE	T039	A		
8#	BC231M	800m	250M	5.3m	5J	40	30	5.0		400m	100n	5.0	50m	100 Δ*	T039	A		
9#	BC360	800m	250M		5J	40	40	5.0		500m	5.0	50m	40 Δ*	PE	T039	A		
10#	BC361	800m	250M		5J	60	60	5.0		500m	5.0	50m	40 Δ*	PE	T039	A		
11#	BF323	800m	250M	5.3m	5J	30	25	3.0		600m	1.0	10m	300 †	PE	T039	A		
12#	HSE152-RT	800m	250MΔ	6.4m	5J	40	20	3.5			1.0u	1.0	300m	15 Δ*	PE	T05	A	
13#	SE8541	800m	250M	4.5m	5J	30	30	5.0	1.0	50n	1.0	150m	70 †	DPL	T039	A		
14#	BC131	800m	300M	5.3m	5J	60	40	5.0	1.0	100n	2.0	50m	20 Δ	PL	T039	A		
15#	BC131A†	800m	300M	5.3m	5J	80	60	5.0	1.0	100n	2.0	50m	20 Δ	PL	T039	A		
16#	2N5042	800m	500M	4.5m	5J	40	40	5.0	1.0	0.05u	1.0	150m	40 †	E	T039	A		
17#	2SA1224†	800m%	2.5G	4.5m	5S	40	25	5.0	3	250m	0.1n	10m	50m	20 Δ	E	Y205d	A	
18#	BF421	830m	60M	6.6m	5J	300	300	5.0		25m	10n	20m	40 Δ	PE	R185	D		
19#	BF423	830m	60M	6.6m	5J	250	250	5.0		20m	10n	20m	50 Δ	PE	R191	B		
20#	BFP22†	830m	60M	6.6m	5J	250	250	5.0		200m	100n	10m	50m	30 Δ	PE	T092	D	
21#	ESM623	830m	60M	6.6m	5J	300	300	5.0			20m	255m	50 Δ	PE	T092	B		
22#	BC303-4	850m		40m	5J	85	60	5.0		20n	10m	150m	40 Δ		T039	A		
23#	BC303-5	850m		40m	5J	85	60	5.0		20n	10m	150m	70 Δ		T039	A		
24#	BC303-6	850m		40m	5J	85	60	5.0		20n	10m	150m	120 Δ		T039	A		
25#	BC304-4	850m		40m	5J	60	45	5.0		20n	10m	150m	40 Δ		T039	A		
26#	BC304-5	850m		40m	5J	60	45	5.0		20n	10m	150m	70 Δ		T039	A		
27#	BC304-6	850m		40m	5J	60	45	5.0		20n	10m	150m	120 Δ		T039	A		
28#	BC461-4	850m		550m	5J	75	60	5.0		100n	4.0	500m	40 Δ		T05	A		
29#	BC461-5	850m		550m	5J	75	60	5.0		100n	4.0	500m	60 Δ		T05	A		
30#	BC461-6	850m		550m	5J	75	60	5.0		100n	4.0	500m	115 Δ		T05	A		
31#	BSS44†	870m	70MΔ	5.0m	5J	65	60	6.0	5.0	500n	2.0	500m	30 Δ#	PE	T039	A		
32#	BSS46†	870m	70MΔ	5.0m	5J	85	80	6.0	5.0	500n	2.0	500m	25 Δ#	PE	T039	A		
33#	BCW79	870m	100MΔ		5J	32	32	5.0		800m	1.0	100m	65 Δ	PE	T039	A		
34#	BCW80	870m	100MΔ		5J	45	45	5.0		800m	1.0	100m	65 Δ	PE	T039	A		
35#	2SA1193K†	900m		9.0m	5J	60	60	7.0		500m	1.0u	3.0	250m	2.0kΔ†	E	R245	B	
36#	SP5415	900m	15MΔ	7.2m	5J	200	200	4.0	1.0	50u	1.0	50m	30 Δ		T092	A		
37#	SP5416	900m	15MΔ	7.2m	5J	350	300	6.0	1.0	50u	1.0	50m	30 Δ		T092	A		
38#	2SA1013	900m	20MΔ	7.2m	5J	160	160	6.0	1.0	1.0u	5.0	200m	60 Δ	E	R195h	B		
39#	BF692-P	900m	50MΔ	7.1m	5J	300	300	5.0	5.0	500m	250n	10m	30m	25 Δ	PE	B43	A	
40#	BF693-P	900m	50MΔ	7.1m	5J	200	200	5.0	5.0	500m	250n	10m	30m	30 Δ	PE	B43	A	
41#	2SB740B	900m	65M	7.2m	5J	70	50	6.0	1.0	1.0u	2.0	100m	100 Δ	E	R245	B		
42#	2SB740C	900m	65M	7.2m	5J	70	50	6.0	1.0	1.0u	2.0	100m	160 Δ	E	R245	B		
43#	2SB741B	900m	65M	7.2m	5J	70	70	6.0	1.0	1.0u	2.0	100m	100 Δ	E	R245	B		
44#	2SB741C	900m	65M	7.2m	5J	70	70	6.0	1.0	1.0u	2.0	100m	160 Δ	E	R245	B		
45#	2SB738B	900m	80M	7.2m	5J	20	16	6.0	2.0	2.0u	2.0	100m	100 Δ	E	R245	B		
46#	2SB738C	900m	80M	7.2m	5J	20	16	6.0	2.0	2.0u	2.0	100m	160 Δ	E	R245	B		
47#	2SB739B	900m	80M	7.2m	5J	20	20	6.0	2.0	2.0u	2.0	100m	100 Δ	E	R245	B		
48#	2SB739C	900m	80M	7.2m	5J	20	20	6.0	2.0	2.0u	2.0	100m	160 Δ	E	R245	B		
49#	2SA1020	900m	100M	7.2m	5J	50	50	5.0	2.0	1.0u	2.0	500m	70 Δ	E	R195h	B		
50#	2SA965	900m	120M	7.2m	5J	120	120	5.0	800m	100n	5.0	100m	140 †	PE	R195e	B		
51#	2SA966	900m	120M	7.2m	5J	30	30	5.0	1.5	100n	5.0	500m	180 †	PE	R195e	B		
52#	2SB646AB	900m	140M	7.2m	5J	120	100	5.0	50m	10u	5.0	10m	80 Δ	E	R245	B		
53#	2SB646AC	900m	140M	7.2m	5J	120	100	5.0	50m	10u	5.0	10m	100 Δ	E	R245	B		
54#	2SB646B	900m	140M	7.2m	5J	120	80	5.0	50m	10u	5.0	10m	60 Δ	E	R245	B		
55#	2SB646C	900m	140M	7.2m	5J	120	80	5.0	50m	10u	5.0	10m	100 Δ	E	R245	B		
56#	2SB646D	900m	140M	7.2m	5J	120	80	5.0	50m	10u	5.0	10m	160 Δ	E	R245	B		
57#	2SB647AB	900m	140M	7.2m	5J	120	100	5.0	1.0	10u	5.0	150m	60 Δ	E	R245	B		
58#	2SB647AC	900m	140M	7.2m	5J	120	100	5.0	1.0	10u	5.0	150m	100 Δ	E	R245	B		
59#	2SB647B	900m	140M	7.2m	5J	120	80	5.0	1.0	10u	5.0	150m	60 Δ	E	R245	B		
60#	2SB647C	900m	140M	7.2m	5J	120	80	5.0	1.0	10u	5.0	150m	100 Δ	E	R245	B		
61#	2SB647D	900m	140M	7.2m	5J	120	80	5.0	1.0	10u	5.0	150m	160 Δ	E	R245	B		
62#	2SA1208	900m	150M		5J	180	160	5.0	70m	100n	5.0	10m	100 Δ	E	XXXX	B		
63#	2SB764	900m	150M		5J	60	50	5.0	1.0	1.0u	2.0	50m	150 *	PE	R227	B		
64#	2SB562B	900m	350M	7.2m	5J	25	20	5.0	1.0	1.0u	2.0	500m	85 Δ†	E	R245	B		
65#	2SB562C	900m	350M	7.2m	5J	25	20	5.0	1.0	1.0u	2.0	500m	120 Δ†	E	R245	B		
66#	2SA920	950m	40M	10m	5J	200	200	8.0	500m	200n	2.0	100m	70 Δ	E	B2	A		
67#	2SA835	950m	45M	10m	5J	140	140	8.0	500m	200n	2.0	100m	150 †	ET	B2	A		
68#	2SA951	950m	45M		5J	140	140	8.0	500m	200n	2.0	100m	150 †	E	B2	D		
69#	2SA897	950m	55M	10m	5J	60	50	6.0	2.0	200n	2.0	100m	98 Δ	E	B2	D		
70#	2SA861	950m	80M	10m	5J	20	16	6.0	2.0	200n	2.0	100m	140 Δ	ET	B2	D		
71#	KT629A	1.0		1.0	5J	50	50	4.5	1.0	5.0u	5.0	200m	25 †	PE	X184	A		
72#	BSR30†	1.0		8.0m	5J	70	60	5.0	1.0	100n	5.0	100m	120 †	PE		A		
73#	BSR31†	1.0		8.0m	5J	70	60	5.0	1.0	100n	5.0	100m	300 †	PE		A		
74#	BSR32†	1.0		8.0m	5J	90	80	5.0	1.0	100n	5.0	100m	120 †	PE		A		
75#	BSR33†	1.0		8.0m	5J	90	80	5.0	1.0	100n	5.0	100m	300 †	PE		A		
76#	BF623	1.0	60MΔ	8.0m	5J	250	250	5.0	20m	100n	2.0	25m	50 Δ	PE	X166	B		
77#	BFN21	1.0	60MΔ	8.0m	5J	300	300	5.0	20m	100n	2.0	25m	50 Δ	PE	X166	B		
78#	2SB767	1.0	120M	8.0m	5J	80	80	5.0	500m	100m	10m	150m	330 Δ	PE	X156b	A		
79#	2SB789	1.0	120M	8.0m	5J	100	100	5.0	0.5	10m	10m	150m	330 Δ	PE	X166	D		
80#	2SB789A	1.0	120M	8.0m	5J	120	120	5.0	0.5	10m	10m	150m	330 Δ	PE	X166	D		
81#	2SA1209	1.0	150M		5J	180	160	5.0	140m	0.1u	5.0	10m	250 †	PE	TO126	B		
82#	2SA1210	1.0	150M		5J	200	200	5.0	140m	0.1u	5.0	10m	250 †	PE	TO126	B		
83#	2SB559	1.0	150M		5J	20	18	5.0	1.2	0.1u	2.0	500m	150 †	PE	TO126	B		
84#	2SB819	1.0	150M	8.0m	5J	50	40	5.0	1.5	1.0u	5.0	1.0	220 †	PE	B37	D		
85#	BCY67	1.0	180M	2.2m	5J	45	45	5.0	50m	5.0	2.0	350 †	30u	4.5k	2.0	PE	TO18	A
86#	2SB766	1.0	200M	8.0m	5J	30	25	5.0	1.0	0.1u	10m	500m	340 Δ	PE	X156b	A		
87#																		

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	3] TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	TEMPERATURE M A M X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	L C E O D E	
					V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>eb</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER							
										V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001					
1	HA7518	5.0 ∅	1.0M	7.1m	\$J	60	40	60	2.0	100n	5.0	1.0m	90	1.2ub	30	4.0	95p	A	R192	
2#	2SA257	5.0 ∅	80M\$		\$J	50	40	5.0	2.0	5.0u	2.0∅	200m∅	50 ↑				40p∅	EM	TO5	∅
3#	2SA258	5.0 ∅	80M\$		\$J	50	40	5.0	2.0	5.0u	2.0∅	100m∅	70 ↑				40p∅	EM	TO5	∅
4#	2SA527	5.0 ∅	80M\$		\$J	50	40	5.0	2.0	5.0u	2.0∅	200m∅	50 ↑				40p∅	EM	TO5	∅
5#	2SA528	5.0 ∅	80M\$		\$J	50	40	5.0	2.0	5.0u	2.0∅	100m∅	70 ↑				40p∅	EM	TO5	∅
6	NPC750	300	100M\$	25m	\$S	50	50	5.0	50m	50n∅	3.0∅	100u∅	400 ↑				10p∅	E	TO92	A
7#	2SB811	350	110M\$	2.8m	\$J	30	25	5.0	1.0	100n	1.0∅	100m∅	100 ↑*				36p		B40	B
8#	BC327A16	675	100M\$	5.4m	\$J	60	60	5.0	800m	100m\$	1.0∅	100m∅	250 ↑				12p∅		TO92	F
9#	BC327A25	675	100M\$	5.4m	\$J	60	60	5.0	800m	100m\$	1.0∅	100m∅	400 ↑				12p∅		TO92	F
10#	BEL100P	800M			J	60	50	7.0	1.0		1.0	150	50					P	TO39	A∅



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	TEMPERATURE M A M X P	ABS MAX RATINGS @25°C			MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E	
						Vcbo (V)	Vbeo (V)	Vbeo (V)		Vcb (V)	Ic (A)	hfe					COMMON EMITTER hoe (mhos)
1	DTN9001		35M			400	350	6.0	500m	200n	100	20m	40			T092	A
2	DTN9001T		35M			400	350	6.0	500m	200n	100	20m	40			T092	A
3	PE4001		40M			400	30	6.0	500m	200n	100	1.0m	300	PEA		T092	A
4	2N2489A		60M			60	60	6.0	10n	10n	100	10m	100	PEA		T018	A
5	PE4002		60M			60	25	6.0	10n	10n	100	1.0m	100	PEA		T092	A
6	PE4020		100M			60	60	8.0	20n	20n	5.0	10m	950	PEA		T092	A
7#	2SD973A		200M	8.0		60	50	5.0	1.0	100n	100	500m	340	PEA		B37	D
8#	2SC563A		550M			40	40	4.0	25m	10u	10	7.0m	38	PEE		T072	J
9#	2SC287A-B		1.1G			35	15	4.0	20m	10u	100	5.0m	100	PEE		XXXX	C
10#	MPS3707	380n					30		30m		5.0	100u	100			T092	A
11#	MPS3708	380n					30		30m		5.0	100u	45			T092	A
12#	MPS3709	380n					30		30m		5.0	1.0m	45			T092	A
13#	MPS3710	380n					30		30m		5.0	1.0m	80			T092	A
14#	MPS3711	380n					30		30m		5.0	1.0m	180			T092	A
15#	MPS3721	380n					18		100m		100	2.0m	60			T092	A
16#	KT333A	15m					10		250m	0.4u	1.0	10m	90				
17#	KT333B	15m					10		250m	0.4u	1.0	10m	150				
18#	KT333D	15m					10		250m	0.4u	1.0	10m	150				
19#	KT333E	15m					10		250m	0.4u	1.0	10m	280				
20#	KT333G	15m					10		250m	0.4u	1.0	10m	90				
21#	KT333V	15m					10		250m	0.4u	1.0	10m	280				
22#	KT206A	15m	10M				20		20m	1.0u	1.0	5m	90				
23#	KT206B	15m	10M				12		20m	1.0u	1.0	5m	210				
24	ST3031	20m	70M	115u		20		1.0	20m	1.0u	6.0	1.0m	40			TO5	
25#	KT215A-1	25m	5.0M				120		40m	0.1u	1.0	0.4m	20			20ps	
26#	KT215B-1	25m	5.0M				100		40m	0.1u	1.0	0.4m	90			20ps	
27#	KT215D-1	25m	5.0M				30		40m	0.1u	1.0	0.4m	80			20ps	
28#	KT215E-1	25m	5.0M				30		40m	0.1u	1.0	0.4	40			20ps	
29#	KT215G-1	25m	5.0M				60		40m	0.1u	1.0	0.4m	120			20ps	
30#	KT215V-1	25m	5.0M				80		40m	0.1u	1.0	0.4m	120			20ps	
31	2N1248	30m		240u		6.0	6.0	1.0	5.0m	10n	3.0	20u	15			TO5	A
32	2N1249	30m		240m		6.0	6.0	1.0	5.0m	10n	3.0	30u	20			TO5	A
33#	KTS398A-1	30m					10		10m	0.5u		250	250			1.5ps	
34#	KTS398B-1	30m					10		10m	0.5u		250	250			1.5ps	
35	ST1543	30m	5.0M			6.0		1.0	5.0m		3.0	5.0u	25			TO18	
36	2N1247	30m		1.0m		6.0	6.0	2.0	5.0m	5.0n	3.0	5.0m	15			TO5	A
37	ST3042	50m	1.0M			1.0			1.0m								
38	ST3043	50m	1.0M			1.0			1.0m								
39#	MT146	50m	100M			5.0	5.0	5.0	50m	100n	50	500u	80			4.0p	PE
40	A141	50m*	150M	625u		20	20	4.0	50m	100n	50	200u	130			4.0p	PE
41	A142	50m*	150M	625u		20	20	4.0	50m	100n	50	200u	220			4.0p	PE
42	A143	50m*	150M	625u		20	20	4.0	50m	100n	50	200u	380			4.0p	PE
43#	BC146	50m*	150M	625u		20	20	4.0	50m	100n	50	200u	220			4.0p	PE
44#	BC146-01	50m*	150M	62u		20	20	4.0	50m	100n	50	200u	130			4.0p	PE
45#	BC146-02	50m*	150M	62u		20	20	4.0	50m	100n	50	200u	220			4.0p	PE
46#	BC146-03	50m*	150M	62u		20	20	4.0	50m	100n	50	200u	380			4.0p	PE
47#	BC146#	50m	150M	62u		20	20	4.0	100m	100n	50	200u	80			4.0p	EPL
48#	BC146G	50m	150M	625u		20	20	4.0	50m	100n	50	200u	280			4.0p	PE
49#	BC146R	50m	150M	625u		20	20	4.0	50m	100n	50	200u	80			4.0p	PE
50#	BC146Y	50m	150M	625u		20	20	4.0	50m	100n	50	200u	140			4.0p	PE
51#	KT369A	50m	200M				45		250m	10u	2.0	150m	100			4.5ps	
52#	KT369A-1	50m	200M				45		250m	10u	2.0	150m	100			4.5ps	
53#	KT369B	50m	200M				45		250m	10u	2.0	150m	200			4.5ps	
54#	KT369B-1	50m	200M				45		250m	10u	2.0	150m	200			4.5ps	
55#	KT369G	50m	200M				65		250m	10u	3.0	10m	200			10ps	
56#	KT369G-1	50m	200M				65		250m	10u	3.0	10m	200			10ps	
57#	KT369V	50m	200M				65		250m	10u	3.0	10m	100			10ps	
58#	KT369V-1	50m	200M				65		250m	10u	3.0	10m	100			10ps	
59	MMBR931	50m	3.0G	1.0m		10	5.0	2.0	50m	50n	1.0	250u	30			350ps	W187
60#	2SC3029	50m	4G			15	8	2	5m	100n	10	250u	50			0.2p	
61	2N1267	70m		769u		20		2.0	100m	70u	10	2.0m	11			1.5p	
62#	KT391A-2	70m					10		10m	0.5u	7.0	5m	20			0.7ps	
63#	KT391B-2	70m					10		10m	0.5u	7.0	5m	20			0.7ps	
64#	KT391V-2	70m					10		10m	0.5u	7.0	5m	15			0.7ps	
65	2N774	80m		1.2m		20	20	2.0	100m	70u	10	2.0m	20			1.5p	
66	2N1268	80m		769u		20	20	2.0	100m	70u	10	2.0m	20			1.5p	
67#	2SC1734H	100m		800u		40	30	6.0	30m	100n	6.0	100u	160			24u	12k
68#	KT3101A-2	100m					15		20m	0.5u	1.0	5m	300			1.5ps	
69#	uPA36A*	100m		800u		7.0	5.0		50m	50n	50	100u	50				
70#	2S741	100m	2.0M	1.0m		30	30	1.0	25m	1.0u	5.0	3.0m	5.0			12p	
71#	2S742	100m	2.0M	1.0m		30	75	1.0	25m	1.0u	5.0	3.0m	5.0			12p	
72#	2S743	100m	2.0M	1.0m		115	115	1.0	25m	1.0u	5.0	3.0m	5.0			12p	
73#	2S744	100m	2.0M	1.0m		30	30	1.0	25m	1.0u	5.0	3.0m	20			12p	
74#	2S745	100m	2.0M	1.0m		75	75	1.0	25m	1.0u	5.0	3.0m	20			12p	
75#	2S746	100m	2.0M	1.0m		115	115	1.0	25m	1.0u	5.0	3.0m	20			12p	
76#	2S701	100m	8.0M	2.0m		25	25	1.0	20m	1.0u	6.0	1.0m	50			6.0u	1.4k
77#	2S702	100m	12.0M	2.0m		25	25	1.0	20m	1.0u	6.0	1.0m	50			9.0u	2.5k
78#	2S703	100m	16.0M	2.0m		25	25	1.0	20m	1.0u	6.0	1.0m	120			13u	6.0k
79#	MT4101	100m	60M	800u		60	45	5.0	10n	5.0	5.0	1.0m	70			1.0u	32
80#	MT4102	100m	60M	800u		60	45	5.0	10n	5.0	5.0	1.0m	200			1.0u	32
81#	MT4104	100m	60M	800u													

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE fab (Hz)	T   FREE AIR W/°C	M   A X P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	#   C O A D E		
						BV <sub>ceo</sub> (V)	BV <sub>ce0</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					COMMON EMITTER	
													hoe (mhos)	hie (Ω)	hre X.0001				
1 #	2SC2668	100m	550M	1.0m	∗J	40	30	4.0	20m	500n	8.0∅	1.0m∅	40 f ∗Δ				B40	B	
2 #	MT3001	100m	600MΔ	800u	∗J	30	12 ∗	3.0		200n∅	10∅	8.0m∅	50 f ∗	1.4p	E	X173	B		
3 #	2SC2404	100m	650M		∗J	30	20	3.0	15m		6.0	1.0m	40 f ∗Δ	800ft	PE	X156b	A		
4 #	2SC1321	100m	900M	1.0m	∗J	30	25	4.0	10m	100n∅	6.0∅	2.0m∅	40 f ∗Δ ∗		E	X156b	A		
5 #	2SC1321Q2	100m	900M	1.0m	∗J	30	25	4.0	10m	100n∅	6.0∅	2.0m∅	40 f ∗Δ ∗	1.3p	E	X156b	A		
6 #	2SC1321Q3	100m	900M	1.0m	∗J	30	25	4.0	10m	100n∅	6.0∅	2.0m∅	60 f ∗Δ ∗	1.3p	E	X156b	A		
7 #	2SC1321Q4	100m	900M	1.0m	∗J	30	25	4.0	10m	100n∅	6.0∅	2.0m∅	90 f ∗Δ ∗	1.3p	E	X156b	A		
8 #	2SC1321Q5	100m	900M	1.0m	∗J	30	25	4.0	10m	100n∅	6.0∅	2.0m∅	135 f ∗Δ ∗	1.3p	E	X156b	A		
9 #	MT3011	100m	900M	800u	∗J	20	12 ∗	2.0		500n∅	10∅	8.0m∅	50 f ∗	1.4p	PL	X173	B		
10 #	2SC2620A	100m	940M	1.0m	∗J	30	20	4.0	20m	500nΔ	6.0∅	1.0m∅	70 f ∗	900f	E	X156b	A		
11 #	2SC2620B	100m	940M	1.0m	∗J	30	20	4.0	20m	500nΔ	6.0∅	1.0m∅	120 f ∗	900f	E	X156b	A		
12 #	2SC2620C	100m	940M	1.0m	∗J	30	20	4.0	20m	500nΔ	6.0∅	1.0m∅	200 f ∗	900f	E	X156b	A		
13 #	2SC2480	100m	1.2G		∗J	30	20	3.0	50m		10	2.0m	25 f ∗Δ	1.0p	PE	X156b	A		
14	2N776	110m		1.2m	∗S	20			100m		10	2.0m	11	1.5p	D	T018			
15	2N1270	110m		769u	∗S	20			100m	.70u	10	2.0m	11	1.5p	D	T09	A∅		
16 #	BFS18R	110m	200M	2.0m	∗J	30	20	5.0	30m	100n∅	10∅	1.0m∅	35 f ∗Δ	850ft	PE	X156	C		
17 #	BF554	110m	260M		∗J	30	20	5.0	30m		10∅	1.0m∅	115		PL	T092			
18 #	BFS19R	110m	260M	2.0m	∗J	30	20	5.0	30m	100n∅	10∅	1.0m∅	65 f ∗Δ	850ft	PE	X156	C		
19 #	2SC930SP	120m	300M	1.2m	∗J	30	20	5.0	30m	1.0u	6.0∅	1.0m∅	80 f ∗	1.6p	PL	R145	D		
20 #	2SC929	120m	300M		∗J	15	10	5.0	30m	1.0u	6.0∅	1.0m∅	100 f ∗	1.6p	PE	T092	B		
21 #	2SC929NP	120m	300M	1.2m	∗J	30	20	5.0	30m	1.0u	6.0∅	1.0m∅	100 f ∗	1.3p	PL	T092	B		
22 #	2SC929SP	120m	300M	1.2m	∗J	30	20	5.0	30m	1.0u	6.0∅	1.0m∅	80 f ∗	1.6p	PL	R145	D		
23 #	2SC930	120m	300M		∗J	15	10	5.0	30m	1.0u	6.0∅	1.0m∅	80 f ∗	1.6p	PE	T092	B		
24 #	2SC930NP	120m	300M	1.2m	∗J	30	20	5.0	30m	1.0u	6.0∅	1.0m∅	80 f ∗	1.3p	PL	R145	D		
25 #	2SC772†	120m	350M		∗J	15		5.0	30m	1.0u	6.0∅	1.0m∅	45 f ∗	1.5p	PE	R145	D		
26 #	BF363	120m #	600MΔ	1.7m	∗J	30	20	3.0	20m					500f	PL	W49	A		
27 #	2SC674	120m	750M		∗J	15		3.0	30m	1.0u	6.0∅	1.0m∅	80 f ∗	1.1p	PL	R145	D		
28 #	BF362	120m #	800M	1.7m	∗J	30	20	3.0	20m					500f	PL	W49	A		
29 #	BF362 #	120m	800M	1.7m	∗J	30	20	3.0	20m	100u	10	3.0m	20 Δ		PL	W31	A		
30 #	BF363 #	120m	800M	1.7m	∗J	30	20	3.0	20m	100u	10	3.0m	20 Δ		PL	W31	A		
31	D4D24	125m		1.2m	∗J	15	15	1.0	25m	1.0u	5.0∅	1.0m∅	33 f ∗	200nb	GD	T05			
32	D4D25	125m		1.2m	∗J	15	15	1.0	25m	1.0u	5.0∅	1.0m∅	88 f ∗	200nb	GD	T05			
33	D4D26	125m		1.2m	∗J	15	15	1.0	25m	1.0u	5.0∅	1.0m∅	133 f ∗	200nb	GD	T05			
34 #	2S005	125m	30 Δ	1.0m	∗J	40		1.0	20m	1.0u∅	20	1.0m	100	200nb	GD	T05			
35	2N1586	125m	5.0MΔ	2.0m	∗S	15	10	1.0	25m	1.0u	5.0∅	1.0m∅	9.0 Δ	1.5uZb	100	30pZ	O3f	A	
36	2N1587	125m	5.0MΔ	2.0m	∗S	30	20	1.0	25m	1.0u	5.0∅	1.0m∅	9.0 Δ	1.5uZb	100	30pZ	O3f	A	
37	2N1588	125m	5.0MΔ	2.0m	∗S	60	40	1.0	25m	1.0u	5.0∅	1.0m∅	9.0 Δ	1.5uZb	100	30pZ	O3f	A	
38	2N1589	125m	5.0MΔ	2.0m	∗S	15	10	1.0	25m	1.0u	5.0∅	1.0m∅	25 Δ	1.5uZb	100	30pZ	O3f	A	
39	2N1590	125m	5.0MΔ	2.0m	∗S	30	20	1.0	25m	1.0u	5.0∅	1.0m∅	25 Δ	1.5uZb	100	30pZ	O3f	A	
40	2N1591	125m	5.0MΔ	2.0m	∗S	60	40	1.0	25m	1.0u	5.0∅	1.0m∅	25 Δ	1.5uZb	100	30pZ	O3f	A	
41	2N1592	125m	5.0MΔ	2.0m	∗S	15	10	1.0	25m	1.0u	5.0∅	1.0m∅	70 Δ	1.5uZb	100	30pZ	O3f	A	
42	2N1593	125m	5.0MΔ	2.0m	∗S	30	20	1.0	25m	1.0u	5.0∅	1.0m∅	70 Δ	1.5uZb	100	30pZ	O3f	A	
43	2N1594	125m	5.0MΔ	2.0m	∗S	60	40	1.0	25m	1.0u	5.0∅	1.0m∅	70 Δ	1.5uZb	100	30pZ	O3f	A	
44	2N264	125m	10MΔ	1.0m	∗S	45	30	1.0	20m	1.0u∅	5.0	1.0m∅	20 Δ	1.0uZb	80	2.0	3.0pZ	O3f	A
45	JAN2N337†	125m	10MΔ	1.0m	∗A	45	45	1.0	20m	1.0u∅	20	1.0m∅	20 Δ	1.0uZb	80	2.0	3.0pZ	O3f	A
46	2N1103†	125m	10MΔ	1.0m	∗S	45	35	1.0	20m	1.0u∅	20	1.0m∅	20 Δ	1.0uZb	80	2.0	3.0pZ	O3f	A
47	2N337†	125m	20M	1.0m	∗J	45	35	1.0	20m	1.0u∅	5.0∅	1.0m∅	55 f ∗	200nb	50	2.0	1.2p	T05	A
48	JAN2N338†	125m	20MΔ	1.0m	∗A	45	45	1.0	20m	1.0u∅	20	1.0m∅	40 Δ	1.0uZb	80	2.0	3.0pZ	O3f	A
49	2N1104	125m	20MΔ	1.0m	∗S	45	35	1.0	20m	1.0u∅	20	1.0m∅	40 Δ	1.0uZb	80	2.0	3.0pZ	O3f	A
50 #	2S014	125m	20M	1.0m	∗J	40	20	1.0	20m	1.0u∅	20	1.0m∅	65	200nb	50	3.0	1.6p	R216j	A
51	ST1694	125m	20M	7.7m	∗J	40	20	1.0	20m	2.0u∅	5.0∅	1.0m∅	40 Δ	200nb	50	3.0	4pZ	T05	
52	2N338†	125m	30M	1.0m	∗J	45	35	1.0	20m	1.0u∅	5.0∅	1.0m∅	80 f ∗	200nb	50	3.0	1.2p	T05	A
53	JAN3N35	125m	70MΔ	7.14u	∗S	30		1.0	200n∅		20	1.3m	10 Δ		∗S	T012	AC		
54	3N34	125m	100M	1.0m	∗J	30	30	1.0	20m	4.0u∅	20	1.3m	25	1.5p	GD	T012	GA		
55	3N35	125m	150M	1.0m	∗J	30	30	1.0	20m	4.0u∅	20	1.3m	25	1.5p	GD	T012	GA		
56 #	2SC715†	125m	200M		∗J	40		5.0	100m	1.0u	6.0∅	1.0m∅	80 f ∗	3.0p	PE	R145	D		
57 #	BSW58†	125m	500M	1.6m	∗J	40	15	5.0	500m	400n∅	1.0∅	1.0m∅	40 Δ†	4.0p	PE	S4	F		
58 #	BSW59†	125m	600M	1.6m	∗J	30	12	5.0	500m	400n∅	1.0∅	1.0m∅	60 Δ†	4.0p	PE	S4	F		
59	2N777	130m		1.2m	∗S	20		2.0	100m		10	2.0m	20	1.5p	D	T018			
60	2N1271	130m		769u	∗S	20		2.0	100m	.70u	10	2.0m	20	1.5p	D	T09	A∅		
61	2SC562	130m		1.0m	∗J	40	30	4.0	25m		10	4.0m	40 f ∗Δ	.22p	PL	T072			
62	BF167	130m	350M	1.0m	∗J	40	30	4.0	25m		10	4.0m	57		PL	T072			
63 #	SF167	130m	400M	1.0m	∗A	40	30	4.0	25m	50n∅	10	4.0m	26 f ∗Δ	350ft	DPL	X149	B		
64 #	SF196	130m	400M	1.0m	∗A	40	30	4.0	25m	50n∅	10	4.0m	26 f ∗Δ	200ft	DPL	X149	C		
65 #	2SC2135	140m			∗J	4.0	4.0	4.0	50m	1.0n∅	3.0∅	1.0m∅	500 f ∗		Δ	R210c	A		
66 #	2SC2593	140m			∗J	20	20	2.0	50m	2.0m	3.0∅	1.0m∅	500 f ∗		Δ	T092	A		
67	2SC645	140m	200M		∗J	30		5.0	30m	1.0u∅	10	1.0m∅	100	1.5p	PE	R128			
68	2SC563	145m		1.2m	∗J	40	25	4.0	25m		10	7.0m	38 f ∗Δ	.23p	PE	T072			
69 #	2SC477	145m ∗	190M	1.1m	∗J	32	32	4.0	30m		10	1.0m	80		PE	T018			
70	2N4435	145m	220M	1.1m	∗J	30	20	5.0	30m		10	1.0m∅	67 f ∗		PE	T072	A		
71 #	BF185	145m	220M	1.1m	∗J	30	20	5.0	30m		10	1.0m∅	67 f ∗	650ft	PE	T072	J		
72	2N4434	145m	300M	1.1m	∗J	30	20	5.0	30m		10	1.0m∅	115 f ∗		PE	T072	A		
73	2N775	150m		1.2m	∗S	20		2.0	100m		10	2.0m	50	1.5p	D	T018			
74	2N1005	150m		1.0m	∗S	15	15	1.0	25m	.10u∅	5.0∅	1.0m∅	10 Δ			T05	A		
75	2N1006	150m		1.0m	∗S	15	15	1.0	25m	.10u∅	5.0∅	1.0m∅	25 Δ			T05	A		
76	2N1269	150m		769u	∗S	20		2.0	100m	.70u	10	2.0m	50	1.5p	D	T09	A∅		
77	2N1417	150m		1.2m	∗S	15	15	2.0	50m	1.0u	6.0	1.0m	30 Δ		90 Zb	T05	A		
78	2N1418	150m																	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 f <sub>ab</sub> (Hz)	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @ 25°C			MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC. TURE	DWG. # Y200 s/a TO200 Ser.	L C O A D E			
						BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)		I <sub>c</sub> (A)	V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)					h <sub>re</sub> X.0001		
						V	V	V		A	V	A										
1#	PL1025	150m	1.0m	1.0m	5S	20	12	5.0	1.0u	350	10m	40	1Δ	5p	PEΔ	W7	E					
2#	PL1026	150m	1.0m	1.0m	5S	30	12	5.0	4.0u	350	10m	30	1Δ	4p	PEΔ	W7	E					
3#	PL1051	150m	1.0m	1.0m	5S	60	30	5.0	10n	100	1.0m	25	1Δ	8p	PEΔ	W7	E					
4#	PL1052	150m	1.0m	1.0m	5S	75	40	6.0	10n	100	1.0m	25	1Δ	8p	PEΔ	W7	E					
5#	PL1053	150m	1.0m	1.0m	5S	60	30	5.0	10n	100	1.0m	50	1Δ	8p	PEΔ	W7	E					
6#	PL1054	150m	1.0m	1.0m	5S	75	40	6.0	10n	100	1.0m	50	1Δ	8p	PEΔ	W7	E					
7#	PL1055	150m	1.0m	1.0m	5S	60	30	5.0	10n	100	1.0m	12	1Δ	8p	PEΔ	W7	E					
8#	PL1061	150m	1.0m	1.0m	5S	45	45	* 5.0	5.0	100	10u	40	1Δ	8p	PL	W7	E					
9#	PL1062	150m	1.0m	1.0m	5S	45	45	* 5.0	5.0	100	10u	100	1Δ	8p	PL	W7	E					
10#	PL1063	150m	1.0m	1.0m	5S	60	60	* 6.0	5.0	100	10u	100	1Δ	6p	PL	W7	E					
11#	PL1064	150m	1.0m	1.0m	5S	25	25	* 5.0	5.0	100	10u	180	1Δ	8p	PL	W7	E					
12#	PL1065	150m	1.0m	1.0m	5S	60	60	* 6.0	5.0	100	10u	40	1Δ	6p	PL	W7	E					
13#	PL1066	150m	1.0m	1.0m	5S	25	25	* 5.0	5.0	100	10u	40	1Δ	8p	PL	W7	E					
14#	PL1067	150m	1.0m	1.0m	5S	25	25	* 5.0	5.0	100	10u	100	1Δ	8p	PL	W7	E					
15#	PL1081	150m	1.0m	1.0m	5S	60	40	* 5.0	5.0	150m	20	1Δ	#	8p	PL	W7	E					
16#	PL1082	150m	1.0m	1.0m	5S	60	40	* 5.0	100	150m	40	1Δ	#	PL	W7	E						
17#	PL1083	150m	1.0m	1.0m	5S	75	50	* 7.0	100	150m	100	1Δ	#	PL	W7	E						
18#	PL1084	150m	1.0m	1.0m	5S	75	50	* 7.0	100	150m	40	1Δ	#	PL	W7	E						
19#	PL1085	150m	1.0m	1.0m	5S	120	100	* 7.0	100	150m	40	1Δ	#	PL	W7	E						
20#	PL1111	150m	1.0m	1.0m	5S	30	15	3.0	1n	1.0	3.0m	20	1Δ	1.7p	PE	W7	E					
21#	PL1112	150m	1.0m	1.0m	5S	30	15	3.0	10n	1.0	3.0m	20	1Δ	1.7p	PE	W7	E					
22#	PL1113	150m	1.0m	1.0m	5S	30	13	3.0	10n	1.0	4.0m	20	1Δ	2.5p	PE	W7	E					
23#	uPA37A*	150m	1.0m	1.0m	SJ	25	13	5.0	80m	100n	3.0	2.0m	50	1Δ	PE	R131h	PD					
24#	2SC3052	150m	1.5m	1.5m	J	50	50	6.0	200m	100n	6.0	1.0m	300T	2.5p	PE	X156b	A					
25#	2SC3053	150m	200m	1.5m	J	30	25	4.0	30m	1.0	6.0	1.0m	80T	2.0p	PE	X156b	A					
26#	JAN2N117	150m	1.0MΔ	1.2m	SJ	30	30	1.0	1.0u	5.0	1.0m	9.0	Δ	1.5u	Zb	90	5.0	20p	O3b	A		
27#	2SC2462B	150m	1.0M	1.5m	J	50	40	5.0	100m	500nΔ	120	2.0m	200	Z†	EE	EE	EE	EE	EE	X156b	A	
28#	2SC2462C	150m	1.0M	1.5m	J	50	40	5.0	100m	500nΔ	120	2.0m	320	Z†	EE	EE	EE	EE	EE	X156b	A	
29#	2SC2462D	150m	1.0M	1.5m	J	50	40	5.0	100m	500nΔ	120	2.0m	500	Z†	EE	EE	EE	EE	EE	X156b	A	
30#	2SC2463D	150m	1.0M	1.5m	J	55	50	5.0	100m	500nΔ	120	2.0m	500	Z†	EE	EE	EE	EE	EE	X156b	A	
31#	2SC2463E	150m	1.0M	1.5m	J	55	50	5.0	100m	500nΔ	120	2.0m	800	Z†	EE	EE	EE	EE	EE	X156b	A	
32#	2SC2463F	150m	1.0M	1.5m	J	55	50	5.0	100m	500nΔ	120	2.0m	1.2k	Z†	EE	EE	EE	EE	EE	X156b	A	
33#	JAN2N118	150m	2.0MΔ	1.2m	SJ	30	30	1.0	1.0u	5.0	1.0m	18	Δ	1.5u	Zb	90	10	20p	O3b	A		
34#	JAN2N119	150m	2.0MΔ	1.2m	SJ	30	30	1.0	1.0u	5.0	1.0m	37	Δ	1.5u	Zb	90	15	20p	O3b	A		
35#	2N906	150m	2.0MΔ	1.0m	SA	45	30	1.0	25m	2.0u	5.0	1.0m	76	Δ	1.2u	Zb	80	10	10p	R218	A	
36#	JAN2N333	150m	2.5MΔ	1.0m	SJ	45	45	1.0	500n	5.0	1.0m	44	Z†	1.2u	Zb	80	10	15p	T05	A		
37#	JAN2N335	150m	2.5MΔ	1.0m	SJ	45	45	1.0	500n	5.0	1.0m	90	Z†	1.2u	Zb	80	10	15p	T05	A		
38#	JAN2N336	150m	2.5MΔ	1.0m	SJ	45	45	1.0	500n	5.0	1.0m	270	Z†	1.2u	Zb	80	10	15p	T05	A		
39#	2N3268	150m	2.5MΔ	1.0m	SJ	45	45	1.0	25m	500n	5.0	1.0m	40	Δ	1.2u	Zb	80	10	15p	T05	A	
40#	2N117	150m	4.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	15		400nb	42	1.2	7.0p	G	A	O3b	A	
41#	2N160	150m	4.0M	1.0m	S	40	1.0	25m	10u	5.0	1.0m	15		400nb	42		7.0p	G	A	O3e	A	
42#	2N160A	150m	4.0M	1.0m	S	40	5.0	25m	10u	5.0	1.0m	15		400nb	42		7.0p	G	A	O3e	A	
43#	2N332	150m	4.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	14		400nb	42	1.2	7.0p	G	A	T05	A	
44#	2S001	150m	4.0MΔ	769u	SJ	45	1.0	25m	30n	5.0	1.0m	25		400nb	42	12	7.0p	G	G	T05	A	
45#	2S002	150m	4.0MΔ	769u	SJ	45	1.0	25m	30n	5.0	1.0m	25		400nb	42	2.5	7.0p	G	G	T05	A	
46#	2S004	150m	4.0MΔ	769u	SJ	45	1.0	25m	30n	5.0	1.0m	50		400nb	42	40	7.0p	G	G	T05	A	
47#	2N118	150m	5.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	29		400nb	42	2.5	7.0p	G	A	O3b	A	
48#	2N161	150m	5.0M	1.0m	S	40	1.0	25m	10u	5.0	1.0m	30		400nb	42		7.0p	G	A	O3e	A	
49#	2N161A	150m	5.0M	1.0m	S	40	5.0	25m	10u	5.0	1.0m	30		400nb	42		7.0p	G	A	O3e	A	
50#	2N333	150m	5.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	63		400nb	42	2.5	7.0p	G	G	T05	A	
51#	2N119	150m	6.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	63		400nb	42	4.0	7.0p	G	A	O3b	A	
52#	2N163	150m	6.0M	1.0m	S	40	1.0	25m	10u	5.0	1.0m	78		400nb	42		7.0p	A	A	O3e	A	
53#	2N163A	150m	6.0M	1.0m	S	40	5.0	25m	10u	5.0	1.0m	78		400nb	42	4.0	7.0p	A	A	O3e	A	
54#	2N335	150m	6.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	78		400nb	42		7.0p	G	A	T05	A	
55#	2N2529	150m	6.0MΔ	1.0m	SJ	45	40	2.0	25m	50n	5.0	1.0m	12	Δ	1.0u	Zb	80	5.0	3.0p	Z	T018	A
56#	2N120	150m	7.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	200		400nb	42	4.0	7.0p	G	G	O3b	A	
57#	2N336	150m	7.0M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	200		400nb	42	4.0	7.0p	G	G	T05	A	
58#	2N118A	150m	8.0MΔ	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	18	Δ	1.2u	Zb	80	10	20p	O3c	F	T022	F
59#	2N162	150m	8.0M	1.0m	SJ	40	1.0	25m	10u	5.0	1.0m	28	Δ	1.2u	Zb	80	10	20p	O3c	F	T022	F
60#	2N162A	150m	8.0M	1.0m	SJ	40	5.0	25m	10u	5.0	1.0m	28	Δ	1.2u	Zb	80	10	20p	O3c	F	T022	F
61#	2N334	150m	8.0MΔ	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	30		400nb	42	4.0	7.0p	G	A	T05	A	
62#	ST1242	150m	8.0M	1.0m	S	40	2.0	25m	5.0	1.0m	30		.50u	55	3.7	10p				T05	A	
63#	2N2530	150m	10MΔ	1.0m	SJ	45	40	2.0	25m	50n	5.0	1.0m	18	Δ	1.0u	Zb	80	5.0	3.0p	Z	T018	A
64#	2N2533	150m	10MΔ	1.0m	SJ	45	40	2.0	25m	50n	5.0	1.0m	19	Δ	1.0u	Zb	80	7.5	3.0p	Z	T018	A
65#	2S003	150m	10MΔ	769u	SJ	45	1.0	25m	30n	5.0	1.0m	25		400nb	42	20	7.0p	G	A	T05	A	
66#	BCY87*	150m	10MΔ	1.0m	SJ	45	40	5.0	30m	5.0n	10	50n	100	1Δ	3.5p	S	PL	∅	∅	T071	PS	
67#	BCY88*	150m	10MΔ	1.0m	SJ	45	40	5.0	30m	25n	10	.05m	100	1Δ	3.5p	S	PL	∅	∅	T071	PS	
68#	BCY89*	150m	10MΔ	1.0m	SJ	45	40	5.0	30m	.01u	10	.05m	100	1Δ	3.5p	S	PL	∅	∅	T071	PS	
69#	2N9071	150m	12MΔ	1.0m	SJ	45	30	1.0	20m	1.0u	20	1.0m	19	Δ	1.0u	Zb	80	20	3.0p	PD	R218	A
70#	2N1149	150m	12M	1.0m	SJ	45	1.0	25m	2.0u	5.0	1.0m	13		400nb	42	1.2	7.0p	G	A	O3e	A	
71#	2N2531	150m	12MΔ	1.0m	SJ	45	40	2.0	25m	50n	5.0	1.0m	36	Δ	1.0u	Zb	80	5.0	3.0p	Z	T018	A
72#	4C28	150m	12M	1.4m	J	40	30	2.0	25m	2.0u	5.0	1.0m	15	†	200nb	50	3.0	8.0p	GD		R133	A
73#	4C29	150m	12M	1.4m	J	40	30	2.0	25m	2.0												

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab (Hz)	DERATE IN FREE AIR W/C	MAMP	ABS MAX RATINGS @ 25°C				MAX. lobo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	L E O D E
						BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	BSY11	150m	100M	1.0m	SJ	45	15	3.0	50m	500n	5.0	5.0m	55 Δ					T05	A	
2	2N1199†	150m	125M	1.2m	SJ	20	32		100m	700n	1.0	2.0m	25				1.5p	ME	TO9	
3	BCW80	150m	125M	1.4m	SJ							2.0m	120 Δ				4.5p	DA	TO236	
4	BCW80R	150m	125M	1.4m	SJ							2.0m	120 Δ				4.5p	CA	TO238	
5	BCX70	150m	125M	1.4m	SJ							2.0m	120 Δ				4.5p	CA	TO238	
6	BCX70R	150m	125M	1.4m	SJ							2.0m	120 Δ				4.5p	CA	TO238	
7	2N1472†	150m	140M	1.2m	SJ	25	25	3.0	100m	500n	5.0	10m	35 †				1.0p	DA	TO9	
8#	2SC644	150m	150M	1.4m	SJ	30	25	5.0	50m	1.0u	5.0	2.0m	180 †		20u	40k	2.5	PE	TO92	
9#	2SC920	150m	150M	1.4m	SJ	50	25	5.0	30m	100n	3.0	500u	75 †				5.0p	PE	W3a	
10#	2SC1853	150m	150M	1.5m	SJ	150	130	5.0	50m	100n	3.0	15m	50 †				4.5p	PE	X158b	
11#	2SC1853N2	150m	150M	1.5m	SJ	150	130	5.0	50m		3.0	15m	50 †				4.5p	PE	X158b	
12#	2SC1853N3	150m	150M	1.5m	SJ	150	130	5.0	50m		3.0	15m	100 †				4.5p	PE	X158b	
13#	2SC1853N4	150m	150M	1.5m	SJ	150	130	5.0	50m		3.0	15m	150 †				4.5p	PE	X158b	
14#	2SC1854	150m	150M	1.5m	SJ	180	180	5.0	50m	100n	3.0	15m	50 †				4.5p	PE	X158b	
15#	2SC1854N5	150m	150M	1.5m	SJ	180	180	5.0	50m		3.0	15m	50 †				4.5p	PE	X158b	
16#	2SC1854N6	150m	150M	1.5m	SJ	180	180	5.0	50m		3.0	15m	100 †				4.5p	PE	X158b	
17#	2SC1854N7	150m	150M	1.5m	SJ	180	180	5.0	50m		3.0	15m	150 †				4.5p	PE	X158b	
18#	BFV18	150m	150M	1.0m	SJ	80	60	5.0		1.0u	5.0	5.0m	60 †		95u	1.8k	1.3	PE	TO18	
19#	BFV50†	150m	175M	1.2m	SJ	50	25	5.0	800m	.50u	1.0	150m	30 †				12p	PE	S5a	
20#	BFV52†	150m	175M	1.2m	SJ	50	30	5.0	1	.50u	1.0	150m	25 †				12p	PE	S5a	
21#	BFV55†	150m	175M	1.2m	SJ	75	40	5.0	500m	.50u	1.0	150m	25 †				12p	PE	S5a	
22#	2SC1032	150m	200M	1.5m	SJ	25	20	3.0	25m	2.0u	6.0	1.0m	70 †				1.8p	PE	R195d	
23#	BFV10	150m	200M	1.0m	SJ	50	30	5.0	800m	.05u	1.0	10m	30 †				12p	PE	S5a	
24#	BFV11	150m	200M	1.0m	SJ	50	30	5.0	800m	.05u	1.0	10m	70 †				12p	PE	S5a	
25#	BFV40	150m	200M	1.0m	SJ	25	18	5.0		.50u	1.0	10m	20 †				12p	PE	S5a	
26#	BFV49†	150m	200M	1.2m	SJ	25	15	5.0	200m	.50u	1.0	10m	30 †				12p	PE	S5a	
27#	BSX53†	150m	200M	1.3m	SA					.50u	1.0	50m	50 †				5.0p	NPE	TO18	
28#	BSX54†	150m	200M	1.3m	SA					.50u	1.0	50m	50 †				5.0p	NPE	TO18	
29#	BSY95	150m	200M	1.0m	SA	20	15	2.0	100m	50n	3.5	10m	50 †				8.0p	NPE	TO18	
30#	SF115A	150m	200M	1.2m	SA	50	30	5.0	30m	50n	1.0	0m	50 †				5.0p	PE	X149	
31#	SF115B	150m	200M	1.2m	SA	50	30	5.0	30m	50n	1.0	1.0m	75 †				850ft	DPE	X149	
32#	SF195	150m	200M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	36 †				850ft	DPE	X149	
33#	SF195C	150m	200M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	72 †				850ft	DPE	X149	
34#	SF195D	150m	200M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	38 †				850ft	DPE	X149	
35#	SF295	150m	200M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	36 †				850ft	DPE	X149	
36#	SF295C	150m	200M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	72 †				850ft	DPE	X149	
37#	SF295D	150m	200M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	38 †				850ft	DPE	X149	
38#	2SC2619A	150m	230M	1.5m	SJ	30	30	5.0	100m	50n	1.2	2.0m	70 †				3.5p	PE	X158b	
39#	2SC2619B	150m	230M	1.5m	SJ	30	30	5.0	100m	50n	1.2	2.0m	120 †				3.5p	PE	X158b	
40#	2SC2619C	150m	230M	1.5m	SJ	30	30	5.0	100m	50n	1.2	2.0m	200 †				3.5p	PE	X158b	
41#	2SC33	150m	250M	1.5m	SJ	45	20	3.0	50m	1.0u	5.0	5.0m	55				3.0p	PE	TO5	
42#	2SC1009F1	150m	250M	1.5m	SJ	50	25	5.0	50m	100n	3.0	500u	30 †				2.0p	PE	X158b	
43#	2SC1009F2	150m	250M	1.5m	SJ	50	25	5.0	50m	100n	3.0	500u	40 †				2.0p	PE	X158b	
44#	2SC1009F3	150m	250M	1.5m	SJ	50	25	5.0	50m	100n	3.0	500u	60 †				2.0p	PE	X158b	
45#	2SC1009F4	150m	250M	1.5m	SJ	50	25	5.0	50m	100n	3.0	500u	90 †				2.0p	PE	X158b	
46#	2SC1009F5	150m	250M	1.5m	SJ	50	25	5.0	50m	100n	3.0	500u	135 †				2.0p	PE	X158b	
47#	2SC1327	150m	250M	1.5m	J	35	35	5.0	100m	100n	5.0	2.0	1.0k					PE	TO92	
48#	2SC1328	150m	250M	1.5m	J	55	55	5.0	100m	100n	5.0	2.0	1.0k					PE	TO92	
49#	BCW60A†	150m	250M	1.2m	SJ	32	5.0	5.0	100m	20n	5.0	2.0m	200		18	2.7k	1.5	PE	u56a	
50#	BCW60AA†	150m	250M	1.4	SJ	32	5.0	5.0	200m	20n	5.0	2.0m	200		18u	2.7k	1.5	PE	X156a	
51#	BCW60AB†	150m	250M	1.4	SJ	32	5.0	5.0	200m	20n	5.0	2.0m	260		24u	3.6k	2.0	PE	X156a	
52#	BCW60AC†	150m	250M	1.4	SJ	32	5.0	5.0	200m	20n	5.0	2.0m	330		30u	4.5k	2.0	PE	X156a	
53#	BCW60AD†	150m	250M	1.4	SJ	32	5.0	5.0	200m	20n	5.0	2.0m	520		50u	7.5k	3.0	PE	X156a	
54#	BCW60B†	150m	250M	1.2m	SJ	32	5.0	5.0	100m	20n	5.0	2.0m	260		24	3.6	2.0	PE	u56a	
55#	BCW60C†	150m	250M	1.2m	SJ	32	5.0	5.0	100m	20n	5.0	2.0m	330		30	4.5	2.0	PE	u56a	
56#	BCW60D†	150m	250M	1.2m	SJ	32	5.0	5.0	100m	20n	5.0	2.0m	520		50	7.4	3.0	PE	u56a	
57#	BCX70AG†	150m	250M	1.4	SJ	45	5.0	5.0	200m	20n	5.0	2.0m	200		18u	2.7k	1.5	PE	X156a	
58#	BCX70AH†	150m	250M	1.4	SJ	45	5.0	5.0	200m	20n	5.0	2.0m	260		24u	3.6k	2.0	PE	X156a	
59#	BCX70AJ†	150m	250M	1.4	SJ	45	5.0	5.0	200m	20n	5.0	2.0m	330		30u	4.5k	3.0	PE	X156a	
60#	BCX70AK†	150m	250M	1.4	SJ	45	5.0	5.0	200m	20n	5.0	2.0m	520		50u	7.5k	3.0	PE	X156a	
61#	BF207 #	150m	250M	1.0m	SJ	40	30	4.0	25	1.0	4.0m	25 Δ					2.5p	PE	TO72	
62#	BFV42	150m	250M	1.0m	SJ	60	35	5.0	800m	.05u	1.0	1.0m	40 †				10p	PE	S5a	
63#	BFV41	150m	250M	1.0m	SJ	20	12	4.5	200m	1.0u	3.5	10m	30 †				5p	PE	S5a	
64#	BFV45	150m	250M	1.2m	SJ	35	15	5.0		.08u	1.0	10m	30 †				5p	PE	S5a	
65#	BFV54†	150m	250M	1.2m	SJ	60	30	5.0		.50u	1.0	150m	30 †				850ft	PE	S5a	
66#	SF194	150m	280M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	67 †				850ft	DPE	X149	
67#	SF194B	150m	280M	1.2m	SJ	30	20	5.0	30m	50n	1.0	1.0m	110 †				850ft	DPE	X149	
68#	SF294	150m	280M	1.2m																

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	M E X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
					V <sub>ce</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001				
1#	BFV271	150m	500mSΔ	1.2m	SJ	15	6.0	4.0	100μ	1.00	30mΩ	15	1#Δ			3p	PE	S5a	P
2#	BFV281	150m	500mSΔ	1.7m	SJ	15	6.0	4.0	100μ	1.00	1.0mΩ	15	1#Δ		3p	PE	S5a	P	
3#	BFV80	150m	500mSΔ	1.2m	SJ	25	12	3.0	50m	50μ	1.00	3.0mΩ	20	1Δ	1.7p	PE	S5a	P	
4#	PL40221	150m	500mSΔ	1.0m	SΔ	40	15*	4.5	200m	40μ	1.00	1.0mΩ	40	1Δ	4p	PE	S6	P	
5#	PL40231	150m	500mSΔ	1.0m	SΔ	40	15	4.5	200m	40μ	1.00	100mΩ	20	1Δ#	4p	PE	S6	P	
6#	2SC606	150m	530mS		SJ	30	30	4.0	20m	20μ	100	2.0mΩ	60	1	1p	PL	W3a	C	
7#	BF200	150m	550mS	1.0m	SJ	30	20	3.0	20m	100	100	3.0mΩ	16	Δ	90p	PL	T072	G	
8#	2SC668SP	150m	600mS	1.5m	Δ	25	20	3.0	30m	1.0u	6.00	1.0mΩ	560	1Δ	550ft	PL	T072	G	
9#	2SC762	150m	600mS	1.0m	SJ	30	20	3.0	20m	100u#	10	2.0m	13	1Δ	280ft	PL	T072	G	
10#	2SC997	150m	600mS		SJ	40	30	25m	25n	100	100	4.0mΩ	70	1	1.5p	PL	T072	E	
11#	2SC1778	150m	600mSΔ	1.5m	Δ	25	20	3.0	15m	100u#	10	3.0mΩ	50	1	500ft	PL	T092	E	
12#	2SC2813	150m	600mS		Δ	25	20	3	30m	0.1u	6.0	1mΩ	320	1Δ	75p	PE	S27	E	
13#	2SC2840	150m	600mS		Δ	25	20	3.0	30m	0.1u	6.00	1.0mΩ	100	1	0.5p	PE	X192	B	
14#	BF181	150m	600mS		SJ	30	20	3.0	30m	100	100	2.0mΩ	14	1	9p	PE	T072	E	
15#	BFV59	150m	600mSΔ	1.3m	SΔ	25	13	3.0	50m	0.5u	100	4.0mΩ	20	Δ	2.5p	PE	S5a	P	
16#	PL4112	150m	600mSΔ	1.0m	SΔ	30	15	3.0	200m	10n	1.00	3.0mΩ	20	1Δ	2.0p	PE	S6	P	
17#	SF173	150m	600mS	1.2m	Δ	40	25	4.0	25m	50n	100	7.0mΩ	38	1Δ	400ft	DPE	X149	B	
18#	SF197	150m	600mS	1.2m	Δ	40	25	4.0	25m	50n	100	7.0mΩ	38	1Δ	300ft	DPE	X149	C	
19#	2SC707	150m	650mS	1.0m	SJ	25	20	3.0	20m	100u	100	2.0mΩ	50	1	40p	PL	T072	G	
20#	2SC947	150m	650mS	1.0m	SJ	25	20	3.0	15m	100u#	10	2.0m	20	1	330ft	PL	T072	G	
21#	2SC1047	150m	650mS	1.5m	Δ	30	20	3.0	15m	10u	6.0	1.0m	40	1Δ	800ft	PE	T092	B	
22#	2SC2860	150m	650mS	1.5m	Δ	30	20	3.0	15m	100	6.00	1.0mΩ	40	1Δ	0.8p	PE	S9	D	
23#	BF200	150m	650mS	1.0m	SJ	30	20	1.0	20m	50n	100	3.0mΩ	15	1Δ	280ft	AN	T072	G	
24#	2SC761	150m	675mS	1.0m	SJ	30	20	3.0	20m	100u#	10	2.0m	13	1Δ	280ft	PL	T072	G	
25#	BF180	150m	700mS	1.0m	SJ	30	20	3.0	20m	100	100	3.0mΩ	15	1Δ	280ft	PL	T072	G	
26#	BF180	150m	700mS	1.0m	SJ	30	20	3.0	20m	100	100	3.0mΩ	15	1Δ	1.4p	PE	T072	F	
27#	BF273	150m	750mS	1.4m	Δ	40	35	4.0	50m	7.00	10m	80	1	400ft	PE	T0106	C		
28#	BF274	150m	750mS	1.4m	Δ	40	35	4.0	50m	7.00	10m	80	1	400ft	PE	T0106	C		
29#	2SC618	150m	800mS	1.2m	SJ	25	13	4.0	25m	100n	6.00	2.0m	80		60	PE	T072	G	
30#	2SC618A	150m	800mS	1.2m	SJ	25	13	4.0	25m	100n	6.00	2.0m	80		60	PE	T072	G	
31#	2SC629	150m	800mS		SΔ	18	13	3.0	30m	20u	3.00	1.0mΩ	30	1	1.3p	D	X153	B	
32#	2SC948	150m	800mS	1.0m	SJ	25	20	3.0	15m	100u#	10	3.0m	24	1	330ft	PL	T072	G	
33#	2SC1117H	150m	850mS	1.2m	SJ	20	20	3	20m	1.0u	100	2.0mΩ	320	1Δ*	45p	PL	T072	G	
34#	2SC1547	150m	900mS	1.2m	SJ	30	20	3.0	20m	1.0u	10	3.0m	20	1Δ	800ft	PL	T072	G	
35#	2SC392	150m	1.0G		SJ	30	20	3.0	20m	500n	100	2.0mΩ	80	1	1.5p	PL	T072	G	
36#	2SC787	150m	1.0G	1.2m	SJ	25	20	3.0	20m	25n	100	2.0mΩ	25	1Δ	300ft	PL	T072	G	
37#	2SC2732	150m	1.0G	1.5m	Δ	30	15	4	20m	100	100	3.0mΩ	30	1Δ	0.8p	PE	T0236	C	
38#	2SC2733	150m	1.0G	1.5m	Δ	30	20	3	50m	100	100	1.0mΩ	60	1Δ	65p	PE	T0236	C	
39#	2SC2735	150m	1.0G	1.5m	Δ	30	20	3	50m	100	100	1.0mΩ	40	1Δ	1.5p	PE	T0236	C	
40#	SK3019-RT	150m	1.0G		SJ	20	20	3.0	20m	100	100	2.0mΩ	130	1	1.2p	PE	T072	G	
41#	2SC1780	150m	1.2GΔ	1.5m	Δ	25	18	3.0	15m	100u#	100	2.0mΩ	50	1	1.2p	PE	S9	B	
42#	2SC1790	150m	1.2GΔ	1.0m	Δ	25	18	3.0	15m	100u	100	2.0mΩ	50	1	800ft	PE	T072	G	
43#	2N5650	150m	2.0GΔ	1.2m	SΔ	20	15	3.0	30m	50n	100	3.0mΩ	30	1Δ	700fs	PE	T072	G	
44#	2N5651	150m	2.0GΔ	1.2m	SΔ	20	15	3.0	30m	50n	100	3.0mΩ	30	1Δ	700fs	PE	T072	G	
45#	2N5652	150m	2.0GΔ	1.2m	SΔ	20	15	3.0	30m	50n	100	3.0mΩ	30	1Δ	700fs	PE	T072	G	
46#	2SC2736	150m	2.2G	1.5m	Δ	30	20	3	50m	100	100	5.0mΩ	200	1Δ	1.0p	PE	T0236	C	
47#	2SC2734	150m	3.5G	1.5m	Δ	20	11	3	50m	100	100	1.0mΩ	200	1Δ	1.5p	PE	T0236	C	
48#	BF214#	165m	150mS		SJ	30	30	4.0	30	100	100	1.0mΩ	330	1	0.7p	PE	T072	C	
49#	BF215#	165m	150mS		SJ	30	30	4.0	30	100	100	1.0mΩ	165	1	0.7p	PE	T092	C	
50#	BF226#	165m	150mS		SJ	30	30	4.0	50	100	100	1.0mΩ	165	1	0.7p	PE	T092	C	
51#	2N4433	165m	200mS	1.1m	SJ	50	30	5.0	30m	0.1u	100	1.0mΩ	50	1Δ	1.5p	PE	T072	J	
52#	BF214A	165m	250mS		SJ	30	30	4.0	30	100	100	1.0mΩ	150	1	0.7p	PE	T072	C	
53#	BF214B	165m	250mS		SJ	30	30	4.0	30	100	100	1.0mΩ	250	1	0.7p	PE	T092	C	
54#	2N778	170mS		1.2m	SΔ	20	20	2.0	100m	100	100	2.0mΩ	50		1.5p	D	T018	A	
55#	2N1272	170mS		769u	SΔ	20	20	2.0	100m	70u	100	2.0mΩ	50		1.5p	D	T09	A	
56#	2N4259	175m		1.1m	SΔ	40	30	2.5	100m	10n	8.00	2.0mΩ	70	1	550p	PE	R176b	G	
57#	BSX38	175m*	200mS	1.7m	SJ	35	30	5.0	100m	0.5u	500	10mΩ	65	1Δ	5.0p	PE	T018	B	
58#	SE5022	175m	300mSΔ	1.1m	SJ	20	20	3.0	30m	50n	5.00	4.0mΩ	40	1#	500ft	DPL	T072	Ø	
59#	SE5023	175m	300mSΔ	1.1m	SJ	20	20	3.0	30m	50n	5.00	4.0mΩ	40	1#	500ft	DPL	T072	Ø	
60#	SE5024	175m	300mSΔ	1.2m	SJ	20	20	3.0	30m	0.5u	5.00	4.0mΩ	40	1#	.5p	DPL	T072	G	
61#	SE5050	175m	300mSΔ	1.2m	SJ	20	20	3.0	30m	0.5u	5.00	4.0mΩ	40	1#	.5p	DPL	T072	G	
62#	SE5051	175m	300mSΔ	1.2m	SJ	20	20	3.0	30m	0.5u	5.00	4.0mΩ	40	1#	.5p	DPL	T072	G	
63#	TPE5050	175m	300mSΔ		SJ	20	20	3.0	30m	50u	5.00	4.0mΩ	200	1Δ	1	DPL	T092	A	
64#	TPE5051	175m	300mSΔ		SJ	20	20	3.0	30m	50u	5.00	4.0mΩ	200	1Δ	1	DPL	T092	A	
65#	SE5020	175m	375mSΔ	1.2m	SJ	20	20	3.0	30m	0.5u	5.00	4.0mΩ	40	1#	.5p	DPL	T072	G	
66#	SE5021	175m	375mSΔ	1.2m	SJ	20	20	3.0	30m	0.5u	5.00	4.0mΩ	40	1#	.5p	DPL	T072	G	
67#	BF222	175m	400mS	1.1m	SJ	50	50	4.0	20m	1.0u	7.00	2.0mΩ	20	1Δ	.40p	DPE	T072	G	
68#	BF166	175m	500mS	1.2m	SJ	40	30	3.0	30m	.10u	7.00	2.5mΩ	50	1#	.40p	DPE	T072	G	
69#	SE5052	175m	500mS	1.2m	SJ	20	20	3.0	30m	0.5u	5.00	4.0mΩ	40	1#	.17p	DPL	R176a	G	
70#	SE5055	175m	500mS	1.1m	SJ	20	20	3.0	30m	50n	100	2.0mΩ	80		130fs	DPL	T072	J	
71#	BF161	175m	550mS	1.2m	SJ	50	50	4.0	20m	0.5u	240	1.5mΩ	70	1	1.2p	PL	T072	G	
72#	BF155	175m	600mS	1.2m	SJ	40	40	3.0	20m	1.0u	120	2.5mΩ	70	1#	.40p	DPL	T072	J	
73#	BFY88	175m*	750mSΔ		SJ	25	25	2.5	25m	1.00	1.00	5.0mΩ	40	1Δ	250ft	PE	T072	J	
74#	BFY88	175m*	850mS	1.3m	SJ	40	25	3.5	25m	10u	1.00	5.0mΩ	40	1Δ	8.0p	PE	T072	J	
75#	40350	180m			SJ	35	35									P	R92	Ø	
76#	40351	180m			SJ	35	35									P	R92	Ø	
77#	40352	180m			SJ	35	35									P	R92	Ø	
78#	2SC631	180m	140mS		Δ	25	25	6.0	100m	20u	3.00	1.0mΩ	350	1	4.5p	EM	X153	B	
79#	2SC632	180m	14																



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE IN FREE AIR W/°C (Hz)	T   M A M E X P	ABS MAX RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y2000 s/a TO200 Ser.	L E A D E
					BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)	I <sub>cb</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre				
					(V)	(V)	(V)	(A)	(A)		(V)	(A)			X.0001					
1	40243	180m	850m	1.2m	SJ	45	45	4.5	50m	20n	6.0	1.0m	80 f				500fs	PL	T072	G
2	40481	180m	860m	1.2m	SJ	45	45	3.0	50m	20n	6.0	1.0m	70 f	Δ			500fs	PL	T072	J
3	40482	180m	860m	1.2m	SJ	45	45	3.0	50m	20n	6.0	1.0m	27 f	Δ			500fs	PL	T072	J
4	40242	180m	900m	1.2m	SJ	45	45	4.5	50m	20n	6.0	1.0m	80 f				500fs	PL	T072	G
5	40472	180m	900m	1.2m	SJ	45	45	3.0	50m	1.0u	6.0	1.0m	170 f	Δ			500fs	PL	T072	J
6	40473	180m	900m	1.2m	SJ	45	45	3.0	50m	1.0u	6.0	1.0m	275 f	Δ			500fs	PL	T072	J
7	40474	180m	900m	1.2m	SJ	45	45	3.0	50m	1.0u	6.0	1.0m	275 f	Δ			500fs	PL	T072	J
8	40235	180m	1.0G	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	170 f	Δ			500fs	PL	T072	G
9	40236	180m	1.0G	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	275 f	Δ			500fs	PL	T072	G
10	40237	180m	1.0G	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	275 f	Δ			500fs	PL	T072	G
11	TP90	180m	2.8G	1.2m	SJ	25	15	2.5	50m	50n	1.0	1.0m	25m	20 f	Δ		700f		W15	G
12	BFW92A	180m	4.5G	1.2m	SS	25	15	2.5	35m	50n	1.0	1.0m	2m	50 f			500n		W167	E
13	2N1082	200m	1.5m	1.2m	SS	25	25	2.0	50m	50u	5.0	2.0m	10 f	Δ			5p	†	T05	B
14	2N2711	200m	2.6m	1.2m	SS	18	18	5.0	100m	500n	4.5	2.0m	30 f	Δ			12p		T098	B
15	2N2712	200m	2.6m	1.2m	SS	18	18	5.0	100m	500n	4.5	2.0m	80 f	Δ			12p		T098	B
16	2N2713	200m	2.6m	1.2m	SS	18	18	5.0	200m	500n	4.5	2.0m	30 f	Δ			12p		T098	B
17	2N2714	200m	2.6m	1.2m	SS	18	18	5.0	200m	500n	4.5	2.0m	80 f	Δ			12p		T098	B
18	2N2715	200m	2.6m	1.2m	SS	18	18	5.0	50m	500n	4.5	2.0m	30 f	Δ			5.0p		T098	B
19	2N2716	200m	2.6m	1.2m	SS	18	18	5.0	50m	500n	4.5	2.0m	80 f	Δ			5.0p		T098	B
20	2N2921	200m	2.6m	1.2m	SS	25	25	5.0	100m	500n	10	2.0m	35 f	Δ			12p		T098	B
21	2N2922	200m	2.6m	1.2m	SS	25	25	5.0	100m	500n	10	2.0m	55 f	Δ			12p		T098	B
22	2N2923	200m	2.6m	1.2m	SS	25	25	5.0	100m	500n	10	2.0m	90 f	Δ			12p		T098	B
23	2N2924	200m	2.6m	1.2m	SS	25	25	5.0	100m	500n	10	2.0m	150 f	Δ			12p		T098	B
24	2N2925	200m	2.6m	1.2m	SS	25	25	5.0	100m	500n	10	2.0m	235 f	Δ			12p		T098	B
25	2N2926	200m	2.6m	1.2m	SS	18	18	5.0	100m	500n	10	2.0m	35 f	Δ			12p		T098	B
26	2N3390	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	400 f	Δ			10p		T098	B
27	2N3391	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	250 f	Δ			10p		T098	B
28	2N3391A	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	250 f	Δ			10p	∅	T098	B
29	2N3392	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	150 f	Δ			10p		T098	B
30	2N3393	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	90 f	Δ			10p		T098	B
31	2N3394	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	55 f	Δ			10p		T098	B
32	2N3395	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	150 f	Δ			10p		T098	B
33	2N3396	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	90 f	Δ			10p		T098	B
34	2N3397	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	55 f	Δ			10p		T098	B
35	2N3398	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	4.5	2.0m	55 f	Δ			10p		T098	B
36	2N3721	200m	2.6m	1.2m	SS	18	18	5.0	100m	500n	10	2.0m	60 f	Δ			12p		T098	B
37	2N3877	200m	2.6m	1.2m	SS	70	70	4.0	50m	500n	4.5	2.0m	20 f	Δ			12p		T098	B
38	2N3877A	200m	2.6m	1.2m	SS	85	85	4.0	50m	500n	4.5	2.0m	20 f	Δ			12p		T098	B
39	2N3900	200m	2.6m	1.2m	SS	18	18	5.0	100m	100n	4.5	2.0m	170 f	Δ			12p		T098	B
40	2N3900A	200m	2.6m	1.2m	SS	18	18	5.0	100m	100n	4.5	2.0m	170 f	Δ			12p		T098	B
41	2N3901	200m	2.6m	1.2m	SS	18	18	5.0	100m	100n	10	2.0m	350 f	Δ			12p		T098	B
42	2N4086	200m	2.6m	1.2m	SS	12	12	5.0	100m	100n	10	2.0m	150 f	Δ			12p		T098	B
43	2N4087	200m	2.6m	1.2m	SS	12	12	5.0	100m	100n	10	2.0m	250 f	Δ			12p		T098	B
44	2N4087A	200m	2.6m	1.2m	SS	12	12	5.0	100m	100n	10	2.0m	250 f	Δ			12p		T098	B
45	2N4252	200m	1.3n	1.2m	SJ	30	18	4.0	50m	50n	10	2.0m	50 f	Δ			100n	∅	T092	G
46	2N4253	200m	1.3n	1.2m	SJ	30	18	4.0	50m	50n	10	2.0m	30 f	Δ			100n	∅	T092	G
47	2N4256†	200m	2.6m	1.2m	SJ	30	30	5.0	100m	500n	2.0	1.0m	60 f	Δ			100n	∅	T098	B
48	2N5172	200m	2.6m	1.2m	SS	25	25	5.0	100m	100n	10	2.0m	100 f	Δ			10p		T098	B
49	2N5174	200m	2.6m	1.2m	SS	90	75	5.0	25m	500n	5.0	1.0m	40 f	Δ			10p		T098	B
50	2N5175	200m	2.6m	1.2m	SS	130	100	5.0	25m	500n	5.0	1.0m	55 f	Δ			10p		T098	B
51	2N5176	200m	2.6m	1.2m	SS	130	100	5.0	25m	500n	5.0	1.0m	140 f	Δ			10p		T098	B
52	2SC603*	200m	1.6m	1.2m	SJ	7.0	4.5	7.0	50m	1.0u	5.0	100u	100 f			9.0p	PEΔ	R144a	QY	
53	2SC719†	200m	1.3m	1.2m	SJ	20	15	4.0	200m	400n	1.0	1.0m	60 f	†			PEΔ	T046	A	
54	2SC1349†	200m	1.3m	1.2m	SJ	20	15	4.0	200m	400n	1.0	1.0m	60 f	†			PEΔ	T046	A	
55	2SC2405	200m	1.6m	1.2m	SJ	35	35	5.0	100m	100n	5.0	2.0m	180 f	Δ			PEΔ	X156b	A	
56	2SD1030	200m	2.0m	1.2m	SJ	50	40	5.0	100m	100n	10	2.0m	2.0k	Δ			PEΔ	X156a	A	
57	3N870	200m	1.3m	1.2m	SS	20	10	10	10m	1.0n	5.0	500u	5.0 f			3.5p	PEΔ	T072	GC	
58	3N880	200m	1.3m	1.2m	SS	20	10	10	10m	1.0n	5.0	500u	5.0 f			3.5p	PEΔ	T072	GC	
59	40894	200m	1.1m	1.2m	SJ	20	12	2.5	50m	20n	6.0	5.0 f	14			700fs	PE∅	T072	G	
60	40895	200m	1.1m	1.2m	SJ	20	12	2.5	50m	20n	6.0	5.0 f	14			700fs	PE∅	T072	G	
61	40896	200m	1.1m	1.2m	SJ	20	12	2.5	50m	20n	6.0	5.0 f	14			700fs	PE∅	T072	G	
62	40897	200m	1.1m	1.2m	SJ	20	12	2.5	50m	20n	6.0	5.0 f	14			700fs	PE∅	T072	G	
63	BC170	200m	2.0	1.2m	SJ	20	20	5.0	100m	100n	1.0	1.0m	35 f	Δ			10p		T0106	A
64	BF173	200m	1.6m	1.2m	SJ	40	30	4.0	200m	50n	1.0	5.0m	110 f	†			0.3p		T072	A
65	FMM32369†	200m	1.3m	1.2m	SA	40	15	4.5												



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 DERATE IN FREE AIR W/°C	ABS MAX RATINGS @ 25°C										TYPICAL h <sub>FE</sub> PARAMETERS										Cob	STRUC-TURE	DWG Y200 s/A TO200 Ser.	# C O A D E
				M E A M P	V <sub>ce0</sub>	V <sub>ce</sub>	I <sub>c</sub>	I <sub>cb0</sub>	BIAS		COMMON EMITTER			h <sub>FE</sub>	hoe	hie	hre	F									
									V <sub>cb</sub>	I <sub>e</sub>	V <sub>cb</sub>	I <sub>e</sub>	h <sub>FE</sub>														
1	TD101*	200m	30MSΔ	1.6m	60	30	5.0	500m	10n	5.0	1.0m	120 Δ	200n	32	6.0	8.0p	PL*	R138	PN								
2	TD102*	200m	30MSΔ	1.6m	60	30	5.0	500m	10n	5.0	1.0m	120 Δ	200n	32	8.0p	PL†	R138	PL									
3	TD201*	200m	30MSΔ	1.6m	60	30	5.0	500m	10n	5.0	1.0m	120 Δ	200n	32	8.0p	PL*	R138	PL									
4	TD202*	200m	30MSΔ	1.6m	60	30	5.0	500m	10n	5.0	1.0m	120 Δ	200n	32	8.0p	PL†	R138	PN									
5	2N3565	200m	40MSΔ	2.0m	60	30	25	6.0	50m	50n	5.0	1.0m	120 Δ	100u	20k	4.0p	∅	R110	PN								
6	2N4966	200m	40MSΔ	2.0m	60	30	25	6.0	30m	25n	5.0	1.0m	500 Δ	1.0u	32	6.0p	∅	TO106	A								
7	2N4967	200m	40MSΔ	2.0m	60	30	25	6.0	30m	25n	5.0	1.0m	950 Δ	1.0u	32	6.0p	∅	TO106	A								
8	2N4968	200m	40MSΔ	2.0m	60	30	25	6.0	30m	50n	5.0	1.0m	500 Δ	1.0u	32	6.0p	∅	TO106	A								
9	2N5133	200m	40MSΔ	2.0m	60	30	18	3.0	50m	05u	5.0	1.0m	50 Δ			5p	∅	TO106	A								
10	3N1200	200m	40MSΔ	1.3m	30	20		10m	01u						10p			TO72	GC∅								
11	3N1210	200m	40MSΔ	1.3m	30	20		10m	01u						10p			TO72	GC∅								
12	JAN3N127∅	200m	40MSΔ	2.0m	60	30		20m	10n						4.0p			TO72	GC∅								
13	BC132	200m	40MSΔ	2.0m	60	30	25	6.0	05u	5.0	1.0m	280	11u	7.5k	3.0	2.2p	PL	R97a	A								
14	MPS3565	200m	40MSΔ	2.0m	60	30	25	6.0	50n	10p	1.0m	600	11u	7.5	3.0	4.0p	†	TO92	A								
15	SE4001	200m	40MSΔ	2.0m	60	30	25	6.0	20u	20p	1.0m	280				4p	DPL	R124b	A								
16	ST70000∅	200m	40MSΔ	1.3m	30	20	20	10m	01u						10p	PE*	TO79	RN									
17	ST70001∅	200m	40MSΔ	1.3m	30	20	20	10m	01u						10p	PE*	TO79	RN									
18	TD100*	200m	50MS	1.5m	60	30	5.0	500m	10n	5.0	1.0m	350	90nb	26	5.0p	PL*	R138	PN									
19	TD200*	200m	50MS	1.6m	60	30	5.0	500m	10n	5.0	1.0m	350	90nb	26	5.0p	PL*	R138	PL									
20	TD250*	200m	50MS	1.6m	60	30	5.0	500m	10n	5.0	1.0m	350	90nb	26	5.0p	PL*	R138	PL									
21	2N2453*	200m	60MSΔ	1.1m	60	30	7.0	50m	5.0n	5.0	1.0m	150 Δ	30u	5.0k	6.0	8.0p	*	R131c	PA								
22	2N2453A*	200m	60MSΔ	1.1m	60	30	7.0	50m	5.0n	5.0	1.0m	150 Δ	30u	5.0k	6.0	4.0p	*	R131c	PA								
23	2N2903*	200m	60MSΔ	1.1m	60	30	7.0	50m	01u	5.0	1.0m	150 Δ	30u	1.0k	6	8p	*∅	R131c	PA								
24	2N2903A*	200m	60MSΔ	1.1m	60	30	7.0	50m	01u	5.0	1.0m	150 Δ	30u	1.0k	6	8p	*∅	R131c	PA								
25	2N3843	200m	60MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	30 Δ			4.0p			TO98	B								
26	2N3843A	200m	60MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	20 Δ			4.0p			TO98	B								
27 #	2SC1515K	200m	60MSΔ	2.0m	60	30	150	50m	100n	6.0	1.0m	30 Δ			10p	D	∅	S8	B								
28 #	2SC1706H†	200m	60MS	1.3m	60	30	150	50m	100n	6.0	1.0m	30 Δ			10p	D	∅	TO18	A								
29	BC113	200m	60MS	2.0m	60	30	25	6.0	05u	5.0	1.0m	330	15u	8.0k	.32	2.0p	DPL	R97a	A								
30 #	BSS64	200m	60MSΔ	1.6m	60	30	120	80	5.0	1.0m	4.0m	80 †			3.4p	PE†	∅	X156e	A								
31	EN2484	200m	60MSΔ	2.0m	60	30	60	6.0	50m	05u	5.0	1.0m	900 †#	40u	24k	8	6p	DPE∅	TO106	A							
32	MMCM930	200m	60MSΔ	1.1m	60	30	45	6.0	50m	10n	5.0	1.0m	100 †			6.0p	AN∅	W10	C								
33	MMCM2484	200m	60MSΔ	1.1m	60	30	60	6.0	50m	10n	5.0	1.0m	100u	175 †		6.0p	AN∅	W10	C								
34	PE4010	200m	60MSΔ	2.0m	60	30	25	6.0	200n	5.0	1.0m	200 †			4.0p			TO92	A								
35	SA2255∅	200m	60MSΔ	2.0m	60	30	45	3.0	7.0	5.0n	5.0	1.0m	125 †			4.0p		TO78	A								
36	SE4002	200m	60MSΔ	2.0m	60	30	25	6.0	20u	20p	1.0m	400	15u	15	4.3	4p	DPL	R124b	A								
37	SE4010	200m	60MSΔ	2.0m	60	30	25	6.0	20u	20p	1.0m	400	15u	15	4.3	4p	DPL∅	R124b	A								
38	SO2484	200m	60MSΔ	1.6m	60	30	60	0.2	0.2	0.1m	100 Δ				6.0p			TO236	A								
39	SO2484R	200m	60MSΔ	1.6m	60	30	60	0.2	0.2	0.1m	100 Δ				6.0p			TO236	A								
40 #	2SC281	200m	80MSΔ	1.3m	60	30	20	5.0	100m	100n	6.0	1.0m	170			10p	E	TO1	A								
41 #	2SC1000	200m	80MS	2.0m	60	30	55	5.0	100m	100n	6.0	2.0m	300 †			10p	PE	R67a	B								
42 #	2SC2458	200m	80MSΔ	2.0m	60	30	50	5.0	150m	100n	6.0	2.0m	70 †*			2.0p	E	B40	B								
43 #	2SC2670	200m	80MSΔ	2.0m	60	30	35	3.0	4.0	100m	100n	1.2	2.0m	40 †*			2.2p	E	B40	B							
44	CS9017	200m	80MSΔ	2.6m	60	30	18	4.0	100m	500n	5.0	1.0m	40 †			2.0p	E	TO92	A								
45	2N3844	200m	90MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	35 Δ			4.0p			TO98	B								
46	2N3844A	200m	90MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	35 Δ			4.0p			TO98	B								
47	2N3858	200m	90MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	60 †			4.0p			TO98	B								
48	2N3858A	200m	90MSΔ	2.6m	60	30	6.0	100m	500u	10p	1.0m	60 †			4.0p			TO98	B								
49	2N3859	200m	90MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	100 †			4.0p			TO98	B								
50	2N3859A	200m	90MSΔ	2.6m	60	30	6.0	100m	500u	10p	1.0m	100 †			4.0p			TO98	B								
51	2N3860	200m	90MSΔ	2.6m	60	30	4.0	100m	500n	4.5	2.0m	150 †			4.0p			TO98	B								
52 #	2SC2210	200m	90MS	2.3m	60	30	20	5.0	30m	100n	6.0	1.0m	90 †*			3.5p	PE	TO92	B								
53	2N3854	200m	100MSΔ	2.6m	60	30	18	4.0	100m	500n	4.5	2.0m	35 Δ			3.5p			TO98	B							
54	2N3854A	200m	100MSΔ	2.6m	60	30	30	4.0	100m	500n	4.5	2.0m	35 Δ			3.5p			TO98	B							
55	2N5131	200m	100MSΔ	2.0m	60	30	15	3.0	200m	05u	1.0	1.0m	25 Δ			6p	PL	TO106	A								
56 #	2SC5365P	200m	100MS	2.0m	60	30	40	3.0	5.0	100m	1.0u	6.0	1.0m	320 †*			3.0p	PL	B40	B							
57 #	2SC7131	200m	100MSΔ	2.0m	60	30	25	4.0	100m	1.0u	6.0	1.0m	90 †*			2.5p	PE†	TO92	D								
58 #	2SC780	200m	100MS	2.0m	60	30	70	2.0	20m	5.0u	10p	2.0m	60		5.0p	PE	R67a	B									
59 #	2SC1416	200m	100MS	2.0m	60	30	55	5.0	50m	100n	6.0	2.0m	350 †			6.0p	PE	R166	A								
60 #	2SC1570	200m	100MS	2.0m	60	30	55	5.0	100m	100n	6.0	1.0m	40 †			6.0p	PE∅	R182a	B								
61 #	2SC1571	200m	100MS	2.0m	60	30	40	35	5.0	100m	100n	6.0	1.0m	40 †			6.0p	PE∅	R182a	B							
62 #	2SC1571L	200m	100MS	2.0m	60	30	40	35	5.0	100m	100n	6.0	1.0m	40 †			6.0p	PE∅	R182a	B							
63 #	2SC1707AHB†	200m	100MSΔ	1.6m	60	30	70	5.0	100m	500n	1.0	1.0m	100 Δ†			2.6p	E	TO18	A∅								
64 #	2SC1707HB†	200m	100MSΔ	1.6m	60	30	40	30	5.0	100m	500n	1.0	1.0m	100 Δ†			2.6p	E	TO18	A∅							
65 #	2SC1707HC†	200m	100MSΔ	1.6m	60	30	40	30	5.0	100m	500n	1.0	1.0m	160 Δ†			2.6p	E	TO18	A∅							
66 #	2SC1707HD†	200m	100MSΔ	1.6m	60	30	70	5.0	100m	500n	1.0	1.0m	250 Δ†			2.6p	E	TO18	A∅								
67 #	2SC2129	200m	100MS	2.0m	60	30	70	5.0	100m	100n	6.0	1.0m	250 †	12u	16k	1.4	3.0p	PE†	TO92	D							
68 #	2SC2130	200m	100MS	2.0m	60	30	70	5.0	100m	100n	6.0	1.0m	250 †	12u	16k	1.4	3.0p	PE†	TO92	D							
69 #	2SC2459	200m	100MS	2.0m	60	30	120	120	5.0	100m	100n	6.0	2.0m	200 †*			3.0p	E	B40	B							
70 #	2SC2669	200m	100MSΔ	2.0m	60	30	35	3.0	4.0	50m	100n	1.2	2.0m	40 †*			2.0p	E	B40	B							
71 #	2SC2812	200m	100MS	2.0m	60	30	55	5.0	150m	0.1u	6.0	1.0m	960 †			3p	PE	S27	E								
72 #	BC817	200m	100MS	.62m	60	30	45	4.0	800m	100n	1.0	1.0m	50 #Δ†			12p	PL†	Y236	E								
73 #	FMMTA05	200m	100MSΔ	1.3m	60	30	60	4.0	500m	100n	1.0	1.0m	50 #Δ†			6.0p	PL†	X156d	A								
74 #	FMMTA06	200m	100MSΔ	1.3m	60	30	80	4.0	500m	100n	1.0	1.0m	50 #Δ†			6.0p	PL†	X156d	A								
75	SO5550R	200m	100MS																								

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	T M A X P X	ABS MAX RATINGS @25°C					MAX I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS							Cob (F)	STRUC TURE	DWG # Y200 s/a TO200 Ser.	L C O D E
					V <sub>bc</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)	BIAS			COMMON EMITTER									
									V <sub>cb</sub> (V)		I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)						
1#	2SC1914	200m	150m	2.0m	J	90	90	5.0	50m	100n	6.0	1.0m	250	10u	18k	800m	1.8p	PEI	T092	D	
2#	2SC1914A	200m	150m	2.0m	J	120	120	5.0	50m	100n	6.0	1.0m	250	10u	18k	800m	1.8p	PEI	T092	D	
3#	2SC1919	200m	150m	2.0m	J	50	50	5.0	30m	100n	6.0	1.0m	250	11u	16k	1.0	1.9p	PEI	T092	D	
4#	2SD601	200m	150m	2.0m	J	30	25	7.0	100m	1.0u	10	2.0m	90	10u	18k	800m	3.5p	PE	X156b	A	
5#	2SD601A	200m	150m	2.0m	J	60	50	7.0	100m	100n	10	2.0m	90	10u	18k	800m	3.5p	PE	X156b	A	
6#	2SD813	200m	150m	2.0m	J	25	20	7.0	500m	100n	2.0	500m	65	10u	18k	800m	6.0p	PE	X156b	A	
7#	2SD814	200m	150m	2.0m	J	150	150	5.0	50m	1.0u	5.0	10m	65	10u	18k	800m	2.3p	PE	X156b	A	
8#	2SD814A	200m	150m	2.0m	J	185	185	5.0	50m	1.0u	5.0	10m	450	10u	18k	800m	2.3p	PE	X156b	A	
9	4101	200m	150m	2.0m	J	60	45	5.0	100m	100n	5.0	1.0m	200	10u	18k	800m	3.5p	PE	T0106	A	
10	4102	200m	150m	2.0m	J	60	45	5.0	100m	100n	5.0	1.0m	200	10u	18k	800m	3.5p	PE	T0106	A	
11	4103	200m	150m	2.0m	J	50	45	5.0	100m	100n	5.0	1.0m	200	10u	18k	800m	3.5p	PE	T0106	A	
12	4104	200m	150m	2.0m	J	25	25	4.0	100m	100n	5.0	1.0m	50	10u	18k	800m	3.0p	PE	T0106	A	
13#	BC171	200m	150m	2.0m	J	45	45	5.0	100m	15n	5.0	2.0m	275	24u	3.6k	1.8	6.0p	PE	R204	A	
14#	BC172	200m	150m	2.0m	J	20	20	5.0	100m	15n	5.0	2.0m	380	36u	5.3k	2.5	6.0p	PE	R204	A	
15#	BC173	200m	150m	2.0m	J	20	20	5.0	100m	15n	5.0	2.0m	465	45u	6.6k	2.5	6.0p	PE	R204	A	
16	BC173A	200m	150m	2.0	J	60	50	5.0	100m	15n	5.0	2.0m	40	30m	4.5k		4.5p	PE	T0106	A	
17	BC182K	200m	150m	2.0	J	60	50	5.0	100m	15n	5.0	2.0m	500	30m	4.5k		5.0p	PE	T0106	A	
18	BC182KA	200m	150m	2.0	J	60	50	5.0	100m	15n	5.0	2.0m	260	30m	4.5k		5.0p	PE	T0106	A	
19	BC182KB	200m	150m	2.0	J	60	50	5.0	100m	15n	5.0	2.0m	240	30m	4.5k		5.0p	PE	T0106	A	
20	BC183K	200m	150m	2.0	J	45	30	5.0	100m	15n	5.0	2.0m	125	30m	4.5k		5.0p	PE	T0106	A	
21	BC183KA	200m	150m	2.0	J	45	30	5.0	100m	15n	5.0	2.0m	260	30m	4.5k		5.0p	PE	T0106	A	
22	BC183KB	200m	150m	2.0	J	45	30	5.0	100	15n	5.0	2.0m	500	30m	4.5k		5.0p	PE	T0106	A	
23	BC183KC	200m	150m	2.0	J	45	30	5.0	100	15n	5.0	2.0m	450	30m	4.5k		5.0p	PE	T0106	A	
24	BC184K	200m	150m	2.0	J	45	30	5.0	100	15n	5.0	2.0m	240	30m	4.5k		5.0p	PE	T0106	A	
25	BC184KB	200m	150m	2.0	J	45	30	5.0	100	15n	5.0	2.0m	500	30m	4.5k		5.0p	PE	T0106	A	
26	BC184KC	200m	150m	2.0	J	45	30	5.0	100	15n	5.0	2.0m	450	30m	4.5k		5.0p	PE	T0106	A	
27#	BCF29	200m	150m	2.0	J	-30	-20	-5	100m	100n	-5	-10u	90				8ps	PE	X156e	A	
28#	BCF29R	200m	150m	2.0	J	-30	-20	-5	100m	100n	-5	-10u	90				8ps	PE	X156e	A	
29#	BCF30	200m	150m	2.0	J	-30	-20	-5	100m	100n	-5	-10u	150				8ps	PE	X156e	A	
30#	BCF30R	200m	150m	2.0	J	-30	-20	-5	100m	100n	-5	-10u	150				8ps	PE	X156e	A	
31#	BCF70	200m	150m	2.0	J	-50	-45	-5	100m	100n	-5	-10u	150				8ps	PE	X156e	A	
32#	BCF70R	200m	150m	2.0	J	-50	-45	-5	100m	100n	-5	-10u	150				8ps	PE	X156e	A	
33#	BCW89	200m	150m	2.0	J	-60	-60	-5	100m	100n	-5	-10u	90				8ps	PE	X156e	A	
34#	BCW89R	200m	150m	2.0	J	-60	-60	-5	100m	100n	-5	-10u	90				8ps	PE	X156e	A	
35#	SG104	200m	150m	2.0	J	30	24	5	200m	25n	4.0	1.0m	30	24u	3.6k	1.8	4.0p	PE	R110	A	
36#	SG118	200m	150m	2.0	J	30	20	5.0	200m	25n	4.0	1.0m	200	24u	3.6k	1.8	4.0p	PE	R110	A	
37#	SG119	200m	150m	2.0	J	24	15	5.0	200m	25n	4.0	1.0m	400	24u	3.6k	1.8	4.0p	PE	R110	A	
38#	2SD596	200m	170m	1.6m	J				700m	100n	1.0	100m	180				13p	PE	X156h	A	
39#	2SD596DV1	200m	170m	1.6m	J				700m	100n	1.0	100m	180				13p	PE	X156h	A	
40#	2SD596DV2	200m	170m	1.6m	J				700m	100n	1.0	100m	220				13p	PE	X156h	A	
41#	2SD596DV4	200m	170m	1.6m	J				700m	100n	1.0	100m	320				13p	PE	X156h	A	
42#	2SD596DV5	200m	170m	1.6m	J				700m	100n	1.0	100m	400				13p	PE	X156h	A	
43	2SC56	200m	180m	2.1m	J	20		3.0	25m	2.0u	6.0	2.0m	80		80		2.3p	PE	R110	A	
44	2N3891	200m	200m	2.0m	J	35	20	4.0	30m	50u	10	5.0m	40				3.5p	PE	R110	A	
45	2N3892	200m	200m	2.0m	J	35	20	4.0	30m	50u	10	5.0m	100				3.5p	PE	R110	A	
46	2N3893	200m	200m	2.0m	J	45	45	4.0	30m	50u	10	10m	40				6.0p	PE	R110	A	
47	2N3894	200m	200m	2.0m	J	45	45	4.0	30m	50u	10	10m	100				6.0p	PE	R110	A	
48	2N4970†	200m	200m	2.0m	S	50	30	5.0	500m	.05u	10	150m	350				8ps	PE	T0106	A	
49	2N5132	200m	200m	2.0m	J	20	20	3.0	30m	.05u	10	10m	20				3.5p	PE	T0106	A	
50#	2SC206	200m	200m	1.3m	J	20		2.0	25m	2.0u	6.0	2.0m	35				1.5p	PE	T072	A	
51#	2SC372	200m	200m	2.0m	J	35	30	4.0	50m	500n	12	2.0m	70				2.0p	PE	R67a	B	
52#	2SC373	200m	200m	2.0m	J	35	30	4.0	50m	500n	12	2.0m	200				3.5p	PE	R67a	B	
53#	2SC373#	200m	200m	2.0m	J	35	30	4.0	50m	500n	12	2.0m	200				3.5p	PE	R67a	B	
54#	2SC394	200m	200m	2.0m	J	35	30	4.0	100m	50u	12	2.0m	25				2.0p	PE	R67a	B	
55#	2SC710	200m	200m	2.0m	J	30	25	4.0	30m	1.0u	6.0	1.0m	90				2.0p	PE	T092	B	
56#	2SC2076	200m	200m	2.0m	J	35	30	4.0	20m	1.0u	10	1.0m	80				3.5p	PE	T092	B	
58#	2SD602	200m	200m	2.0m	J	30	25	5.0	500m	100n	10	150m	60				6.0p	PE	X156b	A	
59#	2SD602A	200m	200m	2.0m	J	60	50	5.0	500m	100n	10	150m	60				6.0p	PE	X156b	A	
60#	BC118	200m	200m	2.0m	J	45	45	4.0	10u	10	5.0m	110	25u	900	1.2	3.5p	DPL	R97a	A		
61#	BC134	200m	200m	2.0m	J	45	45	4.0	100n	10	5.0m	230	35u	1.1k	1.2	3.5p	DPL	R97a	A		
62#	BC135	200m	200m	2.0m	J	45	45	5.0	.05u	10	5.0m	110	35u	800	1.2	3.5p	DPL	R97a	A		
63#	BC207	200m	200m	2.0m	J	50	45	5.0	100m	15n	5.0	2.0m	250	20u	4.0k	2.7	3.1p	PE	R110	A	
64#	BC207A	200m	200m	2.0m	J	50	45	5.0	100m	15n	5.0	2.0m	190	13u	3.0k	1.7	3.1p	PE	R110	A	
65#	BC207B	200m	200m	2.0m	J	50	45	5.0	100m	15n	5.0	2.0m	300	26u	4.8k	3.7	3.1p	PE	R110	A	
66#	BC208	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	370	30u	5.5k	3.1	3.1p	PE	R110	A	
67#	BC208A	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	190	13u	3.0k	1.7	3.1p	PE	R110	A	
68#	BC208B	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	300	26u	4.8k	2.7	3.1p	PE	R110	A	
69#	BC208C	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	500	34u	7.0k	3.8	3.1p	PE	R110	A	
70#	BC209	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	370	30u	5.5k	3.1	3.1p	PE	R110	A	
71#	BC209B	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	300	26u	4.8k	3.7	3.1p	PE	R110	A	
72#	BC209C	200m	200m	2.0m	J	25	20	5.0	100m	15n	5.0	2.0m	550	34u	7.0k	3.8	3.1p	PE	R110	A	
73#	BFS18	200m	200m	1.6m	J	30	20	5.0	30m	100n	10	1.0m	35				1.0p	PE	X156e	A	
74	BFS18R#	200m	200m	1.6m	J	30															

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	T <sub>M</sub> °C	ABS MAX RATINGS @25°C				I <sub>co</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O D E	
					V <sub>ce</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001					
1	25C454B	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	100	Δ				3.0p	E	T092	B
2	25C454C	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	160	Δ				3.0p	E	T092	B
3	25C454D	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	250	Δ				3.0p	E	T092	B
4	25C458	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	100	Δ	11u	18k	700m	1.8p	E	S8	B
5	25C458B	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	100	Δ				1.8p	E	T092	B
6	25C458C	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	160	Δ				1.8p	E	T092	B
7	25C458D	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	250	Δ				1.8p	E	T092	B
8	25C460	200m	230M	2.0m	30	30	5.0	100m	.50u	120	2.0m	35	Δ				1.5p	PE		B
9	25C461	200m	230M	2.0m	30	30	5.0	100m	.50u	120	2.0m	35	Δ				1.5p	PE		B
10	25C536	200m	230M	2.0m	40	40	5.0	100m	1.0u	6.0	1.0m	120	†				3.0p	PLΔ	R145	D
11	25C537	200m	230M	2.0m	40	40	5.0	100m	1.0u	6.0	1.0m	120	†				3.0p	PLΔ	R145	D
12	25C1335	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	160	Δ				1.8p	Et	X162a	B
13	25C1344D	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	250	Δ	12u	110k	9.5	3.5p	E	T092	B
14	25C1344E	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	400	Δ	12u	170k	14	3.5p	E	T092	B
15	25C1344F	200m	230M	2.0m	30	30	5.0	100m	500n	120	2.0m	600	Δ	13u	240k	16	3.5p	E	T092	B
16	25C1345	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	250	Δ*				1.8p	E	S8	B
17	25C1345D	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	250	Δ	12u	110k	9.5	3.5p	E	T092	B
18	25C1345E	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	400	Δ	12u	170k	14	3.5p	E	T092	B
19	25C1345F	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	600	Δ	13u	240k	16	3.5p	E	T092	B
20	25C1345KD	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	250	Δ				2.3p	E	T092	B
21	25C1345KE	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	400	Δ				2.3p	E	T092	B
22	25C1345KF	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	600	Δ				2.3p	E	T092	B
23	25C2308B	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	100	Δ				1.8p	E	T092	B
24	25C2309D	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	250	Δ				1.8p	E	T092	B
25	25C2309E	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	400	Δ				1.8p	E	T092	B
26	25C2309F	200m	230M	2.0m	55	50	5.0	100m	500n	120	2.0m	600	Δ				1.8p	E	T092	B
27	25C2778	200m	230M	2.0m	30	20	5.0	30m	100n	100	1.0m	500	†				1.3p	PE	X156	A
28	2N3291	200m	250MΔ	1.1m	25	25	3.0	50m	100n	100	2.0m	10	Δ				2.0p	∅	T072	G∅
29	2N3292	200m	250MΔ	1.1m	25	25	3.0	50m	100n	100	2.0m	10	Δ				2.0p	∅	T072	G∅
30	2N3293	200m	250MΔ	1.1m	25	20	3.0	50m	100n	100	2.0m	10	Δ				2.0p	∅	T072	G∅
31	2N3294	200m	250MΔ	1.1m	20	20	3.0	50m	.10u	100	2.0m	10	Δ				2.0p	∅	T072	G∅
32	2N4437†	200m	250MΔ	2.0m	60	30	5.0	500m	.05u	100	150m	100	†#Δ				8p	PE	R124b	A
33	2N5134†	200m	250MΔ	2.0m	20	10	3.5	100m	.40u	1.0	10m	150	†#Δ				4.0p	PE	TO106	A
34	25C380#	200m	250M	2.0m	35	30	4.0	50m	100n	120	2.0m	40	Δ*				2.0p	PE	T092	B
35	25C380A	200m	250M	2.0m	35	30	4.0	30m	100n	120	2.0m	40	Δ*				2.0p	PE	R67A	B
36	25C398	200m	250MΔ	1.6m	20	20	3.0	20m	.05u	5.0	4.0m	20	Δ				5p	PE∅	T072	G
37	25C399	200m	250MΔ	1.6m	20	20	3.0	20m	.05u	5.0	4.0m	20	Δ				5p	PE∅	T072	G
38	25C724†	200m	250M	2.0m	30	20	5.0	200m	50n	6.0	2.0m	70					4.0p	PEΔ	R195d	B
39	25C725†	200m	250M	2.0m	60	50	5.0	200m	50n	6.0	2.0m	70					4.0p	PEΔ	R195d	B
40	25C1009A	200m	250M	1.6m	50	30	5.0	50m	100n	6.0	1.0m	90	†*				1.9p	PE	X156b	A
41	25C2295	200m	250M	2.0m	30	20	5.0	30m	100n	10	1.0m	50	Δ				4.0p	PE	X156b	A
42	BSR131	200m	250MΔ	1.6m	30	30	5.0	30m	100n	10	150m	100	Δ				4.0p	PE	TO236	A
43	BSR131R†	200m	250MΔ	1.6m	30	40	5.0	30m	100n	10	150m	100	Δ				4.0p	PE	TO236	C
44	BSS66†	200m	250MΔ	1.6m	60	40	6.0	100m	50n	1.0	10m	50	Δ				4.0p	PL	X156a	A
45	BSS66#†	200m	250MΔ	1.3m	60	40	6.0	100m	50n	1.0	50m	30	Δ				4.0p	PL	X156a	B
46	BSS66R†	200m	250MΔ	1.6m	60	40	6.0	100m	50n	1.0	10m	50	Δ				4.0p	PL	X156a	C
47	BSS66R#†	200m	250MΔ	1.3m	60	40	6.0	100m	50n	1.0	50m	30	Δ				4.0p	PL	X156a	B
48	EN2222	200m	250MΔ	2.0m	60	30	5.0	800m	.05u	100	1.0m	35	Δ				8p	DPEΔ	TO106	A
49	FMMT2222†	200m	250MΔ	1.3m	60	30	5.0	800m	10n	100	1.0m	50	Δ				8.0p	PLΔ	X156d	A
50	FMMT3903†	200m	250MΔ	1.3m	60	40	6.0	200m	50n	1.0	100u	20	Δ#				8.0p	PLΔ	X156d	A
51	MPS5134†	200m	250M	5.0m	20	10	7.5	200m	400n	1.0	10m	20					4.0p	PE	T092	A
52	S03903	200m	250MΔ	1.6m	30	40	5.0	30m	100n	10	10m	50	Δ				4.0p	PE	TO236	A
53	S03903R	200m	250MΔ	1.6m	30	40	5.0	30m	100n	10	10m	50	Δ				4.0p	PE	TO236	C
54	TD2219*	200m	250MΔ	1.6m	60	30	5.0	500m	10n	100	150m	100	Δ				8.0p	PLΔ	R138	PN
55	2SD1048	200m	258M	1.6m	20	15	5	700m	0.1u	20	50m	960	†				8p	PE	S27	E
56	BFS19	200m	260M	1.6m	30	20	5.0	30m	100n	100	1.0m	65	Δ				1.0p	PE∅	X156	A
57	BFS19R#	200m	260M	1.6m	30	20	5.0	30m	100n	100	1.0m	65	Δ				1.0p	PE∅	X156	C
58	CIL194	200m	260M	1.6m	30	20	4.0	30m	100n	100	1.0m	66	Δ				950f	PE	R110e	C
59	CIL194B	200m	260M	1.6m	30	20	4.0	30m	100n	100	1.0m	111	Δ				950f	PE	R110e	C
60	SE4021	200m	260M	2.0m	45	45	8.0	50m	2.0n	100	1.0m	1.0k		74u	28k	23	2.5p	DPE∅	TO106	A
61	SE4022	200m	282MΔ	2.0m	45	30	8.0	50m	2.0n	100	1.0m	1.6k		120u	39k	33	2.5p	DPE∅	TO106	A
62	EN744†	200m	300MΔ	1.1m	30	12	3.0	200m	1.0u	25	1.0m	20	Δ				5p	DPE∅	TO106	A
63	2N2954	200m	300MΔ	1.1m	30	20	5.0	500m	.05u	100	2.0m	25	Δ				3.8	DPE∅	TO106	A
64	2N3289	200m	300MΔ	1.1m	30	15	3.0	50m	.01u	100	2.0m	10	Δ				2p	∅	T072	G∅
65	2N3290	200m	300MΔ	1.1m	30	15	3.0	50m	.01u	100	2.0m	10	Δ				2p	∅	T072	G∅
66	2N3407	200m	300MΔ	1.3m	35	18	3.0	100m	.20u	100	10m	10	Δ				2.5p	∅	R38	B
67	2N3605†	200m	300MΔ	2.6m	18	14	5.0	200m	500n	1.0	10m	30	Δ				6.0p	∅	T098	B
68	2N3606†	200m	300MΔ	2.6m	18	14	5.0	200m	500n	1.0	10m	30	Δ				6.0p	∅	T098	B
69	2N3607†	200m	300MΔ	2.6m	18	14	5.0	200m	500n	1.0	10m	30	Δ				6.0p	∅	T098	B
70	2N3985	200m	300MΔ	2.0m	30	12	3.0	30m	100n	100	0.0	15	Δ				2.2p	∅	T092	B
71	2N5126	200m	300MΔ	2.0m	20	20	3.0	30m	.05u	10	4.0m	200	Δ				1.6p	∅	TO106	B
72	BCF32	200m	300M	1.6m	20	20	0.2	0.2	0.2	0.2	2.0m	200	Δ				4.0p	∅	TO236	A
73	BCF32R	200m	300M	1.6m	20	20	0.2	0.2	0.2	0.2	2.0m	200	Δ				4.0p	∅	TO236	C
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# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE IN FREE AIR W/°C (Hz)	T M E A M X P	ABS MAX RATINGS @ 25°C					MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser	L E A O D E
					Vcbo (V)	Vceo (V)	Vebo (V)	Ic (A)	Vcb (V)		Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1 #	EN916	200m	300MΔ	2.0m	J	45	25	5.0	50m	50n	1.0	10	50	10	75u	6.0k	6.0p	PE	T0108	A
2 #	FMMT2222A1	200m	300MΔ	1.3m	SA	75	40	6.0	800m	10n	1.0	10	50	10	75u	6.0k	8.0p	PLΔ	X156d	A
3 #	FMMT39041	200m	300MΔ	1.3m	SA	60	40	6.0	200m	50n	1.0	10	100	10	75u	6.0k	8.0p	PLΔ	X156d	A
4 #	NTM2222A1	200m	300MΔ	1.6m	SJ	75	40	6.0	800m	50n	1.0	150	100	10	75u	6.0k	8.0p	EΔ	X156h	A
5 #	NTM3904	200m	300MΔ	1.6m	SJ	60	40	6.0	200m	50n	1.0	10	100	10	75u	6.0k	4.0p	E	X156h	A
6 #	SO3904	200m	300MΔ	1.6m	SJ	40	40	6.0	200m	50n	1.0	10	100	10	75u	6.0k	4.0p	E	T0236	A
7 #	SO3904R	200m	300MΔ	1.6m	SJ	40	40	6.0	200m	50n	1.0	10	100	10	75u	6.0k	4.0p	E	T0236	C
8 #	2N3287	200m	350MΔ	1.1m	SJ	40	20	3.0	50m	.01u	10	2.0	15	10	75u	6.0k	1p	∅	T072	A
9 #	2N3288	200m	350MΔ	1.1m	SJ	40	20	3.0	50m	.01u	10	2.0	15	10	75u	6.0k	2p	∅	T072	G
10 #	2N36461	200m	350MΔ	2.0m	J	40	15	5.0	200m	500n	.40	30	30	10	75u	6.0k	5.0p	∅	T072	A
11 #	2N4134	200m	350MΔ	1.1m	SJ	30	30	3.0	30m	.05u	5.0	4.0	200	10	75u	6.0k	1.2p	∅	T072	B
12 #	2SC2995	200m	350MΔ	2.0m	J	40	30	4.0	50m	100n	6.0	1.0	40	10	75u	6.0k	5.0p	E	B40	A
13 #	CIL194A	200m	350MΔ	2.0m	J	30	20	4.0	4.0	50u	1.0	1.0	200	10	75u	6.0k	950fs	R110	C	
14 #	EN30091	200m	350MΔ	2.0m	J	40	15	4.0	5.0	.50u	.40	30	30	10	75u	6.0k	5p	DPE	T0106	A
15 #	EN30131	200m	350MΔ	2.0m	J	40	15	5.0	5.0	.30u	.40	30	30	10	75u	6.0k	5p	DPE	T0106	A
16 #	EN30141	200m	350MΔ	2.0m	J	40	15	5.0	5.0	.30u	.40	30	30	10	75u	6.0k	5p	DPE	T0106	A
17 #	SE1001	200m	350MΔ	2.0m	J	45	45	4.0	4.0	.50u	1.0	10	115	10	75u	6.0k	3.5p	DPL	T0106	A
18 #	SE1002	200m	350MΔ	2.0m	J	45	45	4.0	4.0	.50u	1.0	10	115	10	75u	6.0k	3.5p	DPL	T0106	A
19 #	2SC864	200m	360MΔ	1.6m	SJ	40	30	4.0	25m	1n	10	7.0	38	10	75u	6.0k	2.3p	PE	T072	G
20 #	2N3564	200m	400MΔ	2.0m	J	30	15	4.0	100m	50n	10	15	20	10	75u	6.0k	3.5p	PE	R110	A
21 #	2N3688	200m	400MΔ	2.0m	J	40	40	4.0	30m	50u	10	4.0	30	10	75u	6.0k	1.6p	∅	R110	A
22 #	2N3689	200m	400MΔ	2.0m	J	40	40	4.0	30m	50u	10	4.0	30	10	75u	6.0k	1.6p	∅	R110	A
23 #	2N3690	200m	400MΔ	2.0m	J	40	40	4.0	30m	50u	10	4.0	30	10	75u	6.0k	1.6p	∅	R110	A
24 #	2N3984	200m	400MΔ	2.0m	SS	30	12	3.0	30m	100n	1.0	0.0	0.0	10	75u	6.0k	1.6p	∅	T092	A
25 #	2N42741	200m	400MΔ	2.0m	J	30	12	4.5	100m	100u	1.0	100	18	10	75u	6.0k	4p	∅	R110	A
26 #	2N42751	200m	400MΔ	2.0m	J	40	15	4.5	100m	100u	1.0	10	18	10	75u	6.0k	4p	∅	R110	A
27 #	2N42941	200m	400MΔ	1.6m	SS	30	12	4.5	200m	400n	1.0	10	30	10	75u	6.0k	5.0p	∅	X149	A
28 #	2SC464	200m	400MΔ	1.1m	SJ	30	12	2.0	20m	500n	6.0	1.0	40	10	75u	6.0k	850fs	PE	R103A	A
29 #	BF155Z	200m	400MΔ	1.1m	SJ	30	20	3.0	20m	20n	1.2	2.5	20	10	75u	6.0k	400ft	PE	T072	A
30 #	BF157Z	200m	400MΔ	1.1m	SJ	30	20	3.0	50m	20n	5.0	5.0	30	10	75u	6.0k	950ft	PE	T072	A
31 #	BFX18	200m	400MΔ	1.1m	SJ	35	35	4.0	4.0	50n	1.2	3.0	20	10	75u	6.0k	3.0	PL	T0118	A
32 #	BFX19	200m	400MΔ	1.1m	SJ	35	35	4.0	4.0	50n	1.2	3.0	20	10	75u	6.0k	3.0	PL	T0118	A
33 #	BFX20	200m	400MΔ	1.1m	SJ	35	35	4.0	4.0	50n	1.2	3.0	20	10	75u	6.0k	3.0	PL	T0118	A
34 #	BFX21	200m	400MΔ	1.1m	SJ	35	35	4.0	4.0	50n	1.2	3.0	20	10	75u	6.0k	3.0	PL	T0118	A
35 #	EN30111	200m	400MΔ	2.0m	J	30	30	5.0	5.0	.4u	.35	10	30	10	75u	6.0k	4p	DPE	T0106	A
36 #	MPS42741	200m	400MΔ	2.0m	J	30	12	4.5	500m	10u	1.0	10	4.0	10	75u	6.0k	4.0p	∅	T092	A
37 #	MPS42751	200m	400MΔ	2.0m	J	40	15	4.5	500m	10u	1.0	10	4.0	10	75u	6.0k	4.0p	∅	T092	A
38 #	2N4135	200m	425MΔ	1.1m	SJ	30	30	3.0	50m	.05u	5.0	4.0	200	10	75u	6.0k	1.2p	∅	T072	A
39 #	2N5140	200m	450MΔ	2.0m	J	30	12	1.0	30m	.05u	10	8.0	12	10	75u	6.0k	1.7p	∅	T0106	A
40 #	BF520	200m	450MΔ	1.6m	SJ	30	20	4.0	25m	100n	10	7.0	85	10	75u	6.0k	800fs	PE	X156	A
41 #	2N3983	200m	450MΔ	1.6m	SJ	30	20	4.0	25m	100n	10	7.0	85	10	75u	6.0k	350ft	PE	X156	A
42 #	2N42951	200m	500MΔ	2.0m	SS	30	12	3.0	30m	100n	1.0	0.0	0.0	10	75u	6.0k	1.3p	∅	T092	B
43 #	2SC384	200m	500MΔ	1.6m	SS	20	18	5.0	200m	100n	1.0	100	40	10	75u	6.0k	4.0p	PE	X149	B
44 #	2SC9341	200m	500MΔ	2.0m	J	20	15	5.0	300m	1.0u	5.0	2.0	100	10	75u	6.0k	1.2p	PE	R67a	B
45 #	2SC9342	200m	500MΔ	2.0m	J	20	15	5.0	300m	1.0u	5.0	2.0	100	10	75u	6.0k	1.2p	PE	T0104	A
46 #	BF233-2	200m	500MΔ	2.0m	J	30	30	4.0	50m	100n	1.0	1.0	40	10	75u	6.0k	500ft	PE	T0106	A
47 #	BF233-3	200m	500MΔ	2.0m	J	30	30	4.0	50m	100n	1.0	1.0	60	10	75u	6.0k	500ft	PE	T0106	A
48 #	BF233-4	200m	500MΔ	2.0m	J	30	30	4.0	50m	100n	1.0	1.0	90	10	75u	6.0k	500ft	PE	T0106	A
49 #	BF233-5	200m	500MΔ	2.0m	J	30	30	4.0	50m	100n	1.0	1.0	140	10	75u	6.0k	500ft	PE	T0106	A
50 #	D16G6	200m	500MΔ	2.6m	J	30	12	3.0	25m	500n	10	5.0	20	10	75u	6.0k	1.2p	PE	T098	B
51 #	EN2391	200m	500MΔ	2.0m	J	40	15	4.5	200m	400n	1.0	10	20	10	75u	6.0k	4.0p	∅	R110	A
52 #	EN2369A1	200m	500MΔ	2.0m	J	40	15	4.5	200m	400n	1.0	10	40	10	75u	6.0k	4.0p	DPE	T0106	A
53 #	MMCM23691	200m	500MΔ	1.1m	SJ	40	15	4.5	200m	100n	1.0	10	40	10	75u	6.0k	4.0p	AN	W10	A
54 #	NTM2369	200m	500MΔ	1.6m	SJ	40	15	4.5	200m	40u	1.0	10	40	10	75u	6.0k	4.0p	E	X156h	A
55 #	SG7691	200m	500MΔ	1.6m	SJ	40	15	4.5	200m	400n	1.0	10	40	10	75u	6.0k	4.0p	∅	R110	A
56 #	SO23691	200m	500MΔ	1.6m	SJ	15	15	4.5	200m	400n	1.0	10	40	10	75u	6.0k	4.0p	∅	T0236	A
57 #	SO2369R1	200m	500MΔ	1.6m	SJ	15	15	4.5	200m	400n	1.0	10	40	10	75u	6.0k	4.0p	∅	T0236	C
58 #	2SC805-B	200m	530MΔ	2.0m	J	30	30	4.0	20m	20u	10	3.0	100	10	75u	6.0k	55p	∅	XXXXX	C
59 #	2SC806-B	200m	530MΔ	2.0m	J	30	30	4.0	20m	20u	10	3.0	100	10	75u	6.0k	55p	∅	XXXXX	C
60 #	ST2130	200m	550MΔ	1.1m	SJ	25	12	2.0	20m	500n	3.0	3.0	20	10	75u	6.0k	2.0p	PE	T072	G
61 #	BF562	200m	580MΔ	1.5m	SJ	40	25	4.0	25m	10u	2.0	2.0	15	10	75u	6.0k	330ft	PE	T072	J
62 #	BF562Z	200m	580MΔ	1.5m	SJ	40	25	4.0												



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX COLL. DISS. @ 25°C (W)	DERATE IN FREE AIR W/°C (Hz)	M E A M P	ABS MAX RATINGS @ 25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E			
					BVcbo (V)	BVceo (V)	BVcbo (V)	Ic (A)		BIAS									
					hfe	hoe (mhos)	hie (Ω)	hre (X.0001)											
1#	ZSC2467	200m	900mΔ	2.0m	Δ J	30	20	3.0	50m	500n	10	10m	30	Δ	450f	E	R242	GD	
2#	ZSC2468	200m	900mΔ	2.0m	Δ J	30	20	3.0	50m	100n	10	10m	40	Δ	1.5p	PE	R242	AJ	
3#	ZSC2804	200m	900mΔ	2.0m	Δ J	25	20	3.0	20m	100n	10	20m	25	Δ					
4#	BFX73	200m	900mΔ	1.1m	Δ S	30	15	3.0	50m	10n	1.0	3.0	50	Δ	1.0p	DPE	∅	TO72	G
5#	MMBR5179	200m	900mΔ	2.0m	Δ S	20	12	2.5	20m	10n	1.0	3.0	25	Δ	1.0p	DPL	∅	X156d	
6#	SE3001	200m	900mΔ	2.0m	Δ J	30	12	2.0	50m	50n	10	8.0m	50	Δ	1.7p	DPL	∅	TO106	
7#	SE3002	200m	900mΔ	2.0m	Δ J	30	12	2.0	50m	50n	10	8.0m	50	Δ	1.7p	DPL	∅	TO106	
8#	ST2110	200m	950mΔ	1.1m	Δ S	25	12	2.0	30m	50n	5.0	8.0m	20	Δ	2.0p	PE	∅	TO18	A∅
9#	2N3681	200m	1.0GΔ	1.1m	Δ S	10	7.0	2.0	25m	50n	6.0	2.0m	20	Δ	7p	PE	∅	TO72	G
10#	2N3683	200m	1.0GΔ	1.1m	Δ S	30	12	2.0	30m	50n	10	8.0m	30	Δ	2.0p	PE	∅	TO72	G
11#	2N6389	200m	1.0GΔ	1.1m	Δ S	20	12	2.5	40m	20n	1.0	3.0m	25	Δ	550f	PE	∅	TO72	G
12#	2SC611	200m	1.0GΔ	1.6m	Δ S	20	15	∅	30m	20m	1.0	2.0m	80		2p	PE	∅	TO72	G
13#	40294	200m	1.0GΔ	1.1m	Δ S	30	15	2.5	40m	0.1u	1.0	3.0m	150	Δ	1p	DPE	∅	TO72	G
14#	40517	200m	1.0GΔ	1.1m	Δ S	30	15	2.5	40m	0.1u	6.0	2.0m	50	Δ	1.5p	PE	∅	TO72	G
15#	40518	200m	1.0GΔ	1.1m	Δ S	30	15	2.5	40m	0.1u	6.0	2.0m	50	Δ	1.5p	PE	∅	TO72	G
16#	A490	200m	1.0GΔ	1.1m	Δ S	30	15	2.5	25m	10n	1.0	15m	20	Δ	1.5p	PE	∅	TO72	G
17#	BF689	200m	1.0GΔ	1.4m	Δ S	25	15	2.5	25m	10n	1.0	2.0m	20	Δ	1.7p	PE*	∅	TO72	G
18#	K2115	200m	1.0GΔ	1.1m	Δ S	30	15	2.5	25m	10n	1.0	3.0m	30	Δ	1.0p	PE*	∅	TO72	G
19#	MM8006	200m	1.0GΔ	1.1m	Δ S	15	10	3.0	20m	10n	6.0	1.0m	25	Δ	1.1p	∅	∅	TO72	G
20#	MM8007	200m	1.0GΔ	1.1m	Δ S	15	10	3.0	20m	10n	6.0	1.0m	25	Δ	1.1p	∅	∅	TO72	G
21#	MMBR5031	200m	1.0GΔ	2.0m	Δ S	15	10	3.0	20m	10n	6.0	1.0m	25	Δ	700f	∅	∅	X156d	A
22#	SE5035	200m	1.0GΔ	1.3m	Δ A	40	30	Δ	4.0	50n	10	5.0m	80	Δ	220f	DPE	∅	TO72	J
23#	SO3572	200m	1.0GΔ	1.6m	Δ S	13	13	Δ							85p	∅	∅	TO236	A
24#	SO3572R	200m	1.0GΔ	1.6m	Δ S	13	13	Δ							85p	∅	∅	TO236	A
25#	ST2120	200m	1.0GΔ	1.1m	Δ S	30	15	4.0	50m	5.0n	1.0	3.0m	50	Δ	1.7p	PE	∅	TO72	G
26#	ZTX325	200m	1.0GΔ	1.3m	Δ S	30	15	2.5	50m	10n	1.0	2.0m	25	Δ	1.0p	PL	∅	X59	F
27#	ZTX325K	200m	1.0GΔ	1.3m	Δ S	30	15	2.5	50m	10n	1.0	2.0m	25	Δ	1.0p	PL	∅	B58	A
28#	ZTX325L	200m	1.0GΔ	1.3m	Δ S	30	15	2.5	50m	10n	1.0	2.0m	25	Δ	1.0p	PL	∅	B58	A
29#	ZTX325M	200m	1.0GΔ	1.3m	Δ S	30	15	2.5	50m	10n	1.0	2.0m	25	Δ	1.0p	PL	∅	B58	A
30#	ZTX326	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	20	Δ	0.9p	PL	∅	B58	A
31#	ZTX326A	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	100	Δ	0.9p	PL	∅	B58	A
32#	ZTX326AK	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	100	Δ	0.9p	PL	∅	B58	A
33#	ZTX326AL	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	100	Δ	0.9p	PL	∅	B58	A
34#	ZTX326AM	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	100	Δ	0.9p	PL	∅	B58	A
35#	ZTX326K	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	20	Δ	0.9p	PL	∅	B58	A
36#	ZTX326L	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	20	Δ	0.9p	PL	∅	B58	A
37#	ZTX326M	200m	1.0GΔ	1.3m	Δ S	25	12	2.5	50m	1.0u	1.0	2.0m	20	Δ	0.9p	PL	∅	B58	A
38#	2SC313	200m	1.1GΔ	1.2m	Δ S	30	19	2.0	50m	50n	10	10m	40	Δ	1.0p	PE	∅	R92b	B
39#	2SC684	200m	1.1GΔ	2.0m	Δ J	30	19	2.0	50m	50n	10	10m	40	Δ	2.0p	PE	∅	X162a	B
40#	2SC2360	200m	1.1GΔ	1.1m	Δ S	30	30	3	20m	1.0u	10	3m	20	Δ	95p	PL	∅	R246	Δ
41#	2N2708	200m	1.2GΔ	1.1m	Δ S	35	20	3.0	0.1u	15	2.0m	180	Δ	1p	∅	∅	TO72	G	
42#	2N3880	200m	1.2GΔ	1.1m	Δ S	30	15	2.5	0.05u	6.0	3.0m	50	Δ	75p	∅	∅	TO72	G	
43#	2SC809	200m	1.2GΔ	1.6m	Δ S	25	13	3.0	20m	100n	6.0	2.0m	90		1.4p	PE	∅	TO72	G∅
44#	2SC1215	200m	1.2GΔ	2.0m	Δ J	30	20	3.0	50m	100u	10	2.0m	25	Δ	1.0p	PE	∅	TO92	B
45#	2SC2646	200m	1.2GΔ	2.0m	Δ J	30	20	3.0	50m	100u	10	2.0m	25	Δ	1.5p	PE	∅	S9	B
46#	40295	200m	1.2GΔ	1.1m	Δ S	35	20	3.0	40m	0.1u	2.0	2.0m	200	Δ	1p	PE	∅	TO72	G
47#	BFX89	200m	1.2GΔ	1.1m	Δ S	30	15	2.5	50m	10n	1	2m	25	Δ	850n	∅	∅	TO72	G
48#	SO3571	200m	1.2GΔ	1.6m	Δ S	15	15	Δ							85p	∅	∅	TO236	A
49#	SO3571R	200m	1.2GΔ	1.6m	Δ S	15	15	Δ							85p	∅	∅	TO236	A
50#	2N3953	200m	1.3GΔ	1.1m	Δ S	15	10	2.5	30m	10u	6.0	2.0m	40	Δ	1.8p	∅	∅	TO72	G
51#	2N5024	200m	1.3GΔ	1.1m	Δ S	20	10	4.0	15m	10u	1.0	10m	25	Δ	1.5p	∅	∅	TO72	G
52#	2N5053	200m	1.3GΔ	1.1m	Δ S	30	15	3.0	25m	0.1u	5.0	2.0m	25	Δ	1p	∅	∅	TO72	G∅
53#	2SC288A5-B	200m	1.3GΔ	2.0m	Δ J	30	15	4.0	20m	20u	10	5.0m	100	Δ	80p	E	PE	XXXX	C
54#	2SC568	200m	1.3GΔ	2.0m	Δ J	30	15	∅	20m	50u	6.0	2.0m	80		65p	E	PE	TO72	J
55#	2SC583	200m	1.3GΔ	1.3m	Δ S	30	15	2.5	25m	10n	1.0	2.0m	25	Δ	800f	PE	∅	TO72	G
56#	2SC2729	200m	1.3GΔ	2m	Δ J	15	10	3	50m	500n	4	5m	20	Δ	340f	E	∅	W168	Y
57#	BFY90	200m	1.3GΔ	1.1m	Δ S	30	15	2.5	50m	10n	1	2m	25	Δ	850n	E	∅	TO72	G
58#	2SC653	200m	1.4GΔ	1.6m	Δ S	25	13	3.0	20m	100n	6.0	2.0m	120		600f	E	∅	TO72	G
59#	2N5054	200m	1.5GΔ	1.1m	Δ S	30	15	3.0	25m	0.1u	5.0	2.0m	25	Δ	1p	∅	∅	TO72	G
60#	SD1300	200m	1.5GΔ	1.1m	Δ S	30	15	3.5	50m	100n	10	10m	30	Δ	1.8p	∅	∅	TO72	G
61#	SO3570	200m	1.5GΔ	1.6m	Δ S	15	15	Δ							75p	∅	∅	TO236	A
62#	SO3570R	200m	1.5GΔ	1.6m	Δ S	15	15	Δ							75p	∅	∅	TO236	A
63#	2N4934	200m	1.6GΔ	1.1m	Δ S	40	30	3.0	0.1u	8.0	2.0m	170	Δ	25p	∅	∅	TO104	J	
64#	2N4935	200m	1.6GΔ	1.1m	Δ S	50	40	3.0	0.1u	8.0	2.0m	200	Δ	25p	∅	∅	TO104	J	
65#	2N4936	200m	1.6GΔ	1.1m	Δ S	50	40	3.0	0.1u	8.0	2.0m	250	Δ	25p	∅	∅	TO104	J	
66#	2SC1789	200m	1.6GΔ	2.0m	Δ J	25	18	3.0	50m	10n	1.0	2.0m	20	Δ	1.0p	PE	∅	TO92	B
67#	BT3960	200m	1.6GΔ	1.1m	Δ S	20	12												

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	T M A M X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (V)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # s/a TO200 Ser.	L C O D E		
					V <sub>bc0</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ve0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)						
1	MMT930	225m	60MΔ	2.0m	TJ	60	45	6.0	50m	10n	5.0	1.0m	150	Δ				W6	C		
2	MMT2484	225m	60MΔ	2.0m	TJ	60	60	6.0	50m	10n	5.0	1.0m	250	Δ			ANT	W6	C		
3	PET8005	225m	200MΔ	2.3m	†J	30	30	4.0	100m	.05u	1.0	2.0m	30	Δ			PL	R110	A		
4	PET8006	225m	200MΔ	2.3m	†J	30	30	4.0	100m	.05u	1.0	2.0m	55	Δ			PL	R110	A		
5	PET8007	225m	200MΔ	2.3m	†J	30	30	4.0	100m	.05u	1.0	2.0m	100	Δ			PL	R110	A		
6	MMT3903	225m	250MΔ	1.8m	†J	60	40	6.0	200m	50n	1.0	1.0m	50	†Δ			AN	W6a	A		
7	MMT3904	225m	300MΔ	1.8m	†J	60	40	6.0	200m	50n	1.0	1.0m	100	†Δ			AN	W6a	C		
8	MMT2222†	225m	340MΔ	1.8m	†J	60	30	*	300m	50n	1.0	1.0	50	†Δ			AN	W6a	C		
9	MMT3014†	225m	350MΔ	2.0m	TJ	40	20		200m	100n	4.0	3.0m	50	†Δ			AN	W6	C		
10	MMT72†	225m	400MΔ	2.0m	TJ	10	10		200m	10n	2.0	1.0m	30	†Δ			AN	W6	C		
11	MMT2369†	225m	500MΔ	2.0m	TJ	40	15		200m	100n	1.0	1.0m	40	†Δ			AN	W6	C		
12	MMT918	225m	600MΔ	2.0m	TJ	30	15		50m	0.1u	1.0	3.0m	20	†Δ			AN	W6	C		
13	MMT74	225m	1.0GΔ	2.0m	TJ	20	12		40m	100n	1.0	3.0m	25	†Δ			AN	W6	C		
14	MMT3960†	225m	2.0GΔ	2.0m	TJ	5.0	3.0		3.0	100n	1.0	1.0m	100	†Δ			AN	W6	C		
15	MMT3960A†	225m	2.0GΔ	2.0m	TJ	15	8.0		3.0	50n	1.0	1.0m	30	†Δ			AN	W6	C		
16	MMT806	225m	2.1GΔ	2.0m	TJ	8.0	5.0		5.0	10n	1.0	1.0u	150	†			AN	W6	C		
17	MMT807	225m	2.1GΔ	2.0m	TJ	8.0	5.0		5.0	10n	1.0	1.0u	125	†			AN	W6	C		
18#	BF208#	230m	350MΔ	2.0m	†J	40	25		4.0	25	1.0	7.0m	40	Δ			PE	T072	A		
19#	BC413†	240m	250MΔ	3.0m	†J	45	30		100m	5.0	2.0m	240	Δ				PE	R204d	A		
20#	BC414†	240m	250MΔ	3.0m	†J	50	45		100m	5.0	2.0m	240	Δ				PE	R204d	A		
21#	BFW70	240m	750MΔ	1.6m	†J	30	30		4.0	100	1.0	1.0m	75	†			3p	†			
22#	BFW70†	240m	750MΔ	1.6m	†J	30	30		4.0	100	1.0	1.0m	30	†Δ			1.6p	†			
23#	25C812†	250m		2.0m	†J	20	20	∅	4.0	100m	500n	1.0	1.0m	50	†		PE	∅	T072		
24#	25C828	250m		2.5m	†J	30	30		5.0	50m	5.0	2.0m	65	†Δ			PE	∅	T018		
25#	25C828A	250m		2.5m	†J	45	45		5.0	50m	5.0	2.0m	65	†Δ			PE	∅	T092		
26	25C1222	250m				60	50	∅		100m	3.0	500u	500	†					T092		
27	25C1399	250m				100	80	∅		50m	3.0	500u	600	†					T092		
28	25C1400	250m				100	80	∅		50m	3.0	500u	600	†					T092		
29	25C1674	250m				50	30	∅		30m	6.0	1.0m	90	†					T092		
30	25C1675	250m				50	30	∅		30m	6.0	1.0m	90	†					T092		
31#	25C2263	250m		2.5m	†J	60	55		5.0	50m	100n	5.0	2.0m	180	†Δ			PE	T092	B	
32#	25D227	250m		2.5m	†J	30	15		5.0	300m	100n	1.0	50	†*					R182b	B	
33#	25D327	250m		2.5m	†J	40	20		5.0	500m	200n	1.0	100m	140	†*				R182b	B	
34#	BC121	250m		1.0m	†J	5.0	5.0		5.0	75m	10n	2.0	250u	900	†*			11	PE	X151	D
35#	BC254	250m		2.0m	†S	100	55		6.0	30m	100n	5.0	1.0m	45	†			PE	T092	B	
36#	KT3102A	250m		2.5m	†A	50	50		5.0	100m	50n	5.0	1.0	100	†Δ			6.0p	†	R216c	A
37#	KT3102B	250m		2.5m	†A	50	50		4.0	100m	50n	5.0	1.0	200	†Δ			6.0p	†	R216c	A
38#	KT3102D	250m		2.5m	†A	30	30		4.0	100m	50n	5.0	1.0	200	†Δ			6.0p	†	R216c	A
39#	KT3102E	250m		2.5m	†A	20	20		4.0	100m	50n	5.0	1.0	400	†Δ			6.0p	†	R216c	A
40#	KT3102G	250m		2.5m	†A	20	20		4.0	100m	50n	5.0	1.0	400	†Δ			6.0p	†	R216c	A
41#	KT3102V	250m		2.5m	†A	30	20		4.0	100m	50n	5.0	1.0	200	†Δ			6.0p	†	R216c	A
42	6001	250m	200mΔ			40	30		5.0	500m	1.0	5.0m	30	†Δ				10p	†	T0106	A
43	6002	250m	200mΔ			40	30		5.0	500m	1.0	5.0m	75	†Δ				10p	†	T0106	A
44	2N619	250m	200kΔ		†S	50	40		3.0	50m	100n	1.5	5.0m	9.0	†Δ			22p	†	T05	A
45	2N1074	250m	20M		†S	50	20		5.0	50m	1.0	5.0m	14					65p			A
46	2N1077	250m	200kΔ		†S	50	35		2.0	50m	1.0u	6.0	1.0m	9.0	†Δ			20u	†	3.5k	†
47	2N620	250m	250kΔ		†S	50	35		3.0	50m	100n	1.5	5.0m	18	†Δ			22p	†	T05	A
48	2N621	250m	300kΔ		†S	50	30		3.0	50m	100n	1.5	5.0m	36	†Δ			22p	†	T05	A
49	2N1075	250m	30M		†S	50	20		5.0	50m	1.0	5.0m	25					65p			A
50	2N1076	250m	40M		†S	50	20		5.0	50m	1.0	5.0m	50					65p			A
51	TIS108	250m	3.5MΔ		†S	40	30	†*	4.0	50m	50n	1.0	4.0m	25	†Δ			400f	†	R203	C
52	2N339A	250m	10MΔ		†S	60	60		3.0	150m	200u	5.0	1.0m	15	†Δ			2.0u	†	3.0	†
53	2N340A	250m	10MΔ		†S	85	85		3.0	150m	200u	5.0	1.0m	15	†Δ			2.0u	†	3.0	†
54	2N341A	250m	10MΔ		†S	125	125		3.0	150m	200u	5.0	1.0m	15	†Δ			2.0u	†	3.0	†
55	CK419	250m	10.0MΔ		†J	50	40		5.0	50m	1.0u	1.5	5.0m	15	†			5.0p		PDA	†
56	CK420	250m	10.0MΔ		†J	50	35		5.0	50m	1.0u	1.5	5.0m	30	†			5.0p		PDA	†
57	CK421	250m	10.0MΔ		†J	50	30		5.0	50m	1.0u	1.5	5.0m	60	†			5.0p		PDA	†
58	CK422	250m	10.0MΔ		†J	50	35		5.0	50m	1.0u	1.5	5.0m	25	†			10p		PDA	†
59	CK474	250m	10.0MΔ		†J	50	40		5.0	50m	1.0u	5.0	5.0m	15				7.5u		1.0k	†
60	CK475	250m	10.0MΔ		†J	50	35		5.0	50m	1.0u	5.0	5.0m	28				10u		1.7k	†
61	CK476	250m	10.0MΔ		†J	50	30		5.0	50m	1.0u	5.0	5.0m	60				15u		1.7k	†
62	CK477	250m	10.0MΔ		†J	50	35		5.0	50m	1.0u	5.0	5.0m	25				10u		2.5k	†
63#	25C1637	250m	20MΔ		†J	50	25		2.0	20m	20n	3.0	1.0m	200	†			7.0p		∅	X153
64	2N3043*	250m	30MΔ		†S	45	45		5.0	30m	10n	5.0	1.0m	130	†Δ			100u	†	19k	†
65	2N3044*	250m	30MΔ		†S	45	45		5.0	30m	10n	5.0	1.0m	130	†Δ			100u	†	19k	†
66	2N3045	250m	30MΔ		†S	45	45		5.0	30m	10n	5.0	1.0m	130	†Δ			100u	†	19k	†
67	2N3046*	250m	30MΔ		†S	45	45		5.0	30m	10n	5.0	1.0m	65	†Δ			70u	†	13k	†
68	2N3047*	250m	30MΔ		†S	45	45		5.0	30m	10n	5.0	1.0m	65	†Δ			70u	†	13k	†
69	2N3048	250m	30MΔ		†S	45	45		5.0	30m	10n	5.0	1.0m	65	†Δ			70u	†	13k	†
70	2N4286	250m	40MΔ		†S	30	25		6.0	100m	50n	5.0	1.0m	60	†Δ			10u	†	4.0	†
71	2N4287	250m	40MΔ		†S	45	45		7.0	100m	10n	5.0	1.0m	60	†Δ			10u	†	4.0	†
72	2N2981*	250m	50MΔ		†J	100	60		7.0	500m	.01u	5.0	1.0m	40	†Δ			30u	†	6k	†
73	2N2982*	250m	50MΔ		†J	100	60		7.0	500m	.01u	5.0	1.0m	40	†Δ			30u	†	6k	†
74	2N2972	250m	60MΔ		†J	45	45		6.0	30m	10n	5.0	1.0u	60	†Δ			1.0u	†	32	†
75	2N2973	250m	60MΔ		†J	45	45		6.0	30m	10n	5.0	1.0u	150	†Δ			1.0u	†	32	†
76	2N2974*	250m	60MΔ		†J	45	45		6.0	30m	10n	5.0	1.0u	60	†Δ			1.0u	†	32	†
77	2N2975*	250m	60MΔ		†J	45	45		6.0	30m	10n	5.0	1.0u								



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @ 25°C (W)	2] fab (Hz)	DERATE IN FREE AIR W/°C	T M A M P X	ABS MAX RATINGS @ 25°C			MAX. lcbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser	# L E O A D E
						V] BVcbo (V)	W] BVceo (V)	X] BVebo (V)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	6003	250m	150MΔ			25	25	4.0	500m	5.0	10m	30	1Δ			2.5p	TO106	A	
2	K97	250m	150MΔ			20	20	5.0	50m	5.0	1.0m	29	Δ		6.0p	TO92	A		
3	NFC069	250m	150MΔ	2.5m	SS	50	40	4.0	100m	6.0	1.0m	40	Δ		1.2p	TO42	A		
4	MRF526	250m	175MΔ	2.5m	SS	25	14	3.5	1m	7.5	2.0m	40	Δ		3.5p	TO18	A		
5	2N957	250m	200MΔ	2.0m	SJ	40	20	5.0	100m	5.0	1.0m	45	1#Δ		8.0p	TO92	A		
6	2N3052T	250m	200MΔ	1.6m	SS	35	15	5.0	200m	25n	1.0	10m	25	Δ	8.0p	TO92	A		
7	2N3825	250m	200MΔ	2.5m	SS	30	15	4.0	100m	100n	1.0	2.0m	20	Δ	3.5p	TO92	A		
8	2SC123	250m	200MΔ	1.7m	SJ	40	25	1.0	25m	1.0	1.0m	140			4.0p	TO39	A		
9	2SC395At	250m	200MΔ	2.0m	SJ	20	12	5.0	400m	1.0	1.0m	80	†		7.0p	TO18	A		
10	2SC714T	250m	200MΔ	2.5m	†J	70	40	5.0	200m	1.0	1.0m	80	†		7.0p	TO92	A		
11	2SC815	250m	200MΔ	2.5m	†J	60	45	5.0	200m	1.0	1.0m	80	†		5.5p	R182b	A		
12	2SC844T	250m	200MΔ	2.5m	†J	60	40	8.0	100m	1.0	2.0m	80	†		3.0p	TO92	A		
13	2SC863	250m	200MΔ	1.6m	†J	35	25	4.0	50m	2.0	1.0m	100		50	1.2p	R196f	A		
14	2SC209	250m	200MΔ		†J	35	35	3.0	100m	200n	3.0	1.0m	137	†	1.2p	TO92	A		
15	BF165C	250m	200MΔ			30	20	5.0	30m		1.0	1.0m	70	†	950ft	XXXXX	A		
16	BF195D	250m	200MΔ			30	20	5.0	30m		1.0	1.0m	30	†	950ft	XXXXX	A		
17	2SC2519	250m	230MΔ	2.5m	†J	30	20	5.0	30m		1.0	1.0m	50	†	1.3p	TO92	A		
18	2SC2647	250m	230MΔ	2.3m	†J	30	20	5.0	30m		1.0	1.0m	50	†	1.3p	B37	D		
19	2SC105	250m	250MΔ	1.7m	†J	30	20	5.0	80m	5n	1.0	1.0m	80	†	4.0p	TO18	A		
20	2SC323	250m	250MΔ	1.7m	†J	40	20	5.0	100m	1.0	1.0m	80	†		4.0p	TO18	A		
21	2SC619T	250m	250MΔ	2.5m	†J	30	25	5.0	200m	1.0	1.0m	110	†		7.0p	TO92	A		
22	2SC620	250m	250MΔ	2.5m	†J	50	30	5.0	200m	1.0	1.0m	90	†		7.0p	TO92	A		
23	2SC773	250m	250MΔ	2.5m	†J	50	30	5.0	200m	1.0	1.0m	35	†		7.0p	TO92	A		
24	2SC838	250m	250MΔ	2.5m	†J	50	25	5.0	30m	200n	3.0	500u	75	†	1.8p	TO92	A		
25	2SC839	250m	250MΔ	2.5m	†J	50	25	5.0	30m	100n	3.0	500u	100	†	2.0p	R182b	A		
26	2SC823#	250m	250MΔ	2.5m	†J	50	35	5.0	50m	3.0	500u	100	†		2.0p	TO92	A		
27	2SC445T	250m	250MΔ	2.5m	†J	60	40	8.0	100m	1.0	2.0m	180	†		2.2p	TO92	A		
28	2SC945	250m	250MΔ	2.5m	†J	60	50	5.0	100m	100n	6.0	1.0m	200	†	3.5p	R182b	A		
29	2SC945L	250m	250MΔ	2.5m	†J	60	50	5.0	100m	100n	6.0	1.0m	200	†	3.5p	TO92	A		
30	2SC2378	250m	250MΔ	2.5m	†J	70	70	100m	100n	6.0	1.0m	185	†		3.0p	TO92	A		
31	2SC2561	250m	250MΔ	2.5m	†J	30	20	3.0m	100n	2.0	1.0m	220	†		0.9p	TO92	A		
32	2SD1012	250m	250MΔ		†J	20	15	7.0	50m	1.0	2.0	400	†		8.0p	S9	B		
33	6101	250m	250MΔ			70	50	6.0	500m		1.0	150	40	Δ	8.0p	TO106	A		
34	6102	250m	250MΔ			60	45	6.0	500m		1.0	150	40	Δ	8.0p	TO106	A		
35	BC122	250m	250MΔ	1.0m	SJ	30	20	5.0	75m	10n	5.0	250u	150	†	7.0p	X151	D		
36	BC123	250m	250MΔ	1.0m	SJ	45	30	5.0	75m	10n	5.0	250u	150	†	7.0p	X151	D		
37	BC413	250m	250MΔ	2.5m	†J	45	30	5.0	100m	15n	5.0	2.0m	240	†	2.5p	TO106	A		
38	BC414	250m	250MΔ	2.5m	†J	45	45	5.0	100m	15n	5.0	2.0m	240	†	2.5p	TO106	A		
39	K918	250m	250MΔ			12			50m		5.0	1.0m	29	†	1.7p	TO92	A		
40	KT379A	250m	250MΔ		#A	30	†	5.0	30m	05u	5.0	1.0m	250	†	8.0p	TO92	A		
41	KT379G	250m	250MΔ		#A	60	†	3.0m	30m	05u	5.0	1.0m	125	†	8.0p	TO92	A		
42	SO2221T	250m	250MΔ		SJ	40	†	0.8	150m		5.0	150m	40	†	8.0p	TO236	A		
43	SO2221At	250m	250MΔ		SJ	40	†	0.8	150m		5.0	150m	40	†	8.0p	TO236	A		
44	SO2221Rt	250m	250MΔ		SJ	40	†	0.8	150m		5.0	150m	40	†	8.0p	TO236	A		
45	SO2222T	250m	250MΔ		SJ	40	†	0.8	150m		5.0	100	40	†	8.0p	TO236	A		
46	SO2222Rt	250m	250MΔ		SJ	40	†	0.8	150m		5.0	100	40	†	8.0p	TO236	A		
47	BF194A	250m	260MΔ	2.0m	†J	30	20	5.0	30m		10	1.0m	200	†	950ft	XXXXX	A		
48	BF194B	250m	260MΔ			30	20	5.0	30m		10	1.0m	100	†	950ft	XXXXX	A		
49	BF594	250m	260MΔ	2.0m	SS	35	25	5.0	30m		10	1.0m	65	†	600ft	R203c	C		
50	BF595	250m	260MΔ	2.0m	SS	35	25	5.0	30m		10	1.0m	35	†	600ft	R203c	C		
51	2SC400T	250m	300MΔ	1.0m	SJ	30	18	5.0	100m	50u	10	1.0m	30	†	4.0p	TO18	A		
52	2SC1359	250m	300MΔ	2.5m	†J	30	20	5.0	100m	100n	1.0	1.0	220	†	900ft	TO92	A		
53	BC407	250m	300MΔ	2.5m	†J	50	45	8.0	100m	15u	5.0	2.0m	110	†	2.5p	TO106	A		
54	BC407A	250m	300MΔ	2.5m	†J	50	45	8.0	100m	15u	5.0	2.0m	220	†	2.5p	TO106	A		
55	BC407B	250m	300MΔ	2.5m	†J	50	45	8.0	100m	15u	5.0	2.0m	330	†	2.5p	TO106	A		
56	BC408	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	110	†	2.5p	TO106	A		
57	BC408A	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	220	†	2.5p	TO106	A		
58	BC408B	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	330	†	2.5p	TO106	A		
59	BC408C	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	600	†	2.5p	TO106	A		
60	BC409	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	200	†	2.5p	TO106	A		
61	BC409B	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	330	†	2.5p	TO106	A		
62	BC409C	250m	300MΔ	2.5m	†J	30	20	5.0	100m	15u	5.0	2.0m	600	†	2.5p	TO106	A		
63	KT379B	250m	300MΔ		#A	25	†	3.0m	05u	5.0	1.0m	500	†	8.0p	TO92	A			
64	KT379V	250m	300MΔ		#A	10	†	3.0m	05u	5.0	1.0m	1.0k	†	8.0p	TO92	A			
65	SE5025	250m	300MΔ	2.5m	†J	30	30	3.0	30m	05u	5.0	1.0m	35	†	8.0p	TO92	A		
66	SO2222At	250m	300MΔ		SJ	40	†	0.8	150m		5.0	100	40	†	8.0p	R97e	A		
67	TIS64	250m	300MΔ	2.0m	SJ	30	12	3.0	30m	10u	10	4.0m	20	†	2p	R203	A		
68	SC107	250m	330MΔ	2.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	120	†	4.5p	X149	B		
69	SC107A	250m	330MΔ	2.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	110	†	4.5p	X149	B		
70	SC107B	250m	330MΔ	2.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	200	†	4.5p	X149	B		
71	SC108	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	120	†	4.5p	X149	B		
72	SC108A	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	110	†	4.5p	X149	B		
73	SC108B	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	200	†	4.5p	X149	B		
74	SC108C	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	420	†	4.5p	X149	B		
75	SC109	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	220	†	4.5p	X149	B		
76	SC109B	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	200	†	4.5p	X149	B		
77	SC109C	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	420	†	4.5p	X149	B		
78	SC147	250m	330MΔ	2.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	120	†	4.5p	X149	A		
79	SC147A	250m	330MΔ	2.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	110	†	4.5p	X149	A		
80	SC147B	250m	330MΔ	2.0m	SJ	50	45	5.0	100m	15n	5.0	2.0m	200	†	4.5p	X149	A		
81	SC148	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	120	†	4.5p	X149	A		
82	SC148A	250m	330MΔ	2.0m	SJ	30	20	5.0	100m	15n	5.0	2.0m	110	†	4.5p	X149	A		
83	SC148B	250m	330MΔ	2.0m	SJ	30	20	5.0											

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	T ABS MAX RATINGS @25°C						TYPICAL h' PARAMETERS						Cob (F)	STRUC-TURE	DWG #/s/a TO200 Ser.	L C E O A D E
				M A M P X	BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	Icbo @MAX Vcb (A)	BIAS			COMMON EMITTER						
										Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	2N4255	250m	600MΔ	2.0m	SS	30	18	4.0	50m	10uΩ	100	2.0mΩ	30	Δ	.7p	T092	B		
2	2N4996	250m	600MΔ	2.0m	SS	30	18	4.0	50m	10uΩ	100	2.0mΩ	50	Δ	.7p	R203	A		
3	2N4997	250m	600MΔ	2.0m	SS	30	18	4.0	50m	10uΩ	100	2.0mΩ	30	Δ	.7p	R203	A		
4#	2SC2349	250m	600MΔ	2.5m	J	30	15	3.0	50m	100nΩ	3.0	8.0mΩ	20	Δ	1.2p	T092	B		
5#	BF562	250m*	600MΔ	2.4m	J	30	20	3.0	20m	20m	100	3.0mΩ	20	Δ	650ft	E PL	T092		
6#	FP50801	250m	600MΔ	2.5m	J	15	13	3.0	20m	50n	5.0	1.0mΩ	70	↑	1.5p	PE	T092		
7#	2SC2347	250m	650MΔ	2.5m	J	30	15	3.0	50m	100nΩ	3.0	8.0mΩ	20	Δ	1.2p	E	T092		
8	TIS84	250m	650MΔ	2.0m	SS	40	30	4.0	50m	50nΩ	100	4.0mΩ	30	Δ	1.5p	PE	R203		
9#	2SC1394	250m	700MΔ	2.5m	J	30	30	5.0	20m	100nΩ	100	2.0mΩ	90	Δ*	350ft	E PE	R182b		
10#	MMT5031A	250m	750MΔ	2m	J	20	14	4	20m	50n	100	1.5mΩ	20	Δ	1p	W6a	C		
11	TIS129	250m	800MΔ	2.0m	SS	40	25	4.0	30m	100nΩ	100	4.0mΩ	60	Δ	800f	R203	C		
12#	2SC1188	250m	850MΔ	2.5m	J	40	30	4.0	30m	100nΩ	100	10mΩ	90	↑*	500ft	E	T092		
13#	2SC1189	250m	850MΔ	2.5m	J	50	40	4.0	30m	100nΩ	100	10mΩ	90	↑*	500ft	E	T092		
14	2N6601	250m#	1.0GΔ	1.4m	SS	20	10	2.5	50m	100u	5.0	5.0mΩ	25	Δ	1.2p	W6a	C		
15#	2SC1254	250m	1.0GΔ	1.5m	J	45	25	4	30m	100u	6.0	6.0mΩ	100	↑	80p	E	T072		
16#	MMT5031	250m	1GΔ	2m	J	15	10	3	20m	50n	6	1mΩ	25	Δ	1p	W6a	C		
17	2N4251†	250m	1.3GΔ	1.4m	J	15	10	4.5	100m	1.0u	5.0	10mΩ	32	Δ	2p	T046	A		
18#	BF37	250m	1.4G	3	SS	30	30	4.0	50m	100u	15	10uΩ	80	Δ	220f	PE	T072		
19#	2SC1260	250m	2.0GΔ	2.5m	J	45	25	4	30m	10u	6.0	6.0mΩ	40	Δ	.50p	E	Y206a		
20#	2SC2026	250m	2.0GΔ	2.5m	J	30	14	3	50m	10u	10	10mΩ	80	↑	.75p	E	T092		
21#	2SC2037	250m	2.0GΔ	2.5m	J	30	14	3	50m	10u	10	10mΩ	80	↑	.90p	E	T092		
22#	2SC2671	250m	2.5GΔ	2.0m	J	20	14	3.0	50m	100	10	10mΩ	80	↑	0.7p	PE	T092		
23#	TP393	250m%	3GΔ	3	J	25	15	2.5	50m	50	5	30mΩ	25	Δ	700f	PE	W15		
24	2N5761	250m	3.7GΔ	2.0m	SS	20	15	3.0	30m	500nΩ	100	10mΩ	30	Δ	500f	PE	W47		
25#	2SC2845	250m	4.5GΔ	2.5m	J	25	12	3.0	70m	100n	100	20mΩ	200	Δ	.75p	PE	X156		
26#	BF241	255m	400MΔ	2.5m	J	40	40	4.0	25m	100nΩ	100	1.0mΩ	36	Δ	300ft	PE	R204		
27#	BF241C	255m	400MΔ	2.5m	J	40	40	4.0	25m	100nΩ	100	1.0mΩ	72	Δ	300ft	DPE	X149		
28#	BF241D	255m	400MΔ	2.5m	J	40	40	4.0	25m	100nΩ	100	1.0mΩ	38	Δ	300ft	DPE	X149		
29#	BF240	255m	430MΔ	2.5m	J	40	40	4.0	25m	100nΩ	100	1.0mΩ	67	Δ	300ft	PE	R204		
30#	BF240B	255m	450MΔ	2.5m	J	40	40	4.0	25m	100nΩ	100	1.0mΩ	110	Δ	300ft	DPE	X149		
31#	BFY85*	260m			J	45	45	5.0	100m	.01u	50	50	50	Δ		PE	R131c		
32#	BFY86*	260m			J	45	45	5.0	100m	.01u	50	50	50	Δ		PE	R131c		
33#	BSY79	260m*	100MΔ	2.0m	J	120		5.0	30m	50nΩ	1.0	1.0mΩ	60	↑	4.0p	PE	T018		
34	BSY62	260m*	200MΔ	2.0m	J	25	15	5.0	200m	50uΩ	1.0	10mΩ	40	↑	5.0p	PE	T018		
35#	2SC300	260m	420MΔ	2.0m	J	25	15	5.0	100m	500nΩ	1.0	100uΩ	85	↑	3.5p	PE	T018		
36#	2SC301	260m	420MΔ	2.0m	J	25	15	5.0	100m	10nΩ	100	100uΩ	85	↑	3.5p	PE	T018		
37#	2SC302	260m	420MΔ	2.0m	J	50	20	5.0	100m	10nΩ	100	100uΩ	85	↑	3.5p	PE	T018		
38	2N1386†	300m		2.0m	SS	25	25	3.0	50m	100nΩ	1.0	10mΩ	30	Δ	8.0p	PE	T05		
39	2N1387†	300m		2.0m	SS	30	30	3.0	50m	100nΩ	1.0	10mΩ	20	Δ	8.0p	PE	T05		
40	2N1763†	300m		500u	SS	40	25	10	50m	100nΩ						PL	T018		
41#	2S741A	300m			SS	30	30	3.0	50m	100u	5.0	3.0mΩ	5.0	Δ		PL	T018		
42#	2S742A	300m			SS	75	75	3.0	50m	100u	5.0	3.0mΩ	5.0	Δ		PL	T018		
43#	2S743A	300m			SS	115	115	3.0	50m	100u	5.0	3.0mΩ	5.0	Δ		PL	T018		
44#	2S744A	300m			SS	30	30	3.0	50m	100u	5.0	3.0mΩ	20	Δ		PL	T018		
45#	2S745A	300m			SS	75	75	3.0	50m	100u	5.0	3.0mΩ	20	Δ		PL	T018		
46#	2S746A	300m			SS	115	115	3.0	50m	100u	5.0	3.0mΩ	20	Δ		PL	T018		
47#	2SC538	300m	2.0m	J	25	25	25	5.0	50m	.01u	5.0	2.0m	250			PE	T018		
48#	2SC538A	300m	2.0m	J	45	45	45	5.0	50m	.01u	5.0	2.0m	250			PE	T018		
49#	2SC539	300m	2.0m	J	25	25	25	5.0	50m	.01u	5.0	2.0m	250			PE	T018		
50#	2SC913†	300m	8.3m	J	40	35	35	5.0	300m	10uΩ	1.0	30mΩ	45	Δ	5p	PE	T018		
51#	2SC914†	300m			J			5.0			1.0	30mΩ	45	Δ	5.0p	PE	T018		
52#	2SC915†	300m			J			5.0			1.0	30mΩ	45	Δ	5.0p	PE	T018		
53#	2SC1071†	300m	2.0m	J	30	17	17	5.0	200m	200nΩ	1.0	30mΩ	83	↑		PE	T018		
54#	2SC1261	300m	2.4m	J	20	13	13	3.0	30m	100nΩ	100	7.0mΩ	100	↑		PE	W83		
55#	2SC1375H†	300m	2.0m	J	25	10	10	4	100m	50nΩ	0.4	50mΩ	54	Δ		PE	T018		
56#	2SC1483	300m	2.4m	J	20	10	10	3.0	40m	100nΩ	6.0	10mΩ	100	↑		PE	W83		
57#	2SC1709	300m	2.4m	J	20	20	20	5.0	300m	15nΩ	1.0	10mΩ	60			PE	R225		
58#	2SC1960	300m	2.4m	J	20	15	15	4.0	200m	400nΩ	1.0	10mΩ	60		2.0p	PE	R225		
59#	2SC2070†	300m	2.0m	J	40	32	32	5.0	300m	200nΩ	1.0	30mΩ	70	↑		PE	T018		
60#	2SD661	300m	2.7m	J	35	35	35	7.0	200m	100nΩ	10	2.0m	260	Δ		PE	B37		
61#	2SD1010	300m	3.0m	J	50	40	40	15	50m	100n	100	2.0mΩ	2.0k	Δ		PE	T092		
62#	2SD1011	300m	3.0m	J	100	100	100	15	20m	100n	100	2.0mΩ	2.0k	Δ		PE	T092		
63	BC136	300m	3.0	J	60	40	40	5.0	600m	50n	100	10mΩ	30	Δ	25p	PE	T0105A		
64#	BF120	300m	2.0m	J		220		5.0	50m	200nΩ	10	10m	20	Δ		PE	T018		
65#	KTS395A	300m			J	45	45	5.0	100m	0.5u	5.0	1.0m	120	Δ	8.0p	PE			
66#	KTS395B	300m			J	45	45	5.0	100m	0.5u	5.0	1.0m	120	Δ	8.0p	PE			
67	ST1607	300m			J	40	20	2.0	2.0u	5.0	5.0	10mΩ	120	Δ	4.0p	PE	T018		
68	ST1633	300m			J	70	70	2.0	50m	5.0u	100	5.0mΩ	80		50u	1.5k	1.0		
69#	TIS60	300m	3.0m	SS	40	25	25	5.0	400m	100nΩ	2.0	50mΩ	160	↑		PL	T092		
70	TPES036	300m			J	35	30	3.0	50u	100	5.0m	225	Δ		300f	PE	T092		
71#	uPA15A*	300m	2.4m	J	25	12	12	5.0	50m	100nΩ	1.0	1.0mΩ	100	↑		PE	R131h		
72#	uPA74V	300m			J	80	80	5.0	50m	1.0u	6.0	0.1	150	Δ	2.5p	*	B75		
73#	uPA76V	300m			J	60	60	5.0	50m	1.0u	6.0	0.1	150	Δ	2.5p	*	B75		
74#	ZTX341	300m																	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	T M E A M X P	ABS MAX RATINGS @25°C				Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	# L O D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS			COMMON EMITTER							
										Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	3N790	300m	30MΔ	2.0m	SS	40	45	5.0	20m	0.2u	100u	100 Δ	60 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	Δ	T072	GC
2#	BFV85D	300m	30MΔ	500u	SJ	45	45	5.0	30m	10n	5.0u	100u	150 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	W5a	B
3#	BFV85E	300m	30MΔ	500u	SJ	45	45	5.0	30m	10n	5.0u	100u	150 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	W5a	B
4#	BFX92Z	300m	30MΔ		SJ	45	45	5.0	30m	10n	5.0u	100u	100 Δ	1.0uZb	32 Z	6.0 Z	5.0pZ	Δ	T018	A
5#	BFX93Z	300m	30MΔ		SJ	45	45	5.0	30m	10n	5.0u	100u	100 Δ	1.0uZb	32 Z	6.0 Z	5.0pZ	Δ	T018	A
6	ST1700	300m	30MΔ	1.6m	SJ	60	30	5.0	20n	0.2u	5.0u	100u	80 Δ	1.0uZb	32 Z		8.0pZ	PL	T018	A
7#	ZTX330	300m	30MΔ	2.3m	SS	30	30	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
8#	ZTX330K	300m	30M	2.3m	SS	30	30	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
9#	ZTX330L	300m	30M	2.3m	SS	30	30	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
10#	ZTX330M	300m	30M	2.3m	SS	30	30	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
11#	ZTX331	300m	30MΔ	2.3m	SS	45	45	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
12#	ZTX331K	300m	30M	2.3m	SS	45	45	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
13#	ZTX331L	300m	30M	2.3m	SS	45	45	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
14#	ZTX331M	300m	30M	2.3m	SS	45	45	5.0	500m	20u	5.0u	100u	100 Δ				8.0pZ	PL	B58	A
15	2N2639*	300m	31MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	65 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	R131c	PA
16	2N2640*	300m	31MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	65 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	R131c	PA
17	2N2641*	300m	31MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	65 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	R131c	PA
18	2N2642*	300m	31MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	130 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	R131c	PA
19	2N2643*	300m	31MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	130 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	R131c	PA
20	2N2644*	300m	31MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	130 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	R131c	PA
21	JAN2N2639*	300m	32MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	65 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	T077	PA
22	JAN2N2642*	300m	32MΔ	2.0m	SS	45	45	5.0	30m	10n	5.0u	1.0m	130 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	T077	PA
23	2N841	300m	40MΔ	3.0m	SS	45	45	2.0	50m	1.0u	5.0u	1.0m	80 Δ	1.2uZb	80	6.0 Z	15pZ	ME	T018	A
24	2N843	300m	40M	2.0m	SS	45	45	2.0	50m	1.0u	5.0u	1.0m	40 Δ	350nb	40	2.0	6.0p	ME	T018	A
25	JAN2N2432	300m	40MΔ	1.7m	SS	30	30	100m	10n	5.0u	1.0m	80 Δ				12pZ	Δ	T018	A	
26	JAN2N2432A	300m	40MΔ	1.7m	SS	45	45	100m	10n	5.0u	1.0m	80 Δ				12pZ	Δ	T018	A	
27	2N3566	300m	40MΔ	3.0m	SS	40	30	5.0	200m	50n	2.0u	2.0m	80 Δ				25pZ	Δ	R110a	A
28	2N5135	300m	40MΔ	2.9m	SS	30	25	4.0	200m	30u	10u	10m	50 Δ				25pZ		T0105	A
29	2N5137	300m	40MΔ	2.9m	SS	30	20	3.0	500m	10u	1.0u	150m	20 Δ				35pZ		T0106	A
30	BC115	300m	40M	3.0m	SS	40	30	5.0	50m	10u	10u	10m	200 Δ				12p	DPL	R97	A
31#	BC117	300m	40MΔ	3.0m	SS	120	120	5.0	50m	10u	10u	30m	30 Δ				6.0p	DPL	R97	A
32	BC125	300m	40MΔ	3.0m	SS	50	30	5.0	50m	0.5u	10u	1.0m	20 Δ				12p	DPE	R97	A
33	BC125A	300m	40MΔ	3.0m	SS	50	40	5.0	500m	50n	10u	10m	40 Δ				25pZ		T0105	A
34#	BC145	300m	40MΔ	3.0m	SS	120	120	5.0	50m	10u	30u	5.0m	30 Δ				6.0p	PE	R97	A
35	BC236	300m	40MΔ	3.0m	SS	120	120	5.0	50m	100n	5.0u	10m	25 Δ				4.0p	PE	R110	A
36#	BC236Z	300m	40MΔ		SS	120	120	5.0	50m	100n	5.0u	10m	25 Δ				8.0pZ	PE	T0106	A
37#	BCY76	300m	40M	2.0m	SS	45	45	6.0	100m	0.1u	5.0u	1.0m	140 Δ				6.0pZ	PE	T018	A
38#	BSY890	300m	40M	2.0m	SS	25	18	7.0	100m	0.1u	5.0u	1.0m	150 Δ				15pZ	PE	T018	A
39	MPS5137	300m	40M	5.0m	SS	30	20	3.0	500m	100u	1.0	150m	20				8.0p	PE	T092	A
40	SE6001	300m	40M	3.0m	SS	40	30	5.0	50m	50u	10u	10m	50 Δ				25pZ	PL	T0105	A
41	SE6002	300m	40M	3.0m	SS	40	30	5.0	50m	50u	10u	10m	150 Δ				25pZ	PL	T0105	A
42	2N2693†	300m	42MΔ	2.0m	SS	45	30	10	50m	0.1u	1.0u	0.1m	40 Δ				5pZ		T018	A
43	2N2694†	300m	42MΔ	2.0m	SS	45	20	10	50m	0.1u	1.0u	0.1m	20 Δ				5pZ		T018	A
44	JAN2N929	300m	45MΔ	2.0m	SS	60	45	6.0	30m	10n	5.0u	1.0m	60 Δ	1.0uZb	32 Z	6.0 Z	8.0pZ	PL	T018	A
45	2N2586	300m	45MΔ	2.0m	SS	60	45	6.0	30m	2.0n	5.0u	1.0m	150 Δ	1.0uZb	18kZ	7.0pZ	Δ	T018	A	
46#	2N3463	300m	45MΔ	2.0m	SS	60	45	6.0	30m	2.0n	5.0u	1.0m	150 Δ	1.0uZb	14kZ	6.0pZ	Δ	T018	A	
47#	BFX92	300m	45M	2.0m	SS	50	45	6.0	30m	10n	5.0u	1.0m	60 Δ	1.0uZb	32 Z	6.0 Z	5.0p	DPL	T018	A
48#	BFX93	300m	45M	2.0m	SS	50	45	6.0	30m	10n	5.0u	1.0m	150 Δ	1.0uZb	32 Z	6.0 Z	5.0p	DPL	T018	A
49	2N844	300m	50MΔ	3.0m	SS	60	60	3.0	50m	50u	10u	5.0m	40 Δ				10pZ		T018	A
50	2N845	300m	50MΔ	3.0m	SS	100	80	3.0	50m	50u	10u	5.0m	40 Δ				10pZ		T018	A
51	2N1388	300m	50MΔ	2.0m	SS	45	25	1.5	50m	500n	6.0u	1.0m	30 Δ				10pZ		T05	A
52	2N2480*	300m	50MΔ	1.7m	SS	75	40	5.0	500m	0.5u	5.0u	1.0m	30 Δ				20pZ	*	R131c	PA
53	2N2480A*	300m	50MΔ	1.7m	SS	80	40	5.0	500m	0.2u	5.0u	1.0m	50 Δ	16uZ	5.0kZ	2.0	18pZ	*	R131c	PA
54#	2SC1006	300m	50MΔ	2.4m	SS	50	40	5.0	30m	50n	3.0u	1.0m	600 Δ	22	14k	2.0	10pZ	E	T018	A
55#	2SC1010	300m	50MΔ	2.4m	SS	50	40	5.0	30m	50n	3.0u	1.0m	550 Δ	22	14k	2.0	10pZ	E	T018	A
56	EN697	300m	50MΔ	3.0m	SS	60	30	5.0	30m	1.0u	5.0u	1.0m	25 Δ	500nZb	34 Z	5.0 Z	35pZ	DPL	T0105	A
57	HSE450-RT	300m	50MΔ	3.0m	SS	30	30	4.0	30m	1.0u	5.0u	2.0m	100 Δ				35pZ		T098	B
58	K9014	300m	50MΔ		SS	20		100m		5.0u	1.0m	60 Δ					6.0pZ		T092	A
59	MPS9600	300m	50MΔ		SS	12		100m		5.0u	1.0m	25 Δ					4.0pZ		T092	A
60	MPS9601	300m	50MΔ		SS	18		100m		5.0u	1.0m	25 Δ					4.0pZ		T092	A
61	MPS9602	300m	50MΔ		SS	30		100m		5.0u	1.0m	25 Δ					4.0pZ		T092	A
62	MPSA10	300m	50MΔ	2.7m	TJ	40		4.0	100m	100n	10u	5.0m	40 Δ				4.0pZ	AN	T092	A
63#	SCA42	300m	50M	2.4m	SS	300	300	6	500m	250n	10u	30m	25 Δ				10p	PE	R204	A
64#	SCA43	300m	50M	2.4m	SS	200	200	6	500m	250n	10u	30m	30 Δ				10p	PE	R204	A
65#	SCA44	300m	50M	2.4m	SS	150	150	6	500m	250n	10u	180	180 Δ				10p	PE	R204	A
66#	SCA45	300m	50M	2.4m	SS	120	120	6	500m	250n	10u	10m	240 Δ				10p	PE	R204	A
67	TRS3011	300m	50MΔ	2.0m	SA	300	300	6.0	2.0u	4.0u	50m	65 Δ					14p		T046	A
68	TRS3012	300m	50MΔ	2.0m	SA	300	300	6.0	2.0u	4.0u	50m	65 Δ					14p		T018	A
69	TRS3501	300m	50MΔ	2.0m	SA	350	350	6.0	2.0u	4.0u	50m	60 Δ					14p		T046	A
70	TRS3502	300m	50MΔ	2.0m	SA	350	350	6.0	2.0u	4.0u	50m	60 Δ					14p		T018	A
71	TRS4001	300m	50MΔ	2.0m	SA	400	400	6.0	2.0u	4.0u	50m	65 Δ					14p		T046	A
72	TRS4002	300m	50MΔ	2.0m	SA	400	400	6.0	2.0u	4.0u	50m	65 Δ					14p		T018	A
73	TRS4501	300m	50MΔ	2.0m	SA	450	450	6.0	2.0u	4.0u	50m	65 Δ		</						

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) f<sub>β</sub> & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	DERATE IN FREE AIR W/°C	M A M X P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O D E		
					V <sub>bcvo</sub> (V)	V <sub>bcvo</sub> (V)	V <sub>bevo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001						
1	2N6090*	300m	60mΔ	1.7m	SS	45	45	6.0	30m	10n	5.0	100	150	1Δ	1.0uZb	32	8	3.0pZ	TO78	PA	
2	2N6091*	300m	60mΔ	1.7m	SS	60	60	6.0	30m	2.0n	5.0	100	60	1Δ	1.0uZb	32	8	3.0pZ	TO78	PA	
3	2N6092*	300m	60mΔ	1.7m	SS	60	60	6.0	30m	2.0n	5.0	100	60	1Δ	1.0uZb	32	8	3.0pZ	TO78	PA	
4 #	BFV85F	300m	60mΔ	500u	SJ	60	60	6.0	50m	.01u	5.0	1.0m	80	Δ	30uZ	13	8	6pZ	W5a	B	
5 #	BFV85G	300m	60mΔ	500u	SJ	60	60	6.0	50m	.01u	5.0	1.0m	80	Δ	30uZ	13	8	6pZ	W5a	B	
6 #	BFY10	300m	60mΔ	2.0m	SJ	45	45	5.0	50m	2.0u	5.0	5.0m	20	Δ	40uZ	24	8	3pZ	ME	T05	
7 #	BFY11	300m	60mΔ	2.0m	SJ	45	45	5.0	50m	2.0u	5.0	5.0m	35	Δ	40uZ	24	8	3pZ	ME	T05	
8 #	BSS38	300m	60mΔ	4.0m	SJ	120	100	5.0	100m	200n	1.0	4.0m	80	†	1.0	8	4.5pZ	PEΔ	R189	A	
9 #	BSS38Z	300m	60mΔ	4.0m	SJ	80	80	5.0	100m	1.0	1.0	4.0m	20	†	1.0	8	4.5pZ	PEΔ	T092	A	
10 #	BSY10	300m	60mΔ	2.0m	SJ	45	45	5.0	50m	5.0	5.0	1.0m	45	†	5.0	8	25pZ	ME	T05	A	
11	EN1813	300m	60mΔ	3.0m	†	75	40	7.0	30m	50n	5.0	1.0m	25	†	5.0	8	25pZ	PL	TO105	A	
12 #	PN1813	300m	60m	3.3m	†	75	7.0	1.0	30m	50n	10	150m	40	†	5.0	8	25pZ	PL	TO105	A	
13 #	PN1711	300m	60m	3.3m	†	75	7.0	1.0	30m	50n	10	150m	40	†	5.0	8	25pZ	PL	TO105	A	
14	TD228*	300m	60m		†	45	45	6.0	500m	10n	5.0	100u	100	†	5.0	8	8.0p	†	R131c	PA	
15	TD229*	300m	60m		†	45	45	6.0	500m	10n	5.0	100u	225	†	5.0	8	8.0p	†	R131c	PA	
16	TD230*	300m	60m		†	45	45	6.0	500m	10n	5.0	100u	100	†	5.0	8	8.0p	†	R131c	PA	
17	TD231*	300m	60mΔ		†	45	45	6.0	500m	10n	5.0	100u	600	†	5.0	8	8.0p	†	R131c	PA	
18	TD241*	300m	60mΔ		†	60	30	7.0	500m	5.0n	5.0	100u	80	†	5.0	8	8.0p	†	R131c	PA	
19	TP3567	300m	60m		†	80	40	5.0	750m	50u	1.0	150m	40	†	1.0	8	10p	†	T092	A	
20	TP3568	300m	60m		†	80	40	5.0	750m	50u	1.0	150m	40	†	1.0	8	10p	†	T092	A	
21	TP3569	300m	60m		†	80	40	5.0	750m	50u	1.0	150m	40	†	1.0	8	10p	†	T092	A	
22	2N2992	300m	66.5m	2.0m	SJ	45	30	1.0	50m	.01u	1.0	1.0m	90	†	5.0	8	5pZ	PEΔ	TO18	A	
23	JAN2N702†	300m	70mΔ	1.7m	SS	40	25	5.0	30m	100n	5.0	10m	20	†	5.0	8	6.0pZ	DPL	TO18	A	
24	JAN2N703†	300m	70mΔ	1.7m	SS	40	25	5.0	30m	100n	5.0	10m	20	†	5.0	8	6.0pZ	DPL	TO18	A	
25 #	2S1011	300m	70mΔ	2.0m	SJ	25	25	5.0	50m	50u	5.0	1.0m	20	†	5.0	8	6pZ	DM	TO18	A	
26 #	EN1711	300m	70mΔ	3.0m	†	75	40	7.0	50m	50n	5.0	1.0m	50	†	5.0	8	25pZ	DPL	TO105	A	
27	2N2720*	300m	80mΔ	1.7m	SJ	60	60	6.0	40m	10n	5.0	1.0m	30	†	1.0uZb	32	5.0	6.0pZ	†	R131c	PA
28	2N2721*	300m	80mΔ	1.7m	SJ	60	60	6.0	40m	10n	5.0	1.0m	30	†	1.0uZb	32	5.0	6.0pZ	†	R131c	PA
29	2N3587*	300m	80mΔ	1.7m	SS	80	45	5.0	500m	10n	5.0	1.0m	80	†	1.0uZb	32	5.0	8.0pZ	†	R131c	PA
30 #	2SC733	300m	80mΔ	3.0m	†	35	30	5.0	100m	10u	8.0	2.0m	70	†	5.0	8	7.0p	†	R67a	B	
31 #	2SC1380	300m	80m		SJ	55	50	5.0	100m	100n	6.0	2.0m	400	†	5.0	8	6.0p	PE	TO18	A	
32 #	2SC1380A	300m	80m		SJ	55	50	5.0	100m	100n	6.0	2.0m	400	†	5.0	8	6.0p	PE	TO18	A	
33 #	BCY55*	300m	80m	3.0m	†	45	45	5.0	100m	10n	5.0	1.0m	350	†	25u	10k	5.5	6.0p	†	F3†	PL
34 #	BSV28	300m	80mΔ		SA	100	100	5.0	100m	500n	1.0	2.0m	30	†	1.0	8	10pZ	PLT	B58	A	
35 #	BSV29	300m	80mΔ		SA	120	120	5.0	100m	500n	1.0	2.0m	30	†	1.0	8	10pZ	PLT	B58	A	
36 #	CX901	300m	80m		†	40	40	5.0	100m	100m	5.0	1.0m	80	†	5.0pZ	†	3.5pZ	†	T092	A	
37	CX904	300m	80m		†	40	40	5.0	100m	100m	5.0	1.0m	80	†	5.0pZ	†	3.5pZ	†	T092	A	
38	K901	300m	80mΔ		†	20	20	5.0	100m	100m	5.0	1.0m	29	†	5.0pZ	†	3.5pZ	†	T092	A	
39	HSE453-RT	300m	90mΔ	3.0m	†	60	60	4.0	100m	10u	1.0	1.0m	60	†	1.0	8	12pZ	†	TO18	A	
40	2N728†	300m	100mΔ	4.0m	SS	15	15	3.0	100m	5.0u	6.0	10m	20	†	1.0	8	12pZ	†	TO18	A	
41	2N729†	300m	100mΔ	4.0m	SS	30	30	3.0	100m	5.0u	6.0	10m	20	†	1.0	8	12pZ	†	TO18	A	
42	2N2569	300m	100mΔ	2.0m	SS	20	20	5.0	100m	.01u	1.0	10m	50	†	5.0	8	10pZ	†	TO18	A	
43	2N2570	300m	100mΔ	2.0m	SS	20	20	5.0	100m	.01u	1.0	10m	50	†	5.0	8	10pZ	†	TO18	A	
44	2N2722*	300m	100mΔ	2.0m	SS	45	45	5.0	40m	1.0n	5.0	1.0m	100	†	1.0uZb	32	6.0	6.0pZ	†	R131c	PA
45 #	2SC380	300m	100mΔ	3.0m	†	35	30	4.0	50m	10n	5.0	2.0m	40	†	5.0	8	2.0p	†	TO18	A	
46 #	2SC2240	300m	100m	3.0m	†	120	120	8.0	50m	100n	6.0	1.0m	250	†	2.5u	6.5k	550m	3.0p	†	TO92	B
47 #	BC110	300m	100m	2.0m	SJ	80	80	8.0	100m	100n	5.0	1.0m	35	†	5.0	8	5.0p	PE	TO18	A	
48 #	BC170A	300m	100m	3.0m	†	20	20	5.0	100m	100n	1.0	1.0m	25	†	4.0p	†	4.0p	PE	R204	A	
49 #	BC170B	300m	100m	3.0m	†	20	20	5.0	100m	100n	1.0	1.0m	25	†	4.0p	†	4.0p	PE	R204	A	
50 #	BC170C	300m	100m	3.0m	†	20	20	5.0	100m	100n	1.0	1.0m	25	†	4.0p	†	4.0p	PE	R204	A	
51 #	BCW65#	300m	100m	3.0m	†	32	32	5.0	800m	100m	1.0	1.0m	100	†	8.0p	†	8.0p	PE	X156e	D	
52 #	BCW66#	300m	100m	3.0m	†	45	45	5.0	800m	100m	1.0	1.0m	100	†	8.0p	†	8.0p	PE	X156e	D	
53 #	BCY42	300m	100mΔ	5.0m	SJ	40	25	5.0	100m	25n	5.0	1.0m	45	†	5.0	8	6pZ	PE	TO18	A	
54 #	BCY43	300m	100mΔ	5.0m	SJ	40	20	5.0	100m	25n	5.0	1.0m	75	†	5.0	8	6pZ	PE	TO18	A	
55 #	BSS64Z	300m	100m		SA	120	80	8.0	100m	100n	1.0	1.0m	60	†	5.0	8	5.0pZ	PE	X156e	A	
56 #	TP110	300m	100m		†	80	80	8.0	500m	10n	5.0	2.0m	30	†	5.0	8	6.0p	†	TO92	A	
57 #	2SC2784	300m	110m	3.0m	†	80	80	5.0	50m	50n	6.0	1.0m	600	†	5.0	8	1.6p	†	X189	B	
58 #	ZTX107	300m	115m	2.0m	SA	60	50	5.0	100m	15n	5.0	2.0m	125	†	30u	4.8k	4.1	4.5p	PL	B58	A
59 #	ZTX107A	300m	115m	2.0m	SA	60	50	5.0	100m	15n	5.0	2.0m	125	†	30u	4.8k	4.1	4.5p	PLT	B58	A
60 #	ZTX107B	300m	115m	2.0m	SA	60	50	5.0	100m	15n	5.0	2.0m	240	†	30u	4.8k	4.1	4.5p	PLT	B58	A
61 #	ZTX108	300m	115m	2.0m	SA	45	30	5.0	100m	15n	5.0	2.0m	125	†	30u	4.8k	4.1	4.5p	PLT	B58	A
62 #	ZTX108A	300m	115m	2.0m	SA	45	30	5.0	100m	15n	5.0	2.0m	125	†	30u	4.8k					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG #	C O D E			
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)	I <sub>c</sub> (A)		BIAS							COMMON EMITTER		
											V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					hoe (mhos)	hie (Ω)	hre (X.0001)
1#	BC109B	300m	150MΔ	2.0m	Δ	30	20	5	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	T018	A			
2#	BC109BP	300m	150MΔ	2.0m	Δ	30	20	5.0	50m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PLT	B58	A			
3#	BC109C	300m	150MΔ	2.0m	Δ	30	20	5	100m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PE	T018	A			
4#	BC109CP	300m	150MΔ	2.0m	Δ	30	20	5.0	50m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PLT	B58	A			
5#	BC182T	300m	150MΔ	2.4m	Δ	60	50	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	R203	A			
6#	BC182A1	300m	150MΔ	2.4m	Δ	60	50	5.0	200m	15nΔ	5.0Δ	2.0mΔ	260	Δ	PE	R203	A			
7#	BC182A1	300m	150MΔ	2.4m	Δ	60	50	6.0	200m	15nΔ	5.0Δ	2.0mΔ	170	Δ	PET	T092	D			
8#	BC182AP	300m	150MΔ	2.4m	Δ	60	50	6.0	100m	15nΔ	5.0Δ	2.0mΔ	125	Δ	PLT	B58	A			
9#	BC182B1	300m	150MΔ	2.4m	Δ	60	50	5.0	200m	15nΔ	5.0Δ	2.0mΔ	260	Δ	PE	R203	A			
10#	BC182B1	300m	150MΔ	2.4m	Δ	60	50	6.0	200m	15nΔ	5.0Δ	2.0mΔ	290	Δ	PET	T092	D			
11#	BC182BP	300m	150MΔ	2.4m	Δ	60	50	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PLT	B58	A			
12#	BC182L1	300m	150MΔ	2.4m	Δ	60	50	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	T092	B			
13#	BC182LA1	300m	150MΔ	2.4m	Δ	60	50	5.0	200m	15nΔ	5.0Δ	2.0mΔ	260	Δ	PE	T092	A			
14#	BC182LB1	300m	150MΔ	2.4m	Δ	60	50	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	T092	A			
15#	BC182P	300m	150MΔ	2.4m	Δ	60	50	6.0	100m	15nΔ	5.0Δ	2.0mΔ	125	Δ	PLT	S14a	B			
16#	BC183T	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	R203	A			
17#	BC183A1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	260	Δ	PE	R203	A			
18#	BC183A1	300m	150MΔ	2.5m	Δ	45	30	6.0	200m	15nΔ	5.0Δ	2.0mΔ	222	Δ	PE	T092	A			
19#	BC183AP	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	125	Δ	PLT	B58	A			
20#	BC183B1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	R203	A			
21#	BC183B1	300m	150MΔ	2.5m	Δ	45	30	6.0	200m	15nΔ	5.0Δ	2.0mΔ	330	Δ	PE	T092	A			
22#	BC183BP	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PLT	B58	A			
23#	BC183C1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	R203	A			
24#	BC183CP	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PLT	B58	A			
25#	BC183L1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	T092	B			
26#	BC183LA1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	260	Δ	PE	T092	B			
27#	BC183LB1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	T092	B			
28#	BC183LCT	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	T092	A			
29#	BC183P	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	125	Δ	PLT	S14a	B			
30#	BC184T	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	R203	A			
31#	BC184B1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	R203	A			
32#	BC184BP	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PLT	B58	A			
33#	BC184C	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PE	R203	A			
34#	BC184CP	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PLT	B58	A			
35#	BC184L1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	T092	A			
36#	BC184LB1	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	T092	A			
37#	BC184LCT	300m	150MΔ	2.4m	Δ	45	30	5.0	200m	15nΔ	5.0Δ	2.0mΔ	900	Δ	PE	T092	A			
38#	BC184P	300m	150MΔ	2.4m	Δ	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PLT	S14a	B			
39#	BC267	300m	150MΔ	10u	Δ	#J	50	30	1	15nΔ	5.0Δ	2.0mΔ	300	Δ	PE	T018	A			
40#	BC268	300m	150MΔ	10u	Δ	#J	30	30	1	15nΔ	5.0Δ	2.0mΔ	400	Δ	PE	T018	A			
41#	BC269	300m	150MΔ	10u	Δ	#J	30	30	1	15nΔ	5.0Δ	2.0mΔ	500	Δ	PE	T018	A			
42#	BC382	300m	150MΔ	2.4m	Δ	#	50	45	6.0	200m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	T018	A		
43#	BC3821	300m	150MΔ	2.4m	Δ	#S	50	45	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	F		
44#	BC382B	300m	150MΔ	2.4m	Δ	#S	50	45	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	R203c	A		
45#	BC382C	300m	150MΔ	2.4m	Δ	#S	50	45	6.0	100m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PE	R203c	A		
46#	BC382L	300m	150MΔ	2.4m	Δ	#	45	45	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	B		
47#	BC383	300m	150MΔ	2.4m	Δ	#	45	30	6.0	200m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	T018	F		
48#	BC3831	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	F		
49#	BC383B	300m	150MΔ	2.4m	Δ	#S	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	R203c	A		
50#	BC383C	300m	150MΔ	2.4m	Δ	#S	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PE	R203c	A		
51#	BC383L	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	A		
52#	BC384	300m	150MΔ	2.4m	Δ	#	45	30	6.0	200m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	T018	F		
53#	BC3841	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	250	Δ	PE	T092	F		
54#	BC384B	300m	150MΔ	2.4m	Δ	#S	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	R203c	A		
55#	BC384C	300m	150MΔ	2.4m	Δ	#S	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	450	Δ	PE	R203c	A		
56#	BC384L	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	250	Δ	PE	T092	A		
57#	BC385	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	A		
58#	BC385	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	A		
59#	BC451	300m	150MΔ	2.4m	Δ	#	20	20	6.0	100m	15nΔ	5.0Δ	2.0mΔ	100	Δ	PE	T092	F		
60#	BC4511	300m	150MΔ	2.4m	Δ	#	45	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	110	Δ	PE	T092	F		
61#	BC452	300m	150MΔ	2.4m	Δ	#	30	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	110	Δ	PE	T092	F		
62#	BC453	300m	150MΔ	2.4m	Δ	#	30	30	6.0	100m	15nΔ	5.0Δ	2.0mΔ	110	Δ	PE	T092	F		
63#	BC582	300m	150MΔ	2.4m	Δ	#	45	30	6.0	200m	15nΔ	5.0Δ	2.0mΔ	125	Δ	PE	T092	F		
64#	BC583	300m	150MΔ	2.4m	Δ	#	20	20	6.0	200m	15nΔ	5.0Δ	2.0mΔ	125	Δ	PE	T092	F		
65#	BC584	300m	150MΔ	2.4m	Δ	#	20	20	6.0	200m	15nΔ	5.0Δ	2.0mΔ	240	Δ	PE	T092	F		
66#	BC682	300m	150MΔ	2.4m	Δ	#	75	70	5.0	200m	15nΔ	5.0Δ	2.0mΔ	60	Δ	PE	T018	A		
67#	BCW36	300m	150MΔ	2.4m	Δ	#	60	45	5.0	600m	10nΔ	5.0Δ	100mΔ	100	Δ	PE	T018	A		
68#	BCY69	300m	150MΔ	2.0m	Δ	#J	20	20	5.0	100m	150nΔ	5.0Δ	2.0mΔ	750	Δ	PE	T018	A		
69#	BF253	300m	150MΔ	2.0m	Δ	#	30	30	5.0	30m	10nΔ	1.0mΔ	40	Δ	PE	T092	E			
70#	BF321	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	380	Δ	PE	T092	A			
71#	BF321A	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	100	Δ	PE	T092	A			
72#	BF321B	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	135	Δ	PE	T092	A			
73#	BF321C	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	175	Δ	PE	T092	A			
74#	BF321D	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	225	Δ	PE	T092	A			
75#	BF321E	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	300	Δ	PE	T092	A			
76#	BF321F	300m	150MΔ	2.0m	Δ	#	30	20	5.0	100m	7.0nΔ	1.0	380	Δ	PE	T092	A			
77#	BFY39	300m	150MΔ	2.0m	Δ	#J	45	25	5.0	100m	50uΔ	10nΔ	35	Δ	PL	T018	A			
78#	BFY39-1	300m	150MΔ	2.0m	Δ	#J	45	25	5.0	100m	50nΔ	10nΔ	110	Δ	PE	T018	A			
79#	BFY39-2	300m	150MΔ	2.0m	Δ	#J	45	25	5.0	100m	50nΔ	10nΔ	200	Δ	PE	T0				

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN AIR W/C (Hz)	M E A M X P	ABS MAX RATINGS @25°C				MAX. lcb0 @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D E
					VbVcbo (V)	VbVceo (V)	VbVebo (V)	lc (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	ZTX301M	300m	150MΔ	2.0m	SS	35	35	5.0	500m#	200n	6.00	10m0	50 Δ			6.0p	PL0	B58	A
2#	ZTX302	300m	150MΔ	2.0m	SS	35	35	5.0	500m#	200n	6.00	10m0	100 Δ		6.0p	PL0	X59a	A	
3#	ZTX302K	300m	150MΔ	2.0m	SS	35	35	5.0	500m#	200n	6.00	10m0	100 Δ		6.0p	PL0	B58	A	
4#	ZTX302L	300m	150MΔ	2.0m	SS	35	35	5.0	500m#	200n	6.00	10m0	100 Δ		6.0p	PL0	B58	A	
5#	ZTX302M	300m	150MΔ	2.0m	SS	45	45	5.0	500m#	200n	6.00	10m0	100 Δ		6.0p	PL0	B58	A	
6#	ZTX303	300m	150MΔ	2.0m	SS	45	45	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	X59a	F	
7#	ZTX303K	300m	150MΔ	2.0m	SS	45	45	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
8#	ZTX303L	300m	150MΔ	2.0m	SS	45	45	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
9#	ZTX303M	300m	150MΔ	2.0m	SS	45	45	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
10#	ZTX304	300m	150MΔ	2.0m	SS	70	70	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
11#	ZTX304K	300m	150MΔ	2.0m	SS	70	70	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
12#	ZTX304L	300m	150MΔ	2.0m	SS	70	70	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
13#	ZTX304M	300m	150MΔ	2.0m	SS	70	70	5.0	500m#	200n	6.00	10m0	50 Δ		6.0p	PL0	B58	A	
14#	BSX21	300m	160M	2.0m	Δ	120	80	5.0	100m	200n0	1.00	1.0m0	60 Δ		3.4p	PE	TO18	A0	
15#	2SC318A	300m	170M	2.0m	Δ	50	30	5.0	100m	200n0	1.00	1.0m0	109		4.5p	PE	TO18	A0	
16#	2SC1175	300m	170M	3.0m	Δ	50	50	4.0	200m	100u0	6.00	50m0	100 Δ		1.0p	PL	H195a	B	
17#	BSY72	300m	170M	2.0m	Δ	25	18	5.0	30m	10u0	1.00	1.0m0	80 Δ	8.0u	5.0k	PE	TO18	A0	
18#	BSY74	300m	170M	2.0m	Δ	25	18	5.0	100m	10u0	1.00	1.0m0	80 Δ	8.0u	5.0k	PE	TO18	A0	
19#	BSY76	300m	170M	2.0m	Δ	40	32	7.0	250m	0.5u0	1.00	1.0m0	80 Δ	7.0u	5.0k	PE	TO18	A0	
20#	BSY78	300m	170M	2.0m	Δ	80	64	7.0	250m	0.5u0	1.00	1.0m0	80 Δ	5.5u	5.0k	PE	TO18	A0	
21#	MPSH04	300m	180M	2.7m	Δ	80	80	4.0	100m	50n0	1.00	1.5m0	120 Δ	2.0u	1.0p	AN0	TO92	A0	
22#	MPSH05	300m	180M	2.7m	Δ	80	80	4.0	100m	50n0	1.00	1.5m0	120 Δ	2.0u	1.0p	AN0	TO92	A	
23#	SA2710*	300m	180MΔ	2.0m	Δ	60	50	6.0	2n0	5.00	5.00	0.1m0	40 Δ		3p0	*0	TO78		
24#	SA2711*	300m	180MΔ	2.0m	Δ	60	50	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
25#	SA2712*	300m	180MΔ	2.0m	Δ	60	50	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
26#	SA2713*	300m	180MΔ	2.0m	Δ	60	50	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
27#	SA2714*	300m	180MΔ	2.0m	Δ	60	50	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
28#	SA2715*	300m	180MΔ	2.0m	Δ	50	30	6.0	2n0	5.00	5.00	0.1m0	40 Δ		3p0	*0	TO78		
29#	SA2716*	300m	180MΔ	2.0m	Δ	50	30	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
30#	SA2717*	300m	180MΔ	2.0m	Δ	50	30	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
31#	SA2718*	300m	180MΔ	2.0m	Δ	50	30	6.0	2n0	5.00	5.00	0.1m0	150 Δ		3p0	*0	TO78		
32#	SA2725*	300m	180MΔ	2.0m	Δ	50	25	6.0	2n0	5.00	5.00	1.0m0	200 Δ		3p0	*0	TO78		
33#	JAN2N706†	300m	200MΔ	2.0m	SS	25	15	5.0	100n	1.00	1.00	10m0	30 Δ		6.0p0		TO18	A0	
34#	2N706A†	300m	200MΔ	2.0m	Δ	25	20	5.0	50m	10u	1.00	1.0m0	20 Δ		5.0p0		TO18	A0	
35#	2N7531	300m	200MΔ	1.7m	Δ	25	15	5.0	50m	500n0	1.00	1.0m0	40 Δ		5.0p0		TO18	A0	
36#	2N7831	300m	200MΔ	2.0m	Δ	40	20	5.0	200m	25u0	1.00	1.0m0	20 Δ		3.5p0		TO18	A0	
37#	2N7841	300m	200MΔ	2.0m	Δ	30	15	5.0	200m	25u0	1.00	1.0m0	25 Δ		3.5p0		TO18	A0	
38#	2N8491	300m	200MΔ	2.0m	SS	25	15	5.0	50m	10u	1.00	1.0m0	20 Δ		5.0p0		W5A	B	
39#	2N8501	300m	200MΔ	2.0m	SS	25	15	5.0	50m	10u	1.00	1.0m0	40 Δ		5.0p0		W5A	B	
40#	2N1708	300m	200MΔ	2.0m	Δ	25	12	3.0	200m	25n0	1.00	1.0m0	20 Δ		6.0p0	Δ	TO46	A0	
41#	2N2205†	300m	200MΔ	1.7m	Δ	25	12	3.0	200m	25n0	1.00	1.0m0	20 Δ		6.0p0		TO46	A0	
42#	2N2206†	300m	200MΔ	1.7m	Δ	25	12	3.0	200m	25n0	1.00	1.0m0	40 Δ		6.0p0		TO46	A0	
43#	2N2719	300m	200MΔ	2.0m	Δ	25	8.0	3.0	200m	1.0u0	4.00	200u0	30 Δ		6.0p0	Δ	TO18	A0	
44#	2SC294*	300m	200M	2.0m	Δ	25	12	5.0	50m	100n0	1.00	1.0m0	80 Δ		4.5p	D*	R131h	PD	
45#	2SC478	300m	200M	1.7m	Δ	50	50	1.5	120m#	1.0u0	1.20	20m	20 Δ		4.0p	PE	TO18	A0	
46#	2SC896	300m	200M	2.0m	Δ	55	30	5.0	200m	1.0u0	1.00	5.0m	70		3.5p	PE	TO46	A0	
47#	2SC1775AE	300m	200M	3.0m	Δ	120	120	5.0	509m	500n	120	2.0m0	400 Δ		1.6p	PE	TO92	B	
48#	2SC1775E	300m	200M	3.0m	Δ	90	90	5.0	509m	500n	120	2.0m0	400 Δ		1.6p	PE	TO92	B	
49#	2SC1775F	300m	200M	3.0m	Δ	90	90	5.0	509m	500n	120	2.0m0	600 Δ		1.6p	PE	TO92	B	
50#	2SC1890AD	300m	200M	3.0m	Δ	120	120	5.0	509m	500n	120	2.0m0	250 Δ		1.6p	PE	TO92	B	
51#	2SC1890AE	300m	200M	3.0m	Δ	120	120	5.0	50m	500n	120	2.0m0	400 Δ		1.6p	PE	TO92	B	
52#	2SC1890AF	300m	200M	3.0m	Δ	120	120	5.0	50m	500n	120	2.0m0	600 Δ		1.6p	PE	TO92	B	
53#	2SC1890D	300m	200M	3.0m	Δ	90	90	5.0	509m	500n	120	2.0m0	250 Δ		1.6p	PE	TO92	B	
54#	2SC1890E	300m	200M	3.0m	Δ	90	90	5.0	509m	500n	120	2.0m0	400 Δ		1.6p	PE	TO92	B	
55#	2SC1890F	300m	200M	3.0m	Δ	120	120	5.0	509m	500n	120	2.0m0	600 Δ		1.6p	PE	TO92	B	
56#	2SC2320	300m	200M	3.0m	Δ	50	50	6.0	200m	100n	6.00	1.0m0	300 Δ		3.5p	PE	TO92	B	
57#	2SC2320L	300m	200M	3.0m	Δ	50	50	6.0	200m	1.0n	6.00	1.0m0	800 Δ		3.5p	PE	TO92	B	
58#	2SC2575	300m	200M	3.0m	Δ	50	50	6.0	200m	1.0n	6.00	1.0m0	800 Δ		3.5p	PE	TO92	B	
59#	2SC2575L	300m	200M	3.0m	Δ	50	50	6.0	200m	1.0n	6.00	1.0m0	800 Δ		3.5p	PE	TO92	B	
60	40218†	300m	200M	2.0m	Δ	25	20	5.0	50m	500n0	1.00	1.0m0	20 Δ		5.0p0	PE	TO52	0	
61	40222†	300m	200MΔ	2.0m	Δ	25	20	5.0	200m	30n0	1.00	1.0m0	20 Δ		6.0p0	PE	TO52	0	
62#	BC190	300m	200M	2.0m	Δ	64	64	5.0	200m	15n	5.00	2.0m0	312		1.6p	PE	R216f	A0	
63#	BC190A	300m	200M	2.0m	Δ	70	64	5.0	100m	15n	5.00	2.0m0	125 Δ	18u	2.7k	PE	TO18	A0	
64#	BC190B	300m	200M	2.0m	Δ	70	64	5.0	100m	15n	5.00	2.0m0	240 Δ	30u	4.5k	PE	TO18	A0	
65#	BCY85	300m	200MΔ	2.5m	SS	100	60	7.0	200m	5.0n0	5.00	2.0m0	100 Δ		5.0p0	PE†	R203c	A	
66#	BCY86	300m	200MΔ	2.5m	SS	80	50	7.0	200m	5.0n0	5.00	2.0m0	250 Δ		5.0p0	PE†	R203c	A	
67#	BF255	300m	200M	1.3m	Δ	30	20	5.0	30m	10u	1.00	1.0m0	67 Δ		850f	PE†	R207	C	
68#	BF255*	300m	200M	3.0m	Δ	30	20	5.0	30m	10u	1.00	1.0m0	67 Δ		850f	PE†	R207	C	
69#	BF495	300m	200M	4.0m	Δ	30	20	5.0	30m	10u	1.00	1.0m0	67 Δ		850f	PE†	R189	C	
70#	BFY37	300m	200MΔ	2.0m	Δ	25	20	5.0	100m	10u0	1.00	1.0m0	35 Δ		2.3p	PL	TO18		
71#	BSX24	300m	200M	2.0m	Δ	32	32	5.0	100m	0.5u0	5.00	50m0	35 Δ		5.0p	PE	TO18		
72#	BSX38A†	300m*	200MΔ	2.2m	Δ	35	30	5.0	100m	100u	1.00	1.0m0	100 Δ		5.0p0	PE	TO18	A0	
73#	BSX38B†	300m*	200MΔ	2.2m	Δ	35	30	5.0	100m	100u	1.00	1.0m0	250 Δ		5.0p0	PE	TO18	A0	
74#	BSX89†	300m	200MΔ	2.0m	Δ	25	15	5.0	500m	50u0	1.00	1.0m0	20 Δ		2.5p	DPE	TO18	A0	
75#	BSY26†	300m	200MΔ	2.0m	Δ	20	15	6.0	100m	25n0	2.00	1.0m0	20 Δ		6.0p0	PE	TO18	A0	
76#	BSY27†	300m	200MΔ	2.0m	Δ	20	15	6.0	100m	25n0	2.00	1.0m0	40 Δ		6.0p0	PE	TO18		



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE fab (Hz)	IN FREE AIR W/°C	MAMP	ABS MAX RATINGS @25°C				MAX. lobo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E	
						BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe					hoe (mhos)
1#	2SC1007†	300m	250M	2.4m	Δ	60	40	8.0	200m	100n	1.0	10m	150	†	3.4p	E	TO18	A
2#	2SC2785	300m	250M	3.0m	Δ	60	50	5.0	100m	100n	6.0	1.0m	200	†	3.0p	E	X189	B
3#	2SC2787	300m	250M	3.0m	Δ	50	30	5.0	30m	100n	6.0	1.0m	90	†	1.9p	E	X189	B
4#	BC167A	300m	250M	2.4m	Δ	50	45	5.0	100m	15n	5.0	2.0m	180	†	4.5p	PE†	TO92	B
5#	BC167B	300m	250M	2.4m	Δ	50	45	5.0	100m	15n	5.0	2.0m	290	†	30u	PE†	TO92	B
6#	BC168A	300m	250M	2.4m	Δ	30	20	5.0	100m	15n	5.0	2.0m	180	†	18u	PE†	TO92	B
7#	BC168B	300m	250M	2.4m	Δ	30	20	5.0	100m	15n	5.0	2.0m	290	†	30u	PE†	TO92	B
8#	BC168C	300m	250M	2.4m	Δ	30	20	5.0	100m	15n	5.0	2.0m	520	†	60u	PE†	TO92	B
9#	BC171A	300m	250M	3.0m	Δ	45	45	5.0	100m	15n	5.0	2.0m	125	Δ	18u	PE†	R204	A
10#	BC171B	300m	250M	3.0m	Δ	45	50	5.0	100m	15n	5.0	2.0m	240	Δ	30u	PE†	R204	A
11#	BC172A	300m	250M	3.0m	Δ	20	20	5.0	100m	15n	5.0	2.0m	125	Δ	18u	PE†	R204	A
12#	BC172B	300m	250M	3.0m	Δ	20	20	5.0	100m	15n	5.0	2.0m	240	Δ	30u	PE†	R204	A
13#	BC172C	300m	250M	3.0m	Δ	20	20	5.0	100m	15n	5.0	2.0m	450	Δ	60u	PE†	R204	A
14#	BC174A	300m	250M	3.0m	Δ	64	50	5.0	100m	15u	5.0	10u	90	†	18u	PE†	R204d	A
15#	BC174B	300m	250M	3.0m	Δ	64	50	5.0	100m	15u	5.0	10u	150	†	30u	PE†	R204d	A
16#	BC237#	300m	250M	2.2m	Δ	50	45	5.0	100m	15n	5.0	2.0m	330	*	30u	PE†	R204a	C
17#	BC237PA	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
18#	BC237PAK	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
19#	BC237PAL	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
20#	BC237PAM	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
21#	BC237PB	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
22#	BC237PBK	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
23#	BC237PBL	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
24#	BC237PBM	300m	250M	2.3m	Δ	45	6.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
25#	BC238#	300m	250M	2.2m	Δ	30	20	5.0	100m	15n	5.0	2.0m	330	*	30u	PE†	R204a	C
26#	BC238PA	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
27#	BC238PAK	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
28#	BC238PAL	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
29#	BC238PAM	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
30#	BC238PB	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	170	†	18u	PE†	B58	A	
31#	BC238PBK	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
32#	BC238PBL	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
33#	BC238PBM	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
34#	BC238PC	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
35#	BC238PCK	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
36#	BC238PCL	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
37#	BC238PCM	300m	250M	2.3m	Δ	20	5.0	100m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
38#	BC239#	300m	250M	2.2m	Δ	30	20	5.0	100m	15n	5.0	2.0m	330	*	30u	PE†	R204	A
39#	BC239PB	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
40#	BC239PBK	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
41#	BC239PBL	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
42#	BC239PBM	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	290	†	30u	PE†	B58	A	
43#	BC239PC	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
44#	BC239PCK	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
45#	BC239PCL	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
46#	BC239PCM	300m	250M	2.3m	Δ	20	5.0	50m	15n	5.0	2.0m	500	†	60u	PE†	B58	A	
47#	BC413B	300m	250M	2.5m	Δ	45	30	5.0	100m	15n	5.0	2.0m	330		2.5p	PE†	R204b	A
48#	BC413BP	300m*	250M	3.0m	Δ	45	30	5.0	100m	15n	5.0	2.0m	330		2.5p	PE†	B58	A
49#	BC413C	300m	250M	2.5m	Δ	45	30	5.0	100m	15n	5.0	2.0m	600		30u	PE†	R204b	A
50#	BC413CP	300m*	250M	3.0m	Δ	45	30	5.0	100m	15n	5.0	2.0m	600		30u	PE†	B58	A
51#	BC414B	300m	250M	2.5m	Δ	50	45	5.0	100m	15n	5.0	2.0m	330		30u	PE†	R204b	A
52#	BC414BP	300m*	250M	3.0m	Δ	50	45	5.0	100m	15n	5.0	2.0m	330		30u	PE†	B58	A
53#	BC414C	300m	250M	2.5m	Δ	50	45	5.0	100m	15n	5.0	2.0m	600		60u	PE†	R204b	A
54#	BC414CP	300m*	250M	3.0m	Δ	50	45	5.0	100m	15n	5.0	2.0m	600		60u	PE†	B58	A
55#	BCY55	300m	250M	2.5m	Δ	45	45	5.0	100m	100n	5.0	2.0m	250		17u	PE†	TO18	A
56#	BF234	300m	250M	3.0m	Δ	30	30	4.0	30m	1.0	1.0m	150	†	.75p†	PE†	R110	A	
57#	BSX781	300m	250M	2.0m	Δ	20	20	5.0	100m	.05u	4.0	10m	80	†		PE†	TO18	A
58#	BSX777	300m	250M	2.0m	Δ	40	20	5.0	100m	.05u	5.0	10m	80	†		PE†	TO18	A
59#	TPE6020	300m	250MΔ		Δ	80	80	6.5	100u	1.0u	150m	300	†	15p†	PE†	TO92	A	
60#	TPE6021	300m	250MΔ		Δ	80	80	6.5	100u	1.0u	150m	300	†	15p†	PE†	TO92	A	
61#	UPI2222	300m	250M	3.3m	Δ	60	35	5.0	800m	10	1.0m	50	†	8.0p	PE†	TO18	A	
62#	BF254†	300m	280M	1.3m	Δ	30	20	5.0	30m	1.0	1.0m	115	†	850†	PE†	R207	C	
63#	BF254%	300m	280M	3.0m	Δ	30	20	5.0	30m	1.0	1.0m	115	†	850†	PE†	R207	C	
64#	BF494	300m	280M	4.0m	Δ	30	20	5.0	30m	1.0	1.0m	115	†	850†	PE†	R189	C	
65#	2N7431	300m	280MΔ	2.0m	Δ	20	12	5.0	200m	1.0u	35	10m	20	Δ	5.0p	PE†	TO18	A
66#	2N7441	300m	280MΔ	2.0m	Δ	20	12	5.0	200m	1.0u	35	10m	40	Δ	5.0p	PE†	TO18	A
67#	JAN2N7441	300m	280MΔ	2.0m	Δ	20	15	5.0	200m	500n	35	10m	40	Δ	5.0p	PE†	TO18	A
68#	2N8511	300m	280MΔ	2.0m	Δ	20	12	5.0	200m	1.0u	25	1.0m	10	Δ	5.0p	PE†	W5a	B
69#	2N8521	300m	280MΔ	2.0m	Δ	20	12	5.0	200m	1.0u	25	1.0m	20	Δ	5.0p	PE†	W5a	B
70#	2SC1833†	300m	280M	2.4m	Δ	60	40	8.0	200m	100n	1.0	10m	180	†	3.5p	E	R182b	B
71#	BSX781	300m	285M	2.0m	Δ	40	20	5.0	100m	.05u	5.0	10m	120	†		PE†	TO18	A
72#	ZDT40*	300m	290M	2.0m	Δ	45	35	4.0	500m	50u	6.0	10m	200	†	8p	PE†	TO78	A
73#	ZDT41*	300m	290M	2.0m	Δ	60	45	7.0	500m	.05u	6.0	10m	170	†	8p	PE†	TO78	PA
74#	ZDT42*	300m	290M	2.0m	Δ	60	60	7.0	500m	.05u	6.0	1.0m	180	†	8p	PE†	TO78	PA
75#	ZDT44*	300m	290M	2.0m	Δ	60	60	7.0	500m	.05u	6.0	1.0m	180	†	8p	PE†	TO78	PA
76#	ZDT45*	300m	290M	2.0m	Δ	100	70	7.0	500m	.05u	6.0	1.0m	60	Δ	8p	PE†	TO78	PA
77#	2N988	300m	300MΔ	6.7k	Δ	20	10	3.0	220m	500n	1.0	10m	20	Δ	4.0p	PE†	TO18	A
78#	2N989	300m	300MΔ	6.7k	Δ	20	10	3.0	220m	500n	1.0	10m	20	Δ	3.5p	PE†	TO18	A
79#	2N1708A†	300m	300MΔ	1.7m	Δ	40	15	5.0	500m	25n	1.0	10m	30	Δ	6.0p	PE†	TO46	A
80#	2N2319†	300m	300MΔ	1.7m	Δ	30	15</											

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 DERATE fab (Hz)	T IN FREE AIR W/°C	M E M A X P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	BC239F	300m	300m	3.0m	↑	30	20	5.0	100m	150m	5.00	2.0m	240 Δ			2.5p	PE	R207	A	
2#	BC239A	300m	300m	3.0m	↑	30	20	5.0	100m	5.0	2.0m	200 Δ			2.5p	PE	T092			
3#	BC239B	300m	300m	3.0m	↑	30	20	5.0	100m	15n	5.00	2.0m	450 T			2.5p	PE	R204	A	
4#	BC239C	300m	300m	3.0m	↑	30	20	5.0	100m	15n	5.00	2.0m	800 T			2.5p	PE	R204	A	
5#	BC451	300m	300m	3.0m	↑	50	45	5.0	100m	100n	6.00	2.0m	800 T			3.5p	PE	R67a		
6#	BC452	300m	300m	3.0m	↑	30	30	5.0	100m	100n	6.00	2.0m	800 T			3.5p	PE	R67a		
7#	BC453	300m	300m	3.0m	↑	30	30	5.0	100m	100n	6.00	2.0m	800 T			3.5p	PE	R67a		
8#	BC454	300m	300m	3.0m	↑	50	45	5.0	100m	100n	6.00	2.0m	800 T			4.0p	PE	R67a		
9#	BC455	300m	300m	3.0m	↑	30	30	5.0	100m	100n	6.00	2.0m	800 T			4.0p	PE	R67a		
10#	BC456	300m	300m	3.0m	↑	30	30	5.0	100m	100n	6.00	2.0m	800 T			4.0p	PE	R67a		
11#	BF253-3	300m	300m	3.0m		30	30	5.0	30		1.00	1.0m	100 Δ			1.0p	PE	T092		
12#	BF253-4	300m	300m	3.0m		30	30	5.0	30		1.00	1.0m	150 Δ			1.0p	PE	T092		
13#	BF253-5	300m	300m	3.0m		30	30	5.0	30m		1.00	1.0m	220 Δ			1.0p	PE	T092		
14#	BF253-6	300m	300m	3.0m		30	30	5.0	30m		1.00	1.0m	350 Δ			1.0p	PE	T092		
15#	BF310	300m	300m	3.0m		30	30	5.0	25m		1.00	4.0m	29 T			1.6p	PE	T092	F	
16#	BFV83	300m	300m	3.0m	Δ	588u	5J	40	15	5.0	25n	1.00	500m	15 T			6.0p	PE	W5a	A
17#	BFV83A†	300m	300m	3.0m	Δ	588u	5J	40	20	5.0	25n	1.00	10m	30 T	#		6.0p	PE	W5a	B
18#	BSW43A†	300m	300m	3.0m	Δ	3.0m	5J	50	5.0	7.0	200m	5.0u	4.50	2.0m	300 T		4.0p	PE	R110	A
19#	BSX51†	300m	300m	2.0m	Δ	2.5	5A	25	25	5.0	200m	500n	4.50	2.0m	130 T		8.0p	PE	T018	
20#	BSX51A†	300m	300m	2.0m	Δ	5.0	5A	50	50	7.0	200m	500n	4.50	2.0m	130 T		8.0p	PE	T018	
21#	BSX52†	300m	300m	2.0m	Δ	2.5	5A	25	25	5.0	200m	500n	4.50	2.0m	300 T		8.0p	PE	T018	
22#	BSX52A†	300m	300m	2.0m	Δ	5.0	5A	50	50	7.0	200m	5.0u	4.50	2.0m	300 T		8.0p	PE	T018	
23#	BSX90†	300m	300m	2.0m	Δ	2.0	5J	20	12	5.0	200m	1.0u	.350	10m	20 T	#	5p	DPE	T018	A
24#	BSX91†	300m	300m	2.0m	Δ	2.0	5J	20	12	5.0	200m	1.0u	.350	10m	40 T	#	5p	DPE	T018	A
25	HSE311-RT	300m	300m	3.0m	Δ	3.0m	5J	40	30	3.0	100n	1.00	100m	30 T					R124d	A
26	HSE455-RT	300m	300m	3.0m	Δ	3.0m	5J	40	30	3.0	100n	1.00	100m	30 T					T098	B
27#	BSY70	300m	320m	2.0m	Δ	2.0m	5J	25	20	5.0	50n	1.00	10m	20 T	#		6.0p	PE	T018	
28	UPI706	300m	320m	2.0m	Δ	2.0m	5J	25	20	3.0	54m	1.00	10m	20 T	#		6.0p	PE	T018	A
29	2N834†	300m	350m	2.0m	Δ	2.0m	5J	40	30	5.0	500n	1.00	10m	25 T			4.0p	PE	T018	A
30#	2S131	300m	350m	2.0m	Δ	2.0m	5A	15	12	5.0	200m	1.0u	1.00	10m	40		3.5p	PE	T018	
31#	2SC98†	300m	350m	2.0m	Δ	2.0m	5J	20	15	5.0	100m	.10u	.350	10m	45 T				T018	
32#	2SC99†	300m	350m	2.0m	Δ	2.0m	5J	20	15	5.0	100m	.10u	.350	10m	80 T				T018	
33#	2SC172	300m	350m	2.0m	Δ	2.0m	5J	25	20	5.0	50m	1.0u	6.00	10m	60		5.0p	PE	T018	
34#	2SC2035	300m	350m	2.4m	Δ	2.4m	5J	50	28	5.0	300m	100n	1.00	10m	80 T				R225	A
35	40220†	300m	350m	2.0m	Δ	2.0m	5J	40	30	5.0	200m	500n	1.00	10m	25 T		4.0p	PE	T052	
36#	BC125B	300m	350m	2.0m	Δ	2.0m	5J	60	30	6.0	50n	1.00	10m	45 T			5.0p	PE	T0105	A
37#	BCV57	300m	350m	2.0m	Δ	2.0m	5J	25	20	5.0	100m	100n	5.00	2.0m	500		4.5p	PE	T018	A
38#	BFV83B†	300m	350m	2.0m	Δ	588u	5J	40	40	5.0	200m	.30u	4.00	30m	30 T	#	5p	PE	W5a	B
39#	BFV83C†	300m	350m	2.0m	Δ	588u	5J	40	40	5.0	200m	.30u	4.00	10m	25 T	#	5p	PE	W5a	B
40#	BSY38†	300m	350m	2.0m	Δ	2.0m	5J	20	15	5.0	200m	100n	.350	10m	30 T		5.0p	PE	T018	
41#	BSY39†	300m	350m	2.0m	Δ	2.0m	5J	20	15	5.0	200m	100n	.350	10m	40 T		5.0p	PE	T018	
42	2N3828	300m	360m	2.0m	Δ	3.0m	5S	40	40	3.0	100m	100n	2.00	12m	30 T	#	5.0p	PE	T092	B
43#	BSY28†	300m	380m	2.0m	Δ	2.0m	5J	15	12	3.0	100m	.05u	2.00	10m	34 T		3.5p	PE	T018	
44	LD4410	300m	380m	2.9m	Δ	2.9m	5J	40	35	4.0	25m	.10u	5.0m	10m	3.8 Δ		.3p	PE	T0122	P
45	2N706	300m	400m	6.6m	Δ	6.6m	5J	25	20	5.0	500n	1.00	10m	20 T	#		6.0p	DME	T018	A
46	2N706B†	300m	400m	2.0m	Δ	2.0m	5J	25	20	5.0	10u	1.00	10m	40 T			4.5p	ME	T018	A
47	2N707	300m	400m	2.0m	Δ	2.0m	5J	56	28	4.0	5.0u	1.00	10m	12			5.0p	PE	T018	A
48	2N2967†	300m	400m	1.7m	Δ	1.7m	5J	12	6.0	4.0	50n	5.00	5.00	10m	20 T		3.0p	PE	T018	A
49	2N3337	300m	400m	1.7m	Δ	1.7m	5J	40	40	4.0	50m	25n	1.00	4.0	30 Δ		1.6p	PE	T072	G
50	2N3338	300m	400m	1.7m	Δ	1.7m	5J	40	40	4.0	50m	25n	1.00	4.0	30 Δ		1.6p	PE	T072	G
51	2N3339	300m	400m	1.7m	Δ	1.7m	5J	40	40	4.0	50m	25n	1.00	4.0	30 Δ		1.6p	PE	T072	G
52	2N5186†	300m	400m	1.7m	Δ	1.7m	5S	10	5.0	3.0	300m	5.0u	1.00	10m	25 T		3p	PE	T052	A
53	2N5187†	300m	400m	1.7m	Δ	1.7m	5S	25	10	5.0	500m	.45u	1.00	10m	30 T		3.5p	PE	T052	A
54#	2SC356†	300m	400m	2.0m	Δ	2.0m	5J	30	15	5.0	200m	1.0u	1.00	10m	60 T		4.5p	PE	T046	A
55#	2SC979	300m	400m	2.0m	Δ	2.0m	5J	70	50	5.0	100m	1.0u	1.00	10m	70 T		3.0p	PE	T018	A
56#	2SC1129	300m	400m	4.0m	Δ	4.0m	5J	35	30	3.0	200m	1.0u	1.00	4.0m	20 T	#	450ft	E†	T092	C
57#	2SC1293	300m	400m	3.0m	Δ	3.0m	5J	25	25	3.0	50m	1.0u	6.00	1.0m	120 T	#		PE	R195a	B
58	40217†	300m	400m	2.0m	Δ	2.0m	5J	25	20	5.0	500n	1.00	1.00	10m	20 T		5.0p	PE	T052	
59	BF154	300m	400m	3.0m	Δ	3.0m	5J	30	20	4.0	.50u	1.00	1.00	10m	50 T	#	2.0p	DPE	R97	
60#	BF199	300m	400m	2.9m	Δ	2.9m	5J	40	25	4.0	25m	1.00	7.0m	90 T			2.0p	PE	R224	E
61#	BF241†	300m	400m	2.0m	Δ	2.0m	5J	40	40	4.0	25m	1.00	1.00	10m	36 T		340ft	PE	T092	E
62#	BFV87†	300m	400m	2.0m	Δ	588u	5J	40	40	4.5	500m	.40u	1.00	10m	20 T	#	4p	PE	W5a	B
63#	BFY19	300m	400m	2.0m	Δ	2.0m	5J	30	20	3.0	100m	1.0u	9.00	10m	110		4.0p	PE	T018	
64#	BFY79	300m	400m	1.7m	Δ	1.7m	5J	30	30	4.0	25n	1.00	1.00	4.0m	30 T		1.6p	DPE	T072	G
65	SE6020†	300m	400m	5.9m	Δ	5.9m	5J	60	60	6.5	1	1.0u	1.00	1.0m	100 T		1.1p	DPE	T0105	A
66	SE6021†	300m	400m	5.9m	Δ	5.9m	5J	80	80	6.5	1	1.0u	1.00	1.0m	120 T		1.1p	DPE	T05	A
67	UPI706B	300m	400m	2.0m	Δ	2.0m	5J	25	15	5.0	10u	1.00	1.00	10m	40 T		4.5p	ME	T018	A
68#	ZTX312†	300m	400m	3.0m	Δ	3.0m	5S	30	12	5.0	500m	200n	1.00	10m	40 T		4.0p	PL	B58	A
69#	ZTX312K†	300m	400m	3.0m	Δ	3.0m	5S	30	12	5.0	500m	200n	1.00	10m	40 T		4.0p	PL	B58	A
70#	ZTX312L†	300m	400m	3.0m	Δ	3.0m	5S	30	12	5.0	500m	200n	1.00	10m	40 T		4.0p	PL	B58	A
71#	ZTX312M†	300m	400m	3.0m	Δ	3.0m	5S	30	12	5.0	500m	200n	1.00	10m	40 T		4.0p	PL	B58	A
72#	BF240†	300m	430m	2.0m	Δ	2.0m	5J	40	40	4.0	25m	1.00	1.00	10m	67 T		340ft	PE	T092	E
73#	BF253-2	300m	430m	2.																

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab	DERATE IN FREE AIR W/C	M E M P	ABS MAX RATINGS @25°C			MAX. I <sub>c</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUCTURE	DWG # Y200 S/a TO200 Ser.	L C O A D E					
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					hoe (mhos)	hie (Ω)	hre (X.0001)		
1	BSX44	300m	800MSΔ	2.0m	Δ	15	15	4.0	200m#	20m∅	30 Δ			PE	T018						
2	HEPS0017-RT	300m	800MS	2.0m	Δ	30	30	3.0	50m	10n∅	50 Δ			E	T072	A					
3	MM 1941	300m	800MSΔ	2.0m	Δ	30	30	3.0	200m	10u∅	50 Δ			E	T018	A∅					
4#	2SC 1128	300m	830MS	4.0m	#J	35	35	3.0	100m	300n	70 Δ			ET	T092	C					
5#	2SC 1727	300m	700MS	3.4m	#J	35	35	3.0	25m	200n∅	50 Δ			E∅	T092	C					
6	40404	300m	700MS	2.0m	#A	40	16	5.0	500m	25n∅	65 Δ			PE	T052	A∅					
7#	BF311	300m	750MS	1.7m	Δ	15	15	4.0	25m	10∅	15m∅	40 Δ			350ft	T092	E				
8	2N709A1	300m	800MS	1.7m	#J	15	6.0	4.0		5.0∅	10m∅	60 Δ		PE	T018	A∅					
9	ST6125	300m	800MSΔ	1.6m	Δ	10	5.0	3.0		5.0∅	10m∅	20 Δ		PE	T018	A∅					
10	2N2729	300m	900MSΔ	1.7m	#J	30	15	3.0	50m	0.1u∅	50 Δ			PE	T046	A∅					
11	2N5200S	300m	900MSΔ	1.7m	#J	20	20	4.5	100m	0.1u∅	50 Δ			PE	T046	A∅					
12#	2SC2512	300m	900MS	3.0m	#J	30	20	3.0	50m	500n	30 Δ			E	T092	C					
13	MPSH33	300m	950MS	2.4m	#J	30	30	3.0	100m	100n∅	2.5m∅	20 Δ		AN∅	R190	A					
14	2N27841	300m	1.0G5Δ	1.7m	#J	15	6.0	4.0		5.0∅	10m∅	40 Δ		PE	T018	A∅					
15#	2SC 1906	300m	1.0G5	3.0m	#J	30	19	2.0	50m	500n∅	10∅	40 Δ		PE	T092	A					
16	ST6120F	300m	1.0G5	1.6m	#J	10	5.0	3.0	50m	50n∅	10m∅	20		PE	T018						
17	2N5201S	300m	1.1G5Δ	1.7m	#J	20	20	4.5	100m	0.1u∅	50 Δ			PE	T046	A∅					
18	2N36331	300m	1.3G5Δ	1.7m	#J	15	6.0	4.0	50m	5.0n∅	10m∅	50 Δ		PE	T018	A∅					
19#	2SC 1747	300m	1.4G5Δ	2.0m	#J	40	20	3.0	100m	1.0u∅	20m∅	25 Δ		∅	T072	G					
20#	2SC 1265*	300m	3.0G5	2.0m	#J	20	12	3.0	50m	500n∅	100 Δ			EΔ	T139	PR					
21	BCY59VIII	309m*	300MS	2.0m	#J	45	7.0	200m	10n∅	5.0∅	2.0m∅	260	24u	30	3.7p	T018	A∅				
22#	BC358	310m		2.8m	TJ	20	18	3.0	100m	10∅	100 Δ			10p∅	T092	F					
23	CS9014	310m		2.8m	TJ	20	18	3.0	100m	50n	60 Δ			PE	T092	A					
24	CS9014A	310m		2.8m	TJ	20	18	3.0	100m	50n	60 Δ			PE	T092	A					
25	CS9014B	310m		2.8m	TJ	20	18	3.0	100m	50n	60 Δ			PE	T092	A					
26	CS9014C	310m		2.8m	TJ	20	18	3.0	100m	50n	200 Δ			PE	T092	A					
27	CS9014D	310m		2.8m	TJ	20	18	3.0	100m	50n	400 Δ			PE	T092	A					
28	MPS2711	310m		2.9m	TJ	18	18	5.0			30 Δ			4p∅	T092	A					
29	MPS2712	310m		2.9m	TJ	18	18	5.0			75 Δ			4p∅	T092	A					
30	MPS2715	310m		2.9m	TJ	18	18	5.0			30 Δ			3.5p∅	T092	A					
31	MPS2716	310m		2.9m	TJ	18	18	5.0			75 Δ			3.5p∅	T092	A					
32	MPS3392	310m		2.9m	TJ	25	25	5.0			300 Δ			3.5p∅	T092	A					
33	MPS3393	310m		2.9m	TJ	25	25	5.0			180 Δ			3.5p∅	T092	A					
34	MPS3394	310m		2.9m	TJ	25	25	5.0			170 Δ			3.5p∅	T092	A					
35	MPS3395	310m		2.9m	TJ	25	25	5.0			150 Δ			3.5p∅	T092	A					
36	MPS3396	310m		2.9m	TJ	25	25	5.0			90 Δ			3.5p∅	T092	A					
37	MPS3397	310m		2.9m	TJ	25	25	5.0			500 Δ			3.5p∅	T092	A					
38	MPS3398	310m		2.9m	TJ	25	25	5.0			800 Δ			3.5p∅	T092	A					
39	MPS3708	310m		2.9m	TJ	30	30	6.0			660 Δ			AN∅	T092	A					
40	MPS6541	310m		2.9m	TJ	30	30	4.0						1.7p	T092	A					
41	MPS6544	310m		2.9m	TJ	60	60	4.0						AN	T092	A					
42	MPS6545	310m		2.9m	TJ	60	60	4.0						AN	T092	A					
43	MPS6564	310m		2.8m	TJ	40	45	5.0	50m	500n∅	5.0∅	10m∅	25 Δ		4.0p	T092	A				
44	MPS6567	310m		2.9m	TJ	40	40	5.0						.7p∅	T092	A					
45	HSE419-RT	310m	40MSΔ	3.1m	#J	140	120	5.0		1.0u∅	5.0∅	10m∅	100 Δ		AN	T092	A				
46#	KT650A	310m	40MS		#A				50m	1.0u∅	10	1.0m	300 Δ								
47#	BC333	310m	50MS				25		50m	50m	5.0∅	100u∅	100 Δ		4.0p∅	T092	F				
48	BC335	310m	50MS				25		50m	50m	5.0∅	100m∅	100 Δ		4.0p∅	T092	A				
49	CS9011E	310m	50MSΔ	2.8m	TJ	20	18	3.0	100m	50n	5.0∅	1.0m∅	28 Δ		3.5p∅	T092	A				
50	CS9011F	310m	50MSΔ	2.8m	TJ	20	18	3.0	100m	50n	5.0∅	1.0m∅	39 Δ		3.5p∅	T092	A				
51	CS9011G	310m	50MSΔ	2.8m	TJ	20	18	3.0	100m	50n	5.0∅	1.0m∅	54 Δ		3.5p∅	T092	A				
52	CS9011H	310m	50MSΔ	2.8m	TJ	20	18	3.0	100m	50n	5.0∅	1.0m∅	72 Δ		3.5p∅	T092	A				
53	CS9011I	310m	50MSΔ	2.8m	TJ	20	18	3.0	100m	50n	5.0∅	1.0m∅	97 Δ		3.5p∅	T092	A				
54	CS9011J	310m	50MSΔ	2.8m	TJ	20	18	3.0	100m	50n	5.0∅	1.0m∅	132 Δ		3.5p∅	T092	A				
55	HSE412-RT	310m	50MSΔ	3.1m	#J	70	70	4.0	100n∅	1.0∅	10m∅	60 Δ			T092	A					
56	HSE415-RT	310m	50MSΔ	3.1m	#J	25	25	4.0	100n	5.0∅	10m∅	250 Δ			T092	A					
57	HSE416-RT	310m	50MSΔ	3.1m	#J	30	25	4.5	100n∅	5.0∅	10m∅	400 Δ			T092	A					
58	MPS3707	310m	50MS	2.9m	TJ	30	30	6.0	30m	100n	5.0∅	100u∅	100 Δ		5.0p∅	T092	A				
59	MPS3709	310m	50MS	2.9m	TJ	30	30	6.0	30m	100n	5.0∅	1.0m∅	45 Δ		5.0p∅	T092	A				
60	MPS3710	310m	50MS	2.9m	TJ	30	30	6.0	30m	100n	5.0∅	1.0m∅	90 Δ		5.0p∅	T092	A				
61	MPS3711	310m	50MS	2.9m	TJ	30	30	6.0	30m	100n	5.0∅	1.0m∅	180 Δ		5.0p∅	T092	A				
62	HSE411-RT	310m	60MSΔ	3.1m	#J	60	50	5.0	100n∅	1.0∅	10m∅	60 Δ			T092	A					
63	HSE417-RT	310m	60MSΔ	3.1m	#J	45	40	4.0	50n∅	5.0∅	10m∅	120 Δ			T092	A					
64	HSE418-RT	310m	60MSΔ	3.1m	#J	25	25	4.0	100n∅	5.0∅	10m∅	200 Δ			T092	A					
65	MPS6591	310m	60MSΔ	2.8m	#J	60	50	4.0	250m	100n∅	10∅	10m∅	40 Δ		75u	1.4k	800m	12p	AN∅	R210	A
66	HEPS0024-RT	310m	80MS	2.8m	TJ	50	50	4.5	50m	50n∅	5.0∅	100u∅	400 Δ			T092	A				
67	MPSA09	310m	80MS	2.8m	TJ	50	50	5.0	50m	100n∅	5.0∅	100u∅	100 Δ		5.0p∅	T092	A				
68	HSE420-RT	310m	100MSΔ	3.1m	#J	160	160	5.0	100n∅	100n∅	5.0∅	10m∅	100 Δ			T092	A				
69	MPS3704	310m	100MSΔ	2.8m	TJ	50	30	5.0	600m	100n∅	2.0∅	50m∅	100 Δ		12p∅	T092	A				
70	MPS3705	310m	100MSΔ	2.8m	TJ	50	30	5.0	600m	100n∅	2.0∅	50m∅	50 Δ		12p∅	T092	A				
71	MPS3706	310m	100MSΔ	2.8m	TJ	40	20	5.0	600m	100n∅	2.0∅	50m∅	30 Δ		12p∅	T092	A				
72	MPS9623	310m	100MSΔ	2.8m	TJ	18	18	5.0	100m	100n∅	5.0∅	1.0m∅	25 Δ		3.5p∅	T092	A				
73	MPS9624	310m	100MSΔ	2.8m	TJ	40	30	5.0	100m	100n∅	5.0∅	1.0m∅	25 Δ		3.5p∅	T092	A				
74	NPC290	310m	100MS	2.5m	#S	40	35	5.0	100m	50n∅	5.0∅	2.0	1.1kΔ		5.0p∅	T092	A				
75	HSE408-RT	310m	150MSΔ	3.1m	#J	50	40	5.0	100n∅	10n∅	1.0∅	150m∅	100 Δ		E	T092	A				
76	PTC 139	310m	150MSΔ	2.8m	TJ	33	30	7.0	100m	100u∅	8.0∅	5.0m∅	700 Δ			T092	A				

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 DERATE fab (Hz)	3 IN FREE AIR W/°C	M A M E X P	ABS MAX RATINGS @ 25°C					TYPICAL 'h' PARAMETERS					Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E				
						VBcbo (V)	BVceo (V)	VBcbo (V)	IC (A)	ICBO @ MAX Vcb (A)	Vcb (V)	IE (A)	hfe	hoe (mhos)	hie (Ω)					hre (X.0001)			
1	BC318B	310m	280MS	2.8m	TJ	30	20	5.0	150m	30n	5.0	2.0	200	1Δ#			4.0p	PE	T092	A			
2	BC318C	310m	280MS	2.8m	TJ	30	20	5.0	150m	30n	5.0	2.0	420	1Δ#		4.0p	PE	T092	A				
3	BC319	310m	280MS	2.8m	TJ	30	20	5.0	150m	30n	5.0	2.0	200	1Δ#		4.0p	PE	T092	A				
4	BC319B	310m	280MS	2.8m	TJ	30	20	5.0	150m	30n	5.0	2.0	450	1Δ#		4.0p	PE	T092	A				
5	BC319C	310m	280MS	2.8m	TJ	30	20	5.0	150m	30n	5.0	2.0	420	1Δ#		4.0p	PE	T092	A				
6	2N4264†	310m	300MSΔ	2.8m	TS	30	15	6.0	200m	1u#	1.0	10m	40	1Δ		4.0p	PE	T092	A				
7	2N4265†	310m	300MSΔ	2.8m	TS	30	12	6.0	200m	1u#	1.0	10m	100	1Δ		4.0p	PE	T092	A				
8	AST4124†	310m	300MSΔ	2.8m	TS	30	25	5.0	200m	50n	1.0	2.0	120	Δ		4.0p	PE	R203	A				
9	BCY58IX†	310m*	300MS	2.0m	SJ	32	7.0	200m	10n	5.0	2.0	200	330		30u	4.5k	2.0	3.7p	AN	T018	A		
10	BCY58VII†	310m*	300MS	2.0m	SJ	32	7.0	200m	10n	5.0	2.0	200	260		18u	2.7k	1.5	3.7p	AN	T018	A		
11	BCY58VIII†	310m*	300MS	2.0m	SJ	32	7.0	200m	10n	5.0	2.0	200	260		24u	3.6k	2.0	3.7p	AN	T018	A		
12	BCY58XI†	310m*	300MS	2.0m	SJ	32	7.0	200m	10n	5.0	2.0	520	520		50u	7.5k	3.0	3.7p	AN	T018	A		
13	BCY59IX†	310m*	300MS	2.0m	SJ	45	7.0	200m	10n	5.0	2.0	300	330		30u	4.5k	2.0	3.7p	AN	T018	A		
14	BCY59VII†	310m*	300MS	2.0m	SJ	45	7.0	200m	10n	5.0	2.0	200	200		18u	2.7k	1.5	3.7p	AN	T018	A		
15	BCY59VIII†	310m*	300MS	2.0m	SJ	45	7.0	200m	10n	5.0	2.0	200	200		50u	7.5k	3.0	3.7p	AN	T018	A		
16#	BSR14†	310m	300MSΔ	2.8m	SJ	75	40	6.0	800m	10n	1.0	50m	40	1Δ#		35u	8.0k	8.0	1.7p	PE	X156e	A	
17#	BSR17†	310m	300MSΔ	2.8m	SJ	60	40	6.0	200m	5.0u	1.0	100u	40	1Δ#		40u	10k	8.0	1.7p	PE	X156e	A	
18	CS9016	310m	300MSΔ	2.8m	TJ	20	20	3.0	25m	50n	5.0	1.0	28	Δ						PE	T092	A	
19	CS9016D	310m	300MSΔ	2.8m	TJ	20	20	3.0	25m	50n	5.0	1.0	28	Δ						PE	T092	A	
20	CS9016E	310m	300MSΔ	2.8m	TJ	20	20	3.0	25m	50n	5.0	1.0	39	Δ						PE	T092	A	
21	CS9016F	310m	300MSΔ	2.8m	TJ	20	20	3.0	25m	50n	5.0	1.0	54	Δ						PE	T092	A	
22	CS9016G	310m	300MSΔ	2.8m	TJ	20	20	3.0	25m	50n	5.0	1.0	72	Δ						PE	T092	A	
23	CS9016H	310m	300MSΔ	2.8m	TJ	20	20	3.0	25m	50n	5.0	1.0	97	Δ						PE	T092	A	
24	EN3904†	310m	300MSΔ	2.8m	TJ	60	40	5.0	200m	50n#	1.0	2.0	100	Δ		40u	10k	8.0	4.0p	DPE	T0106	A	
25	HEPS0015-RT	310m	300MS	2.8m	TJ	60	40	6.0	600m		1.0	150m	200	†								T092	A
26	HSE405-RT	310m	300MSΔ	3.1m	†J	30	20	4.0		40n	1.0	50m	50	Δ								T092	A
27	MPS2926	310m	300MS	2.9m	TJ	18		5.0					470	†								T092	A
28	MPS3721	310m	300MS	2.8m	TJ	18		5.0	100m	500n	10	2.0	60	Δ								T092	A
29	MPS6569	310m	300MSΔ	2.9m	TJ	20	3.0															T092	A
30	MPS6570	310m	300MSΔ	2.9m	TJ	20	3.0															T092	A
31	MPSH19	310m	300MSΔ	2.8m	TJ	30	25	3.0		100n	10	4.0	45	†								T092	C
32	MPSH31	310m	300MSΔ	2.8m	TJ	20	20	3.0		50n	5.0	4.0	20	†								T092	C
33	MPSH37	310m	300MSΔ	2.8m	TJ	40	40	5.0		500n	10	5.0	25	†								T092	C
34	MPS534†	310m	350MSΔ	2.8m	TJ	40	30	3.0	200m	50n	1.0	1.0	25	†								T092	A
35	MPS6568	310m	375MSΔ	2.8m	TJ	20	20	3.0		50n	5.0	4.0	20	†								T092	A
36	MPS6568A	310m	375MSΔ	2.8m	TJ	20	20	3.0		50n	5.0	4.0	20	†								T092	A
37	MPS6520	310m	390MS	2.8m	TJ	40	25	4.0	100m	.05u	1.0	2.0	200	†								T092	A
38	MPS6521	310m	390MS	2.8m	TJ	40	25	4.0	100m	.05u	1.0	2.0	300	†								T092	A
39	MPS6530	310m	390MS	2.8m	TJ	60	40	5.0	600m	.05u	1.0	100m	85	†								T092	A
40	MPS6531	310m	390MS	2.8m	TJ	60	40	5.0	600m	.05u	1.0	100m	150	†								T092	A
41	MPS6532	310m	390MS	2.8m	TJ	50	30	5.0	600m	.05u	1.0	100m	30	†								T092	A
42	BF366	310m	400MSΔ	2.4m	SJ	35	30	4.0	25m	50n	1.0	3.0	15	†								T092	A
43	BF369	310m	400MSΔ	2.8m	TJ	30	20	4.0	50m	100n	1.0	1.0	70	†								T092	A
44#	BF369†	310m	400MSΔ	2.8m	TJ	30	20	4.0	50m	100n	1.0	1.0	70	†								T092	A
45	HEPS0033-RT	310m	400MS	2.8m	TJ	40	40	4.0	25m	50n	1.0	4.0	80	†								T092	C
46	HSE422-RT	310m	400MSΔ	3.1m	†J	30	20	3.0		100n	1.0	3.0	20	†								T092	A
47	HSE424-RT	310m	400MSΔ	3.1m	†J	60	40	3.0		500n	1.0	10m	80	†								T092	A
48	BF367	310m	440MS	2.4m	SJ	40	30	4.0	25m	50n	5.0	4.0	35	†								T092	A
49	HEPS0008-RT	310m	440MS	2.8m	TJ	40	30	4.0	20m	50n	5.0	4.0	35	†								T092	C
50	MPSH32	310m	440MS	2.8m	TJ	40	30	4.0		50n	5.0	4.0	35	†								T092	C
51	MPS6539	310m	500MSΔ	2.8m	TJ	20	20	3.0		50n	10	4.0	20	†								T092	C
52	CS9018	310m	600MSΔ	2.8m	TJ	15	12	2.0	100m	50n	5.0	1.0	28	†								T092	A
53	CS9018D	310m	600MSΔ	2.8m	TJ	15	12	2.0	100m	50n	5.0	1.0	28	†								T092	A
54	CS9018E	310m	600MSΔ	2.8m	TJ	15	12	2.0	100m	50n	5.0	1.0	39	†								T092	A
55	CS9018F	310m	600MSΔ	2.8m	TJ	15	12	2.0	100m	50n	5.0	1.0	24	†								T092	A
56	CS9018G	310m	600MSΔ	2.8m	TJ	15	12	2.0	100m	50n	5.0	1.0	72	†								T092	A
57	MPS918	310m	600MSΔ	2.8m	TJ	30	15	3.0		10n	10	8.0	20	†								T092	A
58	MPS3563	310m	600MSΔ	2.8m	TJ	30	12	2.0		50n	10	8.0	20	†								T092	A
59	MPS6546	310m	600MSΔ	2.9m	TJ	35	3.0															T092	A
60	MPS6547	310m	600MSΔ	2.9m	TJ	35	3.0															T092	A
61	MPS6548	310m	650MSΔ	2.8m	TJ	30	25	3.0		100n	10	4.0	25	†								T092	C
62	MPS6507	310m	700MSΔ	2.8m	TJ	30	20	3.0	100m	.05u	10	2.0	25	†								T092	A
63	MPS6542	310m	700MSΔ	2.9m	TJ	30	3.0															T092	A
64	BF371	310m	720MS	2.4m	SJ	40	30	4.0	100m	50n	10	7.0	40	†								T092	A
65	MPS6543	310m	750MSΔ	2.9m	TJ	35	3.0															T092	C
66	HEPS0020-RT	310m	800MS	2.8m	TJ	30	20	3.0	100m	50n	2.0	75	†									T092	A
67	HEPS0016-RT	310m	850MS	2.8m	TJ	35	25	2.0	100m	100n	4.0	40	†									T092	C
68#	2SC2471	310m	2.0G	2.5m	TJ	30	30	3.0	50m	100n	10	5.0	20	†								T092	A
69#	2SC1928	315m	10M		†J	50	50	25	50m	200n	3.0	1.0	200	†								T092	A
70	2N5027†	320m	250MSΔ	3.4m	†J	30	5.0	5.0	350m	250n	1.0	1.0	20	†								T092	B
71	2N5028†	320m	250MSΔ	3.4m	†J	30	5.0	5.0	350m	250n	1.0	1.0	35	†								T092	B
72	2N3605A†	320m	300MSΔ	3.4m	†J	40	15	5.0	200m	25n	1.0	10m	30	†								T092	B
73	2N3606A†	320m	300MSΔ	3.4m	†J	40	15	5.0	200m	25n	1.0	10m	30	†								T092	B
74#	BSY19																						



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE fab (Hz)	T   ABS MAX RATINGS @ 25°C	MAX. TYPICAL 'h' PARAMETERS			BIAS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	# L E O D E
					Vcbo (V)	Vceo (V)	Vcbo (V)	Ic (A)	Icbo @ MAX Vcb (A)	Vcb (V)	Ic (A)	hfe	hoe (mhos)				
1#	2N5842	350m%		2.0m	20	3.0	100m	20n	4.0	25m	8.5					T072	G
2#	2SC5651	350m		2.3m	50	5.0	200m	1.0	1.0	10m	45				T018	A	
3#	2SC14851	350m		2.3m	250	6.0	125m	1.0	4.0	10m	90			PE	T018	A	
4#	2SC20691	350m		2.3m	20	17	300m	500n	1.0	10m	80			PE	T018	A	
5#	BC585	350m		2.3m	20	17	100m	100n	5.0	500u	120	1Δ		∅	T092	F	
6#	DTN1006	350m		∅	500	400	50m	100u	10	1.0m	40	1		∅	T092	A	
7#	MMBT23691	350m		2.8m	40	15	4.5	200m	400n	10	10m	40	Δ	4p	X15bd	C	
8#	MPS3013	350m		2.8m	40	40	∅	5	200m	300n	30	Δ		5p	T092	A	
9#	MPS3391A	350m		2.8m	25	25	5.0	100m	4.5	2.0m	350			2.0p	T092	A	
10#	MPS6511	350m		2.8m	30	20	3.0	100m	10	10m	25	Δ		2.5p	T092	A	
11#	MPS9410	350m		2.8m	20	12	4.0	500m	1.0	50m	40	Δ		EA	T092	A	
12#	MPS9411	350m		2.8m	25	18	4.0	500m	1.0	50m	40	Δ		PE	T092	A	
13#	MPS9412	350m		2.8m	25	25	4.0	500m	1.0	50m	40	Δ		PE	T092	A	
14#	MPS9630	350m		2.8m	12	12	100m	50n	5.0	1.0m	45	Δ		PE	T092	A	
15#	MPS9631	350m		2.8m	18	18	100m	100n	5.0	1.0m	45	Δ		PE	T092	A	
16#	MPS9632	350m		2.8m	30	30	100m	100n	5.0	1.0m	45	Δ		PE	T092	A	
17#	MPS3391	350m	250kΔ	2.8m	25	25	5.0	100m	4.5	2.0m	250			10p	T092	A	
18#	MPS3390	350m	400kΔ	2.8m	25	25	5.0	100m	4.5	2.0m	400			10p	T092	A	
19#	MMBT4041	350m	4MΔ	2.8m	25	24	12	150m	100n	1.5	12m	30	Δ	20p	X15bd	C	
20#	MMBT4041A	350m	4MΔ	2.8m	40	35	25	150m	100n	1.5	12m	30	Δ	20p	X15bd	C	
21#	2SC727	350m	20.MΔ	2.3m	100	100	3.0	100m	1.0	10m	90	1*		9.0p	T018	A	
22#	2SC7281	350m	20.MΔ	2.3m	200	200	6.0	100m	1.0	10m	90	1*		9.0p	T018	A	
23#	2N5209	350m	30MΔ	2.8m	50	50	4.5	50m	50n	5.0	1.0m	150	Δ	4.0p	T092	A	
24#	2N5210	350m	30MΔ	2.8m	50	50	4.5	50m	50n	5.0	1.0m	250	Δ	4.0p	T092	A	
25#	MMBT930	350m	30MΔ	2.8m	45	45	5	30m	10n	5.0	10u	100	Δ	8p	X15bd	C	
26#	2N2314	350m	40MΔ	2.3m	60	40	5	500m	25n	5.0	1.0m	15	Δ	35p	T046	A	
27#	MPSD02	350m	40MΔ	2.8m	140	140	4.0	50m	100n	10	10m	25	Δ	3.0p	T092	A	
28#	MPSD02	350m	40MΔ	2.8m	140	140	4.0	50m	100n	10	10m	25	Δ	3.0p	T092	A	
29#	MPSD03	350m	40MΔ	2.8m	100	100	4.0	50m	100n	10	10m	25	Δ	3.0p	T092	A	
30#	MPSD03	350m	40MΔ	2.8m	100	100	4.0	50m	100n	10	10m	25	Δ	3.0p	T092	A	
31#	SWT1042	350m	40MΔ	2.8m	30	30	4.0	50m	500p	1.0	10u	200	Δ	4.0p	T092	A	
32#	2N2315	350m	50MΔ	2.3m	60	40	5	500m	25n	5.0	1.0m	25	Δ	35p	T046	A	
33#	2N2316	350m	50MΔ	2.3m	120	80	5	500m	25n	5.0	1.0m	30	Δ	20p	T046	A	
34#	2N2353	350m	50MΔ	2.0m	45	25	5.0	1.0	100n	10	150m	20	1#Δ	20p	T046	A	
35#	2N2353A	350m	50MΔ	2.0m	45	25	5.0	1.0	100n	10	150m	20	1#Δ	20p	T046	A	
36#	2N5225	350m	50MΔ	2.8m	25	25	4.0	500m	300n	10	50m	30	Δ	20p	T092	A	
37#	MMBT5088	350m	50MΔ	2.8m	35	30	5	50m	50n	5.0	100u	300	Δ	4p	X15bd	C	
38#	MMBT5089	350m	50MΔ	2.8m	30	25	5	50m	50n	5.0	100u	400	Δ	4p	X15bd	C	
39#	SO1893	350m	50MΔ	2.8m	80	80	0.8	50m	50n	5.0	150m	40	Δ	15p	T0236	A	
40#	SO1893R	350m	50MΔ	2.8m	80	80	0.8	50m	50n	5.0	150m	40	Δ	15p	T0236	A	
41#	2N2317	350m	60MΔ	2.3m	75	50	5	7.0	500m	10n	5.0	30	Δ	25p	T046	A	
42#	2N2346	350m	60MΔ	2.0m	60	45	10	50m	1.0n	6.0	200	Δ		5.0p	T018	A	
43#	2N4956*	350m	60MΔ	3.5m	30	25	5.0	30m	10n	5.0	1.0m	150	Δ	6.0p	R137	PA	
44#	MPS3567	350m	60MΔ	2.8m	80	40	5.0	500m	1.0	30m	40	1#Δ		AN	T092	A	
45#	MPS3568	350m	60MΔ	2.8m	80	40	5.0	500m	1.0	30m	40	1#Δ		AN	T092	A	
46#	MPS3569	350m	60MΔ	2.8m	80	60	5.0	500m	1.0	30m	100	1#Δ		AN	T092	A	
47#	SO1613	350m	60MΔ	1.6m	50	50	0.8	50m	10n	5.0	150m	40	Δ	25p	T0236	A	
48#	SO1613R	350m	60MΔ	1.6m	50	50	0.8	50m	10n	5.0	150m	40	Δ	25p	T0236	A	
49#	SO1711	350m	70MΔ	2.8m	50	50	0.8	50m	10n	5.0	150m	100	Δ	25p	T0236	A	
50#	SO1711R	350m	70MΔ	2.8m	50	50	0.8	50m	10n	5.0	150m	100	Δ	25p	T0236	A	
51#	MPSA17	350m	80MΔ	2.7m	40	40	15	100m	100n	10	5.0m	200	Δ	4.0p	T092	A	
52#	HSE454-RT	350m	90MΔ	3.5m	65	50	5.0	50m	1.0u	1.0	10m	100	Δ	10p	T092	A	
53#	2N5220	350m	100MΔ	2.8m	15	15	3.0	500m	100n	10	50m	30	Δ	6.0p	T092	A	
54#	2N5550	350m	100MΔ	2.8m	160	140	6.0	600m	100n	10	1.0m	50	Δ	6.0p	T092	A	
55#	2N5551	350m	100MΔ	2.8m	180	160	6.0	600m	50n	10	1.0m	50	Δ	6.0p	T092	A	
56#	2SD1021	350m	100MΔ	2.8m	30	25	5.0	1.0	100n	1.0	100m	200	1*	22p	X189	B	
57#	BCW65A	350m	100MΔ	2.8m	32	32	5.0	800m	20n	1.0	100m	160	1	8.0p	X156a	A	
58#	BCW65B	350m	100MΔ	2.8m	32	32	5.0	800m	20n	1.0	100m	250	1	8.0p	X156a	A	
59#	BCW65C	350m	100MΔ	2.8m	32	32	5.0	800m	20n	1.0	100m	350	1	8.0p	X156a	A	
60#	BCW65EA1	350m	100MΔ	2.8m	32	32	5.0	800m	20n	1.0	100m	100	Δ	12p	X156	A	
61#	BCW65EB1	350m	100MΔ	2.8m	32	32	5.0	800m	20n	1.0	100m	160	Δ	12p	X156	A	
62#	BCW65EC1	350m	100MΔ	2.8m	32	32	5.0	800m	20n	1.0	100m	250	Δ	12p	X156	A	
63#	BCW65EF1	350m	100MΔ	2.8m	45	45	5.0	800m	20n	1.0	100m	100	Δ	12p	X156	A	
64#	BCW65EG1	350m	100MΔ	2.8m	45	45	5.0	800m	20n	1.0	100m	160	Δ	12p	X156	A	
65#	BCW65EH1	350m	100MΔ	2.8m	45	45	5.0	800m	20n	1.0	100m	250	Δ	12p	X156	A	
66#	BCW65F	350m	100MΔ	2.8m	45	45	5.0	800m	20n	1.0	100m	160	1	8.0p	X156a	A	
67#	BCW66G	350m	100MΔ	2.8m	45	45	5.0	800m	20n	1.0	100m	250	1	8.0p	X156a	A	
68#	BCW66H	350m	100MΔ	2.8m	45	45	5.0	800m	20n	1.0	100m	350	1	8.0p	X156a	A	
69#	BCX25	350m	100MΔ	2.8m	60	60	2.0	200m	5.0	10m	70	Δ	6.0p	T092	F		
70#	BCX27	350m	100MΔ	2.8m	80	80	2.0	200m	5.0	10m	70	Δ	6.0p	T092	F		
71#	BCX29	350m	100MΔ	2.8m	100	100	2.0	200m	5.0	10m	70	Δ	6.0p	T092	F		
72#	BCX41	350m	100MΔ	2.7m	125	5.0	800m	100n	5.0	10m	70	Δ	6.0p	T092	F		
73#	BCX41R	350m	100MΔ	2.8m	125	5.0	800m	100n	5.0	10m	70	Δ	6.0p	T092	F		
74#	BCY42#	350m	100MΔ	2.0m	40	25	5.0	200m	25n	5.0	1.0m	40	Δ	6.0p	T018	A	
75#	BCY43#	350m	100MΔ	2.0m	40	20	5.0	200m	25n	5.0	1.0	75	Δ	6.0p	T018	A	
76#	MMBT5550	350m	100MΔ	2.8m	160	140	6	600m	100n	5.0	1m	60	Δ	6p	X15bd	C	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FRE AIR W/°C (Hz)	T M A M P X	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC TURE	DWG # Y200 s/a TO200 Ser.	L O D E
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER						
										V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre X.0001				
1#	ZTX382BK	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	240			5.0p	PL	B58	A	
2#	ZTX382BL	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	240			5.0p	PL	B58	A	
3#	ZTX382BM	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	240			5.0p	PL	B58	A	
4#	ZTX382C	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	450	Δ		2.5p	PL	B58	A	
5#	ZTX382CK	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
6#	ZTX382CL	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
7#	ZTX382CM	350m	150m	2.3m	50	45	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
8#	ZTX383	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	900	Δ		2.5p	PL	X59a	F	
9#	ZTX383B	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		2.5p	PL	B58	A	
10#	ZTX383BK	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		5.0p	PL	B58	A	
11#	ZTX383BL	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		5.0p	PL	B58	A	
12#	ZTX383BM	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		5.0p	PL	B58	A	
13#	ZTX383C	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		2.5p	PL	B58	A	
14#	ZTX383CK	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
15#	ZTX383CL	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
16#	ZTX383CM	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
17#	ZTX384	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	900	Δ		2.5p	PL	B58	A	
18#	ZTX384B	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		2.5p	PL	B58	A	
19#	ZTX384BK	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		5.0p	PL	B58	A	
20#	ZTX384BL	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		5.0p	PL	B58	A	
21#	ZTX384BM	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	240	Δ		5.0p	PL	B58	A	
22#	ZTX384C	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		2.5p	PL	X59a	F	
23#	ZTX384CK	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
24#	ZTX384CL	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
25#	ZTX384CM	350m	150m	2.3m	45	30	6.0	200m	15n	5.0	2.0	450	Δ		5.0p	PL	B58	A	
26#	MP5A18	350m	160m	2.8m	45	45	6.5	200m	50n	5.0	1.0	1.1k†	#		1.7p	AN	T092	A	
27#	MP5A18Z	350m	160m	2.8m	45	45	6.5	200m	100n	5.0	1.0	1.1†	#		1.7p	PE	T092	A	
28#	ZSD1020	350m	170m	2.8m	30	25	5.0	700m	100n	1.0	100m	200	*†#		13p	AN	X189	A	
29#	BF394	350m	180m	2.8m	30	30	5.0	100m	100n	1.0	100m	65	†		900ft	AN	R210a	B	
30#	BF394B	350m	180m	2.8m	30	30	5.0	100m	100n	1.0	100m	160	†		900ft	AN	R210a	C	
31#	BF395	350m	180m	2.8m	30	30	5.0	100m	100n	1.0	1.0m	35	†		900ft	AN	R210a	A	
32#	BF395C	350m	180m	2.8m	30	30	5.0	100m	100n	1.0	1.0m	95	†		900ft	AN	R210a	C	
33#	BF395D	350m	180m	2.8m	30	30	5.0	100m	100n	1.0	1.0m	65	†		900ft	AN	R210a	C	
34#	2N4400†	350m	200m	2.8m	60	40	6.0	600m	100n	1.0	1.0m	20	Δ		6.5p	AN	T092	A	
35#	BC237	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	120	Δ		4.5p	AN	R210a	F	
36#	BC237-5	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	120	Δ		4.5p	AN	W50	F	
37#	BC237-18	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	120	Δ		4.5p	AN	R204e	A	
38#	BC237A5	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	220			4.5p	AN	R207	A	
39#	BC237A18	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	220			4.5p	AN	R204e	A	
40#	BC237AZ	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	220			4.5p	AN	R210a	F	
41#	BC237B5	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	330			4.5p	AN	R207	A	
42#	BC237B18	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	330			4.5p	AN	R204e	A	
43#	BC237BZ	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	330			4.5p	AN	R210a	F	
44#	BC237C5	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	600			4.5p	AN	R207	A	
45#	BC237C18	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	600			4.5p	AN	R204e	A	
46#	BC237CZ	350m	200m	2.8m	45	45	5.0	100m	15n	5.0	2.0	600			4.5p	AN	R210a	F	
47#	BCX19#	350m	200m	2.8m	45	45	5.0	500m	200u†	1.0	100m	100	Δ			PL	X156	F	
48#	BCX19R#	350m	200m	2.8m	45	45	5.0	500m	200u†	1.0	100m	100	Δ			PL	X156	F	
49#	BCX20#	350m	200m	2.8m	45	45	5.0	500m	200u†	1.0	100m	100	Δ			PL	X156	B	
50#	BCX20R#	350m	200m	2.8m	45	45	5.0	500m	200u†	1.0	100m	100	Δ			PL	X156	B	
51#	MMBC1621B2	350m	200m	2.8m	25	20	2.0	200m	100n	0.5	1m	40	Δ†		3p		X15bd	B	
52#	MMBC1621B3	350m	200m	2.8m	25	20	2.0	200m	100n	0.5	1m	60	Δ†		3p		X15bd	C	
53#	MMBC1621B4	350m	200m	2.8m	25	20	2.0	200m	100n	0.5	1m	90	Δ†		3p		X15bd	C	
54#	MMB390A	350m	200m	2.8m	60	40	6.0	100m	100n	1.0	100m	40	Δ		4.0p		X156d	C	
55#	MPS3693Z	350m	200m	2.8m	45	45	6.0	50m	100n	1.0	100m	40	Δ		3.5p		T092	A	
56#	MPS3694Z	350m	200m	2.8m	45	45	6.0	50m	100n	1.0	100m	100	Δ		3.5p		T092	A	
57#	MPS3826Z	350m	200m	2.8m	45	45	6.0	100m	100n	1.0	100m	40	Δ		3.5p		T092	A	
58#	MPS3827Z	350m	200m	2.8m	45	45	6.0	100m	100n	1.0	100m	100	Δ		3.5p		T092	B	
59#	MPS8097	350m	200m	2.8m	60	40	6.0	200m	10u	5.0	100m	250	Δ		4.0p	AN	T092	A	
60#	BC238	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	120	Δ		4.5p	AN	R210a	F	
61#	BC238-5	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	120	Δ		4.5p	AN	R207	A	
62#	BC238-18	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	120	Δ		4.5p	AN	R204e	A	
63#	BC238A5	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	220			4.5p	AN	R207	A	
64#	BC238A18	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	220			4.5p	AN	R204e	A	
65#	BC238AZ	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	220			4.5p	AN	R210a	F	
66#	BC238B5	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	330			4.5p	AN	R207	A	
67#	BC238B18	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	330			4.5p	AN	R204e	A	
68#	BC238BZ	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	330			4.5p	AN	R210a	F	
69#	BC238C5	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	600			4.5p	AN	R207	A	
70#	BC238C18	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	600			4.5p	AN	R204e	A	
71#	BC238CZ	350m	240m	2.8m	20	20	5.0	100m	15n	5.0	2.0	600			4.5p	AN	R210a	F	
72#	2N3643	350m	250m	3.5m	60	30	5.0	500m	50n	1.0	150m	100	†Δ		8.0p		R110a	F	
73#	2N3903†	350m	250m	2.8m	60	40	6.0	200m	50n	1.0	150m	50	Δ		4.0p		T092	A	
74#	2N4123	350m	250m	2.8m	60	40	6.0	200m	0.5u	1.0	2.0m	50	Δ		4.0p		T092	A	
75#	2N4401†	350m	250m	2.8m	60	40	6.0	600m	100n	1.0	1.0m	40	Δ		6.5p		T092	A	
76#	2N5224†	350m	250m	2.8m	25	12	5.0	100m	500n	1.0	10m	40	Δ		4.0p		X22	PB	
77#	2N6503*	350m	250m	2.0m	55	40	6.0	1.0	1.7u	1.0	500m	10	Δ		10p		T092	PB	
78#	ZSC204†	350m	250m	2.3m	30	20	5.0	200m	50n	6.0	2.0m	70			4.0p		T018	A	
79#	BC445	350m	250m	2.8m	60	60	5.0	2											



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E M P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	Y200 s/a TO200 Ser.	# L E O D E			
					V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>eb</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	BIAS I <sub>e</sub> (A)	h <sub>fe</sub>					COMMON EMITTER hoe (mhos)	hie (Ω)	hre (X.0001)
1#	ZTX237BM	350m	250m	2.3m	50	45	6.0	100m	15n	5.0	2.0m	330		PLT	B58	A			
2#	ZTX237K	350m	250m	2.3	50	45	6.0	100m	15n	5.0	2.0m	125 Δ		PLT	B58	A			
3#	ZTX237L	350m	250m	2.3	50	45	6.0	100m	15n	5.0	2.0m	125 Δ		PLT	B58	A			
4#	ZTX237M	350m	250m	2.3	50	45	6.0	100m	15n	5.0	2.0m	125 Δ		PLT	B58	A			
5#	ZTX238AK	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	220		PLT	B58	A			
6#	ZTX238AL	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	220		PLT	B58	A			
7#	ZTX238AM	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	220		PLT	B58	A			
8#	ZTX238BK	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	330		PLT	B58	A			
9#	ZTX238BL	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	330		PLT	B58	A			
10#	ZTX238BM	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	330		PLT	B58	A			
11#	ZTX238CK	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	600		PLT	B58	A			
12#	ZTX238CL	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	600		PLT	B58	A			
13#	ZTX238CM	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	600		PLT	B58	A			
14#	ZTX238K	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	125 Δ		PLT	B58	A			
15#	ZTX238L	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	125 Δ		PLT	B58	A			
16#	ZTX238M	350m	250m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	125 Δ		PLT	B58	A			
17	BC239	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	180 Δ		AN	R210a	F			
18	BC239-5	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	180 Δ		AN	R210a	F			
19	BC239-18	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	180 Δ		AN	R210a	F			
20	BC239B5	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	330	10u	6.0k	2.0	4.5p	AN	R207	A
21	BC239B18	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	330	10u	6.0k	2.0	4.5p	AN	R204e	A
22	BC239B1	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	330	10u	8.0k	2.0	4.5p	AN	R207	A
23	BC239C5	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	600	12u	8.7k	3.0	4.5p	AN	R207	A
24	BC239C18	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	600	12u	8.7k	3.0	4.5p	AN	R204e	A
25	BC239C1	350m	280m	2.8m	45	45	5.0	100m	15n	5.0	2.0m	600	12u	8.7k	3.0	4.5p	AN	R204e	A
26	BC317	350m	280m	2.8m	50	45	6.0	150m	30n	5.0	2.0m	220	20u	5.0k	2.0	2.5p	AN	R210b	A
27	BC317A	350m	280m	2.8m	50	45	6.0	150m	30n	5.0	2.0m	220	20u	5.0k	2.0	2.5p	AN	R210b	A
28	BC317B	350m	280m	2.8m	50	45	6.0	150m	30n	5.0	2.0m	330	20u	5.0k	2.0	2.5p	AN	R210b	A
29	BC318	350m	280m	2.8m	40	30	5.0	150m	30n	5.0	2.0m	330	20u	5.0k	2.0	2.5p	AN	R210b	A
30	BC318A	350m	280m	2.8m	40	30	5.0	150m	30n	5.0	2.0m	220	20u	5.0k	2.0	2.5p	AN	R210b	A
31	BC318B	350m	280m	2.8m	40	30	5.0	150m	30n	5.0	2.0m	330	20u	5.0k	2.0	2.5p	AN	R210b	A
32	BC318C	350m	280m	2.8m	40	30	5.0	150m	30n	5.0	2.0m	600	20u	5.0k	2.0	2.5p	AN	R210b	A
33	BC319	350m	280m	2.8m	30	20	5.0	150m	30n	5.0	2.0m	600	20u	5.0k	2.0	2.5p	AN	R210b	A
34	BC319B	350m	280m	2.8m	30	20	5.0	150m	30n	5.0	2.0m	330	20u	5.0k	2.0	2.5p	AN	R210b	A
35	BC319C	350m	280m	2.8m	30	20	5.0	150m	30n	5.0	2.0m	600	20u	5.0k	2.0	2.5p	AN	R210b	A
36	2N3904	350m	300m	2.8m	60	40	6.0	200m	50n	10	1.0m	100 Δ	40u	10k	8.0	4.0p	PE	T092	A
37	JAN2N3904	350m	300m	2.7m	60	40	6.0	200m	50n	10	1.0m	100 Δ	40u	10k	8.0	4.0p	PE	T092	A
38	2N4072	350m	300m	2.0m	40	20	4.0	100m	10u	2.0	25m	10 Δ				4p	PE	T018	A
39	2N4124	350m	300m	2.8m	30	25	5.0	200m	0.5u	10	2.0m	120 Δ				4p	PE	T092	A
40	2N4955*	350m	300m	3.4m	30	25	5.0	30m	0.1u	5.0	1.0m	1.0k	40u	30k	8	6p	PE	R137	PA
41#	BC147	350m	300m	3.5m	50	45	6.0	100m	15n	5.0	2.0m	125 Δ				2.5p	PE1	XXXXX	A
42#	BC147A	350m	300m	3.5m	50	45	6.0	100m	15n	5.0	2.0m	220	18u	2.7k	1.5	2.5p	PE1	XXXXX	A
43#	BC147B	350m	300m	3.5m	50	45	6.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE1	XXXXX	A
44#	BC148	350m	300m	3.5m	30	20	5.0	100m	100n	5.0	2.0m	125 Δ				2.5p	PE1	XXXXX	A
45#	BC148A	350m	300m	3.5m	30	20	5.0	100m	100n	5.0	2.0m	220	18u	2.7k	1.5	2.5p	PE1	XXXXX	A
46#	BC148B	350m	300m	3.5m	30	20	5.0	100m	100n	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE1	XXXXX	A
47#	BC148C	350m	300m	3.5m	30	20	5.0	100m	100n	5.0	2.0m	600	60u	8.7k	3.0	2.5p	PE1	XXXXX	A
48#	BC149	350m	300m	3.5m	30	20	5.0	100m	15n	5.0	2.0m	240 Δ				2.5p	PE1	XXXXX	A
49#	BC149B	350m	300m	3.5m	30	20	5.0	100m	15n	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE1	XXXXX	A
50#	BC149C	350m	300m	3.5m	30	20	5.0	100m	15n	5.0	2.0m	600	60u	8.7k	3.0	2.5p	PE1	XXXXX	A
51#	BCF32#	350m	300m	2.3m	32	32	5.0	100m	100n	5.0	2.0m	200 †				4.0p	PE	X156a	A
52#	BCF32R#	350m	300m	2.3m	32	32	5.0	100m	100n	5.0	2.0m	200 †				4.0p	PE	X156a	C
53#	BCF33#	350m	300m	2.3m	32	32	5.0	100m	100n	5.0	2.0m	420 †				4.0p	PE	X156a	A
54#	BCF33R#	350m	300m	2.3m	32	32	5.0	100m	100n	5.0	2.0m	420 †				4.0p	PE	X156a	C
55#	BCF81#	350m	300m	2.3m	50	45	5.0	100m	100n	5.0	2.0m	420 †				4.0p	PE	X156a	A
56#	BCF81R#	350m	300m	2.3m	50	45	5.0	100m	100n	5.0	2.0m	420 †				4.0p	PE	X156a	C
57#	BCV71#	350m	300m	2.3m	80	60	5.0	100m	100n	5.0	2.0m	110 †				4.0p	PE	X156a	A
58#	BCV71R#	350m	300m	2.3m	80	60	5.0	100m	100n	5.0	2.0m	110 †				4.0p	PE	X156a	C
59#	BCV72#	350m	300m	2.3m	80	60	5.0	100m	100n	5.0	2.0m	200 †				4.0p	PE	X156a	A
60#	BCV72R#	350m	300m	2.3m	80	60	5.0	100m	100n	5.0	2.0m	200 †				4.0p	PE	X156a	C
61#	BCW81#	350m	300m	2.3m	50	45	5.0	100m	100n	5.0	2.0m	420 †				4.0p	PE	X156a	A
62#	BCW81R#	350m	300m	2.3m	50	45	5.0	100m	100n	5.0	2.0m	420 †				4.0p	PE	X156a	C
63#	BSR17R	350m	300m	2.3m	60	40	6.0	200m	5.0u	1.0	1.0m	70 †				4.0p	PE	X156a	C
64	HEPS0025-RT	350m	300m	2.8m	60	40	6.0	600m	15n	1.0	150m	100 †				5.0p	AN*	X22	PB
65	MD708AF*	350m	300m	2.0m	40	15	5.0	200m	15n	1.0	500u	40 Δ #				5.0p	AN*	X22	PB
66	MD708BF*	350m	300m	2.0m	40	15	5.0	200m	15n	1.0	500u	40 Δ #				5.0p	AN*	X22	PB
67	MD708F*	350m	300m	2.0m	40	15	5.0	200m	15n	1.0	500u	40 Δ #				3.0p	AN	X22	PB
68	MD7003AF*	350m	300m	2.0m	50	40	5.0	50m	100n	10	100u	350 † #				3.0p	AN	X22	PB
69	MD7003F*	350m	300m	2.0m	50	40	5.0	50m	100n	10	100u	350 † #				3.0p	AN	X22	PB
70#	MMBT2222A1	350m	300m	2.8m	75	40	6.0	600m	50n	10	100u	35 Δ †				8p	PE	X156b	C
71	MPS8351	350m	300m	2.8m	25	20	3.0	200m	500n	5.0	10m	3.0 Δ				4.0p	PE	T092	A
72	MPSH30	350m	300m	2.8m	20	20	3.0	200m	50n	5.0	4.0m	20 Δ				650fs	AN	T092	A
73#	ZTX239BK	350m	300m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	330				4.5p	PL	B58	A
74#	ZTX239BL	350m	300m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	330				4.5p	PL	B58	A
75#	ZTX239BM	350m	300m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	330				4.5p	PL	B58	A
76#	ZTX239CK	350m	300m	2.3m	45	30	6.0	100m	15n	5.0	2.0m	600				4.5p	PL	B58	A
77#	ZTX239CL	350m	300m	2.3m	45	30	6.0	100m	15n	5									

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @ 25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	T M A M P	ABS MAX RATINGS @ 25°C			MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG #/s/a TO200 Ser.	L E O A D E		
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					hoe (mhos)	hie (Ω)
1	MMBC1321Q5	350m	600mΔ	2.8m	Δ	30	25	3.0	10m	100n	1.0	2.0	135	Δ	1.3p	X15bd	C
2	MMBT918	350m	600mΔ	2.8m	Δ	30	15	3.0	10m	100n	1.0	3.0	20	Δ	3.0p	X156d	A
3	MPS918	350m%	600mΔ	2.8m	Δ	30	15	3.0	50m	1.0u	1.0	3.0	20	Δ	3.0p	T092	A
4	MPS3563	350m	600mΔ	2.8m	Δ	40	12	3.0	50m	1.0u	1.0	8.0	20	Δ	1.7p	T092	A
5	MPS3646†	350m	600mΔ	2.8m	Δ	40	15	3.0	300m	500u	4.0	3.0	65	#	2.5p	R210a	A
6	MPS6546Δ	350m	600mΔ	2.8m	Δ	35	25	3.0	50m	100n	5.0	2.0	20	Δ	450ft	T092	C
7	MPS6547Δ	350m	600mΔ	2.8m	Δ	35	25	3.0	50m	100n	5.0	2.0	20	Δ	350ft	T092	C
8	MPSH10	350m	650mΔ	2.8m	Δ	30	25	3.0	50m	100n	1.0	4.0	60	Δ	700ft	T092	C
9	MPSH11	350m	650mΔ	2.8m	Δ	30	25	3.0	50m	100n	1.0	4.0	60	Δ	700ft	T092	C
10	BF311	350m	700mΔ	2.9m	Δ	40	25	4.0	40m	50n	1.0	15m	38	Δ	340ft	R204	C
11	MPS6507	350m	700mΔ	2.8m	Δ	30	25	3.0	50m	100n	1.0	2.0	25	Δ	2.5p	T092	A
12	MPS6542Δ	350m	700mΔ	2.8m	Δ	30	20	3.0	50m	100n	1.0	2.0	25	Δ	1.5p	T092	A
13	BF374	350m	800m	2.8m	Δ	30	25	3.0	100m	100n	1.0	1.0	75	Δ	550ft	R210a	A
14	BF375	350m	800m	2.8m	Δ	30	25	3.0	100m	100n	1.0	1.0	35	Δ	550ft	R210a	C
15	BF375C	350m	800m	2.8m	Δ	30	25	3.0	100m	100n	1.0	1.0	70	Δ	550ft	R210a	C
16	BF375D	350m	800m	2.8m	Δ	30	25	3.0	100m	100n	1.0	1.0	35	Δ	550ft	R210a	C
17	HEPS0010-RT	350m	800m	2.8m	Δ	30	25	3.0	20m	100n	4.0	4.0	75	†	550ft	T092	C
18	MMBR2060	350m	1GΔ	2.8m	Δ	30	14	3.0	50m	50n	5.0	5m	20	Δ	1p	X15bd	C
19	MMBR2857	350m	1GΔ	2.8m	Δ	30	15	3.0	40m	50n	5.0	3m	30	Δ	1p	X15bd	C
20	MMBR901	350m	4.0G	2.8m	Δ	25	15	3.0	50m	50n	5.0	5.0	80	†	400ft	X156d	A
21	25C1988	350m%	4.5G	2.8m	Δ	25	12	3.0	70m	1u	1.0	2.0	20	Δ	0.6p	Y20bd	X
22	MMBR930	350m	5.5G	2.8m	Δ	15	12	3.0	50m	50n	5.0	3.0	25	Δ	600ft	X156d	A
23	2N2368	.36	6.8m	6.8m	Δ	40	15	4.5	500m	0.4u	1.0	10m	4.0	Δ	4.0p	T018	A
24	2N2831	360m	2.1m	2.1m	Δ	40	12	3.0	200m	0.3u	1.0	10m	4.0	Δ	5p	T018	A
25	2N3414	360m	2.6m	2.6m	Δ	25	25	5.0	500m	100n	4.5	2.0	75	Δ		T098	B
26	2N3415	360m	2.6m	2.6m	Δ	25	25	5.0	500m	100n	4.5	2.0	180	Δ		T098	B
27	2N3416	360m	2.6m	2.6m	Δ	50	50	5.0	500m	100n	4.5	2.0	75	Δ		T098	B
28	2N3417	360m	2.6m	2.6m	Δ	50	50	5.0	500m	100n	4.5	2.0	100	Δ		T098	B
29	2N3510	360m	2.0m	2.0m	Δ	40	10	6.0	500m	25n	1.0	1.0	12	Δ	10uΔ	T052	A
30	2N3511	360m	2.0m	2.0m	Δ	40	15	6.0	500m	25n	1.0	1.0	15	Δ	10uΔ	T052	A
31	2N3707	360m	2.9m	2.9m	Δ	30	30	6.0	30m	10u	5.0	1.0	100	Δ		T092	B
32	2N3708	360m	2.9m	2.9m	Δ	30	30	6.0	30m	10u	5.0	1.0	45	Δ		T092	B
33	2N3709	360m	2.9m	2.9m	Δ	30	30	6.0	30m	10u	5.0	1.0	45	Δ		T092	B
34	2N3710	360m	2.9m	2.9m	Δ	30	30	6.0	30m	10u	5.0	1.0	90	Δ		T092	B
35	2N3711	360m	2.9m	2.9m	Δ	30	30	6.0	30m	10u	5.0	1.0	180	Δ		T092	B
36	2N4269	360m	2.0m	2.0m	Δ	200	140	15	30m	1.0u	1.0	10m	200	†	5p	T018	A
37	2N4424	360m	2.8m	2.8m	Δ	40	40	5.0	500m	100n	4.5	2.0	180	Δ		T098	B
38	2N5824	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	60	Δ	4.0p	R203a	A
39	2N5825	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	100	Δ	4.0p	R203a	A
40	2N5826	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	150	Δ	4.0p	R203a	A
41	2N5827	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	250	Δ	4.0p	R203a	A
42	2N5827A	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	250	Δ	4.0p	R203a	A
43	2N5828	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	400	Δ	4.0p	R203a	A
44	2N5828A	360m	3.6m	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0	400	Δ	4.0p	R203a	A
45	2N6222	360m	2.8m	2.8m	Δ	60	60	5.0	100m	50n	5.0	2.0	75	Δ	4.0p	R207b	A
46	2N6224	360m	2.8m	2.8m	Δ	60	60	5.0	100m	50n	5.0	2.0	150	Δ	4.0p	R207b	A
47	25C321HA†	360m	2.4m	2.4m	Δ	40	15	5.0	200m	250n	1.0	10m	35	Δ	4.0p	T018	A
48	25C321HB†	360m	2.4m	2.4m	Δ	40	15	5.0	200m	250n	1.0	10m	60	Δ	4.0p	T018	A
49	25C321HC†	360m	2.4m	2.4m	Δ	40	15	5.0	200m	250n	1.0	10m	100	Δ	4.0p	T018	A
50	AST3707	360m	2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	100u	100	Δ		R203	A
51	AST3708	360m	2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	45	Δ		R203	A
52	AST3709	360m	2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	45	Δ		R203	A
53	AST3710	360m	2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	90	Δ		R203	A
54	AST3711	360m	2.9m	2.9m	Δ	30	30	6.0	30m	100n	5.0	1.0	180	Δ		R203	A
55	BC223A	360m	2.9m	2.9m	Δ	50	30	5.0	400m	100n	2.0	50m	100	Δ		R203c	A
56	BC223B	360m	2.9m	2.9m	Δ	50	30	5.0	400m	100n	2.0	50m	200	Δ		R203c	A
57	BC280	360m	2.9m	2.9m	Δ	40	30	5.0	100m	100n	5.0	1.0	180	Δ	2.8p	T018	A
58	BF237	360m	2.9m	2.9m	Δ	45	30	4.0	30m	10u	1.0	1.0	30	Δ		R203	A
59	BF238	360m	2.9m	2.9m	Δ	45	30	4.0	30m	10u	1.0	1.0	70	Δ		R203	A
60	LDS2070	360m	2.9m	2.9m	Δ	20	10	5.0	30m	100n	5.0	1.0	75	Δ		T0122	P
61	MPS2711	360m	18	18	Δ	18	18	100m	100n	4.5	2.0	30	Δ	4.0p	T092	A	
62	MPS2716	360m	18	18	Δ	18	18	100m	100n	4.5	2.0	75	Δ	5.0p	T092	A	
63	MPS2923	360m	25	25	Δ	25	25	100m	100n	1.0	2.0	90	Δ	12p	T092	A	
64	MPS2924	360m	25	25	Δ	25	25	100m	100n	1.0	2.0	150	Δ	12p	T092	A	
65	MPS2925	360m	25	25	Δ	25	25	100m	100n	1.0	2.0	235	Δ	12p	T092	A	
66	MPS2926	360m	18	18	Δ	18	18	100m	100n	1.0	2.0	35	Δ	3.5p	T092	A	
67	MPS2990	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	400	Δ	10p	T092	A	
68	MPS3390	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	400	Δ	10p	T092	A	
69	MPS3391	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	250	Δ	10p	T092	A	
70	MPS3392	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	150	Δ	10p	T092	A	
71	MPS3393	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	90	Δ	10p	T092	A	
72	MPS3394	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	55	Δ	10p	T092	A	
73	MPS3395	360m	25	25	Δ	25	25	100m	100n	4.5	2.0	150	Δ	10p	T092	A	
74	MPS3396																

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	DERATE IN FREE AIR W/°C (Hz)	TEMP. R. M. A. X. P.	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D E			
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001							
1	PET4003	360m	60MΔ	3.6m	Δ	30	25	8.0	100m	0.1u	100	1.0m	400				3p	PLT	R110	A		
2	ST71000	360m	60MΔ	2.3m	Δ	60	30	15	50m	2.0m	5.0	100u	400	1Δ			4.0p	PE	T018	A		
3#	BFX92A	360m	69.8M	2.0m	Δ	60	60	6.0	50m	0.1u	5.0	1.0m	280			11u	DPL	T018	A			
4#	BFX93A	360m	78MΔ	2.0m	Δ	60	60	6.0	50m	10n	5.0	1.0m	400			15u	DPL	T018	A			
5#	BC285	360m	80MΔ	2.0m	Δ	120	120	5.0	100m	100n	30	5.0m	30	1Δ			4.0p	PE	T018	A		
6	GES929	360m	90MΔ	3.6m	Δ	70	50	5.0	100m	10n	5.0	100u	60	1Δ			4.0p	PE	T092	A		
7	GES930	360m	90MΔ	3.6m	Δ	70	50	5.0	100m	10n	5.0	100u	100	1Δ			4.0p	PE	T092	A		
8	GES3565	360m	90MΔ	2.8m	Δ	30	25	6.0	100m	50n	1.0	1.0m	150	1Δ			4.0p	PE	T092	A		
9	GES5824	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	60	1Δ		8.2u	1.6k	820m	T092	A		
10	GES5825	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	100	1Δ		11u	2.4k	1.0	T092	A		
11	GES5826	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	150	1Δ		17u	3.6k	1.4	T092	A		
12	GES5827	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	250	1Δ					T092	A		
13	GES5827A	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	250	1Δ					T092	A		
14	GES5828	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	400	1Δ					T092	A		
15	GES5828A	360m	90MΔ	3.6m	Δ	50	40	5.0	100m	50n	5.0	2.0m	400	1Δ					T092	A		
16	GES6222	360m	90MΔ	2.8m	Δ	60	60	5.0	100m	50n	5.0	2.0m	75	1Δ					T092	A		
17	GES6224	360m	90MΔ	2.8m	Δ	60	60	5.0	100m	50n	5.0	2.0m	150	1Δ					T092	A		
18	2N3704	360m	100MΔ	2.9m	Δ	50	30	5.0	800m	10u	2.0	50m	300	#			12p	PE	T092	A		
19	2N3705	360m	100MΔ	2.9m	Δ	50	30	5.0	800m	10u	2.0	50m	150	#			12p	PE	T092	B		
20	2N3706	360m	100MΔ	2.9m	Δ	40	20	5.0	800m	10u	2.0	50m	600	#			12p	PE	T092	B		
21	2N5449	360m	100MΔ	2.9m	Δ	50	30	5.0	800m	10u	2.0	50m	100	#			12p	PE	R203	A		
22	2N5450	360m	100MΔ	2.9m	Δ	50	30	5.0	800m	10u	2.0	50m	50	#			12p	PE	R203	A		
23	2N5451	360m	100MΔ	2.9m	Δ	40	20	5.0	800m	10u	2.0	50m	30	#			12p	PE	R203	A		
24	BC223	360m	100MΔ	2.8m	Δ	30	30	400m									10p	PE	T092	F		
25#	BFR16	360m	100MΔ	6.9m	Δ	60	60	8.0	50m	10n	5.0	1.0m	150	1Δ		17u	10k	4.3	3.5p	PL	T018	A
26#	BFR17	360m	100MΔ	5.9m	Δ	60	60	8.0	50m	20n	5.0	1.0m	450	1Δ		20u	10k	4.5	3.5p	PL	T018	A
27#	BFT29	360m	100MΔ	2.0m	Δ	90	80	5.0	100m	100n	1.0	100m	50	1Δ			10p	PE	T018	A		
28#	BFT30	360m	100MΔ	2.0m	Δ	70	60	5.0	100m	100n	1.0	100m	75	1Δ			10p	PE	T018	A		
29#	BFT31	360m	100MΔ	2.0m	Δ	60	50	5.0	100m	100n	1.0	100m	100	1Δ			10p	PE	T018	A		
30	GES97	360m	100MΔ	2.8m	Δ	60	40	6.0	100m	50n	5.0	100u	250	1Δ			5.0p	PE	T092	A		
31	GES98	360m	100MΔ	2.8m	Δ	80	60	6.0	100m	10n	5.0	1.0m	100	1Δ			5.0p	PE	T092	A		
32	GES5449	360m	100MΔ	2.8m	Δ	50	30	5.0	800m	100n	2.0	50m	100	#			12p	PE	T092	A		
33	GES5450	360m	100MΔ	2.8m	Δ	50	30	5.0	800m	100n	2.0	50m	50	#			12p	PE	T092	A		
34	GES5451	360m	100MΔ	2.8m	Δ	40	20	5.0	800m	100n	2.0	50m	100	#			12p	PE	T092	A		
35#	MPS3704	360m	100MΔ			20	20	800m					100	#			12p	PE	T092	A		
36#	MPS3705	360m	100MΔ			20	20	800m					100	#			12p	PE	T092	A		
37#	MPS3706	360m	100MΔ			20	20	800m					100	#			12p	PE	T092	A		
38#	MPS6573	360m	100MΔ			35	35	100m					100	#			12p	PE	T092	A		
39#	MPS6574	360m	100MΔ			35	35	100m					100	#			12p	PE	T092	A		
40#	MPS6576	360m	100MΔ			45	45	100m					100	#			12p	PE	T092	A		
41#	PET3704	360m	100MΔ	3.6m	Δ	50	30	5.0	100m	10u	2.0	50m	50	Δ			12p	PE	R110	A		
42	PET3705	360m	100MΔ	3.6m	Δ	50	30	5.0	800m	10u	2.0	50m	50	Δ			12p	PE	R110	A		
43	PET3706	360m	100MΔ	3.6m	Δ	40	20	5.0	800m	10u	2.0	50m	50	Δ			12p	PE	R110	A		
44#	BFT57	360m	110MΔ	2.1m	Δ	160	160	5.0	200m	50n	1.0	30m	25	1Δ			5.5p	PE	T018	A		
45#	BFT58	360m	110MΔ	2.1m	Δ	250	250	5.0	200m	50n	1.0	30m	25	1Δ			5.5p	PE	T018	A		
46#	BFT59	360m	110MΔ	2.1m	Δ	300	300	5.0	200m	50n	1.0	30m	25	1Δ			5.5p	PE	T018	A		
47	BCY59-7	360m	125MΔ			45	45	7.0	10n	5.0	2.0m	220	10	1Δ			6.0p	PE	T018	A		
48	BCY59-8	360m	125MΔ			45	45	7.0	10n	5.0	2.0m	310	10	1Δ			6.0p	PE	T018	A		
49	BCY59-9	360m	125MΔ			45	45	7.0	10n	5.0	2.0m	460	10	1Δ			6.0p	PE	T018	A		
50	BCY59-10	360m	125MΔ			45	45	7.0	10n	5.0	2.0m	630	10	1Δ			6.0p	PE	T018	A		
51#	BCW34	360m	150M	2.7m	Δ	60	45	5.0	600m	10n	5.0	100m	100	Δ		5.0u		40k	10	PE	T018	A
52	2N6112	360m	160MΔ	2.8m	Δ	50	30	5.0	10n	5.0	2.0m	185	10	Δ			10p	PE	X149	B		
53	2N706Ct	360m	200MΔ	2.0m	Δ	15	15	5.0	50m	1.0u	1.0	10m	20	1Δ			5.0p	PE	T018	A		
54	2N9191	360m	200MΔ	2.1m	Δ	25	15	5.0	220m	10u	1.0	10m	20	1Δ			7.0p	PE	T018	A		
55	2N9201	360m	200MΔ	2.1m	Δ	25	15	5.0	220m	10u	1.0	10m	40	1Δ			7.0p	PE	T018	A		
56	2N947	360m	200MΔ	2.9m	Δ	20	15	3.0	100m	1.0u	1.0	10m	30	#			8p	PE	T018	A		
57	2N3826	360m	200MΔ	2.9m	Δ	45	40	4.0	30m	10u	1.0	10m	40	#			4p	PE	T092	B		
58	2N3827	360m	200MΔ	2.9m	Δ	60	45	4.0	30m	10u	1.0	10m	100	#			4p	PE	T092	B		
59	2N39731	360m	200MΔ	2.6m	Δ	30	30	5.0	400m	10u	1.0	10m	35	1Δ			7.0p	PE	R67b	B		
60	2N39741	360m	200MΔ	2.6m	Δ	30	30	5.0	400m	10u	1.0	10m	55	1Δ			7.0p	PE	R67b	B		
61	2N39751	360m	200MΔ	2.6m	Δ	30	30	5.0	400m	10u	1.0	10m	35	1Δ			7.0p	PE	R67b	B		
62	2N39761	360m	200MΔ	2.6m	Δ	30	30	5.0	400m	10u	1.0	10m	55	1Δ			7.0p	PE	R67b	B		
63	2N4994	360m	200MΔ	2.9m	Δ	45	40	4.0	30m	10u	1.0	10m	40	#			4p	PE	R203	A		
64	2N4995	360m	200MΔ	2.9m	Δ	45	40	4.0	30m	10u	1.0	10m	100	#			4p	PE	R203	A		
65	2N5525	360m	200MΔ	2.8m	Δ	40	30	9.0	200m	100n	1.0	10m	50k	Δ			10p	PE	R196d	B		
66	2N5526	360m	200MΔ	2.8m																		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	DERATE IN FREE AIR W/°C (Hz)	TEMP. RANG. °C	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O D E
					V <sub>ce</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001				
1	GES53701	380m	250M	2.8m	50	30	5.0	500m	50n#	100	150m	200	1A#	8.0p	PE	TO92	A		
2	GES53711	380m	250M	2.8m	50	30	5.0	500m	50n#	100	150m	80	1A#	8.0p	PE	TO92	A		
3	GET2222	380m	250M	3.6m	60	30	5.0	400m	10n#	1.0	150m	50	1A#	8.0p	PE	TO18	A		
4	LDA400	380m	250M	2.9m	35	35	5.0	30m	10n#	5.0	10u	40	1A#	6.0p	PE	S5	P		
5	LDA400MP*	380m	250M	2.9m	35	35	5.0	30m	10n#	5.0	10u	40	1A#	6.0p	PE	S5	P		
6	LDA401	380m	250M	2.9m	35	35	5.0	30m	10n#	5.0	10u	100	1A#	6.0p	PE	S5	P		
7	LDA401MP*	380m	250M	2.9m	35	35	5.0	30m	10n#	5.0	10u	100	1A#	6.0p	PE	S5	P		
8	LDA402	380m	250M	2.9m	35	35	5.0	30m	100n	5.0	1.0m	100	1A#	6.0p	PE	S5	P		
9	LDA403	380m	250M	2.9m	35	35	5.0	30m	100n	5.0	1.0m	270	1A#	6.0p	PE	S5	P		
10	MM3903†	380m	250M	2.0m	60	40	6.0	200m	50n#	1.0	1.0m	50	Δ	40u	AN	TO52	A		
11	NS3903	380m	250M	2.0m	60	40	6.0	200m	50n#	1.0	1.0m	50	Δ	40u	AN	TO18	A		
12#	PET3903	380m	250M	3.5m	60	40	6.0	200m	500n#	1.0	1.0m	50	Δ	40u	PE	R110	A		
13	T1511†	380m	250M	2.8m	60	40	6.0	800m	100n#	1.0	1.0m	40	Δ	30u	PE	TO18	A		
14	2N708	380m	300M	2.1m	50	15	5.0	200m	25n#	1.0	1.0m	30	Δ	6.0p	PE	TO18	A		
15	JAN2N708†	380m	300M	2.0m	40	15	5.0	200m	25n#	1.0	1.0m	40	Δ	6.0p	PE	TO18	A		
16	2N708A	380m	300M	2.1m	50	20	5.0	200m	0.1u	1.0	1.0m	40	Δ	6.0p	PE	TO18	A		
17	2N784A†	380m	300M	2.0m	40	20	5.0	200m	100u	1.0	1.0m	88	Δ	3.5p	PE	TO18	A		
18	JAN2N784†	380m	300M	2.1m	40	15	5.0	200m	25n#	1.0	1.0m	30	Δ	6.0p	PE	TO18	A		
19	2N914A†	380m	300M	2.1m	40	15	5.0	50m	5.0n#	1.0	1.0m	30	Δ	6.0p	PE	TO18	A		
20	2N916	380m	300M	2.0m	45	25	5.0	50m	0.1u	5.0	5.0m	50	Δ	6.0p	PE	TO18	A		
21	JAN2N916†	380m	300M	2.0m	45	25	5.0	50m	10n#	5.0	1.0m	40	Δ	6.0p	PE	TO18	A		
22	2N916A	380m	300M	2.1m	45	25	5.0	50m	10n#	5.0	5.0m	50	Δ	6.0p	PE	TO18	A		
23	2N2242	380m	300M	2.0m	40	15	5.0	500m	10u	1.0	1.0m	80	Δ	6.0p	PE	TO18	A		
24	2N2272†	380m	300M	2.0m	40	15	5.0	500m	25n#	1.0	1.0m	60	Δ	6.0p	PE	TO18	A		
25	2N2318	380m	300M	2.0m	30	15	5.0	500m	1.0u	4.0	2.0m	40	Δ	5.0p	PE	TO18	A		
26	JAN2N2318†	380m	300M	2.0m	30	15	5.0	500m	50n#	1.0	1.0m	40	Δ	5.0p	PE	TO18	A		
27	2N3210†	380m	300M	2.0m	40	15	5.0	500m	10n#	1.0	1.0m	30	Δ	6.0p	PE	TO18	A		
28	2N3947†	380m	300M	2.0m	60	40	6.0	200m	0.1u#	1.0	1.0m	100	Δ	4.0p	PE	TO18	A		
29	2N4013†	380m	300M	2.0m	50	30	6.0	500m	1.7u	1.0	100m	15	Δ	10p	PE	TO18	A		
30	2N4414†	380m	300M	2.0m	80	50	6.0	500m	1.7u	1.0	100m	25	Δ	10p	PE	TO18	A		
31	2N4421†	380m	300M	2.8m	30	12	5.0	200m	500n#	4.0	30m	15	Δ	5.0p	PE	R203	A		
32	2N5144s	380m	300M	2.0m	50	30	6.0	500m	1.7u	1.0	1.0m	30	Δ	1.2p	PE	TO18	A		
33	2N5376	380m	300M	2.8m	60	30	5.0	500m	10n#	5.0	1.0m	120	Δ	8.0p	PE	R207	A		
34	2N5376†	380m	300M	2.8m	60	30	5.0	500m	10n#	5.0	1.0m	100	Δ	8.0p	PE	R207	A		
35	2N5381†	380m	300M	2.8m	60	40	6.0	200m	50n#	1.0	1.0m	100	Δ	4.0p	PE	R207	A		
36#	2SC35	380m	300M	2.4m	25	25	3.0	100m	50u#	6.0	1.0m	50	Δ	4.0p	PE	TO18	A		
37#	2SC321HT	380m	300M	2.3m	40	15	5.0	200m	250n#	1.0	1.0m	35	Δ	6.0p	PE	TO18	A		
38	40219†	380m	300M	2.0m	40	15	5.0	500m	30n#	1.0	1.0m	30	Δ	6.0p	PE	TO52	A		
39	40221†	380m	300M	2.0m	40	15	5.0	500m	30n#	1.0	1.0m	30	Δ	6.0p	PE	TO52	A		
40	A5T3904†	380m	300M	2.8m	60	40	6.0	200m	80n#	1.0	1.0m	100	Δ	4.0p	PE	R203	A		
41#	BF224	380m	300M	2.9m	45	30	4.0	50m	1.0u	10	7.0m	85	Δ	3.0p	PE	R203	A		
42#	BF224Z	380m	300M	2.9m	45	30	4.0	50m	1.0u	10	7.0m	30	Δ	3.0p	PE	R203	A		
43#	BFV85C†	380m	300M	417u	75	40	6.0	800m	0.1u	10	1.0m	30	Δ	8.0p	PE	W5a	B		
44#	GES222A†	380m	300M	2.1m	40	30	5.0	500m	0.2u	1.0	1.0m	30	Δ	8.0p	PE	TO18	A		
45	MM3904†	380m	300M	3.6m	60	40	6.0	200m	10n#	1.0	150m	100	Δ	8.0p	PE	TO92	A		
46	NS3904	380m	300M	2.0m	60	40	6.0	200m	50n#	1.0	1.0m	100	Δ	5.0p	PE	TO52	A		
47	NS3904	380m	300M	2.0m	60	40	6.0	200m	50n#	1.0	1.0m	100	Δ	4.0p	PE	TO52	A		
48#	PET3904	380m	300M	3.5m	60	40	6.0	200m	50n#	1.0	1.0m	120	Δ	4.0p	PE	R110	A		
49#	PET4124	380m	300M	3.5m	30	25	5.0	200m	50m#	1.0	2.0m	120	Δ	4.0p	PE	R110	A		
50#	ZT708	380m	300M	2.0m	40	15	5.0	500m	25n#	1.0	1.0m	120	Δ	6.0p	PE	TO18	A		
51#	2N913	380m	300M	2.0m	30	15	5.0	500m	0.5u	1.0	1.0m	75	Δ	6.0p	PE	TO18	A		
52	2N2310†	380m	350M	2.1m	40	20	6.0	500m	25n#	1.0	1.0m	25	Δ	4.0p	PE	TO18	A		
53	2N2851†	380m	350M	2.1m	40	20	5.0	500m	30n#	1.0	1.0m	25	Δ	4.0p	PE	TO18	A		
54	2N3009†	380m	350M	2.0m	40	15	4.0	200m	5.0u	4.0	30m	30	Δ	5.0p	PE	TO52	A		
55	2N3013†	380m	350M	2.0m	40	15	5.0	200m	30u	4.0	30m	30	Δ	5.0p	PE	TO52	A		
56	JAN2N3013†	380m	350M	2.0m	40	20	5.0	300m	40u#	4.0	30m	35	Δ	5.0p	PE	TO52	A		
57	2N3211†	380m	350M	2.1m	40	15	6.0	500m	1.0u	1.0	1.0m	25	Δ	5.0p	PE	TO18	A		
58	2N4420†	380m	350M	2.8m	40	20	5.0	200m	500n#	4.0	30m	30	Δ	5.0p	PE	R203	A		
59	2N4422†	380m	350M	2.8m	40	15	5.0	200m	500n#	4.0	30m	30	Δ	5.0p	PE	R203	A		
60#	BSV59†	380m	400M	2.0m	40	15	5.0	500m	500n#	1.0	500m	10	Δ	1.0p	PE	TO18	A		
61#	BSX88A†	380m	400M	2.0m	40	20	5.5	500m	30u	1.0	1.0m	80	Δ	3.0p	DPE	TO18	A		
62	LDS210†	380m	350M	2.9m	50	30	5.0	500m	500n#	1.0	150m	30	Δ	4.0p	PE	TO122	P		
63#	BFY74	380m	400M	2.0m	60	45	5.0	500m	0.1u	5.0	5.0m	90	Δ	3.0p	DPE	TO18	A		
64#	BFY75	380m	400M	2.1m	60	45	5.0	500m	0.1u	5.0	5.0m	130	Δ	3.0p	DPE	TO18	A		
65#	BSX87†	380m	370M	2.0m	50	15	5.0	500m	25n#	1.0	1.0m	55	Δ	4.5p	DPE	TO18	A		
66#	2N921†	380m	400M	63u	50	20	5.0	200m	10u	1.0	1.0m	40	Δ	4.0p	ME	TO18	A		
67	2N922	380m	400M	63u	50	20	5.0	200m	10u	1.0	1.0m	40	Δ	4.0p	ME	TO18	A		
68	2N3011†	380m	400M	2.0m	40	12	5.0	200m	40u	35	1.0m	30	Δ	4.0p	PE	TO18	A		
69	2N4419†	380m	400M	2.9m	30	12	4.5	200m	40u#	1.0	1.0m	30	Δ	4.0p	PE	R203	A		
70#	2SC67†	380m	400M	2.0m	40	40	5.0	200m	10u	1.0	1.0m	80	Δ	4.0p	PE	TO18	A		
71#	2SC68†	380m	400M	2.0m	40	15	5.0	2											



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG No. s/a TO200 Ser.	# L E O D E			
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)	BIAS			COMMON EMITTER								
									V <sub>cb</sub> (V)		I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)					h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001	
1	2N48731	360m	700mΔ	Δ	40	15	4.5	200m	40μs	1.0Ω	10mΩ	150	1#	4pΩ	PE	T018	A			
2	2SC6391	360m	750mΔ	Δ	40	12	5.0	200m	400nΩ	1.0Ω	10mΩ	80	1#	1.5p	PE	T018	A			
3	2N5292S	360m	800mΔ	Δ	12	40	4.5	100m	1nΩ	1.0Ω	100mΩ	30	1#	4.5pΩ	PE	T018	A			
4	2N5107S	360m	900mΔ	Δ	60	30	5.0	500m	0.1μΩ	10Ω	150mΩ	100	1#	8pΩ	PE	T018	A			
5	LDA406	360m	900mΔ	Δ	30	15	3.0	25m	10nΩ	10Ω	3.0mΩ	20	Δ	3.0pΩ	PE	T0122	A			
6	LDA420	360m	1.0GΔ	Δ	2.9m	25	2.0	150m	10nΩ	5.0Ω	50mΩ	25	Δ	4.0pΩ	PE	T0122	A			
7	BC377Z	375m	100mΔ	Δ	30	25	6.0	1.0	1.0	1.0Ω	100mΩ	75	Δ	12pΩ	PE	T018	A			
8	BC378Z	375m	100mΔ	Δ	25	25	6.0	1.0	1.0	1.0Ω	100mΩ	75	Δ	12pΩ	PE	T018	A			
9	BC377	375m	200mΔ	Δ	50	45	6.0	1.0	15n	1.0Ω	100mΩ	75	Δ	12pΩ	PE	T018	A			
10	BC378	375m	200mΔ	Δ	30	25	6.0	1.0	15n	1.0Ω	100mΩ	75	Δ	12pΩ	PE	T018	A			
11	2SC918	375m	400mΔ	Δ	20	20	3.0	30m	200nΩ	10Ω	4.0mΩ	20	Δ	450fΩ	PE	T0104	A			
12	2E622	386m	300kΔ	Δ	50	30	2.0	50m	100n	1.5Ω	500μA	25	f	70pΩ	PE	T05	A			
13	BCY59A	390m	150mΔ	Δ	45	45	7.0	200m	0.1μ	5.0Ω	2.0mΩ	200	Δ	6.0pΩ	PE	T018	A			
14	BCY59B	390m	150mΔ	Δ	45	45	7.0	200m	0.1μ	5.0Ω	2.0mΩ	260	Δ	6.0pΩ	PE	T018	A			
15	BCY59C	390m	150mΔ	Δ	45	45	7.0	200m	0.1μ	5.0Ω	2.0mΩ	330	Δ	6.0pΩ	PE	T018	A			
16	BCY59D	390m	150mΔ	Δ	45	45	7.0	200m	0.1μ	5.0Ω	2.0mΩ	520	Δ	6.0pΩ	PE	T018	A			
17	2N4074	400m#	3.3m	Δ	40	40	8.0	300m	10nΩ	12Ω	10mΩ	400	Δ	6.0pΩ	PE	R179d	A			
18	2N5418	400m	4.0m	Δ	25	25	5.0	500m	100n	10Ω	2.0mΩ	25	Δ	6.0pΩ	PE	T098	B			
19	2N5419	400m	4.0m	Δ	25	25	5.0	500m	100n	10Ω	2.0mΩ	70	Δ	6.0pΩ	PE	T098	B			
20	2N5420	400m	4.0m	Δ	25	25	5.0	500m	100n	10Ω	2.0mΩ	150	Δ	6.0pΩ	PE	T098	B			
21	2N5998	400m	4.0m	Δ	35	25	5.0	500m	30nΩ	2.0Ω	10mΩ	150	Δ	6.0pΩ	PE	T098	B			
22	2N6008	400m	4.0m	Δ	35	25	5.0	500m	30nΩ	2.0Ω	10mΩ	250	Δ	6.0pΩ	PE	T098	B			
23	2SC853	400m	4.0m	Δ	70	60	5.0	200m	100nΩ	1.0Ω	50mΩ	80	f*	6.0pΩ	PE	R198a	B			
24	2SC881	400m	4.0m	Δ	60	45	5.0	200m	100n	1.0Ω	50mΩ	80	f	6.0pΩ	PE	R198a	B			
25	2SC1213	400m	4.0m	Δ	35	35	4.0	500m	500n	3.0Ω	10mΩ	40	Δ	3.0pΩ	PE	T092	B			
26	2SC1213AB	400m	4.0m	Δ	50	50	4.0	500m	500n	3.0Ω	10mΩ	60	Δ	3.0pΩ	PE	T092	B			
27	2SC1213AC	400m	4.0m	Δ	50	50	4.0	500m	500n	3.0Ω	10mΩ	100	Δ	3.0pΩ	PE	T092	B			
28	2SC1213B	400m	4.0m	Δ	35	35	4.0	500m	500n	3.0Ω	10mΩ	60	Δ	3.0pΩ	PE	T092	B			
29	2SC1213C	400m	4.0m	Δ	35	35	4.0	500m	500n	3.0Ω	10mΩ	100	Δ	3.0pΩ	PE	T092	B			
30	2SC1213D	400m	4.0m	Δ	35	35	4.0	500m	500n	3.0Ω	10mΩ	160	Δ	3.0pΩ	PE	T092	B			
31	2SC1264	400m	3.2m	Δ	30	20	3.0	100m	500n	10Ω	40mΩ	100	f	3.0pΩ	PE	W5C	C			
32	2SC2634NC	400m	3.2m	Δ	60	55	7.0	100m	100n	5.0Ω	2.0mΩ	700	Δ	3.5p	PE	T092	B			
33	2SD636	400m	3.6m	Δ	30	25	7.0	200m	1.0μ	10Ω	2.0mΩ	90	Δ	3.5p	PE	B37	D			
34	2SD637	400m	3.6m	Δ	60	50	7.0	200m	1.0μ	10Ω	2.0mΩ	90	Δ	3.5p	PE	B37	D			
35	BC282	400m	2.2m	Δ	60	30	5.0	600m	50n	5.0Ω	50mΩ	50	Δ	3.0p	PE	T018	A			
36	CS9013	400m	3.6m	Δ	25	25	3.0	1.0	500n	1.0Ω	50mΩ	64	Δ	3.0p	PE	T092	A			
37	CS9013E	400m	3.6m	Δ	25	25	3.0	1.0	500n	1.0Ω	50mΩ	78	Δ	3.0p	PE	T092	A			
38	CS9013F	400m	3.6m	Δ	25	25	3.0	1.0	500n	1.0Ω	50mΩ	96	Δ	3.0p	PE	T092	A			
39	CS9013G	400m	3.6m	Δ	25	25	3.0	1.0	500n	1.0Ω	50mΩ	118	Δ	3.0p	PE	T092	A			
40	CS9013H	400m	3.6m	Δ	25	25	3.0	1.0	500n	1.0Ω	50mΩ	144	Δ	3.0p	PE	T092	A			
41	IT126*	400m	2.3mΩ	Δ	60	60	7.0	100m	100pΩ	5.0Ω	1.0mΩ	200	Δ	3.0pΩ	PE	T078	FA			
42	IT127*	400m	2.3mΩ	Δ	60	60	7.0	100m	100pΩ	5.0Ω	1.0mΩ	200	Δ	3.0pΩ	PE	T078	FA			
43	IT128*	400m	2.3mΩ	Δ	55	55	7.0	100m	100pΩ	5.0Ω	1.0mΩ	150	Δ	3.0pΩ	PE	T078	FA			
44	IT129*	400m	2.3mΩ	Δ	45	45	7.0	100m	100pΩ	5.0Ω	1.0mΩ	100	Δ	3.0pΩ	PE	T078	FA			
45	2SC2544E	400m	90mΔ	Δ	4.0m	Δ	120	100n	100n	12Ω	2.0mΩ	400	Δ	3.0p	PE	T092	B			
46	2SC2545D	400m	90mΔ	Δ	4.0m	Δ	60	60	5.0	100m	100n	120	Δ	3.0p	PE	T092	B			
47	2SC2545E	400m	90mΔ	Δ	4.0m	Δ	60	60	5.0	100m	100n	120	Δ	3.0p	PE	T092	B			
48	2SC2545F	400m	90mΔ	Δ	4.0m	Δ	60	60	5.0	100m	100n	120	Δ	3.0p	PE	T092	B			
49	2SC2546D	400m	90mΔ	Δ	4.0m	Δ	90	90	5.0	100m	100n	120	Δ	3.0p	PE	T092	B			
50	2N6566E	400m	3.0mΔ	Δ	2.3m	Δ	30	30	30	100m	50p	1.0	100	Δ	3.0p	PE	T046	A		
51	2N6566D	400m	5.0mΔ	Δ	2.3m	Δ	30	30	30	100m	1.0n	1.0	100	Δ	3.0p	PE	T046	A		
52	AD818*	400m	8mΔ	Δ	4.0m	Δ	60	50	5.0	150m	100n	120	Δ	3.0p	PE	T071	FA			
53	AD814*	400m	10mΔ	Δ	2.3m	Δ	35	35	3.0	10m	10p	5.0	10kΔ	3.0u	5.0k	600m	2.0p	PE	T071	FA
54	AD815*	400m	10mΔ	Δ	2.3m	Δ	20	20	7.0	10m	10p	5.0	10kΔ	3.0u	5.0k	600m	2.0p	PE	T071	FA
55	AD816*	400m	10mΔ	Δ	2.3m	Δ	10	10	7.0	10m	10p	5.0	2.0kΔ	3.0u	5.0k	600m	2.0p	PE	T071	FA
56	BF250	400m	20.MΔ	Δ	2.7m	Δ	15	15	3.0	600m	50n	5.0	0.1m	30	Δ	8.0p	PE	T018	A	
57	2N2514	400m	2.0m	Δ	2.3m	Δ	80	60	6.0	100m	5.0n	5.0	0.1m	15	Δ	6.0p	PE	T046	A	
58	2N2517	400m	3.0m	Δ	2.2m	Δ	125	80	8.0	50m	5.0n	5.0	0.1m	20	Δ	6.0p	PE	T046	A	
59	2SC2878	400m	30mΔ	Δ	4.0m	Δ	50	20	25	300m	100n	2.0	4.0m	200	Δ	4.8p	PE	T092	B	
60	2N710	400m	40mΔ	Δ	10m	Δ	60	40	5.0	1.0μ	10Ω	50mΩ	20	1#	35pΩ	PE	T018	A		
61	2N710	400m	40mΔ	Δ	10m	Δ	120	80	5.0	2.0μ	10Ω	50mΩ	25	Δ	35pΩ	PE	T018	A		
62	TD234*	400m	40m	Δ	45	45	5.0	500m	10n	5.0	100μ	55	Δ	8.0p	PE	R131c	FA			
63	TD235*	400m	40m	Δ	45	45	5.0	500m	10n	5.0	100μ	55	Δ	8.0p	PE	R131c	FA			
64	TD236*	400m	40m	Δ	45	45	5.0	500m	10n	5.0	100μ	55	Δ	8.0p	PE	R131c	FA			
65	TD237*	400m	40m	Δ	45	45	5.0	500m	10n	5.0	100μ	110	Δ	8.0p	PE	R131c	FA			
66	TD238*	400m	40m	Δ	45	45	5.0	500m	10n	5.0	100μ	110	Δ	8.0p	PE	R131c	FA			
67	TD239*	400m	40m	Δ	45	45	5.0	500m	10n	5.0	100μ	110	Δ	8.0p	PE	R131c	FA			
68	2N718	400m	50mΔ	Δ	10m	Δ	60	40	5.0	1.0μ	10Ω	150mΩ	40	f	35pΩ	PE	T018	A		
69	2N720	400m	50mΔ	Δ	10m	Δ	120	80	5.0	2.0μ	10Ω	150mΩ	40	f	35pΩ	PE	T018	A		
70	2N909	400m	50mΔ	Δ	2.6m	Δ	60	30	5.0	1.0μ	10Ω	50mΩ	40	Δ	35pΩ	PE	T018	A		
71	2N2350I	400m	50mΔ	Δ	2.3m	Δ	60	40	5.0	1.0μ	10Ω	100	1#	20p	PE	T046	A			
72	2N2350A1	400m	50mΔ	Δ	2.3m	Δ	60	40	5.0	0.1μ	100Ω	100	1#	20p	PE	T046	A			
73	2N2351I	400m	50mΔ	Δ	2.3m	Δ	80	50	8.0	0.1μ	100Ω	150mΩ	40	1#	20p	PE	T046	A		
74	2N2351A1	400m	50mΔ	Δ	2.3m	Δ	80	50	8.0	0.1μ	100Ω	150mΩ	40	1#	20p	PE	T046	A		
75	2N2352I	400m	50mΔ	Δ	2.3m	Δ	60	40	5.0	0.1μ	100Ω	150mΩ	20	1#	20p	PE	T046	A		
76	2N2352A1	400m	50mΔ	Δ	2.3m	Δ	60	40	5.0	0.1μ	100Ω	150mΩ	20	1#	20p	PE	T046	A		
77	2N2364I	400m	50mΔ	Δ	2.3m	Δ	120	80	7.0	0.1μ	100Ω	150mΩ	40	1#	15p	PE	T046	A		
78	2N2364A1	400m	50mΔ	Δ	2.3m	Δ	120	80	7.0	0.1μ	100Ω	150mΩ	40	1#	15p	PE	T046	A		
79	2N2520	400m	50mΔ	Δ	2.2m	Δ	60	60	8.0	100m	5.0n	5.0	1.0m	18	Δ	6.0p	PE	T046	A	
80	2N2521																			

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	TEMP. M A M X P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L E O D E
						V <sub>bcvo</sub> (V)	V <sub>cevo</sub> (V)	V <sub>bevo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	ZSC2546F	400m	90M	4.0m	J	90	90	5.0	100m	100n	120	2.0mΩ	600 Δ†				3.0p	E	T092	B
2	ZSC2547D	400m	90M	4.0m	J	120	120	5.0	100m	100n	120	2.0mΩ	250 Δ†				3.0p	E	T092	B
3	ZSC2547E	400m	90M	4.0m	J	120	120	5.0	100m	100n	120	2.0mΩ	400 Δ†				3.0p	E	T092	B
4	2N2516	400m	99M	2.3m	S	80	60	8.0	100m	5nΩ	5.0	1.0m	60 Δ	30uΩ	1.8k		5.0p	E	T046	A
5	2N2459	400m	100M	2.2m	S	100	60	8.0	50m	2.0mΩ	5.0	5.0mΩ	40 Δ			6.0p	E	T046	A	
6	2N2519	400m	100M	2.2m	S	125	80	8.0	50m	5.0mΩ	5.0	5.0mΩ	80 Δ			6.0p	E	T046	A	
7	2N3057	400m	100M	2.3m	S	100	60	7.0	100m	10nΩ	10	150mΩ	100 †# Δ	4.0u	1.5k	800m	12p	PL	T046	A
8	2N3057A	400m	100M	2.3m	S	140	80	7.0	100m	0.1u	5.0	1.0mΩ	80 Δ			12p	PL	T046	A	
9	JAN2N3057A	400m	100M	2.3m	S	140	80	7.0	100m	10n	5.0	1.0mΩ	80 Δ			12p	PL	T046	A	
10	ZSC368GT	400m	100M	4.0m	J	80	40	5.0	400m	100n	1.0	100mΩ	70 †* Δ			10p	E	T092	B	
11	ZSC367G	400m	100M	4.0m	J	80	40	5.0	400m	100n	1.0	100mΩ	70 †* Δ			10p	E	T092	B	
12	ZSC536KNP	400m	100M	4.0m	J	55	50	5	100m	1.0u	6	1.0mΩ	90 †* Δ			45p	E	T092	B	
13	ZSC780AGT	400m	100M	4.0m	J	150	150	5.0	30m	100n	3.0	10mΩ	70 †* Δ			2.0p	PL	T092	B	
14	D3851	400m	100M	4.0m	J	30	30	7.0	100m	25n	5.0	100uΩ	400 †Δ			4.0p	PE	T092	A	
15	D3852	400m	100M	4.0m	J	30	30	7.0	100m	25n	5.0	100uΩ	600 †Δ			4.0p	PE	T092	A	
16	D3853	400m	100M	4.0m	J	30	30	7.0	100m	25n	5.0	100uΩ	1.0k †Δ			4.0p	PE	T092	A	
17	D3854	400m	100M	4.0m	J	30	30	7.0	100m	25n	5.0	100uΩ	1.5k †Δ			4.0p	PE	T092	A	
18	D3855	400m	100M	4.0m	J	45	45	7.0	100m	25n	5.0	100uΩ	400 †Δ			4.0p	PE	T092	A	
19	D3856	400m	100M	4.0m	J	45	45	7.0	100m	25n	5.0	100uΩ	500 †Δ			4.0p	PE	T092	A	
20	D3857	400m	100M	4.0m	J	45	45	7.0	100m	25n	5.0	100uΩ	1.0k †Δ			4.0p	PE	T092	A	
21	D3858	400m	100M	4.0m	J	60	60	7.0	100m	25n	5.0	100uΩ	250 †Δ			4.0p	PE	T092	A	
22	D3859	400m	100M	4.0m	J	60	60	7.0	100m	25n	5.0	100uΩ	400 †Δ			4.0p	PE	T092	A	
23	D38510	400m	100M	4.0m	J	60	60	7.0	100m	25n	5.0	100uΩ	600 †Δ			4.0p	PE	T092	A	
24	IT124*	400m	100M	2.3m	S	2.0	2.0	7.0	10m	100p	1.0	1.0u	1.5k †Δ			800p	PL*	T078	PA	
25	IT125*	400m	100M	2.3m	S	2.0	2.0	7.0	10m	100p	1.0	1.0u	1.0k †Δ			800p	PL*	T078	PA	
26	ST6593	400m	100M	2.2m	S	60	30	5.0	50m	50n	10	150mΩ	20 †Δ			10p	PE	T018	A	
27	ST6594	400m	100M	2.2m	S	60	30	5.0	50m	50n	10	150mΩ	100 †Δ			10p	PE	T018	A	
28	2N2460	400m	120M	2.2m	S	100	60	8.0	50m	2.0n	5.0	5.0mΩ	70 Δ	60uΩ	1.2k		5.0p	ME	T046	A
29	2S102	400m	120M	2.6m	S	60	45	4.5	50m	25u	5.0	10m	40	25u	450	.90	5.0p	ME	T018	A
30	2S731	400m	120M	5.6m	J	30	30	3.0	50m	1.0u	5.0	5.0m	40	25u	450	.90	5.0p	ME	T018	A
31	2S732	400m	120M	5.6m	J	30	30	3.0	50m	1.0u	5.0	5.0m	60	25u	450	.90	5.0p	ME	T018	A
32	2S733	400m	120M	5.6m	J	30	30	3.0	50m	1.0u	5.0	5.0m	100	25u	450	.90	5.0p	ME	T018	A
33	2S941	400m	120M	4.0m	J	35	30	4.0	100m	100n	12	2.0mΩ	40 †Δ*			2.2p	E	T092	B	
34	ZSC1213AD	400m	120M	4.0m	J	50	50	4.0	500m	500n	3.0	10mΩ	160 Δ†			1.8p	E	T092	B	
35	ZSC1213AKB	400m	120M	4.0m	J	50	50	4.0	500m	500n	3.0	10mΩ	60 Δ†			1.8p	E	T092	B	
36	ZSC1213AKC	400m	120M	4.0m	J	50	50	4.0	500m	500n	3.0	10mΩ	100 Δ†			1.8p	E	T092	B	
37	ZSC1213AKD	400m	120M	4.0m	J	50	50	4.0	500m	500n	3.0	10mΩ	160 Δ†			1.8p	E	T092	B	
38	GES60001	400m	125M	4.0m	J	35	25	5.0	500m	10n	1.0	10mΩ	100 †Δ#	50uΩ	13k	9.0	6.0p	PE	T092	A
39	GES60041	400m	125M	4.0m	J	50	40	5.0	500m	10n	1.0	10mΩ	100 †Δ#	50uΩ	13k	9.0	6.0p	PE	T092	A
40	ZSC2382	400m	130M	2.6m	J	120	100	5.0	50m	1.0u	6.0	1.0mΩ	400 †*			1.8p	PE	T092	B	
41	ZSC2362K	400m	130M	2.6m	J	150	120	5.0	50m	1.0u	6.0	1.0mΩ	400 †*			1.8p	PE	T092	B	
42	2S103	400m	135M	2.6m	S	60	45	4.5	50m	25u	5.0	10m	65	65u	60	1.1	5.0p	ME	T018	A
43	2N2461	400m	140M	2.2m	S	100	60	8.0	50m	2.0n	5.0	5.0mΩ	115 Δ	90uΩ	1.8k		5.0p	PE	T046	A
44	GES60021	400m	140M	4.0m	J	35	25	5.0	500m	10n	1.0	10mΩ	200 †Δ#	70uΩ	20k	20	6.0p	PE	T092	A
45	GES60061	400m	140M	4.0m	J	50	40	5.0	500m	10n	1.0	10mΩ	200 †Δ#	70uΩ	20k	20	6.0p	PE	T092	A
46	2N4100*	400m	150M	4.3m	S	55	55	7.0	10m	10u	5.0	1.0m	175 †Δ			8p	ME	T018	A	
47	2S104	400m	150M	2.6m	S	60	45	4.5	50m	250n	5.0	10m	80	95u	1.0k	1.3	5.0p	ME	T092	B
48	ZSC732	400m	150M	4.0m	J	60	50	5.0	150m	100n	6.0	2.0mΩ	20 †Δ*			2.0p	PE	T092	B	
49	TP107A	400m	150M	2.2m	J	50	30	5.0	50m	50n	10	150mΩ	40 †Δ			1.1p	PE	T018	A	
50	TP107B	400m	150M	2.2m	J	50	30	5.0	50m	50n	10	150mΩ	40 †Δ			1.1p	PE	T018	A	
51	TP107C	400m	150M	2.2m	J	50	30	5.0	50m	50n	10	150mΩ	40 †Δ			1.1p	PE	T018	A	
52	TP108A	400m	150M	2.2m	J	30	20	5.0	50m	15n	5.0	2.0mΩ	125 †Δ			4.5p	PE	R203a	A	
53	TP108B	400m	150M	2.2m	J	30	20	5.0	50m	15n	5.0	2.0mΩ	125 †Δ			4.5p	PE	R203a	A	
54	TP108C	400m	150M	2.2m	J	30	20	5.0	50m	15n	5.0	2.0mΩ	125 †Δ			4.5p	PE	R203a	A	
55	TS2221	400m	150M	2.3m	J	60	30	5.0	800m	20n	10	10mΩ	35 †			1.2p	PE	T018	A	
56	TS2222	400m	150M	2.3m	J	60	30	5.0	800m	20n	10	10mΩ	35 †			1.2p	PE	T018	A	
57	2N2462	400m	160M	2.2m	S	100	60	8.0	50m	2.0n	5.0	5.0mΩ	167 Δ	120uΩ	2.4k		5.0p	PE	T046	A
58	IT121*	400m	180M	2.3m	S	45	45	7.0	50m	1.0n	5.0	1.0mΩ	100 Δ†			2.0p	PL*	T078	PA	
59	IT122*	400m	180M	2.3m	S	45	45	7.0	50m	1.0n	5.0	1.0mΩ	100 Δ†			2.0p	PL*	T078	PA	
60	2N1962†	400m	200M	2.7m	S	40	25	5.0	200m	25u	1.0	10mΩ	20 †Δ			3.5p	PE	T046	A	
61	2N1963†	400m	200M	2.7m	S	40	15	5.0	200m	25u	1.0	10mΩ	25 †Δ			3.5p	PE	T046	A	
62	2N2096A	400m	200M	2.7m	S	60	60	5.0	50m	0.1u	1.0	1.0mΩ	100 †			8.0p	PE	T018	A	
63	2N2097A	400m	200M	2.7m	S	60	60	5.0	50m	0.1u	1.0	1.0mΩ	100 †			8.0p	PE	T018	A	
64	ZSC372G	400m	200M	4.0m	J	60	50	5.0	150m	100n	1.0	10mΩ	70 †* Δ			3.5p	PE	T092	B	
65	ZSC373G	400m	200M	4.0m	J	60	50	5.0	150m	100n	1.0	10mΩ	200 †Δ	</						



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab	DERATE IN AIR W/°C	M E M P	ABS MAX RATINGS @ 25°C			MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	L C E O D E
						V <sub>bcbo</sub> (V)	V <sub>ceo</sub> (V)	V <sub>bebo</sub> (V)		I <sub>c</sub> (A)	V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)				
1#	BCY59PBK1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	45 Δ	24u	2.5kΔ	2.0	6.0pZ	PL	B58	F
2#	BCY59PBL1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	45 Δ	24u	2.5kΔ	2.0	6.0pZ	PL	B58	F
3#	BCY59PBM1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	45 Δ	24u	2.5kΔ	2.0	6.0pZ	PL	B58	F
4#	BCY59PC1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	60 Δ	30u	3.2kΔ	2.0	6.0pZ	PL	B58	F
5#	BCY59PCK1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	60 Δ	30u	3.2kΔ	2.0	6.0pZ	PL	B58	F
6#	BCY59PCL1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	60 Δ	30u	3.2kΔ	2.0	6.0pZ	PL	B58	F
7#	BCY59PCM1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	60 Δ	30u	3.2kΔ	2.0	6.0pZ	PL	B58	F
8#	BCY59PD1	400m	250M\$		\$J	45	7.0	200m	.20n\$	1.00	100m	60 Δ	50u	4.5kΔ	3.0	6.0pZ	PL	B58	F
9#	BCY65EPA1	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	40 Δ	30uZ	1.6kΔ	1.5	6.0pZ	PL	B58	F
10#	BCY65EPB1	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	45 Δ	50uZ	2.5kΔ	2.0	6.0pZ	PL	B58	F
11#	BCY65EPC1	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	45 Δ	50uZ	2.5kΔ	2.0	6.0pZ	PL	B58	F
12#	BCY65EPD	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	60 Δ	60uZ	3.2kΔ	2.0	6.0pZ	PL	B58	F
13#	BCY65EPDK	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	60 Δ	60uZ	3.2kΔ	2.0	6.0pZ	PL	B58	F
14#	BCY65EPDL	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	60 Δ	60uZ	3.2kΔ	2.0	6.0pZ	PL	B58	F
15#	BCY65EPDM	400m	250M\$		\$J	60	7.0	100m	2.0 \$	1.00	50m	60 Δ	60uZ	3.2kΔ	2.0	6.0pZ	PL	B58	F
16#	BF248	400m	250M\$	2.7m	\$A	30	25	3.0	800m		100	5.0m	20 Δ			8.0p	PE	T018	A
17#	BFR11Z	400m	250M\$Δ		\$J	40	30	3.0	800m		100	150m	60 Δ			8.0pZ	PE	T018	A
18#	BFX94A	400m	250M\$Δ		\$J	30	30	3.0	800m		100	100m	35 Δ			8.0pZ	PE	T018	A
19#	BFX95A	400m	250M\$Δ	2.3m	\$	60	30	5.0	800m	10n	100	150m	100 Δ			8.0p	PE	T018	A
20#	BFX95AZ	400m	250M\$Δ		\$J	30	30	3.0	800m		100	150m	100 Δ			8.0pZ	PE	T018	A
21#	HEPS0011-RT	400m	250M\$	2.6m	\$J	25	15	4.0	300m	100n	100	150m	85 Δ			8.0pZ	PE	T018	A
22#	PH2222	400m	250M\$	2.6m	\$J	60	30	6.0	800m	10n\$	100	500m	30			8.0pZ	EPL	R191	B
23#	PH2222A	400m	250M\$	2.6m	\$J	75	40	6.0	800m	10n\$	100	500m	40			8.0pZ	EPL	R191	B
24#	SG103	400m	250M\$Δ		\$J	30	24	3.0	250m	1.0u	5.0	150m	40 Δ			8.0pZ	PE	T018	A
25	TD244*	400m	250M\$		\$J	60	30	5.0	500m	10n	10	150m	40			8.0p	↑	R131c	PA
26	TD245*	400m	250M\$		\$J	60	30	5.0	500m	10n	10	100m	35			8.0p	↑	R131c	PA
27	TD246*	400m	250M\$		\$J	75	40	6.0	500m	10n	10	100m	20			8.0p	↑	R131c	PA
28	TP3115	400m	250M\$		\$J	60	20	5.0	500m	25n	100	150m	40 Δ			8.0p	↑	T092	A
29	TP3116	400m	250M\$		\$J	60	20	5.0	500m	25n	100	150m	100 Δ			8.0p	↑	T092	A
30	UPI4046-46	400m	250M\$	4.5m	#J	60	35	6.0	500m	1.7u	1.0	100m	150 Δ			12p	↑	T041	A
31	UPI4047-46	400m	250M\$	4.5m	#J	70	40	6.0	500m	1.7u	1.00	100m	150 Δ			10p	↑	T046	A
32#	BSY171	400m	280M\$Δ	2.0m	\$J	20	12	5.0	200m	1.0u	.35	10m	60 Δ			2.7p	PE	T018	A
33#	BSY181	400m	280M\$Δ	2.0m	\$J	20	12	5.0	200m	1.0u	.35	10m	120 Δ			2.7p	PE	T018	A
34	2N2222A†	400m	300M\$Δ	2.3m	\$J	75	40	6.0	800m	.01u	100	1.0m	50 Δ			8pZ	PE	T018	A
35#	2SC2206	400m	300M\$	1.8m	†J	30	20	5.0	30m		10	1.0m	50 Δ			8.0pZ	PE	B37	D
36#	BSY631	400m	300M\$Δ	2.0m	\$J	40	15	5.0	200m	25n	1.00	10m	120 Δ			2.7p	PE	T018	A
37	D2T2219A†	400m	300M\$Δ	2.3m	\$	75	40	6.0	800m	10n	100	1.0m	50 Δ			8.0pZ	PE*	T077	PA
38	TD247*	400m	300M\$		\$J	75	40	6.0	500m	10n	10	100m	35			8.0p	↑	R131c	PA
39#	2SC2853D	400m	310M\$	4m	†J	90	90	5	100m	100n	120	2m	250 Δ†#			3p	↑	T092	B
40#	2SC2853E	400m	310M\$	4m	†J	90	90	5	100m	100n	120	2m	400 Δ†#			3p	↑	T092	B
41#	2SC2854D	400m	310M\$	4m	†J	120	120	5	100m	100n	120	2m	250 Δ†#			3p	↑	T092	B
42#	2SC2854E	400m	310M\$	4m	†J	120	120	5	100m	100n	120	2m	400 Δ†#			3p	↑	T092	B
43#	2SC2855D	400m	310M\$	4m	†J	90	90	5	100m	100n	120	2m	250 Δ†#			3p	↑	T092	B
44#	2SC2855E	400m	310M\$	4m	†J	90	90	5	100m	100n	120	2m	400 Δ†#			3p	↑	T092	B
45#	2SC2856D	400m	310M\$	4m	†J	120	120	5	100m	100n	120	2m	250 Δ†#			3p	↑	T092	B
46#	2SC2856E	400m	310M\$	4m	†J	120	120	5	100m	100n	120	2m	400 Δ†#			3p	↑	T092	B
47	2N3647†	400m	350M\$Δ	2.2m	\$S	40	10	6.0	500m	25n	1.00	1.0m	20 Δ			4.0pZ	PE	T046	A
48	2N6004†	400m	350M\$Δ	4.0m	\$J	50	40	5.0	500m	10n	100	1.0m	70 Δ			6.0pZ	PE	R203a	A
49#	BFR11†	400m	350M\$		\$J	50	30	3.0	30m		5.00	150m	40 Δ			5.0p	PE	T018	A
50	JE9011	400m	370M\$		\$J	50	30	3.0	30m		5.00	2.0m	90 Δ			1.5p	PE	T092	A
51#	JE9011D	400m	370M\$	3.2m	\$J	50	30	5.0	30m	100n	5.00	1.0m	28 Δ*			1.5p	PE	T092	A
52#	JE9011E	400m	370M\$	3.2m	\$J	50	30	5.0	30m	100n	5.00	1.0m	39 Δ*			1.5p	PE	T092	A
53#	JE9011F	400m	370M\$	3.2m	\$J	50	30	5.0	30m	100n	5.00	1.0m	54 Δ*			1.5p	PE	T092	A
54#	JE9011G	400m	370M\$	3.2m	\$J	50	30	5.0	30m	100n	5.00	1.0m	72 Δ*			1.5p	PE	T092	A
55#	JE9011H	400m	370M\$	3.2m	\$J	50	30	5.0	30m	100n	5.00	1.0m	97 Δ*			1.5p	PE	T092	A
56#	JE9011I	400m	370M\$	3.2m	\$J	50	30	5.0	30m	100n	5.00	1.0m	132 Δ*			1.5p	PE	T092	A
57#	2SC752G†	400m	400M\$	4.0m	\$J	40	15	5.0	200m	100n	1.00	10m	40 Δ*			4.0p	PE	T092	B
58	2N3648†	400m	450M\$Δ	2.2m	\$S	40	15	6.0	500m	25n	1.00	1.0m	20 Δ			4.0pZ	PE	T046	A
59	2N6002†	400m	450M\$Δ	4.0m	\$J	35	25	5.0	500m	10n	100	1.0m	175 Δ			6.0pZ	PE	R203a	A
60	2N6006†	400m	450M\$Δ	4.0m	\$J	50	40	5.0	500m	10n	100	1.0m	175 Δ			6.0pZ	PE	R203a	A
61	2N3508†	400m	500M\$Δ	2.3m	\$S	40	20	6.0	200m	.20u	1.00	10m	40 Δ			4pZ	PE	T046	A
62	2N3509†	400m	500M\$Δ	2.3m	\$S	40	20	6.0	200m	.20u	1.00	10m	100 Δ			4pZ	PE	T046	A
63	TD248*	400m	500M\$		\$J	40	15	5.0	500m	30n	1.0	10m	40			4.0p	↑	T099	PA
64	TIS86	400m	500M\$Δ	3.2m	\$J	30	30	4.0	50m	.10u	100	4.0m	40 Δ			700f\$	PE	R203	C
65	TIS87	400m	500M\$Δ	3.2m	\$J	45	45	4.0	50m	.10u	120	12m	30 Δ			700f\$	PE	R203	C
66	TIS105	400m	600M\$	3.2m	\$S	45	45	4.0	50m	.50n	150	10m	30 Δ#			700f\$	PE	R203	C
67	TIS126	400m	600M\$Δ	3.2m	\$S	45	40	4.0	50m	.50n	150	10m	25 Δ#			360f\$	PE	R203	C
68	UCX2910*	400m	600M\$Δ		\$S	30	15	4.0		.1p	1.00	3.0m	40 Δ			pZ	PLΔ	T078	PA
69	JE9016	400m	620M\$		\$J	30	20	4.0	25m		5.00	1.0m	90 Δ			1.0p	PE	T092	A
70#	JE9016D	400m	620M\$	3.2m	\$J	30	20	4.0	25m	100n	5.00	1.0m	25 Δ*			1.2p	PE	T092	A
71#	JE9016E	400m	620M\$	3.2m	\$J	30	20	4.0	25m	100n	5.00	1.0m	39 Δ*			1.2p	PE	T092	A
72#	JE9016F	400m	620M\$	3.2m	\$J	30	20	4.0	25m	100n	5.00	1.0m	54 Δ*			1.2p	PE	T092	A
73#	JE9016G	400m	620M\$	3.2m	\$J	30	20	4.0	25m	100n	5.00	1.0m	72 Δ*			1.2p	PE	T092	A
74#	JE9016H	400m	620M\$	3.2m	\$J	30	20	4.0	25m	100n	5.00	1.0m	97 Δ*			1.2p	PE	T092	A
75#	JE9016I	400m	620M\$	3.2m	\$J	30	20	4.0	25m	100n	5.00	1.0m	132 Δ*			1.2p	PE		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/C	TEMP. M A M X P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E	
						BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER							
											V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001					
1#	BCX58VIII	450m	250M	3.5m	S	J	32	7.0	100m	10ns	5.00	10u	145	†	24u	3.6k	2.0	4.5p	PE	R204c	A
2#	BCX58XI	450m	250M	3.5m	S	J	32	7.0	100m	10ns	5.00	10u	300	†	50u	7.5k	3.0	4.5p	PE	R204c	A
3#	BCX59IX1	450m	250M	3.5m	S	J	45	7.0	100m	10ns	5.00	10u	220	†	30u	4.5k	2.0	4.5p	PE	R204c	A
4#	BCX59VII	450m	250M	3.5m	S	J	45	7.0	100m	10ns	5.00	10u	78	†	18u	2.7k	1.5	4.5p	PE	R204c	A
5#	BCX59VIII	450m	250M	3.5m	S	J	45	7.0	100m	10ns	5.00	10u	145	†	24u	3.6k	2.0	4.5p	PE	R204c	A
6#	BCX59XI	450m	250M	3.5m	S	J	45	7.0	100m	10ns	5.00	10u	300	†	50u	7.5k	3.0	4.5p	PE	R204c	A
7#	2SC1954	450m	1.5G	3.6m	S	J	25	20	3.0	150m	1.0u	100	100	†	25m	100	†	2.0p	PE	R195d	B
8#	JAN2N560†	500m		2.7m	S	J	60	60	8.0	100m	50p	5.00	100m	20	†	1.2k	8.0p	10p	ME	T05	A
9#	2N734	500m		3.3m	S	J	80	60	5.0	50m	1.0u	5.00	5.0m	20	†	1.5k	10p	10p	ME	T018	A
10#	2N735	500m		3.3m	S	J	80	60	5.0	50m	1.0u	5.00	5.0m	40	†	1.8k	10p	10p	ME	T018	A
11#	2N736	500m		3.3m	S	J	80	60	5.0	50m	1.0u	5.00	5.0m	80	†	1.2k	10p	10p	ME	T018	A
12#	2N738	500m		3.3m	S	J	125	80	5.0	50m	1.0u	5.00	5.0m	20	†	1.5k	10p	10p	ME	T018	A
13#	2N739	500m		3.3m	S	J	125	80	5.0	50m	1.0u	5.00	5.0m	40	†	1.8k	10p	10p	ME	T018	A
14#	2N740	500m		3.3m	S	J	125	80	5.0	50m	1.0u	5.00	5.0m	80	†	1.2k	10p	10p	ME	T018	A
15#	2N742	500m		4.0m	S	J	60	60	8.0	100m	10u	5.00	100m	20	†	1.5k	8p	8p	ME	T018	A
16#	2N742A	500m		4.0m	S	J	60	60	8.0	100m	10u	5.00	100m	20	†	1.5k	8p	8p	ME	T018	A
17#	2N997	500m		3.0m	S	J	75	40	7.0	300m	.01u	100	100m	40	†	36p	36p	36p	PE	T018	A
18#	2N1051	500m		4.0m	S	J	60	40	8.0	100m	10u	5.00	5.0m	30	†	7.0p	7.0p	7.0p	PE	T05	A
19#	2N1491	500m		3.3m	S	J	30	30	1.0	100m	100u	2.00	15m	50	†	5.0p	5.0p	5.0p	PE	T039	A
20#	2N1492	500m		3.3m	S	J	60	60	2.0	100m	100u	2.00	15m	15	†	5.0p	5.0p	5.0p	PE	T039	A
21#	2N1493	500m		3.3m	S	J	100	100	4.5	100m	100u	2.00	15m	15	†	5.0p	5.0p	5.0p	PE	T039	A
22#	2N5810	500m		4.5m	T	J	35	25	5.0	750m	100p	2.00	2.0m	60	†	15p	15p	15p	PE	R203a	A
23#	2N5812	500m		4.5m	T	J	35	25	5.0	750m	100p	2.00	2.0m	150	†	15p	15p	15p	PE	R203a	A
24#	2N5814	500m		4.5m	T	J	50	40	5.0	750m	100p	2.00	2.0m	60	†	15p	15p	15p	PE	R203a	A
25#	2N5816	500m		4.5m	T	J	50	40	5.0	750m	100p	2.00	2.0m	100	†	15p	15p	15p	PE	R203a	A
26#	2N5818	500m		4.5m	T	J	50	40	5.0	750m	100p	2.00	2.0m	150	†	15p	15p	15p	PE	R203a	A
27#	2N5820	500m		4.5m	T	J	70	60	5.0	750m	100p	2.00	2.0m	60	†	15p	15p	15p	PE	R203a	A
28#	2N5822	500m		4.5m	T	J	70	60	5.0	750m	100p	2.00	2.0m	100	†	15p	15p	15p	PE	R203a	A
29#	2SC1721	500m		4.0m	T	J	80	60	5.0	1.0	1.0u	100	500m	50	†	10p	10p	10p	PE	R195d	B
30#	2SD261	500m		5.0m	T	J	40	20	5.0	500m	200p	1.00	100m	140	†	10p	10p	10p	PE	R205a	A
31#	BFV32	500m		3.0m	S	J	30	30	1.0	700m	100p	1.00	100m	70	†	12p	12p	12p	PE	T018	A
32#	BFX66	500m		3.0m	S	J	75	40	7.0	300m	.01u	100	100m	40	†	36p	36p	36p	PE	T018	A
33#	BT3227	500m		2.8m	S	J	40	20	6.0	200m	1.00	100m	30	†	4.0p	4.0p	4.0p	PE	C14	AA	
34#	BT3227T	500m		2.8m	S	J	40	20	6.0	200m	1.00	100m	30	†	4.0p	4.0p	4.0p	PE	T018	A	
35#	KT645A	500m		4.0m	S	J	60	50	4.0	300m	10u	2	150m	20	†	5	5	5	PE	R237	A
36#	KT928A	500m		4.0m	S	J	60	50	4.0	800m	5.0u	3.0	150m	20	†	5	5	5	PE	T05	A
37#	KT928V	500m		4.0m	S	J	60	50	4.0	800m	5.0u	3.0	150m	20	†	5	5	5	PE	T05	A
38#	MPS2369A	500m		3.3m	S	J	40	15	4.5	200m	25n	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	B58	A
39#	MPS2369AK	500m		3.3m	S	J	40	15	4.5	200m	25n	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	B58	A
40#	MPS2369AL	500m		3.3m	S	J	40	15	4.5	200m	25n	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	B58	A
41#	MPS2369AM	500m		3.3m	S	J	40	15	4.5	200m	25n	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	B58	A
42#	MPS2369AK†	500m		3.3m	S	J	40	15	4.5	200m	400p	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	X167	A
43#	MPS2368L	500m		3.3m	S	J	40	15	4.5	200m	400p	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	X168	A
44#	MPS2369M†	500m		3.3m	S	J	40	15	4.5	200m	400p	1.00	10m	40	†	4.0p	4.0p	4.0p	PE	X169	A
45#	MPS2711K	500m		3.3m	S	J	18	18	5.0	100m	500n	1.00	2.0m	30	†	4.0p	4.0p	4.0p	PE	X167	A
46#	MPS2711L	500m		3.3m	S	J	18	18	5.0	100m	500n	1.00	2.0m	30	†	4.0p	4.0p	4.0p	PE	X168	A
47#	MPS2711M	500m		3.3m	S	J	18	18	5.0	100m	500n	1.00	2.0m	30	†	4.0p	4.0p	4.0p	PE	X169	A
48#	MPS2712K	500m		3.3m	S	J	18	18	5.0	100m	500n	1.00	2.0m	80	†	4.0p	4.0p	4.0p	PE	X167	A
49#	MPS2712L	500m		3.3m	S	J	18	18	5.0	100m	500n	1.00	2.0m	80	†	4.0p	4.0p	4.0p	PE	X168	A
50#	MPS2712M	500m		3.3m	S	J	18	18	5.0	100m	500n	1.00	2.0m	80	†	4.0p	4.0p	4.0p	PE	X169	A
51#	MPS2923K	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	90	†	12p	12p	12p	PE	X167	A
52#	MPS2923L	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	90	†	12p	12p	12p	PE	X168	A
53#	MPS2923M	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	90	†	12p	12p	12p	PE	X169	A
54#	MPS2924K	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	150	†	12p	12p	12p	PE	X167	A
55#	MPS2924L	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	150	†	12p	12p	12p	PE	X168	A
56#	MPS2924M	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	150	†	12p	12p	12p	PE	X169	A
57#	MPS2925K	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	235	†	12p	12p	12p	PE	X167	A
58#	MPS2925L	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	235	†	12p	12p	12p	PE	X168	A
59#	MPS2925M	500m		3.3m	S	J	25	25	5.0	100m	500n	1.00	2.0m	235	†	12p	12p	12p	PE	X169	A
60#	MPS3392K	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	150	†	2.0p	2.0p	2.0p	PE	X167	A
61#	MPS3392L	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	150	†	2.0p	2.0p	2.0p	PE	X168	A
62#	MPS3392M	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	150	†	2.0p	2.0p	2.0p	PE	X169	A
63#	MPS3393K	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	90	†	2.0p	2.0p	2.0p	PE	X167	A
64#	MPS3393L	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	90	†	2.0p	2.0p	2.0p	PE	X168	A
65#	MPS3393M	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	90	†	2.0p	2.0p	2.0p	PE	X169	A
66#	MPS3394K	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	55	†	2.0p	2.0p	2.0p	PE	X167	A
67#	MPS3394L	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	55	†	2.0p	2.0p	2.0p	PE	X168	A
68#	MPS3394M	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	55	†	2.0p	2.0p	2.0p	PE	X169	A
69#	MPS3395K	500m		3.3m	S	J	25	25	5.0	100m	100n	4.50	2.0m	150	†	2.0p	2.0p	2.0p	PE	X167	A

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E M P	ABS MAX RATINGS @25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E	
					BVcbo (V)	BVceo (V)	BVcbo (V)			BIAS			COMMON EMITTER							
							V	Ic		Vcb	Ic	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	JAN2N335A	500m	2.5MΔ	3.3m	SS	45	45	4.0	500n	5.0	1.0m	90	1.2uZb	80	10	15pZ	G	TO5	A	
2	JAN2N336A	500m	2.5MΔ	3.3m	SS	45	45	4.0	500n	5.0	1.0m	270	1.2uZb	80	10	15pZ	G	TO5	A	
3	2N1095	500m	3.0M	4.0m	SS	60	60	4.0	500n	5.0	1.0m	36	1.2uZb	80	10	15pZ	G	TO5	A	
4	2N1096	500m	3.0M	4.0m	SS	90	90	4.0	500n	5.0	1.0m	35	1.2u	55	15p	G	TO5	A		
5	2N1704	500m	5.0M	3.3m	S	45	45	6.0	50m	1.0u	5.0	1.0m	50	1Δ				TO5	A	
6#	KT503A	500m	5.0M	4.0m	SJ	40	40	5.0	300m	5.0	10m	40	1Δ					X183	A	
7#	KT503B	500m	5.0M	4.0m	SJ	40	40	5.0	300m	5.0	10m	80	1Δ					X183	A	
8#	KT503D	500m	5.0M	4.0m	SJ	80	80	5.0	300m	5.0	10m	40	1Δ					X183	A	
9#	KT503E	500m	5.0M	4.0m	SJ	100	100	5.0	300m	5.0	10m	40	1Δ					X183	A	
10#	KT503G	500m	5.0M	4.0m	SJ	60	60	5.0	300m	5.0	10m	80	1Δ					X183	A	
11#	KT503V	500m	5.0M	4.0m	SJ	60	60	5.0	300m	5.0	10m	40	1Δ					X183	A	
12#	2SD2191	500m	8.0M	4.0m	SJ	40	40	7.0	1.0	1.0u	4.0	200m	40	1Δ			D	TO5	A	
13#	2SD2201	500m	8.0M	4.0m	SJ	80	80	7.0	1.0	1.0u	4.0	200m	40	1Δ			D	TO5	A	
14#	2SD2211	500m	8.0M	4.0m	SJ	110	110	7.0	1.0	1.0u	4.0	200m	40	1Δ			D	TO5	A	
15	2N332A	500m	10M	4.3m	SJ	45	45	4.0	25m	5.0	1.0m	16	3.5u	750	7.0p	GDA	TO5	A		
16	MP301	500m	10MΔ	4.3m	SJ	20	20	7.0	10m	10p	5.0	10u	2.0kΔ				TO52	A		
17	MP301#1	500m	10MΔ	4.3m	SJ	20	20	7.0	10m	10p	5.0	10u	2.0kΔ				TO78	A		
18	MP302	500m	10MΔ	4.3m	SJ	35	35	7.0	10m	10p	5.0	10u	1.0kΔ				TO52	A		
19	MP302#1	500m	10MΔ	4.3m	SJ	35	35	7.0	10m	10p	5.0	10u	1.0kΔ				TO78	A		
20	MP303	500m	10MΔ	4.3m	SJ	10	10	7.0	10m	10p	5.0	10u	2.0kΔ				TO52	A		
21	MP303#1	500m	10MΔ	4.3m	SJ	10	10	7.0	10m	10p	5.0	10u	2.0kΔ				TO78	A		
22	2N333A	500m	11M	4.3m	SJ	45	45	4.0	25m	500n	5.0	1.0m	27	5.0u	1.3k	7.0p	GDA	TO5	A	
23	2N334A	500m	12M	4.3m	SJ	45	45	4.0	25m	500n	5.0	1.0m	36	6.0u	1.7k	7.0p	GDA	TO5	A	
24	2N335A	500m	13M	4.3m	SJ	45	45	4.0	25m	500n	5.0	1.0m	45	7.0u	2.0k	7.0p	GDA	TO5	A	
25	2N335B	500m	13M	4.3m	SJ	60	60	4.0	25m	500n	5.0	1.0m	52	7.0u	2.0k	1.5	7.0p	TO5	A	
26	2N336A	500m	15M	4.3m	SJ	45	45	4.0	25m	500n	5.0	1.0m	75	8.0u	3.7k	7.0p	GDA	TO5	A	
27	CT1464	500m	20M	4.3m	SJ	20	20	5.0	500m	100n	5.0	150m	25	1Δ				TO92	A	
28	40080	500m	27.M*	2.9m	SJ	40	40	3.0	250m	10u	5.0	10m	55	13u	2.5k	2.5	2.0p	DPL	TO5	A
29	2N337A	500m	30.M	3.3m	SJ	45	45	2.5	20m	50u	20	1.0m	30	1Δ				TO5	A	
30	HSE210-RT	500m	30MΔ	4.0m	SJ	60	60	4.0	5.0	500n	10	150m	30	1Δ				TO18	A	
31	MPSA09Z	500m	30MΔ	4.0m	SJ	50	50	3.0	50m	100n	5.0	100u	100	1Δ				TO92	A	
32	TP4384	500m	30M	4.0m	SJ	40	40	5.0	500m	10n	5.0	10u	100	1Δ				TO92	A	
33	TP4386	500m	30M	4.0m	SJ	40	40	5.0	500m	10n	5.0	10u	40	1Δ				TO92	A	
34	2N1140	500m	35MΔ	5.0m	SJ	40	40	5.0	15u	6.0	1.0m	20	500nZb	35	2.5	20pZ	PL	R179e	A	
35	2N179A	500m	40MΔ	2.8m	SJ	120	60	7.0	1.0	10n	5.0	1.0m	15	Δ				TO18	A	
36	2N7301	500m	40MΔ	3.3m	SJ	60	40	5.0	1.0	1.0u	10	150m	40	1Δ				TO18	A	
37	2N8661	500m	40MΔ	3.0m	VS	30	20	5.0	600m	100u	10	150m	15	1Δ				TO18	A	
38	2N912	500m	40MΔ	2.8m	SJ	100	60	7.0	25n	5.0	1.0m	18	25uZ	600	5.0	1.5	15pZ	TO18	A	
39	JAN2N912	500m	40MΔ	2.8m	SJ	100	60	7.0	15n	5.0	1.0m	20	25uZ	500	5.0	1.5	15pZ	TO18	A	
40	2N338A	500m	45.M	3.3m	SJ	45	35	2.5	20m	50u	20	1.0m	99	15u	3.0k	2.6	2.0p	D	TO5	A
41	2N929A	500m	45MΔ	2.8m	SS	60	45	6.0	30m	2.0n	5.0	1.0m	60	Δ	1.0uZb	32	6.0	6.0pZ	TO18	A
42	2N930A	500m	45MΔ	2.8m	SS	60	45	6.0	30m	2.0n	5.0	1.0m	150	Δ	1.0uZb	32	6.0	6.0pZ	TO18	A
43	2N930B	500m	45MΔ	2.8m	SS	60	45	6.0	30m	2.0n	5.0	1.0m	150	Δ	1.0uZb	32	6.0	6.0pZ	TO18	A
44	2N5601	500m	50.M	4.0m	SJ	60	60	8.0	100m	1.0u	5.0	100m	20	1Δ				TO29	A	
45	2N720A	500m	50MΔ	10m	SJ	120	80	7.0	10n	5.0	1.0m	30	500nZb	30	1.2	15pZ	D	TO18	A	
46	2N7311	500m	50MΔ	3.3m	SJ	60	40	5.0	1.0	1.0u	10	150m	80	1Δ				TO18	A	
47	2N756	500m	50MΔ	2.8m	SA	45	45	6.0	100m	200n	5.0	1.0m	12	Δ	1.0uZb	80	10	8.0pZ	TO18	A
48	2N756A	500m	50MΔ	2.8m	SA	60	60	6.0	100m	100n	5.0	1.0m	12	Δ	1.0uZb	80	10	8.0pZ	TO18	A
49	2N757	500m	50MΔ	2.8m	SA	45	45	6.0	100m	200n	5.0	1.0m	18	Δ	1.0uZb	80	10	8.0pZ	TO18	A
50	2N757A	500m	50MΔ	2.8m	SA	60	60	6.0	100m	100n	5.0	1.0m	18	Δ	1.0uZb	80	10	8.0pZ	TO18	A
51	2N758	500m	50MΔ	2.8m	SA	45	45	8.0	100m	200n	5.0	1.0m	18	Δ	1.0uZb	80	10	8.0pZ	TO18	A
52	2N758A	500m	50MΔ	2.8m	SA	60	60	7.0	100m	100n	5.0	1.0m	18	Δ	1.0uZb	80	10	8.0pZ	TO18	A
53	2N758B	500m	50MΔ	2.8m	SA	60	60	8.0	100m	5.0n	5.0	1.0m	18	Δ	1.0uZb	35	6.0	6.0pZ	TO18	A
54	2N759	500m	50MΔ	2.8m	SA	45	45	8.0	100m	200n	5.0	1.0m	36	Δ	1.0uZb	80	10	8.0pZ	TO18	A
55	2N759A	500m	50MΔ	2.8m	SA	60	60	7.0	100m	100n	5.0	1.0m	36	Δ	1.0uZb	80	10	8.0pZ	TO18	A
56	2N759B	500m	50MΔ	2.8m	SA	60	60	8.0	100m	5.0n	5.0	1.0m	36	Δ	1.0uZb	35	6.0	6.0pZ	TO18	A
57	2N760	500m	50MΔ	2.8m	SA	45	45	8.0	100m	200n	5.0	1.0m	76	Δ	1.0uZb	80	10	8.0pZ	TO18	A
58	2N760A	500m	50MΔ	2.8m	SA	60	60	7.0	100m	100n	5.0	1.0m	36	Δ	1.0uZb	80	10	8.0pZ	TO18	A
59	2N760B	500m	50MΔ	2.8m	SA	60	60	8.0	100m	5.0n	5.0	1.0m	76	Δ	1.0uZb	35	6.0	6.0pZ	TO18	A
60	2N761	500m	50MΔ	2.8m	SA	50	30	6.0	100m	200n	20	1.0m	19	Δ	1.0uZb	80	20	6.0pZ	TO18	A
61	2N762	500m	50MΔ	2.8m	SA	50	30	6.0	100m	200n	20	1.0m	39	Δ	1.0uZb	80	20	6.0pZ	TO18	A
62	2N8671	500m	50MΔ	3.0m	VS	30	20	5.0	600m	100u	10	150m	30	1Δ				TO18	A	
63	2N870	500m	50MΔ	2.8m	SJ	100	60	7.0	100m	10n	5.0	1.0m	30	Δ	500nZb	30	1.2	15pZ	TO18	A
64	2N911	500m	50MΔ	2.8m	SJ	100	60	7.0	25n	5.0	1.0m	36	Δ	50uZ	1.0k	1.7	15pZ	TO18	A	
65	JAN2N911	500m	50MΔ	2.8m	SJ	100	60	7.0	15n	5.0	1.0m	40	Δ	50uZ	1.0kZ	1.7	15pZ	TO18	A	
66	2N981	500m	50MΔ	2.8m	SA	80	80	8.0	100m	1.0u	5.0	1.0m	36	Δ	1.0uZb	80	10	5.0pZ	TO18	A
67	2N2223*	500m	50MΔ	2.8m	SJ	100	60	7.0	500m	10n	5.0	1.0m	40	Δ	500nZb	30	3.0	15pZ	R131c	PA
68	2N2223A*	500m	50MΔ	2.8m	SJ	100	60	7.0	500m	10n	5.0	1.0m	40	Δ	500nZb	30	3.0	15pZ	R131c	PA
69	2N2414*	500m	50MΔ	2.8m	SJ	60	28	5.0	500m	25n	10	5.0m	50	Δ	1.0uZb	8.0	5.0	25pZ	R131c	PA
70	2N2427	500m	50.M	2.8m	SJ	40	40	4.0	50m	50u	3.0	0.1m	20	1Δ				TO18	A	
71	2N2645	500m	50MΔ	2.8m	SJ	75	50	7.0	10n	5.0	1.0m	75	Δ	500nZb	34	5.0	25pZ	TO18	A	
72	2N3241	500m	50MΔ	3.3m	SS	30	25	5.0	100m	100n	12	10m	70	Δ	350uZ	1.0kZ	30pZ	TO18	A	
73	2N3241A	500m	50MΔ	3.3m	SS	30	25	7.5	200m	100n	12	10m	100	Δ	350uZ	1.0kZ	20pZ	TO18	A	
74	2N3242	500m	50MΔ	3.3m	SS	30	25	5.0	200m	10n	12	10m	100	Δ	350uZ	1.5kZ	30pZ	TO1		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. 2		DERATE IN FREE AIR W/C	M E A P	ABS MAX RATINGS @25°C			MAX. lobo @MAX Vcb	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E		
		COLL. DISS. @25°C (W)	fab (Hz)			BVcbo (V)	BVceo (V)	BVebo (V)		Ic (A)	BIAS			COMMON EMITTER							
										Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)						
1	2N2245	500m	60MΔ	2.8m	ΔS	20	20	6.0	100m	10u	4.00	2.0u	20	†	50u	8.0p	ME	T018	A		
2	2N2246	500m	60MΔ	2.8m	ΔS	20	20	6.0	100m	10u	4.00	2.0u	40	†	50u	8.0p	ME	T018	A		
3	2N2247	500m	60MΔ	2.8m	ΔS	45	45	6.0	100m	10u	4.00	2.0u	10	†	50u	8.0p	ME	T018	A		
4	2N2248	500m	60MΔ	2.8m	ΔS	45	45	6.0	100m	10u	4.00	2.0u	20	†	50u	8.0p	ME	T018	A		
5	2N2249	500m	60MΔ	2.8m	ΔS	45	45	6.0	100m	10u	4.00	2.0u	40	†	50u	8.0p	ME	T018	A		
6	2N2250	500m	60MΔ	2.8m	ΔS	25	20	6.0	500m	10n	5.00	1.0m	40	Δ	25u	8.0p	ME	T018	A		
7	2N2251	500m	60MΔ	2.8m	ΔS	25	20	6.0	500m	10n	5.00	1.0m	80	Δ	30u	8.0p	ME	T018	A		
8	2N2252	500m	60MΔ	2.8m	ΔS	25	20	6.0	500m	10n	5.00	1.0m	150	Δ	50u	8.0p	ME	T018	A		
9	2N2253	500m	60MΔ	2.8m	ΔS	45	50	6.0	500m	10n	5.00	1.0m	40	Δ	25u	8.0p	ME	T018	A		
10	2N2254	500m	60MΔ	2.8m	ΔS	45	50	6.0	500m	10n	5.00	1.0m	80	Δ	30u	8.0p	ME	T018	A		
11	2N2255	500m	60MΔ	2.8m	ΔS	45	50	6.0	500m	10n	5.00	1.0m	150	Δ	50u	8.0p	ME	T018	A		
12#	2SC848	500m	60.MΔ	3.3m	ΔJ	30	20	5.0	200m	1.0u	4.00	1.0m	160	†	50u	8.0p	PL	T018	A		
13#	2SC849†	500m	60.MΔ	3.3m	ΔJ	30	20	5.0	300m	.50u	4.00	1.0m	160	†	50u	8.0p	PL	T018	A		
14#	2SC1247A	500m	60MΔ	3.3m	ΔJ	50	30	5.0	500m	1.0u	6.00	1.0m	160	†	70	12p	PE	R195d	B		
15#	2SC1247AF	500m	60MΔ	3.3m	ΔJ	50	30	5.0	500m	500n	2.00	1.0m	160	†	70	12p	PE	R219	B		
16	40231	500m	60MΔ	3.3m	ΔJ	18	18	5.0	100m	500n	1.00	2.0m	80		22p	PL	R92	Ø			
17	40232	500m	60MΔ	3.3m	ΔJ	18	18	5.0	100m	500n	1.00	2.0m	175		22p	PL	R92	Ø			
18	40233	500m	60MΔ	3.3m	ΔJ	18	18	5.0	100m	250n	1.00	2.0m	175		22p	PL	R92	Ø			
19#	BC284	500m	60MΔ	1.0m	ΔS	40	40	5.0	200m	50n	1.00	1.0m	100	Δ	60u	1.0k	1.5	15p	PL	T018	A
20#	BFR18	500m	60MΔ	2.8m	ΔJ	45	45	5.0	500m	10n	5.00	1.0m	100	Δ	20p	PE	T018	A			
21	BT929	500m	60MΔ	2.8m	ΔJ	45	45	5.0	500m	10n	5.00	1.0m	100	Δ	6.0p	PE	C14	AA			
22	BT929†	500m	60MΔ	2.8m	ΔJ	45	45	5.0	500m	10n	5.00	1.0m	100	Δ	6.0p	PE	T018	A			
23	BT930	500m	60MΔ	2.8m	ΔJ	45	45	5.0	500m	10n	5.00	1.0m	200	Δ	6.0p	PE	C14	AA			
24	BT930†	500m	60MΔ	2.8m	ΔJ	45	45	5.0	500m	10n	5.00	1.0m	200	Δ	6.0p	PE	T018	A			
25	BT2483	500m	60MΔ	2.8m	ΔJ	60	60	6.0	500m	10n	5.00	1.0m	100	Δ	6.0p	PE	C14	AA			
26	BT2483T	500m	60MΔ	2.8m	ΔJ	60	60	6.0	500m	10n	5.00	1.0m	100	Δ	6.0p	PE	T018	A			
27	BT2484	500m	60MΔ	2.8m	ΔJ	60	60	6.0	500m	10n	5.00	1.0m	200	Δ	6.0p	PE	C14	AA			
28	BT2484†	500m	60MΔ	2.8m	ΔJ	60	60	6.0	500m	10n	5.00	1.0m	200	Δ	6.0p	PE	T018	A			
29	UPI7 18A	500m	60MΔ	2.8m	ΔJ	75	32	7.0	10n	5.0	1.0m	30	Δ	500n	34	3.0	25p	PE	T0106	A	
30	2N5183	500m	62MΔ	3.3m	ΔS	18	18	7.0	1.0	500n	12p	1.0m	70	Δ	20p	PE	T0104	AA			
31	2N707A	500m	70.MΔ	3.3m	ΔS	70	40	5.0	100m	1.0u	1.00	1.0m	9	†	6p	PE	T018	A			
32	2N715	500m	70.MΔ	3.3m	ΔS	50	35	5.0	100m	10u	10p	15m	10	†	6p	PE	T018	A			
33	2N716	500m	70.MΔ	3.3m	ΔS	70	40	5.0	100m	10u	10p	15m	10	†	6p	PE	T018	A			
34	2N956	500m	70MΔ	2.8m	ΔJ	75	50	7.0	500m	10n	5.00	1.0m	50	Δ	500n	34	5.0	25p	PE	T018	A
35	2N2437	500m	70MΔ	2.8m	ΔJ	100	75	7.0	500m	1.0n	10p	5.0m	20	Δ	15p	PE	T046	AA			
36#	2SC847	500m	70.MΔ	3.3m	ΔJ	30	20	5.0	200m	.50u	4.00	1.0m	160	†	10p	PL	T018	A			
37#	2SC850†	500m	70.MΔ	3.3m	ΔJ	50	30	7.0	500m	.50u	4.00	1.0m	160	†	10p	PL	T018	A			
38#	2SC968	500m	70MΔ	3.3m	ΔJ	50	30	5.0	500m	1.0u	4.00	1.0m	160	†	10p	PE	R213	AA			
39	UPI956	500m	70MΔ	2.8m	ΔJ	75	50	7.0	500m	10n	5.00	1.0m	50	Δ	500n	34	5.0	25p	PE	T0106	A
40	JAN2N1051	500m	80MΔ	4.0m	ΔS	75	45	8.0	100m	100n	5.00	5.0	30	Δ	7.0p	PE	R179e	AA			
41	2N2433	500m	80MΔ	2.8m	ΔJ	75	45	7.0	1.0	1.0n	10p	5.0m	35	Δ	20p	PE	T046	AA			
42	2N2435	500m	80MΔ	2.8m	ΔJ	120	80	7.0	500m	1.0n	10p	5.0m	45	Δ	15p	PE	T046	AA			
43	2N2438	500m	80MΔ	2.8m	ΔJ	100	75	7.0	500m	1.0n	10p	5.0m	40	Δ	15p	PE	T046	AA			
44	2N3701	500m	80MΔ	2.9m	ΔS	140	80	7.0	1	.01u	5.00	1.0m	30	Δ	12p	PE	T018	A			
45	CX906	500m	80MΔ	2.8m	ΔJ	40	40	5.0	500m	1.00	1.00	50m	50	Δ	8.0p	PE	T092	A			
46	D33D29	500m	80MΔ	4.0m	ΔJ	70	60	5.0	750m	100n	2.00	2.0m	60	Δ	15p	PE	T098	B			
47	D38H1	500m	80MΔ	4.0m	ΔJ	60	60	5.0	500m	25n	1.00	10m	60	Δ	12p	PE	T092	A			
48	D38H2	500m	80MΔ	4.0m	ΔJ	60	60	5.0	500m	25n	1.00	10m	100	Δ	12p	PE	T092	A			
49	D38H3	500m	80MΔ	4.0m	ΔJ	60	60	5.0	500m	25n	1.00	10m	200	Δ	12p	PE	T092	A			
50	D38H4	500m	80MΔ	4.0m	ΔJ	80	80	5.0	500m	25n	1.00	10m	60	Δ	12p	PE	T092	A			
51	D38H5	500m	80MΔ	4.0m	ΔJ	80	80	5.0	500m	25n	1.00	10m	100	Δ	12p	PE	T092	A			
52	D38H6	500m	80MΔ	4.0m	ΔJ	80	80	5.0	500m	25n	1.00	10m	200	Δ	12p	PE	T092	A			
53	D38H7	500m	80MΔ	4.0m	ΔJ	100	100	5.0	500m	25n	1.00	10m	60	Δ	12p	PE	T092	A			
54	D38H8	500m	80MΔ	4.0m	ΔJ	100	100	5.0	500m	25n	1.00	10m	100	Δ	12p	PE	T092	A			
55	D38H9	500m	80MΔ	4.0m	ΔJ	100	100	5.0	500m	25n	1.00	10m	200	Δ	12p	PE	T092	A			
56#	PD202B	500m	80MΔ	4.0m	ΔJ	30	20	4.0	30m	200n	10p	1.0m	220	Δ	3.0p	PL	T092	A			
57#	PD202C	500m	80MΔ	4.0m	ΔJ	30	20	4.0	30m	200n	10p	1.0m	130	Δ	3.0p	PL	T092	A			
58#	PD202D	500m	80MΔ	4.0m	ΔJ	30	20	4.0	30m	200n	10p	1.0m	70	Δ	3.0p	PL	T092	A			
59	PTC123	500m	85MΔ	2.8m	ΔJ	110	60	6.0	600m	50n	10p	200m	200	†	1.0u	30	2.5	20p	PE	T05	A
60	2N2434	500m	90MΔ	2.8m	ΔJ	75	45	7.0	1.0	1.0n	10p	5.0m	70	Δ	1.0u	30	2.5	20p	PE	T046	AA
61	2N2436	500m	90MΔ	2.8m	ΔJ	120	80	7.0	500m	1.0n	10p	5.0m	70	Δ	500n	30	2.5	15p	PE	T046	AA
62	2N2439	500m	90MΔ	2.8m	ΔJ	100	75	7.0	500m	1.0n	10p	5.0m	80	Δ	1.0u	30	2.5	15p	PE	T046	AA
63#	BFR18	500m	90MΔ	1.0m	ΔS	55	85	7.0	500m	10n	1.00	1.0m	70	Δ	8.5u	2.2k	2.4	12p	PE	T018	A
64#	B5X331	500m	94MΔ	2.8m	ΔJ	70	40	7.0	15n	10p	1.0m	70	†	12p	DPE	T018	A				
65	2N736A	500m	100MΔ	3.3m	ΔS	80	60	8.0	100m	.50u	5.00	1.0m	60	Δ	6p	PE	T018	A			
66	2N736B	500m	100MΔ	2.8m	ΔS	80	60	8.0	100m	5.0n	5.00	1.0m	60	Δ	6.0p	PE	T018	A			
67	2N740A	500m	100MΔ	2.8m	ΔS	125	80	8.0	50m	5.0n	5.00	5.0m	80	Δ	6.0p	PE	T018	A			
68	2N1139	500m	100MΔ	6.7m	ΔS	15	15	3.0	100m	5.0u	6.00	10m	20	Δ	12p	PE	T05	AA			
69	2N1444†	500m	100M	4.0m	ΔJ	60	60	6.0	250m	.50u	5.00	250m	25	†	32p	Δ	DME	T029	AA		
70	2N2331Ø	500m	100MΔ	3.3m	ΔS	30	20	5.0	500m	1.0n	1.00	10m	50	Δ	10p	PE	T018	A			
71	2N2463	500m	100MΔ	2.8m	ΔS	100	60	8.0	50m	2.0n	5.00	5.0m	40	Δ	30u	800	5.0p	PE	T018	AA	
72	2N2897	500m	100MΔ	2.8m	ΔS	60	45	7.0	1.0	50n	5.00	5.0m	50	Δ	15p	PE	T018	AA			
73	2N2900	500m	100MΔ	2.8m	ΔS	60	45	7.0	1.0	50n	5.00	5.0m	50	Δ	15p	PE	T046	AA			
74	2N3700	500m	100																		



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/C	TEMP. MAMP	ABS MAX RATINGS @25°C				MAX. lcco @MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# L E O D E	
						BVcbo (V)	BVceo (V)	Ic (A)	Icbo (A)		BIAS			COMMON EMITTER							
											Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	ZTX223AK	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	100	Δ#							
2#	ZTX223AL	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	100	Δ#							
3#	ZTX223AM	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	100	Δ#							
4#	ZTX223BK	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	200	Δ#							
5#	ZTX223BL	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	200	Δ#							
6#	ZTX223BM	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	200	Δ#							
7#	ZTX223K	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	100	Δ#							
8#	ZTX223L	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	100	Δ#							
9#	ZTX223M	500m	100MΔ	3.3m	ΔS	50	30	5.0	400m	100n	2.0	50m	100	Δ#							
10#	GES60101	500m	105MΔ	4.0m	ΔJ	50	40	5.0	800m	10n	1.0	10m	100	Δ#	45u	12k	10p	PE	T092	A	
11#	GES60141	500m	105MΔ	4.0m	ΔJ	70	60	5.0	800m	10n	1.0	10m	100	Δ#	45u	12k	10p	PE	T092	A	
12#	25C1841E	500m	110MΔ	5m	ΔJ	120	120	5	50m	50n	6	10m	400	Δ†			1.6p			T092	A
13#	25C1841F	500m	110MΔ	5m	ΔJ	120	120	5	50m	50n	6	10m	300	Δ†			1.6p			T092	B
14#	25C1841P	500m	110MΔ	5m	ΔJ	120	120	5	50m	50n	6	10m	200	Δ†			1.6p			T092	B
15#	25C1841U	500m	110MΔ	5m	ΔJ	120	120	5	50m	50n	6	10m	600	Δ†			1.6p			T092	B
16#	25C1845	500m	110MΔ	5.0m	ΔJ	120	120	5	50m	50n	6.0	100m	580	†			1.6p			T092	B
17#	2N2424	500m	120MΔ	2.8m	ΔS	100	80	5.0	50m	2.0n	5.0	5.0m	70	Δ	60u	1.2k	5.0p			T018	A
18#	2N2895	500m	120MΔ	2.8m	ΔS	120	85	7.0	1.0	2.0n	5.0	5.0m	50	Δ			15p			T018	A
19#	2N2896	500m	120MΔ	2.8m	ΔS	140	90	7.0	1.0	1.0n	5.0	5.0m	50	Δ			15p			T018	A
20#	2N2898	500m	120MΔ	2.8m	ΔS	120	85	7.0	1.0	2.0n	5.0	5.0m	50	Δ			15p			T046	A
21#	2N2999	500m	120MΔ	2.8m	ΔS	140	90	7.0	1.0	1.0n	5.0	5.0m	50	Δ			15p			T046	A
22#	2N4384	500m	120MΔ	2.8m	ΔS	40	30	5.0	800m	10n	5.0	1.0m	1.0k	Δ	200n	32	8.0p			T018	A
23#	2N4386	500m	120MΔ	2.8m	ΔS	40	30	5.0	800m	10n	5.0	1.0m	1.0k	Δ	200n	32	8.0p			T018	A
24#	25C2274	500m	120MΔ	2.8m	ΔJ	80	50	5.0	500m	1.0u	5.0	5.0m	150	†			5.0p			T092	A
25#	25C2274K	500m	120MΔ	4.5m	ΔJ	100	80	5.0	500m	1.0u	5.0	5.0m	150	†			5.0p			T092	B
26#	D33D25	500m	120MΔ	4.5m	ΔJ	50	40	5.0	750m	100n	2.0	2.0m	100	Δ†			15p			T092	B
27#	D33D30	500m	120MΔ	4.0m	ΔJ	70	60	5.0	750m	100n	2.0	2.0m	100	Δ†			15p			T092	B
28#	GES5516	500m	120MΔ	4.5m	ΔJ	50	40	5.0	750m	100n	2.0	2.0m	100	Δ†			15p			T092	B
29#	GES5822	500m	120MΔ	4.5m	ΔJ	70	60	5.0	750m	100n	2.0	2.0m	100	Δ†			15p			T092	B
30#	MPS572K	500m	120MΔ	3.3m	ΔA	25	25	5.0	100m	100n	10	10m	100	Δ			10p			T092	A
31#	MPS5172L	500m	120MΔ	3.3m	ΔA	25	25	5.0	100m	100n	10	10m	100	Δ			10p			X167	A
32#	MPS5172M	500m	120MΔ	3.3m	ΔA	25	25	5.0	100m	100n	10	10m	100	Δ			10p			X169	A
33#	MPSA20#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			X167	A
34#	MPSA20K#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			T05	A
35#	MPSA20L#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			X168	A
36#	MPSA20M#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			T018	A
37#	MPSA20N#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			X169	A
38#	MPSA20P#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			T018	A
39#	MPSA20R#	500m	125MΔ	3.3m	ΔA	40	40	4.0	100m	100n	10	5.0m	40	Δ†			4.0p			X167	A
40#	25C1209	500m	130MΔ	5.0m	ΔJ	25	20	4.0	700m	1.0u	1.0	500m	100	†						T092	A
41#	25C1210	500m	130MΔ	5.0m	ΔJ	45	40	4.0	500m	1.0u	2.0	150m	100	†						T092	A
42#	25C1211	500m	130MΔ	5.0m	ΔJ	55	60	4.0	500m	1.0u	2.0	150m	100	†						T092	A
43#	25C1438	500m	130MΔ	4.0m	ΔJ	150	120	5.0	50m	1.0u	5.0	10m	150	†			3.0p			R195d	B
44#	25C1439	500m	130MΔ	4.0m	ΔJ	150	150	5.0	50m	1.0u	5.0	10m	150	†			3.0p			R195d	B
45#	25C2363	500m	130MΔ	4.0m	ΔJ	150	100	5.0	50m	1.0u	6.0	1.0m	250	†			1.8p			T092	B
46#	D33D22	500m	135MΔ	4.0m	ΔJ	35	25	5.0	750m	100n	2.0	2.0m	150	Δ†			15p			T092	B
47#	D33D26	500m	135MΔ	4.5m	ΔJ	50	40	5.0	750m	100n	2.0	2.0m	150	Δ†			15p			T092	B
48#	GES5812	500m	135MΔ	4.5m	ΔJ	35	25	5.0	750m	100n	2.0	2.0m	150	Δ†			15p			T092	A
49#	GES5818	500m	135MΔ	4.5m	ΔJ	50	40	5.0	750m	100n	2.0	2.0m	150	Δ†			15p			T092	A
50#	GES6012†	500m	135MΔ	4.0m	ΔJ	50	40	5.0	800m	10n	1.0	10m	200	Δ#	70u	20k	10p	PE	T092	A	
51#	GES6016†	500m	135MΔ	4.0m	ΔJ	50	40	5.0	800m	10n	1.0	10m	200	Δ#	70u	20k	10p	PE	T092	A	
52#	2N2465	500m	140MΔ	2.8m	ΔS	100	60	8.0	50m	2.0n	5.0	5.0m	115	Δ	90u	1.8k	5.0p			T018	A
53#	25C2	500m	150MΔ	4.0m	ΔJ	60	30	5.0	100m	1.0u	10	10m	50	†			4.0p			T05	A
54#	25C797	500m	150MΔ	3.3m	ΔJ	60	35	2.0	500m	5.0u	30	15m	30	†			5.0p			T05	A
55#	25C2602	500m	150MΔ	4.0m	ΔJ	70	70	5.0	200m	1.0n	6.0	1.0m	1.2k	Δ			7.0p			T092	F
56#	BC569	500m	150MΔ	4.0m	ΔJ	50	45	5.0	100m	1.5n	5.0	2.0m	125	Δ	47u	450	150	PE	T092	A	
57#	BFS59	500m	150MΔ	3.3m	ΔS	60	30	5.0	1.0	100n	10	150m	40	Δ†			15p			B58	A
58#	BFS59K	500m	150MΔ	3.3m	ΔS	60	30	5.0	1.0	100n	10	150m	40	Δ†	47u	450k	150	PL†	B58	A	
59#	BFS59L	500m	150MΔ	3.3m	ΔS	60	30	5.0	1.0	100n	10	150m	40	Δ†	47u	450k	150	PL†	B58	A	
60#	BFS59M	500m	150MΔ	3.3m	ΔS	60	30	5.0	1.0	100n	10	150m	40	Δ†	47u	450k	150	PL†	B58	A	
61#	BFS60	500m	150MΔ	3.3m	ΔS	60	40	5.0	1.0	100n	10	150m	100	Δ†	47u	450	150	PL†	B58	A	
62#	BFS60K	500m	150MΔ	3.3m	ΔS	60	40	5.0	1.0	100n	10	150m	100	Δ†	47u	450k	150	PL†	B58	A	
63#	BFS60L	500m	150MΔ	3.3m	ΔS	60	40	5.0	1.0	100n	10	150m	100	Δ†	47u	450k	150	PL†	B58	A	
64#	BFS60M	500m	150MΔ	3.3m	ΔS	60	40	5.0	1.0	100n	10	150m	100	Δ†	47u	450k	150	PL†	B58	A	
65#	BFS66	500m	150MΔ	3.3m	ΔS	80	60	5.0	1.0	100n	10	150m	40	Δ†	47u	450	150	PL†	B58	A	
66#	BFS61	500m	150MΔ	3.3m	ΔS	80	60	5.0	1.0	100n	10	150m	40	Δ†	47u	450	150	PL†	B58	A	
67#	BFS61K	500m	150MΔ	3.3m	ΔS	80	60	5.0	1.0	100n	10	150m	40	Δ†	47u	450k	150	PL†	B58	A	
68#	BFS61L	500m	150MΔ	3.3m	ΔS	80	60	5.0	1.0	100n	10	150m	40	Δ†	47u	450k	150	PL†	B58	A	
69#	BFS61M	500m	150MΔ	3.3m	ΔS	80	60	5.0	1.0	100n	10	150m	40	Δ†	47u	450k	150	PL†	B58	A	
70#	D33D7	500m	150MΔ	4.5m	ΔJ	50	40	5.0	750m	100n	2.0	2.0m	200	Δ†			15p			T092	B
71#	MPSL21#	500m	150MΔ	4.0m	ΔJ	140	120	5.0	700m	1.0u	5.0	1.0m	300	†			8.0p			T092	A
72#	PA6013	500m	150MΔ	4.0m	ΔJ	25	25	4.0													

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @ 25°C (W)	2] DERATE IN FREE AIR W/C (Hz)	T E M A P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 TO200 Ser.	# C O D E		
					V <sub>cb0</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)
1#	PE109B	500m	200mS	2.5m	1J	35	35	4.0	200m	5.0	2.0	200	1Δ	PE	T092	A		
2#	PE109C	500m	200mS	2.5m	1J	35	35	4.0	200m	5.0	2.0	420	1Δ	PE	T092	A		
3#	PE255D	500m	200mS	4.0m	1J	30	20	5.0	200m	10	1.0m	70	1Δ	PE	R222	A		
4#	SG1061	500m	200mS	4.0m	1J	20	20	5.0	500m	20n	10	75	1		T018	A		
5#	SG1061	500m	200mS	4.0m	1J	40	40	5.0	500m	20n	10	75	1		T018	A		
6#	SG1071	500m	200mS	4.0m	1J	60	60	5.0	500m	20n	10	75	1		T018	A		
7#	ZTX360†	500m	200mS	3.3m	1J	80	40	5.0	1.0 #	500m	1.0	500m	25	1Δ	PLT	S14b	F	
8#	ZTX4400†	500m	200mS	3.3m	1J	60	40	6.0	100n#	1.0	20	20	Δ	PLΔ	B58 C14	AA		
9#	BT5109	500m	218M#	2.8m	1J	40	20	3.0	600m	20MΔ	15	50m	40	1Δ		T018	A	
10#	BT5109†	500m	218M#	2.8m	1J	40	20	3.0	600m	20MΔ	15	50m	40	1Δ		T018	A	
11#	2SC796	500m	230M#	3.3m	1J	40	30	2.0	500m	5.0u	20	15m	50		PE	T05	A	
12#	SE8040	500m	230M#	5.0m	1J	30	30	6.0	1.0	50m	1.0	150m	70	1#	DPL	R124c	A	
13#	JAN2N2221†	500m	250MΔ	2.9m	1J	60	30	5.0	800m	10m	10	1.0m	25	Δ		T018	A	
14#	JAN2N2221A†	500m	250MΔ	2.9m	1J	75	50	5.0	800m	10m	10	1.0m	30	Δ		T018	A	
15#	JAN2N2221	500m	250MΔ	2.9m	1J	60	30	5.0	800m	10m	10	1.0m	50	Δ		T018	A	
16#	JAN2N2222A†	500m	250MΔ	2.9m	1J	75	50	5.0	800m	10m	10	1.0m	50	Δ		T018	A	
17#	2N2539†	500m	250MΔ	2.9m	1J	60	30	5.0	800m	25u	10	1.0m	20	1Δ		T018	A	
18#	2N2540†	500m	250MΔ	2.9m	1J	60	30	5.0	800m	25u	10	1.0m	35	1Δ		T018	A	
19#	2N2790†	500m	250MΔ	2.8m	1J	75	35	5.0	800m	10m	20	20m	30	Δ		T018	A	
20#	2N2791†	500m	250MΔ	2.8m	1J	75	35	5.0	800m	10m	20	20m	75	Δ		T018	A	
21#	2N2792†	500m	250MΔ	2.8m	1J	75	35	5.0	800m	10m	20	20m	50	Δ		T018	A	
22#	2N3405*	500m	250MΔ	2.9m	1J	60	30	5.0	500m	04u	10	1.0m	40	1Δ		T018	A	
23#	2N3410*	500m	250MΔ	2.9m	1J	60	30	5.0	500m	01u	10	1.0m	40	1Δ		T018	A	
24#	2N3411*	500m	250MΔ	2.9m	1J	60	30	5.0	500m	01u	10	1.0m	40	1Δ		T018	A	
25#	2N3737†	500m	250MΔ	2.9m	1J	75	50	5.0	20u#	1.0	10m	35	1Δ			T046	A	
26#	JAN2N3737†	500m	250MΔ	2.8m	1J	75	50	5.0	1.5	250m	1.0	500m	40	1Δ		T046	A	
27#	2N4961†	500m	250MΔ	2.8m	1J	80	80	6.5	1.0	10m	10	1.0m	60	1Δ		T039	A	
28#	2N4963†	500m	250MΔ	2.8m	1J	80	80	6.5	1.0	10m	10	1.0m	60	1Δ		T039	A	
29#	2N5417S	500m	250MΔ	3.3m	1J	40	35	3.0	500m	01u	10	1.0m	35	1Δ		T039	A	
30#	JAN2N5581†	500m	250MΔ	2.2m	1J	75	50	6.0	800m	10m	10	1.0	30	Δ		T046	A	
31#	JAN2N5582†	500m	250MΔ	2.2m	1J	75	50	6.0	800m	10m	10	1.0	50	Δ		T046	A	
32#	2SD655D	500m	250M#	4m	1J	30	15	5	700m	1u	10	150m	250	1†	E	T092	B	
33#	2SD655E	500m	250M#	4m	1J	30	15	5	700m	1u	10	150m	400	1†	E	T092	B	
34#	2SD655F	500m	250M#	4m	1J	30	15	5	700m	1u	10	150m	600	1†	E	T092	B	
35#	2SD734	500m	250M#	4m	1J	25	20	5.0	700m	1.0u	2.0	50m	230	1*	PE	T092	B	
36#	40577	500m	250MΔ	357u	1J	25	20	4.0	500m	01u	5.0	100m	50	1#Δ		T05	A	
37#	BC549C	500m	250M#	4.0m	1J	30	20	5.0	100m	5.0u	5.0	2.0m	800	1Δ	PE	R189	A	
38#	BC550C	500m	250M#	4.0m	1J	50	45	5.0	100m	5.0u	5.0	2.0m	200	1Δ*	PE	T092	F	
39#	BC550C	500m	250M#	4.0m	1J	50	45	5.0	100m	15n	5.0	2.0m	600	1Δ	PE	R183	F	
40#	BCX55	500m	250M#	4.0m	1J	32	32	2.0m	200m	100m	2.0m	120	1Δ	PEΔ	R221a	F		
41#	BCX59	500m	250M#	4.0m	1J	45	45	2.0m	200m	100m	2.0m	120	1Δ	PEΔ	R221a	F		
42#	BFX94	500m	250MΔ	3.3m	1J	60	30	5.0	800m	01u	10	150m	40	1Δ	PE	T018	A	
43#	BFX94†	500m	250MΔ	3.3m	1J	60	30	5.0	800m	01u	10	150m	40	1Δ		T018	A	
44#	BFX95	500m	250MΔ	3.3m	1J	60	30	5.0	800m	01u	10	150m	100	1Δ	PE	T018	A	
45#	BFX95†	500m	250MΔ	3.3m	1J	60	30	5.0	800m	01u	10	150m	100	1Δ		T018	A	
46#	BFX96†	500m	250MΔ	3.3m	1J	60	30	5.0	800m	01u	10	150m	40	1Δ		T039	A	
47#	BFX97†	500m	250MΔ	3.3m	1J	60	30	5.0	800m	01u	10	150m	100	1Δ		T039	A	
48#	BT2221	500m	250MΔ	2.8m	1J	60	30	5.0	10n	10	10	10m	35	1Δ	PE	C14	AA	
49#	BT2221†	500m	250MΔ	2.8m	1J	60	30	5.0	10n	10	10	10m	35	1Δ	PE	T018	A	
50#	BT2222	500m	250MΔ	2.8m	1J	60	30	5.0	10n	10	10	10m	75	1Δ	PE	C14	AA	
51#	BT2222†	500m	250MΔ	2.8m	1J	60	30	5.0	10n	10	10	10m	75	1Δ	PE	T018	A	
52#	HSE218-RT	500m	250MΔ	4.0m	1J	75	40	6.0	100n	10	150m	50	1Δ			T018	A	
53#	HSE220-RT	500m	250MΔ	4.0m	1J	75	40	6.0	100n	10	150m	150	1Δ			T018	A	
54#	HSE307-RT	500m	250MΔ	5.0m	1J	60	30	5.0	10u	1.0	1.0m	70	1Δ			R124d	A	
55#	MM2613†	500m	250MΔ	2.8m	1J	60	40	5	5	500m	10	150m	40	1Δ	EΔ	T018	A	
56#	MM2711†	500m	250MΔ	2.8m	1J	60	30	5	5	500m	10	150m	100	1Δ	EΔ	T018	A	
57#	MPS2222K†	500m	250MΔ	3.3m	1A	60	30	5.0	800m	10n	10	1.0m	50	1Δ	E	X167	A	
58#	MPS2222L†	500m	250MΔ	3.3m	1A	60	30	5.0	800m	10n	10	1.0m	50	1Δ	PL	X168	A	
59#	MPS2222M†	500m	250MΔ	3.3m	1A	60	30	5.0	800m	10n	10	1.0m	50	1Δ	PL	X169	A	
60#	MPS2713K†	500m	250M#	3.3m	1A	18	18	5.0	200m	500m	4.5	2.0m	30	Δ	PL	X167	A	
61#	MPS2713L†	500m	250M#	3.3m	1A	18	18	5.0	200m	500m	4.5	2.0m	30	Δ	PL	X168	A	
62#	MPS2713M†	500m	250M#	3.3m	1A	18	18	5.0	200m	500m	4.5	2.0m	30	Δ	PL	X169	A	
63#	MPS2714K†	500m	250M#	3.3m	1A	18	18	5.0	200m	500m	4.5	2.0m	80	Δ	PL	X167	A	
64#	MPS2714L†	500m	250M#	3.3m	1A	18	18	5.0	200m	500m	4.5	2.0m	80	Δ	PL	X169	A	
65#	PN3946†	500m	250MΔ	4.0m	1J	60	40	5	6.0	200m	10n	1.0	1.0m	30	1Δ	DPE	T092	A
66#	TP2221	500m	250M	4.0m	1J	60	30	5.0	500m	10n	10	150m	40	1Δ	†	T092	A	
67#	TP2221A	500m	250M	4.0m	1J	60	30	5.0	500m	10n	5.0	150m	50	1Δ	†	T092	A	
68#	TP2222	500m	250M	4.0m	1J	60	30	5.0	500m	10n	10	150m	100	1Δ	†	T092	A	
69#	UPI2222P	500m	250MΔ	3.3m	1J	60	30	5.0	800m	10n	10	1.0m	50	1Δ	†	T0106	A	
70#	ZTX3903†	500m	250MΔ	3.3m	1J	60	40	5	6.0	200m	50n#	10	1.0m	50	Δ	PL	B58	A
71#	ZTX4401†	500m	250MΔ	3.3m	1J	60	40	6.0	600m	100n#	10	40	Δ	PLΔ	B58	A		
72#	2SC30	500m	280M#	4.0m	1J	60	30	5.0	80m	10u	10	10m	45	1Δ	PE	T05	A	
73#	2SD467	500m	280M#	4.0m	1J	25	20	5.0	700m	1.0u	1.0	150m	60	1Δ		T092	B	
74#	2SD467B	500m	280M#	4.0m	1J	25	20	5.0	700m	1u	1.0	150m	85	1Δ†	E	T092	B	
75#	2SD467C	500m	280M#	4.0m	1J	25	20	5.0	700m	1u	1.0	150m	120	1Δ†	E	T092	B	
76#	2N3736†	500m	300MΔ	2.9m	1J	50	30	5.0	1.5	20u#	1.0	10m	35	1Δ		T046	A	
77#	2SC238	500m	300M#	4.0m	1J	30	30	3.5	100m	10u	8.0	1.0m	80	1Δ	PL	T05	A	
78#	2SC1959	500m	300M#	4.0m	1J	35	30	5.0	400m	100n	1.0	100m	240	1Δ	E	T092	B	
79#	BC546	500m	300M#	4.0m	1J	80	65	6.0	100m	15n	5.0	2.0m	125	Δ	PE	R189	A	
80#	BC546A	500m	300M#	4.0m	1J	80	65	6.0	100m	15n	5.0	2.0m	220	Δ	PE	R189a	F	
81#	BC546AP	500m	300M#	4.0m	1J	80	65	6.0	100m	15n	5.0	2.0m	220	Δ	PL†	S14b	F	
82#	BC546B	500m	300M#	4.0m	1J	80	65	6.0	100m	15n	5.0	2.0m	330	Δ				



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @ 25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	TEMP. MAX. (°C)	ABS. MAX. RATINGS @ 25°C			MAX. l <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #	L C A O D E
					V <sub>bcvo</sub> (V)	V <sub>bcvo</sub> (V)	V <sub>bcvo</sub> (V)		BIAS			COMMON EMITTER						
					V <sub>bcvo</sub> (V)	V <sub>bcvo</sub> (V)	V <sub>bcvo</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	BT2222A	500m	300m	2.8m	50	75	40	6.0	10n	100	100	75	1Δ		PE	C14	AA	
2	BT2222AT	500m	300m	2.8m	50	75	40	6.0	10n	100	100	75	1Δ		PE	T018	AA	
3	MPS2222AK1	500m	300m	3.3m	50	75	40	6.0	800m	10n	100	1.0m	50	1.0u	PE	X167	AA	
4	MPS2222ALT	500m	300m	3.3m	50	75	40	6.0	800m	10n	100	1.0m	50	1.0u	PE	X168	AA	
5	MPS2222AM1	500m	300m	3.3m	50	75	40	6.0	800m	10n	100	1.0m	50	1.0u	PE	X169	AA	
6	MPS2712Z	500m	300m	4.0m	50	18	17	5.0	30m	500p	4.5	2.5m	75	1.2p	DPE	T092	AA	
7	MPS8564Z	500m	300m	4.0m	50	45	45	5.0	200m	500n	5.0	10m	25	4.0p	DPE	T092	AA	
8	MPSH19Δ	500m	300m	4.0m	50	30	25	3.0	100n	100n	100	4.0m	45	750ft	DPL	T092	AA	
9	PE107B	500m	300m	4.0m	50	30	45	4.0	100m	200n	5.0	2.0m	45	3.0p	PE	R222	AA	
10	PE254A	500m	300m	4.0m	50	30	30	5.0	200n	100	100	1.0m	200	750ft	PE	R222	AA	
11	PE254B	500m	300m	4.0m	50	30	30	5.0	200n	100	100	1.0m	200	750ft	PE	R222	AA	
12	PE254C	500m	300m	4.0m	50	30	30	5.0	200n	100	100	1.0m	200	750ft	PE	R222	AA	
13	PN39471	500m	300m	4.0m	50	60	40	6.0	200m	10n	1.0	100u	60	2.0p	DPE	T092	AA	
14	PTC101	500m	300m	5.0m	50	70	35	6.0	100m	50n	100	150m	150	1.0	DPE	T0105	AA	
15	SE8012	500m	300m	5.0m	50	100	60	6.0	500m	50u	1.0	100m	40	9p	DPE	T0105	AA	
16	SK3048-RT	500m	300m	4.0m	50	60	30	2.0	250m	10n	1.2	15m	50	1.0	D	R216k	AA	
17	TBC546	500m	300m	4.0m	50	60	65	6.0	100m	100n	5.0	2.0m	800	3.5p	E	T092	AA	
18	TBC547	500m	300m	4.0m	50	50	45	6.0	100m	100n	5.0	2.0m	800	3.5p	E	T092	AA	
19	TBC548	500m	300m	4.0m	50	30	30	5.0	100m	100n	5.0	2.0m	800	3.5p	E	T092	AA	
20	TBC549	500m	300m	4.0m	50	30	30	5.0	100m	100n	5.0	2.0m	800	3.5p	E	T092	AA	
21	TBC550	500m	300m	4.0m	50	30	45	5.0	100m	100n	5.0	2.0m	800	3.5p	E	T092	AA	
22	TP2222A	500m	300m	4.0m	50	75	40	6.0	500m	10n	5.0	150m	50	8.0p	PE	T092	AA	
23	UPI2222B	500m	300m	4.0m	50	60	40	6.0	800m	14m	100	1.0m	50	3.0p	PE	T018	AA	
24	ZTX39041	500m	300m	4.0m	50	60	40	6.0	200m	50n	100	1.0m	100	4.0p	PE	B58	AA	
25	ZSC285	500m	320m	4.0m	50	50	50	5.0	200m	10u	100	10m	60	3.5p	PE	T05	AA	
26	ZSC285A	500m	320m	4.0m	50	50	50	5.0	200m	10u	100	10m	60	3.5p	PE	T05	AA	
27	2N60101	500m	330m	4.0m	50	50	40	5.0	800m	10n	100	1.0m	65	90u	PE	R203a	AA	
28	2N80141	500m	330m	4.0m	50	60	60	5.0	800m	10n	100	1.0m	65	90u	PE	R203a	AA	
29	2N80001	500m	350m	3.3m	50	35	25	5.0	500m	10n	100	1.0m	70	80u	PE	R203a	AA	
30	ZSC521	500m	350m	4.0m	50	40	40	5.0	100m	30n	6.0	1.0m	50	100nb	PE	T05	AA	
31	TPS108	500m	350m	4.0m	50	40	30	4.0	50m	50n	100	4.0m	25	1.5	PE	T092	AA	
32	PD201	500m	375m	4.0m	50	20	20	3.0	30m	200n	5.0	4.0m	20	700f	PE	T092	AA	
33	PD201B	500m	375m	4.0m	50	20	20	3.0	30m	200n	5.0	4.0m	20	700f	PE	T092	AA	
34	PD201C	500m	375m	4.0m	50	20	20	3.0	30m	200n	5.0	4.0m	130	700f	PE	T092	AA	
35	PD201D	500m	375m	4.0m	50	20	20	3.0	30m	200n	5.0	4.0m	70	700f	PE	T092	AA	
36	MPS6530K	500m	390m	3.3m	50	60	40	5.0	600m	50n	1.0	10m	75	3.5p	PL	X167	AA	
37	MPS6530L	500m	390m	3.3m	50	60	40	5.0	600m	50n	1.0	10m	75	3.5p	PL	X168	AA	
38	MPS6530M	500m	390m	3.3m	50	60	40	5.0	600m	50n	1.0	10m	75	3.5p	PL	X169	AA	
39	MPS6531K	500m	390m	3.3m	50	60	40	5.0	600m	50n	1.0	10m	120	3.5p	PL	X167	AA	
40	MPS6531L	500m	390m	3.3m	50	60	40	5.0	600m	50n	1.0	10m	120	3.5p	PL	X168	AA	
41	MPS6531M	500m	390m	3.3m	50	60	40	5.0	600m	50n	1.0	10m	120	3.5p	PL	X169	AA	
42	MPS6532K	500m	390m	3.3m	50	60	40	5.0	600m	100n	1.0	100m	30	3.5p	PL	X167	AA	
43	MPS6532L	500m	390m	3.3m	50	60	40	5.0	600m	100n	1.0	100m	30	3.5p	PL	X168	AA	
44	MPS6532M	500m	390m	3.3m	50	60	40	5.0	600m	100n	1.0	100m	30	3.5p	PL	X169	AA	
45	2N220A	500m	400m	3.3m	50	75	40	6.0	100m	0.1u	100	150m	40	4.0p	PL	T018	AA	
46	ZSC441	500m	400m	2.8m	50	25	15	5.0	100m	10n	100	100u	50	3.5p	PL	T05	AA	
47	BF196P	500m	400m	3.3m	50	40	30	4.0	25m	5.0	100	15m	10	200ft	PL	B58	AA	
48	BF198#	500m	400m	4.0m	50	40	30	4.0	25m	5.0	100	4.0m	65	1.0	EPL	R191	AA	
49	PH2369	500m	400m	4.0m	50	40	15	4.5	400n	1.0	100	40	150u	20k	EPL	R191	AA	
50	RTC136	500m	400m	4.0m	50	40	44	7.0	800m	100n	100	10m	200	150u	PE	R203a	AA	
51	2N60121	500m	420m	4.0m	50	60	40	5.0	800m	10n	100	1.0m	155	20k	PE	R203a	AA	
52	2N60181	500m	420m	4.0m	50	60	60	5.0	800m	10n	100	1.0m	155	20k	PE	R203a	AA	
53	BT2708	500m	450m	2.8m	50	35	20	3.0	10n	2.0	2.0	2.0m	30	1.8p	PE	C14	AA	
54	BT3708T	500m	450m	2.8m	50	35	20	3.0	10n	2.0	2.0	2.0m	30	1.8p	PE	T018	AA	
55	MAT01GH*	500m	450m	6.3m	50	45	45	5.0	25m	50p	15	10m	840	2.8p	*	T099	AA	
56	MAT01FH	500m	450m	6.3m	50	60	60	5.0	25m	200p	15	10m	610	2.8p	*	T099	AA	
57	MAT01H	500m	450m	6.3m	50	45	45	5.0	25m	200p	15	10m	610	2.8p	*	T099	AA	
58	MAT01H	500m	450m	6.3m	50	60	60	5.0	25m	50p	15	10m	740	2.8p	*	T099	AA	
59	2N585	500m	500m	2.9m	50	30	15	4.5	100m	1.0u	1.0	10m	40	1.5p	PE	T072	AA	
60	ZSC423T	500m	500m	4.0m	50	40	40	5.0	300m	1.0u	5.0	20m	80	5.0p	PE	T039	AA	
61	BF854	500m	500m	2.8m	50	40	15	4.5	500m	400n	1.0	10m	40	2.0p	EPL	T092	AA	
62	BT918	500m	500m	2.8m	50	30	15	3.0	20n	2.0	2.0	20m	20	2.0p	PE	C14	AA	
63	BT918T	500m	500m	2.8m	50	30	15	3.0	20n	2.0	2.0	20m	20	2.0p	PE	T018	AA	
64	BT2369A	500m	500m	2.8m	50	40	15	5.0	400n	.40	10m	40	40	4.0p	PE	T018	AA	
65	BT2369AT	500m	500m	2.8m	50	40	15	5.0	400n	.40	10m	40	40	4.0p	PE	T018	AA	
66	PD198	500m	500m	4.0m	50	40	30	3.0	50n	1.0	100	2.0m	80	130ft	PE	R222	AA	
67	TIS62A	500m	500m	4.0m	50	30	12	3.0	30m	100n	100	4.0m	20	1.3p	PE	R203	AA	
68	TIS63A	500m	500m	4.0m	50	30	12	3.0	30m	100n	100	4.0m	30	1.3p	PE	R203	AA	
69	TIS64	500m	500m	4.0m	50	30	12	3.0	30m	100n	100	4.0m	50	1.3p	PE	R203	AA	
70	TPS84	500m	500m	4.0m	50	40	30	4.0	50m	50n	100	4.0m	30	5.0p	PE	T092	AA	
71	BF197P	500m	550m	3.3m	50	40	25</											

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE IN FREE AIR (Hz)	3   ABS MAX RATINGS @ 25°C						4   TYPICAL h <sub>FE</sub> PARAMETERS						Cob (F)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	# L E O D E
				V <sub>ce</sub> (V)	I <sub>c</sub> (A)	P <sub>tot</sub> (W)	BIAS			COMMON EMITTER									
							V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001							
1	BCW95B	540m	80MΔ	4.3m	70	60	5.0	400m	30nΩ	2.0	2.0mΩ	100	Δ	5.0p	PEΔ	R203a	A		
2	BCW95KA	540m	80MΔ	4.3m	70	60	5.0	400m	30nΩ	2.0	2.0mΩ	70	Δ	5.0p	PEΔ	R203a	A		
3	BCW95KB	540m	80MΔ	4.3m	70	60	5.0	400m	30nΩ	2.0	2.0mΩ	100	Δ	5.0p	PEΔ	R203a	A		
4#	BFS36	550m	30MΔ	3.6m	45	45	5.0	500m	10n	5.0	10uΩ	100	Δ	8.0p	PLΩ	X156f	C		
5#	BFS36A	550m	30MΔ	3.6m	30	30	5.0	500m	10n	5.0	100uΩ	100	Δ	8.0p	PLΩ	X156f	C		
6#	BFT27	550m	30MΔ	3.6m	60	60	5.0	500m	10n	5.0	100uΩ	100	Δ	8.0p	PLΩ	X156f	C		
7#	BSS47	550m	80MΔ	3.6m	100	100	5.0	100m	500nΩ	1.0	2.0mΩ	30	Δ	10p	PLT	X156f	C		
8#	BSS56	550m	80MΔ	3.6m	120	120	5.0	100m	500nΩ	1.0	2.0mΩ	30	Δ	10p	PLT	X156f	C		
9#	BFS38	550m	150MΔ	3.6m	45	35	5.0	500m	50n	6.0	100uΩ	20	Δ	5.0p	PL	X156f	C		
10#	BFS38A	550m	150MΔ	3.6m	25	25	5.0	500m	50n	6.0	10mΩ	50	Δ	5.0p	PL	X156f	C		
11#	BFS39	550m	150MΔ	3.6m	60	45	5.0	500m	50n	6.0	10mΩ	40	Δ	5.0p	PL	X156f	C		
12	2N6441*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	60	Δ	1.5p	*Ω	TO78	PA		
13	2N6442*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	120	Δ	1.5p	*Ω	TO78	PA		
14	2N6443*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	60	Δ	1.5p	*Ω	TO78	PA		
15	2N6444*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	120	Δ	1.5p	*Ω	TO78	PA		
16	2N6445*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	60	Δ	1.5p	*Ω	TO78	PA		
17	2N6446*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	120	Δ	1.5p	*Ω	TO78	PA		
18	2N6447*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	60	Δ	1.5p	*Ω	TO78	PA		
19	2N6448*	550m	160MΔ	3.1m	60	45	5.0	10m	5.0n	5.0	10uΩ	120	Δ	1.5p	*Ω	TO78	PA		
20#	BSV35A†	550m	300MΔ	3.6m	25	12	5.0	500m	500nΩ	1.0	10mΩ	20	Δ	6.0p	PL	X156f	PA		
21#	MD708*	550m	300MΔ	3.1m	40	15	5.0	200m	15n	1.0	500uΩ	40	Δ	5.0p	AN*	R131f	PA		
22	MD708A*	550m	300MΔ	3.1m	40	15	5.0	200m	15n	1.0	500uΩ	40	Δ	5.0p	AN*	R131f	PA		
23	MD708B*	550m	300MΔ	3.1m	40	15	5.0	200m	15n	1.0	500uΩ	40	Δ	5.0p	AN*	R131f	PA		
24	MD7003	550m	300MΔ	3.1m	50	40	5.0	50m	100nΩ	10	100uΩ	350	#	3.0p	ANΩ	R131f	PA		
25	MD7003A*	550m	300MΔ	3.1m	50	40	5.0	50m	100nΩ	10	100uΩ	350	#	3.0p	ANΩ	R131f	PA		
26	MD7003B*	550m	300MΔ	3.1m	50	40	5.0	50m	100nΩ	10	100uΩ	350	#	3.0p	ANΩ	R131f	PA		
27	MD7005*	550m	400MΔ	3.1m	25	12	4.0	50m	100nΩ	1.0	3.0mΩ	50	Δ	1.0p	AN	TO99	PA		
28#	BSV35†	550m	500MΔ	3.6m	40	15	5.0	500m	400nΩ	1.0	10mΩ	40	Δ	4.0p	PL	X156f	PA		
29	MD2369*	550m	500MΔ	3.1m	40	15	5.0	500m	30n	1.0	10mΩ	40	Δ	4.0p	ANΔ	TO99	PA		
30	MD2369A*	550m	500MΔ	3.1m	40	15	5.0	500m	30n	1.0	10mΩ	40	Δ	4.0p	ANΔ	TO99	PA		
31	MD2369B*	550m	500MΔ	3.1m	40	15	5.0	500m	30n	1.0	10mΩ	40	Δ	4.0p	ANΔ	TO99	PA		
32#	BFS46	550m	600MΔ	3.6m	30	15	5.0	500m	10n	1.0	3.0mΩ	20	Δ	1.7p	PLΩ	X156f	C		
33#	BFS46A	550m	600MΔ	3.6m	30	15	5.0	500m	10n	1.0	3.0mΩ	20	Δ	1.7p	PLΩ	X156f	C		
34#	BSV36†	550m	600MΔ	3.6m	15	6.0	4.0	500m	50n	4.0	20mΩ	30	Δ	3.0p	PL	X156f	PA		
35	MD918*	550m	600MΔ	3.1m	30	15	5.0	50m	10n	5.0	3.0mΩ	50	Δ	1.1p	ANΩ	TO99	PA		
36	MD918A*	550m	600MΔ	3.1m	30	15	5.0	50m	10n	5.0	3.0mΩ	50	Δ	1.1p	ANΩ	TO99	PA		
37	MD918B*	550m	600MΔ	3.1m	30	15	5.0	50m	10n	5.0	3.0mΩ	50	Δ	1.1p	ANΩ	TO99	PA		
38	MD1132*	550m	800MΔ	3.1m	30	15	5.0	50m	10n	5.0	1.0mΩ	50	Δ	1.1p	AN	TO99	PA		
39	2N3402	560m	4.4m	4.4m	25	25	5.0	500m	100nΩ	4.5	2.0mΩ	75	Δ	1.5p	AN	TO99	PA		
40	2N3403	560m	4.4m	4.4m	25	25	5.0	500m	100nΩ	4.5	2.0mΩ	180	Δ			R198	B		
41	2N3404	560m	4.4m	4.4m	50	50	5.0	500m	100nΩ	4.5	2.0mΩ	75	Δ			R198	B		
42	2N3405	560m	4.4m	4.4m	50	50	5.0	500m	100nΩ	4.5	2.0mΩ	100	Δ			R198	B		
43	2N4425	560m	4.4m	4.4m	40	40	5.0	500m	100nΩ	4.5	2.0mΩ	180	Δ			R198	B		
44	MPS3405	560m	4.4m	4.4m	50	50	5.0	500m	100nΩ	4.5	2.0mΩ	100	Δ			R198	A		
45	MPS3402	560m	75kΔ	4.4m	25	25	5.0	500m	100nΩ	4.5	2.0mΩ	75	Δ			R198	A		
46	MPS3404	560m	75kΔ	4.4m	50	50	5.0	500m	100nΩ	4.5	2.0mΩ	75	Δ			R198	A		
47	MPS3403	560m	180kΔ	4.4m	25	25	5.0	500m	100nΩ	4.5	2.0mΩ	180	Δ			R198	A		
48#	ZTX3866	560m	800MΔ	3.7m	55	30	5.5	400m	20uΔ	5.0	50mΩ	15	Δ	3.0p	PLT	B58	A		
49#	2SD654	570m	190MΔ	4.6m	50	30	5.0	500m	100nΩ	10	1.0mΩ	60	Δ	3.0p	PE	TO39	A		
50#	2SC309	570m	120MΔ	4.5m	120	80	4.0	500m	100nΩ	10	150mΩ	65	#	6.0p	PE	TO39	A		
51#	2SC310	570m	120MΔ	4.5m	140	100	4.0	500m	100nΩ	10	150mΩ	65	#	6.0p	PE	TO39	A		
52#	2SC306	570m	240MΔ	4.5m	50	30	4.0	500m	100nΩ	10	150mΩ	85	#	10p	PE	TO39	A		
53#	2SC307	570m	250MΔ	4.5m	80	40	4.0	500m	100nΩ	10	150mΩ	85	#	10p	PE	TO39	A		
54	MD1129*	575m	250MΔ	3.2m	60	30	5.0	500m	10n	10	10uΩ	60	Δ	8.0p	AN	R131b	PA		
55	MD2218*	575m	250MΔ	3.2m	60	30	5.0	500m	20n#	10	100nΩ	50	#	3.5p	ANΔ	R131c	PA		
56	MD2218A*	575m	250MΔ	3.2m	60	30	5.0	500m	15n#	10	100nΩ	50	#	3.5p	ANΔ	R131c	PA		
57	MD2219*	575m	250MΔ	3.2m	60	30	5.0	500m	20n#	10	100nΩ	45	#	3.5p	ANΔ	R131c	PA		
58	MD2219A*	575m	250MΔ	3.2m	60	30	5.0	500m	15n#	10	100nΩ	45	#	3.5p	ANΔ	R131c	PA		
59	MD3409*	575m	250MΔ	3.2m	60	30	5.0	500m	10n	10	100uΩ	50	#	3.5p	AN	TO99	PA		
60	MD3410*	575m	250MΔ	3.2m	60	30	5.0	500m	10n	10	100uΩ	50	#	3.5p	AN	TO99	PA		
61	MD7000*	575m	250MΔ	3.2m	50	30	5.0	500m	100nΩ	10	1.0mΩ	60	#	3.5p	AN	TO99	PA		
62	MD7002	575m	260MΔ	3.2m	50	40	5.0	30m	100nΩ	10	100uΩ	130	#	2.6p	AN*	R131c	PA		
63	MD7002A*	575m	260MΔ	3.2m	50	40	5.0	30m	100nΩ	10	100uΩ	130	#	2.6p	AN*	R131c	PA		
64	MD7002B*	575m	260MΔ	3.2m	50	40	5.0	30m	100nΩ	10	100uΩ	130	#	2.6p	AN*	R131c	PA		
65	MD8001*	575m	260MΔ	3.2m	40	40	5.0	30m	50n	10	1.0mΩ	200	↑	2.6p	AN*	R131f	PA		
66	MD8002*	575m	260MΔ	3.2m	40	40	5.0	30m	50n	10	1.0mΩ	200	↑	2.6p	AN*	R131f	PA		
67	MD8003*	575m	260MΔ	3.2m	60	60	5.0	30m	50n	10	1.0mΩ	200	↑	2.6p	AN*	R131f	PA		
68	MD7007	575m	600MΔ	3.2m	50	40	5.0	200m	100nΩ	10	100uΩ	110	#	4.0p	AN*	R131c	PA		
69	MD7007A*	575m	600MΔ	3.2m	50	40	5.0	200m	100nΩ	10	100uΩ	110	#	4.0p	AN*	R131c	PA		
70	MD7007B*	575m	600MΔ	3.2m	50	40	5.0	200m	100nΩ	10	100uΩ	110	#	4.0p	AN*	R131c	PA		
71	2N4270	580m	3.3																

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX COLL. DISS @ 25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMPERATURE M A M P	ABS MAX RATINGS @ 25°C			MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E	
						V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>eb</sub> (V)		V <sub>cb</sub> (V)	I <sub>le</sub> (A)	h <sub>fe</sub>					hoe (mhos)
1	ED1402E	600m		208u	\$J	35	30	4.0	100m	10n	5.00	2.0m	410	1.0	PE	T092	A
2	ED1702K	600m		208u	\$J	30	25	5.0	1.5	100n	1.00	100m	106	1.0	PE	T092	A
3	ED1702L	600m		208u	\$J	30	25	5.0	1.5	100n	1.00	100m	132	1.0	PE	T092	A
4	ED1702M	600m		208u	\$J	30	25	5.0	1.5	100n	1.00	100m	170	1.0	PE	T092	A
5	ED1702N	600m		208u	\$J	30	25	5.0	1.5	100n	1.00	100m	213	1.0	PE	T092	A
6	T1480	600m		6.0m	\$J	50	40	5.0	60m	2.0u	10	5.0m	9.0	1.0	PE	T011	A
7	T1481	600m		6.0m	\$J	80	70	4.0	60m	2.0u	10	5.0m	9.0	1.0	PE	T011	A
8	MM1803	600m	500mΔ	4.1m	\$J	40	15	5.0	150m	50n	5.00	50m	40	1.0	PL	T05	A
9	PN2484	600m	60 Δ	4.8m	\$J	60	60	6.0	50m	10n	5.00	1.0m	150	1.0	PL	T092	A
10	PN2222A	600m	300 Δ	4.8m	\$J	75	40	6.0	800m	10n	1.00	1.0m	50	1.0	PL	T092	A
11	PN2369	600m	500	4.8m	\$J	40	15	4.5	500m	400n	1.00	10m	40	1.0	PL	T092	A
12	PN2369A	600m	500 Δ	4.8m	\$J	40	15	4.5	500m	400n	1.00	10m	40	1.0	PL	T092	A
13	2N2858T	600m	1.0MΔ	5.9m	\$J	100	80	10	3	4.00	1	20	20	1.0	D	T05	A
14	2N2859T	600m	1.0MΔ	5.9m	\$J	120	100	10	3	4.00	1	20	20	1.0	D	T05	A
15	2N1615	600m	2.0MΔ	5.6m	\$J	100	100	8.0	200m	2.0u	10	5.0m	25	1.0	D	T05	A
16	2N2038	600m	2.0MΔ	5.6m	\$S	45	45	4.0	500m	15u	6.00	200m	12	1.0	PL	T05	A
17	2N2039	600m	2.0MΔ	5.6m	\$S	75	75	4.0	500m	15u	6.00	200m	12	1.0	PL	T05	A
18	2N2040	600m	2.0MΔ	5.6m	\$S	45	45	4.0	500m	15u	6.00	200m	30	1.0	PL	T05	A
19	2N2041	600m	2.0MΔ	5.6m	\$S	75	75	4.0	500m	15u	6.00	200m	30	1.0	PL	T05	A
20	2N551	600m	3.0MΔ	5.6m	\$S	60	60	6.0	200m	15u	6.00	50m	20	1.0	PL	T05	A
21	2N552	600m	3.0MΔ	5.6m	\$S	30	30	6.0	200m	15u	6.00	50m	20	1.0	PL	T05	A
22	2N1055	600m	3.0MΔ	5.6m	\$S	100	100	6.0	200m	15u	6.0	50m	20	1.0	PL	T05	A
23	2N547	600m	5.6m	5.6m	\$S	60	60	6.0	800m	15u	6.00	500m	20	1.0	PL	T05	A
24	2N548	600m	4.0MΔ	5.6m	\$S	30	30	6.0	800m	15u	6.00	500m	20	1.0	PL	T05	A
25	2N549	600m	5.6m	5.6m	\$S	60	60	6.0	800m	15u	6.00	200m	20	1.0	PL	T05	A
26	2N550	600m	4.0MΔ	5.6m	\$S	30	30	6.0	800m	15u	6.00	200m	20	1.0	PL	T05	A
27	2N1052	600m	4.0M	3.4m	\$J	180	180	6.0	10u	6.00	200m	35	1.0	ME	T05	A	
28	2N1053	600m	4.0M	3.4m	\$J	200	200	6.0	10u	6.00	200m	35	1.0	ME	T05	A	
29	2N1054	600m	4.0M	3.4m	\$J	125	115	6.0	5.0u	20	100m	12	1.0	ME	T05	A	
30	2N1117	600m	4.0MΔ	5.6m	\$S	60	60	6.0	800m	15u	6.00	200m	40	1.0	PL	T05	A
31	2N2198	600m	4.0MΔ	5.6m	\$S	80	80	7.0	200m	15u	5.00	100m	35	1.0	D	T05	A
32#	2S711	600m	5.0M	833u	#A	40	40	8.0	200m	10u	10	200m	20	1.0	D	T05	A
33#	2S712	600m	5.0M	833u	#A	40	40	8.0	200m	10u	10	200m	40	1.0	D	T05	A
34#	N1X	600m	5.0M	4.0m	\$S	80	75	5.0	50m	1.0u	5.00	2.0m	20	1.0	ME	T05	A
35	2N1116	600m	6.0MΔ	4.8m	\$S	60	60	6.0	800m	15u	6.0	500m	40	1.0	PL	T05	A
36	HSE150-RT	600m	10MΔ	4.8m	\$J	350	325	5.0	50u	10	100	20m	30	1.0	PL	T05	A
37	HSE151-RT	600m	10MΔ	4.8m	\$J	250	200	4.0	50u	10	100	20m	30	1.0	PL	T05	A
38	PN930	600m	30MΔ	4.8m	\$J	45	45	5.0	30m	10n	5.00	1.0m	150	1.0	PL	T092	A
39	2N3388T	600m	36MΔ	4.0m	\$A	125	100	6.0	2.5m	2.0u	1.50	2.5m	60	1.0	PL	T05	A
40	2N3389T	600m	36MΔ	4.0m	\$A	195	160	6.0	7.0m	2.0u	1.50	7.0m	60	1.0	PL	T05	A
41	2N1953	600m	40MΔ	4.0m	\$J	20	20	3.0	1	.70u	2.0	10m	15	1.0	PL	T05	A
42	2N1983	600m	40MΔ	4.7m	\$J	50	25	5.0	1.0	5.0u	5.00	1.0m	70	1.0	PL	T05	A
43	2N1984	600m	40MΔ	4.7m	\$J	50	25	5.0	1.0	5.0u	5.00	1.0m	35	1.0	PL	T05	A
44	2N1985	600m	40MΔ	4.7m	\$J	50	25	5.0	1.0	5.0u	5.00	1.0m	15	1.0	PL	T05	A
45	2N1986	600m	40MΔ	5.0m	\$J	50	25	5.0	1.0	5.0u	10	150m	60	1.0	PL	T05	A
46	2N1987	600m	40MΔ	4.8m	\$J	50	25	5.0	1.0	5.0u	10	150m	20	1.0	PL	T05	A
47	2N1988	600m	40MΔ	4.7m	\$J	100	45	5.0	1.0	5.0u	5.00	1.0m	20	1.0	PL	T05	A
48	2N1989	600m	40MΔ	4.7m	\$J	100	45	5.0	1.0	5.0u	5.00	1.0m	10	1.0	PL	T05	A
49#	2N5073	600m	40MΔ	4.0m	\$J	180	120	6.0	400m	5.0u	10	6.0m	20	1.0	PL	T05	A
50#	BFW29	600m	40MΔ	4.0m	\$S	200	200	5.0	400m	10n	2.0	10m	120	1.0	PL	T039	A
51#	BSS33	600m	40MΔ	4.0m	\$S	200	200	5.0	200m	10n	2.0	10m	120	1.0	PL	T05	A
52	PN3565	600m	40MΔ	4.8m	\$J	30	25	6.0	50m	50n	10	1.0m	150	1.0	PL	T092	A
53	PN3566	600m	40MΔ	4.8m	\$J	40	30	5.0	200m	50n	10	2.0m	80	1.0	PL	T092	A
54#	PN3566Z	600m	40MΔ	4.8m	\$J	40	30	5.0	200m	50n	10	10m	150	1.0	PL	T092	A
55	T1482	600m	40MΔ	5.0m	\$J	20	20	5.0	500m	2.0u	10	150m	20	1.0	PL	T05	A
56	T1483	600m	40MΔ	5.0m	\$J	40	20	5.0	500m	2.0u	10	150m	20	1.0	PL	T05	A
57	T1484	600m	40MΔ	5.0m	\$J	40	20	5.0	500m	2.0u	10	150m	40	1.0	PL	T05	A
58	JAN2N696T	600m	50MΔ	4.0m	\$S	60	40	5.0	100u	10	100	150m	20	1.0	PL	T05	A
59	2N699	600m	50MΔ	4.0m	\$J	120	80	5.0	2.0u	5.0	5.0	1.0m	35	1.0	PL	T05	A
60	2N1409	600m	50MΔ	4.0m	\$J	30	25	4.0	10u	10	100	150m	15	1.0	PL	T05	A
61	2N1410	600m	50MΔ	4.0m	\$J	45	30	4.0	10u	10	100	150m	30	1.0	PL	T05	A
62	2N1420	600m	50MΔ	4.0m	\$J	60	30	5.0	1.0u	10	100	150m	100	1.0	PL	T05	A
63	2N1507	600m	50MΔ	4.0m	\$J	60	30	5.0	1.0u	10	100	150m	150	1.0	PL	T05	A
64	2N1972	600m	50MΔ	4.0m	\$J	60	30	5.0	1.0u	5.0	5.0	1.0m	40	1.0	PL	T05	A
65	2N2195	600m	50MΔ	3.4m	\$J	45	25	5.0	1.0u	10	100	150m	20	1.0	PL	T05	A
66	2N2195A	600m	50MΔ	3.4m	\$J	45	25	5.0	1.0u	10	100	150m	20	1.0	PL	T05	A
67	2N2195B	600m	50MΔ	3.4m	\$J	45	25	5.0	1.0	100n	10	150m	20	1.0	PL	T05	A
68	2N2238T	600m	50MΔ	5.0m	\$S	40	20	6.0	500m	.05u	1.00	100m	15	1.0	PL	T05	A
69	2N2240	600m	50MΔ	3.4m	\$J	25	20	5.0	500m	25n	5.00	1.0m	40	1.0	PL	T05	A
70	2N2241	600m	50MΔ	3.4m	\$J	25	20	5.0	500m	25n	5.00	1.0m	100	1.0	PL	T05	A
71#	2SC482	600m	50MΔ	4.8m	\$J	40	32	5.0	600m	1.0u	2.00	150m	30	1.0	PE	T039	A
72#	2SC2001	600m	50MΔ	4.8m	\$J	30	25	5.0	700m	100n	1.00	100m	200	1.0	PE	R182b	B
73#	2SC2002	600m	50MΔ	4.8m	\$J	60	60	5.0	300m	100n	1.00	50m	200	1.0	PE	R182b	B
74#	2SC2003	600m	50MΔ	4.8m	\$J	80	80	5.0	300m	100n	1.00	50m	200	1.0	PE	R182b	B
75#	BF305Z	600m	50MΔ	4.8m	\$J	150	80	5.0	50m	20	2.00	30m	20	1.0	PE	T039	A
76#	BFR77	600m	50MΔ	4.8m	\$J	80	80	5.0	1.0	10	100	150m	40	1.0	PL	T039	A
77	BFX15	600m	50MΔ	2.9m	\$J	80	75	5.0	.01u	5.00	5.00	1.0m	30	1.0	PL	T078	PA
78	HSE130-RT	600m	50MΔ	4.8m	\$J	30	25	5.0	1.0u	10	100	100m	150	1.0	PL	T05	A
79	PN7055	600m	50MΔ	4.8m	\$J	220	220	7.0	30m	100n	20	10m	40	1.0	PL	T092	A
80	TRS100A	600m	50MΔ	4.0m	\$J	100	100	6.0	3.0u	4.00	4.00	50m	30	1.0	PL	T05	A
81	TRS120	600m	50MΔ	4.0m	\$J	120	120	6.0	3.0u	4.00	4.00	50m	30	1.0	PL	T05	A
82	TRS140	600m	50MΔ	4.0m	\$J	140	140	6.0	3.0u	4.00	4.00	50m	30	1.0	PL	T05	A

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	M A X P	ABS MAX RATINGS @ 25°C						MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC TURE	DWG # s/a TO200 Ser.	L C O D E		
						BVcbo (V)		BVceo (V)		BVebo (V)			BIAS			COMMON EMITTER								
						V	(V)	V	(V)	V	(V)		Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)						
1	2N1946	800m	60MΔ	4.0m	Δ	40	40	5	10	1.0u	2.0	1.0m	300	1				20p	ME	T05	A0			
2	2N1947	800m	60MΔ	4.0m	Δ	20	20	5	5.0	1.0u	2.0	100m	650	1				20p	ME	T05	A0			
3	2N1948	800m	60MΔ	4.0m	Δ	30	30	5	8.0	1.0u	2.0	100m	650	1				20p	ME	T05	A0			
4	2N1949	800m	60MΔ	4.0m	Δ	40	40	5	10	1.0u	2.0	100m	650	1				20p	ME	T05	A0			
5	2N1950	800m	60MΔ	4.0m	Δ	20	20	5	5.0	1.0u	2.0	100m	375	1				20p	ME	T05	A0			
6	2N1951	800m	60MΔ	4.0m	Δ	30	30	5	8.0	1.0u	2.0	100m	375	1				20p	ME	T05	A0			
7	2N1952	800m	60MΔ	4.0m	Δ	40	40	5	10	1.0u	2.0	100m	375	1				20p	ME	T05	A0			
8#	2SC505	800m	60MΔ	5.3m	Δ	300	300	3	100m	1.0u	5.0	50m	40	Δ				20p	D	T039	A			
9#	2SC506	800m	60MΔ	5.3m	Δ	200	200	3	100m	1.0u	5.0	50m	40	Δ				20p	D	T039	A			
10#	N2XA	800m	60MΔ	4.0m	Δ	120	5	5.0	50m	1.0u	3.0	5.0m	40					20p	ME	T05	A			
11	PN3567	800m	60MΔ	4.8m	Δ	80	40	5.0	500m	50n	1.0	150m	40	Δ				20p	PL	T092	A			
12	PN3568	800m	60MΔ	4.8m	Δ	80	60	5.0	500m	50n	1.0	150m	40	Δ				20p	PL	T092	A			
13	PN3569	800m	60MΔ	4.8m	Δ	80	40	5.0	500m	50n	1.0	150m	100	Δ				20p	PL	T092	A			
14	2N3881	800m	70MΔ	3.3m	Δ	60	35	5.0	1.0	1.0u	5.0	200u	50	Δ				25p	PL	T05	A			
15#	2SC2000	800m	70MΔ	4.8m	Δ					1.0u	6.0	100m	180	Δ				3.7p	E	T092	B			
16#	BFW34	800m	70MΔ			30	φ		200m	15	8.0m	45	10	Δ				10p	PL	T039	A			
17#	BFW35	800m	70MΔ			30	φ		200m	15	8.0m	80	10	Δ				10p	PL	T039	A			
18#	BFW80	800m	70MΔ			30	φ		200m	15	8.0m	90	10	Δ				10p	PL	T039	A			
19	TR5100	800m	70MΔ	4.5m	Δ	150	135	5	5.0	1.0u	3.5	50m	40	Δ				15p	ME	T05	A0			
20	TR5101	800m	70MΔ	4.5m	Δ	180	115	5	5.0	1.0u	5.0	60m	35	Δ				15p	ME	T05	A0			
21	2N696	800m	80MΔ	1.3m	Δ	60	40	5	5.0	1.0u	10	150m	40	#				20p	DM	T05	A0			
22	2N1252	800m	80MΔ	1.3m	Δ	30	20	5	5.0	10u	10	150m	35	#				30p	DM	T05	A0			
23#	2SC497	800m	80MΔ	5.0m	Δ	100	80	5	800m	1.0u	2.0	200m	70					30p	PL	T039	G			
24#	2SC498	800m	80MΔ	5.0m	Δ	80	50	5	800m	1.0u	2.0	200m	70					30p	PL	T039	G			
25#	2SC1573	800m	80MΔ	5.4m	Δ	250	200	5	5.0	2.0u	10	5.0m	30	Δ				10p	D	T0128	B			
26#	2SD662	800m	80MΔ	5.4m	Δ	250	200	5	5.0	100m	10	5.0m	30	Δ				5.0p	PL	B37	D			
27#	BFW29	800m	80MΔ	4.0m	Δ	50	30	6.0	400m	10u	10	150m	70	Δ				25p	PE	T05	A0			
28	2N1838†	800m	90MΔ	4.0m	Δ	45	20	5.0	500m	1.5u	10	100m	40	Δ				27p	PL	T05	A0			
29	2N1839†	800m	90MΔ	4.0m	Δ	45	20	4.5	500m	1.5u	10	100m	12	Δ				27p	PL	T05	A0			
30	2N1840†	800m	90MΔ	4.0m	Δ	25	15	5.0	500m	300u	10	150m	10	Δ				27p	PL	T05	A0			
31#	BFX74	800m	90MΔ	3.4m	Δ	50	35	5.0	500m	1.0u	10	5.0m	60					600nb	6.2	2.0	31p	DPL	T05	A0
32#	BSY241	800m	90MΔ	5.0m	Δ	40	20	6.0	500m	1.0m	9.0	20m	30					23p	PE	T05	A0			
33#	2MC509	800m	100MΔ	4.8m	Δ	35	30	5.0	500m	100m	2.0	50m	100	Δ				22p	PE	R67a	B			
34	2N697	800m	100MΔ	1.3m	Δ	60	40	5	5.0	1.0u	10	150m	75	#				20p	DM	T05	A0			
35	2N1566A	800m	100MΔ	4.0m	Δ	80	60	8.0	100m	.50u	5.0	1.0m	60	Δ				6p	PL	T05	A0			
36	2N1958†	800m	100MΔ	4.0m	Δ	60	40	5	5.0	500m	.50u	10	150m	20	Δ			18p	PL	T05	A0			
37	2N1958A†	800m	100MΔ	4.0m	Δ	60	40	5	5.0	1.0	200m	10	150m	20	Δ			14p	PL	T05	A0			
38	2N1959†	800m	100MΔ	4.0m	Δ	60	40	5	5.0	.50u	10	150m	40	Δ				14p	PL	T05	A0			
39	2N1959A†	800m	100MΔ	4.0m	Δ	60	40	5	5.0	1.0	200m	10	150m	40	Δ			14p	PL	T05	A0			
40	2N2237†	800m	100MΔ	5.0m	Δ	40	20	6.0	500m	.05u	1.0	100m	40	#				35p	PL	T05	A0			
41	2N2380†	800m	100MΔ	4.0m	Δ	80	40	5	5.0	4.0u	5.0	150m	20	#				14p	PL	T05	A0			
42	2N2380A†	800m	100MΔ	4.0m	Δ	80	40	5	5.0	4.0u	5.0	150m	20	#				14p	PL	T05	A0			
43	2N3450†	800m	100MΔ	4.5m	Δ	120	60	7.0	800m	200m	1.0	150m	40	#				15p	PL	T05	A0			
44#	2SC481	800m	100MΔ	4.8m	Δ	60	60	5	5.0	1.0	10u	2.0	150m	35	Δ			30p	PE	T039	A0			
45#	2SC509	800m	100MΔ	4.8m	Δ	35	30	5	5.0	500m	100m	2.0	50m	100	Δ			11p	PE	T039	A0			
46#	2SC509G†	800m	100MΔ	4.8m	Δ	35	30	5	5.0	800m	100m	2.0	50m	70	Δ	*		11p	PE	T092	B			
47#	BC337-16	800m	100MΔ	4.8m	Δ	45	5	5.0	800m	100m	1.0	100m	250	Δ				12p	PE	T092	F			
48#	BC337-25	800m	100MΔ	4.8m	Δ	45	5	5.0	800m	100m	1.0	100m	400	Δ				12p	PE	T092	F			
49#	BC337-40	800m	100MΔ	4.8m	Δ	45	5	5.0	800m	100m	1.0	100m	630	Δ				12p	PE	T092	F			
50#	BC338-16	800m	100MΔ	4.8m	Δ	25	5	5.0	800m	100m	1.0	100m	250	Δ				12p	PE	T092	F			
51#	BC338-25	800m	100MΔ	4.8m	Δ	25	5	5.0	800m	100m	1.0	100m	400	Δ				12p	PE	T092	F			
52#	BC338-40	800m	100MΔ	4.8m	Δ	25	5	5.0	800m	100m	1.0	100m	630	Δ				12p	PE	T092	F			
53#	BFW37	800m	100MΔ	4.0m	Δ	130	130	5	5.0	200m	5m	15	8.0m	60				6.0p	PE	T05	A0			
54	2N1253	800m	110MΔ	1.3m	Δ	30	20	5	5.0	100m	10	150m	45	#				30p	DM	T05	A0			
55#	2SC983	800m	120MΔ	4.8m	Δ	250	150	5	5.0	50m	100m	5.0	10m	40	Δ	*		5.5p	PL	T161	B			
56#	2SC1048	800m	120MΔ	4.8m	Δ	200	200	6.0	50m	100m	10	25m	90	Δ			3.5p	ME	T039	A0				
57#	2SC1166	800m	120MΔ	4.8m	Δ	70	50	5	200m	100m	1.0	50m	100	Δ				20p	PL	C17	B			
58#	2SC2120	800m	120MΔ	5.2m	Δ	30	25	5	800m	100m	1.0	100m	320	Δ				13p	PE	T092	B			
59#	BFW36	800m	120MΔ	4.0m	Δ	180	180	5	6.0	400m	100u	2.0	200m	50	Δ			25p	PE	T05	A0			
60	SK3244-RT	800m	120MΔ	4.0m	Δ	250	150	5	5.0	50m	5.0	10m	100	Δ				13p	PE	S22	B			
61#	2SC1921	800m	130MΔ	4.0m	Δ	250	200	5	5.0	1.0u	6.0	10m	30	Δ				4.0p	D	R195a	B			
62	2N1837†	800m	140MΔ	4.0m	Δ	80	30	8.0	500m	.50u	10	150m	40	Δ				18p	PL	T05	A0			
63#	2SC2719	800m	140MΔ	4.8m	Δ	80	30	8.0	300m	100m	1.0	50m	400	Δ	*			7.0p	E	T092	B			
64#	BSY251	800m	140MΔ	5.0m	Δ	40	20	6.0	500m	1.0m	9.0	20m	60					23p	PE	T05	A0			
65	2N1644A	800m	150MΔ	4.0m	Δ	60	60	5.0	500m	1.0u	10	15m	75	Δ				20p	ME	T05	A0			
66	2N2086†	800m	150MΔ	4.0m	Δ	120	80	5	5.0	500m	2.0u	1.5	150m	20	Δ			12p	PL	T05	A0			
67	2N2087†	800m	150MΔ	4.0m	Δ	120	80	5	5.0	500m	2.0u	1.0	150m	40	Δ			12p	PL	T05	A0			
68	2N2479†	800m	150MΔ	4.0m	Δ	80	40	5	5.0	500m	4.0u	1.5	150m	30	Δ			14p	PL	T05	A0			
69#	2SC188	800m	150MΔ	4.0m	Δ	40	25	3.0	500m	1.0u	6.0	10m	50				9.0p	PE	T05	A0				
70#	2SC189†	800m	150MΔ	4.0m	Δ	60	40	5	5.0	1.0u	10	150m	40	Δ				9.0p	PL	T05	A0			
71#	2SC1788	800m	150MΔ	5.5m	Δ	30	18	7.0	500m	100m	2.0	50m	280	Δ				6.0p	PE	T092	B			
72#	2SC2909	800m	150MΔ	5.5m	Δ	180	160	5	7.0	0.1u	5.0	10m	250	Δ				2.5p	PE	T092	B			
73#	2SD969	800m	150MΔ																					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) f<sub>β</sub> & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   f <sub>β</sub> (Hz)	DERATE IN FREE AIR W/°C	T <sub>M</sub> °C	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E
						BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001				
1	PN2222	600m	250MΔ	4.8m	SJ	60	30	5.0	800m	10n	100	1.0m	50	1Δ			8.0p	PL	T092	A
2	PN3641	600m	250MΔ	4.8m	SJ	60	30	5.0	500m	50n	100	150m	40	1Δ			8.0p	PL	T092	A
3	PN3642	600m	250MΔ	4.8m	SJ	60	30	5.0	500m	50n	100	150m	40	1Δ			8.0p	PL	T092	A
4	PN3643	600m	250MΔ	4.8m	SJ	60	30	5.0	500m	50n	100	150m	100	1Δ			8.0p	PL	T092	A
5	2N2320	600m	300M	3.4m	SJ	30	30	5.0	500m	1.0u	40	20m	40	1			8.0p	PL	T05	A
6	ED1502A	600m	300MΔ	208u	SJ	25	20	4.0	50m	50n	100	1.0m	36	1Δ			5.0p	PE	T092	A
7	ED1502B	600m	300MΔ	208u	SJ	25	20	4.0	50m	50n	100	1.0m	48	1Δ				PE	T092	A
8	ED1502C	600m	300MΔ	208u	SJ	25	20	4.0	50m	50n	100	1.0m	66	1Δ				PE	T092	A
9	ED1502D	600m	300MΔ	208u	SJ	25	20	4.0	50m	50n	100	1.0m	84	1Δ				PE	T092	A
10	ED1502E	600m	300MΔ	208u	SJ	25	20	4.0	50m	50n	100	1.0m	105	1Δ				PE	T092	A
11#	2SC1303	600m	350MΔ	4.0m	SJ	40	20	4.0	500m	1.0u	130	100m	70	1			10p	PE	T039	A
12	PN3646	600m	350MΔ	4.8m	SJ	40	15	5.0	200m	500n	40	30m	30	1Δ			5.0p	PL	T092	A
13#	2SC2720†	600m	400M	4.8m	SJ	60	40	5.0	500m	100n	1.0	150m	150	1			3.5p	E	T092	C
14	PN3564	600m	400MΔ	4.8m	SJ	30	15	4.0	100m	50n	100	15m	20	1Δ			3.5p	PL	T092	A
15	PN4274	600m	400MΔ	4.8m	SJ	30	12	4.5	500m	500n	1.0	10m	120	1			4.0p	PL	T092	A
16	PN4275	600m	400MΔ	4.8m	SJ	40	15	4.5	100m	100n	1.0	100m	18	1			4.0p	PL	T092	A
17	2N3303†	600m	450MΔ	4.0m	SJ	25	12	4.0	1	30u	50	300m	60	#			15p	PL	R179h	A
18#	2SC998	600m	450M	4.0m	SJ	40	40	4.0	400m	2.0u	50	50m	50	1			10p	PE	T039	A
19	2N3137	600m	500MΔ	3.4m	SJ	40	20	4.0	150m	50n	50	50m	20	1#			3.5p	PL	T039	A
20	2N5236‡	600m	500MΔ	3.4m	SJ	40	20	4.0	150m	1.0u	50	50m	30	1#			3p	PL	T039	A
21#	2SC994	600m	500M	4.0m	SJ	36	15	3.0	100m	1.0u	30	100m	70	1			38p	PE	T039	A
22#	2SC2188	600m	500M	5.4m	TJ	45	35	4.0	50m	100n	100	20m	20	1Δ			1.7p	PL	B37	D
23	PN918	600m	600MΔ	4.8m	SJ	30	15	3.0	50m	50n	100	30m	20	1Δ			1.7p	PL	T092	A
24	PN3563	600m	600MΔ	4.8m	SJ	30	12	2.0	50m	50n	100	8.0m	20	1Δ			1.7p	PL	T092	A
25#	BFY63	600m	750M	3.4m	SJ	30	15	4.0	50m	50n	50	50m	70	1			2.8p	DPE	T05	∅
26	PN5179	600m	900MΔ	4.8m	SJ	20	12	2.5	25m	2.0n	100	3.0m	250	1			1.0	PL	T092	C
27#	2SC1638	600m	1.0GΔ	4.0m	SJ	40	20	3.0	300m	50n	100	20m	100	1			1.0	PE	R176h	G
28#	2SC1164	600m	1.4G	4.0m	SJ	40	35	2.0	300m	100n	100	15m	15	1Δ			3.0p	EP	R176d	G
29#	2SC1199	600m	1.4G	4.0m	SJ	50	35	2.0	300m	100n	100	20m	80	1			3.5p	PE	T039	A
30#	BCW90	610m	100M	4.9m	SJ	50	40	5.0	800m	30n	20	150m	100	1Δ			12p	PE	R203a	A
31#	BCW91	610m	80M	4.9m	SJ	70	60	5.0	800m	30n	20	150m	100	1Δ			12p	PE	R203a	A
32	BCW90A	610m	80M	4.8m	SJ	50	40	5.0	800m	30n	20	20m	60	1Δ			10p	PE	R203a	A
33	BCW90B	610m	80M	4.8m	SJ	50	40	5.0	800m	30n	20	20m	80	1Δ			10p	PE	R203a	A
34	BCW90C	610m	80M	4.8m	SJ	50	40	5.0	800m	30n	20	20m	120	1Δ			10p	PE	R203a	A
35	BCW90KA	610m	80M	4.8m	SJ	50	40	5.0	800m	30n	20	20m	60	1Δ			10p	PE	R203a	A
36	BCW90KB	610m	80M	4.8m	SJ	50	40	5.0	800m	30n	20	20m	80	1Δ			10p	PE	R203a	A
37	BCW90KC	610m	80M	4.8m	SJ	50	40	5.0	800m	30n	20	20m	120	1Δ			10p	PE	R203a	A
38	BCW91A	610m	80M	4.8m	SJ	70	60	5.0	800m	30n	20	20m	60	1Δ			10p	PE	R203a	A
39	BCW91B	610m	80M	4.8m	SJ	70	60	5.0	800m	30n	20	20m	80	1Δ			10p	PE	R203a	A
40	BCW91KA	610m	80M	4.8m	SJ	70	60	5.0	800m	30n	20	20m	60	1Δ			10p	PE	R203a	A
41	BCW91KB	610m	80M	4.8m	SJ	70	60	5.0	800m	30n	20	20m	80	1Δ			10p	PE	R203a	A
42#	BCW90†	610m	100M	4.9m	SJ	50	40	5.0	800m	30n	20	150m	100	1Δ			15p	PE	T092	F
43#	BCW91†	610m	100M	4.9m	SJ	70	60	5.0	800m	30n	20	150m	100	1Δ			15p	PE	T092	F
44	A5T3391	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	2.0m	250	Δ			10p	PE	R203	A
45	A5T3391A	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	2.0m	250	Δ			10p	PE	R203	A
46	A5T3392	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	2.0m	150	Δ			10p	PE	R203	A
47	A5T5172	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	10m	100	1Δ			10p	PE	R203	A
48	A8T3391	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	2.0m	250	Δ			10p	PE	T092	A
49	A8T3391A	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	2.0m	250	Δ			10p	PE	T092	A
50	A8T3392	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	4.5	2.0m	150	Δ			10p	PE	T092	A
51	A8T3707	625m	5.0m	5.0m	SS	30	30	6.0	30m	100n	50	100u	100	Δ			10p	PE	T092	A
52	A8T3708	625m	5.0m	5.0m	SS	30	30	6.0	30m	100n	50	10m	45	Δ			10p	PE	T092	A
53	A8T3709	625m	5.0m	5.0m	SS	30	30	6.0	30m	100n	50	10m	45	Δ			10p	PE	T092	A
54	A8T3710	625m	5.0m	5.0m	SS	30	30	6.0	30m	100n	50	10m	90	Δ			10p	PE	T092	A
55	A8T3711	625m	5.0m	5.0m	SS	30	30	6.0	30m	100n	50	10m	180	Δ			10p	PE	T092	A
56	A8T5172	625m	5.0m	5.0m	SS	25	25	5.0	100m	100n	100	100	100	1Δ			10p	PE	T092	A
57#	BC232A	625m	5.0m	5.0m	SS	40	30	5.0	400m	100n	20	50m	100	1#			10p	PE	T092	B
58#	BC232B	625m	5.0m	5.0m	SS	40	30	5.0	400m	100n	20	50m	20	1#			10p	PE	T092	B
59	BC337-10	625m	5.4m	5.4m	SJ	45	45	5.0	800m	100n	1.0	100m	63	Δ			7.0p	AN	R210a	F
60	BC338-10	625m	5.4m	5.4m	SJ	45	45	5.0	800m	100n	1.0	100m	63	Δ			7.0p	AN	R210a	F
61	BC485	625m	5.0m	5.0m	SJ	45	45	5.0	1.0	100n	20	100m	60	1#			7.0p	AN	R210a	F
62	BC485-5	625m	5.0m	5.0m	SJ	45	45	5.0	1.0	100n	20	100m	60	1#			7.0p	AN	R210a	F
63	BC487	625m	5.0m	5.0m	SJ	60	60	5.0	1.0	100n	20	100m	60	1#			7.0p	AN	R210a	F
64	BC487-5	625m	5.0m	5.0m	SJ	60	60	5.0	1.0	100n	20	100m	60	1#			7.0p	AN	R210a	F
65	BC489	625m	5.0m	5.0m	SJ	80	80	5.0	1.0	100n	20	100m	60	1#			7.0p	AN	R210a	F
66	BC489-5	625m	5.0m	5.0m	SJ	80	80	5.0	1.0	100n	20	100m	60	1#			7.0p	AN	R210a	F
67	C266	625m	5.0m	5.0m	SJ	60	60	5.0	2.0	100n	100	100m	45	1			7.0p	AN	R210a	F
68	HEPS0034-RT	625m	5.0m	5.0m	SJ	60	60	3.0	500m	10u	100	100m	30	1					T092	A
69	JE9013	625m	5.0m	5.0m	SJ	40	20	5.0	500m	50n	1.0	50m	120	1					T092	A
70#	JE9013D	625m	5.0m	5.0m	SJ	40	20	5.0	500m	100n	1.0	50m	64	1Δ					R182b	A
71#	JE9013E	625m	5.0m	5.0m	SJ	40	20	5.0	500m	100n	1.0	50m	78	1Δ					T092	A
72#	JE9013F	625m	5.0m	5.0m	SJ	40	20	5.0	500m	100n	1.0	50m	96	1Δ					T092	A
73#	JE9013G	625m	5.0m	5.0m	SJ	40	20	5.0	500m	100n	1.0	50m	112	1Δ					T092	A
74#	JE9013H	625m	5.0m	5.0m	SJ	40	20	5.0	500m	100n	1.0	50m	144	1Δ						

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	TEMPERATURE IN FREE AIR W/°C	M E A M P X	ABS MAX RATINGS @25°C				MAX. Icbo @MAX Vcb (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# L C O D E			
					BVcbo (V)	BVceo (V)	VBebo (V)	Ic (A)		BIAS							COMMON EMITTER		
										Vcb (V)	Ic (A)	hfe					hoe (mhos)	hie (Ω)	hre (X.0001)
1	A5T2192T	625m	50MΔ	5.0m	SS	80	40	5.0	1.0	10n∅	100	150m∅	100	Δ	PE	R203	A		
2	A5T2193T	625m	50MΔ	5.0m	SS	80	50	8.0	1.0	10n∅	100	150m∅	40	Δ	PE	R203	A		
3	A5T2243	625m	50MΔ	5.0m	SS	120	80	7.0	1.0	10n∅	100	150m∅	40	Δ	PE	R203	A		
4	BC532	625m	50MΔ		TJ	160	140	6.0		100n∅	100	1.0m∅	200	Δ		T092			
5	BC533	625m	50MΔ		SJ	180	160	6.0		50n∅	100	1.0m∅	200	Δ		T092			
6	BC535	625m	50MΔ		SJ	80	80	6.0		100n	1.0∅	10m∅	50	Δ		T092			
7#	BC535Z	625m	50MΔ				80	∅		500m		1.0∅	10m∅	50	Δ		T092	A	
8#	BF297Z	625m	50MΔ				160	∅		100m		10∅	30m∅	25	Δ		T092	F	
9#	BF298Z	625m	50MΔ				250	∅		100m		10∅	30m∅	25	Δ		T092	F	
10#	BF299Z	625m	50MΔ				300	∅		100m		10∅	30m∅	25	Δ		T092	F	
11#	BF391	625m	50MΔ	5.0m	SJ	200	200	6.0	500m#	100n∅	100	10m∅	40	Δ	PL	T092	A		
12#	BF392	625m	50MΔ	5.0m	SJ	250	250	8.0	500m#	100n∅	100	10m∅	40	Δ	PL	T092	A		
13#	BF393	625m	50MΔ	5.0m	SJ	300	300	8.0	500m#	100n∅	100	10m∅	40	Δ	PL	T092	A		
14#	BF642	625m	50MΔ	5.0m	SJ	300	300	8.0	500m	100m∅	100	30m∅	40	Δ		T092	F		
15#	BF643	625m	50MΔ	5.0m	SJ	200	200	6.0	500m	100m∅	100	30m∅	50	Δ		T092	F		
16#	BFP25	625m	50MΔ		SJ	300	300	6.0	500m	100n	100	1.0m∅	25	∅		T092	F		
17	DTN9000	625m	50M	5.0m	SS	450	400	6.0	500m	100u	100	20m∅	30	Δ	PE	T092	A		
18#	ESM642	625m	50MΔ				300	∅				10∅	30m∅	40	Δ		T092	A	
19#	ESM643	625m	50MΔ				200	∅				10∅	30m∅	50	Δ		T092	A	
20	HEPS0027-RT	625m	50MΔ	5.0m	SJ	300	300	6.0	500m	100n∅	100	10m∅	40	Δ		T092	A		
21	MPSA42	625m	50MΔ	5.0m	SJ	300	300	6.0	500m	100n∅	100	30m∅	40	Δ	AN	T092	A		
22	MPSA43	625m	50MΔ	5.0m	SJ	200	200	6.0	500m	100n∅	100	30m∅	50	Δ	AN	T092	A		
23#	ON831	625m	50MΔ		SJ	400	400	6.0		100n∅	100	10m∅	40			T092	A		
24	2N4409	625m	60MΔ	5.0m	SS	80	50	5.0	250m	10n∅	1.0∅	10m∅	60	Δ		T092	A		
25	2N4410	625m	60MΔ	5.0m	SS	120	80	5.0	250m	10n∅	1.0∅	10m∅	60	Δ		T092	A		
26	A5T4409	625m	60MΔ	5.0m	SS	80	50	5.0	250m	10n∅	1.0∅	10m∅	60	Δ	PE	R203	A		
27	A5T4410	625m	60MΔ	5.0m	SS	120	80	5.0	250m	10n∅	1.0∅	10m∅	60	Δ	PE	R203	A		
28	GES6560	625m	60MΔ	5.0m	SJ	25	25	5.0	500m	100n	2.0∅	500m∅	50	Δ	PE	T092	A		
29	GES6561	625m	60MΔ	5.0m	SJ	25	20	5.0	600m	100n	1.0∅	350m∅	50	Δ	PE	T092	A		
30	MPS6560	625m	60MΔ	5.0m	SJ	25	25	5.0	500m	100n∅	1.0∅	10m∅	35	Δ#	AN†	T092	A		
31	MPS6561	625m	60MΔ	5.0m	SJ	25	20	5.0	600m	100n∅	1.0∅	10m∅	35	Δ#	AN†	T092	A		
32	MPS6561Z	625m	60MΔ	5.0m	SJ	20	20	5.0	600m	100n	1.0∅	10m∅	35	Δ	DPE	T092	A		
33#	MPS6591Z	625m	60MΔ				50	∅		250m		10∅	10m∅	40	Δ		T092	A	
34	MPSL01	625m	60MΔ	5.0m	SJ	140	120	5.0	150m	1.0u∅	100	1.0m∅	30	Δ	AN	T092	A		
35	TPS100	625m	60M				180			50n	5.0	10m	50		†		T092	F	
36#	2SC1627	625m	80MΔ	5.0m	SJ	80	80	5.0	300m	100n∅	2.0∅	50m∅	200	Δ	E	R67a	B		
37	GES3566	625m	80MΔ	5.0m	SJ	40	30	5.0	500m	50n	1.0∅	150m∅	150	Δ	PE	T092	A		
38	GES3567	625m	80MΔ	5.0m	SJ	80	40	5.0	500m	50n	1.0∅	150m∅	40	Δ	PE	T092	A		
39	GES3568	625m	80MΔ	5.0m	SJ	80	60	5.0	500m	50n	1.0∅	150m∅	40	Δ	PE	T092	A		
40	GES3569	625m	80MΔ	5.0m	SJ	80	40	5.0	500m	50n	1.0∅	150m∅	100	Δ	PE	T092	A		
41	TIS100	625m	80MΔ	5.0m	SS	180	180	5.0	100m	50n∅	100	1.0m∅	40	∅	PE†	R203	A		
42	TIS101	625m	80MΔ	5.0m	SS	150	150	5.0	100m	50n∅	100	1.0m∅	45	∅	PE†	R203	A		
43	TPS101	625m	80M				150			50n	5.0	10m	50		†		T092	F	
44#	BF297	625m	95MΔ	5.0m	SS	160	160	5.0	100m	50n∅	100	5.0m∅	10	Δ	PE	R203c	A		
45#	BF298	625m	95MΔ	5.0m	SS	250	250	5.0	100m	50n∅	100	5.0m∅	10	Δ	PE	R203c	A		
46#	BF299	625m	95MΔ	5.0m	SS	300	300	5.0	100m	50n∅	100	5.0m∅	10	Δ	PE	R203c	A		
47	2N5830	625m	100MΔ	5.0m	SJ	120	100	5.0	600m	50n∅	100	1.0m∅	60	Δ		T092	A		
48	2N5831	625m	100MΔ	5.0m	SJ	160	140	5.0	600m	50n∅	100	1.0m∅	60	Δ		T092	A		
49	2N5832	625m	100MΔ	5.0m	SJ	160	140	5.0	600m	50n∅	100	1.0m∅	125	Δ		T092	A		
50	2N5833	625m	100MΔ	5.0m	SJ	200	180	6.0	600m	10n∅	100	1.0m∅	50	Δ		T092	A		
51	2N5961	625m	100MΔ	5.0m	SS	60	60	8.0	50m	2.0n∅	5.0∅	10m∅	150	Δ		T092	A		
52	2N5962	625m	100MΔ	5.0m	SS	45	45	8.0	50m	2.0n∅	5.0∅	10m∅	600	Δ		T092	A		
53	2N6428	625m	100MΔ	5.0m	SS	60	50	6.0	200m	10n∅	5.0	1.0m∅	200	Δ		T092	A		
54	2N6428A	625m	100MΔ	5.0m	SS	60	50	6.0	200m	10n∅	5.0	1.0m∅	200	Δ		T092	A		
55	2N6429	625m	100MΔ	5.0m	SS	55	45	6.0	200m	10n∅	5.0	1.0m∅	400	Δ		T092	A		
56	2N6429A	625m	100MΔ	5.0m	SS	55	45	6.0	200m	10n∅	5.0	1.0m∅	400	Δ		T092	A		
57	A5T5220	625m	100MΔ	5.0m	SS	15	15	3.0	500m	100n∅	100	5.0m∅	30	Δ		T092	A		
58	A5T5550	625m	100MΔ	5.0m	SS	160	140	6.0	600m	100n∅	100	1.0m∅	50	Δ	PE	R203	A		
59	A5T5551	625m	100MΔ	5.0m	SS	180	160	6.0	600m	50n∅	100	1.0m∅	50	Δ	PE	R203	A		
60	A8T3704	625m	100MΔ	5.0m	SS	50	30	5.0	800m	100n∅	2.0∅	50m∅	100	Δ	PE	T092	A		
61	A8T3705	625m	100MΔ	5.0m	SS	50	30	5.0	800m	100n∅	2.0∅	50m∅	50	Δ	PE	T092	A		
62	A8T3706	625m	100MΔ	5.0m	SS	40	20	5.0	800m	100n∅	2.0∅	50m∅	30	Δ	PE	T092	A		
63	BC232	625m	100MΔ				30			400m		5.0∅	100	Δ		T092	B		
64#	BC337AP	625m	100MΔ	5.0m	SJ	45	5.0	800m	100n∅	1.0∅	100m∅	160	∅		PL†	B58	A		
65#	BC337BP	625m	100MΔ	5.0m	SJ	45	5.0	800m	100n∅	1.0∅	100m∅	250	∅		PL†	B58	A		
66#	BC337CP	625m	100MΔ	5.0m	SJ	45	5.0	800m	100n∅	1.0∅	100m∅	400	∅		PL†	B58	A		
67	BC338-16%	625m	100MΔ			25	25	5.0	750m	50u	1.0	100m	100			T092	F		
68#	BC338-16#1	625m	100MΔ	5.0m	SJ	30	25	5.0	800m	100n∅	1.0∅	100m∅	250	∅		T092	F		
69#	BC338-25#1	625m	100MΔ	5.0m	SJ	30	25	5.0	800m	100n∅	1.0∅	100m∅	400	∅		T092	F		
70#	BC338-40#1	625m	100MΔ	5.0m	SJ	30	25	5.0	800m	100n∅	1.0∅	100m∅	630	∅		T092	F		
71#	BC338AP	625m	100MΔ	5.0m	SJ	25	25	5.0	800m	100n∅	1.0∅	100m∅	160	∅		PL†	B58	A	
72#	BC338BP	625m	100MΔ	5.0m	SJ	25	25	5.0	800m	100n∅	1.0∅	100m∅	250	∅		PL†	B58	A	
73#	BC338CP	625m	100MΔ	5.0m	SJ	25	25	5.0	800m	100n∅	1.0∅	100m∅	400	∅		PL†	B58	A	
74#	BC431Z	625m	100MΔ				60			800m		1.0∅	100m∅	63	Δ*		T092	F	
75#	BC445Z	625m	100MΔ				60			300m		5.0∅	2.0m∅	50	Δ*		T092	F	
76	BC526	625m	100MΔ		SJ	60	50	6.0		15n∅	5.0∅	2.0m∅	600	∅		T092	A		
77#	BC532Z	625m	100MΔ				140			100m		5.0∅	10m∅	60	Δ		T092	A	
78#	BC533Z	625m	100MΔ				160			100m		5.0∅	10m∅	80	Δ		T092	A	
79#	BC537	625m	100MΔ	5.0m	SJ	60	60	6.0	1.0	100n∅	100	10m∅	50	∅*		T092	A		
80#	BC538	625m	100MΔ	5.0m	SJ	80	80	6.0	1.0	100n∅	100	10m∅	50	∅*		T092	A		
81#	BCX45Z	625m	100MΔ				45					2.0∅	100m∅	50	Δ		T092	F	
82#	BCX47Z	625m	100MΔ				60					2.0∅	100m∅	50	Δ		T092		



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @25°C			MAX. Icbo @MAX Vcb (A)	TYPICAL h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E		
					Vcbo (V)	Vceo (V)	Vbeo (V)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)						
1	2N5963	0.25m	150mΔ	5.0m	30	30	8.0	50m	2.0n	5.0p	10m	1.2kΔ					T092	A		
2#	2221	0.25m	150mΔ	5.0m	60	30	5.0	0.8	10n	10p	150m	40 Δ†					T092	F		
3#	2221A	0.25m	150mΔ	5.0m	75	40	6.0	0.8	10n	10p	150m	40 Δ†					T092	F		
4#	2222	0.25m	150mΔ	5.0m	60	30	5.0	0.8	10n	10p	150m	100 Δ†					T092	F		
5#	2222A	0.25m	150mΔ	5.0m	75	40	6.0	0.8	10n	10p	150m	100 Δ†					T092	F		
6	A5T5219	0.25m	150mΔ	5.0m	20	15	3.0	100m	100n	10p	2.0m	35 Δ					R203	A		
7	A5T5223	0.25m	150mΔ	5.0m	25	20	3.0	100m	100n	10p	2.0m	50 Δ					R203	A		
8	A5T5225	0.25m	150mΔ	5.0m	25	20	3.0	100m	100n	10p	2.0m	50 Δ					R203	A		
9#	BC375	0.25m	150m		25	20	3.0	100m	100n	1.0p	150m	60 Δ					T092	A		
10	MPS3903†	0.25m	150mΔ	5.0m	60	40	6.0	200m	50n	1.0p	10m	50 Δ	40uΩ	8.0kΩ	5.0 Ω	4.0pΩ	AN	T092	A	
11	MPS5128	0.25m	150mΔ	5.0m	15	12	3.0	100m	50n	5.0p	50m	1.5 Δ					T092	A		
12	MPS5129	0.25m	150mΔ	5.0m	15	12	3.0	100m	50n	5.0p	50m	1.5 Δ					T092	A		
13	PN5128	0.25m	150m	5.0m	15	12	3.0	500m	50n	10p	50m	35 Δ#					T092	A		
14	2N6538	0.25m	200mΔ	5.0m	60	40	6.0	200m	10u	5.0p	100u	100 Δ	30uΩ	300kΩ	100 Ω	4.0pΩ	∅	T092	A	
15	2N6539	0.25m	200mΔ	5.0m	60	40	6.0	200m	10u	5.0p	100u	250 Δ	30uΩ	300kΩ	100 Ω	4.0pΩ	∅	T092	A	
16	2N6540	0.25m	200mΔ	5.0m	80	60	6.0	200m	10u	5.0p	1.0m	100 Δ	50uΩ	2.5kΩ	10 Ω	4.0pΩ	∅	T092	A	
17	2N6541	0.25m	200mΔ	5.0m	80	65	6.0	200m	10u	5.0p	1.0m	60 Δ	50uΩ	2.5kΩ	3.0 Ω	4.0pΩ	∅	T092	A	
18#	25C1317NC	0.25m	200m		30	25	5.0	500m	0.1u	10p	150m	160	300uΩ	2.5kΩ	3.0 Ω	4.0pΩ	PE	T092	B	
19#	25C1851	0.25m	200m	5.7m	30	25	5.0	1.0 #	100n	10p	150m	160 †					PE	T092	A	
20#	25C1852	0.25m	200m	5.7m	60	50	5.0	1.0 #	100n	10p	150m	160 †					PE	T092	A	
21	A5T6538	0.25m	200mΔ	5.0m	60	40	6.0	200m	10u	5.0p	100u	100 Δ	30uΩ	300kΩ	100 Ω	4.0pΩ	∅	R203	A	
22	A5T6539	0.25m	200mΔ	5.0m	60	40	6.0	200m	10u	5.0p	100u	250 Δ	30uΩ	300kΩ	100 Ω	4.0pΩ	∅	R203	A	
23	A5T6540	0.25m	200mΔ	5.0m	80	60	6.0	200m	10u	5.0p	1.0m	100 Δ	50uΩ	2.5kΩ	10 Ω	4.0pΩ	∅	R203	A	
24	A5T6541	0.25m	200mΔ	5.0m	80	65	6.0	200m	10u	5.0p	1.0m	60 Δ	300uΩ	2.5kΩ	3.0 Ω	4.0pΩ	∅	R203	A	
25#	BC337A	0.25m	200m		60	60	5.0	1.2 #	1.0p	100m	400 Ω						10p	T092	A	
26#	BC337A-16	0.25m	200m		60	60	5.0	1.2 #	1.0p	100m	250 Ω						10p	T092	A	
27#	BC337A-25	0.25m	200m		60	60	5.0	1.2 #	1.0p	100m	400 Ω						10p	T092	A	
28#	BC485	0.25m	200m		45	45	5.0	1.0	100n	2.0p	100m	60 Δ*					7.0p	T092	F	
29	BC485-18	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	60 Δ*					AN	R204e	A	
30	BC485A5	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	160 †					AN	R207	A	
31	BC485A18	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	160 †					AN	R204e	A	
32	BC485A	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	160 †					AN	R210a	F	
33	BC485B5	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	260 †					AN	R207	A	
34	BC485B18	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	260 †					AN	R204e	A	
35	BC485B	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	260 †					AN	R210a	F	
36	BC485L5	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	120 †					AN	R207	A	
37	BC485L18	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	120 †					AN	R204e	A	
38	BC485L	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	100m	120 †					AN	R210a	F	
39#	BC487	0.25m	200m		60	60	5.0	1.0	100n	2.0p	100m	60 Δ*					7.0p	T092	F	
40	BC487-18	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	60 Δ*					AN	R204e	A	
41	BC487A5	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	160 †					AN	R207	A	
42	BC487A18	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	160 †					AN	R204e	A	
43	BC487A	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	160 †					AN	R210a	F	
44	BC487B5	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	260 †					AN	R207	A	
45	BC487B18	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	260 †					AN	R204e	A	
46	BC487B	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	260 †					AN	R210a	F	
47	BC487L5	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	120 †					AN	R207	A	
48	BC487L18	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	120 †					AN	R204e	A	
49	BC487L	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	100m	120 †					AN	R210a	F	
50#	BC489	0.25m	200m		80	80	5.0	1.0	100n	2.0p	100m	60 Δ*					7.0p	T092	F	
51	BC489-18	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	60 Δ*					AN	R204e	A	
52	BC489A5	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	160 †					AN	R207	A	
53	BC489A18	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	160 †					AN	R204e	A	
54	BC489A	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	160 †					AN	R210a	F	
55	BC489B5	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	260 †					AN	R207	A	
56	BC489B18	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	260 †					AN	R204e	A	
57	BC489B	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	260 †					AN	R210a	F	
58	BC489L5	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	120 †					AN	R207	A	
59	BC489L18	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	120 †					AN	R204e	A	
60	BC489L	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	100m	120 †					AN	R210a	F	
61	BCX45†	0.25m	200m	5.0m	45	45	5.0	1.0	100n	2.0p	10m	120	58u	530	1.1			AN	R210a	F
62	BCX47†	0.25m	200m	5.0m	60	60	5.0	1.0	100n	2.0p	10m	120	58u	530	1.1			AN	R210a	F
63	BCX49†	0.25m	200m	5.0m	80	80	5.0	1.0	100n	2.0p	10m	120	58u	530	1.1			AN	R210a	F
64	MPS3904†	0.25m	200mΔ	5.0m	60	40	6.0	200m	50n	1.0p	10m	100 Δ	40uΩ	10kΩ	8.0 Ω	4.0pΩ	AN	T092	A	
65	MPS5133	0.25m	200m		20	18	3.0	100m	50n	5.0p	1.0m	60					5.0p	T092	A	
66	PN3693	0.25m	200mΔ	5.0m	45	45	4.0	30m	50n	10p	10m	40 Δ					3.5pΩ	DPE	T092	A
67	PN5132	0.25m	200m	5.0m	20	20	3.0	30m	50n	10p	10m	20 Δ					3.5pΩ	T092	A	
68	TIS94	0.25m	200mΔ																	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	ABS MAX RATINGS @25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUCTURE	DWG # Y200 S/a TO200 Ser.	L E O D E
				Vcbo (V)	Vceo (V)	Vbebo (V)	Ic (A)		BIAS			COMMON EMITTER						
									Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	TPS111	625m	250mΔ	5.0m	5.0m	5.0m	100n	1.0	150m	300	100	20u	9.0k	7.5	6.5p	T092	A	
2	JE9014A	625m	270mΔ	5.0m	5.0m	5.0m	100m	5.0	1.0m	60	100	20u	9.0k	7.5	3.7p	T092	A	
3	JE9014B	625m	270mΔ	5.0m	5.0m	5.0m	100m	5.0	1.0m	100	100	20u	9.0k	7.5	3.7p	T092	A	
4	JE9014C	625m	270mΔ	5.0m	5.0m	5.0m	100m	5.0	1.0m	200	100	20u	9.0k	7.5	3.7p	T092	A	
5	JE9014D	625m	270mΔ	5.0m	5.0m	5.0m	100m	5.0	1.0m	400	100	20u	9.0k	7.5	3.7p	T092	A	
6	A5T2222A†	625m	300mΔ	5.0m	5.0m	5.0m	800m	10	100u	35	Δ	35u	8.0k	8.0	8.0p	R203	A	
7	BC546A	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	220	15u	2.7k	4.8	2.7	3.7p	R189b	A	
8	BC546B	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	330	27u	5.0k	4.8	3.7p	R189b	A		
9	BC547A	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	220	15u	2.7k	2.7	3.7p	R189b	A		
10	BC547B	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	330	27u	5.0k	4.8	3.7p	R189b	A		
11	BC547C	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	600	37u	8.0k	7.0	3.7p	R189b	A		
12	BC548A	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	220	15u	2.7k	2.7	3.7p	R189b	A		
13	BC548B	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	330	27u	5.0k	4.8	3.7p	R189b	A		
14	BC548C	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	600	37u	8.0k	7.0	3.7p	R189b	A		
15	BC549B	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	330	28u	4.0k	4.5	3.7p	R189b	A		
16	BC549C	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	600	37u	6.5k	7.0	3.7p	R189b	A		
17	BC550B	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	330	28u	4.0k	4.5	3.7p	R189b	A		
18	BC550C	625m	300mΔ	5.0m	5.0m	5.0m	100m	5.0	2.0m	600	37u	6.5k	7.0	3.7p	R189b	A		
19	JE9100A	625m	300mΔ	5.0m	5.0m	5.0m	60	7.0	100m	50n	1.0	2.0m	50	1.6p	T092	A		
20	MPS708†	625m	300mΔ	5.0m	5.0m	5.0m	14	15	5.0	200m	25n	1.0	500u	15	Δ	T092	A	
21	MPS2222A†	625m	300mΔ	5.0m	5.0m	5.0m	75	40	6.0	600m	10n	1.0	100u	75	Δ	R211	A	
22	MPS3725†	625m	300mΔ	5.0m	5.0m	5.0m	70	50	6.0	1.0	500n	1.0	10m	30	Δ	T092	A	
23	PN2219A	625m	300mΔ	8.0m	5.0m	5.0m	75	40	6.0	800m	100	100	100	100	100	R185	A	
24	PN4013	625m	300mΔ	5.0m	5.0m	5.0m	50	30	6.0	500m	1.7u	1.0	100m	150	100	T092	A	
25	PN4014	625m	300mΔ	5.0m	5.0m	5.0m	80	50	6.0	500m	1.7u	1.0	100m	150	100	T092	A	
26	2N5772	625m	350mΔ	5.0m	5.0m	5.0m	40	15	5.0	200m	500n	.40	30m	30	Δ	T092	A	
27	MPSH20	625m	400mΔ	5.0m	5.0m	5.0m	40	30	4.0	100m	50n	1.0	4.0m	25	Δ	T092	A	
28	MPSH24	625m	400mΔ	5.0m	5.0m	5.0m	40	30	4.0	100m	50n	1.0	8.0m	30	Δ	T092	A	
29	PN5130	625m	450mΔ	5.0m	5.0m	5.0m	30	12	1.0	50m	50n	1.0	8.0m	12	Δ	T092	A	
30	2N5769†	625m	500mΔ	5.0m	5.0m	5.0m	40	40	4.5	200m	10u	1.0	100m	20	Δ	T092	A	
31	BF523	625m	500mΔ	5.0m	5.0m	5.0m	50	45	4.5	50m	50n	1.0	15m	50	Δ	R203c	A	
32	HEPS0040-RT	625m	500mΔ	5.0m	5.0m	5.0m	45	45	4.0	100m	50n	1.0	7.0m	80	Δ	T092	A	
33	MPS3866	625m	500mΔ	5.0m	5.0m	5.0m	55	45	4.0	100m	20u	5	380m	5	Δ	T092	A	
34	MPSH34	625m	500mΔ	5.0m	5.0m	5.0m	45	45	4.0	100m	50n	1.0	7.0m	40	Δ	T092	A	
35	BF373	625m	720mΔ	5.0m	5.0m	5.0m	45	45	4.0	100m	50n	1.0	7.0m	40	Δ	R210b	C	
36	MPSH17	625m	800mΔ	5.0m	5.0m	5.0m	20	15	3.0	100m	100n	1.0	5.0m	30	Δ	T092	C	
37	MPS6595†	625m	2.0G	5.0m	5.0m	5.0m	20	12	3.0	100m	100n	5.0	10m	110	Δ	R211	A	
38	2SC216	650m	4.3m	5.0m	5.0m	5.0m	50	50	5.0	300m	.10u	1.0	50m	50	Δ	T05	A	
39	2SC218	650m	4.3m	5.0m	5.0m	5.0m	80	80	5.0	300m	.10u	1.0	50m	50	Δ	T05	A	
40	2SC227	650m	4.3m	5.0m	5.0m	5.0m	25	25	5.0	700m	1.0u	1.0	100m	50	Δ	T05	A	
41	2SC479H†	650m	4.3m	5.0m	5.0m	5.0m	60	40	5.0	600m	1.0u	1.0	100m	40	Δ	T039	A	
42	2SC564†	650m	4.3m	5.0m	5.0m	5.0m	50	50	5.0	500m	1.0u	1.0	150m	50	Δ	T039	A	
43	BCW65	650m	100mΔ	2.8m	2.8m	2.8m	32	32	0.8	100m	100	100	100	100	100	T0236	A	
44	BCW65R	650m	100mΔ	2.8m	2.8m	2.8m	32	32	0.8	100m	100	100	100	100	100	T0236	A	
45	BCW66	650m	100mΔ	2.8m	2.8m	2.8m	45	45	0.8	100m	100	100	100	100	100	T0236	A	
46	BCW66R	650m	100mΔ	2.8m	2.8m	2.8m	45	45	0.8	100m	100	100	100	100	100	T0236	A	
47	2SC1360	650m	500mΔ	5.9m	5.9m	5.9m	50	45	4.0	50m	100n	10	10m	100	Δ	R182	B	
48	SK3132-RT	650m	500mΔ	5.9m	5.9m	5.9m	50	45	4.0	50m	100n	10	10m	50	Δ	R182	B	
49	BC337-16#	675m	100mΔ	5.4m	5.4m	5.4m	45	45	5.0	800m	100n	1.0	100m	180	Δ	R189b	A	
50	BC337-25#	675m	100mΔ	5.4m	5.4m	5.4m	45	45	5.0	800m	100n	1.0	100m	250	Δ	R189b	A	
51	BC338-16#	675m	100mΔ	5.4m	5.4m	5.4m	25	5.0	800m	100n	1.0	100m	180	Δ	R189b	A		
52	BC338-25#	675m	100mΔ	5.4m	5.4m	5.4m	25	5.0	800m	100n	1.0	100m	250	Δ	R189b	A		
53	BF137	680m	50mΔ	4.5m	4.5m	4.5m	160	160	5.0	100m	100n	1.0	30m	25	Δ	T039	A	
54	BF117	680m	80mΔ	4.5m	4.5m	4.5m	140	140	5.0	100m	10n	1.0	30m	25	Δ	T039	A	
55	BF137	680m	95mΔ	4.5m	4.5m	4.5m	160	160	5.0	100m	10n	1.0	30m	25	Δ	T039	A	
56	2SC774	680m	200mΔ	4.5m	4.5m	4.5m	50	30	4.0	500m	10u	1.0	100m	20	Δ	T039	A	
57	2SC741	680m	500mΔ	4.5m	4.5m	4.5m	40	40	4.0	300m	1.0u	1.0	100m	50	Δ	T039	A	
58	BCW94K	700m	1.0MΔ	5.6m	5.6m	5.6m	50	40	5.0	400m	30n	2.0	50m	100	Δ	R198	A	
59	BCW95K	700m	1.0MΔ	5.6m	5.6m	5.6m	70	60	5.0	400m	30n	2.0	50m	100	Δ	R198	A	
60	2N5965	700m	1.0MΔ	6.3m	6.3m	6.3m	200	180	5.0	600m	50n	5.0	1.0m	50	Δ	T0105	A	
61	2SC12	700m	13MΔ	5.6m	5.6m	5.6m	60	60	8.0	250m	10	200m	20	Δ	T09	A		
62	2SC627	700m	20MΔ	4.8m	4.8m	4.8m	200	200	4.0	100m	5.0u	10	50m	360	Δ	T05	A	
63	2SC826	700m	20MΔ	4.8m	4.8m	4.8m	100	60	6.0	300m	1.0u	4.0	50m	100	Δ	T05	A	
64	2SC827†	700m	20MΔ	4.8m	4.8m	4.8m	100	60	6.0	500m	1.0u	4.0	50m	100	Δ	T05	A	
65	2SC1062†	700m	35MΔ	4.7m	4.7m	4.7m	200	200	4.0	100m	2.0u	2.0	50m	60	Δ	T039	A	
66	BC144	700m	40MΔ	4.0m	4.0m	4.0m	60	40	5.0	0.2u	1.0	300m	40	Δ	T05	A		
67	2SC959	700m	50MΔ	5.6m	5.6m	5.6m	120	80	5.0	700m	3.0u	5.0	200m	80	Δ	T05	A	
68	BFY67A	700m*	60MΔ	4.5m	4.5m	4.5m	60	40	5.0	1.0	75n	10	150m	40	Δ	T039	A	
69	BFY67C	700m*	60MΔ	4.5m	4.5m	4.5m	50	25	5.0	1.0	20n	10	10m	30	Δ	T039	A	
70	BFX68	700m	70MΔ	4.5m	4.5m	4.5m	30	30	7.0	500m	.02u	10	150m	100	Δ	T039	A	
71	BFY33	700m*	80MΔ	5.6m	5.6m	5.6m	50	40	5.0	750m	100n	2.0	5.0m	35	Δ	T05	A	
72	D33D24J1	700m	80MΔ	5.6m	5.6m	5.6m	50	40	5.0	750m	100n	2.0	2.0m	60	Δ	R198	B	
73	D33D29J1	700m	80MΔ	5.6m	5.6m	5.6m	70	60	5.0	750m	100n	2.0	2.0m	60	Δ	R198	B	
74	2SC798	700m	90MΔ	4.8m	4.8m	4.8m	60	35	4.0	1.5	5.0u	20	15m	50	Δ	T05	A	
75	BFX68	700m	100MΔ	4.0m	4.0m	4.0m	75	50	7.0	.01u	5.0	1.0m	115	23u	4.4	7.3	T05	A
76	BSX72†	700m	100MΔ	5.4m	5.4m	5.4m	40	25	5.0	1.0	10u	10	150m	40	Δ	T039	A	
77	BSX95†	700m*	100MΔ	4.5m	4.5m	4.5m	75	30	7.0	1.0	10n	5.0	1.0m	40	Δ	T039	A	
78	BSX96†	700m*	100MΔ	4.5m	4.5m	4.5m	75	30	7.0	1.0	10n	5.0	1.0m	50	Δ	T039	A	
79	D33D21J1	700m	100MΔ	5.6m	5.6m	5.6m	35	25	5.0	750m	100n	2.0	2.0m	60	Δ	R198		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C	M A P	ABS MAX RATINGS @25°C			MAX l <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E			
					BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)		BIAS							COMMON EMITTER		
					(V)	(V)	(A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001
1	40837A	750m	4.2m	5J	100	38	3.5	500u	1.0	100m	180	4.0p	PE	T018	A			
2	BC140-25	750m			80	40	7.0	100n	1.0	100m	180		PEA	T039	A			
3	BC141-25	750m			100	60	7.0	100n	1.0	100m	180		PEA	T039	A			
4	C288P	750m			100	60	2.0	500n	1.0	1.0m	25				Y237a	A		
5	2SD755D	750m	350m	6m	100	100	5	50m	1.0	2m	250	1.6p	E	R245	B			
6	2SD755E	750m	350m	6m	100	100	5	50m	1.0	2m	400	1.6p	E	R245	B			
7	2SD755F	750m	350m	6m	100	100	5	50m	1.0	2m	600	1.6p	E	R245	B			
8	2SD756AF	750m	350m	6m	140	140	5	50m	1.0	2m	250	1.6p	E	R245	B			
9	2SD756D	750m	350m	6m	120	120	5	50m	1.0	2m	250	1.6p	E	R245	B			
10	2SD756E	750m	350m	6m	120	120	5	50m	1.0	2m	400	1.6p	E	R245	B			
11	2N1154	750m	1.0M	5.9m	50		1.0	60m	5.0	10	5.0m		G	O3e	A			
12	2N1155	750m	1.0M	5.9m	80		1.0	50m	6.0	10	5.0m		G	O3e	A			
13	2N1156	750m	1.0M	5.8m	120		1.0	40m	8.0	10	5.0m		G	O3e	A			
14	JAN2N341	750m	5.0M	6.0m	125	100	1.0	60m	5.0	10	5.0m		G	O3e	A			
15	2SC1063T	750m	30M	6.0m			1.0	60m	5.0	10	5.0m		D	TO11	A			
16	2SC898	750m	35M	5.0m	100	80	5.0	3.0	3.0u	2.0	500m	28	PE	T039	A			
17	2SC896A	750m	35M	5.0m	130	80	5.0	3.0	3.0u	2.0	500m	28	PE	T039	A			
18	2SC1473NC	750m	50M	5.0m	250	200	5	70m	1.0	100	5m	30	PL	T092	B			
19	2SC1870	750m	50M	8.0m	140	140	8.0	500m	2.0	100m	150	15p	E	R232	B			
20	2SC2271	750m	50M	5.0m	300	300	6.0	100m	1.0	100m	80	7.5p	PL	R195e	A			
21	BC140-6*	750m	50M	5.0m	80	40	7.0	1.0	100n	1.0	1.0	15	PEA	T039	A			
22	BC140-10*	750m	50M	5.0m	80	40	7.0	1.0	100n	1.0	1.0	20	PEA	T039	A			
23	BC140-16*	750m	50M	5.0m	80	40	7.0	1.0	100n	1.0	1.0	30	PEA	T039	A			
24	BC141-6*	750m	50M	5.0m	100	60	7.0	1.0	100n	1.0	1.0	15	PEA	T039	A			
25	BC141-10*	750m	50M	5.0m	100	60	7.0	1.0	100n	1.0	1.0	20	PEA	T039	A			
26	BC141-16*	750m	50M	5.0m	100	60	7.0	1.0	100n	1.0	1.0	30	PEA	T039	A			
27	BC142-10	750m	50M	5.0m	100	60	7.0	1.0	100n	1.0	1.0	20	PEA	T039	A			
28	BC142-16	750m	50M	5.0m	100	60	7.0	1.0	100n	1.0	1.0	30	PEA	T039	A			
29	2SC1449	750m	80M	6.0m	40	35	5.0	2.0	500n	2.0	300m	120	E	B16m	B			
30	2SC116	750m	70M	5.0m	50		5.0	200m	1.0	6.0	10m	3.5	EM	TO5	A			
31	2SC1474-3	750m	80M	7.9m	20	16	6.0	2.0	200n	2.0	100m	140	PE	R232	B			
32	2SC1474-4	750m	80M	7.9m	20	20	6.0	2.0	200n	2.0	100m	140	PE	R232	B			
33	2SC1475	750m	80M	8.0m	100	50	6.0	500m	2.0	100m	98	16p	PE	R232	B			
34	BT3701	750m	80M	4.2m	140	80	7.0	1.0	100n	1.0	10m	40	PE	C14b	AA			
35	BT3701T	750m	80M	4.2m	140	80	7.0	1.0	100n	1.0	10m	40	PE	T018	AA			
36	2N5856	750m	100M	6.8m	60	60	5.0	1.0	100n	1.0	10m	50	PLT	TO105	A			
37	2N5858	750m	100M	6.8m	80	80	5.0	1.0	100n	1.0	10m	50	PLT	TO105	A			
38	2SC150	750m	100M	5.0m	20		5.0	100m	1.0	6.0	10m	50	ME	TO5	A			
39	2SC1630	750m	100M	5.0m	175		5.0	30m	1.0	5.0	3.0m	26	ME	TO5	A			
40	2SD438	750m	100M	5.0m	100	80	5.0	1.0	1.0u	5.0	50m	320	EP	R195e	B			
41	BT3700	750m	100M	4.2m	140	80	7.0	1.0	100n	1.0	10m	90	EP	C14b	AA			
42	BT3700T	750m	100M	4.2m	140	80	7.0	1.0	100n	1.0	10m	90	EP	T018	AA			
43	MPSA05K	750m	100M	5.0m	60	60	4.0	500m	1.0	1.0	10m	50	PLT	B58	A			
44	MPSA05M	750m	100M	5.0m	60	60	4.0	500m	1.0	1.0	10m	50	PLT	B58	A			
45	MPSA06K	750m	100M	5.0m	60	60	4.0	500m	1.0	1.0	10m	50	PLT	B58	A			
46	MPSA06L	750m	100M	5.0m	80	80	4.0	500m	1.0	1.0	10m	50	PLT	B58	A			
47	MPSA06M	750m	100M	5.0m	80	80	4.0	500m	1.0	1.0	10m	50	PLT	B58	A			
48	CO66P	750m	120M	5.0m	20		1.5	100m	1.0	1.0	100m	50	PLT	Y237a	A			
49	C186	750m	120M	5.0m	25		1.0	100m	1.0	1.0	100m	50	PLT	Y237a	A			
50	2SC2375	750m	130M	5.0m	150	120	5.0	50m	1.0	6.0	1.0u	250	PE	R195e	B			
51	2SC805A11	750m	140M	5.0m	240	150	5.0	200m	200n	5.0	3.0m	150	PE	TO5	A			
52	2SC805A2†	750m	140M	5.0m	240	175	5.0	200m	200n	5.0	3.0m	150	E	TO5	A			
53	2SC805	750m	160M	5.0m	100	100	5.0	200m	1.0	5.0	3.0m	100	D	TO5	A			
54	2SC2631	750m	160M	6.0m	150	150	5.0	50m	1.0	5.0	10m	450	PE	R245	A			
55	2SC352	750m	170M	5.0m	50	30	5.0	100m	20u	3.0	1.0m	90	PE	TO5	A			
56	2SC352A	750m	170M	5.0m	50	30	5.0	100m	20u	1.0	1.0m	109	PE	TO5	A			
57	2SC353	750m	170M	5.0m	100	60	5.0	100m	20u	3.0	1.0m	90	PE	TO5	A			
58	2SC353A	750m	170M	5.0m	100	60	5.0	100m	20u	1.0	1.0m	109	D	TO5	A			
59	2SC112†	750m	180M	8.3m	50		2.0	200m	35	2.0	200m	35	PE	TO5	A			
60	2SD400	750m	180M	5.0m	25	25	5.0	1.0	1.0u	2.0	50m	60	PE	R182a	B			
61	2SC31	750m	200M	5.0m	60	25	5.0	200m	1.0	1.0	10m	35	PE	TO5	A			
62	2SC456	750m	200M	6.3m	50	50	1.5	600m	1.0	6.0	80m	20	PE	TO5	A			
63	2SC507	750m	200M	5.0m	170	120	5.0	80m	1.0	5.0	10m	70	PE	T039	A			
64	2SC594	750m	200M	5.0m	60	30	5.0	200m	1.0	1.0	10m	60	PE	TO5	A			
65	2SC708	750m	200M	5.0m	80	80	4.0	1	4.0	5.0	50m	35	PE	T039	A			
66	2SC1885	750m	200M	6.8m	150	150	5.0	100m	1.0	5.0	10m	150	PE	R182a	B			
67	2SD592ANC	750m	200M	5.0m	60	60	5	1.0	0.1u	1.0	500m	60	PE	TO92	B			
68	2SD592NC	750m	200M	5.0m	30	30	5	1.0	0.1u	1.0	500m	60	PE	TO92	B			
69	2SD879	750m	200M	5.3m	30	10	6.0	3.0	1.0u	2.0	3.0	210	PE	TO92	B			
70	ZTX337	750m	200M	6.8m	50	45	5.0	800m	100n	1.0	100m	100	PLT	B58	A			
71	ZTX337A	750m	200M	6.8m	50	45	5.0	800m	100n	1.0	100m	180	PLT	X59a	F			
72	ZTX337AK	750m	200M	6.8m	50	50	5.0	800m	100n	1.0	100m	100	PL	B58	A			
73	ZTX337AL	750m	200M	6.8m	50	50	5.0	800m	100n	1.0	100m	100	PL	B58	A			
74	ZTX337AM	750m	200M	6.8m	50	50	5.0	800m	100n	1.0	100m	100	PL	B58	A			
75	ZTX337B	750m	200M	6.8m	50	45	5.0	800m	100n	1.0	100m	250	PLT	B58	A			
76	ZTX337BK	750m	200M	6.8m	50	50	5.0	800m	100n	1.0	100m	180	PL	B58	A			
77	ZTX337BL	750m	200M	6.8m	50	50	5.0	800m	100n	1.0	100m	180	PL	B58	A			
78	ZTX337BM	750m	200M	6.8m	50	50	5.0	800m	100n	1.0	100m	180	PL	B58	A			
79	ZTX337C	750m	200M	5.0m	50	45	5.0	800m	100n	1.0	100m	400	PLT	X59a	F			
80	ZTX337CK	750m	200M	6.8m	50	50	5.0	800m	100n	1.0								

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DEFA TE IN FREE AIR W/°C	M E A M P	ABS MAX RATINGS @ 25°C					TYPICAL 'h' PARAMETERS					Cob (F)	STRUC TURE	DWG # Y200 S/a T0200 Ser.	L C O D E
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	Icbo @ MAX Vcb (A)	BIAS		COMMON EMITTER						
										Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)				
1#	2SC652	750m	800m	5.9m	40	20	3.0	300m	100μ	100	20	100	20	1#	PE	T05	A	
2#	2SC651	750m	1.1Gs	4.5m	45	22	3.0	300m	100μ	100	80	100	80	20	PE	T05	R	
3#	KJ6001	750m	3.5Gs	4.0m	20	20	3.0	100m	100μ	100	5.0	5.0	20	Δ	PE	W21	R	
4#	BSW39-6†	790m	50M	4.5m	100	80 *	7.0	1.0	30n	1.0	1.0	20	1#	PE	T039	A		
5#	BSW39-10†	790m	50M	4.5m	100	80 *	7.0	1.0	30n	1.0	1.0	30	1#	PE	T039	A		
6#	BSW39-16†	790m	50M	4.5m	100	80 *	7.0	1.0	30n	1.0	1.0	40	1#	PE	T039	A		
7	2N1105	800m	4.6m	60	60	60	8.0	500m	100μ	100	200m	12	1#	PE	T043	A		
8	2N1943	800m	4.5m	60	60	60	8.0	500m	100μ	6.0	1.0m	12	1#	PL	T05	A		
9	2N2886	800m	4.5m	50	40	5.0	5.0	500m	100μ	1.5	5.0m	22	1#	PL	T05	A		
10	2N5189	800m	4.5m	60	55	5.0	5.0	2.0	100μ	1.0	1.0	15	1#	PE	R179q	A		
11	2N5262†	800m	5.7m	75	50	5.0	5.0	2.0	100μ	1.0	500m	40	1#	PE	R179n	A		
12#	2SC1069†	800m	5.3m	100	80	6.0	6.0	1.0	500n	3.0	500m	40	1#	PE	R179n	A		
13#	2SC1072†	800m	5.3m	100	80	6.0	6.0	1.0	500n	3.0	500m	40	1#	PE	R179n	A		
14#	2SC1072A†	800m	5.3m	100	80	6.0	6.0	1.0	500n	3.0	500m	40	1#	PE	R179n	A		
15#	2SC1150†	800m	5.3m	60	50	5.0	5.0	1.0	500n	1.0	500m	50	1#	PE	R216	A		
16#	2SC1385H†	800m	5.3m	60	30	5.0	5.0	500m	500n	1.0	300m	35	1#	PE	T039	A		
17#	2SC1386H†	800m	5.3m	70	52	5.0	5.0	1.0	100μ	1.0	60m	30	1#	PE	T039	A		
18#	2SC1388†	800m	4.5m	100	80	6.0	6.0	1.0	500n	3.0	500m	15	*	PE	T039	A		
19#	2SC1635†	800m	5.3m	70	50	5.0	5.0	1.0	300n	1.0	500m	50	1#	PE	R216a	A		
20#	2SD329†	800m	5.3m	70	200	5.0	5.0	1.0	20μ	4.0	1.0	40	1#	D	T039	A		
21#	BC312	800m	5.3m	100	100	5.0	5.0	150m	100n	100	30m	130	1#	PL	T05	A		
22#	BCW90K	800m	6.4m	50	40	5.0	5.0	800m	30n	2.0	150m	100	1#	PE	R198	A		
23#	BCW91K	800m	6.4m	70	60	5.0	5.0	800m	30n	2.0	150m	100	1#	PE	R198	A		
24#	BF355	800m	4.5m	300	225	5.0	5.0	100m	100μ	1.0	10m	20	1#	PL	T039	A		
25#	BFR36	800m	5.0m	40	30	4.0	4.0	150m	100μ	5.0	150m	40	1#	PE	T039	A		
26#	BFY40	800m	5.0m	30	30	4.0	4.0	800m	100μ	100	10m	40	1#	PE	T039	A		
27#	BFY41	800m	4.5m	120	120	5.0	5.0	600m	100μ	100	50m	35	1#	PL	T05	A		
28#	BFY41	800m	5.2m	60	40	6.0	6.0	1.0	100μ	1.0	500m	50	1#	PE	T039	A		
29#	BSV69†	800m	5.2m	45	40	6.0	6.0	1.0	100μ	1.0	500m	50	1#	PE	T039	A		
30#	KT604AM	800m	5.2m	250	250	5.0	5.0	200m	20μ	40	20m	10	1#	P	B21	B		
31#	KT604BM	800m	5.2m	250	250	5.0	5.0	200m	20μ	40	20m	30	1#	P	B83	B		
32#	KT611AM	800m	5.2m	180	180	4.0	4.0	100m	200μ	40	20m	10	1#	P	B83	B		
33#	KT611BM	800m	5.2m	180	180	4.0	4.0	100m	200μ	40	20m	30	1#	P	B83	B		
34#	PT8889	800m	5.2m	25	14	3.5	3.5	200m	1m	5	100m	20	1#	PE	T046	A		
35	2N1445	800m	75k†	4.5m	120	80	7.0	750m	100μ	100	200m	80	1#	PE	T05	A		
36	2N4237	800m	1.0M	4.5m	50	40	6.0	1	100μ	100	100m	30	1#	PE	T05	A		
37	2N4238	800m	1.0M	4.5m	80	60	6.0	1	100μ	100	100m	30	1#	PE	T05	A		
38	2N4239	800m	1.0M	4.5m	100	80	6.0	1	100μ	100	100m	30	1#	PE	T05	A		
39#	2SD149	800m	1.2M	5.3m	70	70	5.0	1.0	20μ	4.0	1.0	40	1#	D	T039	A		
40#	2SD215	800m	1.2M	5.3m	40	35	5.0	1.0	20μ	4.0	500m	70	1#	D	T039	A		
41#	2SD216	800m	1.2M	5.3m	60	50	5.0	1.0	20μ	4.0	500m	70	1#	D	T039	A		
42	JAN2N3439†	800m	15M	4.5m	450	350	7.0	1.0	500μ	100	5.0m	25	1#	PE	T05	A		
43	JAN2N3440†	800m	15M	4.5m	300	250	7.0	1.0	500μ	100	5.0m	25	1#	PE	T05	A		
44#	2SC1888	800m	15M	6.4m	80	60	6.0	3.0	100μ	4.0	200m	500	1#	D	T05	A		
45#	2SC1889	800m	15M	6.4m	100	80	6.0	3.0	100μ	4.0	200m	500	1#	D	T05	A		
46	HSE148-RT	800m	15M	6.4m	70	60	5.0	100μ	100μ	1.0	150m	40	1#	PE	T05	A		
47	MJ420	800m	15M	5.3m	275	250	6.0	100m	100μ	200	10m	25	1#	PE	T05	A		
48	MJ421	800m	15M	5.3m	350	325	6.0	100m	100μ	200	10m	25	1#	PE	T05	A		
49	2N1714	800m	16M	5.3m	90	60	6.0	750m	1.0μ	5.0	200m	20	1#	PE	T05	A		
50	JAN2N1714	800m	16M	5.2m	60	60	6.0	750m	1.0μ	5.0	200m	20	1#	PE	T05	A		
51	2N1715	800m	16M	5.3m	150	100	6.0	750m	1.0μ	5.0	200m	20	1#	PE	T05	A		
52	JAN2N1715	800m	16M	5.2m	100	60	6.0	750m	1.0μ	5.0	200m	20	1#	PE	T05	A		
53	2N1716	800m	16M	5.3m	90	60	6.0	750m	1.0μ	5.0	200m	20	1#	PE	T05	A		
54	JAN2N1716	800m	16M	5.2m	60	60	6.0	750m	1.0μ	5.0	200m	20	1#	PE	T05	A		
55	2N1717	800m	16M	5.3m	150	100	6.0	750m	1.0μ	5.0	200m	40	1#	PE	T05	A		
56	JAN2N1717	800m	16M	5.2m	100	60	6.0	750m	1.0μ	5.0	200m	40	1#	PE	T05	A		
57#	2SC484	800m	20M	6.7m	150	110	5.0	1.5	10μ	2.0	200m	30	1#	DM	T039	A		
58#	2SC485	800m	20M	6.7m	120	80	5.0	1.5	10μ	2.0	200m	30	1#	DM	T039	A		
59#	2SC486	800m	20M	6.7m	80	50	5.0	1.5	10μ	2.0	200m	30	1#	DM	T039	A		
60	ERS100	800m	20M	5.2m	100	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
61	ERS120	800m	20M	5.2m	120	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
62	ERS140	800m	20M	5.2m	140	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
63	ERS160	800m	20M	5.2m	160	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
64	ERS180	800m	20M	5.2m	180	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
65	ERS200	800m	20M	5.2m	200	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
66	ERS225	800m	20M	5.2m	225	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
67	ERS250	800m	20M	5.2m	250	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
68	ERS275	800m	20M	5.2m	275	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
69	ERS301	800m	20M	5.2m	300	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
70	ERS325	800m	20M	5.2m	325	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
71	ERS350	800m	20M	5.2m	350	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
72	ERS375	800m	20M	5.2m	375	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
73	ERS401	800m	20M	5.2m	400	60	6.0	2.0μ	4.0μ	50m	30	1#	PE	T05	A			
74	ERS425	800m	20M	5.2m	425	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
75	ERS450	800m	20M	5.2m	450	60	6.0	2.0μ	4.0μ	50m	35	1#	PE	T05	A			
76	ERS475	800m	20M	5.2m	475	60	6.0	2.0μ	4.0μ	50m	25	1#	PE	T05	A			
77	ETP2008†	800m	20M	5.3m	175	110	5.0	2.0μ	50	5.0m	65	250nb	6.0	700m	7.0p	PL	T05	A
78	ETP3114	800m	20M	5.3m	150	150	5.0	200m	10n	5.0	1.0m	25	1#	PE	T05	A		
79	ETP3923	800m	20M	5.3m	150	150	6.0	100m	10n	100	25m	20	1#	PE	T05	A		
80	ETP5092	800m	20M	5.3m	400	350	6.0	1.0	500n	100	100m	15	1#	PE	T05	A		
81	ETP5095	800m	20M	5.3m	500	400	6.0	1.0	500n	100	100m	15	1#	PE	T05	A		
82#	2SD413	800m	25M	5.3m	200	200	5.0	500m	5.0μ	200m	65	1#	DM	T039	A			
83	HSE125-RT	800m	30M	6.4m	60	40	5.0	5.0	500n	100	150m	30	1#	PE	T05	A		
84	2N696A†	800m	40M	4.5m	60	35	5.0	1.0	100n	5.0	1.0m	15	1#	PE	T05	A		
85	2N698	800m	40M	4.5m	120	60	7.0	1.0	5.0n	5.0	1.0m	15	1#	PE	T05	A		
86	2N1252A†	800m	40M	4.5m	60	30	5.0	1.0	1.0μ	100	150m	15	1#	PE	T05	A		
87	2N1975	800m	40M	4.5m	100	60	5.0	5.0	25n	5.0	1.0m	18	1#</					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. M A M X P	ABS MAX RATINGS @ 25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D			
						V <sub>bcbo</sub> (V)	V <sub>bcvo</sub> (V)	V <sub>bevo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001							
1	MS170S	800m	40M	5.3m	SJ	700	700	5.0	100m	4.0u	100	30	25 Δ	500nZb	30 Z	5.0 Z	8.0p	DM	T05	A			
2	2N697A†	800m	50MΔ	4.5m	SJ	60	35	5.0	1.0	100n	5.0	1.0m	35 Δ	500nZb	30 Z	2.5 Z	35pZ	Δ	T05	A			
3	2N699A	800m	50MΔ	5.2m	SJ	120	80	5.0	500n	5.0n	1.0m	30 Δ	500nZb	30 Z	1.2 Z	20pZ	Δ	T05	A				
4	2N1253A†	800m	50MΔ	4.5m	SJ	60	30	5.0	1.0	1.0u	100	30 Δ	500nZb	30 Z	1.2 Z	45p	Δ	T05	A				
5	2N1889	800m	50MΔ	4.5m	SJ	120	80	7.0	500m	10n	5.0	1.0m	30 Δ	500nZb	30 Z	1.2 Z	15pZ	Δ	T05	A			
6	2N1893	800m	50MΔ	4.5m	SJ	120	80	7.0	500m	10n	5.0	1.0m	30 Δ	500nZb	30 Z	1.2 Z	15pZ	Δ	T05	A			
7	2N1974	800m	50MΔ	4.5m	SJ	120	80	7.0	500m	10n	5.0	1.0m	30 Δ	500nZb	30 Z	1.2 Z	15pZ	Δ	T05	A			
8	2N2049	800m	50MΔ	4.5m	SJ	75	50	5.0	500m	10n	5.0	1.0m	36 Δ	500nZb	34 Z	5.0 Z	15pZ	Δ	T05	A			
9	2N2192†	800m	50MΔ	4.5m	SJ	60	40	5.0	1	0.1u	100	10m	75 Δ	500nZb	34 Z	5.0 Z	25pZ	Δ	T05	A			
10	2N2192A†	800m	50MΔ	4.5m	SJ	60	40	5.0	1.0	10n	100	10m	75 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T05	A			
11	2N2192B†	800m	50MΔ	4.5m	SJ	60	40	5.0	1	0.1u	100	10m	75 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T05	A			
12	2N2193†	800m	50MΔ	4.6m	SJ	80	50	8.0	1.0	10n	100	10m	30 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T039	A			
13	2N2193A†	800m	50MΔ	4.6m	SJ	80	50	8.0	1.0	10n	100	10m	30 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T039	A			
14	2N2193B†	800m	50MΔ	4.5m	SJ	80	50	8.0	1	0.1u	100	10m	30 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T05	A			
15	2N2194†	800m	50MΔ	4.5m	SJ	60	40	5.0	1	0.1u	100	10m	15 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T05	A			
16	2N2194A†	800m	50MΔ	4.5m	SJ	60	40	5.0	1	0.1u	100	10m	15 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T05	A			
17	2N2194B†	800m	50MΔ	4.5m	SJ	60	40	5.0	1	0.1u	100	10m	15 Δ	500nZb	34 Z	5.0 Z	20pZ	Δ	T05	A			
18	2N2243	800m	50MΔ	4.5m	SJ	120	80	7.0	1	0.1u	100	10m	30 Δ	500nZb	34 Z	5.0 Z	15pZ	Δ	T05	A			
19	2N2243A	800m	50MΔ	4.5m	SJ	120	80	7.0	1	0.1u	100	10m	30 Δ	500nZb	34 Z	5.0 Z	15pZ	Δ	T05	A			
20	2N2443	800m	50MΔ	4.5m	SJ	120	100	7.0	1	0.1u	5.0	1.0m	30 Δ	500nZb	34 Z	5.0 Z	15pZ	Δ	T05	A			
21	2N2868	800m	50MΔ	4.5m	SJ	120	100	7.0	1	0.1u	5.0	1.0m	30 Δ	500nZb	34 Z	5.0 Z	15pZ	Δ	T05	A			
22	2N2890†	800m	50MΔ	5.0m	SJ	100	80	5.0	1	100n	100	50m	30 Δ	500nZb	34 Z	5.0 Z	120pZ	Δ	T05	A			
23	2N2891†	800m	50MΔ	5.0m	SJ	100	80	5.0	1	100n	100	50m	30 Δ	500nZb	34 Z	5.0 Z	120pZ	Δ	T05	A			
24	2N3036†	800m	50MΔ	5.0m	SS	120	80	7.0	1.2	0.1u	100	10m	40 Δ	500nZb	34 Z	5.0 Z	15pZ	Δ	T05	A			
25	2N4895†	800m	50MΔ	4.5m	SJ	120	60	6.0	5.0	1.0m	2.0	2.0	40 Δ	500nZb	34 Z	5.0 Z	80pZ	Δ	T039	A			
26	2N4897†	800m	50MΔ	4.5m	SJ	150	80	6.0	5.0	1.0m	2.0	2.0	40 Δ	500nZb	34 Z	5.0 Z	80pZ	Δ	T039	A			
27#	2SC103A	800m	50MΔ	6.4m	SJ	250	250	7.0	100m	100n	2.0	2.0	40 Δ	500nZb	34 Z	5.0 Z	4.8pZ	DPL	R215e	A			
28#	2SC1748	800m	50MΔ	6.4m	SJ	300	300	7.0	100m	1.0u	2.0	50m	200 *	500nZb	34 Z	5.0 Z	4.2p	D	T039	A			
29#	2SC1940	800m	50MΔ	6.4m	SJ	120	120	5.0	50m	100n	100	10m	200 *	500nZb	34 Z	5.0 Z	2.3p	S9a	T039	A			
30#	2SC1941	800m	50MΔ	6.4m	SJ	160	160	5.0	50m	100n	100	10m	200 *	500nZb	34 Z	5.0 Z	2.3p	S9a	T039	A			
31#	2SC2230	800m	50MΔ	6.4m	SJ	200	180	5.0	100m	100n	100	10m	120 Δ	500nZb	34 Z	5.0 Z	7.0pZ	D	R195e	A			
32#	2SC2230A	800m	50MΔ	6.4m	SJ	200	180	5.0	100m	100n	100	10m	120 Δ	500nZb	34 Z	5.0 Z	7.0pZ	D	R195e	A			
33#	2SD228S	800m	50MΔ	6.4m	SJ	100	80	7.0	1.0	1.0u	2.0	5.0m	40 Δ	500nZb	34 Z	5.0 Z	7.0pZ	D	T039	A			
34#	2SD624	800m	50MΔ	6.4m	SJ	200	150	5.0	500m	5.0u	5.0	200m	180	500nZb	34 Z	5.0 Z	12p	DMΔ	R195e	A			
35#	BC2-1.6	800m	50MΔ	6.4m	SJ	80	40	5.0	1.0	1.0u	2.0	150m	180	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
36#	BC211-1.10	800m	50MΔ	6.4m	SJ	80	40	5.0	1.0	1.0u	2.0	150m	180	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
37#	BC211-1.16	800m	50MΔ	6.4m	SJ	80	40	5.0	1.0	1.0u	2.0	150m	180	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
38#	BC211-#	800m	50MΔ	6.4m	SJ	80	40	5.0	1.0	1.0u	2.0	150m	180	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
39#	BC211A-6	800m	50MΔ	6.4m	SJ	100	60	5.0	1.0	1.0u	2.0	150m	250	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
40#	BC211A-10	800m	50MΔ	6.4m	SJ	100	60	5.0	1.0	1.0u	2.0	150m	250	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
41#	BC211A-16	800m	50MΔ	6.4m	SJ	100	60	5.0	1.0	1.0u	2.0	150m	250	500nZb	34 Z	5.0 Z	25pZ	Δ	T039	A			
42#	BF851†	800m	50MΔ	6.4m	SJ	60	60	6.0	1.0	50n	6.0	1.0m	30 Δ	500nZb	34 Z	5.0 Z	8.0pZ	PE	R188	A			
43#	BF852†	800m	50MΔ	6.4m	SJ	40	40	6.0	1.0	50n	6.0	1.0m	30 Δ	500nZb	34 Z	5.0 Z	8.0pZ	PE	R188	A			
44#	BFW33	800m	50MΔ	4.5m	SJ	120	80	7.0	1	0.1u	100	150m	40 Δ	500nZb	34 Z	5.0 Z	15pZ	PE	T039	A			
45#	BFW33Z	800m	50MΔ	4.5m	SJ	80	40	6.0	1	0.1u	100	150m	40 Δ	500nZb	34 Z	5.0 Z	15pZ	PE	T039	A			
46#	BFX84	800m	50MΔ	4.5m	SJ	100	60	6.0	1	0.5u	100	150m	20 Δ	500nZb	34 Z	5.0 Z	12p	PE	T05	A			
47#	BFX84Z†	800m	50MΔ	4.5m	SJ	100	60	6.0	1.0	500n	100	150m	112 *	500nZb	34 Z	5.0 Z	35u	250	.85	PE	T039	A	
48#	BFX85	800m	50MΔ	4.5m	SJ	100	60	6.0	1	0.5u	100	150m	50 Δ	500nZb	34 Z	5.0 Z	35u	250	.85	PE	T039	A	
49#	BFX85Z†	800m	50MΔ	4.5m	SJ	100	60	6.0	1.0	0.5u	100	150m	142 *	500nZb	34 Z	5.0 Z	35u	250	.85	PE	T039	A	
50#	BFX86	800m	50MΔ	4.5m	SJ	40	35	6.0	1	0.5u	100	150m	50 Δ	500nZb	34 Z	5.0 Z	35u	250	.85	PE	T039	A	
51#	BFX86Z†	800m	50MΔ	4.5m	SJ	40	35	6.0	1.0	0.5u	100	150m	142 *	500nZb	34 Z	5.0 Z	35u	250	.85	PE	T039	A	
52#	BFY51†	800m	50MΔ	4.5m	SJ	60	30	6.0	1.0	500n	5.0	1.0m	65	500nZb	34 Z	5.0 Z	35u	250	850m	7.0p	PE	T05	A
53#	BFY52†	800m	50MΔ	4.5m	SJ	40	20	6.0	1.0	500n	5.0	1.0m	65	500nZb	34 Z	5.0 Z	35u	250	850m	7.0p	PE	T05	A
54#	BFY53	800m	50MΔ	4.5m	SJ	30	20	6.0	1.0	500n	6.0	1.0m	30 Δ	500nZb	34 Z	5.0 Z	15pZ	PE	T05	A			
55#	BSY45	800m	50 MΔ	4.5m	SJ	40	25	5.0	1	100u	2.0	1.0m	80 Δ	500nZb	34 Z	5.0 Z	15pZ	PLΔ	T05	A			
56#	BSY46†	800m	50 MΔ	4.5m	SJ	40	25	5.0	1	100u	2.0	1.0m	80 Δ	500nZb	34 Z	5.0 Z	15pZ	PLΔ	T05	A			
57#	BSY91	800m	50MΔ	4.5m	SJ	40	25	5.0	1	100u	2.0	1.0m	80 Δ	500nZb	34 Z	5.0 Z	20pZ	PE	T05	A			
58#	BSY92	800m	50MΔ	4.5m	SJ	40	25	5.0	1	100u	2.0	1.0m	80 Δ	500nZb	34 Z	5.0 Z	20pZ	PE	T05	A			
59	C866	800m	50MΔ	4.5m	SJ	60	40	5.0	1	100u	2.0	1.0m	60 Δ	500nZb	34 Z	5.0 Z	25pZ	PLΔ	T039	A			
60	CX703	800m	50MΔ	4.5m	SJ	160	160	5.0	1.5	100m	2.0	1.0m	50 Δ	500nZb	34 Z	5.0 Z	3.0pZ	PLΔ	T092	A			
61	CX703A	800m	50MΔ	4.5m	SJ	200	100m	5.0	1.5	100m	2.0	1.0m	40 Δ	500nZb	34 Z	5.0 Z	3.0pZ	PLΔ	T092	A			
62	CX703B	800m	50MΔ	4.5m	SJ	250	100m	5.0	1.5	100m	2.0	1.0m	40 Δ	500nZb	34 Z	5.0 Z	3.0pZ	PLΔ	T092	A			
63	HSE126-RT	800m	50MΔ	6.4m	SJ	100	80	5.0	1	1.0u	1.0	150m	50 Δ	500nZb	34 Z	5.0 Z	3.0pZ	PLΔ	T092	A			
64	HSE186-RT	800m	50MΔ	6.4m	SJ	100	80	5.0	1	1.0u	1.0	150m	50 Δ	500nZb	34 Z	5.0 Z	3.0pZ	PLΔ	T092	A			
65#	KT630A	800m	50MΔ	6.4m	SJ	120	120	7.0	1.2	1.0u	100	150m	40 Δ	500nZb	34 Z	5.0 Z	10pZ	Δ	T05	A			
66#	KT630B	800m	50MΔ	6.4m	SJ	120	120	7.0	1.2	1.0u	100	150m	40 Δ	500nZb	34 Z	5.0 Z	10pZ	Δ	T05	A			
67#	KT630D	800m	50MΔ	6.4m	SJ	60	60	5.0	1.2	1.0u	100	150m	8										



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C	TEMPERATURE RANGE °C	ABS MAX RATINGS @25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)	I <sub>c</sub> (A)	V <sub>cb</sub> (V)		I <sub>e</sub> (A)	h <sub>FE</sub>	h <sub>oe</sub> (mhos)	r <sub>hie</sub> (Ω)	r <sub>hre</sub> (Ω)					
1	SE7002	800m	60Ms	4.5m	SJ	120	120	5.0	1.0	100	5.0	100	50	5.3u	1.5k	1.5	6.0p	DPL	T05	CØ
2	UP1613	800m	60Ms	4.5m	SJ	75	50	7.0	1.0	100	5.0	1.0m	30 Δ	500nZb	34 Z	3.0 Z	25pZ	PL	T05	AØ
3#	BC368	800m	65Ms	8.0m	SJ	20	20	5.0	1.0	100	1.0	500	85 Δ						T092	AØ
4#	BC368Z	800m	65Ms	8.0m	SJ	20	20	5.0	1.0	100	1.0	500	85 Δ						R204d	AØ
5#	BCX68	800m	65Ms	6.4m	SJ	25	20	5.0	1.0	100	1.0	500	300						X166	B
6#	2N1335	800m	70Ms	5.3m	SJ	120	90	4.0	300m	1.0u	100	30m	10 #Δ				8.0p	PE	T05	A
7	2N1336	800m	70Ms	5.3m	SJ	120	90	4.0	300m	1.0u	100	30m	10 #Δ				10p	PL	T05	A
8	2N1337	800m	70Ms	5.3m	SJ	120	90	4.0	300m	1.0u	100	30m	10 #Δ				8.0p	PL	T05	A
9	2N1338	800m	70Ms	5.3m	SJ	80	50	3.0	300m	1.0u	100	30m	10 #Δ				10p	PL	T05	A
10	2N1339	800m	70Ms	5.3m	SJ	120	100	3.0	300m	1.0u	100	30m	10 #Δ				8.0p	PL	T05	A
11	2N1340	800m	70Ms	5.3m	SJ	120	100	3.0	300m	1.0u	100	30m	10 #Δ				8.0p	PL	T05	AØ
12	2N1341	800m	70Ms	5.3m	SJ	120	100	3.0	300m	1.0u	100	30m	10 #Δ				8.0p	PL	T05	A
13	2N1342	800m	70Ms	5.3m	SJ	150	125	5.0	300m	1.0u	100	30m	10 #Δ				8.0p	PL	T05	AØ
14	2N1505	800m	70Ms	5.3m	SJ	50	20	3.0	500m	50u	280	100m	7.0 t #Δ				20pZ	Ø	T05	AØ
15	2N1711	800m	70Ms	4.5m	SJ	75	50	7.0	1.0 #	100	5.0	1.0m	90 Δ	500nZb	34 Z	5.0 Z	25pZ	Ø	T05	AØ
16	JAN2N1711t	800m	70Ms	4.5m	SJ	75	50	7.0	500m	10n	100	5.0m	90 Δ	1.0uZb	8.0 Z	5.0 Z	25pZ	Ø	T05	AØ
17	2N1711S	800m	70Ms	4.5m	SJ	75	50	7.0	1.0 #	100	5.0	1.0m	90 Δ	500nZb	34 Z	5.0 Z	25pZ	Ø	T039	AØ
18	JAN2N1890t	800m	70Ms	4.5m	SJ	100	60	7.0	500m	10n	100	5.0m	90 Δ	300nZb	8.0 Z	1.5 Z	5.0pZ	Ø	T05	AØ
19	2N3107t	800m	70Ms	4.5m	SJ	100	60	7.0	1.0	0.1u	100	1.0m	60 Δ				20pZ	Ø	T05	AØ
20	2N3109t	800m	70Ms	4.5m	SJ	80	40	7.0	1.0	1.0	100	1.0m	60 Δ				25pZ	Ø	T05	AØ
21#	2SC1008At	800m	70Ms	6.4m	SJ	100	80	8.0	700m	100n	2.0	50m	140 #				15p	E	R216e	AØ
22#	BFW25	800m	70Ms	4.5m	SJ	80	40	7.0	1.0	0.1u	1.0	150m	100 t #				25pZ	PE	T05	AØ
23#	BFW25Z	800m	70Ms	4.5m	SJ	80	40	7.0	1.0	1.0	1.0	150m	100 t #				25pZ	PE	T039	AØ
24#	BFY46	800m	70Ms	4.5m	SJ	75	50	7.0	1.0 #	10n	100	100	75 t				25pZ	Ø	T05	AØ
25#	BFY68Z	800m	70Ms	4.5m	SJ	30	30	7.0	500m	100	100	150m	100 t				25pZ	Ø	T039	A
26#	BSY71Z	800m	70Ms	4.5m	SJ	75	28	7.0	10n	100	100	150m	100 t				25pZ	PL	T039	A
27#	SL305	800m	70Ms	4.5m	SJ	150	150	5.0	100m	100	100	30m	25 t				5.0pZ	PL	T039	A
28#	SL306	800m	70Ms	4.5m	SJ	200	175	5.0	100m	100	100	30m	25 t				5.0pZ	PL	T039	A
29#	SL307	800m	70Ms	4.5m	SJ	250	200	5.0	100m	100	100	30m	25 t				5.0pZ	PL	T039	A
30#	SL308	800m	70Ms	4.5m	SJ	300	225	5.0	100m	100	100	30m	25 t				5.0pZ	PL	T039	A
31	UP1711	800m	70Ms	4.5m	SJ	75	50	7.0	1.0 #	10n	5.0	1.0m	50 Δ	500nZb	34 Z	3.0 Z	25pZ	E	T0105	AØ
32#	2SC1008t	800m	75Ms	6.4m	SJ	80	60	8.0	700m	100n	2.0	50m	160 #				17p	E	R216e	AØ
33	HSE178-RT	800m	75Ms	6.4m	SJ	120	100	5.0	700m	500n	100	150m	50 t						T05	AØ
34	2N3020	800m	80Ms	4.5m	SJ	140	80	7.0	1.0	0.1u	5.0	1.0m	30 Δ				12pZ	Ø	T05	AØ
35	2N3020S	800m	80Ms	4.5m	SJ	140	80	7.0	1.0	10n	5.0	1.0m	30 Δ				12pZ	Ø	T039	AØ
36	2N4896t	800m	80Ms	4.5m	SJ	120	60	6.0	5.0	1.0m	2.0	2.0	100 t				80pZ	Ø	T039	CØ
37#	2SC2510	800m	80Ms	6.4m	SJ	300	300	5.0	100m	1.0u	200	20m	30 t				4.0pZ	D	R245	B
38#	BCW44	800m	80Ms	4.5m	SJ	70	55	5.0	1.0	10n	1.0	200m	40 t				12p	PE	T039	A
39#	BF294	800m	80Ms	4.5m	SJ	160	160	6.0	100m	100u	500	10m	70 t				2.5p	PL	T039	A
40#	BFR77	800m	80Ms	4.5m	SJ	120	80	7.0	1.0	10n	100	150m	40 t				12p	PE	T039	A
41#	BFR78	800m	80Ms	4.5m	SJ	120	100	7.0	1.0	10n	100	100m	20 t				12p	PE	T039	A
42#	BFW45Z	800m	80Ms	4.5m	SJ	130	130	7.0	50m	200	50m	20 t				6.0pZ	PE	T039	A	
43#	BFX69	800m	80Ms	4.5m	SJ	75	30	7.0	1.0	10n	5.0	1.0m	55				18p	DPL	T05	AØ
44#	BFY56B	800m	80Ms	4.5m	SJ	80	55	7.0	1.0	50n	1.0	150m	70 t				12p	PE	T039	A
45#	BSW65t	800m	80Ms	4.5m	SJ	80	80	6.0	1.0	100u	5.0	1.0	15 t				35pZ	PE	T05	AØ
46	BSW66Z	800m	80Ms	4.5m	SJ	100	100	6.0	1.5	100n	5.0	500m	30 t				35pZ	PE	T039	AØ
47#	BFX69A	800m	84Ms	4.5m	SJ	80	40	7.0	1.0	0.1u	5.0	1.0m	70	8.0u	1.8k	2.1	13p	DPL	T05	AØ
48#	BC310	800m	86Ms	4.5m	SJ	70	70	5.0	1.0	50n	100	100	110 t				12p	PE	T05	A
49	BF174	800m	86Ms	4.5m	SJ	150	150	6.0	1.0	0.1u	100	25m	20 t				2.6p	DPL	T05	AØ
50#	BFY56t	800m	86Ms	4.5m	SJ	80	45	5.0	1.0	0.5u	100	10m	40 t				12p	DPE	T05	AØ
51#	BFY56A	800m	86Ms	4.5m	SJ	80	55	7.0	1.0	0.5u	1.0	150m	70 #				12p	PE	T039	AØ
52	SE7010	800m	86Ms	4.5m	SJ	150	150	6.0	1.0	0.1u	100	25m	20 t				2.6p	DPL	T05	AØ
53	2N2440	800m	90Ms	4.5m	SJ	120	80	7.0	500m	1.0m	100	5.0m	90 Δ	500nZb	30 Z	2.5 Z	15pZ	Δ	T05	AØ
54#	BFR20	800m	90Ms	28m	S	35	75	7.0	7.0	10n	1.0	150m	70 t				13p	PE	T039	A
55#	BFR21	800m	90Ms	28m	S	70	120	7.0	7.0	10n	1.0	150m	40 t				13p	PE	T039	A
56#	BFR57Z	800m	90Ms	160	160	100	100	7.0	100m	100	100	30m	25 t				4.2p	PE	T039	A
57#	BFR58Z	800m	90Ms	250	250	100	100	7.0	100m	100	100	30m	25 t				4.2p	PE	T039	A
58#	BFR59Z	800m	90Ms	300	300	100	100	7.0	100m	100	100	30m	25 t				4.2p	PE	T039	A
59	2N1893A	800m	100Ms	4.5m	SJ	140	80	7.0	500m	10n	5.0	1.0m	30 t	500nZb	30 Z	1.2	8.0pZ	Δ	T05	AØ
60	2N2330Z	800m	100Ms	5.3m	S	30	20	5.0	500m	1.0n	1.0	10m	50 t				10pZ	Δ	T05	AØ
61	2N3019	800m	100Ms	4.5m	SJ	140	80	7.0	1.0	0.1u	5.0	1.0m	80 Δ				12pZ	Ø	T05	AØ
62	JAN2N3019	800m	100Ms	4.6m	SJ	140	80	7.0	1.0	10n	5.0	1.0m	80 Δ				12pZ	Ø	T05	AØ
63	2N3019S	800m	100Ms	4.5m	SJ	140	80	7.0	1.0	10n	5.0	1.0m	80 Δ				12pZ	Ø	T039	AØ
64#	2SC995	800m	100Ms	6.4m	SJ	300	300	5.0	100m	100n	100	50m	80 t				5.5pZ	DPL	T039	A
65#	2SC1382	800m	100Ms	6.4m	SJ	80	80	7.0	750m	500n	2.0	150m	120 t				20pZ	PE	B7	A
66#	2SC1627A	800m	100Ms	6.4m	SJ	80	80	5.0	400m	100n	5.0	50m	130 t				10pZ	PE	R195e	B
67#	2SD355	800m	100Ms	6.9m	SJ	30	25	4.0	1.0	1.0u	1.0	500m	100 #				20pZ	PE	T092	A
68#	BC144Z	800m	100Ms	4.5m	SJ	40	40	7.0	1.0	1.0	1.0	300m	20 t				20pZ	PE	T039	A
69#	BC286	800m	100Ms	4.5m	SJ	70	60	5.0	1.0	20n	2.0	500m	20 t				12p	DPE	T05	A
70#	BC323	800m	100Ms	4.5m	S	100	100	5.0	5.0	100u	1.0	500m	160 t				80p	PE	T039	A
71#	BC324	800m	100Ms	4.5m	S	85	55	5.0	1.0	1.0	1.0	50m	20 t				25p	PE	T039	A
72#	BC340	800m	100Ms	4.5m	S	40	40	7.0	500m	5.0	5.0	50m	40 t				6.5p	PE	T039	A
73#	BC341	800m	100Ms	4.5m	S	60	60	7.0	500m	5.0	5.0	50m	40 t				6.5p	PE	T039	A
74#	BC342	800m	100Ms	4.5m	S	60	60	7.0	500m	5.0										

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @ 25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. RANG. °C	ABS. MAX. RATINGS @ 25°C				MAX. I <sub>c</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG #/s/a TO200 Ser.	L E O D E	
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>beo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					h <sub>oe</sub> (mhos)
1	C086	800m	120M					20	1.5	1.0	100	50	10				T092	A
2	C166P	800m	120M					25	2.0	1.0	100	50	10				T092	A
3#	25C1735	800m	130M	7.3m	TJ	100	100	5.0	500m	1.0u	100	130		7.0p	PE	T092	A	
4#	25D471	800m	130M	6.4m	J	30	25	5.0	1.0	100n	1.0	200		22p	PE	T092	B	
5#	BC835	800m	130M	6.0m	J	45	45	5.0	1.0	100n	2.0	150			PE	T092	B	
6#	BC835Z	800m	130M	6.4m	J	45	45	5.0	1.0	10u	2.0	150			PE	R221a	B	
7#	BC837	800m	130M	6.0m	J	60	60	5.0	1.0	100n	2.0	150			PE	T092	D	
8#	BC837Z	800m	130M	6.4m	J	60	60	5.0	1.0	10u	2.0	150			PE	R221a	D	
9#	BC639	800m	130M	6.0m	J	100	80	5.0	1.0	100n	2.0	150			PE	T092	D	
10#	BC639Z	800m	130M	6.4m	J	100	80	5.0	1.0	10u	2.0	150			PE	R221a	D	
11#	BFR86	800m	130M	6.4m	A	120	120	5.0	200m	50n	10	30		2.2p1	PE	T092	B	
12#	BFR86TO5	800m	130M	6.4m	A	120	120	5.0	200m	50n	10	30		2.2p1	PE	R188	B	
13#	BFR87	800m	130M	6.4m	A	160	160	5.0	200m	50n	10	30		2.2p1	PE	T092	B	
14#	BFR87TO5	800m	130M	6.4m	A	160	160	5.0	200m	50n	10	30		2.2p1	PE	R188	B	
15#	BFR88	800m	130M	6.4m	A	250	250	5.0	200m	50n	10	30		2.2p1	PE	T092	B	
16#	BFR88TO5	800m	130M	6.4m	A	250	250	5.0	200m	50n	10	30		2.2p1	PE	R188	B	
17#	BFR89	800m	130M	6.4m	A	300	300	5.0	200m	50n	10	30		2.2p1	PE	T092	B	
18#	BFR89TO5	800m	130M	6.4m	A	300	300	5.0	200m	50n	10	30		2.2p1	PE	R188	B	
19#	BSW68A1	800m	130M	4.5m	J	100	100	6.0	1.0	100u	5.0	100			PE	T039	A	
20#	BSW67A1	800m	130M	4.5m	J	120	120	6.0	1.0	100u	5.0	100			PE	T039	A	
21#	BSW68A1	800m	130M	4.5m	J	150	150	6.0	1.0	100u	5.0	100			PE	T039	A	
22#	BSY52	800m	130M	4.5m	J	60	25	5.0	500m	100n	10	150			PE	T039	A	
23#	ESM635	800m	130M	6.0m	J	45	45	5.0	1.0	100n	2.0	500			PE	T05	A	
24#	ESM637	800m	130M	6.0m	J	60	60	5.0	1.0	100n	2.0	500			PE	T05	A	
25#	ESM639	800m	130M	6.0m	J	100	80	5.0	1.0	100n	2.0	500			PE	T05	A	
26#	MA8001	800m	130M	4.7m	J	40	30	5.0	800m	500n	10	150			PE	T05	A	
27#	MA8002	800m	130M	4.7m	J	120	80	7.0	800m	10n	10	150			PE	T05	A	
28#	MA8003	800m	130M	4.7m	J	80	60	7.0	800m	10n	10	150			PE	T05	A	
29	2N1506	800m	140M	5.3m	J	60	20	4.0	500m	10u	28	100			PE	T05	A	
30	2N1506A	800m	140M	4.6m	J	80	50	5.0	500m	50n	28	100			PE	T05	A	
31	2N1837A1	800m	140M	5.3m	J	80	30	8.0	500m	50u	10	150			PE	T05	A	
32	2N1837B1	800m	140M	4.5m	J	80	30	8.0	500m	10n	10	150			PE	T05	A	
33#	BSY54	800m	145M	4.5m	J	75	30	7.0	750m	10n	10	150			PE	T039	A	
34#	BSY56	800m	145M	4.5m	J	120	80	7.0	500m	10n	10	150			PE	T05	A	
35	2N2863	800m	150M	4.5m	S	60	25	5.0	1	50u	15	10			PE	T05	A	
36	2N2864	800m	150M	4.5m	S	60	25	5.0	1	50u	15	10			PE	T05	A	
37	2N2839	800m	150M	3.3m	S	75	60	7.0	1.0	25n	10	150			PE	T05	A	
38	2N2940	800m	150M	3.3m	S	120	80	7.0	1.0	25n	10	150			PE	T05	A	
39	2N2941	800m	150M	3.3m	S	150	100	7.0	1.0	25n	10	150			PE	T05	A	
40	2N35541	800m	150M	4.5m	S	60	30	5.0	1.2	5u	1.0	750			PE	T05	A	
41	2N4943	800m	150M	4.5m	S	120	80	7.0	1	.01u	1.0	150			PE	T05	A	
42#	25C59	800m	150M	5.3m	J	120	60	6.0	300m	50u	10	150			PE	T05	A	
43#	25C108A1	800m	150M	5.3m	J	90	70	5.0	800m	500n	2.0	200			PE	T039	A	
44#	25C109A1	800m	150M	5.3m	J	70	50	5.0	800m	500n	2.0	200			PE	T039	A	
45#	25C503	800m	150M	5.6m	J	60	50	5.0	600m	50u	2.0	150			PE	T039	A	
46#	25C504	800m	150M	4.0m	J	40	30	5.0	600m	1.0u	2.0	150			PE	T039	A	
47#	BFR391	800m	150M	6.4m	S	90	80	5.0	1.0	100n	10	500			PE	T092	B	
48#	BFR39TO51	800m	150M	6.4m	S	90	80	5.0	1.0	100n	10	500			PE	R188	B	
49#	BFR401	800m	150M	6.4m	S	70	60	5.0	1.0	100n	10	500			PE	T092	B	
50#	BFR40TO51	800m	150M	6.4m	S	70	60	5.0	1.0	100n	10	500			PE	R188	B	
51#	BFR411	800m	150M	6.4m	S	60	50	5.0	1.0	100n	10	500			PE	T092	B	
52#	BFR41TO51	800m	150M	6.4m	S	60	50	5.0	1.0	100n	10	500			PE	R188	B	
53	BSY52Z	800m	150M	4.5m	J	60	25	5.0	500m	100n	5.0	1.0		15u	PE	T039	A	
54	BSY54Z	800m	150M	4.5m	J	70	30	7.0	750m	10n	5.0	1.0		12u	PE	T039	A	
55	BSY87Z	800m	150M	4.5m	J	100	60	7.0	500m	10n	5.0	1.0		10u	PE	T039	A	
56	ST6601	800m	150M	4.5m	J	50	30	5.0	800m	50n	10	150			PE	T05	A	
57#	TS2218	800m	150M	4.6m	J	60	30	5.0	800m	20n	10	10			PE	T039	A	
58#	TS2219	800m	150M	4.6m	J	60	30	5.0	800m	20n	10	10			PE	T05	A	
59#	25C49	800m	160M	5.3m	J	120	70	6.0	300m	50u	10	150			PE	T05	A	
60#	25C89	800m	160M	5.3m	J	120	60	6.0	300m	50u	10	150			PE	T05	A	
61#	25C149	800m	160M	5.3m	J	120	80	6.0	300m	10u	10	150			PE	T039	A	
62#	BSY71	800m	160M	4.5m	J	75	50	7.0	10n	10	150	130		23u	PE	T05	A	
63	2N24101	800m	200M	4.5m	J	60	30	5.0	800m	30u	10	10			PE	T05	A	
64	2N5211	800m	200M	4.5m	S	80	80	4.0	600m	10u	5.0	200			PE	T039	A	
65#	25C775	800m	200M	4.5m	J	75	75	4.0	1	10u	10	100			PE	T039	A	
66#	25C1915	800m	200M	7.3m	TJ	120	120	5.0	50m	1.0u	10	10			PE	T092	D	
67#	25C2705	800m	200M	6.4m	J	150	150	5.0	50m	100n	5.0	10			PE	T05	A	
68#	25D576	800m	200M	5.3m	J	250	250	5.0	500m	500n	10	10			PE	T039	A	
69#	BSW271	800m	200M	4.5m	J	60	50	4.0	1	50u	2.0	500			PE	T018	A	
70#	BSW281	800m	200M	4.5m	J	60	50	4.0	1	50u	2.0	500			PE	T05	A	
71	BSY88Z	800m	200M	4.5m	J	100	60	7.0	500m	10n	5.0	1.0		10u	PE	T039	A	
72	HSE139-RT	800m	200M	6.4m	J	60	30	4.0	500n	10	150	50			PE	T05	A	
73	HSE144-RT	800m	200M	6.4m	J	55	30	4.0	1.0	1.0	1.0	300			PE	T05	A	
74	HSE166-RT	800m	200M	6.4m	J	50	50	4.0	2.0	1.0	1.0	500			PE	T05	A	
75	2N1409A	800m	230M		J	30	25	4.0	500m	10u	10	150			PE	T05	A	
76	2N1410A1	800m	230M		J	45	30	4.0	500m	10u	10	150			PE	T05	A	
77#	BFY51Z1	800m	230M	4.0m	J	60	30	6.0	1.0	50n	5.0	10		80u	PE	T039	A	
78	SE8041	800m	230M	4.5m	J	30	30	6.0	1.0	50n	1.0	150			PE	T039	A	
79	BFY1851	800m	240M		J	55	30	6.0	1.0	1.0	1.0	100			PE	T039	A	
80	BSY2451	800m	240M		J	55	30	6.0	1.0	1.0	1.0	100			PE	T039	A	
81	2N2217	800m	250M	4.5m	J	60	30	5.0	800m	0.1u	10	1.0			PE	T05	A	
82	2N2218	800m	250M	4.5m	J	60	30	5.0	800m	0.1u	10	1.0			PE	T05	A	
83	JAN2N22181	800m	250M	4.5m	S	60	30	5.0	800m	10n	10	1.0			PE	T039	A	
84	2N2218A1	800m	250M	5.3m	J	75	40	6.0	800m	10n	10	1.0			PE	T05	A	
85	JAN2N2218A1	800m	250M	4.5m	S	75	50	6.0	800m	10n	10	1.0			PE	T039	A	
86	2N2219	800m	250M	4.5m	J	60	30	5.0	800m	0.1u	10	1.0			PE	T05	A	
87	JAN2N22191	800m	250M	4.5m	S	60	30	5.0	800m	10n</								

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C (Hz)	T <sub>MAX</sub> °C	ABS MAX RATINGS @ 25°C				MAX. I <sub>CB</sub> @ MAX V <sub>CB</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# OF LEADS		
					V <sub>CB</sub> (V)	V <sub>CE</sub> (V)	V <sub>EB</sub> (V)	I <sub>C</sub> (A)		V <sub>CB</sub> (V)	I <sub>CE</sub> (A)	h <sub>FE</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001						
1#	2SC502	800m	250MΔ	6.7m	§J	60	60	5.0	1.0	100Ω	5.0Ω	200mΩ	30				13p	PE	T039	A	
2#	2SC580	800m	250MΔ	6.25u	§J	60	30	5.0	1.0	1.0uΩ	100Ω	50m	30				10p	PE	T039	A	
4#	BF322	800m	250MΔ	5.3m	§J	30	25	3.0	600m	100Ω	100Ω	300	12*			6.0p	PE	T039	A		
4#	BFR10Z	800m	250MΔ	4.5m	§J	60	40	5.0	1.0	100Ω	100Ω	150mΩ	60	1Δ			8.0pZ	PE	T039	A	
5#	BFX17	800m	250MΔ	4.5m	§J	60	40	5.0	1.0	2.0uΩ	1.0Ω	100mΩ	35	1Δ			12pZ	PE	T05	A	
6#	BFX96	800m	250MΔ	4.5m	§J	60	30	5.0	800m	.01uΩ	100Ω	150mΩ	40	1Δ#			8.0pZ	PE	T05	A	
7#	BFX96A	800m	250M	4.5m	§	60	30	5.0		10n	100Ω	150mΩ	40	1Δ			8.0p	PE	T039	A	
8#	BFX96AZ	800m	250MΔ	4.5m	§J	60	30	5.0	800m	10n	100Ω	150mΩ	40	1Δ			8.0pZ	PE	T039	A	
9#	BFX97	800m	250MΔ	4.5m	§J	60	30	5.0	800m	.01uΩ	100Ω	150mΩ	100	1Δ#			8.0pZ	PE	T05	A	
10#	BFX97A	800m	250M	4.5m	§	60	30	5.0		10n	100Ω	150mΩ	100	1Δ			8.0p	PE	T039	A	
11#	BFX97AZ	800m	250MΔ	4.5m	§J	60	30	5.0	800m	10n	100Ω	150mΩ	100	1Δ			8.0pZ	PE	T039	A	
12#	BFY52Z	800m	250MΔ	4.0m	§J	40	20	6.0		50nΩ	5.0Ω	100Ω	45	1Δ	80uZ	750	5.0u	PE	T039	A	
13#	HSE163-RT	800m	250MΔ	6.4m	§J	50	30	5.0		500nΩ	1.0Ω	300mΩ	50	1Δ			6.0p	EΔ	T05	A	
14#	HSE164-RT	800m	250MΔ	6.4m	§J	65	40	4.0		5.0u	1.0Ω	300mΩ	30	1Δ			6.0p	EΔ	T05	A	
15#	MM1613T	800m	250MΔ	4.5m	§J	60	40	5.0		50n	100Ω	150mΩ	40	1Δ			6.0p	EΔ	T05	A	
16#	MM1711T	800m	250MΔ	4.5m	§S	60	30	5.0		50n	100Ω	150mΩ	100	1Δ			6.0p	EΔ	T05	A	
17#	UPI2217	800m	250M	5.3m	#J	65	30	5.0	800m	14mΩ	100Ω	1.0mΩ	18	1Δ			8.0p	EΔ	T05	A	
18#	UPI2218	800m	250M	5.3m	#J	65	30	5.0	800m	14mΩ	100Ω	1.0mΩ	30	1Δ			8.0p	EΔ	T05	A	
19#	UPI4046	800m	250M	4.5m	#J	60	35	6.0	500m	1.7uΩ	1.0Ω	100mΩ	150	1Δ			2.0p		T05	A	
20#	UPI4047	800m	250M	4.5m	#J	70	40	6.0	500m	1.7uΩ	1.0Ω	100mΩ	150	1Δ			10p		T05	A	
21#	2N2219A†	800m	300MΔ	5.3m	§J	75	40	6.0	800m	.01uΩ	100Ω	1.0mΩ	50	Δ	35uZ	8.0kZ	8	Z	PE	T05	A
22#	2N3722†	800m	300MΔ	4.5m	§J	80	60	6.0	500m	.50uΩ	1.0Ω	100mΩ	25	1#Δ			10pZ		T05	A	
23#	2N3723†	800m	300MΔ	4.5m	§J	100	80	6.0	500m	.50uΩ	1.0Ω	100mΩ	25	1#Δ			9pZ		T05	A	
24#	2N3724†	800m	300MΔ	4.6m	§J	50	30	6.0	500m	1.7uΩ	1.0Ω	100mΩ	60	1Δ#			12pZ		T039	A	
25#	2N3725†	800m	300MΔ	4.6m	§J	80	50	6.0	500m	1.7uΩ	1.0Ω	100mΩ	60	1Δ#			10pZ		T039	A	
26#	2N5145‡	800m	300MΔ	4.5m	§J	50	30	6.0	500m	1.7uΩ	1.0Ω	100mΩ	30	1#Δ			12pZ	Δ	T039	A	
27#	AS75058	800m	300MΔ	6.4m	§S	300	300	7.0	150m	50nΩ	25Ω	30mΩ	35	1Δ			10pZ	PE	R203	A	
28#	AS75059	800m	300MΔ	6.4m	§S	250	250	6.0	150m	50nΩ	25Ω	30mΩ	30	1Δ			10pZ	PE	R203	A	
29#	BC211A	800m	300MΔ	5.3m	§J	100	60	7.0	1.0	100nΩ	2.0Ω	500mΩ	20	1Δ			8.0p	PL	T039	A	
30#	BC232M	800m	300MΔ	5.3m	§J	40	30	5.0	400m	100nΩ	2.0Ω	500mΩ	100	1Δ*			6.0p	PE	T039	A	
31#	BSX30†	800m	330MΔ	4.5m	§J	60	30	5.0		200nΩ	1.0Ω	150mΩ	63	1#			5.0p	DPE	T05	A	
32#	2SC97A†	800m	350MΔ	5.3m	§J	80	45	5.0		.50uΩ	1.0Ω	500mΩ	40	1#Δ			10pZ	DPE	T039	A	
33#	2SC198A	800m	350MΔ	5.3m	§J	50	50	5.0	500m	1.0uΩ	100Ω	20mΩ	40	1Δ			5.0p	PE	T012	G	
34#	2SC319	800m	350MΔ	5.3m	§J	40	20	4.0	300m	1.0uΩ	100Ω	100mΩ	20	1#Δ			10pZ	PE	T033	A	
35#	2SC781	800m	350MΔ	5.3m	§J	75	40	5.0		1	1.0uΩ	100Ω	150mΩ	80	1Δ		11p	PE	T05	A	
36#	BFR10†	800m	350MΔ	5.3m	§J	75	40	5.0		1	1.0uΩ	100Ω	150mΩ	60	1Δ		5.0p	PE	T039	A	
37#	BFY72	800m	350MΔ	3.4m	§J	50	28	5.0		20nΩ	100Ω	10mΩ	90	1Δ	55u	460	1.3	DPE	T05	A	
38#	2N2217A	800m	400MΔ	5.6m	§J	75	40	6.0		.01uΩ	100Ω	150mΩ	40	1#			4.0p	PE	T05	A	
39#	2N2883	800m	400MΔ	4.5m	§J	40	20	4.0	300m	.50uΩ	100Ω	100mΩ	20	1#Δ			10p	PE	T05	A	
40#	2N2884	800m	400MΔ	4.5m	§J	40	20	4.0	300m	.50uΩ	100Ω	100mΩ	20	1#Δ			10p	PE	T05	A	
41#	2N3123	800m	400MΔ	5.2m	§J	60	30	5.0	800m	10nΩ	100Ω	150mΩ	100	1#Δ			8.0pZ	PE	T05	A	
42#	2N5188†	800m	400MΔ	4.5m	§S	60	25	5.0		.50uΩ	.50Ω	150mΩ	25	1Δ			8.0pZ	PE	T039	A	
43#	2SC138	800m	400MΔ	5.3m	§J	60	30	5.0	500m	1.0uΩ	100Ω	30mΩ	50	1Δ			4.0p	PE	T033	A	
44#	2SC138A	800m	400MΔ	5.3m	§J	60	35	5.0	500m	1.0uΩ	100Ω	30mΩ	50	1Δ			4.0p	PE	T033	A	
45#	2SC139	800m	400MΔ	5.3m	§J	60	30	5.0	500m	1.0uΩ	100Ω	30mΩ	50	1Δ			4.0p	PE	T033	A	
46#	2SC320	800m	400MΔ	5.3m	§J	40	20	4.0	500m	1.0uΩ	100Ω	100mΩ	20	1#Δ			10pZ	PE	T033	A	
47#	BSV77†	800m	400MΔ	5.3m	§J	60	30	5.0		1.0uΩ	100Ω	100mΩ	60	1Δ			4.8p	PE	T039	A	
48#	BSV95†	800m	400MΔ	5.3m	§J	60	30	5.0		1.0uΩ	100Ω	500mΩ	20	1Δ			4.8p	PE	T039	A	
49#	BSY34†	800m	400MΔ	4.5m	§J	60	40	5.0	800m	70nΩ	1.0Ω	100mΩ	42	1#			4.5p	PE	T039	A	
50#	BSX32†	800m	450MΔ	4.5m	§J	65	40	6.0	1.0	4.0uΩ	1.0Ω	100mΩ	60	1#			5.0p	DPE	T05	A	
51#	BSX32Z†	800m	450MΔ	4.5m	§J	65	40	6.0	1.0	4.0uΩ	1.0Ω	100mΩ	60	1#			6.0p	AN	T039	A	
52#	BSX59†	800m	475MΔ	4.5m	§J	70	45	5.0		.50uΩ	1.0Ω	500mΩ	25	1Δ			5.8p	PE	T05	A	
53#	BSX60†	800m	475MΔ	4.5m	§J	70	30	5.0		.50uΩ	1.0Ω	500mΩ	30	1Δ			5.8p	PE	T05	A	
54#	BSX61†	800m	475MΔ	4.5m	§J	70	45	5.0		.50uΩ	1.0Ω	500mΩ	25	1Δ			5.8p	PE	T05	A	
55#	2SC654	800m	500MΔ	5.3m	§J	40	35	3.0	300m	.20uΩ	15Ω	50mΩ	40	1Δ			3.5pZ	PE	T033	A	
56#	2SC1324	800m	1.7G	5.3m	§J	35	25	4.0	150m	.50uΩ	15Ω	30mΩ	70	1Δ			8.0p	PE	T039	A	
57#	DTN900OT	830m	50M	6.7m	§S	450	400	6.0	500m	100uΩ	100Ω	20mΩ	30	1Δ			8.0p	PE	Y237a	A	
58#	BF420	830m	60MΔ	6.6m	§J	300	300	5.0	25m	10n	20Ω	25mΩ	40	1Δ			1.6pZ	PE	R178	D	
59#	BF422	830m	60MΔ	6.6m	§J	250	250	5.0	20m	10n	20Ω	25mΩ	50	1Δ			1.6pZ	PE	R191	B	
60#	ESM622	830m	60MΔ	6.6m	§J	300	300	5.0		300	20Ω	25mΩ	50	1Δ			1.6pZ	PE	T092	B	
61#	BC300-4	850m		40mΩ	§J	120	80	6.0		20nΩ	100Ω	150mΩ	40	Δ					T039	A	
62#	BC300-5	850m		40mΩ	§J	120	80	6.0		20nΩ	100Ω	150mΩ	70	Δ					T039	A	
63#	BC300-6	850m		40mΩ	§J	120	80	6.0		20nΩ	100Ω	150mΩ	120	Δ					T039	A	
64#	BC301-4	850m		40mΩ	§J	90	60	6.0		20nΩ	100Ω	150mΩ	40	Δ					T039	A	
65#	BC301-5	850m		40mΩ	§J	90	60	6.0		20nΩ	100Ω	150mΩ	70	Δ					T039	A	
66#	BC301-6	850m		40mΩ	§J	90	60	6.0		20nΩ	100Ω	150mΩ	120	Δ					T039	A	
67#	BC302-4	850m		40mΩ	§J	60	45	6.0		20nΩ	100Ω	150mΩ	40	Δ					T039	A	
68#	BC302-5	850m		40mΩ	§J	60	45	6.0		20nΩ	100Ω	150mΩ	70	Δ					T039	A	
69#	BC302-6	850m		40mΩ	§J	60	45	6.0		20nΩ	100Ω	150mΩ	120	Δ					T039	A	
70#	2N2849†	850m	30MΔ	5.0m	§S	100	80	5.0	3.0	100nΩ	1.0Ω	1.0Ω	40	1Δ#			125pZ		R61	A	
71#	2N2850†	850m	30MΔ	5.0m	§S	100	80	5.0	3.0	100nΩ	1.0Ω	1.0Ω	40	1Δ#			125pZ		R61	A	
72#	2N2851†	850m	30MΔ	5.0m	§S	100	80	5.0	3.0	100nΩ	1.0Ω	1.0Ω	40	1Δ#			125pZ		R61	A	
73#	2N2852†	850m	30MΔ	5.0m	§S	100	8														

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DEGRATE IN FREE AIR W/C (Hz)	TEMPERATURE M E A M P	ABS MAX RATINGS @25°C					TYPICAL h PARAMETERS					Cob (F)	STRUC-TURE	DWG #200 s/a TO200 Ser.	L E O D E			
					BVcbo (V)	BVceo (V)	VBebo (V)	Ic (A)	Icbo @MAX Vcb (A)	BIAS			COMMON EMITTER								
										Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)					hre (X.0001)		
1	SP3439	900m	15mΔ	7.2m	\$J	450	350	7.0	1.0 #	20uΔ	10u	20mΔ	40 Δ	10p		T092	A				
2	SP3440	900m	15mΔ	7.2m	\$J	300	250	7.0	1.0 #	50uΔ	10u	20mΔ	40 Δ	10p		T092	A				
3#	2SC2383	900m	20mΔ	7.2m	\$J	160	160	6.0	1.0	1.0u	5.0u	200mΔ	60 Δ	20p	E	R195h	A				
4#	2SC2228A	900m	50mΔ	7.2m	\$J	200	200	5.0	50m	1.0u	10u	10mΔ	40 Δ	4.0p	PL	R227	B				
5#	2SC2228Y	900m	50mΔ	7.2m	\$J	160	160	5.0	50m	1.0u	10u	10mΔ	40 Δ	4.0p	PL	R227	B				
6#	BF642W3	900m	50mΔ	7.2m	\$J	300	300	8.0	500m	100mΔ	10u	30mΔ	40 Δ	3.0p	PL	B43	D				
7#	BF642W	900m	50mΔ	7.2m	\$J	300	300	8.0	500m	100mΔ	10u	30mΔ	40 Δ	3.0p		B43	A				
8#	BF643W3	900m	50mΔ	7.2m	\$J	200	200	6.0	500m	100mΔ	10u	30mΔ	50 Δ	4.0p		B43	A				
9#	BF643W	900m	50mΔ	7.2m	\$J	200	200	6.0	500m	100mΔ	10u	30mΔ	50 Δ	4.0p		B43	A				
10	HS3405	900m	60m	7.2m	\$J	50	50	5.0	500m	100n	4.5	2.0m	180	8.0p	E	T092	A				
11#	2SD787B	900m	80mΔ	7.2m	\$J	20	20	6	2	2u	2u	100mΔ	100 Δ	20p	E	R245	B				
12#	2SD787C	900m	80mΔ	7.2m	\$J	20	20	6	2	2u	2u	100mΔ	180 Δ	20p	E	R245	B				
13#	2SD787D	900m	80mΔ	7.2m	\$J	20	20	6	2	2u	2u	100mΔ	250 Δ	20p	E	R245	B				
14#	2SD787E	900m	80mΔ	7.2m	\$J	20	20	6	2	2u	2u	100mΔ	400 Δ	20p	E	R245	B				
15#	2SD788B	900m	80mΔ	7.2m	\$J	20	16	6	2	2u	2u	100mΔ	100 Δ	20p	E	R245	B				
16#	2SD788C	900m	80mΔ	7.2m	\$J	20	16	6	2	2u	2u	100mΔ	180 Δ	20p	E	R245	B				
17#	2SD788D	900m	80mΔ	7.2m	\$J	20	16	6	2	2u	2u	100mΔ	250 Δ	20p	E	R245	B				
18#	2SD788E	900m	80mΔ	7.2m	\$J	20	16	6	2	2u	2u	100mΔ	400 Δ	20p	E	R245	B				
19#	2SD789B	900m	80mΔ	7.2m	\$J	100	50	6	1	1u	2u	100mΔ	100 Δ	20p	E	R245	B				
20#	2SD789C	900m	80mΔ	7.2m	\$J	100	50	6	1	1u	2u	100mΔ	180 Δ	20p	E	R245	B				
21#	2SD789D	900m	80mΔ	7.2m	\$J	100	50	6	1	1u	2u	100mΔ	250 Δ	20p	E	R245	B				
22#	2SD789E	900m	80mΔ	7.2m	\$J	100	50	6	1	1u	2u	100mΔ	400 Δ	20p	E	R245	B				
23#	2SD790B	900m	80mΔ	7.2m	\$J	100	70	6	1	1u	2u	100mΔ	100 Δ	20p	E	R245	B				
24#	2SD790C	900m	80mΔ	7.2m	\$J	100	70	6	1	1u	2u	100mΔ	180 Δ	20p	E	R245	B				
25#	2SC2655	900m	100mΔ	7.2m	\$J	50	50	5.0	2.0	1.0u	2.0u	500mΔ	70 Δ	30p	E	R195h	B				
26#	BSY81	900m	100mΔ	5.1m	\$J	40	18	5.0	1.0	100n	10u	150mΔ	40 Δ	15p	PE	T039	A				
27#	BSY82	900m	100mΔ	5.1m	\$J	40	18	5.0	1.0	100n	10u	150mΔ	100 Δ	15p	PE	T039	A				
28#	BSY83	900m	100mΔ	5.1m	\$J	80	35	7.0	1.0	10n	10u	150mΔ	40 Δ	15p	PE	T039	A				
29#	BSY84	900m	100mΔ	5.1m	\$J	80	35	7.0	1.0	10n	10u	150mΔ	100 Δ	15p	PE	T039	A				
30#	BSY85	900m	100mΔ	5.1m	\$J	120	64	7.0	1.0	10n	10u	150mΔ	40 Δ	15p	PE	T039	A				
31#	BSY86	900m	100mΔ	5.1m	\$J	120	64	7.0	1.0	10n	10u	150mΔ	100 Δ	15p	PE	T039	A				
32#	2SC2235	900m	120mΔ	7.2m	\$J	120	120	5.0	800m	100n	5.0u	100mΔ	140 Δ	30p	PE	R195e	B				
33#	2SC2236	900m	120mΔ	7.2m	\$J	30	30	5.0	1.5	100n	5.0u	500mΔ	180 Δ	30p	PE	R195e	B				
34#	2SD1145	900m	140mΔ	7.2m	\$J	60	20	6.0	5.0	1.0u	2.0u	500mΔ	100 Δ	45p	PE	R195e	B				
35#	2SD666AB	900m	140mΔ	7.2m	\$J	120	100	5	50m	10u	5u	10mΔ	80 Δ	3p	E	R245	B				
36#	2SD666AC	900m	140mΔ	7.2m	\$J	120	100	5	50m	10u	5u	10mΔ	100 Δ	3p	E	R245	B				
37#	2SD666B	900m	140mΔ	7.2m	\$J	120	80	5	50m	10u	5u	10mΔ	80 Δ	3p	E	R245	B				
38#	2SD666C	900m	140mΔ	7.2m	\$J	120	80	5	50m	10u	5u	10mΔ	100 Δ	3p	E	R245	B				
39#	2SD666D	900m	140mΔ	7.2m	\$J	120	80	5	50m	10u	5u	10mΔ	180 Δ	3p	E	R245	B				
40#	2SD667AB	900m	140mΔ	7.2m	\$J	120	100	5	1	10u	5u	150mΔ	80 Δ	12p	E	R245	B				
41#	2SD667AC	900m	140mΔ	7.2m	\$J	120	100	5	1	10u	5u	150mΔ	100 Δ	12p	E	R245	B				
42#	2SD667B	900m	140mΔ	7.2m	\$J	120	80	5	1	10u	5u	150mΔ	80 Δ	12p	E	R245	B				
43#	2SD667C	900m	140mΔ	7.2m	\$J	120	80	5	1	10u	5u	150mΔ	100 Δ	12p	E	R245	B				
44#	2SD667D	900m	140mΔ	7.2m	\$J	120	80	5	1	10u	5u	150mΔ	180 Δ	12p	E	R245	B				
45#	2SC2500	900m	150mΔ	7.2m	\$J	30	10	6.0	2.0	100n	1.0u	500mΔ	140 Δ	27p	E	R195h	B				
46#	2SC2910	900m	150mΔ	7.2m	\$J	180	160	5.0	70m	100n	5.0u	10mΔ	100 Δ	2.0p	PE	R195e	B				
47#	2SD863	900m	150mΔ	7.2m	\$J	60	50	5.0	1.0	1.0u	2.0u	50mΔ	150 Δ	12p	PE	R227	B				
48#	2SD468B	900m	190mΔ	7.2m	\$J	25	20	5	1.0	1u	2u	500mΔ	85 Δ	22p	E	R245	B				
49#	2SD468C	900m	190mΔ	7.2m	\$J	25	20	5	1.0	1u	2u	500mΔ	120 Δ	22p	E	R245	B				
50#	BSY581	900m	400mΔ	4.5m	\$J	50	25	5.0	600m	120n	1.0u	300mΔ	42 Δ	4.5p	PE	T039	A				
51#	2SC1127-1	950m	30mΔ	10m	\$J	180	180	8.0	100m	1.0u	5.0u	3.0mΔ	30 Δ	15p	ME	B2	A				
52#	2SC1127-2	950m	30mΔ	10m	\$J	210	210	8.0	100m	1.0u	5.0u	3.0mΔ	30 Δ	15p	ME	B2	A				
53#	2SC1962	950m	45mΔ	10m	\$J	200	200	8.0	500m	200n	2.0u	70 Δ	200 Δ	12p	ME	B2	A				
54#	2SC1663	950m	50mΔ	10m	\$J	140	140	8.0	500m	200n	2.0u	100mΔ	150 Δ	15p	ME	B2	A				
55#	2SC2141	950m	50mΔ	10m	\$J	140	140	8.0	500m	200n	2.0u	100mΔ	350 Δ	20p	ME	B2	D				
56#	2SC1429-1	950m	80mΔ	10m	\$J	16	12	6.0	2.0	100n	1.0u	1.0 Δ	70 Δ	40p	ME	B2	A				
57#	2SC1429-2	950m	80mΔ	10m	\$J	16	16	6.0	2.0	100n	1.0u	1.0 Δ	100 Δ	40p	ME	B2	A				
58#	2SC1761	950m	80mΔ	10m	\$J	20	16	6.0	2.0	200n	2.0u	100mΔ	140 Δ	30p	ME	B2	D				
59	2N339	1.0			\$J	55	55	1.0		1.0u				2.0u	Zb	30	3.0	3.0		T011	A
60	2N340	1.0			\$J	85	85	1.0		1.0u				2.0u	Zb	30	3.0	3.0		T011	A
61	2N341	1.0			\$J	125	85	1.0		1.0u				2.0u	Zb	30	3.0	3.0		T011	A
62	2N342	1.0			\$J	60	60	1.0		1.0u				2.0u	Zb	30	3.0	3.0		T011	A
63	2N342A	1.0	8.0m		\$J	85	85	1.0	60m	1.0u				2.0u	Zb	30	3.0	3.0		T011	A
64	2N343	1.0			\$J	60	60	1.0		1.0u				2.0u	Zb	30	3.0	3.0		T011	A
65	2N343A	1.0	8.0m		\$J	60	60	1.0	60m	1.0u				2.0u	Zb	30	3.0	3.0		T011	A
66#	2SC2080	1.0	8.0m		\$J	60	50	5.0	1.0	500n	1.0u	500mΔ	50 Δ							T0126	B
67#	KT624A	1.0	10m		\$J	30	30	4.0	1.0	100u	1.0u	300mΔ	30 Δ							X182a	D
68#	KT625A	1.0	10m		\$J	60	40	4.0	1.0	30u	1.0u	300mΔ	20 Δ							X182a	D
69	ST4341	1.0			\$J	80		5.0	150m	100u	5.0	3.0m	15 Δ	50p						T05	A
70#	BCY65E1	1.0 *	250mΔ	2.2m	\$J	60	45	7.0	100m	100n	5.0u	2.0m	500 Δ	24u	3.6k	2.0	3.0	3.0		T018	A
71	JAN2N342	1.0	1.0MΔ	8.3m	\$J	60	60	1.0	60m	1.0u	10	5.0m	9.0 Δ	2.0u	Zb	30	3.0	3.0		T011	A
72	JAN2N342A	1.0	1.0MΔ	8.3m	\$J	85	85	1.0	60m	1.0u	10	5.0m	9.0 Δ	2.0u	Zb	30	3.0	3.0		T011	A
73	JAN2N343	1.0	1.0MΔ	8.3m	\$J	60	60	1.0	60m	1.0u	10	5.0m	28 Δ	2.0u	Zb	30	3.0	3.0		T011	A
74#	DT13111	1.0	1.5M		\$A	60	40	12	1.5	2.0u	4.0u	200mΔ	60 Δ	8.0u	2.0 b	6.0	150p			T05	B
75#	DT13121	1.0	1.5M		\$A	100	60	12	1.5	2.0u	4.0u	200mΔ	60 Δ	8.0u	2.0 b	6.0	150p			T05	B
76#	DT13211	1.0	2.5M		\$A	60	40	12	1.5	2.0u	4.0u	200mΔ	120 Δ	8.0u	2.0 b	8.0	150p			T05	B
77#	DT13221	1.0	2.5M		\$A	100	60	12	1.5	2.0u	4.0u	200mΔ	120 Δ	8.0u	2.0 b	8.0	150p			T05	B
78#	BF622	1.0	60mΔ	8.0m	\$J	250	250	5.0	20m	100n	20u	25mΔ	50 Δ	1.6p	PE	X166	B				
79#	BFN20	1.0	60mΔ	8.0m	\$J	300	300	5.0	20m	100n	20u	25mΔ	50 Δ	1.6p	PE	X166	B				

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @ 25°C (W)	2   DERATE IN FREE AIR W/°C	M E A M X P	ABS MAX RATINGS @ 25°C				MAX. Icbo @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG s/a TO200 Ser.	# C O D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS			COMMON EMITTER							
										Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	BCY59C#	1.0	250M\$	2.2m	\$J	32	7.0	200m	10n\$	5.0φ	2.0mφ	330	30u	4.5k	2.0	3.5p	PLT	T018	A	
2#	BCY59D#	1.0	250M\$	2.2m	\$J	32	7.0	200m	10n\$	5.0φ	2.0mφ	520	50u	7.5k	3.0	3.5p	PLT	T018	A	
3#	BCY85EA†	1.0	250M\$	2.2m	\$J	60	7.0	100m	10n\$	5.0φ	2.0mφ	200	18u	2.7k	1.5	3.5p	PLT	T018	A	
4#	BCY85EB†	1.0	250M\$	2.2m	\$J	60	7.0	100m	10n\$	5.0φ	2.0mφ	280	24u	3.8k	2.0	3.5p	PLT	T018	A	
5#	BCY85EC†	1.0	250M\$	2.2m	\$J	60	7.0	100m	10n\$	5.0φ	2.0mφ	330	30u	4.5k	2.0	3.5p	PLT	T018	A	
6#	NP2218APT	1.0	250M\$Δ	8.0m	\$J	75	4.0	6.0	800m	10nφ	1.0mφ	30 Δ	15uφ	3.5kφ	5.0 φ	8.0pφ	φ	B32	Aφ	
7#	NP2218P†	1.0	250M\$Δ	8.0m	\$J	80	3.0	5.0	800m	10nφ	1.0mφ	25 fΔ				8.0pφ	Δ	B32	Aφ	
8#	NP2219P†	1.0	250M\$Δ	8.0m	\$J	80	3.0	5.0	800m	10nφ	1.0mφ	50 fΔ				8.0pφ	Δ	B32	Aφ	
9#	NP2221APT	1.0	250M\$Δ	8.0m	\$J	75	4.0	6.0	800m	10nφ	1.0mφ	30 Δ	15uφ	3.5kφ	5.0 φ	8.0pφ	Δ	B32	Aφ	
10#	NP2221P†	1.0	250M\$Δ	8.0m	\$J	80	3.0	5.0	800m	10nφ	1.0mφ	25 fΔ				8.0pφ	Δ	B32	Aφ	
11#	NP2222P†	1.0	250M\$Δ	8.0m	\$J	80	3.0	5.0	800m	10nφ	1.0mφ	50 fΔ				8.0pφ	Δ	B32	Aφ	
12#	NP2219APT	1.0	300M\$Δ	8.0m	\$J	75	4.0	6.0	800m	10nφ	1.0mφ	50 Δ	35uφ	8.0kφ	8.0kφ	8.0pφ	φ	B32	Aφ	
13#	NP2222APT	1.0	300M\$Δ	8.0m	\$J	75	4.0	6.0	800m	10nφ	1.0mφ	50 Δ	35uφ	8.0kφ	8.0kφ	8.0pφ	φ	B32	Aφ	
14#	2N3833	1.0	1.0G\$Δ	6.8m	\$S	25	15	1.0	100m	20n\$	12φ	30mφ	20 f#			1.7p\$		W5b	\$	
15#	2N3834	1.0	1.0G\$Δ	6.8m	\$S	25	15	1.0	100m	20n\$	12φ	30mφ	20 f#			1.7p\$		W5b	\$	
16#	2N3835	1.0	1.0G\$Δ	6.8m	\$S	25	15	1.0	100m	20n\$	12φ	30mφ	20 f#			1.7p\$		W5b	\$	
17#	MS12JE	1.0	2.0G\$	5.7mφ	\$S	30	20	1.0	200m	100nφ	5.0φ	10mφ	40 fΔ					W21	Rφ	
18#	MS12TE	1.0	2.0G\$	5.7mφ	\$S	30	20	1.0	200m	100nφ	5.0φ	10mφ	40 fΔ					W5b	Rφ	
19#	MS175CE	1.0	2.5G\$	5.7mφ	\$S	30	20	1.0	100m	100nφ	9.0φ	5.0mφ	20 fΔ			1.2p\$φ		W67	Rφ	
20#	MS175YE	1.0	2.5G\$	5.7mφ	\$S	30	20	1.0	100m	100nφ	9.0φ	5.0mφ	3.6			700f\$		W67	Rφ	
21#	MS173CE	1.0	3.0G\$	5.7mφ	\$S	30	20	1.0	50m	100nφ	10φ	3.0mφ	20 fΔ			800f\$φ		W67	Rφ	
22#	MS173H	1.0	3.0G\$	5.7mφ	\$S	30	20	1.0	50m	100nφ	10φ	3.0mφ	20 fΔ			800f\$φ		T072	Rφ	
23#	MS173YE	1.0	3.0G\$	5.7mφ	\$S	30	20	1.0	50m	100nφ	9.0φ	10mφ	2.5			500f\$		W67a	Rφ	
24#	BF018A	1.0	3.6G\$	8.0m	\$J	25	15	2.0	150m	10φ	100mφ	25 f#			1.2p†	PE	X166	Rφ		
25#	MS250YE	1.0	4.0G\$	5.7m	\$S	25	15	1.0	100m	100nφ	12φ	30mφ	10 fΔ			400f\$		W67a	Rφ	
26#	MS250CE	1.0	4.5G\$	5.7m	\$S	30	20	1.0	100m	1.0uφ	9.0φ	30mφ	10 f			400f\$		W67	Rφ	
27#	MS250TE	1.0	4.5G\$	5.7m	\$S	30	20	1.0	100m	1.0uφ	9.0φ	30mφ	10 f			400f\$		W5b	Rφ	
28#	NPCA42P	1.1	50M\$Δ	8.8m	\$J	300	300	6.0	500m	100nφ	10φ	30mφ	40 fΔ			3.0p\$φ		B32	A	
29#	NPCA43P	1.1	50M\$Δ	8.8m	\$J	200	200	6.0	500m	100nφ	10φ	30mφ	50 fΔ			4.0p\$φ		B32	A	
30#	BF415	1.2	70M\$	10m	\$J	250	250	5.0	200m	50nφ	15φ	25mφ	30 fΔ			4.5p\$φ	PE†	T0128	A	
31#	BF417	1.2	70M\$	10m	\$J	300	300	5.0	200m	50nφ	15φ	25mφ	30 fΔ			4.5p\$φ	PE†	T0128	B	
32#	2SC2278	1.2	80M\$	10m	\$J	300	300	5.0	100m	1.0uΔ	20φ	20mφ	200 fφ			2.0p	D	B11	A	
33#	2SC1554	1.2	4.0G\$	8.0mφ	\$J	30	15	3.0	120m	1.0uφ	5.0φ	50mφ	100 f			2.3pφ	EP	W70	A	
34#	2SC2073	1.5	4.0M\$	13m	\$J	150	150	5.0	1.5	10uφ	10φ	500mφ	75 f			35p	D	Y220b	V	
35#	2SC2068	1.5	95M\$	13m	\$J	300	300	5.0	50m	1.0uφ	10φ	500uφ	20 fΔ			4.0pφ	D			
36#	MS250KE	1.7 φ	4.5G\$	5.7m	\$S	30	20	1.0	100m	1.0uφ	9.0φ	30mφ	10 f			400f\$	φ	W44	A	
37#	BF715	2.0	60M\$Δ	16m	\$J	250	250	5.0	100m#	50n	15φ	5.0mφ	50 fΔ			1.8p†	PE	Y202a	B	
38#	BF717	2.0	60M\$Δ	16m	\$J	300	300	5.0	100m#	50n	15φ	5.0mφ	50 fΔ			1.8p†	PE	Y202a	B	
39#	BSW67†	5.0 φ	80M†	4.5m	\$J	120	120	1.5	100nφ	5.0φ	500mφ	30 Δ			35pφ	PE	T039	Aφ		
40#	BSW68†	5.0 φ	80M†	4.5m	\$J	150	150	1.5	100mφ	5.0φ	500mφ	30 Δ			35pφ	PE	T039	Aφ		
41#	BF657	7.0 φ	90M\$	5.7m	\$J	180	180	5.0	100m	50nφ	10φ	30mφ	25 fΔ			3.0p†	PE	T039	A	
42#	BF658	7.0 φ	90M\$	5.7m	\$J	250	250	5.0	100m	50nφ	10φ	30mφ	25 fΔ			3.0p†	PE	T039	A	
43#	BF659	7.0 φ	90M\$	5.7m	\$J	300	300	5.0	100m	50nφ	10φ	30mφ	25 fΔ			3.0p†	PE	T039	A	
44#	2SC614	7.5 φ	200M\$		\$J	80	4.0	1.5	1.0u	10φ	10φ	250mφ	80 f			12p	PE	T039	A	
45#	2SC615	7.5 φ	200M\$		\$J	30	4.0	1.5	1.0u	10φ	10φ	250mφ	80 f			12p	PE	T039	A	
46#	2SC1880†	12	.10	.10	\$J	150	100 φ	7.0	2.0	1.0u	5.0φ	.10 φ	70 f#*					Y205d	A	
47#	2SC1861†	12	.10	.10	\$J	300	250 φ	7.0	2.0	1.0u	5.0φ	.10 φ	60 f#*					Y205d	A	
48#	2SC1862†	12	.10	.10	\$J	450	400 φ	7.0	2.0	1.0u	5.0φ	.10 φ	40 f#*					Y205d	A	
49#	2SD596DV3	200	170M\$	1.8m	\$J			700m	100n	1.0φ	100mφ	270 f#†			13p	E	X156h	A		
50#	MPS9633	350	150M\$	2.8m	\$J	30	30	5.0	100m	100n	5.0φ	100uφ	220 f*			1.5p		T092	A	
51#	MPS9634	350	150M\$	2.8m	\$J	30	30	5.0	100m	100n	5.0φ	100uφ	220 f*			1.5p		T092	A	
52#	BSRT3R#	425	250M\$	2.8m	\$J	80	30	5.0	800m	30n	10φ	1.0mφ	50 f	25uΔ	.25kΔ	4.0 Δ	8.0p	PE	X156a	A
53#	BEL100N	800M			J	60	50	7.0	1.0		1.0	150	50					N	T039	Aφ



# 6. SILICON FIELD EFFECT TRANSISTORS - P CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp		ABS. MAX. RATINGS @ 25°C		MAX. Id		MAX. Icss @ Vgs=0 & Vds=Vp		MAX. Icss @ Vgs=Vp & Vds=Vp		TEST COND		COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)	IN FREE AIR W/°C	MAX. TEMP (°C)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
			Id=0 (V)	Vds (V)	V (V)	Vgss (V)	Id (A)	Ig (A)	Vgs @ Vds=Vp (A)	Icss @ Vgs=Vp (A)	Vgs (V)	Vds (V)	gts (mhos)	Yos (mhos)									
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX									
1	VP0104N1		-3Δ	-40#	-40#	-1	-10u	100n	-25	75	150 Δ	5	50p#	1.0	150S	MΔ	703	DE					
2	VP0104N6		-3	-40#	-40#	-1	-10u	100n	-25	75	150 Δ	5	50p#	1.0	150S	MΔ	S31	DE					
3	VP0106N1		-3Δ	-60#	-60#	-1	-10u	100n	-25	75	150 Δ	6	50p#	1.0	150S	MΔ	T03	DE					
4	VP0108N6		-3	-80#	-80#	-1	-10u	100n	-25	75	150 Δ	6	50p#	1.0	150S	MΔ	S31	DE					
5	VP0108N1		-3Δ	-80#	-80#	-1	-10u	100n	-25	75	150 Δ	7	50p#	1.0	150S	MΔ	T03	DE					
6	VP0108N6		-3	-80#	-80#	-1	-10u	100n	-25	75	150 Δ	7	50p#	1.0	150S	MΔ	S31	DE					
7	VP0109N1		-3Δ	-90#	-90#	-1	-10u	100n	-25	75	150 Δ	8	50p#	1.0	150S	MΔ	T03	DE					
8	VP0109N6		-3	-90#	-90#	-1	-10u	100n	-25	75	150 Δ	8	50p#	1.0	150S	MΔ	S31	DE					
9	2N3573	6.0m	2.0	10	25	1.0m	1.0m	1.0m	0.0	10	1.0m	3.0m	4.0u	6.0p#	2.0m	200S		200S	∅	T072	DG		
10	2N3698	7.5m	1.1	20	30	.25m	50m	25mΔ	1.0n	0.0	20	.25m	.75m	3.0u	5.0p#	2.0m	200S		200S	∅	T072	DG	
11	2N3277	12m	5.0	10	25	.50m	10m	10m	4.0n	0.0	10	1.0m	2.0u	5.0p#	2.0m	200S		200S	∅	T033	DG		
12	2N3574	18m	2.0	10	25	1.0m	1.0m	380u	600p	0.0	10	200u	600u	10u	6.0p#	2.0m	200S		200S	∅	T072	DG	
13	2N3328	20m	6.0	10	20	1.0m	1.0m	1.0m	0.0	10	1.0m	1.0m	4p#	2.0m	200S		200S		200S	∅	T072	DG	
14	2N3333∅	20m	1.6	10	20	1.0m	1.0m	1.0m	0.0	10	1.0m	1.0m	30p#	2.0m	200S		200S		200S		T089	PB	
15	2N3334∅	20m	1.6	10	20	1.0m	1.0m	1.0m	0.0	10	1.0m	1.0m	30p#	2.0m	200S		200S		200S		T089	PB	
16	2N3335∅	20m	1.6	10	20	1.0m	1.0m	1.0m	0.0	10	1.0m	1.0m	30p#	2.0m	200S		200S		200S		T089	PV	
17	2N3336∅	20m	1.6	10	20	1.0m	1.0m	1.0m	0.0	10	1.0m	1.0m	30p#	2.0m	200S		200S		200S		T089	PV	
18	2N3278	22m	8.0	10	25	.90m	1.0m	1.0m	4.0n	0.0	10	1.5m	10u	100k	4.5p#	2.0m	200S		200S		T033	DG	
19	2N3575	40m	4.0	10	25	1.0m	1.0m	1.0m	8.0n	0.0	10	.30m	.90m	20u	5.0p#	2.0m	200S		200S		T072	DG	
20	2N3698	45m	3.2	20	30	1.5m	50m	1.5mΔ	1.0n	0.0	20	.75m	1.2m	15u	5.0p#	2.0m	200S		200S		T072	DG	
21	2N3113	50m	4.0	5.0	20	1.0m	10m	175u	50p	0.0	5.0	50u	115u	120u	2.0p#	330u	200S		200S		W2a	DD	
22#	2SK42	50m	3.0	4.0	10	10Δ	10m	5.0m	100u	0.0	4.0	3.5m	5.5mΔ		4.8p#	3.3m	85J	#	PE#	X153	DE		
23	UC420	75m	2.5	20	30Δ	10m	10m	2.5mΔ	100p	0.0	20	1.5m	2.0m		200J	8.0p#	200J	#	PE#	T072	DG		
24#	uPA33A	100m	5.5Δ	10*	30Δ	20m	20m	10p	10p	0.0	10	1.0m	2.0mΔ		20p#	2.0m	75	*	PE#	T099	PV		
25	2N3379	150m	5.0	5.0	30	100m	50m	6mΔ	3.0n	0.0	10	1.5m	2.3m		2.0p#	1.0m	200S		200S		W2	DA	
26	2N3385	150m	5.0	5.0	30	100m	50m	30m*	15n	0.0	10	7.5m	13m		5.0p#	1.0m	200S		200S		W2	DA	
27#	2SJ39	150m	6.0	10	50	20m	10m	4.0m*	1.0n	0.0	10	1.5m		10u	25p		125J	#	∅	B34	RC		
28	UC410	180m	4.0	20	30Δ	30m	100p	6.0mΔ	100p	1.0	20	2.2m	2.5m	25u	500	8.0p#	200J	#	PE#	T072	DG		
29	2N3882	200m	3.0Δ	15*	30	20	30m	25m	100p	0.0	15	1.0m	2.5m	75u	3.0p#	2.0m	200S		200S		T072	DB	
30	2N4342	200m	5.5	10Δ	25Δ	25Δ	50m	12mΔ	10n	0.0	10	2.0m	6.0m	75u	700	20p#	125J	#	∅	R124b	DB		
31	2N4343	200m	10	10Δ	25Δ	25Δ	50m	30mΔ	10n	0.0	10	4.0m	8.0m	100u	350	20p#	125J	#	∅	R124b	DB		
32	2N4360	200m	10	10Δ	20Δ	20Δ	50m	30mΔ	10n	0.0	10	2.0m	8.0m	100u	700	20p#	125J	#	∅	R124b	DB		
33	2N5033	200m	2.5	10Δ	20Δ	20Δ	50m	3.5mΔ	10n	0.0	10	1.0m	5.0m	20u	1.3kt	25p#	2.0m	125J	#	∅	R124	DB	
34	2N5285	200m	3.0	15	60	60	20m	10m	1.0m	2.0n	0.0	15	.90m	2.7m	75u	7.0p#	1.3m	200S		200S		T072	DH
35	2N5286	200m	3.0	15	60	60	20m	10m	1.8m	2.0n	0.0	15	1.0m	3.0m	75u	7.0p#	1.3m	200S		200S		T072	DH
36	2N5287	200m	6.0	15	60	60	20m	10m	3.0m	2.0n	0.0	15	1.5m	3.5m	75u	7.0p#	1.3m	200S		200S		T072	DH
37	2N5288	200m	6.0	15	60	60	20m	10m	5.0m	2.0n	0.0	15	2.0m	4.0m	75u	7.0p#	1.3m	200S		200S		T072	DH
38	2N5289	200m	8.0	15	60	60	20m	10m	8.0m	2.0n	0.0	15	2.2m	4.5m	75u	7.0p#	1.3m	200S		200S		T072	DH
39	2N5270	200m	8.0	15	60	60Δ	20m	10m	14mΔ	2.0n	0.0	15	2.5m	5.0m	75u	7.0p#	1.3m	200S		200S		T072	DG
40	2N5797	200m	4.0	15	40	40	10m	100uΔ	3.0n	0.0	15	60m	225m	1.0u	5.0p#	2.0m	150S	#	#	T092	DD		
41	2N5798	200m	6.0	15	40	40	10m	400uΔ	3.0n	0.0	15	100m	400m	2.5u	5.0p#	2.0m	150S	#	#	T092	DD		
42	2N5799	200m	8.0	15	40	40	10m	1.0mΔ	3.0n	0.0	15	160m	500m	5.0u	5.0p#	2.0m	150S	#	#	T092	DD		
43	2N5800	200m	9.0	15	40	40	10m	2.0mΔ	3.0n	0.0	15	250m	700m	10u	5.0p#	2.0m	150S	#	#	T092	DD		
44#	2SJ84	200m		15*		20m	10m	12m	10u	10	10	9.0 Δ		22 *			125S	#	#	X156	DD		
45#	2SJ90	200m	2.0	10	30*	10m	10m	20m	10n	10	10	8.0m	22mΔ		95p#	2.0m	125J	#	#	B71	RD		
46	HEPF1036-RT	200m	4.0Δ	10*	40	40	20m	7.0m	2.0n	100p		1.0m		200	5.0p#	1.3m	175J	#	#	T072	DG		
47	MFE3003	200m	3.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	900u	2.7m	75u	7.0p#	1.3m	175J	#	#	T072	DW		
48	MFE4007	200m	3.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	1.0m	3.0m	75u	7.0p#	1.3m	175J	#	#	T072	DR		
49	MFE4008	200m	3.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	1.0m	3.0m	75u	7.0p#	1.3m	175J	#	#	T072	DR		
50	MFE4009	200m	6.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	1.5m	3.5m	75u	7.0p#	1.3m	175J	#	#	T072	DR		
51	MFE4010	200m	6.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	2.0m	4.0m	75u	7.0p#	1.3m	175J	#	#	T072	DR		
52	MFE4011	200m	8.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	2.2m	4.5m	75u	7.0p#	1.3m	175J	#	#	T072	DR		
53	MFE4012	200m	8.0	15Δ	40	40	20m	1.0m	2.0n	0.0	15	2.5m	5.0m	75u	7.0p#	1.3m	175J	#	#	T072	DR		
54#	3SJ11A	225m	3.5	10*	30	40	50m	10nΔ	10p	1.0	10	500u	4.0m	350u	500	8.0p#	3.0m	150S	PL#	PE#	T072	DR	
55	KE5460	225m	6.0	15Δ	40	40	10m	5.0m	5.0n	0.0	15	1.0m	4.0m	75u	9.0p#	2.4m	125J	#	#	T0106	DB		
56	2N4353†	250m	5.0Δ	10*	30	30	100m	10m	5.0m	0.0	10	1.0m	4.0m	350u	12p#	2.0m	125S	#	#	T072	DB		
57	2N5508∅	250m	4.0	10	30	30	200u	7.0m	.25n	0.0	10	1.0m	3.5m	80u	18p#	2.0m	150S	#	#	T071	DA		
58	2N5510∅	250m	4.0	10	30	30	200u	5.0m	.25n	0.0	10	.50m	3.0m	60u	18p#	2.4m	150S	#	#	T071	DA		
59#	2SJ43	250m			50Δ	20m		12m		0.0	10	3					125S	#	#	T092	DA		
60	2N2608	300m	4.0	5.0	30	30		5.0m	1.0n	0.0	5.0	.11m			6.0p#	2.0m	200S		200S		T018	DA	
61	JAN2N2606	300m	4.0	5.0	30	30		500u	750p	0.0	5.0	110u	600u		6.0p#	1.7m	200S	#	#	T018	DA		
62	2N2607	300m	4.0	5.0	30	30		1.5m	3.0n	0.0	5.0	.33m			10p#	2.0m	200S		200S		T018	DA	
63	JAN2N2607	300m	4.0	5.0	30	30		1.5m	2.2n	0.0	5.0	330u	1.0m		10p#	1.7m	200S	#	#	T018	DA		
64	2N2608	300m	4.0	5.0	30	30		4.5m	10n	0.0	5.0	1.0m			17p#	2.0m	200S		200S		T018	DA	
65	JAN2N2608	300m	4.0	5.0	30	30		4.5m	7.5n	0.0	5.0	1.0m	2.5m		17p#	1.7m	200S	#	#	T018	DA		
66	2N2609	300m	4.0	5.0	30	30		10m	30n	0.0	5.0	2.5m			30p#	2.0m	200S		200S		T018	DA	
67	JAN2N2609																						

# 6. SILICON FIELD EFFECT TRANSISTORS - P CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	2 TYPE No.	1 MAX. DEVICE DISS @25°C (W)	MAX. ABS MAX RATINGS @25°C				MAX. Id		MAX. Vgs @ Vds=0		MAX. Vgs @ Vds=0		PARAMETERS @25°C						DERATE		STRUC-TURE	DWG # Y200 s/a	L C E O A D E
			Vp	Vds	Vds	Vgs	Id	Ig	Vgs	Vgs	TEST COND		COMMON SOURCE		r(on)	Cis	FREE AIR W/C	MAX TEMP (°C)					
											Vds	Vgs	MIN	MAX					mhos	(Ω)			
1	3N157	300m	3.2Δ	15*	35	50	30m	1.0n	10p	2.0∅	15	1.0m	4.0m	60u%	5.0p#	2.0m	175J	*	T072	DR			
2	3N157A	300m	3.2Δ	15*	50	50	30m	250p	10p	2.0∅	15	1.0m	4.0m	60u%	5.0p#	2.0m	175J	*	T072	DR			
3	3N158	300m	5.0Δ	15*	35	50	30m	1.0n	10p	2.0∅	15	1.0m	4.0m	60u%	5.0p#	2.0m	175J	*	T072	DR			
4	3N158A	300m	5.0Δ	15*	50	50	30m	250p	10p	2.0∅	15	1.0m	4.0m	60u%	5.0p#	2.0m	175J	*	T072	DR			
5	3N165▼	300m	5.0Δ	15*	40	40	50m	30m	10p	1.0∅	15	1.5m	3.0m	300u	3.0p#	2.4m	200S	Δ*	T099	PU			
6	3N166†	300m	5.0Δ	15*	40	40	50m	30m	10p	1.0∅	15	1.5m	3.0m	300u	3.0p#	2.4m	200S	*	T099	PU			
7	3N182†	300m	5.0Δ	10*	30	30Δ	100m	100u	2.5n	10p	10∅	1.5m	4.0m	300u	60%	2.5p#	2.4m	200S	*∅	T072	DM		
8	3N188▼	300m	5.0Δ	15*	40	40Δ	50m	1.0m	200p	10p	10∅	1.5m	4.0m	300u	300%	4.5p#	2.4m	200S	*∅	T099	PJ		
9	3N189*	300m	5.0Δ	15*	40	40Δ	50m	1.0m	200p	10p	10∅	1.5m	4.0m	300u	300%	4.5p#	2.4m	200S	*∅	T099	PJ		
10	3N190▼	300m	5.0Δ	15*	40	40	50m	200p	10p	10∅	15	1.5m	4.0m	300u	300%	4.5p#	2.4m	200S	Δ*	T099	PJ		
11	3N191*	300m	5.0Δ	15*	40	40	50m	200p	10p	10∅	15	1.5m	4.0m	300u	300%	4.5p#	2.4m	200S	Δ*	T099	PJ		
12	3N208	300m	6.0Δ	15*	25	25Δ	100m	10m	10n	10∅	15	1.5m	4.0m	300u	400	4.0p#	2.0m	200S	*∅	T076	PJ		
13	FT3909	300m	8.0†	10	20	20	10m	15m	10n	0.0	10	1.0m	5.0m	100u	75	32p#	2.0m	125J	DPL	T018	DA∅		
14	IT100	300m	4.5	15Δ	35	35	50m	10m	200p	0.0	15	8.0m			75	35p#	1.7m	200J	PE#	T018	DA		
15	IT101	300m	10	15Δ	35	35	50m	20m	200p	0.0	15	8.0m			60	35p#	1.7m	200J	PE#	T018	DA		
16	MFE823	300m	6.0	*	25	10	30m	20n	1.0p	2.0∅	10	1.0m			75 †	45p	1.7m	200J	*	T018	EP		
17	P1086RR†	300m	10†	15	30	30	10m	10m	2.0n						150 †	45p	150S			T092	DF		
18	P1087RR†	300m	5.0†	15	30	30	10m	10m	5m						150 †	45p	150S			T092	DF		
19	TP5114	300m	10†	15	30	30	100m	10m	90mΔ	2.0n					75	45p	1.7m	200S	∅	T018	DA∅		
20	TP5115	300m	6.0†	15	30	30	100m	10m	60mΔ	2.0n					100	45p	1.7m	200S	∅	T018	DA∅		
21	TP5116	300m	4.0†	15	30	30	100m	10m	25mΔ	2.0n					150	45p	1.7m	200S	∅	T018	DA∅		
22	U110	300m	6.0	10	20	20	30m	1.0m	4.0n	0.0	10	110u			6.0p#	2.0m	150S			T018	DA∅		
23	U112	300m	6.0	10	20	20	30m	9.0m	1.0n	0.0	10	1.0m			17p#	2.0m	150S			T018	DA∅		
24	U146	300m	6.0	10	20	20	30m	25u#	1.0n	0.0	10	60u			6.0p#	2.0m	150S			T018	DA∅		
25	U147	300m	6.0	10	20	20	30m	85u#	2.0n	0.0	10	180u			10p#	2.0m	150S			T018	DA∅		
26	U148	300m	6.0	10	20	20	30m	200u#	6.0n	0.0	10	540u			17p#	2.0m	150S			T018	DA∅		
27	U149	300m	6.0	10	20	20	30m	440u#	20.0n	0.0	10	1.4m			30p#	2.0m	150S			T018	DA∅		
28	U300	300m	10	15	40	40	50m	90m	100p	15∅	15	8.0m	12m		60%	20p#	1.7m	150S	#	T018	DA∅		
29	U301	300m	6.0	15	40	40	50m	60m	100p	7.0∅	15	7.0m	11m		100%	20p#	1.7m	150S	#	T018	DA∅		
30	UC310	300m	3.0	20	30	30	50m	1.5m	100p	0.0	20	750u			1.6kt	5.0p#	200J	PL	T072	DA∅			
31	UC401	300m	8.0	20	25	25	10m	8.0m	100p	0.0	20	250 †	1.0m	10m	1.0kt	8.0p#	1.7m	200S	PE∅	T072	DG		
32	UC805	300m	8.0	20	25	25	10m	25m#	1.0n	0.0	20	1.0m	10m		1.0kt	12p#			PE∅	T072	DG		
33	UC814	300m	8.0	20	25	25	10m	15m	2.0n	0.0	20	8.0m	5.0m		1.3kt	16p#			PL∅	T072	DG		
34	UC851	300m	6.0	15	20	20	10m	9.0m	4.0n	0.0	15	1.0m			17p#	2.0m	200	PL	T018	DA			
35	UC853	300m	6.0	20	25	25	10m	70u#	4.0p	0.0	20	180u			10p	17p#	2.0m	200	PL	T018	DA		
36	UC854	300m	6.0	20	25	25	10m	200u#	15n	0.0	20	540u				17p#	2.0m	200	PL	T018	DA		
37	UC855	300m	6.0	20	25	25	10m	440u#	25n	0.0	20	1.4m				25p#	2.0m	200	PL∅	T018	DA		
38	UC2766*	300m	5.0Δ	15*	30	30Δ	50m	10n	10p	15	15	1.0m	4.0m	300u	300%	3.5p#	2.4m	150J	PL∅	T099	PU		
39	VCR3P	300m	7.0†	10	15	15	10m	10m	20n						200%	6.0p#	2.0m	150S	#	T072	DB∅		
40	VCR5P	300m	7.0†	10	15	15	10m	10m	10n						900%	3.0p#	2.0m	150S	#	T072	DB∅		
41	VP0104N3	300m	-3Δ		40#	-1		-10u	100n		-25	75	150 Δ		5	50p#*	8m	150S	MΔ	T092	DC		
42	VP0106N3	300m	-3Δ		60#	-1		-10u	100n		-25	75	150 Δ		6	50p#*	8m	150S	MΔ	T092	DC		
43	VP0108N3	300m	-3Δ		80#	-1		-10u	100n		-25	75	150 Δ		7	50p#*	8m	150S	MΔ	T092	DC		
44	VP0109N3	300m	-3Δ		90#	-1		-10u	100n		-25	75	150 Δ		8	50p#*	8m	150S	MΔ	T092	DC		
45	2N5460	310m	6.0†	15	40	40	50m	5.0mΔ	5.0n	0.0	15	1.0m	4.0m	75u	7p#	2.8m	150S	∅#	T092	DB			
46	2N5461	310m	7.5†	15	40	40	50m	9.0mΔ	5.0n	0.0	15	1.5m	5.0m	75u	7p#	2.8m	150S	∅#	T092	DB			
47	2N5462	310m	9.0†	15	40	40	50m	16mΔ	5.0n	0.0	15	2.0m	6.0m	75u	7p#	2.8m	150S	∅#	T092	DB			
48	2N5463	310m	6.0†	15	60	60	50m	5.0mΔ	5.0n	0.0	15	1.0m	4.0m	75u	7p#	2.8m	150S	∅#	T092	DB			
49	2N5464	310m	7.5†	15	60	60	50m	9.0mΔ	5.0n	0.0	15	1.5m	5.0m	75u	7p#	2.8m	150S	∅#	T092	DB			
50	2N5465	310m	9.0†	15	60	60	50m	16mΔ	5.0n	0.0	15	2.0m	6.0m	75u	7p#	2.8m	150S	∅#	T092	DB			
51	HEPF1035-RT	310m	8.0†	15Δ	40	40	20m	14m	10n		15	1.0m				7.0p#	2.8m	135J	#	T092	DB		
52	MPF161	310m	6.0Δ	15*	25	25	20m	14m	10n	0.0	15	800u%	6.0m%	75u%	1.0k#	7.0p#	2.8m	135J	#†	T092	DB		
53	2N3609∅	350m	6.0Δ	15*	25	25	20m	3.2m	20p						1.0k#	15m	125S			T077	PT		
54	2N4065†	350m	6.0Δ	15*	30	25	20m	12m	10n	15	15	400u	100u%	100u%	1.5k#	4.5p#	2.3m	175J	∅	T072	DM		
55	2N4120†	350m	6.0Δ	15*	30	25	20m	12m	10n	15	15	700u	100u%	100u%	1.0k#	4.5p#	2.3m	175J	∅	T072	DM		
56	E1741	350m	10	15	30	30	50m	100m%	1.0n						85%	40p#*	3.5m	125A	#∅	R187	DA		
57	E175†	350m	6.0	15	30	30	50m	60m%	1.0n						125%	40p#*	3.5m	125A	#∅	R187	DA		
58	E176†	350m	4.0	15	30	30	50m	25m%	1.0n						250%	40p#*	3.5m	125A	#∅	R187	DA		
59	E177†	350m	2.2	15	30	30	50m	20m%	1.0n						300%	40p#*	3.5m	125A	#∅	T0106	DA		
60	E270	350m	2.0†	15	30	30	50m	15m%	200p	0.0	15	6.0m†	15m†		20*	3.5m	125A	#†	R187	DA			
61	E271	350m	4.5†	15	30	30	50m	50m%	200p</														



# 6. SILICON FIELD EFFECT TRANSISTORS - P CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	2 TYPE No.	1 MAX. DEVICE DISS @ 25°C (W)	MAX. Vp & Vds		ABS MAX RATINGS @ 25°C				MAX. Idss @ Vgs=0 & Vgs=Vp		MAX. Igss @ Vgs=0 & Vgs=Vp		TEST COND		PARAMETERS @ 25°C			DERATE		STRUCTURE	DWG # Y200 s/a TO200 Ser.	# C O A D E
			Id=0 (V)	Vds (V)	BVdss (V)	BVgss (V)	Id (A)	Ig (A)	Idss (A)	Igss (A)	Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)	r(DS) on (Ω)	MAX. Cis (F)	IN FREE AIR W/C (°C)	MAX TEMP (°C)				
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX				
1#	2SJ82	100	.80Δ	10	140†	8.0	8.0			1.0u	8.0	10	1.0	1.5 Δ				1.5n#	800m	150J	B41	DF5
2#	BUZ15	100	2.7	50	50	40	100n	1.0m	100n	100n	6.0□	25	5.5				30m	150	150	TO3	DA	
3#	BUZ24	100	2.7	100	100	28	100n	1.0m	100n	100n	2.3□	25	4.0				60m	150	150	TO3	DA	
4#	BUZ84	100	2.7	800	800	4.7	100n	1.0m	100n	100n		25	4.0				2.0	800m	150	TO3	DA	
5	SML2163	100	1.5†	10	150†	15												3.0n	800p	150J	MOSA	DF
6#	2SJ55	125	1.5†	10	180†	14						5.0	5.0					1.2n#	1.0	150S	TO3	DF
7#	2SJ58	125	1.5†	10	200†	14						5.0	5.0					1.2n#	1.0	150S	TO3	DF
8#	2SJ58H	125 Δ	1.5†	10	200	20						5.0	5.0					1.0n#*	1.0	150S	TO3	C
9	VP1204N1	125	2.4Δ	40*	40	16			100u	100n		25	10	0.7 □	1.4 □		0.4	650p	150A	M	TO3	DE
10	VP1208N1	125	2.4Δ	80*	80	16			100u	100n		25	4.0	4.5 Δ			0.4	650p	150A	M	TO3	DE
11	VP1208N1	125	2.4Δ	80*	80	16			100u	100		25	4.0	4.5 Δ			0.4	650p	150A	M	TO3	DE
12	VP1209N1	125	2.4Δ	90*	90	16			100u	100		25	4.0	4.5 Δ			0.4	650p	150A	M	TO3	DE







# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @ 25°C (W)	MAX. Vp		ABS MAX RATINGS @ 25°C		MAX. Id		MAX. Idss @ Vgs=0 & Vds=Vp		MAX. Igss @ Vgs=Vp & Vds=0		TEST COND		COMMON SOURCE			r(DS) on (Ω)	MAX. Cis (F)	DERATE IN FREE AIR W/°C		STRUC-TURE	DWG # Y200 S/A TO200 Ser.	# L C O D E
			ld=0 (V)	& Vds (V)	Vdss (V)	Vgss (V)	ld (A)	Ig (A)	Idss @ Vgs=0 (A)	Igss @ Vgs=Vp (A)	Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)	MIN	MAX	FREE AIR W/°C			MAX TEMP (°C)				
1#	2SK242	150m	2.5f	5.0	20Δ	20Δ	10m	12m	10n	5.0	5.0	8.0m	30	30	20mΔ	5.0p*	4.0p*	125J	D	S27	DA			
2#	2SK283	150m	.80f	30	80Δ	80Δ	10m	17m	1.0n	30	30	20mΔ	12p*	12p*	20mΔ	5.0p*	125J	D	S27	DA				
3#	2SK303	150m	4.0f	10	30Δ	30Δ	10m	12m	1.0n	10	10	6.0mΔ	5.0p*	5.0p*	6.0mΔ	5.0p*	125J	D	S27	DA				
4#	2SK304	150m	4.0f	10	30Δ	30Δ	10m	12m	1.0n	10	10	6.0mΔ	5.0p*	5.0p*	6.0mΔ	5.0p*	125J	D	X192	DC				
5#	2SK322WE	150m#	3f	5	15Δ	15Δ	50m	5m	12m	10n	0	5	25mΔ	45mΔ	45mΔ	1.5m	1.5m	125S	#	S27	DE			
6#	2SK322WF	150m#	3f	5	15Δ	15Δ	50m	5m	12m	10n	0	5	25mΔ	45mΔ	45mΔ	1.5m	1.5m	125S	#	S27	DE			
7#	2SK322WG	150m#	3f	5	15Δ	15Δ	50m	5m	32m	10n	0	5	25mΔ	45mΔ	45mΔ	1.5m	1.5m	125S	#	S27	DF			
8#	2SK322WH	150m#	3f	5	15Δ	15Δ	50m	5m	50m	10n	0	5	25mΔ	45mΔ	45mΔ	1.5m	1.5m	125S	#	S27	DF			
9#	2SK323KB	150m#	1.5f	10	40	40	30m	10m	3.2m	10n	30	10	8mΔ	12mΔ	12mΔ	1.2m	1.2m	125S	#	S27	DE			
10#	2SK323KC	150m#	1.5f	10	40	40	30m	10m	5m	10n	30	10	8mΔ	12mΔ	12mΔ	1.2m	1.2m	125S	#	S27	DE			
11#	2SK323KD	150m#	1.5f	10	40	40	30m	10m	8m	10n	30	10	8mΔ	12mΔ	12mΔ	1.2m	1.2m	125S	#	S27	DE			
12#	2SK323KE	150m#	1.5f	10	40	40	30m	10m	12m	10n	30	10	8mΔ	12mΔ	12mΔ	1.2m	1.2m	125S	#	S27	DE			
13	3N138	150m†		Δ	35	10	50m		10p							350%	5.0p#	150S	Δ*	T072	DW			
14	3N139	150m	6.0†	15Δ	35	10	50m		25m%	1.0n							7.0p#	150S		T072	DW			
15#	3SK71	150m					10m	5.0m	500u								1.5m	125J	#	X191	Δ			
16#	BF900	150m	5.0†	15Δ	20	30Δ	50m	10m	30mΔ	100n	4.0	15	8.0m%				4.0p#*	1.5m	150S	*§	W97	ET		
17#	BF905	150m	5.0†	15Δ	20	30Δ	50m	10m	25m%	100n	4.0	15	6.0m%				4.0p#*	1.5m	150S	*§	W97	ET		
18#	BFW12	150m	2.5	15	30	30	10m	5.0m	5.0m	100p	0.0	15	2.0m			30u%	1.6m	200J	*§	T072	DN			
19#	BFW13	150m	1.2	15	30	30	10m	5.0m	1.5m	100n	0.0	15	1.0m			10u%	1.6m	200J	∅	T072	DN			
20#	PL1091	150m					50		.10n	0.0	15	1.5m%	4.5m%				6.0p#	175S	PE	W7	E			
21#	PL1092	150m					50		.10n	0.0	15	3.0m%	6.5m%				6.0p#	175S	PE	W7	E			
22#	PL1093	150m					30		.50n	0.0	15	3.5m%	6.5m%				6.0p#	175S	PE	W7	E			
23#	PL1094	150m					50		.10n	0.0	15	3.5m%	6.5m%			250kt	6.0p#	175S	PE	W7	E			
24	2N4417	175m	6.0†	15Δ	30	30	10m	15m	10n	0.0	15	4.5m	725m	50u			3.5p#	200S		W3	DB			
25	UC155W	175m	10	20	30Δ	30	30m	10m	30m	1.0n	0.0	10	3.0m	1.0p	0.0	10	90m	1.8m	25u%	1.1m	200S	PE	W3	DB
26	2N3796	200m	4.0†	10	25	10	20m	10m	3.0m	1.0p	0.0	10	90m	1.8m	25u%	1.1m	200S		8.0p#	1.1m	200S		T018	DA
27	2N3797	200m	7.0†	10	20	10	20m	10m	6.0m	1.0p	0.0	10	1.5m	3.0m	60u%			8.0p#	1.1m	200S		T018	DA	
28	2N5163	200m	8.0†	15Δ	25	25	50m	40m	10n	0.0	15	2.0m	9.0m	200u%	50k%		20p#	2.0m	125J	∅	T0106	DB		
29	2N5716	200m	3.0†	15	40Δ	40Δ			250uΔ%	1.0n	0.0	15	200u	1.0m	25u		5.0p#	2.0m	150S	#	T092	DD		
30	2N5717	200m	5.0†	15	40Δ	40Δ			1.0mΔ%	1.0n	0.0	15	400u	1.6m	25u		5.0p#	2.0m	150S	#	T092	DD		
31	2N5718	200m	8.0†	15	40Δ	40Δ			4.0mΔ%	1.0n	0.0	15	500u	2.0m	25u		5.0p#	2.0m	150S	#	T092	DD		
32#	2SK18	200m	3.5	10	4.0Δ	4.0Δ	10m	2.8m	100p	0.0	10	800u	3.0m				6.0p	600u	150J	#		DD		
33#	2SK18A	200m	3.5	10	4.0Δ	4.0Δ	10m	2.8m	100p	0.0	10	800u	3.0m				6.0p	600u	150J	#		DD		
34#	2SK19	200m	3.0%	10	18Δ	18Δ	10m	24m	10n	0.0	10	7.0mΔ					2.0m	125J	PE	∅	T092	DD		
35#	2SK19BL	200m	3.0%	10	18	18	10m	24mΔ	10n	0.0	10	7.0mΔ					2.0m	125J	PE	∅	R67a	DD		
36#	2SK19GR	200m	3.0%	10	18	18	10m	14mΔ	10n	0.0	10	7.0mΔ					2.0m	125J	PE	∅	R67a	DD		
37#	2SK19Y	200m	3.0%	10	18	18	10m	7.0mΔ	10n	0.0	10	7.0mΔ					2.0m	125J	PE	∅	R67a	DD		
38#	2SK35	200m	1.6	10	20Δ	20m	10m	16mΔ	1.0n	0.0	10	6.3m	15m	200u			15p	150S	E#	∅	X153	DA		
39#	2SK41	200m	1.4†	10	-18Δ	-18Δ	10m										3.5p#	125S						
40#	2SK61	200m	4.0	10	18Δ	18Δ	10m	10m	10n	0.0	10	9.0m					1.6m	150J	PE	Δ	T071	PJ		
41#	2SK72	200m	.50†	10	20Δ	20Δ	10m	6.5m	100p	0.0	10	1.5	6.5	45m			55p	2.0m	125S		B34	RJ		
42#	2SK111	200m	5.0†	10	30	30	50m	35m	1.0n	5.0	5.0	35m%					4.6p#*	2.0m	125J	#	R219	DD		
43#	2SK120	200m	300#	4.0	15†	15Δ	10m	5.0m	10n	0.0	4.0	3.5m	5.5mΔ				4.6p#*	2.0m	125J	#	B40	DD		
44#	2SK161	200m	4.0	10	18Δ	18Δ	10m	10m	10n	0.0	10	9.0mΔ					6.8p#*	2m	125J	#	T092	DE		
45#	2SK168D	200m#	3f	5	300Δ	20m	10m	8m	10n	0	5	8mΔ	10mΔ				6.8p#*	2m	125S	#	T092	DE		
46#	2SK168F	200m#	3f	5	30Δ	20m	10m	20m	10n	0	5	8mΔ	10mΔ				6.8p#*	2m	125S	#	T092	DE		
47#	2SK184	200m	1.5	10	50	10m	10m	14m	1.0n	0.0	10	4.0m					13p*	2.0m	125J	#	B40	DC		
48#	2SK192	200m	1.2#	10	18Δ	18Δ	10m	24m	10n	0.0	10	7.0mΔ					2.0m	125J	#	∅	B40	DD		
49#	2SK212	200m	2.5†	5	20†	20m	10m	12m	10n	0	5						4.0p*	125	#		T092	DA		
50#	2SK241	200m	2.5	10	20†	30m	10m	14m	50n	0.0	10		10mΔ				3.0p#*	2.0m	125J	#	B40	DD		
51#	3SK22	200m	5.5	10	18Δ	10m	10m	24m	100n	0.0	10	7.0mΔ					4.5p#*	1.6m	150J	Δ	T072	DW		
52#	3SK28	200m	5.0	10	15	10m	10m	22m	20n	0.0	10	6.0m	12m				6.0p#	1.6m	150J	Δ	T072	DW		
53#	3SK38A	200m	3.0	6.0	20	12	10m	50n	25n								6.0p#	1.6m	150J	Δ	T072	DW		
54#	3SK74	200m	-3†	6.0	20†	25m	25m	-1u									6.0p#	2.0m	125J	M	XXXXX	ES		
55#	3SK80	200m#	3f	15	20†	8	50m	20m	20n	4	15	7mΔ					5p#*	2m	125S	M	W168	EA		
56#	3SK81	200m#	3f	15	20	35m	25m	50n	4	15	8mΔ						5p#*	2m	125S	M	W168	EA		
57#	3SK82	200m	1.7†	10	15†	8	33m	20m	20n	3	6	13mΔ					5.0p#	2.0m	125S	*	W168	EA		
58#	3SK83	200m#	1.7†	10	15	35m	20m	20n	3	6	13mΔ						5p#	2m	125S	M	W168	EA		
59#	3SK85	200m#	3f	15	20†	35m	32m	50n	4	15	10mΔ						3.3p#*	2m	125S	M	W168	EA		
60#	3SK87	200m	-2†	10	20†	25m	8.0m	20n									3.5p#	2.0m	125J	M	XXXXX	ES		
61#	3SK88	200m	-2†	10	20†	25m	6.0m	20n									2.5p#	2.0m	125J	M	XXXXX	ES		
62#	3SK95	200m		15†	10	35m						10m%					2.8p#*	2.0m	125S	*	W168	EA		
63#	3SK96	200m	2.0†	10	15†	8	35m	30m	100n	3	6	15m%					4.5p#*	2.0m	125S	*	W168	EA		
64#	3SK101	200m	2.5	15Δ	20†	9.0	30m	24m	50n	10†	15		20mΔ				4.3*	2.0m	125J	*	R242	EA		
65#	3SK102	200m	3.5	15Δ	20†	9.0	30m	24m	50n	10†	15	8.0m	20mΔ				5.0	2.0m	125J	*	R242	EA		
66#	3SK103	200m#	1†	10	15†	10	35m	10m	100n	3	6	10mΔ	15mΔ				2p#*	2m	125S	M	W168	EA		
67#	BF327	200m†	3.8	10	20	20	100m	10m	55m	10n	4.0	10	12	16 Δ			5.0p*	2.6m	150J		W120	EH		
68#	BF961	200m	4.0†	15Δ	20	30Δ	30m	10m	25m	100n	4.0	15	12				3.7p	1.6m	150S	†				
69#	BF961#	200m		20	25																			



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION (2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp		ABS MAX RATINGS @ 25°C		MAX. Id		MAX. I <sub>g</sub>		TEST COND		COMMON SOURCE		PARAMETERS @ 25°C		DERATE		STRUCTURE	DWG Y200 S/a TO200 Ser.	L C O A D E	
			Id @ 0	V <sub>d</sub>	V <sub>DSS</sub>	V <sub>GSS</sub>	Id	I <sub>g</sub>	I <sub>DSS</sub> @ V <sub>GS</sub> =0 & V <sub>DS</sub> =0	I <sub>GSS</sub> @ V <sub>GS</sub> =0 & V <sub>DS</sub> =0	V <sub>GS</sub>	V <sub>DS</sub>	g <sub>fs</sub>	Yos	r <sub>DS</sub>	MAX. Cis	IN FREE AIR W/°C	MAX TEMP (°C)				
			(V)	(V)	(V)	(V)	(A)	(A)	(A)	(A)	(V)	(V)	MIN	MAX	(mhos)	(Ω)	(F)					
1	1T502	250m1	4.0	20Δ	80	80			50m	7.0m	10p	0.0	20	1.0m	4.0m			7.0p#	3.8m	150A	R131j	PJ
2	1T503	250m1	4.0	20Δ	80	80			50m	7.0m	10p	0.0	20	1.0m	4.0m			7.0p#	3.8m	150A	R131j	PJ
3	KP307A	250m	3.1	10				25m	5m	9m	1.0n							5.0p*				
4	KP307B	250m	5.1	10				25m	5m	15m	1.0n							5.0p*				
5	KP307D	250m	6.1	10				25m	5m	24m	1.0n							5.0p*		85A		
6	KP307E	250m	2.5	10				25m	5m	5m	1.0n							5.0p*		85A		
7	KP307G	250m	6.1	10				25m	5m	24m	1.0n							5.0p*		85A		
8	KP307SZ	250m	7.1	10				25m	5m	25m	0.1n							5.0p*		85A		
9	KP307V	250m	5.1	10				25m	5m	15m	1.0n							5.0p*		85A		
10	MM14416	250m	6.1	15		30		10m	15m		10n	0	15	4.5mΔ	7.5mΔ	0		15p#	2.5m	125J	Wba	DD
11	uPA68H	250m	-2.1	10				10m	18m		-1n							5.0p#		175J	B69	RJ
12	uPA70A	250m	5.0	10				50m	1.5m		100p	5.0	10	1.0	2.0 Δ			5.0p#		175J	R120	PC
13	uPA71A	250m	5.0	10				50m	1.5m		100p	5.0	10	1.0	2.0 Δ			5.0p#		175J	R120	PC
14	UC257	250m	5.0	10		25		50m	4.0m		100p	5.0	10	5.0m	10m			5.0p#	7.7m	150S	T099	PF
15	UC220	250m1	2.5	20		50		50m	5.0mΔ		100p	0.0	20	3.0m				7.0p		200J	T072	PH
16	UC2147	250m	5.0	20	30	30		10m			20n	0.0	20	1.0m				6.0p#		200J	PL50	T071
17	2N3066	300m	9.5	30		50Δ		100m	4.0m		1.0n	0.0	30	400u	1.0m	50u		10p#	1.7m	200C		TO18
18	2N3066A	300m	9.5	30Δ		50Δ	4.0m	100m	4.0m		1.0n	0.0	30	400u	1.0m	50u		10p#	1.7m	200C		TO18
19	2N3067	300m	4.5	30		50Δ		100m	1.0m		1.0n	0.0	30	300u	1.0m	20u		10p#	1.7m	200C		TO18
20	2N3067A	300m	4.5	30Δ		50Δ	1.0m	100m	1.0m		1.0n	0.0	30	300u	1.0m	20u		10p#	1.7m	200C		TO18
21	2N3068	300m	2.2	30		50Δ		100m	250u		1.0n	0.0	30	200u	1.0m	5.0u		10p#	1.7m	200C		TO18
22	2N3068A	300m	2.2	30Δ		50Δ	250u	100m	250u		1.0n	0.0	30	200u	1.0m	5.0u		10p#	1.7m	200C		TO18
23	2N3365	300m	12	20		40Δ		10m	4.0m		5.0n	0.0	30	40m	2.0m	50u		15p#	2.4m	150C		TO18
24	2N3366	300m	6.5	20		40Δ		10m	1.0m		5.0n	0.0	30	25m	1.0m	20u		15p#	2.4m	150C		TO18
25	2N3367	300m	2.2	20		40Δ		10m	25m		5.0n	0.0	30	10m	1.0m	10u		15p#	2.4m	150C		TO18
26	2N3368	300m	12	20		40Δ		10m	12m		5.0n	0.0	30	1.0m	4.0m	80u		20p#	2.4m	150C		TO18
27	2N3369	300m	6.5	20		40Δ		10m	2.5m		5.0n	0.0	30	60m	2.0m	30u		20p#	2.4m	150C		TO18
28	2N3370	300m	3.2	20		40Δ		10m	60m		5.0n	0.0	30	30m	2.5m	15u		20p#	2.4m	150C		TO18
29	2N3436	300m	9.8	20		50Δ		10m	15m		5.0n	0.0	20	2.5m	1.0m	35u		18p#	1.7m	200C		TO18
30	2N3437	300m	4.8	20		50Δ		10m	4.0m		5.0n	0.0	20	1.5m	6.0m	20u		18p#	1.7m	200C		TO18
31	2N3438	300m	2.3	20		50Δ		10m	1.0m		5.0n	0.0	20	80m	4.5m	5.0u		18p#	1.7m	200C		TO18
32	2N3452	300m	9.8	20		50Δ		10m	4.0m		1.0n	0.0	30	2.0m	1.2m	15u		6.0p#	1.7m	200C		TO18
33	2N3453	300m	4.8	20		50Δ		10m	1.0m		1.0n	0.0	30	1.5m	9.0m	5.0u		6.0p#	1.7m	200C		TO18
34	2N3454	300m	2.3	20		50Δ		10m	25m		1.0n	0.0	30	10m	60m	3.0u		6.0p#	1.7m	200C		TO18
35	2N3455	300m	10	20		50Δ		10m	4.0m		0.4n	0.0	30	40m	1.2m	15u		5.0p#	1.7m	200C		TO18
36	2N3456	300m	4.8	20		50Δ		10m	1.0m		0.4n	0.0	30	30m	9.0m	5.0u		5.0p#	1.7m	200C		TO18
37	2N3457	300m	2.3	20		50Δ		10m	25m		0.4n	0.0	30	15m	80m	3.0u		5.0p#	1.7m	200C		TO18
38	2N3458	300m	8.0	20		50		10m	15m		250p	0.0	20	2.5m	1.0m			18p	1.7m	200S		TO18
39	2N3459	300m	4.0	20		50		10m	4.0m		250p	0.0	20	1.5m	6.0m			18p	1.7m	200S		TO18
40	2N3460	300m	2.0	20		50		10m	1.0m		250p	0.0	20	800u	4.5m			18p	1.7m	200S		TO18
41	2N3631	300m	6.0	10	20†			10m	10m		10p	0.0	10	1.4m	2.8m	120u%		7.5p	2.0m	200S		TO18
42	JAN2N3821	300m	4.0	15	50	50		10m	2.5m		100p	0.0	15	1.5m	4.5m†	10u*		6.0p#	2.0m	200S		TO18
43	JAN2N3822	300m	6.0	15	50	50		10m	10m		100p	0.0	15	3.0m	6.5m†	20u*		6.0p#	2.0m	200S		TO18
44	2N3823	300m	8.0	15Δ	30	30Δ		10m	20m		50n	0.0	15	3.5m	6.5m	200u*		6.0p#	2.0m	200S		TO18
45	JAN2N3823	300m	8.0	15	30	30		10m	20m		50n	0.0	15	3.5m	6.5m†	35u*		6.0p#	2.0m	200S		TO18
46	2N3824	300m		Δ	50	50Δ		10m			100p	0.0	15					6.0p#	2.0m	200S		TO18
47	2N3966†	300m		Δ	30	30Δ		10m	2.0m		100p	0.0	15					6.0p#	1.7m	200S		TO18
48	2N3967	300m	5.0†	20Δ	30	30		10m	10m		10n	0.0	20	1.6m	2.4m	35u%		5.0p#	1.7m	200S		TO18
49	2N3967A	300m	5.0†	20Δ	30	30		10m	10m		10n	0.0	20	1.6m	2.4m	35u%		5.0p#	1.7m	200S		TO18
50	2N3968	300m	3.0†	20Δ	30	30		10m	5.0m		1.0n	0.0	20	1.4m	2.0m	15u%		5.0p#	1.7m	200S		TO18
51	2N3968A	300m	3.0†	20Δ	30	30		10m	5.0m		1.0n	0.0	20	1.4m	2.0m	15u%		5.0p#	1.7m	200S		TO18
52	2N3969	300m	1.7†	20Δ	30	30		10m	2.0m		1.0n	0.0	20	95m	1.4m	5.0u%		5.0p#	1.7m	200S		TO18
53	2N3969A	300m	1.7†	20Δ	30	30		10m	2.0m		1.0n	0.0	20	95m	1.5m	5.0u%		5.0p#	1.7m	200S		TO18
54	2N4117	300m	1.8	10Δ	40	40		50m	50m	0.9mΔ	0.1n	0.0	10	70m	210m	3.0u		3.0p#	2.0m	175S		TO18
55	2N4117A	300m	1.8	10Δ	40	40		50m	50m	90u	0.1n	0.0	10	70m	210u	3.0u%		3.0p#	2.0m	175S		TO18
56	2N4118	300m	3.0	10Δ	40	40		50m	50m	24mΔ	0.1n	0.0	10	80m	250m	5.0u		3.0p#	2.0m	175S		TO18
57	2N4118A	300m	3.0	10Δ	40	40		50m	50m	240u	0.1n	0.0	10	80m	250u	5.0u%		3.0p#	2.0m	175S		TO18
58	2N4119	300m	6.0	10Δ	40	40		50m	50m	60mΔ	0.1n	0.0	10	100m	330m	10u		3.0p#	2.0m	175S		TO18
59	2N4119A	300m	6.0	10Δ	40	40		50m	50m	600n	0.1n	0.0	10	100u	330u	10u%		3.0p#	2.0m	175S		TO18
60	2N4139	300m	8.0†	20Δ	50	50		10m	11m		1.0n	0.0	20	3.5m	7.0m	35u		18p#	1.7m	200S		TO18
61	2N4220	300m	4.0†	15Δ	30	30		15m	10m	3.0m	100p	0.0	15	1.0m	4.0m	10u		6.0p#	2.0m	200S		TO18
62	2N4220A	300m	4.0†	15Δ	30	30		15m	10m	3.0m	100p	0.0	15	1.0m	4.0m	10u		6.0p#	2.0m	200S		TO18
63	2N4221	300m	6.0†	15Δ	30	30		15m	10m	6.0m	100p	0.0	15	2.0m	5.0m	20u		6.0p#	2.0m	200S		TO18
64	2N4221A	300m	6.0†	15Δ	30	30		15m	10m	6.0m	100p	0.0	15	2.0m	5.0m	20u		6.0p#	2.0m	200S		TO18
65	2N4222	300m	8.0†	15Δ	30	30		15m	10m	15m	100p	0.0	15	2.5m	6.0m	40u		6.0p#	2.0m	200S		TO18
66	2N4222A	300m	8.0†	15Δ	30	30		15m	10m	15m	100p	0.0	15	2.5m	6.0m	40u		6.0p#	2.0m	200S		TO18
67	2N4223	300m	8.0†	15Δ	30	30		20m	10m	18m%	25n	0.0	15	3.0m†	7.0m†			2.0m	175J			TO18
68	2N4224	300m	8.0†	15Δ																		



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp (V)	ABS MAX RATINGS @ 25°C				MAX. Id (A)	MAX. Ig (A)	MAX. Idss @ Vgs=0 (A)	MAX. Igss @ Vgs=Vp (A)	TEST COND		COMMON SOURCE		rDS(on) (Ω)	MAX. Cis (F)	DERATE		STRUCTURE	DWG #	C/O	L/A/D/E	
				BVdss (V)	BVgss (V)	Vd (V)	Vg (V)					Vgs (V)	Vds (V)	MIN (mhos)	MAX (mhos)			Yos (mhos)	IN FREE AIR W/°C					MAX TEMP (°C)
1	2N5592	300m	5.0†	20		50		10m	250p	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	#*	T072	DH				
2	2N5593	300m	5.0†	20		50		10m	250p	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	#*	T072	DH				
3	2N5594	300m	5.0†	20		50		10m	250p	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	#*	T072	DH				
4	2N5647	300m	1.8†	15		50		10m	600u#	10p	20	300u	600u	5.0u%	3.0p	1.7m	150S	∅#	T072	DG				
5	2N5648	300m	2.4†	15		50		10m	6.0m%	10p	40	400u	800u	7.0u%	3.0p	1.7m	150S	∅#	T072	DG				
6	2N5649	300m	3.0†	15		50		10m	1.6m%	10p	60	450u	900u	10u%	3.0p	1.7m	150S	∅#	T072	DG				
7	2SK43	300m	1.5	10	30∅	50∅	20m	5.0m	14m	1.0n	0	6.3m			13p#	4.0m	100J	#∅	T092	DD				
8	2SK43S	300m	1.5	10	30∅	50∅	20m	5.0m	14m	100p	0.0	6.3m			13p#	4.0m	100J	#∅	T092	DD				
9	2SK117	300m	1.5	10	50	50	20m	10m	14m	1.0n	0	6.3m			20p#	3.0m	100J	#	T092	DD				
10	2SK121	300m	1.5	10	30Δ	30Δ	20m	5.0m	14m	1.0n	0.0	6.3m			1.2p#*	100J	#	R218	DA					
11	2SK186B	300m	1.5†	10	40†	40	30m	10m	3.2m	10n	30	8m∇	12mΔ		20p#*	3m	125S	#	T092	DC				
12	2SK186C	300m	1.5†	10	40†	40	30m	10m	5m	10n	30	8m∇	12mΔ		20p#*	3m	125S	#	T092	DC				
13	2SK186D	300m	1.5†	10	40†	40	30m	10m	8m	10n	30	8m∇	12mΔ		20p#*	3m	125S	#	T092	DC				
14	2SK186E	300m	1.5†	10	40†	40	30m	10m	12m	10n	30	8m∇	12mΔ		20p#*	3m	125S	#	T092	DC				
15	2SK187C	300m	1.5†	10	40†	40	30m	10m	5m	10n	30	18m∇	21mΔ		41p#*	3m	125S	#	T092	DC				
16	2SK187D	300m	1.5†	10	40†	40	30m	10m	8m	10n	30	18m∇	21mΔ		41p#*	3m	125S	#	T092	DC				
17	2SK187E	300m	1.5†	10	40†	40	30m	10m	12m	10n	30	18m∇	21mΔ		41p#*	3m	125S	#	T092	DC				
18	2SK187F	300m	1.5†	10	40†	40	30m	10m	20m	10n	30	18m∇	21mΔ		41p#*	3m	125S	#	T092	DC				
19	2SK218	300m		15∅	15∅	40*	50m	5.0m	42m	2.0n	5.0	15			8.0p#	125S	#	T092	DD					
20	2SK222	300m	.50†	10	40	40*	10m	12m	1.0n	1.0n	0	17mΔ			14p#	125J	D	T092	DA					
21	2SK246	300m	6.0	10	50*		10m	14m	1.0n	1.0n	0	1.5m			2.5p#*	3.0m	125J	#	T092	DB				
22	2SK291E	300m	#	3†	5	15	50m	5m	12m	10n	0	5	25m∇	45mΔ	8.5p#*	2.4m	125S	#	T092	DD				
23	2SK291F	300m	#	3†	5	15	50m	5m	20m	10n	0	5	25m∇	45mΔ	8.5p#*	2.4m	125S	#	T092	DD				
24	2SK291G	300m	#	3†	5	15	50m	5m	32m	10n	0	5	25m∇	45mΔ	8.5p#*	2.4m	125S	#	T092	DD				
25	2SK291H	300m	#	3†	5	15	50m	5m	50m	10n	0	5	25m∇	45mΔ	8.5p#*	2.4m	125S	#	T092	DD				
26	3N124	300m	2.5†	15	50	50	20m	20m	2.0m	.25n	0.0	15	50m	2.0m	2.0u	1.0k	14p	200		T072	DV			
27	3N125	300m	4.0†	15	50	50	20m	20m	4.5m	.25n	0.0	15	80m	2.4m	10u	75k	14p	200		T072	DV			
28	3N126	300m	6.5†	15	50	50	20m	20m	9.0m	.25n	0.0	15	1.2m	3.6m	20u	50k	14p	200		T072	DV			
29	3N209	300m	4.0†	15Δ	25	30Δ	30m	10m	30m	20n	4.0	15	10m%	20m%		7.0p	200C	*\$	T072	DX				
30	3SK47*	300m	1.5†	10	20†	7.0	25m	25m	100n	4.0	10	10mΔ			45†	6.5p#	150J	*	T072	DX				
31	3SK59	300m	2.5	15	20	9.0	30m	24m	50n	0.0	15	20 Δ			5.0p#	150J	*	T072	DX					
32	3SK63	300m	2.5	15	20	9.0	30m	24m	50n	0.0	15	20 Δ			5.0p#	150J	*	T072	DX					
33	3SK73	300m	2.5	15Δ	20†	9.0	30m	14m	50n	100	15	20mΔ			5.0p#	3.0	125J	*	X176	EN				
34	3SK78	300m	3.5	15	20†	9.0	30m	24m	50n	100	15	8.0m			11p#*	2.4m	150J	*∅	T072	DX				
35	40841	300m	2.0†	15Δ	18	3.0	50m	10m*	60n	4.0	15	12u				2.2m	175A	*∅	T072	DX				
36	BC264	300m	0.5†	15	30		10m	12m	10n	0.0	15	2.5m			4p	2.4m	150S		T092	DD				
37	BC264A	300m	.50†	15Δ	30	30	10m	4.5m	10n	0.0	15	2.5m%				2.3m	150J	∅	R191	DE				
38	BC264B	300m	.50†	15Δ	30	30	10m	6.5m	10n	0.0	15	3.0m%				2.3m	150J	∅	R191	DE				
39	BC264C	300m	.50†	15Δ	30	30	10m	8.0m	10n	0.0	15	3.5m%				2.3m	150J	∅	R191	DE				
40	BC264D	300m	.50†	15Δ	30	30	10m	12m	10n	0.0	15	4.0m%				2.3m	150J	∅	R191	DE				
41	BC264L	300m	8.0†	15Δ	30	30	50m	4.5m	1.0n	0.0	15	2.5m	4.5mΔ	50u%	6.0p#	2.8m	150S	PE∅	R196	DA				
42	BC264LA	300m	8.0†	15Δ	30	30	50m	4.5m	1.0n	0.0	15	2.5m	4.5mΔ	50u%	6.0p#	2.8m	150S	PE∅	R196	DA				
43	BC264LB	300m	8.0†	15Δ	30	30	50m	6.5m	1.0n	0.0	15	2.5m	4.5mΔ	50u%	6.0p#	2.8m	150S	PE∅	R196	DA				
44	BC264LC	300m	8.0†	15Δ	30	30	50m	8.0m	1.0n	0.0	15	2.5m	4.5mΔ	50u%	6.0p#	2.8m	150S	PE∅	R196	DA				
45	BC264LD	300m	8.0†	15Δ	30	30	50m	12m	1.0n	0.0	15	2.5m	4.5mΔ	50u%	6.0p#	2.8m	150S	PE∅	R196	DA				
46	BF244A	300m	8.0	15Δ	30	30	25m	10m	6.5m	5.0n	0.0	15	3.0m	6.5m	25u	4.0p#	2.3m	150J	∅	T092	DC			
47	BF244A	300m	8.0†	15Δ	30	30	25m	10m	6.5m	5.0n	0.0	15	3.0m∇	6.5m∇	25u	4.0p#	2.3m	150J	∅	T092	DC			
48	BF244B	300m	8.0	15Δ	30	30	25m	10m	15m	5.0n	0.0	15	3.0m	6.5m	25u	4.0p#	2.3m	150J	∅	T092	DC			
49	BF244B	300m	8.0†	15Δ	30	30	25m	10m	15m	5.0n	0.0	15	3.0m∇	6.5m∇	25u	4.0p#	2.3m	150J	∅	T092	DC			
50	BF244C	300m	8.0	15Δ	30	30	25m	10m	25m	5.0n	0.0	15	3.0m	6.5m	25u	4.0p#	2.3m	150J	∅	T092	DC			
51	BF244C	300m	8.0†	15Δ	30	30	25m	10m	25m	5.0n	0.0	15	3.0m∇	6.5m∇	25u	4.0p#	2.3m	150J	∅	T092	DC			
52	BF245A	300m	8.0	15Δ	30	30	25m	10m	6.5m	5.0n	0.0	15	3.0m	6.5m	25u	4.0p#	2.3m	150J	∅	R203c	DD			
53	BF245B	300m	8.0	15Δ	30	30	25m	10m	15m	5.0n	0.0	15	3.0m	6.5m	25u	4.0p#	2.3m	150J	∅	R203c	DD			
54	BF245C	300m	8.0	15Δ	30	30	25m	10m	25m	5.0n	0.0	15	3.0m	6.5m	25u	4.0p#	2.3m	150J	∅	R203c	DD			
55	BF256A	300m†	7.5†	15Δ	30	30	10m	7.0m	5.0n	0.0	15	4.5m	5.0mΔ		4.0p#	2.0m	150J	∅	R203c	DD				
56	BF256B	300m†	7.5†	15Δ	30	30	10m	13m	5.0n	0.0	15	4.5m	5.0mΔ		4.0p#	2.0m	150J	∅	R203c	DD				
57	BF256C	300m†	7.5†	15Δ	30	30	10m	18m	5.0n	0.0	15	4.5m	5.0mΔ		4.0p#	2.0m	150J	∅	R203c	DD				
58	BF410	300m†	0.7	5.0	20Δ	30m	10m	0.7 #	10n	0.0	5.0	2.5m	3.5mΔ	60	5.0p	150J	EPL#	T092	DD					
59	BF410A	300m†	.80†	10	20Δ	30m	10m	3.0m	10n	0.0	10	2.5m	3.5mΔ	60u%	5.0p	150J	PE∅†	R189	DE					
60	BF410B	300m†	1.5†	10	20Δ	30m	10m	7.0m	10n	0.0	10	4.0m	5.5mΔ	80u%	5.0p	150J	PE∅†	R189	DE					
61	BF410C	300m†	2.2†	10	20Δ	30m	10m	12m	10n	0.0	10	4.0m	5.5mΔ	100u%	5.0p	150J	PE∅†	R189	DE					
62	BF410D	300m†	3.0†	10	20Δ	30m	10m	18m	10n	0.0	10	3.5m	5.0mΔ	120u%	5.0p	150J	PE∅†	R189	DE					
63	BF510	300m			-20Δ	30m	10m	3.0m	-10n	0	10	2.5m∇			5.0p	150J	PE#	X156e	DC					
64	BF510#	300m	.80	10	20	20Δ	30m	10m	3.0m	10n	0	10	2.5m	3.5mΔ		4.0p#	150J	#	X156a	DC				
65	BF511	300m			-20Δ	30m	10m	7.0m	-10n	0	10	4.0m∇			5.0p	150J	PE#	X156e	DC					
66	BF511#	300m	1.5	10	20	20Δ	30m	10m	7.0m	10n	0	10	4.0m	5.5mΔ		4.0p#	150J	#	X156a	DC				
67	BF512	300m			-20Δ	3																		



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp (V)	ABS MAX RATINGS @ 25°C				MAX. Id (A)	MAX. Idss @ Vgs=0 & Vds=0 (A)	MAX. Igss @ Vgs=Vp & Vds=0 (A)	TEST COND		COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)	IN FREE AIR W/°C	MAX TEMP (°C)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# L E O A D E		
				Vds (V)	Vgs (V)	Id (A)	Ig (A)				Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)								f(DS) on (Ω)	MAX. Cis (F)
1#	KP302B	300m	7.1				43m	8.0m	43m	10n					150 ↑	20p*	100A						
2#	KP302G	300m	7.1				43m	6.0m	15m	10n					150 ↑	20p*	100A						
3#	KP302V	300m	7.1				43m	6.0m	33m	10n					100 ↑	20p*	100A						
4	MFE120	300m	4.0	15#	25	20	30m	18m	20n	20n	4.0	15	8.0m	18m		7.0p#	1.7m	200J	*∅	T072	DX		
5	MFE121	300m	4.0	15#	25	20	30m	30m	20n	20n	4.0	15	10m	20m		6.0p#	1.7m	200J	*∅	T072	DX		
6	MFE122	300m	4.0	15#	25	20	30m	20m	20n	20n	4.0	15	8.0m	18m		7.0p#	1.7m	200J	*∅	T072	DX		
7	MFE130	300m	4.0	15#	25		30m	30m	20n	20n	4.0	15	8.0m	20m		4.5p#	1.7m	200J	*∅	T072	DN		
8	MFE131	300m	4.0	15#	25		30m	30m	20n	20n	4.0	15	8.0m	20m		4.5p#	1.7m	200J	*∅	T072	EN		
9	MFE132	300m	4.0	15#	25		30m	30m	20n	20n	4.0	15	8.0m	20m		4.5p#	1.7m	200J	*∅	T072	EN		
10	MFE140	300m	4.0	15Δ	25	7.0	30m	10m	30m	20n	4.0	15	10n	20n		7.0p#	2.0S	*∅	T072	DX			
11	MFE521	300m	2.0Δ	15	25	30Δ	30m	10m	50n	50n					126u	4.0p	1.7m	200J	D∅	T072	DX		
12	MFE2000	300m	4.0	15Δ	25	25	30m	10m	100p	0.0	15	2.5m	6.0m	50u	5.0p#	2.0m	175J	∅	T072	DH			
13	MFE2001	300m	8.0	15Δ	25	25	30m	20m	100p	0.0	15	4.0m	8.0m	75u	5.0p#	2.0m	175J	∅	T072	DH			
14	MFE2093	300m	2.5	15	50	50	3.0m	.70m	.10n	0.0	15	25m	50m	1.5u	6.0p	2.0m	175	Δ	T072	DJ			
15	MFE2094	300m	4.5	15	50	50	3.0m	1.4m	100p	0.0	15	350u	700u	3.0u	6.0p	2.0m	175	Δ	T072	DJ			
16	MFE2095	300m	5.5	15	50	50	3.0m	3.0m	100p	0.0	15	400u	800u	10u	6.0p	2.0m	175	Δ	T072	DJ			
17	MFE3004	300m	5.0	15Δ	20	30	10m	10mΔ	50p	2.0∅	15	500			4.5p#	2.0m	175J	*∅	T072	DW			
18	MFE3005	300m	5.0	15Δ	20	30	10m	10mΔ	50p	2.0∅	15	500			4.5p#	2.0m	175J	*∅	T072	DW			
19	MMF1	300m	8.0	15Δ	30	30	20m	10m	20m	500u	0.0	15	3.5m	6.5m	35u%	6.0p#	2.0m	175J	*∅	R206	DH		
20	MMF2	300m	8.0	15Δ	30	30	20m	10m	20m	500u	0.0	15	3.5m	6.5m	35u%	6.0p#	2.0m	175J	*∅	R206	DH		
21	MMF3	300m	8.0	15Δ	30	30	20m	10m	20m	500u	0.0	15	3.5m	6.5m	35u%	6.0p#	2.0m	175J	*∅	R206	DH		
22	MMF4	300m	8.0	15Δ	30	30	20m	10m	20m	500u	0.0	15	3.5m	6.5m	35u%	6.0p#	2.0m	175J	*∅	R206	DH		
23	MMF5	300m	8.0	15Δ	30	30	20m	10m	20m	500u	0.0	15	3.5m	6.5m	35u%	6.0p#	2.0m	175J	*∅	R206	DH		
24	MMF6	300m	8.0	15Δ	30	30	20m	10m	20m	500u	0.0	15	3.5m	6.5m	35u%	6.0p#	2.0m	175J	*∅	R206	DH		
25	MFP201	300m	5	15	25		50m	10m	30m	100n	4	15	8	20	4.5p#	2.4m	150J	M	#	W179	↑		
26	MFP202	300m	5	15	25		50m	10m	30m	100n	4	15	8	20	4.5p#	2.4m	150J	M	#	W179	↑		
27	MFP203	300m	5	15	25		50m	10m	15m	100n	4	15	7	15	4.5p#	2.4m	150J	M	#	W179	↑		
28	NF530	300m	8.0	15	30	30Δ	1.0m	10n	8.0n	0.0	15	500u	2.0mΔ		4.0p#	2.4m	150J	#	∅	T018	DB∅		
29	NF531	300m	8.0	15	30	30Δ	1.0m	2.0m	8.0n	0.0	15	400u	1.2mΔ		4.0p#	2.4m	150J	#	∅	T018	DB∅		
30	NF5301	300m	3.0	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	175S	#	#	T072	DH		
31	NF5301-1	300m	1.8	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	175S	#	#	T072	DH		
32	NF5301-2	300m	3.0	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	175S	#	#	T072	DH		
33	NF5301-3	300m	2.4	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	175S	#	#	T072	DH		
34	PF5301	300m	3.0	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	150S	#	#	T092	DD		
35	PF5301-1	300m	1.8	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	150S	#	#	T092	DD		
36	PF5301-2	300m	3.0	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	150S	#	#	T092	DD		
37	PF5301-3	300m	2.4	10Δ	30	30		500u	1.0p	0.0	10	70u	300u		3.0p	2.0m	150S	#	#	T092	DD		
38	PN4117	300m	1.8	10Δ	40	40		90u	1.0p	0.0	10	70u	210u	3.0u%	3.0p	2.0m	150S	#	#	T092	DD		
39	PN4117A	300m	1.8	10Δ	40	40		90u	1.0p	0.0	10	70u	210u	3.0u%	3.0p	2.0m	150S	#	#	T092	DD		
40	PN4118	300m	3.0	10Δ	40	40		240u	1.0p	0.0	10	80u	250u	5.0u%	3.0p	2.0m	150S	#	#	T092	DD		
41	PN4118A	300m	3.0	10Δ	40	40		240u	1.0p	0.0	10	80u	250u	5.0u%	3.0p	2.0m	150S	#	#	T092	DD		
42	PN4119	300m	6.0	10Δ	40	40		600u	1.0p	0.0	10	100u	330u	10u%	3.0p	2.0m	150S	#	#	T092	DD		
43	PN4119A	300m	6.0	10Δ	40	40		600u	1.0p	0.0	10	100u	330u	10u%	3.0p	2.0m	150S	#	#	T092	DD		
44	PN5432	300m	10	5.0Δ	25	25		150m	20p						5.0 %	30p#	2.0m	150S	#	#	T092	DD	
45	PN5433	300m	9.0	5.0Δ	25	25		100m	20p						7.0 %	30p#	2.0m	150S	#	#	T092	DD	
46	PN5434	300m	4.0	5.0Δ	25	25		30m	20p						10 %	30p#	2.0m	150S	#	#	T092	DD	
47	SD210DE	300m	2.0Δ		30	40	50m				20∅	10	10m	15mΔ	50	500f#	2.0m	125A	*	*	T072	FB	
48	SD211DE	300m	2.0Δ		30	40	50m				20∅	10	10m	15mΔ	50	500f#	2.0m	125A	*	*	T072	FB	
49	SD212DE	300m	2.0Δ		10	40	50m				20∅	10	10m	15mΔ	50	500f#	2.0m	125A	*	*	T072	FB	
50	SD213DE	300m	2.0Δ		10	40	50m				20∅	10	10m	15mΔ	50	500f#	2.0m	125A	*	*	T072	FB	
51	SD214DE	300m	2.0Δ		20	40	50m				20∅	10	10m	15mΔ	50	500f#	2.0m	125A	*	*	T072	FB	
52	SD215DE	300m	2.0Δ		20	55	50m				20∅	10	10m	15mΔ	50	500f#	2.0m	125A	*	*	T072	FB	
53	SD222DC†	300m	2.5Δ	2.5*	60	20	350m				300∅	30	220m	250mΔ	7.5	15p#	2.4m	125A	*	*	T046	FB	
54	SD304DE*	300m	2.0Δ		25		50m				3.5	15	8.0m	10mΔ	90	2.5p#	2.0m	125A	*	*	T072	FB	
55	SD306DE*	300m	1.5Δ		20		50m				1.0u	100n	100n	15mΔ	65	3.6p	2.0m	125A	*	*	T072	DX	
56	SDF1001†	300m	10	10	30	30	100m	100m#	200p						7.0	25p#	2.3m	200S	#	#	T052	DB	
57	SDF1002†	300m	8.0	10	30	30	100m	50m#	200p						10	25p#	2.3m	200S	#	#	T052	DB	
58	SDF1003†	300m	5.0	10	30	30	100m	30m#	200p						15	25p#	2.3m	200S	#	#	T052	DB	
59	SDF9210	300m	2.0Δ	2.0*	30	30	50m	10n#	10n		10	10m	15mΔ	30	500f#	2.0m	125A	*	*	T072	DHΔ		
60	SDF9211	300m	2.0Δ	2.0*	30	30	50m	10n#	10n		10	10m	15mΔ	30	500f#	2.0m	125A	*	*	T072	DHΔ		
61	SDF9212	300m	2.0Δ	2.0*	10	30	50m	10n#	10n		10	10m	15mΔ	30	500f#	2.0m	125A	*	*	T072	DHΔ		
62	SDF9213	300m	2.0Δ	2.0*	10	30	50m	10n#	10n		10	10m	15mΔ	30	500f#	2.0m	125A	*	*	T072	DHΔ		
63	SDF9214	300m	2.0Δ	2.0*	20	30	50m	10n#	10n		10	10m	15mΔ	30	500f#	2.0m	125A	*	*	T072	DHΔ		
64	SDF9215	300m	2.0Δ	2.0*	20	30	50m	10n#	10n		10	10m	15mΔ	30	500f#	2.0m	125A	*	*	T072	DHΔ		
65	SU2080	300m	4.0	10				10m	.50n	.2∅	10	1.5m		20u	7.0p	1.7m	200J				PJ		
66	SU2081	300m	4.0	10				10m	.50n	.2∅	10	1.5m		20u	7.0p	1.7m	200J				PJ		
67	SU2365	300m	3.5	15	30	30	50m	10m	10mΔ	100p	0.0	10	1.5m		2.0u	16p	1.7m	200S	∅	∅	T071	PJ	
68	SU2366	300m	3.5	15	30	30	50m	10m	10mΔ	100p	0.0	10	1.5m		2.0u	16p	1.7m	200S	∅	∅	T071	PJ	
69	SU2366A	300m	3.5	15	30	30	50m	10m	10mΔ	50p	0.0	10	1.5m		2.0u	16p	1.7m	200S	∅	∅			

# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @ 25°C (W)	MAX. Vp (V)	ABS MAX BVdss (V)	MAX. RATINGS @ 25°C			MAX. Idss @ Vgs=0 (A)	MAX. Vgs@ Vgs=0 (V)	TEST COND		COMMON SOURCE		r(DS) on (Ω)	DERATE		STRUCTURE	DWG #/a TO200 Ser.	L C A D E				
					MAX. Vds (V)	MAX. Id (A)	MAX. P (W)			Vgs	Vds	PARAMETERS @ 25°C			MAX. Cis (F)	IN FREE AIR W/C (°C)							
												MIN	MAX							gfs (mhos)	Yos (mhos)		
1	VN1308N3	3	2.4	80#	1.0	10u	100n	0.0	15	80	150	30p*	8m	150S	MA	MA	T092	DC					
2	VN1308N3	3	2.4	80#	1.0	10u	100n	0.0	15	80	150	30p*	8m	150S	MA	MA	T092	DC					
3	VN1309N3	3	2.4	80#	1.0	10u	100n	0.0	15	80	150	30p*	8m	150S	MA	MA	T092	DC					
4	2N5457	310m	6.0	15	25	5mΔ	1.0n	0.0	15	1.0m	5.0m	50u*	7.0p#	2.8m	150S	0#	0#	T092	DD				
5	2N5458	310m	7.0	15	25	9mΔ	1.0n	0.0	15	1.5m	5.0m	50u*	7.0p#	2.8m	150S	0#	0#	T092	DD				
6	2N5459	310m	8.0	15	25	16mΔ	1.0n	0.0	15	2.0m	6.0m	50u*	7.0p#	2.8m	150S	0#	0#	T092	DD				
7	2N5484	310m	3.0	25	10m	5mΔ	1.0n	0.0	15	3.0m	8.0m	50u	5.0p#	2.8m	150S	0#	0#	T092	DD				
8	2N5485	310m	4.0	25	10m	10mΔ	1.0n	0.0	15	3.5m	7.0m	60u	5.0p#	2.8m	150S	0#	0#	T092	DD				
9	2N5486	310m	7.5	25	10m	20mΔ	1.0n	0.0	15	4.0m	8.0m	75u	5.0p#	2.8m	150S	0#	0#	T092	DD				
10	2N5551	310m	1.0	0.0	25	15m	1.0n	15%	10	5.0p#	2.8m	150S	0#	0#	150S	0#	0#	T092	DD				
11	2N56381	310m	1.0	0.0	30Δ	50mΔ	1.0n	30%	10	10p#	2.8m	150S	0#	0#	150S	0#	0#	T092	DD				
12	2N56391	310m	1.0	0.0	30Δ	25mΔ	1.0n	60%	10	10p#	2.8m	150S	0#	0#	150S	0#	0#	T092	DD				
13	2N56401	310m	1.0	0.0	30Δ	2.0mΔ	1.0n	100%	10	10p#	2.8m	150S	0#	0#	150S	0#	0#	T092	DD				
14	2N56531	310m	1.0	0.0	30Δ	40mΔ	1.0n	50%	10	10p#	2.8m	150S	0#	0#	150S	0#	0#	T092	DD				
15	2N56541	310m	1.0	0.0	30Δ	15mΔ	1.0n	100%	10	10p#	2.8m	150S	0#	0#	150S	0#	0#	T092	DD				
16	2N5668	310m	4.0	15	25	5.0m	2.0n	0.0	15	1.5m	6.5m	20u	7.0p#	2.8m	150S	0#	0#	T092	DD				
17	2N5669	310m	6.0	15	25	10m	2.0n	0.0	15	2.0m	6.5m	50u	7.0p#	2.8m	150S	0#	0#	T092	DD				
18	2N5670	310m	8.0	15	25	10m	2.0n	0.0	15	3.0m	7.5m	75u	7.0p#	2.8m	150S	0#	0#	T092	DD				
19	HEPFO021-RT	310m	8.0	15	25	25	25	30m	20m	1.0n	0.0	15	3.5m	7.5m	75u	6.5p	2.4m	150J	#	0#	T092	DD	
20	MPF108	310m	8.0	15	25	25	25	30m	24m	1.0n	0.0	15	2.0m	7.5m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
21	MPF109	310m	8.0	15	25	25	25	30m	24m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
22	MPF109B	310m	8.0	15	25	25	25	30m	14m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
23	MPF109G	310m	6.0	15	25	25	25	30m	8.0m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
24	MPF109N	310m	4.0	15	25	25	25	30m	3.0m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
25	MPF109R	310m	4.0	15	25	25	25	30m	1.6m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
26	MPF109V	310m	8.0	15	25	25	25	30m	2.4m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
27	MPF109W	310m	2.0	15	25	25	25	30m	1.0m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
28	PF5101	310m	6.0	15	25	25	25	30m	5.0m	1.0n	0.0	15	800u	6.0m	75u	7.0p	2.8m	135J	#	0#	T092	DD	
29	PF5102	310m	1.0	15	30	30	30	10m	4.5	1.0n	15	8.0	12p	3.0m	150	#	#	#	#	T092	DD		
30	PF5103	310m	1.4	15	30	30	30	10m	13	1.0n	15	12	12p	3.0m	150	#	#	#	#	T092	DD		
31	PF5103	310m	2.2	15	30	30	30	10m	24	1.0n	15	12	12p	3.0m	150	#	#	#	#	T092	DD		
32	U311A	310m	6.0	15	25	25	25	10m	60m	150p	2.0	10m	20m	80	5.0p	2.8m	200J	#	#	#	DB		
33	2N5564	325m	3.0	15	40	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	12p#	2.2m	200S	#	#	T071	PJ
34	2N5565	325m	3.0	15	40	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	12p#	2.2m	200S	#	#	T071	PJ
35	2N5566	325m	3.0	15	40	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	12p#	2.2m	200S	#	#	T071	PJ
36	NPD5584	325m	3.0	15	40	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	12p#	2.2m	200S	#	#	S16	QW
37	NPD5585	325m	3.0	15	40	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	12p#	2.2m	200S	#	#	S16	QW
38	NPD5586	325m	3.0	15	40	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	12p#	2.2m	200S	#	#	S16	QW
39	2N3821	330m	4.0	15	50	50	50	10m	2.5m	100p	0.0	15	1.5m	4.5m	10u*	6.0p#	2.0m	200S	#	#	T072	DH	
40	2N3822	330m	6.0	15	50	50	50	10m	10m	100p	0.0	15	1.5m	6.5m	20u*	6.0p#	2.0m	200S	#	#	T072	DH	
41	3N128	330m	8.0	15	20	20	20	50m	50m	50p	5.0	15	5.0m	12m	20u*	7.0p#	2.2m	175S	#	#	T072	DW	
42	3N142	330m	8.0	15	20	20	20	50m	25m	1.0n	5.0	15	5.0m	12m	20u*	7.0p#	2.2m	175S	#	#	T072	DW	
43	3N143	330m	8.0	15	20	20	20	50m	30m	1.0n	5.0	15	5.0m	12m	20u*	7.0p#	2.2m	175S	#	#	T072	DW	
44	3N152	330m	8.0	15	20	20	20	50m	30m	1.0n	5.0	15	5.0m	12m	20u*	7.0p#	2.2m	175S	#	#	T072	DW	
45	3N154	330m	8.0	15	20	20	20	50m	25m	50p	5.0	15	5.0m	12m	20u*	7.0p#	2.2m	175S	#	#	T072	DW	
46	3N187	330m	4.0	15	20	20	20	50m	1.0m	50p	7.2	15	7.0m	18m	20m	2.2m	175S	#	#	T072	DX		
47	3N200	330m	3.0	15	20	20	20	50m	1.0m	50p	15	15	10m	20m	2.2m	175S	#	#	T072	DX			
48#	3SK45	330m	3.0	15	20	20	20	35m	32m	20n	4.0	15	14m	4.0p	2.2m	175S	#	#	R217	DX			
49#	3SK51	330m	3.0	15	20	20	20	35m	25m	20n	5	15	17m	2.0p#	2.2m	175S	#	#	T072	DX			
50#	3SK53	330m	1.7	10	15	15	15	33m	30m	20n	5	10	11m	5.0p#	2.6m	150S	#	#	T072	DX			
51#	3SK60	330m	1.7	10	15	15	15	33m	20m	20n	3.0	6.0	11m	5.0p#	2.6m	150S	#	#	T072	DX			
52#	40673	330m	4.0	15	20	20	20	50m	35m	50n	4.0	15	12m	6.0p#	2.2m	175A	#	#	T072	DX			
53	40679	330m	4.0	15	25	25	25	50m	35m	50n	4.0	15	12m	6.0p#	2.2m	175A	#	#	T072	DX			
54	40820	330m	3.0	15	20	20	20	50m	100u	15m	50n	4.0	15	12m	8.5p#	2.2m	175A	#	#	T072	DX		
55	40821	330m	3.0	15	20	20	20	50m	100u	20m	50n	4.0	15	12m	9.0	2.2m	175A	#	#	T072	DX		
56	40822	330m	3.0	15	20	20	20	50m	100u	30m	50n	4.0	15	12m	9.5	2.2m	175A	#	#	T072	DX		
57	40823	330m	4.0	15	20	20	20	50m	100u	35m	50n	4.0	15	12m	10p#	2.2m	175A	#	#	T072	DX		
58#	BF10	330m	5.0	15	20	20	20	50m	10m	40m	100n	4.0	15	14m	3.3m	150S	#	#	W97	ET			
59#	BF963	330m	4.0	15	20	20	20	50m	10m	40m	100n	4.0	15	14m	3.3m	150S	#	#	T050	ET			
60	HR3N187	330m	4.0	15	20	20	20	50m	10m	40m	100n	4.0	15	7.5m	18m	2.							

# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX DEVICE DISS @25°C (W)	MAX Vp		ABS MAX RATINGS @25°C		MAX Id		MAX Idss @ Vds=0		MAX Igss @ Vgs=Vp		TEST COND		COMMON SOURCE		PARAMETERS @25°C		DERATE		STRUCTURE	DWG # Y200 s/a TO200 Ser.	L C E O D E
			Id=0 (V)	Vd & (V)	Vdss (V)	Vgss (V)	Id (A)	Ig (A)	Idss (A)	Igss (A)	Vgs (V)	Vds (V)	Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)	on (Ω)	MAX. Cis (F)	IN AIR W/C (°C)	MAX TEMP (°C)			
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
1	E311	350m	4.0	10	25	25	20n	30m%	100p	100	10	10	10m	20m	3.0kt	8.0%	5.0p#	3.5m	125A	#	T0108	DB	
2	E312	350m	6.5	10	25	25	20n	60m%	100p	100	10	10	8.0m	18m	3.0kt	8.0%	5.0p#	3.5m	125A	#	T0108	DB	
3	J100	350m	10	20	30	30	10m	20m	0.5n	0.0	20	20	0.5m		850	8.0%	8p	150S	#	T092	DD		
4	J101	350m	1.5	20	30	30	10m	1.0m	0.5n	0.0	20	20	0.5m		3.0kt	8.0%	8p	150S	#	T092	DD		
5	J102	350m	4.0	20	30	30	10m	4.5m	0.5n	0.0	20	20	1.0m		1.2kt	8.0%	8p	150S	#	T092	DD		
6	J103	350m	10	20	30	30	10m	20m	0.5n	0.0	20	20	1.5m		850	8.0%	8p	150S	#	T092	DD		
7	J107	350m	4.5	5.0	25	25	50m	100m%	3.0n	0.0	20	20	500u#		150%	8.0p#	3.5m	125A	#	T092	DE		
8	J114	350m	10	5.0	25	25	50m	15m%	1.0n	0.0	20	20	500u#		150%	8.0p#	3.5m	125A	#	T092	DE		
9	J201	350m	1.5	20	40	40	50m	1.0m%	100p	0.0	20	20	500u#		150%	8.0p#	3.5m	125A	#	T092	DE		
10	J202	350m	4.0	20	40	40	50m	4.5m%	100p	0.0	20	20	1.0m#		150%	8.0p#	3.5m	125A	#	T092	DE		
11	J203	350m	10	20	40	40	50m	20m%	100p	0.0	20	20	1.5m#		150%	8.0p#	3.5m	125A	#	T092	DE		
12	J210	350m	3.0	15	25	25	10m	15m%	100p	0.0	15	15	4.0m#	12m#		8.0p#	3.5m	125A	#	T092	DE		
13	J211	350m	4.5	15	25	25	10m	20m%	100p	0.0	15	15	7.0m#	12m#		8.0p#	3.5m	125A	#	T092	DE		
14	J212	350m	6.0	15	25	25	10m	40m%	100p	0.0	15	15	7.0m#	12m#		8.0p#	3.5m	125A	#	T092	DE		
15	J300	350m	6.0	10	25	25	10m	30m%	500p	5.0	15	15	4.5m#	9.0m#	200u#	8.0p#	3.5m	125A	#	T092	DE		
16	J304	350m	6.0	15	30	30	10m	15m%	100p	0.0	15	15	4.5m#	7.5m#	50u#	8.0p#	3.5m	125A	#	T092	DE		
17	J305	350m	3.0	15	30	30	10m	8.0m%	100p	0.0	15	15	3.0m#		50u#	8.0p#	3.5m	125A	#	T092	DD		
18	J401#	350m	2.5	15	50*	50	10m	10m	25p	0.0	10	10	2.0m	7.0m		8.0p#	3.5m	125A	#	S16	QQ		
19	J402#	350m	2.5	15	50*	50	10m	10m	25p	0.0	10	10	2.0m	7.0m		8.0p#	3.5m	125A	#	S16	QQ		
20	J403#	350m	2.5	15	50*	50	10m	10m	25p	0.0	10	10	2.0m	7.0m		8.0p#	3.5m	125A	#	S16	QQ		
21	J404#	350m	2.5	15	50*	50	10m	10m	25p	0.0	10	10	2.0m	7.0m		8.0p#	3.5m	125A	#	S16	QQ		
22	J405#	350m	2.5	15	50*	50	10m	10m	25p	0.0	10	10	2.0m	7.0m		8.0p#	3.5m	125A	#	S16	QQ		
23	J406#	350m	2.5	15	50*	50	10m	10m	25p	0.0	10	10	2.0m	7.0m		8.0p#	3.5m	125A	#	S16	QQ		
24	J410CN	350m	3.5	20	40	40	50m	6.0m%	250p	0.0	20	20	1.0m	4.0m	20u#	4.5p*	3.5m	125A	#	S16	QQ		
25	J411CN	350m	3.5	20	40	40	50m	6.0m%	250p	0.0	20	20	1.0m	4.0m	20u#	4.5p*	3.5m	125A	#	S16	QQ		
26	J412CN	350m	3.5	20	40	40	50m	6.0m%	250p	0.0	20	20	1.0m	4.0m	20u#	4.5p*	3.5m	125A	#	S16	QQ		
27	J4091#	350m	-10	20	-40#	40	10m	30m%	200p	0.0	15	15	1.0m	4.0m#		80%	5.0p#	150S	#	T092	DE		
28	J4092#	350m	-7	20	-40#	40	10m	15m%	200p	0.0	15	15	1.0m	4.0m#		80%	5.0p#	150S	#	T092	DE		
29	J4093#	350m	-5	20	-40#	40	10m	8.0m%	200p	0.0	15	15	1.0m	4.0m#		80%	5.0p#	150S	#	T092	DE		
30	J4220	350m	-4	15	-30#	30	10m	3.0m%	-1n	0	15	15	2.0m	5.0m#		6.0p#	150S	#	T092	DE			
31	J4221	350m	-8	15	-30#	30	10m	6.0m%	-1n	0	15	15	2.0m	5.0m#		6.0p#	150S	#	T092	DE			
32	J4222	350m	-8	15	-30#	30	10m	15m%	-1n	0	15	15	2.5m	6.0m#		6.0p#	150S	#	T092	DE			
33	J4223	350m	-8	15	-30#	30	10m	18m%	-5n	0	15	15	3.0m	7.0m#		6.0p#	150S	#	T092	DE			
34	J4224	350m	-8	15	-30#	30	10m	20m%	-5n	0	15	15	2.0m	7.5m#		6.0p#	150S	#	T092	DE			
35	J4302	350m	4.0	20	30	30	10m	5m%	1.0n	0.0	20	20	1.0m			6p	150S	#	T092	DD			
36	J4303	350m	6.0	20	30	30	10m	10m%	1.0n	0.0	20	20	2.0m			6p	150S	#	T092	DD			
37	J4304	350m	10	20	30	30	10m	15m%	1.0n	0.0	20	20	2.0m			6p	150S	#	T092	DD			
38	J4338	350m	1.0	15	50	50	10m	0.6m	0.1n	0.0	15	15	0.8m	1.8m	2.5kt	8.0p#	3.5m	125A	#	T092	DD		
39	J4339	350m	1.8	15	50	50	10m	1.5m	0.1n	0.0	15	15	0.8m	2.4m	1.7kt	8.0p#	3.5m	125A	#	T092	DD		
40	J4391#	350m	-10	20	-40#	40	10m	150m%	-1n	0	15	15	3.0m			30%	3.5p#	150S	#	T092	DE		
41	J4392#	350m	-5	20	-40#	40	10m	75m%	-1n	0	15	15	3.5m			60%	3.5p#	150S	#	T092	DE		
42	J4393#	350m	-3	20	-40#	40	10m	30m%	-1n	0	15	15	100%			100%	3.5p#	150S	#	T092	DE		
43	J4418	350m	-8	15	-30#	30	10m	15m%	-1n	0	15	15	4.5m	7.5m		4.0p#	150S	#	T092	DE			
44	J4856#	350m	-10	15	-40#	40	10m	50m%	-3n	0	15	15	25%			80%	8.0p#	150S	#	T092	DE		
45	J4857#	350m	-8	15	-40#	40	10m	100m%	-3n	0	15	15	40%			80%	8.0p#	150S	#	T092	DE		
46	J4858#	350m	-4	15	-40#	40	10m	80m%	-3n	0	15	15	60%			80%	8.0p#	150S	#	T092	DE		
47	J4859#	350m	-10	15	-40#	40	10m	50m%	-3n	0	15	15	25%			80%	8.0p#	150S	#	T092	DE		
48	J4860#	350m	-8	15	-40#	40	10m	100m%	-3n	0	15	15	40%			80%	8.0p#	150S	#	T092	DE		
49	J4861#	350m	-4	15	-30#	30	10m	80m%	-3n	0	15	15	60%			80%	8.0p#	150S	#	T092	DE		
50	KE4391	350m	10	20	40	40	50m	150m%	1.0n	0.0	20	20	30			14p#	3.5m	125S	#	T0108	DB		
51	KE4392	350m	5.0	20	40	40	50m	75m%	1.0n	0.0	20	20	60			14p#	3.5m	125S	#	T0108	DB		
52	KE4393	350m	3.0	20	40	40	50m	30m%	1.0n	0.0	20	20	100			14p#	3.5m	125S	#	T0108	DB		
53	KE4416	350m	6.0	15	30	30	50m	15m%	1.0n	0.0	15	15	4.5m	7.5m	50u	4.0p#	3.5m	125S	#	T0108	DB		
54	MMBF4391#	350m	4	15	30	30	50m	150m%	1n	0	15	15	30			14p#	2.8m	150J	#	X156d	DD		
55	MMBF4392#	350m	2	15	30	30	50m	75m%	1n	0	15	15	60			14p#	2.8m	150J	#	X156d	DD		
56	MMBF4393#	350m	5	15	30	30	50m	30m%	1n	0	15	15	100%			14p#	2.8m	150J	#	X156d	DD		
57	MMBF4416	350m	6	15	30	30	10m	15m	100p	0	15	15	4.5m	7.5m	50u#	4.0p#	2.8m	150J	#	X156d	DD		
58	MMBF5457	350m	8	15	25	25	10m	5m%	1n	0	15	15	1m	5m		7p#	2.8m	150J	#	X156d	DD		
59	MMBF5484	350m	3	15	25	25	10m	5m%	1n	0	15	15	3m	6m		5p#	2.8m	150J	#	X156d	DD		
60	MMBFJ310	350m	6.5	10	25	25	10m	60m%	1n	0	10	10	8m	18m		5p#	2.8m	150J	#	X156d	DD		
61	MPF256	350m	7.5	15	30	25	18m	5.0n	0.0	15	15	15	6.0m%			3.0p#	2.7m	150J	#	T092	DD		
62	NP8301	350m	3.5	20	40	40	50m	6.0m%	100p	0.0	20	20	1.0m	4.0m	20u#	4.5p#	3.5m	125A	#	S16a	QW		
63	NP8302	350m	3.5	20	40	40	50m	6.0m%	100p	0.0	20	20	1.0m	4.0m	20u#	4.5p#	3.5m	125A	#	S16a	QW		
64	NP8303	350m	3.5	20	40	40	50m	6.0m%	100p	0.0	20	20	1.0m	4.0m	20u#	4.5p#	3.5m	125A	#	S16a	QW		
65	U440	350m	6.0	10	25	25	500p	30m	500p	5.0	10	10	4.5k	9.0k		3.5p#	2.8	150S	#	T071	PC		
66	U441	350m	6.0	10	25	25	500p	30m	500p	5.0	10	10	4.5k	9.0k		3.5p#	2.8	150S	#	T071	PC		
67	U1837E	350m	8.0	15	30	30	30m	10m	25m	250p	0.0	15	4.0m		150u#	300	8.0p#	3.5m	125J	#	R97b	DB	
68	U1897E	350m	10	20	40	40	10m	30m%					30			30	16p#	3.5m	125J	#	R97b	DB	
69	U1897J	350m	10	20	40	40	1																

# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp & Vds		ABS MAX RATINGS @ 25°C				MAX. Idss @ Vgs=0 & Vds=0		MAX. Igss @ Vgs=0 & Vds=0		PARAMETERS @ 25°C				DERATE		STRUCTURE	Y200 s/a TO200 Ser.	DWG #	L E O A D E				
			Id=0 (V)	Vds (V)	BVdss (V)	BVgss (V)	Id (A)	Ig (A)	Idss (A)	Igss (A)	Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)	r(DS) on (Ω)	MAX. Cis (F)	IN FREE AIR W/°C	MAX TEMP (°C)								
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX								
1	2N6452	360m	3.5	10Δ	25	25	10m	10m	20m%	100u	5.0	10	15m	30m%	50u	2.4m	200S	#	∅*	T072	DH	DH				
2	2N6453	360m	5.0	10Δ	20	20	10m	10m	50m%	100u	15	10	20m	40m%	100u	2.4m	200S	#	∅*	T072	DH	DH				
3	2N6454	360m	5.0	10Δ	25	25	10m	10m	50m%	100u	15	10	20m	40m%	100u	2.4m	200S	#	∅*	T072	DH	DH				
4	3N201	360m	5.0	15Δ	25	30Δ	50m	10m	30m	10n	4.0	15	8.0m	20m		2.4m	200S	#	∅*	T072	DX	DX				
5	JAN3N201	360m	4.0	15Δ	25	30Δ	50m	10m	30m	10n	4.0	15	8.0m	20m		2.4m	200S	#	∅*	T072	DX	DX				
6	3N202	360m	5.0	15Δ	25	30Δ	50m	10m	30m	10n	4.0	15	8.0m	20m		2.4m	200S	#	∅*	T072	DX	DX				
7	JAN3N202	360m	4.0	15Δ	25	30Δ	50m	10m	30m	10n	4.0	15	8.0m	20m		2.4m	200S	#	∅*	T072	DX	DX				
8	3N203	360m	5.0	15Δ	25	30Δ	50m	10m	30m	10n	4.0	15	7.0m	15m		2.4m	200S	#	∅*	T072	DX	DX				
9	JAN3N203	360m	4.0	15Δ	25	30Δ	50m	10m	30m	10n	4.0	15	7.0m	15m		2.4m	200S	#	∅*	T072	DX	DX				
10	3N203A	360m	5.0	15	25	30Δ	50m	10m	15m	10n	4.0	15	7.0m	15m		2.4m	200S	#	∅*	T072	DX	DX				
11	3N204	360m	4.0	15Δ	25	30Δ	50m	10m	30mΔ	10n	0.0	15	10m	22m%		2.4m	200S	#	∅*	T072	DX	DX				
12	JAN3N204	360m	4.0	15Δ	25	30Δ	50m	10m	30mΔ	10n	0.0	15	10m	22m%		2.4m	200S	#	∅*	T072	DX	DX				
13	3N205	360m	4.0	15Δ	25	30Δ	50m	10m	30mΔ	10n	0.0	15	10m	22m%		2.4m	200S	#	∅*	T072	DX	DX				
14	3N206	360m	4.0	15Δ	25	30Δ	50m	10m	15mΔ	10n	0.0	15	7.0m	17m%		2.4m	200S	#	∅*	T072	DX	DX				
15	3N211	360m	5.5	15Δ	27	35Δ	50m	10m	40mΔ	10n	0.0	15	17m	40m%		2.4m	200S	#	∅*	T072	DX	DX				
16	3N212	360m	4.0	15Δ	27	35Δ	50m	10m	40mΔ	10n	0.0	15	17m	40m%		2.4m	200S	#	∅*	T072	DX	DX				
17	3N213	360m	5.5	15Δ	35	40Δ	50m	10m	40mΔ	10n	0.0	15	15m	35m%		2.4m	200S	#	∅*	T072	DX	DX				
18	3N225	360m	4.0	15Δ	20	25Δ	50m	10m	20m	10n	4.0	15	6.0m	15m		2.4m	200S	#	∅*	T072	DX	DX				
19	3N225A	360m	3.0	15Δ	20	25Δ	50m	10m	15m	10n	4.0	15	7.5m	15m		2.4m	200S	#	∅*	T072	DX	DX				
20#	35K70	360m#	3.0	15	20	8	50m	10m	20m	20n	4	15	7m	12m		2.4m	150S	M	PE	T072	R203					
21#	BF244	360m	8.0	15	30	30		10m	25m	5.0n	0.0	15	3.0m	6.5m%		2.8m	150S	PE	∅*	T092	R196	DA				
22#	BF245	360m	8.0	15	30	30		10m	25m	5.0n	0.0	15	3.0m	6.5m%		2.8m	150S	PE	∅*	T092	R196	DA				
23#	BF256L	360m	7.5	15Δ	30	30		50m	18m	5.0n	0.0	15	4.5m	5.0mΔ	50u	350	100%	4.0p#	2.8m	150S	PE	∅*	OC			
24#	BF347	360m	3.0	15	30	30		50m	25mΔ	500p	0.0	15	3.0m	7.5m	15u			4.0p#	2.8m	150S	PE	∅*	OC			
25#	BF348	360m	6.0	15Δ	15	40		25m	60m	5.0n	0.0	15	6.0m	15m				4.0p#	2.8m	150S	PE	∅*	R196	DA		
26#	BF350	360m	5.0	15	15		50m	10m	100n	4.0	15	8.0m	10 Δ					4.0p#	2.8m	150S	PE	∅*	OC			
27#	BF351	360m	5.0	15	24		50m	10m	20n	4.0	15	8.0m	10 Δ					4.0p#	2.8m	150S	PE	∅*	OC			
28#	BF352	360m	2.0	15	24		50m	10m	20n	4.0	15	8.0m	12 Δ					4.0p#	2.8m	150S	PE	∅*	OC			
29#	BF353	360m	3.0	15	24		50m	10m	20n	4.0	15	8.0m	12 Δ					4.0p#	2.8m	150S	PE	∅*	OC			
30	ITE4091	360m	10	20	40	40		10m	30m#	100p	0.0	20						16p#	16m	175J	#	#	T092	DX	DB	
31	ITE4092	360m	7.0	20	40	40		10m	15m#	100p	0.0	20						16p#	16m	175J	#	#	T092	DB	DB	
32	ITE4093	360m	5.0	20	40	40		10m	8.0m#	100p	0.0	20						16p#	16m	175J	#	#	T092	DB	DB	
33	J105f	360m	10	5.0	25	25	3.0n	50m	500p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
34	J105-18f	360m	10	5.0	25	25	3.0n	50m	500p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
35	J106f	360m	6.0	5.0	25	25	3.0n	50m	200p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
36	J106-18f	360m	6.0	5.0	25	25	3.0n	50m	200p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
37	J107Δf	360m	4.5	5.0	25	25	3.0n	50m	100p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
38	J107-18f	360m	4.5	5.0	25	25	3.0n	50m	100p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
39	J108-18f	360m	10	5.0	25	25	3.0n	50m	80p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
40	J109-18f	360m	6.0	5.0	25	25	3.0n	50m	40p	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
41	J110-18f	360m	4.0	5.0	25	25	3.0n	50m	10m	3.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
42	J111-18f	360m	10	5.0	35	35	1.0n	50m	20m	1.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
43	J112-18f	360m	5.0	5.0	35	35	1.0n	50m	5.0m	1.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
44	J113-18f	360m	3.0	5.0	35	35	1.0n	50m	2.0m	1.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
45	J114Δf	360m	10	5.0	25	25	1.0n	50m	15m	1.0n	0.0	20						3.2	135J	#	#	#	T092	DF	DF	
46	J201	360m	1.5	20	40	40		50m	1.0m	100p	0.0	20	500					4.0p	3.2	135J	#	#	#	T092	DE	DE
47	J201-18	360m	1.5	20	40	40		50m	1.0m	100p	0.0	20	500					4.0p	3.2	135J	#	#	#	T092	DE	DE
48	J202	360m	4.0	20	40	40		50m	4.5m	100p	0.0	20	1.0k					4.0p	3.2	135J	#	#	#	T092	DE	DE
49	J202-18	360m	4.0	20	40	40		50m	4.5m	100p	0.0	20	1.0k					4.0p	3.2	135J	#	#	#	T092	DE	DE
50	J203	360m	10	20	40	40		50m	20m	100p	0.0	20	1.5k					4.0p	3.2	135J	#	#	#	T092	DE	DE
51	J203-18	360m	10	20	40	40		50m	20m	100p	0.0	20	1.5k					4.0p	3.2	135J	#	#	#	T092	DE	DE
52	J204	360m	2.0	20	25	25		50m	1.2m	100p	0.0	20	1.5k					4.0p	3.2	135J	#	#	#	T092	DE	DE
53	J204-18	360m	2.0	20	25	25		50m	1.2m	100p	0.0	20	1.5k					4.0p	3.2	135J	#	#	#	T092	DE	DE
54	J210	360m	3.0	15	25	25		10m	15m	100p	0.0	15	12k					4.0p	3.2	135J	#	#	#	T092	DE	DE
55	J211	360m	4.5	15	25	25		10m	20m	100p	0.0	15	12k					4.0p	3.2	135J	#	#	#	T092	DE	DE
56	J212	360m	6.0	15	25	25		10m	40m	100p	0.0	15	12k					4.0p	3.2	135J	#	#	#	T092	DE	DE
57	J230	360m	3.0	20	40	40		10p	3.0m	250	0.0	20	2.5k	0				12p	3.2	135J	#	#	#	T092	DE	DE
58	J230-18	360m	3.0	20	40	40		10p	3.0m	250	0.0	20	2.5k	0				12p	3.2	135J	#	#	#	T092	DE	DE
59	J231	360m	5.0	20	40	40		10p	6.0m	250	0.0	20	3.0k					12p	3.2	135J	#	#	#	T092	DE	DE
60	J231-18	360m	5.0	20	40	40		10p	6.0m	250	0.0	20	3.0k					12p	3.2	135J	#	#	#	T092	DE	DE
61	J232	360m	6.0	20	40	40		10p	10m	250	0.0	20	4.0k					12p	3.2	135J	#	#	#	T092	DE	DE
62	J232-18	360m	6.0	20	40	40		10p	10m	250	0.0	20	4.0k					12p	3.2	135J	#	#	#	T092	DE	DE
63	J270	360m	2.0	15	30	30		15p	15m	200p	0.0	15	15k					32p	3.2	135J	#	#	#	T092	DE	DE
64	J270-18	360m	2.0	15	30	30		15p	15m	200p	0.0	15	15k					32p	3							



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp		ABS MAX RATINGS @ 25°C		MAX. Id		MAX. Igss @ Vgs=0 & Vds=Vp		MAX. Igss @ Vgs=Vp & Vds=0		TEST COND		COMMON SOURCE			DERATE		STRUCTURE	DWG Y200 s/a TO200 Ser.	# OF A D E
			Id @ 0	& Vds	BVdss	BVgss	Id	Ig	Igss @ Vgs=0 & Vds=Vp	Igss @ Vgs=Vp & Vds=0	Vgs	Vds	r(DS) on	MAX. Cis	IN AIR W/°C	MAX TEMP (°C)						
			(V)	(V)	(V)	(V)	(A)	(A)	(A)	(A)	(V)	(V)	MIN	MAX	mhos	(Ω)	(F)	(°C)				
1	PN4303#	380m	6.0†	20	30	30	50m	5.0m	1.0n	0.0	20	1.0k	1.0k	50u%	6.0p	3.2	135J	#	T092	DE		
2	PN4304	380m	10	20	30	30	10m	15m	1.0n	0.0	20	1.0m	1.0m		6.0p	3.2	135J	#	T092	DE		
3	PN4304-18	380m	-10†	20	30	30	50m	15m	-1n	0.0	20	1.0k	1.0k		6.0p#	3.2	135J	#	T092	DE		
4	PN4304#	380m	10†	20	30	30	50m	15m	1.0n	0.0	20	1.0k	1.0k		6.0p	3.2	135J	#	T092	DE		
5	PN4391	380m	4.0	20	40	40	50m	150m	100p						30	14p	3.2	135J	#	T092	DE	
6	PN4391-18†	380m	10†	20	40	40	200n	50m	150m	1.0n					30	14p	3.2	135J	#	T092	DE	
7	PN4392	380m	5.0	20	40	40	50m	75m	100p						60	14p	3.2	135J	#	T092	DE	
8	PN4392-18†	380m	5.0†	20	40	40	200n	50m	75m	1.0n					60	14p	3.2	135J	#	T092	DE	
9	PN4393	380m	3.0	20	40	40	50m	30m	100p						100	14p	3.2	135J	#	T092	DE	
10	PN4393-18†	380m	3.0†	20	40	40	200n	50m	30m	1.0n					100	14p	3.2	135J	#	T092	DE	
11	PN4416	380m	6.0	15	30	30	50m	15m	100p	0.0	15	4.5m	7.5m	100u%	4.0p	3.2	135J	#	T092	DE		
12	PN4856	380m	1.0	15	40	40	50m	50m#	\$250p						25	18p	3.2	135J	#	T092	DE	
13	PN4857	380m	6.0	15	40	40	50m	100m#	\$250p						40	18p	3.2	135J	#	T092	DE	
14	PN4858	380m	4.0	15	40	40	50m	80m#	\$250p						60	18p	3.2	135J	#	T092	DE	
15	PN4859	380m	1.0	15	30	30	50m	50m#	\$250p						25	18p	3.2	135J	#	T092	DE	
16	PN4860	380m	6.0	15	30	30	50m	100m#	\$250p						40	18p	3.2	135J	#	T092	DE	
17	PN4861	380m	4.0	15	30	30	50m	80m#	\$250p						60	18p	3.2	135J	#	T092	DE	
18	PN5163	380m	8.0	15	25	25	50m	40m#	10n						50	12p	3.2	135J	#	T092	DE	
19	SD1100DD	380m	5.0Δ	5.0	475	80m	2.0n	2.0n	5.0n	2500	15	2.0m	9.0m	200u%	25	80 #	2.9m	150J		T018	DA	
20	SD1101DD	380m	5.0Δ	5.0	425	80m	2.0n	2.0n	5.0n	2500	15	2.10mΔ	9.0m	200u%	25	80 #	2.9m	150J		T018	DA	
21	TIS34	380m	8.0	15	30	30	10m	20mΔ	5.0n	0.0	15	3.5m	6.5m	50u%	6.0p	2.9m	150J	PE	T092	DA		
22	TIS41	380m	3.0	15	25	25	50m	50m#	Δ 20						25	18p#	2.4m	200S	PE	T018	DA	
23	TIS42	380m	3.0	15	25	25	10m	10m#	Δ 5.0						70	18p#	2.9m	150J	PE	T092	DA	
24	TIS58	380m	5.0†	15	25	25	8.0m	4.0m	0.0	0.0	15	1.3m	4.0m	20u%	6.0p#	2.8m	150S	PE†	T092	DA		
25	TIS59	380m	9.0†	15	25	25	25m	4.0m	0.0	0.0	15	2.3m	5.0m	50u%	6.0p#	2.8m	150S	PE†	T092	DA		
26	TIS73†	380m	10†	15	30Δ	30Δ	50m	50m#	Δ 2.0n						5.0	18p#	35.0u	150S	PE	R203	DB	
27	TIS74†	380m	6.0†	15	30Δ	30Δ	50m	20m#	Δ 2.0n						0.4k#	18p#	35m	150S	PE	R203	DB	
28	TIS75†	380m	4.0†	15	30Δ	30Δ	50m	8m#	Δ 2.0n						0.8k#	18p#	35m	150S	PE	R203	DB	
29	TIS78	380m	10†	30	300Δ	300Δ	10m	10m#	2.0n	0.0	30	750u	3.0m†	100u*	1.5k#	15p#	2.0m	150J	P	R203	DB	
30	TIS79	380m	12†	30	200Δ	200Δ	10m	10m#	2.0n	0.0	30	750u	3.0m†	100u*	2.0k#	18p#	2.0m	150J	P	R203	DB	
31#	TIS88A	380m	6.0†	15Δ	30	30	50m	15m#	1.0n	0.0	15	4.5m	7.5m	50u%	4.5p#	2.8m	150S	PE	R196	DA		
32	TIS130	380m	4.0	15	30Δ	30Δ	50m	40m	1.0n						15p#	2.9m	150S	PE	R203	DB		
33	U1897†	380m	10†	20	40Δ	40	10n	10m	400p						30	18p#	3.2	135J	#	T092	DE	
34	U1897-18	380m	-10†	20	40#	40#	10n	10m	30m#	Δ 4n					30	18p#	3.3m	150S	Δ	T092	DE	
35	U1898†	380m	7.0†	20	40Δ	40	10n	10m	15m	400p					50	18p#	3.2	135J	#	T092	DE	
36	U1898-18	380m	-7†	20	40#	40#	10n	10m	15m#	Δ 4n					50	18p#	3.3m	150S	Δ	T092	DE	
37	U1899†	380m	5.0†	20	40Δ	40	10n	10m	8.0m	400p					80	18p#	3.2	135J	#	T092	DE	
38	U1899-18	380m	-5†	20	40#	40#	10n	10m	8m#	Δ 4n					80	18p#	3.3m	150S	Δ	T092	DE	
39	UC588	380m	6.0†	15	30	30	10m	15mΔ	1.0n	0.0	15	4.5m	7.5m	50u%	4.0p	2.8m	200	10		T0106	DD	
40	2N5902▽	387m	4.5†	10Δ	40	40	500u	5.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
41	2N5903▽	387m	4.5†	10Δ	40	40	500u	5.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
42	2N5904▽	387m	4.5†	10Δ	40	40	500u	5.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
43	2N5905▽	387m	4.5†	10Δ	40	40	500u	5.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
44	2N5906▽	387m	4.5%	10Δ	40	40	500u	2.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
45	2N5907▽	387m	4.5%	10Δ	40	40	500u	2.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
46	2N5908▽	387m	4.5†	10Δ	40	40	500u	2.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
47	2N5909▽	387m	4.5†	10Δ	40	40	500u	2.0p	0.0	0.0	10	70u	250u	5.0u%	3.0p#	3.0m	150S	0		T078	PE	
48	2N5911▽	387m	5.0†	10Δ	25	25	100p	40m	100p						5.0p#	3.0m	150S	0		T078	PE	
49	2N5912▽	387m	5.0†	10Δ	25	25	100p	40m	100p						5.0p#	3.0m	150S	0		T078	PE	
50	IMF5911▽	387m	5.0	10	25*	25	50m	40m	100p	5.00	10†	5.0m	10m		5.0p	3.0m	200S	#	T099	PF		
51	IMF5912▽	387m	5.0	10	25*	25	50m	40m	100p	5.00	10†	5.0m	10m		5.0p	3.0m	200S	#	T099	PF		
52	IT5911▽	387m	5.0	10	25*	25	50m	40m#	100p	5.00	10†	5.0m	10m		5.0p#	3.0m	200S	#	T071	PF		
53	IT5912▽	387m	5.0	10	25*	25	50m	40m#	100p	5.00	10†	5.0m	10m		5.0p#	3.0m	200S	#	T071	PF		
54	40468A	375m	Δ	20	1.0	25m	10m	25m#	Δ 1.0n						10p#	2.5m	175J	#	T072	DW		
55	IT1750	375m	3.0Δ	20	25	125	10m	10n	0.0	0.0	10	3.0m	7.5mΔ		25	6.0p#	3.0m	150J		T072	DR	
56	NDF9406▽	375m	4.0†	20Δ	50	50	50m	10m	10p	0.0	20	1.0m	8.0m	3.0u	5.0p#	2.1m	200S	#	R120	PC		
57	NDF9407▽	375m	4.0†	20Δ	50	50	50m	10m	10p	0.0	20	1.0m	8.0m	3.0u	5.0p#	2.1m	200S	#	R120	PC		
58	NDF9408▽	375m	4.0†	20Δ	50	50	50m	10m	10p	0.0	20	1.0m	8.0m	3.0u	5.0p#	2.1m	200S	#	R120	PC		
59	NDF9409▽	375m	4.0†	20Δ	50	50	50m	10m	10p	0.0	20	1.0m	8.0m	3.0u	5.0p#	2.1m	200S	#	R120	PC		
60	NDF9410▽	375m	4.0†																			



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DISS @ 25°C (W)	MAX. Vp & Vds		ABS MAX RATINGS @ 25°C		MAX. Idss @ Vgs=0 & Vds=Vp		MAX. Igss @ Vgs=Vp & Vds=0		PARAMETERS @ 25°C				DERATE		STRUCTURE	DWG # Y200 s/a TO200 Ser.	L E O A D E		
			Id=0 (V)	Vds (V)	V (V)	V (V)	Id (A)	Ig (A)	I (V)	V (V)	COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)	IN FREE AIR W/C (°C)	MAX TEMP (°C)					
											MIN	MAX	Yos	mhos							
1	HEPF2004-R1	400m	4.5	20	20	1.0	50m	30m	1.0n												
2	MP840	400m	4.5	20	40Δ	40	50p	5.0m	100p												
3	MP841	400m	4.5	20	40Δ	40	50p	5.0m	100p												
4	MP842	400m	4.5	20	40Δ	40	50p	5.0m	100p												
5	MP3954	400m	4.5	20	40Δ	40	50p	5.0m	100p												
6	MP3954A	400m	4.5	20	40Δ	40	50p	5.0m	100p												
7	MP3955	400m	4.5	20	40Δ	40	50p	5.0m	100p												
8	MP3956	400m	4.5	20	40Δ	40	50p	5.0m	100p												
9	MP3958	400m	4.5	20	40Δ	40	50p	5.0m	100p												
10	MF511	400m	10†	10	20	20Δ	10m	5.0m	100n												
11	U421	400m	2.0†	10	40*	60	10m	1.0m	200†												
12	U422	400m	2.0†	10	40*	60	10m	1.0m	200†												
13	U423	400m	2.0†	10	40*	60	10m	1.0m	200†												
14	U424	400m	3.0†	10	40*	60	10m	1.8m	1.0p												
15	U425	400m	3.0†	10	40*	60	10m	1.8m	1.0p												
16	U426	400m	3.0†	10	40*	60	10m	1.8m	1.0p												
17#	2SK63	470m	9.5	100	120Δ	200m	20m	200n	4.0p												
18	2N5543	500m	15†	30	75	30		10m	1.0u												
19	2N5544	500m			30			10m	1.0u												
20#	BS107	0.5			200		.12														
21	HEPF2007A-R1	500m	4.0	20Δ	25	20	30m	30m	20n												
22	IMF6485v	500m†	4.0	20Δ	25	20	50m	7.5m	200n												
23	J108†	500m	6.0†	5.0Δ	25	25	50m	8.0m	3.0n												
24	J109†	500m	6.0†	5.0Δ	25	25	50m	4.0m	3.0n												
25	J110†	500m	4.0†	5.0Δ	25	25	50m	10m	3.0n												
26	KH5196v	500m†	4.0†	20Δ	50	50	50m	7.0m	25p												
27	KH5197v	500m†	4.0†	20Δ	50	50	50m	7.0m	25p												
28	KH5198v	500m†	4.0†	20Δ	50	50	50m	7.0m	25p												
29	KH5199v	500m†	4.0†	20Δ	50	50	50m	7.0m	25p												
30	NDF940†	500m	4.0†	20Δ	50	50	50m	10m	10p												
31	NDF9402v	500m	4.0†	20Δ	50	50	50m	10m	10p												
32	NDF9403v	500m	4.0†	20Δ	50	50	50m	10m	10p												
33	NDF9404v	500m	4.0†	20Δ	50	50	50m	10m	10p												
34	NDF9405v	500m	4.0†	20Δ	50	50	50m	10m	10p												
35	NF510	500m	10†	20	30	30Δ	10m	5.0m	10n												
36	SDF500v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
37	SDF501v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
38	SDF502v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
39	SDF503v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
40	SDF504v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
41	SDF505v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
42	SDF506v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
43	SDF507v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
44	SDF508v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
45	SDF509v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
46	SDF510v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
47	SDF511v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
48	SDF512v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
49	SDF513v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
50	SDF514v	500m†	4.5†	20Δ	50Δ	50	50m	5.0m	100p												
51	SDF661v	500m	3.0†	10Δ	50	50	10m	5.0m	100p												
52	SDF662v	500m	3.0†	10Δ	50	50	10m	5.0m	100p												
53	SDF663v	500m	3.0†	10Δ	50	50	10m	5.0m	100p												
54#	uPA60A	500m	2.5†	10	40†	40Δ	50m	1.5m	15p												
55#	uPA61A	500m	2.5†	10	40†	40Δ	50m	1.5m	15p												
56	U308	500m	6.0†	10	25	25	20m	30m	150p												
57	U308Δ	500m	6.0†	10Δ	25	25	20m	30m	150p												
58	U308#	500m	6.0†	10Δ	25	25	20m	30m	150p												
59	U309	500m	4.0†	10	25	25	20m	30m	150p												
60	U309#	500m	4.0†	10	25	25	20m	30m	150p												
61	U310	500m	6.0†	10	25	25	20m	30m	150p												
62	U310Δ	500m	6.0†	10Δ	25	25	20m	30m	150p												
63	U310#	500m	6.0†	10Δ	25	25	20m	30m	150p												
64	U312	500m	6.0†	10	25	25	10m	30m	100p												
65	U430*	500m	4.0†	10	25	25	10m	30m	100p												
66	U431*	500m	4.0†	10	25	25	10m	30m	100p												
67	UC250	500m	10	20	30	30	50m	15.0m	1.0n												
68	UC251	500m	6.0	20	30	30	50m	7.5m	1.0n												
69	UC2139	500m	6.0	15	30	30	50m	6.0m	2.0n												
70	UC2149	500m	6.0	20	30	30	50m	6.0m	2.0n												
71#	2SK147	800m	1.2	10	40	40	400m	10m	30m												
72#	MPF9200	800m	3.0†	15Δ	200	40	400m	10m	10u												
73	SU2656v	800m	3.0†	15Δ	200	40	400m	10m	10m												
74	J111	625m	10	5.0	35	35	50m	2.0m	1.0n												
75	J112	625m	5.0	5.0																	

# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	MAX. DISS @ 25°C (W)	MAX. Vp		ABS MAX RATINGS @ 25°C		MAX. Id		MAX. Idss @ Vgs=0p		MAX. Vgs @ Vds=0		TEST COND		COMMON SOURCE		PARAMETERS @ 25°C		DERATE		STRUCTURE	Y200 s/a TO200 Ser.	L E O A D E
			Id=0 (V)	Vds (V)	Vds (V)	Vgs (V)	Id (A)	Ig (A)	Vgs+Vp (A)	Vgs+Vp (A)	Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)	rDS on (Ω)	MAX. Cis (F)	IN FREE AIR W/C (°C)	MAX TEMP (°C)					
1	3N1701	800m	2.0Δ	10*	25	35Δ	30m	10n	10p	10p	10p	250∅	25	210mΔ	200	5.0p#	4.5m	200S	200S	TO72	DR∅		
2	3N1711	800m	3.0Δ	10*	25	35Δ	30m	10n	10p	10p	10p	250∅	25	210mΔ	200	5.0p#	4.5m	200S	200S	TO72	DR∅		
3	SD1100HD	800m	5.0Δ	5.0	475		80m	2.0n				250∅	25	210mΔ	20	80 #	6.4m	150J	150J	TO39	DA∅		
4	SD1101HD	800m	5.0Δ	5.0	425		80m	2.0n				250∅	25	210mΔ	20	80 #	6.4m	150J	150J	TO39	DA∅		
5	U221	800m	8.0	20			25m	110m	1.0n			0.0	20	15m	40m	28p#	4.6m	200J	200J	TO5	DB∅		
6	U222	800m	10	20			25m	250m	1.0n			0.0	20	20m	50m	28p#	4.6m	200J	200J	TO5	DB∅		
7	U1715	800m	15†	50			200	50m	5.0n			8∅	10	75mZ	100mΔ	40kt	25p#	4.5m	200J	200J	TO5	DB∅	
8	BS170	830m	1 #	3†	10		90#	15†	50	500m	10m	200m	10n	1n		3.5	60p#	4.5m	150	150	TO92	DA	
9	ZSK191	1 #	3†	10			15†	50	500m	10m	200m	10n	1n			3.5	60p#	4.5m	150	150	TO92	DA	
10	BSS89	1.0	2.0Δ	2.0*	200		0.3	800m	10m	1.0u	500n	15†	25	200mΔ	200	8.0	13p#	10m	150S	150S	TO39	FC	
11	DMP4025DB1	1.0	4.0Δ	4.0	100#		1.0	0.5m	500n	8†	25	0.8	1.2 Δ		0.6	150p#	833m	150J	150J	Si			
12	IRFD110	1.0	4.0Δ	4.0	100#		1.0	0.5m	500n	8†	25	0.8	1.2 Δ		0.6	150p#	833m	150J	150J	Si			
13	IRFD111	1.0	4.0Δ	4.0	100#		0.8	0.5m	500n	8†	25	0.8	1.2 Δ		0.8	150p#	833m	150J	150J	Si			
14	IRFD112	1.0	4.0Δ	4.0	100#		0.8	0.5m	500n	8†	25	0.8	1.2 Δ		0.8	150p#	833m	150J	150J	Si			
15	IRFD113	1.0	4.0Δ	4.0	100#		0.8	0.5m	500n	8†	25	0.8	1.2 Δ		0.8	150p#	833m	150J	150J	Si			
16	MPF930	1	3.5Δ	3.5	35		2	10u	50n	500∅	25	200m	380mΔ	900m	70p#	8m	150J	150J	MΔ	R210d	DA		
17	MPF960	1	3.5Δ	3.5	60		2	10u	50n	500∅	25	200m	380mΔ	900m	70p#	8m	150J	150J	MΔ	R210d	DA		
18	MPF990	1	3.5Δ	3.5	90		2	10u	50n	500∅	25	200m	380mΔ	900m	70p#	8m	150J	150J	MΔ	R210d	DA		
19	SD220H1	1.0	2.5Δ	2.5*	60		20	500m				300∅	30	220m	250mΔ	7.5	15p#	8.0m	125A	125A	FC		
20	SD224H1	1.0	2.0Δ	2.0*	25		20	2.0				1.0†	15	350m	400mΔ	2.3	5.0p#	8.0m	125A	125A	FC		
21	SD228H1	1.0	2.5Δ	2.5*	30		20	2.0				2.0†	15	700m	750mΔ	1.1	45p#	8.0m	125A	125A	FC		
22	TN5277	1.0	-7†	30	300∅			13m%	-5n			0	30	2.0m	5.0m†		30p#	200S	200S	#	TO39	DB	
23	TN5278	1.0	-10†	30	300∅			13m%	-5n			0	30	3.0m	6.0m†		30p#	200S	200S	#	TO39	DB	
24	U1715A	1.0	15†	50	200∅	125∅		10m	50m	5.0n		0	30	2.0m	5.0m†		30p#	200S	200S	#	TO39	DB	
25	VN0104N2	1.0	2.4Δ		40#		2.0	10u	100n			25	150	250 Δ	2.0	50p#	50m	150S	150S	MΔ	TO39	DA	
26	VN0108N2	1.0	2.4Δ		60#		2.0	10u	100n			25	150	250 Δ	2.5	50p#	50m	150S	150S	MΔ	TO39	DA	
27	VN0108N2	1.0	2.4Δ		80#		2.0	10u	100n			25	150	250 Δ	3.0	50p#	50m	150S	150S	MΔ	TO39	DA	
28	VN0109N2	1.0	2.4Δ		90#		2.0	10u	100n			25	150	250 Δ	3.5	50p#	50m	150S	150S	MΔ	TO39	DA	
29	VN0204N2	1.0	2.4Δ		40#		4.0	25u	100n			25	400	700 Δ	1.2	100p#	.05	150S	150S	MΔ	TO39	DA	
30	VN0206N2	1.0	2.4Δ		60#		4.0	25u	100n			25	400	700 Δ	1.4	100p#	.05	150S	150S	MΔ	TO39	DA	
31	VN0208N2	1.0	2.4Δ		80#		4.0	25u	100n			25	400	700 Δ	1.8	100p#	.05	150S	150S	MΔ	TO39	DA	
32	VN0209N2	1.0	2.4Δ		90#		4.0	25u	100n			25	400	700 Δ	2.0	100p#	.05	150S	150S	MΔ	TO39	DA	
33	VN0330N2	1.0	3.0Δ		300#		4.0	100u	100n			25	1.0	2.0 Δ	2.0	700p#	.05	150S	150S	MΔ	TO39	DA	
34	VN0335N2	1.0	3.0Δ		350#		4.0	100u	100n			25	1.0	2.0 Δ	2.2	700p#	.05	150S	150S	MΔ	TO39	DA	
35	VN0340N2	1.0	3.0Δ		400#		4.0	100u	100n			25	1.0	2.0 Δ	2.4	700p#	.05	150S	150S	MΔ	TO39	DA	
36	VN0345N2	1.0	3.0Δ		450#		4.0	100u	100n			25	1.0	2.0 Δ	2.6	700p#	.05	150S	150S	MΔ	TO39	DA	
37	VN1204N2	1.0	2.4Δ		40#		16	100u	100n			25	1.5	2.5 Δ	2.5	700p#	.05	150S	150S	MΔ	TO39	DA	
38	VN1206N2	1.0	2.4Δ		60#		16	100u	100n			25	1.5	2.5 Δ	.30	700p#	.05	150S	150S	MΔ	TO39	DA	
39	VN1208N2	1.0	2.4Δ		80#		16	100u	100n			25	1.5	2.5 Δ	.35	700p#	.05	150S	150S	MΔ	TO39	DA	
40	VN1209N2	1.0	2.4Δ		90#		16	100u	100n			25	1.5	2.5 Δ	.35	700p#	.05	150S	150S	MΔ	TO39	DA	
41	VN1304N2	1.0	2.4Δ		40#		1.0	10u	100n			25	80	150	8	30p#	.05	150S	150S	MΔ	TO39	DA	
42	VN1306N2	1.0	2.4Δ		60#		1.0	10u	100n			25	80	150	9	30p#	.05	150S	150S	MΔ	TO39	DA	
43	VN1308N2	1.0	2.4Δ		80#		1.0	10u	100n			25	80	150	10	30p#	.05	150S	150S	MΔ	TO39	DA	
44	VN1309N2	1.0	2.4Δ		90#		1.0	10u	100n			25	80	150	11	30p#	.05	150S	150S	MΔ	TO39	DA	
45	ZSK148	1.2	1.2	10		40		10m	30m	1.0n		0.0	25	30m		75p#	.12m	125J		#	R249	RU	
46	BSS81	1.5			200		35	60u	100n			0.2†	25	200mΔ		6.0		150S	150S		TO18	∅	
47	2N39701	1.8	10	20Δ	40	40		50m	150m					200mΔ		30kt	25p#	10m	200S	200S		TO18	DB∅
48	2N39711	1.8	5.0	20Δ	40	40		50m	75m					200mΔ		60kt	25p#	10m	200S	200S		TO18	DB∅
49	2N39721	1.8	3.0	20Δ	40	40		50m	30m					200mΔ		100kt	25p#	10m	200S	200S		TO18	DB∅
50	2N4091	1.8	10	20Δ	40	40Δ		10m	30m%					200mΔ		16p#	10m	200S	200S		TO18	DB∅	
51	2N4091A1	1.8	10†	20Δ	40	50		10m	30m%					200mΔ		16p#	10m	200S	200S		TO18	DB∅	
52	2N4092	1.8	7.0	20Δ	40	40Δ		10m	15m%					200mΔ		16p#	10m	200S	200S		TO18	DB∅	
53	2N4092A1	1.8	7.0†	20Δ	40	50		10m	15m%					200mΔ		16p#	10m	200S	200S		TO18	DB∅	
54	2N4093	1.8	5.0	20Δ	40	40Δ		10m	8.0m%					200mΔ		16p#	10m	200S	200S		TO18	DB∅	
55	2N4093A1	1.8	5.0†	20Δ	40	50		10m	8.0m%					200mΔ		16p#	10m	200S	200S		TO18	DB∅	
56	2N4094	1.8			40Δ	40		10m	75m%					200mΔ		20	32p#	10m	200S	200S		TO18	DB∅
57	2N4095	1.8			40Δ	40		10m	20m%					200mΔ		40	32p#	10m	200S	200S		TO18	DB∅
58	2N4391	1.8 Δ	10	20Δ	40	40		50m	150m%	10n				200mΔ		03kt	14p#	10m	200S	200S		TO18	DB∅
59	2N4392	1.8 Δ	5.0	20Δ	40	40		50m	75m%	10n				200mΔ		06kt	14p#	10m	200S	200S</			



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @ 25°C (W)	MAX. Vp		ABS MAX RATINGS @ 25°C		MAX. Idss @ Vgs=0 & Vds=Vp		MAX. Igss @ Vgs=Vp & Vds=0		PARAMETERS @ 25°C				DERATE IN		STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C E O D E		
			Id=0 (V)	Vds (V)	Vds (V)	Vds (V)	Id (A)	Ig (A)	Vgs (V)	Vds (V)	TEST COND		COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)				FREE AIR W/C (°C)	MAX TEMP (°C)
											MIN	MAX	Yos	gfs (mhos)	gfs (mhos)						
1#	BUZ10	82	3Δ	3Δ	50	20	12	24	1m	100n	2.0	50	3	4.8	100m	1.9n	500m	150		TO220	
2#	BUZ10A	82	3Δ	3Δ	50	20	12		1m	100n			3	4.8	120m	1.9n	500m	150		TO220	
3#	BUZ20	82	3Δ	3Δ	100	20	12	16	1m	100n	2.0	100	2.7	4	160m	1.9n	500m	150		TO220	
4#	BUZ41A	62	3Δ	3Δ	500	20	4.3		1m	100n			1.5	2.5	700m	1.9n	500m	150		TO220	
5#	BUZ50A	62	3Δ	3Δ	1k	20	2.3		1m	100n			1.7	2.5	700m	1.9n	150	150		TO220	
6#	BUZ60	62	3Δ	3Δ	1k	400	5.3		1m	100n			1.7	2.5	1.7	1.9n	150	150		TO220	
7#	BUZ80A	62	3Δ	3Δ	800	20	3		1m	100n			1	1.8	3	1.9n	150	150		TO220	
8#	2SK60	63 Δ	25	31	170Δ	5.0	4	500m	1m	100n					3.3 %	190p#	960m	120J	D#	TO3	
9#	2SK318	70 #	31	10	180	20	4		1m	100n	1.5	20	400m	600mΔ	300p#	960m	150S	M	W178	↑	
10	IRF130T	75	3.5Δ	3.5	100		12		1.0m	100n	0.0	25	3.0	5.0 Δ	.18	100p#	600m	150J	□	TO3	
11	IRF131T	75	3.5Δ	3.5	60		12		1.0m	100n	0.0	25	3.0	5.0 Δ	.18	100p#	600m	150J	□	TO3	
12	IRF132T	75	3.5Δ	3.5	100		10		1.0m	100n	0.0	25	3.0	5.0 Δ	.25	100p#	600m	150J	□	TO3	
13	IRF133T	75	3.5Δ	3.5	60		10		1.0m	100n	0.0	25	3.0	5.0 Δ	.25	100p#	600m	150J	□	TO3	
14	IRF230T	75	3.5Δ	3.5	200		7.0		1.0m	100n	0.0	25	2.5	4.5 Δ	0.3	600m	150J	□	TO3		
15	IRF231T	75	3.5Δ	3.5	150		7.0		1.0m	100n	0.0	25	2.5	4.5 Δ	0.3	600m	150J	□	TO3		
16	IRF232T	75	3.5Δ	3.5	200		6.0		1.0m	100n	0.0	25	2.5	4.5 Δ	0.4	600m	150J	□	TO3		
17	IRF330T	75	3.5Δ	3.5	40		4.0		1.0m	100n	0.0	25	2.0	3.5 Δ	0.8	600m	150J	□	TO3		
18	IRF331T	75	3.5Δ	3.5	350		4.0		1.0m	100n	0.0	25	2.0	3.5 Δ	0.8	600m	150J	□	TO3		
19	IRF332T	75	3.5Δ	3.5	400		3.5		1.0m	100n	0.0	25	2.0	3.5 Δ	1.0	600m	150J	□	TO3		
20	IRF333T	75	3.5Δ	3.5	350		3.5		1.0m	100n	0.0	25	2.0	3.5 Δ	1.0	600m	150J	□	TO3		
21	IRF430	75	3.5Δ	3.5	500#		3.5		1.0m	100n	1.5	100	1.5	2.5 Δ	1.3 ↑	1.3	600m	150J	MΔ	TO3	
22	IRF431	75	3.5Δ	3.5	450#		3.5		1.0m	100n	1.5	100	1.5	2.5 Δ	1.3 ↑	1.3	600m	150J	MΔ	TO3	
23	IRF432	75	3.5Δ	3.5	500#		3.0		1.0m	100n	1.5	100	1.5	2.5 Δ	1.5 ↑	1.5	600m	150J	MΔ	TO3	
24	IRF433	75	3.5Δ	3.5	450#		3.0		1.0m	100n	1.5	100	1.5	2.5 Δ	1.5 ↑	1.5	600m	150J	MΔ	TO3	
25	IRF530T	75	3.5Δ	3.5	100		10		1.0m	500n	0.0	25	3.0	5.0 Δ	.14	100p#	600m	150J	□	Y220b	
26	IRF531T	75	3.5Δ	3.5	60		10		1.0m	500n	0.0	25	3.0	5.0 Δ	.14	100p#	600m	150J	□	Y220b	
27	IRF532T	75	3.5Δ	3.5	100		8.0		1.0m	500n	0.0	25	3.0	5.0 Δ	.20	100p#	600m	150J	□	Y220b	
28	IRF533T	75	3.5Δ	3.5	60		8.0		1.0m	500n	0.0	25	3.0	5.0 Δ	.20	100p#	600m	150J	□	Y220b	
29	IRF630T	75	3.5Δ	3.5	200		6.0		1.0m	500n	0.0	25	2.5	4.5 Δ	0.3	150p#	600m	150J	□	Y220b	
30	IRF631T	75	3.5Δ	3.5	150		6.0		1.0m	500n	0.0	25	2.5	4.5 Δ	0.3	150p#	600m	150J	□	Y220b	
31	IRF632T	75	3.5Δ	3.5	200		5.0		1.0m	500n	0.0	25	2.5	4.5 Δ	0.4	150p#	600m	150J	□	Y220b	
32	IRF633T	75	3.5Δ	3.5	150		5.0		1.0m	500n	0.0	25	2.5	4.5 Δ	0.4	150p#	600m	150J	□	Y220b	
33	IRF730T	75	3.5Δ	3.5	400		3.5		1.0m	500n	0.0	25	2.0	3.5 Δ	0.8	20p#	600m	150J	□	Y220b	
34	IRF731T	75	3.5Δ	3.5	350		3.5		1.0m	500n	0.0	25	2.0	3.5 Δ	0.8	20p#	600m	150J	□	Y220b	
35	IRF732T	75	3.5Δ	3.5	350		3.0		1.0m	500n	0.0	25	2.0	3.5 Δ	1.0	20p#	600m	150J	□	Y220b	
36	IRF733T	75	3.5Δ	3.5	350		3.0		1.0m	500n	0.0	25	2.0	3.5 Δ	1.0	20p#	600m	150J	□	Y220b	
37	IRF830	75	3.5Δ	3.5	500#		3.0		1.0m	500n	1.5	100	1.5	2.5 Δ	1.3	900p#	600m	150J	MΔ	Y220b	
38	IRF831	75	3.5Δ	3.5	450#		3.0		1.0m	500n	1.5	100	1.5	2.5 Δ	1.3	900p#	600m	150J	MΔ	Y220b	
39	IRF832	75	3.5Δ	3.5	500#		2.5		1.0m	500n	1.5	100	1.5	2.5 Δ	1.5	900p#	600m	150J	MΔ	Y220b	
40	IRF833	75	3.5Δ	3.5	450#		2.5		1.0m	500n	1.5	100	1.5	2.5 Δ	1.5	900p#	600m	150J	MΔ	Y220b	
41#	KT904B	75	30T						350m	500n	1.5	100	1.5	250 *		300p#	100A			DF	
42#	MTM1N95	75	4.5Δ	4.5	950		1		250u	500n	500	15	500u		100 %	1.2n#	600m	150J	M	TO3	
43#	MTM1N100	75	4.5Δ	4.5	1k		1		250u	500n	500	15	500u		100 %	1.2n#	600m	150J	M	TO3	
44#	MTM2N45	75	4.5Δ	4.5	450		2		250u	500n	1	15	1		4 %	500p#	600m	150J	MΔ	TO3	
45#	MTM2N50	75	4.5Δ	4.5	500		2		250u	500n	1	15	1		4 %	500p#	600m	150J	MΔ	TO3	
46#	MTM2N85	75	4.5Δ	4.5	850		2		250u	500n	1	15	500m		8 %	1.2n#	600m	150J	MΔ	TO3	
47#	MTM2N90	75	4.5Δ	4.5	900		2		250u	500n	1	15	500m		8 %	1.2n#	600m	150J	MΔ	TO3	
48#	MTM3N35	75	4.5Δ	4.5	350		3		250u	500n	1.5	15	750m		3.3 %	500p#	600m	150J	MΔ	TO3	
49#	MTM3N40	75	4.5Δ	4.5	400		3		250u	500n	1.5	15	750m		3.3 %	500p#	600m	150J	MΔ	TO3	
50#	MTM3N55	75	4.5Δ	4.5	550		3		250u	500n	1.5	15	1.5		2.5 %	1n#	600m	150J	MΔ	TO3	
51#	MTM3N60	75	4.5Δ	4.5	600		3		250u	500n	1.5	15	1.5		2.5 %	1n#	600m	150J	MΔ	TO3	
52#	MTM4N45	75	4.5Δ	4.5	450		4		250u	500n	2	15	1.5		2 %	1.2n#	600m	150J	MΔ	TO3	
53#	MTM4N50	75	4.5Δ	4.5	500		4		250u	500n	2	15	1.5		2 %	1.2n#	600m	150J	MΔ	TO3	
54#	MTM5N18	75	4.5Δ	4.5	180		5		250u	500n	2.5	15	1.5		1 %	400p#	600m	150J	MΔ	TO3	
55#	MTM5N20	75	4.5Δ	4.5	200		5		250u	500n	2.5	15	1.5		1 %	400p#	600m	150J	MΔ	TO3	
56#	MTM5N35	75	4.5Δ	4.5	350		5		250u	500n	2.5	15	2		1.5 %	1.2n#	600m	150J	MΔ	TO3	
57#	MTM5N40	75	4.5Δ	4.5	400		5		250u	500n	2.5	15	2		1.5 %	1.2n#	600m	150J	MΔ	TO3	
58#	MTM8N12	75	4.5Δ	4.5	120		8		250u	500n	4	15	2		500m#	650p#	600m	150J	MΔ	TO3	
59#	MTM8N15	75	4.5Δ	4.5	150		8		250u	500n	4	15	2		500m#	650p#	600m	150J	MΔ	TO3	
60#	MTM8N18	75	4.5Δ	4.5	180		8		250u	500n	4	15	3		400m#	1n#	600m	150J	MΔ	TO3	
61#	MTM8N20	75	4.5Δ	4.5	200		8		250u	500n	4	15	3		400m#	1n#	600m	150J	MΔ	TO3	
62#	MTM10N05	75	4.5Δ	4.5	50		10		250u	500n	5	15	2.5		280m#	400p#	600m	150J	MΔ	TO3	
63#	MTM10N06	75	4.5Δ	4.5	60		10		250u	500n	5	15	2.5		280m						



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION (2) TYPE No.

LINE No.	TYPE No.	MAX. DEVICE DISS @ 25°C (W)	MAX. Vp & Vds (V)		ABS MAX RATINGS @ 25°C (V)		Id (A)	Ilg (A)	Icss @ Vgs=0 & Vds=Vp (A)	Icss @ Vgs=0 & Vds=0 (A)	TEST COND		PARAMETERS @ 25°C		DERATE		STRUCTURE	Y200 s/a TO200 Ser	DWG #	L C A D E		
			Id=0 (V)	Vds (V)	Vdss (V)	Vgss (V)					Vgs (V)	Vds (V)	gfs (mhos)	Yos (mhos)	rDS(on) (Ω)	MAX. Cix (F)					FREE AIR W/C (°C)	MAX TEMP (°C)
			MIN	MAX	MIN	MAX					MIN	MAX	MIN	MAX	MIN	MAX					MIN	MAX
1	MTP15N05	75	4.5Δ	4.5	50	15	1.5	250u	500n	7.5Δ	15	3.5	160mΔ	1.2nΔ	600m	150J	MA	Y220b	DF5			
2	MTP15N06	75	4.5Δ	4.5	450	4.0	1.5	250u	500n	7.5Δ	15	3.5	160mΔ	1.2nΔ	600m	150J	MA	Y220b	DF5			
3	MTP474	75	20†	*	450	4.0	1.5	25m	500n	2.0Δ	15	1.5	2.2%	1.2m#	0.6	150S	MA*	Y220b	DF			
4	MTP475	75	20†	*	500	5.0Δ	4.0	1.5	25m	500n	2.0Δ	15	1.5	2.2%	1.2m#	0.6	150S	MA*	Y220b	DF		
5	MTP564	75	20†	*	350	5.0	1.5	25m	500n	2.5Δ	15	2.0	1.5%	1.2m#	0.6	150S	MA*	Y220b	DF			
6	MTP565	75	20†	*	400	5.0	1.5	25m	500n	2.5Δ	15	2.0	1.5%	1.2m#	0.6	150S	MA*	Y220b	DF			
7	MTP1034	75	4.0†	20*	120	120Δ	10	1.5	25m	500n	10	2.5	.30	1.2n#		150J	MA	Y220a	DF			
8	MTP1035	75	4.0†	20*	150	150Δ	10	1.5	25m	500n	10	2.5	.30	1.2n#		150J	MA	Y220b	DF			
9	MTP1224	75	20†	*	60	60Δ	12	1.5	25m	500n	10	3.0	.25%	1.2n#	0.6	150S	MA*	Y220b	DF			
10	MTP1225	75	20†	*	100	100Δ	12	1.5	25m	500n	6.0Δ	10	3.0	.25%	1.2n#	0.6	150S	MA*	Y220b	DF		
11	BUZ23	78	3Δ	*	100	20	10	1.0	100n	4.0Δ	25	7.0	160m	1.7n	600m	150J	MA	Y220b	DF			
12	BUZ34	78	2.0Δ	*	200#	20	14	1.0	100n	7.0Δ	25	8.0 Δ		400p*#		150J	MA	Y220b	DF			
13	BUZ35	78	3Δ	*	200	20	9.9	1m	100n	2.2	25	3.5	350m	1.9n	600m	150J	MA	Y220b	DF			
14	BUZ43	78	3Δ	*	500	20	2.8	1m	100n	1.5	25	2.5	3	1.9n	600m	150J	MA	Y220b	DF			
15	BUZ44	78	3Δ	*	500#	20	5.6	1.0m	100n	2.8Δ	25	350mΔ	1.1%	3.0p*#		150S	MA	Y220b	DF			
16	BUZ44A	78	3Δ	*	500	20	4.8	1m	100n	1.5	25	2.5	1.5	1.9n	600m	150J	MA	Y220b	DF			
17	BUZ46	78	3Δ	*	500	20	4.2	1m	100n	1.5	25	2.5	1.8	1.9n	600m	150J	MA	Y220b	DF			
18	BUZ53A	78	3Δ	*	1k	20	2.6	1m	100n	7.0m	15	5	5	1.9n	150	150S	MA	Y220b	DF			
19	BUZ63	78	3Δ	*	400	20	5.9	1m	100n	1.7	25	2.5	1	1.9n	150	150S	MA	Y220b	DF			
20	BUZ83	78	3Δ	*	800	20	2.9	1m	100n	1	1.8	4	3	1.9n	600m	150J	MA	Y220b	DF			
21	BUZ83A	78	3Δ	*	800	20	3.4	1m	100n	1	1.8	4	3	1.9n	600m	150J	MA	Y220b	DF			
22	DV1220S	80	30†	*	30†	4.0	4.0			2.0Δ	12		.80	82p*#	455m	200J	#	W159	EY			
23	DV1220W	80	30†	*	30†	4.0	4.0			2.0Δ	12		.80	82p*#	568m	200J	#	W159	EY			
24	SD500KD	80	5.0Δ	5.0	430	5.0	5.0	1.0u*		2.0Δ	25	1.6 Δ		750p*#	640m	150J	MA	Y220b	DF5			
25	SD800KD	80	5.0Δ	5.0	550	5.0	5.0	100u		2.0Δ	25	2.9 Δ	1.3	1.5n#	640m	150J	MA	Y220b	DF5			
26	SD901KD	80	5.0Δ	5.0	500	6.0	6.0	100u		2.0Δ	25	2.9 Δ	0.8	1.5n#	640m	150J	MA	Y220b	DF5			
27	SD902KD	80	5.0Δ	5.0	450	7.0	7.0	100u		2.0Δ	25	2.9 Δ	0.7	1.5n#	640m	150J	MA	Y220b	DF5			
28	SD1002KD	80	5.0Δ	5.0	470	4.0	4.0	1.0u*		1.0Δ	25	1.6 Δ	1.8	750p*#	640m	150J	MA	Y220b	DF5			
29	SD1005KD	80	5.0Δ	5.0	430	4.0	4.0	1.0u*		2.0Δ	25	2.0 Δ	0.4	750p*#	640m	150J	MA	Y220b	DF5			
30	SD1011KD	80	5.0Δ	5.0	430	4.0	4.0	1.0u*		2.0Δ	25	1.6 Δ	1.3	750p*#	640m	150J	MA	Y220b	DF5			
31	SD1012KD	80	5.0Δ	5.0	430	4.0	4.0	1.0u*		1.0Δ	25	1.6 Δ	1.8	750p*#	640m	150J	MA	Y220b	DF5			
32	SD1014KD	80	5.0Δ	5.0	150	9.0	9.0	1.0u#		2.0Δ	25	2.0 Δ	1.3	750p*#	640m	150J	MA	Y220b	DF5			
33	SD1015KD	80	5.0Δ	5.0	150	9.0	9.0	1.0u#		2.0Δ	25	2.0 Δ	1.3	750p*#	640m	150J	MA	Y220b	DF5			
34	SD1021KD	80	5.0Δ	5.0	390	4.0	4.0	1.0u*		1.0Δ	25	1.6 Δ	1.6	750p*#	640m	150J	MA	Y220b	DF5			
35	HPWR6501	90	7.0Δ	7.0	450	6.0	6.0	10u	0.1u	3.0*	20*	1.8 Δ	.85%	1.0n*	719m	150J	MA	Y220b	DF5			
36	HPWR6502	90	7.0Δ	7.0	400	6.0	6.0	10u	0.1u	3.0*	20*	1.8 Δ	.75%	1.0n*	719m	150J	MA	Y220b	DF5			
37	HPWR6503	90	7.0Δ	7.0	450	6.0	6.0	10u	0.1u	3.0*	20*	1.8 Δ	.75%	1.0n*	719m	150J	MA	Y220b	DF5			
38	HPWR6504	90	7.0Δ	7.0	400	6.0	6.0	10u	0.1u	3.0*	20*	1.8 Δ	1.0%	1.0n*	719m	150J	MA	Y220b	DF5			
39	2SK173	95	1.8†	*	210	8.0	10			2.0Δ	10			1.0n*	719m	120S	MA	Y220b	DF5			
40	2SJ96	100	1.5†	10	120†	14	7.0		1u	3Δ	10	1.1 Δ	2.0 Δ	850p*#	800m	150S	MA	Y220b	DF5			
41	2SK133	100	1.5†	10	140†	14	7.0			600mΔ	10	1.3 Δ	1.3 Δ	800p*#	800m	150S	MA	Y220b	DF5			
42	2SK134	100	1.5†	10	140†	14	7.0			600mΔ	10	1.3 Δ	1.3 Δ	800p*#	800m	150S	MA	Y220b	DF5			
43	2SK134H	100	1.5†	10	140†	14	7.0			600mΔ	10	1.3 Δ	1.3 Δ	800p*#	800m	150S	MA	Y220b	DF5			
44	2SK135	100	1.5†	10	160†	14	7.0			600mΔ	10	1.3 Δ	1.3 Δ	800p*#	800m	150S	MA	Y220b	DF5			
45	2SK135H	100	1.5†	10	160†	14	7.0			600mΔ	10	1.3 Δ	1.3 Δ	800p*#	800m	150S	MA	Y220b	DF5			
46	2SK220H	100	Δ	10	180	20	8			600mΔ	10	1.3 Δ	1.3 Δ	500p*#	800m	150S	MA	Y220b	DF5			
47	2SK221H	100	3†	10	200	20	8	1m		3Δ	10	900mΔ		600p*#	800m	150S	MA	Y220b	DF5			
48	2SK222	100	1.4†	10	140†	15	7			3Δ	10	700mΔ		600p*#	800m	150S	MA	Y220b	DF5			
49	2SK228	100	Δ	10	140†	15	7			1.0	10	1.0		800p*#	800m	150S	MA	Y220b	DF5			
50	2SK227	100	Δ	10	180†	15	7			1.0	10	1.0		800p*#	800m	150S	MA	Y220b	DF5			
51	2SK272	100	80Δ	10	140†	8.0	8.0		1.0u	8.0	10	1.0	1.5 Δ	960m	800m	150S	MA	Y220b	DF5			
52	2SK286	100	1.5†	10	10	8	8		1u	3Δ	10	1.1 Δ	2.5 Δ	800p*#	800m	150S	MA	Y220b	DF5			
53	2SK287K	100	3†	10	60	20	8	1m		3Δ	10	1mΔ	1.4mΔ	500p*#	800m	150S	MA	Y220b	DF5			
54	2SK288K	100	3†	10	80	20	8	1m		3Δ	10	1mΔ	1.4mΔ	500p*#	800m	150S	MA	Y220b	DF5			
55	2SK298	100	5†	10	400	8	8	1m	1u	4Δ	10	1.2 Δ	1.7 Δ	800p*#	800m	150S	MA	Y220b	DF5			
56	2SK299	100	5†	10	450	8	8	1m	1u	4Δ	10	1.2 Δ	1.7 Δ	800p*#	800m	150S	MA	Y220b	DF5			
57	2SK308	100	4.5†	10	120	10	10	1m	1u	4Δ	10	1.2 Δ	2.0 Δ	1.1n*#	800m	150J	MA	Y220b	DF5			
58	SML2162	100	1.5†	10	150†	15	10			1.5†	10	1.5 Δ		800p*#	960m	150J	MOSΔ	W178	DF			
59	2SK317	120	3†	10	180	20	8	1m		3Δ	20	900mΔ	1.2 Δ	600p*#	960m	150J	MA	Y220b	DF5			
60	2SK324 #ai	120	3.5Δ	*	400	20	10	1.0m	0.1u	5.0Δ	10	3.0	0.6%	2.0n#		150J	MA	Y220b	DF5			
61	2SK325 #ai	120	3.5Δ	*	450	20	10	1.0m	0.1u	5.0Δ	10	3.0	0.7%	2.0n#		150J	MA	Y220b	DF5			
62	2SK355 #ai	120	3.5Δ	*	150#	20	12	1.0m	0.1u	10Δ	10	3.0	0.18%	2.0n#		150J	MA	Y220b	DF5			
63	2SK356 #ai	120	3.5Δ	*	250#	20	12	1.0m	0.1u	10Δ	10	3.0	0.25%	2.0n#		150J	MA	Y220b	DF5			
64	DV1230†	120	30†	*	30†	6.0	6.0			3.0Δ	12		1.2 *	123p*#	667m	200J	#	W178	DF			
65	DV1230W	120	30†	*	30†	6.0	6.0			3.0Δ	12		1.2 *	123p*#	833m	200J	#	W178	DF			
66	2SK175	125	1.4†	10	180†	20	8			3Δ	10	700mΔ	1.4 Δ	700p*#	1	150S	MA	Y220b	DF5			
67	2SK176	125	1.4†	10	200†	20	8			3Δ	10	700mΔ	1.4 Δ	700p*#	1	150S	MA	Y220b	DF5			
68	2SK176H	125	1.5†	10	200	20	8			3Δ	10	7.0 Δ	1.4 Δ	700p*#	1	150S	MA	Y220b	DF5			
69	2SK258H	125	3†	5	250	20	8	1m		3Δ	10	900mΔ	1.3 Δ	800p*#	1	150S	MA	Y220b	DF5			
70	2SK259H	125	3†	10	400	20	5	1m		3Δ	20	600mΔ	1 Δ	800p*#	1	150S	MA	Y220b	DF5			
71	2SK260H	125	3†	10	400	20	5	1m		3Δ	20	600mΔ	1 Δ	800p*#	1	150S	MA	Y220b	DF5			



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	TEMPERATURE RANGE (°C)	ABSOLUTE MAX. RATINGS @ 25°C					MAX. V <sub>CE</sub> @ 25°C		BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	Y200 s/a TO200 Ser.	#	C O D E
					V <sub>CE</sub>	I <sub>B</sub>	I <sub>C</sub>	P <sub>D</sub>	V <sub>CE</sub>	I <sub>C</sub>	V <sub>CE</sub>	I <sub>C</sub>										
1#	ZSB126A		30	#J	3.5		80	20	220	3.0 Δ	15	50	6.0k					A	T03	C0		
2#	ZSB127A		30	#J	3.5		60	20	220	1.0 Δ	34	100	6.0k					A	T03	C0		
3#	ZSB468		10	#J	10	10	200	1.5	90	1.5 Δ	14	130					2.5u#	A	T03	C0		
4#	AD152		6.0	#J	1.0		45	12	23 *	30u	1.0 Δ	35 #	180 #					A	F9	C0		
5#	AD155		6.0	#J	1.0		25	12	15 *	30u	1.0 Δ	35 #	115 #					A	F9	C0		
6#	AD164		6.0	#J	1.0		25	10	20 *	200u	1.0 Δ	60 #	185 #					A	F9	C0		
7#	GT906AM		15	#J	10					8m#		30						A				
8#	HEP235-RT		56	#J	10		320	2.0	320	400u	1.0 Δ	60	1.0M					A	T03	C0		
9#	HEP236-RT		160	#J	25		110	2.0	80	200u	2.0 Δ	60	2.10k					A	T041	C0		
10#	HEP642-RT		57	#J	3.0		30	20	25	1.0m	3.0 Δ	95	350k					A	T066	C0		
11#	HEP643-RT		57	#J	3.0		30	20	25	1.0m	3.0 Δ	160	350k					A	T066	C0		
12#	PTC120A		57	#J	7.0		75	20	60	5.0m	2.0 Δ	100	250k			57m		A	T066	C0		
13#	PTC122		56	#J	10		320	2.2	220	200u	1.0 Δ	15	1.0M					A	T03	C0		
14#	PTC155		9.0	#J	5.0		60	5.0	40	120u	1.0 Δ	80	1.0M					A	T08	C0		
15#	SK3009-RT		30	#J	10		60	10	50	1.5 Δ	200	80	450k					A	T03	C0		
16#	SK3012-RT		150	#J	15		50	20	30	2.0 Δ	5.0	50	100k					A	T036	C0		
17#	SK3013-RT		30	#J	15		60	10	50	2.0 Δ	1.0	90	450k					A*	T03	C0		
18#	SK3014-RT		40	#J	11		75	5.0	50	1.5 Δ	8.0	150	2.5M					D	T03	C0		
19#	SK3015-RT		40	#J	11		75	5.0	50	1.5 Δ	8.0	150	2.5M					D*	T03	C0		
20#	SK3034-RT		32	#J	10		200	1.5		1.5 Δ	4.0	35	2.5M					D	T03	C0		
21#	SK3035-RT		32	#J	10		220	1.5		1.5 Δ	4.0	25	2.5M					D	T03	C0		
22#	SK3052-RT		6.0	#J	2.0		60	12	60	1.0 Δ	500m	110	450k					A	T066	C0		
23#	SK3123-RT		9.0	#J	5.0		60	5.0	40	2.0 Δ	400m	80	1.0M					A	R177f	C0		
24#	JAN2N2557		14m	#S	1.1		60	20	40	70u	5.0 Δ	20	20					A	T28	A0		
25#	JAN2N2559		14m	#S	1.1		100	20	60	70u	5.0 Δ	1.0	20	80				A*	T28	A0		
26#	AC128-01		22m	#J	1.0		32	10	16	200u	0.0	45	1.5M					A*	X9c	A		
27#	AC128K		22m	#J	1.0	40m	32	10	32	10u	0.0	90	1.5M					A*	X9c	A		
28#	AC188/01		22m	#J	1.0		25	10	15	200u	1.0 Δ	100	500	1.5M				A	X9c	A		
29#	2N4106		25m	#J	1.0		25	10	15	25u	1.0 Δ	70	350					A	T01	A		
30#	AC117		25m	#J	1.0		32	10	18 *	30u	2.0 Δ	115						A	X9	A		
31#	AC178		25m	#J	700m		20	10	15 *	35u	2.0 Δ	60 #						A	X9	A		
32#	AC188		25m	#J	1.0		25	10	15	200u	1.0 Δ	100	500	1.5M				A	T01	A		
33#	AC193		25m	#J	1.0		25	10	15	200u	1.0 Δ	100	500	3.0M				A	T01	A		
34#	2N2788		29m	#S	150m		35	5.0	20	10u	2.0 Δ	33	200	1.0M				A*	T039	A0		
35#	AC180K		33m	#J	1.0		32	10	24	20u	1.0 Δ	600	50	1.0M				A*	X9b	A0		
36#	2N1940		40m	#S	250m		30	1.0	15	5.0u	7.5 Δ	40m	5.0	350M				A	T30	A0		
37#	2N11721		66m	#J	1.5	250m	40	20	20	200u	2.0 Δ	100	30	90	17k	600u	3.0u		A	T037	A0	
38#	2N1609		66m	#J	1.5	250m	80	40	60	17u	2.0 Δ	100	30	75		2.0			A	T037	A0	
39#	2N1610		66m	#J	1.5	250m	80	40	60	17u	2.0 Δ	100	50	125		1.2			A	T037	A0	
40#	2N1611		66m	#J	1.5	250m	60	20	40	17u	2.0 Δ	100	30	75		2.0			A	T037	A0	
41#	2N1612		66m	#J	1.5	250m	60	20	40	17u	2.0 Δ	100	50	125		1.2			A	T037	A0	
42#	2N2282		66m	#C	3.0	1.0	60	1.5	30	100u	1.0 Δ	3.0	15			400m			A	T037	A0	
43#	2N2283		66m	#C	3.0	1.0	100	1.5	60	100u	1.0 Δ	3.0	15			400m			A	T037	A0	
44#	2N2284		66m	#C	3.0	1.0	200	1.5	100	100u	1.0 Δ	3.0	15			400m			A	T037	A0	
45#	2N2467		66m	#C	3.0	1.0	60	1.5	30	10m	1.0 Δ	500	30	90		400m			A	R50	A0	
46#	2N2468		66m	#C	3.0	1.0	100	1.5	60	10m	1.0 Δ	500	30	90		400m			A	R50	A0	
47#	2N2469		66m	#C	3.0	1.0	200	1.5	100	10m	1.0 Δ	500	30	90		400m			A	R50	A0	
48#	2N3461		66m	#C	3.0	1.0	60	1.5	30	3.0m	1.0 Δ	500	90	150		400m			A	T05	A0	
49#	2SB367		66m	#J	1.0		25	12	25	100u	1.5 Δ	45	170	500k		240m			A	F6g	C0	
50#	2SB368		66m	#J	1.0		45	12	45	100u	1.5 Δ	45	170	500k		240m			A	F6g	C0	
51#	2SB473		66m	#J	1.0		32	6.0		15u	0.0	500m	40	180		10k			A	F5a	C0	
52#	GT406A		66m	#J	1.2	400m	25	20	25	50u	5.0 Δ	100	45	150	6.0k	1.0			A	R235	A0	
53#	2N101		71m	#J	1.5		25	12	12										A	R171	A0	
54#	2N141		80m	#J	1.5		60	30	30	5.0m	1.2 Δ	50m	40	125	400k				A	R230	A0	
55#	2SB83		80m	#J	500m		32	12	32	70u	1.0 Δ	500	30	125	200k				A	F6	A0	
56#	2SB180		85m	#J	500m		40	12	30	1.0m	1.5 Δ	500	20	150					A	T08	A0	
57#	2SB481		92m	#J	1.0	200m	32	10		0.0	1.0 Δ	30	110	15k					A	F5b	A0	
58#	2N1183		100m	#C	3.0	500m	45	20	20	250u	2.0 Δ	400	20	60	500k	1.2			A	T08	A0	
59#	JAN2N1183		100m	#S	7.5		45	20	20	250u	2.0 Δ	400	20	75	500k	750m			A	T08	A0	
60#	2N1183A		100m	#C	3.0	500m	60	20	30	250u	2.0 Δ	400	20	60	500k	1.2			A	T08	A0	
61#	JAN2N1183A		100m	#S	7.5		60	20	30	250u	2.0 Δ	400	20	75	350k	750m			A	T08	A0	
62#	2N1183B		100m	#C	3.0	500m	80	20	40	250u	2.0 Δ	400	20	60	500k	1.2			A	T08	A0	
63#	JAN2N1183B		100m	#S	7.5		80	20	40	250u	2.0 Δ	400	20	75	350k	750m			A	T08	A0	
64#	2N1184		100m	#C	3.0	500m	45	20	20	250u	2.0 Δ	400	40	120	500k	1.2			A	T08	A0	
65#	JAN2N1184		100m	#S	7.5		45	1.5	20	250u	2.0 Δ	400	40	120	350k	750m			A	T08	A0	
66#	2N1184A		100m	#C	3.0	500m	60	20	30	250u	2.0 Δ	400	40	120	500k	1.2			A	T08	A0	
67#	JAN2N1184A		100m	#S	7.5		60	1.5	30	250u	2.0 Δ	400	40	120	350k	750m			A	T08	A0	
68#	2N1184B		100m	#C	3.0	500m	80	20	40	250u	2.0 Δ	400	40	120	500k	1.2			A	T08	A0	
69#	JAN2N1184B		100m	#S	7.5		80	1.5	40													

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L C O E O D E	
					Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)									Vcb (V)
1	2N2670	200m	15	#C	3.0	1.0	90	20	90	600	500	50	150		400m			T27	A	
2	2SB474	200m	12	#J	2.0		35	6.0	35	200	1.5	50	275	700k			F5c	A		
3	AD136	200m	11	#J	10	2.0	40	10	22	50	5.0	30	100	300k		A	T08	A		
4	ADY10	200m	17	#J			32	16	30		30	50m	40	70	350k		T08	A		
5	ADY11	200m	17	#J	600m		60	16	45		30	50m	30	50	350k		T08	A		
6	ADY12	200m	17	#J	600m		32	16	30		30	50m	60	100	350k		T08	A		
7	ADY13	200m	17	#J	600m		60	16	45		30	50m	40	70	350k		T08	A		
8	ADY20	200m	17	#J	600m		60	16	45		30	50m	60	100	350k		T08	A		
9	AUY18	200m*	9.0	#J	8.0		64	20	45		50	5.0	30	100	300k		A	T08	A	
10	PTC194	200m	12	#J	2.0		35	6.0	35	250	1.5	200m	100	700k			F5c	A		
11	2SB627	217m	13	#J	10		40	14	12		0.0	2.0	80			A	T08	A		
12	355	222m	13	#J	1.5		35	35		1.0m	1.0					A				
13	AD162	222m	6.0	#J	3.0	100m	32	10	20	200	1.0	50m	74	300	1.5M		A	F9b	C	
14	2N2835	250m	16	#J	1.0	.20	32	10	32		0.0	1.0	30		10		A	F9		
15	AD148	250m*	11	#J	3.5	400m	32	10	26		1.0	1.0	30	100	450k		A	F12	A	
16	AD262	250m	10	#J	4.0	2.0	35	10	20	100	2.0	1.5	30		325		A	F9a		
17	AD263	250m	10	#J	4.0	2.0	60	10	40	100	2.0	1.5	20		325		A	F9a		
18	AL112	250m	10	#J	6.0	1.0	130	2.0	60	10m	2.0	500m	20	200	3.0M		D	T03	C	
19	AL113	250m	10	#J	6.0	1.0	100	1.5	40	10m	2.0	500m	20	200	3.0M		D	T03	C	
20	2N1042-2Δ	263m	1.0	#J	3.0	1.0	40	20	30	650	1.0	3.0	20	60	7.0k	250m	A	T28	A	
21	HEPG6011-RT	266m	20	#J	3.0		60	20	40	200	1.0	1.0	40		200k		A	T05	A	
22	HEPG6012-RT	266m	20	#J	3.0		100	20	30	200	1.0	1.0	40		200k		A	T05	A	
23	2N1038	267m	20	#C	3.0	1.0	40	20	40	125	1.0	50	60		2.2M	250m		R122	A	
24	2N1039	267m	20	#C	3.0	1.0	60	20	60	125	1.0	50	60		2.2M	250m		R122	A	
25	2N1040	267m	20	#C	3.0	1.0	80	20	80	125	1.0	50	60		2.2M	250m		R122	A	
26	2N1041	267m	20	#C	3.0	1.0	100	20	100	125	1.0	50	60		2.2M	250m		R122	A	
27	2N1042	267m	20	#C	3.5	1.0	40	20	40	125	1.0	3.0	20	60	250k	250m		T6	A	
28	JAN2N1042	267m	20	#A	3.0		40	20	30	125	1.0	3.0	20	60				T28		
29	2N1043	267m	20	#C	3.5	1.0	60	20	60	125	1.0	3.0	20	60	250k	250m		T6	A	
30	JAN2N1043	267m	20	#A	3.0		60	20	40	125	1.0	3.0	20	60				T28		
31	2N1044	267m	20	#C	3.5	1.0	80	20	80	125	1.0	3.0	20	60	250k	250m		T6	A	
32	JAN2N1044	267m	20	#A	3.0		80	20	50	125	1.0	3.0	20	60				T28		
33	2N1045	267m	20	#C	3.5	1.0	100	20	100	125	1.0	3.0	20	60	250k	250m		T6	A	
34	JAN2N1045	267m	20	#A	3.0		100	20	60	125	1.0	3.0	20	60				T28		
35	2N2552	267m	20	#C	3.0	1.0	40	20	30	125	1.0	50	60		250m			T27	A	
36	2N2553	267m	20	#C	3.0	1.0	60	20	40	125	1.0	50	60		250m			T27	A	
37	2N2554	267m	20	#C	3.0	1.0	80	20	50	125	1.0	50	60		250m			T27	A	
38	2N2555	267m	20	#C	3.0	1.0	100	20	60	125	1.0	50	60		250m			T27	A	
39	2N2556	267m	20	#C	3.0	1.0	40	20	30	125	1.0	50	60		250m			T28	A	
40	2N2557	267m	20	#C	3.0	1.0	60	20	40	125	1.0	50	60		250m			T28	A	
41	2N2558	267m	20	#C	3.0	1.0	80	20	50	125	1.0	50	60		250m			T28	A	
42	2N2559	267m	20	#C	3.0	1.0	100	20	60	125	1.0	50	60		250m			T28	A	
43	2N2560	267m	20	#C	3.5	1.0	40	20	30	125	1.0	3.0	20	60	250k	250m		T27	A	
44	2N2561	267m	20	#C	3.5	1.0	60	20	40	125	1.0	3.0	20	60	250k	250m		T27	A	
45	2N2562	267m	20	#C	3.5	1.0	80	20	50	125	1.0	3.0	20	60	250k	250m		T27	A	
46	2N2563	267m	20	#C	3.5	1.0	100	20	60	125	1.0	3.0	20	60	250k	250m		T27	A	
47	2N2564	267m	20	#C	3.5	1.0	40	20	30	125	1.0	3.0	20	60	250k	250m		R122	A	
48	2N2565	267m	20	#C	3.5	1.0	60	20	40	125	1.0	3.0	20	60	250k	250m		R122	A	
49	2N2566	267m	20	#C	3.5	1.0	80	20	50	125	1.0	3.0	20	60	250k	250m		R122	A	
50	2N2567	267m	20	#C	3.5	1.0	100	20	60	125	1.0	3.0	20	60	250k	250m		R122	A	
51	JAN2N158	283m	17	#A	2.0		60	30	60	1.0m	2.0	1.0	13	40	4.0k	750m		A	R173a	F
52	2SB449	300m	22	#J	3.5	500m	50	20	50	3.0m	0.0	3.0	20	85	10k		A	T03	C	
53	HSE800-RT	330m	25	#J			50	15	40	3.0m	2.0	500m	30		100k		A	T03	C	
54	2N155	333m	1.5	#J	3.0	500m	30	15	15	1.0m	2.0	500m	32		180k	650m	A	T03	C	
55	2N156	333m	1.5	#J	3.0		30	15	30	1.0m	2.0	500m	20	40	180k	600m	A	T03	D	
56	2N157	333m	8.5	#J	3.0		60	30	60	1.0m	2.0	500m	20		100k	750m	A	T03	C	
57	2N157A	333m	8.5	#J	3.0		90	30	30	1.0m	2.0	500m	20		100k	750m	A	T03	C	
58	2N158	333m	1.5	#J	3.0		60	30	60	1.0m	2.0	500m	21	36	180k	750m	A	T03	D	
59	2N158A	333m		#J	3.0	500m	80	30	60	1.0m	2.0	500m	21		4.0k	750m	A	R173	B	
60	2N242	333m	25	#J	2.0		45	45		5.0m					5.0k	800m	A	F5		
61	2N255	333m	1.5	#J	3.0		15	15	15						200k					
62	2N255A	333m		#J	3.0	.50	15	15	15	5.0m	2.0	.50	30		125k		A	T03	C	
63	2N256	333m	1.5	#J	3.0		30	30	30						200k					
64	2N256A	333m		#J	3.0	.50	30	15	25	5.0m	2.0	.50	30		125k		A	T03	C	
65	2N296	333m	20	#J	2.0		15	15	60	2.0m		1.0			4.0k	1.0	A	T03	C	
66	2N352	333m		#J	2.0		20	40		5.0m	1.5		30	140		4.0k	1.0	A		
67	2N1078	333m	20	#J	3.0		60	15	60	1.5m	2.0	500m	40				A	T013	F	
68	2N1245	333m	20	#S	4.0		30	15	25	5.0m	2.0	.50	50					T03	C	
69	2N1246	333m	20	#S	4.0		30	15	25	5.0m	2.0	.50	150					T03	C	
70	2N1291	333m	20	#J	3.0		35	15	30	1.5m	2.0	500m	40		1.0		A	T03	C	
71	2N1293	333m	20	#J	3.0		60	15	60	1.5m	2.0	500m	40		1.0		A	T03	C	
72	2N1295	333m	20	#J	3.0		80	15	80	2.0m	2.0	500m	40		1.0		A	T03	C	
73	2N1297	333m	20	#J	3.0		100	15	100	2.0m	2.0	500m	40		1.0		A	T03	C	
74	2N1320	333m	20	#J	3.0		35	15	30	1.5	2.0	500m	40		1.0		A	T010	F	
75	2N1322	333m	20	#J	3.0		60	15	60	1.5	2.0	500m	40		1.0		A	T010	F	
76	2N1324	333m	20	#J	3.0		80	15	80	2.0	2.0	500m	40		1.0		A	T010	F	
77	2N1326	333m	20	#J	3.0		100	15	100	2.0m	2.0	500m	40		1.0		A	T010	F	
78	2N1328	333m	20	#J	3.0		35	15	30	2.0m	2.0	500m	40		1.0		A	T013	F	
79	2N1331	333m	20	#J	3.0		80	15	80	1.5m	2.0	500m	40		1.0		A	T013	F	
80	2N1333	333m	20	#J	3.0		100	15	100	2.0m	2.0	500m	40		1.0		A	T013	F	
81	2N1437	333m	23	#J	3.0	500m	100	15	90	2.0m	2.0	500m	20		4.0k	1.0	A	T013	F	
82	2N1438	333m		#J	3.0	500m	100	15	90	2.0m	2.0	500m	20		4.0k	1.0	A	T010	F	
83	2																			

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #200 s/a TO200 Ser.	# L C O D E		
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CB0</sub> (V)	V <sub>EB0</sub> (V)	V <sub>CE0</sub> (V)	I <sub>CB0</sub> @ MAX V <sub>CB</sub> @ 25°C (A)	V <sub>CB</sub> (V)	I <sub>c</sub> (A)							MIN	MAX
1	2N1757f	400m	28	28	#	3.0	2.0	80	30	65	3.0m	2.0	500m	30	75	15kΔ	230m	4.0u	A	F35	
2	2N1758f	400m	28	28	#	3.0	2.0	100	30	75	3.0m	2.0	500m	30	75	15kΔ	230m	4.0u	A	F35	
3	2N1759f	400m	28	28	#	3.0	2.0	40	30	35	3.0m	2.0	500m	60	150	15kΔ	160m	3.5u	A	F35	
4	2N1760f	400m	28	28	#	3.0	2.0	80	30	50	3.0m	2.0	500m	60	150	15kΔ	160m	3.5u	A	F35	
5	2N1761f	400m	28	28	#	3.0	2.0	80	30	65	3.0m	2.0	500m	60	150	15kΔ	270m	5.0u	A	F35	
6	2N1762f	400m	28	28	#	3.0	2.0	100	30	75	3.0m	2.0	500m	60	150	15kΔ	270m	5.0u	A	F35	
7	2N2067	400ms	10	10	#	3.0	500m	40	20	25	3.0m	140	500m	20	100	7.0k	700m		A	F35	
8	2N2067-O	400ms	10	10	#	3.0	2.0	40	20	35	3.0m	140	500m	20	100	7.0k	500m		A	F35	
9	2N2067B	400ms	10	10	#	3.0	2.0	40	20	35	3.0m	140	500m	15	100	7.0k	500m		A	F35	
10	2N2068	400ms	10	10	#	3.0	500m	80	40	55	3.0m	140	500m	20	100	7.0k	700m		A	F35	
11	2N2068-O	400ms	10	10	#	3.0	2.0	80	40	65	3.0m	140	500m	20	100	7.0k	700m		A	F35	
12#	2S26	400m	10	10	Δ	1.5	25	12	20	16m	1.5	1.0	34	110	250k				A	F35	
13	CST1773f	400m	28	28	#	3.0	2.0	25	20	20	5.0m	2.0	500m	25	45	15k	500m	4.0u	AΔ	F35	
14	CST1789	400m	28	28	#	3.0	2.0	120	35	90	3.0m	2.0	500m	30	75	10kΔ	230m		AΔ	F35	
15	2N57	434m	20	20	#	3.0	800m	60	30	30				14							
16	JAN2N539	440m	11	11	#	3.5	2.0	80	28	55	2.0m	2.0	2.0	30	75	300kΔ	300m			T36	
17	JAN2N539A	440m	11	11	#	3.5	2.0	80	28	55	2.0m	2.0	2.0	30	75	300kΔ	300m			T36	
18	2N250	454m	12	12	Δ	2.0		30			1.0m	500m	30	50	6.6k	2.0			A	F2	
19	2N251	454m	10	10	Δ	2.0		60			2.0m	500m	30	50	6.6k	2.0			A	F2	
20	2N538	454ms	10	10	#	3.5	500m	80	28	60	2.0m	2.0	2.0	20	50	8.0k				T36	
21	2N538A	454ms	10	10	#	3.5	500m	80	28	60	2.0m	2.0	2.0	20	50	8.0k				T36	
22	2N539	454ms	10	10	#	3.5	500m	80	28	60	2.0m	2.0	2.0	30	75	7.0k				T36	
23	2N539A	454ms	10	10	#	3.5	500m	80	28	60	2.0m	2.0	2.0	30	75	7.0k				T36	
24	2N540	454ms	10	10	#	3.5	500m	80	28	60	2.0m	2.0	2.0	45	115	6.0k				T36	
25	2N540A	454ms	10	10	#	3.5	500m	80	28	60	2.0m	2.0	2.0	45	115	6.0k				T36	
26	2N1202	455ms	34	34	#	3.5	500m	80	28	60	2.0m	2.0	500m	40	120	200kΔ	600m		A	T36	
27	2N1203	455ms	34	34	#	3.5	500m	120	28	70	2.0m	2.0	2.0	25	75	200kΔ	300m		A	T36	
28	2N1261	455ms	34	34	#	3.5	500m	80	28	45	2.0m	2.0	2.0	20	50	200kΔ	300m		A	T36	
29	2N1262	455ms	34	34	#	3.5	500m	80	28	45	2.0m	2.0	2.0	30	75	200kΔ	300m		A	T36	
30	2N1263	455ms	34	34	#	3.5	500m	80	28	45	2.0m	2.0	2.0	45	113	200kΔ	300m		A	T36	
31	2N1501	455ms	34	34	#	3.5	500m	60	28	40	2.0m	2.0	2.0	25	100	200kΔ	300m		A	T36	
32	2N1502	455ms	34	34	#	3.5	500m	40	28	40	2.0m	2.0	2.0	25	100	200kΔ	300m		A	T36	
33	CA2D2	455m	10	10	#	3.5	500m	20	1.2	20	4.0m	2.0	2.0	20	20	200kΔ	300m			T36	
34	2N234A	500m	25	25	#	3.0	150m	30			1.0m	5.0	1.0	35		8.0k	.80		A	TO3	
35	2N235	500m	25	25	#	3.0	150m	50	15	40	1.0m	5.0	1.0	40		800m	.80		A	TO3	
36	2N235A	500m	25	25	#	3.0	150m	50	15	40	1.0m	5.0	1.0	55		333m	.80		Ge	TO3	
37	2N235B	500m	25	25	#	3.0	150m	50	25	40	1.0m	5.0	1.0	55		5.0kΔ	800m		Ge	TO3	
38	2N236A	500m	25	25	#	3.0	150m	50	25	40	1.0m	5.0	1.0	55		5.0kΔ	333m		Ge	TO3	
39	2N236B	500m	25	25	#	3.0	150m	50	25	40	3.0m	2.0	2.0	50		5.0kΔ	800m		Ge	TO3	
40	2N285	500m	25	25	#	3.0	150m	60	40	40	1.0m	5.0	1.0	100		500m		Δ		TO3	
41	2N285A	500m	25	25	#	3.0	150m	60	40	40	1.0m	5.0	1.0	100		500m		Δ		TO3	
42	2N297	500m	35	35	#	3.0	150m	60	40	50	3.0m	2.0	500m	40	100	5.0k			Ge	TO3	
43	2N297A	500m	35	35	#	3.0	150m	60	40	50	3.0m	2.0	500m	40	100	5.0k			Ge	TO3	
44	2N386	500ms	35	35	#	3.0	150m	60	40	50	3.0m	2.0	500m	40	100	700k			AΔ	TO27	
45	2N399	500ms	35	35	#	3.0	150m	60	40	50	1.0m	1.5	2.5	20	20	400k	.83			TO3	
46	2N400	500ms	35	35	#	3.0	150m	60	40	50	1.0m	1.5	2.5	20	20	400k	.83			TO3	
47	2N401	500ms	35	35	#	3.0	150m	60	40	50	1.0m	1.5	2.5	20	20	400k	.83			TO3	
48	2N418f	500ms	35	35	#	3.0	150m	60	40	50	1.5m	2.0	4.0	40	40	400k	.50	15u		TO3	
49	2N419	500ms	25	25	#	3.0	150m	100	55	45	1.0m	1.5	2.2	9.0	44	300k	1.5		AΔ	TO3	
50	2N420f	500ms	25	25	#	3.0	150m	65	45	45	1.5m	2.0	4.0	40	50	400k	.50	15u		TO3	
51	2N420A1	500ms	25	25	#	3.0	150m	90	40	70	5.0m	2.0	4.0	40	50	400k	.50	15u		TO3	
52	2N463f	500m	35	35	#	3.0	1.0	80	50	60	300u	2.0	2.0	20	60	4.0k	80m	4.6u	A	TO32	
53	2N553	500m	35	35	#	3.0	1.0	80	40	60	2.0m	2.0	500m	40	55	5.0k	300m	5.0u	Ge	F1	
54	2N637f	500m	25	25	#	3.0	1.0	80	40	60	1.0m	5.0	3.0	30	60	15u				TO3	
55	2N637A1	500m	25	25	#	3.0	1.0	80	40	60	5.0m	5.0	3.0	30	60	15u				TO3	
56	2N637B1	500m	25	25	#	3.0	1.0	80	40	60	5.0m	5.0	3.0	30	60	15u				TO3	
57	2N638f	500m	25	25	#	3.0	1.0	80	40	60	1.0m	5.0	3.0	20	40	15u				TO3	
58	2N638A1	500m	25	25	#	3.0	1.0	80	40	60	5.0m	5.0	3.0	20	40	15u				TO3	
59	2N638B1	500m	25	25	#	3.0	1.0	80	40	60	5.0m	5.0	3.0	20	40	15u				TO3	
60	2N639f	500m	25	25	#	3.0	1.0	80	40	60	1.0m	5.0	3.0	15	30	15u				TO3	
61	2N639A1	500m	25	25	#	3.0	1.0	80	40	60	5.0m	5.0	3.0	15	30	15u				TO3	
62	2N639B1	500m	25	25	#	3.0	1.0	80	40	60	5.0m	5.0	3.0	15	30	15u				TO3	
63	2N663f	500m	10	10	#	3.0	1.0	50	20	25	4.0m	2.0	500m	25	75	15kΔ	300m		AΔ	F1	
64	2N665	500m	35	35	#	3.0	1.0	80	40	40	2.0m	2.0	500m	40	80	20kΔ	.30			TO3	
65	JAN2N665	500m	35	35	#	3.0	1.0	80	40	40	10m	2.0	500m	40	80	20kΔ	300m	5.0u	AΔ	TO3	
66	2N1138	500m	35	35	#	3.0	1.0	80	40	40	10m	5.0	3.0	100	200					TO3	
67	2N1138A	500m	35	35	#	3.0	1.0	80	40	40	10m	5.0	3.0	100	200					TO3	
68	2N1138B	500m	35	35	#	3.0	1.0	80	40	40	10m	5.0	3.0	100	200					TO3	
69	2N1971	500m	38	38	#	3.0	1.0	80	40	40	20m	2.0	500m	25	60	5.0kΔ	300m			TO3	
70	2N2083	500m	12	12	#	3.0	500m	40	20	15	10m	2.0	2.0	10	200	2.0k	1.0			TO3	
71	2N2084	500m	12	12	#	3.0	500m	40	20	15	10m	2.0	2.0	20	200	2.0k	500m			TO3	
72	2N2085	500m	12	12	#	3.0	500m	80	30	25	10m	2.0	2.0	10	200	2.0k	1.0			TO3	
73	2N2086	500m	12	12	#	3.0	500m	80	30	25											

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>cb</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	V <sub>cb</sub> (V)								
1	2N2147	860m†	12	#	5.0	1.0	75 †	1.5†	50	10m	2.0	1.0	100	300	3.0MΔ	250m		T03	C
2	2N2148	860m†	12	#	5.0	1.0	60 †	1.0†	40	10m	2.0	1.0	40	160	2.0MΔ	250m		T03	C
3	40421	860m†	12	#	5.0	1.0	75 †	1.5†	50	1.0m	2.0	1.0	62	175	4.0M			T03	C
4	2N257	866m	45	#	3.0	2.0	40	10	35	2.0m	2.0	2.0	40		5.0kΔ	750m		T03	C
5	2N257B	866m	45	#	3.0	2.0	40	20	35	5.0m	2.0	2.0	50		5.0kΔ	500m		T03	C
6	2N257G	866m	45	#	3.0	2.0	40	20	35	5.0mΔ	2.0	2.0	40		5.0kΔ	750m		T03	C
7	2N268	866m	45	#	3.0	2.0	80	40	80	2.0m	2.0	2.0	40		8.0kΔ	1.0		T03	C
8	2N268A	866m	45	#	3.0	2.0	80	20	80	2.0m	2.0	2.0	80		5.0kΔ	500m		T03	C
9	JAN2N297A	866m	45	#	5.0	5.0	80	40	80	3.0m	2.0	2.0	40	100	5.0kΔ	350m		T03	C
10	2N307A	866m	50	#	5.0	3.0	35	10	35	2.0m	1.0	3.0	30	35	3.5kΔ	800m		T03	C
11	2N392	866m	50	#	5.0	1.0	60	40	40	8.0m	2.0	3.0	60	150	8.0kΔ	166m		T03	C
12	2N456A	866m	50	#	7.0	3.0	40	20	20	2.0m†	1.5	5.0	30	90	200kΔ	100m		T03	C
13	2N457A	866m	50	#	7.0	3.0	60	20	30	2.0m†	1.5	5.0	30	90	200kΔ	100m		T03	C
14	2N458A	866m	50	#	7.0	3.0	80	20	40	2.0m†	1.5	5.0	30	90	200kΔ	100m		T03	C
15	JAN2N463	866m	50	#	5.0	1.0	60	50	50	300u	2.0	2.0	20	60	5.0kΔ	80m		T032	C
16	2N1011	866m	50	#	5.0	1.0	80	40	40	20m	2.0	3.0	30	75	5.0kΔ	500m	5.0u	T03	C
17	JAN2N1011	866m	50	#	5.0	1.0	80	40	40	10m	2.0	3.0	30	75	5.0kΔ	500m		T03	C
18	2N1014	866m	50	#	5.0	2.0	100	60	60	500u	1.5	1.0			6.5k†			T03	C
19	2N1120	866m	45	#	1.5	1.0	80	40	70	15m	2.0	1.0	20	50	3.0kΔ	100m	90u	T041	C
20	2N1168	866m	45	#	5.0	1.0	50	20	30	8.0m	2.0	1.0	110	15	10kΔ	83m		T03	C
21	2N1666	866m	30	#	6.0	1.0	80	40	60	100u	1.0	8.0			250k†			T03	C
22	2N2061	866m	10	#	3.0	500m	20	10	10	2.0m	2.0	500m	10	60	2.0kΔ	4.0		T03	C
23	2N2062	866m	10	#	3.0	500m	20	10	10	2.0m	2.0	2.0	20	200	2.0kΔ	500m		T03	C
24	2N2869	866m	30	#	10	3.0	80	10	50	2.0m	2.0	1.0	50	165	4.0k	250m		T03	C
25	2N2870	866m	30	#	10	3.0	80	10	50	2.0m	2.0	1.0	50	165	4.0k	100m		T03	C
26#	2SB41	866m	44	#	1.2	1.0	40	12	32	2.0m	1.5	1.0	35	160	5.0k			T03	C
27#	2SB152	866m	50	#	5.0	5.0	100	60	80	500u	1.5	3.0	30	75	5.0k	200m		T03	C
28	40022	866m	12	#	5.0	1.0	32	5.0	32	1.0m	2.0	1.0	38	70	300k			T03	C
29	40050	866m	12	#	5.0	1.0	40	5.0	40	500u	2.0	1.0	50	90	500k			T03	C
30	40051	866m	12	#	5.0	1.0	50	5.0	50	500u	2.0	1.0	50	90	500k			T03	C
31	40254	866m	12	#	5.0	1.0	32	5.0	32	3.0m	2.0	1.0	30	70	300k			T03	C
32	40439	866m	5.0	#	10	4.0	320	2.0	320	200u	2.0	2.0			250m			T03	C
33	40440	866m	5.0	#	10	4.0	200	2.0	200	200u	2.0	2.0			120m			T03	C
34	40462	866m	12	#	5.0	1.0	40	5.0	40	500u	2.0	1.0	50	90	800k	200m		T03	C
35#	AD130	866m	30	#	3.0	500m	32	10	30	1.0	1.0	20	100	350k			T03	C	
36#	AD131	866m	30	#	3.0	500m	64	20	45	1.0	1.0	20	100	350k			T03	C	
37#	AD132	866m	30	#	3.0	500m	80	20	60	1.0	1.0	30	100	350k			T03	C	
38#	AD133	866m	30	#	1.5	2.0	50	10	32	.50	5.0	20	100	300k			T041	C	
39#	AD140	866m	1.5	#	3.0	2.0	55	10	40	100u	1.0	1.0	30	100	430k	200m	25u	T03	C
40#	AD142	866m	30	#	10	3.0	80	10	80	100u	2.0	1.0	30	170	450k			T03	C
41#	AD143	866m	30	#	10	3.0	40	10	40	100u	2.0	1.0	30	170	450k			T03	C
42#	AD150	866m	30	#	3.5	500m	32	10	30	1.0	1.0	30	100	450k			T03	C	
43#	AD163	866m	30	#	3.0	1.0	100	20	80	150u	1.0	1.0	13	80	350k			T03	C
44#	AL100	866m	30	#	10	3.0	130	2.0	130	100u	2.0	1.0	40	250	4.0M			T03	C
45#	AL102	866m	30	#	6.0	1.0	130	2.0	130	100u	2.0	1.0	40	250	4.0M			T03	C
46#	AL103	866m	30	#	6.0	1.0	100	1.5	130	100u	2.0	1.0	40	250	3.0M			T03	C
47#	ASZ151	866m	30	#	8.0	1.0	100	40	60	3.0m	1.0	1.0	20	55	200k	40m	25u	T03	C
48#	ASZ171	866m	30	#	8.0	1.0	60	20	32	3.0m	1.0	1.0	25	75	220k	40m	25u	T03	C
49#	ASZ181	866m	30	#	8.0	1.0	100	40	32	3.0m	1.0	1.0	30	110	220k	40m	25u	T03	C
50#	AU103†	866m	10	#	12	2.5	155	4.0	155	10m	1.0	10	15	15	15M			T03	C
51#	AU104	866m	15	#	12	2.5	185	4.0	185	10m	1.0	12	14	14	15M			T03	C
52#	AU106	866m	5.0	#	10	4.0	320	2.0	320	200u	1.3	8.0	15	80	2.0M			T03	C
53#	AU107	866m	30	#	10	1.0	200	2.0	200	200u	2.0	700m	35	120	2.0M			T03	C
54#	AU108	866m	30	#	10	1.0	100	2.0	100	200u	2.0	700m	35	200	2.0M			T03	C
55#	AU110	866m	30	#	10	3.0	160	2.0	160	100u	2.0	1.0	20	90	2.0M			T03	C
56#	AU111	866m	5.0	#	10	4.0	320	2.0	320	200u	1.3	8.0	15	80	2.0M			T03	C
57#	AU112	866m	5.0	#	10	4.0	320	2.0	320	200u	1.3	8.0	15	40	2.0M			T03	C
58#	AU113	866m	5.0	#	10	4.0	250	3.0	200u	1.3	8.0	15	80	2.0M			T03	C	
59#	AUY19	866m	30	#	3.0	3.0	64	20	45	1.0	1.0	20	100	350k		10u	T03	C	
60#	AUY20	866m	30	#	3.0	3.0	80	20	60	1.0	1.0	20	100	350k		10u	T03	C	
61#	AUY21	866m	30	#	10	3.0	65	20	45	.50	5.0	13	60	300k		12u	T041	C	
62#	AUY22	866m	30	#	8.0	3.0	80	20	60	.50	5.0	13	60	300k		12u	T041	C	
63#	AUY24	866m	30	#	8.0	3.0	65	20	45	.90	1.0	30	50	350k			T041	C	
64	AUY26	866m	55	#	3.0	3.0	80	20	80	.60	1.0	20	35	350k			T041	C	
65	AUY27	866m	55	#	3.0	3.0	80	20	80	.90	1.0	30	50	350k			T041	C	
66#	AUY28	866m	55	#	6.0	1.5	90	25	65	1.5	5.0	20	33	250k			T03	C	
67#	AUY29	866m	38	#	1.5	1.5	50	10	32	1.0m	5.0	5.0	20	100	300k		10u	T041	C
68#	AUY34	866m	40	#	3.0	500m	100	20	80	1.0	1.0	13	60	350k	500m		T03	C	
69	CDT1310†	866m	45	#	5.0	2.0	40	35	35	5.0m	2.0	2.0	40	120	8.0k	300m	3.5u	T03	C
70	CDT1311†	866m	45	#	5.0	2.0	60	35	50	5.0m	2.0	2.0	40	120	8.0k	300m	3.5u	T03	C
71	CDT1312†	866m	45	#	5.0	2.0	80	35	65	5.0m	2.0	2.0	40	120	8.0k	300m	3.5u	T03	C
72	CDT1313†	866m	45	#	5.0	2.0	100	35	75	5.0m	2.0	2.0	40	120	8.0k	300m	3.5u	T03	C
73	CDT1319†	866m	45	#	5.0	2.0	40	35	35	5.0m	2.0	2.0	60	80	8.0k	300m	3.5u	T03	C
74	CDT1320†	866m	45	#	5.0	2.0	60	35	50	5.0m	2.0	2.0	20	60	8.0k	300m	3.5u	T03	C
75	CDT1321†	866m	45	#	5.0	2.0	80	35	65	5.0m	2.0	2.0	20	60	8.0k	300m	3.5u	T03	C
76	CDT1322†	866m	45	#	5.0	2.0	100	35	75	5.0m	2.0	2.0	20	60	8.0k	300m	3.5u	T03	C
77#	OC20	866m	30	#	8.0	1.0	100	40	70	20m	1.0	1.0	15	30	250k	133m		T03	C
78#	OC29†	866m	30	#	10	1.0	80	40	60	100u	1.0	6.0	15	30	200k			T03	C
79#	OC29†	866m	30	#	10	1.0	60	20	48	10									

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS V <sub>cb</sub> (V)	MIN (A)	MAX (A)	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC. TURE	DWG No. s/a TO200 Ser.	L E O A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb0</sub> (A)	V <sub>cb</sub> (V)									
1	2N5895	670m	57	#J	7.0	2.0	60	20	60	5.0m#	2.0	500m	60	120		57m		T066	C	
2	2N5896	670m	57	#J	7.0	2.0	75	20	75	5.0m#	2.0	500m	60	120		57m		T066	C	
3	2N5897	670m	57	#J	7.0	2.0	30	20	30	5.0m#	2.0	500m	100	200		57m		T066	C	
4	2N5898	670m	57	#J	7.0	2.0	45	20	45	5.0m#	2.0	500m	100	200		57m		T066	C	
5	2N5899	670m	57	#J	7.0	2.0	60	20	60	5.0m#	2.0	500m	100	200		57m		T066	C	
6	2N5900	670m	57	#J	7.0	2.0	75	20	75	5.0m#	2.0	500m	100	200		57m		T066	C	
7	2N5901	670m	57	#J	7.0	2.0	30	20	30	5.0m#	2.0	500m	175	350		57m		T066	C	
8	2N6064†	670m	58	#J	10	5.0	80 †	5.0†	80	3.0m#	2.0	3.0	20	50		80m	10u#	R155	C	
9	MP3730	670m	58	#J	5.0		200	2.0	200	4.0u#	2.0	50m	10	200		10m#		T03	C	
10	MP3730A†	670m	58	#J	7.0		250	2.0	250	4.0u#	3.0	4.0	10	15		200m		F4s	C	
11	MP3730B†	670m	58	#J	10		280	2.0	280	4.0u#	3.0	8.0	15	15		133m		F4t	C	
12	MP3731	670m	58	#J	10		320	2.0	320	4.0u#	3.0	8.0	15	15		833m		T03	C	
13	2N1227	710m	50	#C	30	500m	35 †	10†	2.0	140	500m	25	320	320		5.3		T03	C	
14	2N1073	800m		#C	10		40	1.5	40	20m#	2.0	20	60	60		200m		F15	C	
15	2N1073A	800m		#C	10		80	1.5	80	20m#	2.0	20	60	60		200m		F15	C	
16	2N1073B	800m		#C	10		120	1.5	120	20m#	2.0	20	60	60		200m		F15	C	
17	2N3751	833m†	4	#C	3.0		80		3.0m#	2.0	1.0	35	90		500m	20u	T03	C		
18	2N378†	833m	50	#J	5.0		80		500u#	2.0	2.0	40	80		500m	25u	T03	C		
19	2N379†	833m	50	#J	5.0		80		500u#	2.0	2.0	40	80		500m	25u	T03	C		
20	2N380	833m	50	#J	5.0		30		500u	2.0	2.0	30	70		500m	25u	T03	C		
21	2N459†	833m	50	#J	5.0		105		500u	2.0	2.0	30	70		500m	25u	T03	C		
22	2N618†	833m†	4	#J	3.0		80		3.0m#	4.0	1.0	60	140		400m	20u	T03	C		
23	2N1136	833m		#J	6.0	1.0	80		5.0u#	5.0	30	50	100		333m		T03	C		
24	2N1136A	833m		#J	6.0	1.0	90		5.0u#	5.0	30	50	100		333m		T03	C		
25	2N1136B	833m		#J	6.0	1.0	100		5.0u#	5.0	30	50	100		333m		T03	C		
26	2N1137	833m		#J	6.0		60		1.0m#	5.0	3.0	75	150		.33	5.0u	T03	C		
27	2N1137A	833m		#J	6.0		90		1.0m#	5.0	3.0	75	150		.33	5.0u	T03	C		
28	2N1137B	833m		#J	6.0		100		1.0m#	5.0	3.0	75	150		.33	5.0u	T03	C		
29	2N1159†	833m	20	#J	5.0	1.0	80	20	8.0m	2.0	3.0	75	75	10k	10k	10u	T03	C		
30	2N1160†	833m	20	#J	7.0	1.0	80	20	8.0m	2.0	3.0	75	75	10k	10k	10u	T03	C		
31	2N1314	833m	12	#J	3.5		40	10	40	100u#	140	30m	20	75		12kA	250m	T03	C	
32	2N1317	833m	12	#J	3.0		30	15	20	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
33	2N1317A	833m	12	#J	3.0		30	15	20	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
34	2N1318	833m	12	#J	3.0		45	25	30	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
35	2N1318A	833m	12	#J	3.0		45	25	30	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
36	2N1319	833m	12	#J	3.0		60	30	45	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
37	2N1319A	833m	12	#J	3.0		60	30	45	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
38	2N2140	833m	12	#J	3.0		75	40	60	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
39	2N2140A	833m	12	#J	3.0		75	40	60	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
40	2N2141	833m	12	#J	3.0		90	45	65	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
41	2N2141A	833m	12	#J	3.0		90	45	65	2.0m	2.0	500m	30	60		12kA	250m	T03	C	
42	2N2142	833m	12	#J	3.0		30	15	20	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
43	2N2142A	833m	12	#J	3.0		30	15	20	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
44	2N2143	833m	12	#J	3.0		45	25	30	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
45	2N2143A	833m	12	#J	3.0		45	25	30	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
46	2N2144	833m	12	#J	3.0		60	30	45	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
47	2N2144A	833m	12	#J	3.0		60	30	45	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
48	2N2145	833m	12	#J	3.0		75	40	60	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
49	2N2145A	833m	12	#J	3.0		75	40	60	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
50	2N2146	833m	12	#J	3.0		90	45	65	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
51	2N2146A	833m	12	#J	3.0		90	45	65	2.0m	2.0	500m	50	100		12kA	250m	T03	C	
52	2N2288	833m	80	#C	10	1.0	40 †	75†	40	5.0m	2.0	5.0	20	60		200m		T03	C	
53	2N2289	833m	80	#C	10	1.0	80 †	75†	80	5.0m	2.0	5.0	20	60		200m		T03	C	
54	2N2290	833m	80	#C	10	1.0	120 †	75†	120	5.0m	2.0	5.0	20	60		200m		T03	C	
55	2N2291	833m	80	#C	10	1.0	40 †	75†	30	5.0m	2.0	5.0	50	120		200m		T03	C	
56	2N2292	833m	80	#C	10	1.0	80 †	75†	50	5.0m	2.0	5.0	50	120		200m		T03	C	
57	2N2293	833m	80	#C	10	1.0	120 †	75†	70	5.0m	2.0	5.0	50	120		200m		T03	C	
58	2N2294†	833m	80	#C	10	3.0	40 †	1.5†	30	15m	2.0	5.0	50	120		200m	10u#	T04	C	
59	2N2295†	833m	80	#C	10	3.0	80 †	1.5†	50	15m	2.0	5.0	50	120		200m	10u#	T04	C	
60	2N2296†	833m	80	#C	10	3.0	120 †	1.5†	70	20m	2.0	5.0	50	120		200m	10u#	T04	C	
61	MP2137	833m	83	#J	3.0		30	15	20	2.0m	2.0	500m	30	60		12kA	250m	T04	C	
62	MP2137A	833m	83	#J	3.0		30	15	20	5.0m†	2.0	500m	30	60		20k	250m	T04	C	
63	MP2138	833m	70	#J	3.0		45	25	30	2.0m	2.0	500m	30	60		12kA	250m	T04	C	
64	MP2139	833m	83	#J	3.0		60	30	45	2.0m	2.0	500m	30	60		12kA	250m	T04	C	
65	MP2140	833m	83	#J	3.0		75	40	60	2.0m	2.0	500m	30	60		12kA	250m	T04	C	
66	MP2141	833m	83	#J	3.0		90	45	65	2.0m	2.0	500m	30	60		12kA	250m	T04	C	
67	MP2142	833m	83	#J	3.0		30	15	20	2.0m	2.0	500m	50	100		12kA	250m	T04	C	
68	MP2143	833m	83	#J	3.0		45	25	30	2.0m	2.0	500m	50	100		12kA	250m	T04	C	
69	MP2144	833m	83	#J	3.0		60	30	45	2.0m	2.0	500m	50	100		12kA	250m	T04	C	
70	MP2145	833m	83	#J	3.0		75	40	60	2.0m	2.0	500m	50	100		12kA	250m	T04	C	
71	MP2146	833m	83	#J	3.0		90	45	65	2.0m	2.0	500m	50	100		12kA	250m	T04	C	
72	MP2146A	833m	70	#J	3.0		90	45	65	5.0m†	2.0	500m	50	100		20k	250m	T04	C	
73	2N3811	900m	85	#C	7.0	2.0	40 †	20†	30	5.0m#	2.0	3.0	35	105		300kA	80m	T03	C	
74	2N3812	900m	85	#C	7.0	2.0	60 †	30†	45	5.0m#	2.0	3.0	35	105		300kA	80m	T03	C	
75	2N3813	900m	85	#C	7.0	2.0	40 †	20†	30	5.0m#	2.0	3.0	60	180		300kA	80m	T03	C	
76	2N3814	900m	85	#C	7.0	2.0	60 †	30†	45	5.0m#	2.0	3.0	60	180		300kA	80m	T03	C	
77	2N3815	900m	85	#C	7.0	2.0	80 †	40†	60	5.0m#	2.0	3.0	30	90		300kA	80m	T03	C	
78	2N3816	900m	85	#C	7.0	2.0	100 †	50†	75	5.0m#	2.0	3.0	30	90		300kA	80m	T03	C	
79	2N3817	900m	85	#C	7.0	2.0	80 †	40†	60											



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O D E		
						ic		BVcbo	BVebo	BVceo	icbo @ 25°C	BIAS								MIN	MAX
						(A)	(A)	(V)	(V)	(V)	(A)	V <sub>cb</sub>	ic								
1	2N2070	1.0	20	#S	12	3.0	80	30	80	15m	2.0	5.0	30	200	1.5kΔ	125m		T03	C		
2	2N2071	1.0	20	#S	12	3.0	40	20	30	15m	2.0	5.0	30	200	1.5kΔ	125m		TO41	C		
3	2N2072	1.0	20	#S	12	3.0	80	30	60	15m	2.0	5.0	30	200	1.5kΔ	125m		TO41	C		
4	2N2210	1.0	70	#J	15	4.0	100	60	65	4.0m	2.0	5.0	25	50	5.0kΔ	50m		R167	C		
5	2N2444	1.0	85	#C	10	3.0	80	1.0†	80	2.0m	2.0	3.0	120	120	4.5MΔ	200m		TO3	C		
6	2N2526†	1.0	85	#C	10	5.0	80	5.0	80	3.0m	2.0	3.0	20	50		80m	11uZ	F4j	C		
7	2N2527†	1.0	85	#C	10	5.0	120	5.0	120	3.0m	2.0	3.0	20	50		80m	11uZ	F4j	C		
8	2N2528†	1.0	85	#C	10	5.0	160	5.0	160	3.0m	2.0	3.0	20	50		80m	11uZ	F4j	C		
9	JAN2N2528†	1.0	85	#C	10	5.0	160	5.0	160	3.0m	2.0	3.0	20	50		80m	4.0uZ	TO3	C		
10	2N2612	1.0	75	#C	15	5.0	65	30	65	500mΔ	2.0	3.0	85	250	2.0kΔ	1.0		TO3	C		
11	2N2832†	1.0	85	#C	20	5.0	80	2.0	50	10m	2.0	10	25	100	10MΔ	150m	4.0u	TO3	C		
12	2N2833†	1.0	85	#C	20	5.0	120	2.0	75	10m	2.0	10	25	100	10MΔ	150m	4.0u	TO3	C		
13	2N2834†	1.0	85	#C	20	5.0	140	2.0	100	10m	2.0	10	25	100	10MΔ	150m	4.0u	TO3	C		
14	JAN2N2834†	1.0	85	#A	20	5.0	160	2.0	100	10m	2.0	10	25	#	10MΔ	150m	4.0u	F4e	C		
15	2N2912†	1.0	75	#A	25	3.0	15	1.5	5.0	10m#	2.0	5.0	200	800	10MΔ	20m	2.0u	R74	A		
16#	2S8235	1.0	60	#J	15	15	80	25	80	10m	2.0	5.0	25	200	200kΔ	50m		TO36	C		
17	3N45†	1.0	75	#J	12	500m	60	28	60	3.0m	2.0	5.0	50	120	16k		3.0u	TO15	GB		
18	3N46†	1.0	75	#J	12	500m	80	28	80	3.0m	2.0	5.0	20	80	12k		6.0u	TO15	GB		
19	3N47	1.0	75	#J	12	1.5	40	28	25	3.0m	2.0	5.0	30	120	500kΔ	80m		TO15	GB		
20	3N48	1.0	75	#J	12	1.5	60	28	40	3.0m	2.0	5.0	20	80	300kΔ	80m		TO15	GB		
21	CTP1505	1.0		#J	13		60		45		2.0	5.0	15	45		.13					
22	CTP1512	1.0		#J	13		80		60		2.0	5.0	60	120							
23#	CTP1544	1.0	1.7 *	#J	25		60	30	30	15m	2.0	25	25	125	4.0k	40m		TO3			
24#	CTP1552	1.0	1.7 *	#J	25		40	30	20	15m	2.0	25	25	125	4.0k	40m		TO3			
25	DTG110A	1.0		#J	15	5.0	2.8	70		2.0	1.0	50	50	300	850kΔ			Y204a	C		
26	DTG600†	1.0	60	#J	15	5.0	1.4	50		2.0	5.0	50	50			30m	12uZ	Y204a	C		
27	DTG601†	1.0	60	#J	15	5.0	1.4	60		2.0	5.0	50	50			30m	12uZ	Y204a	C		
28	DTG602†	1.0	60	#J	15	5.0	1.4	70		2.0	5.0	50	50			30m	12uZ	Y204a	C		
29	DTG603†	1.0	60	#J	15	5.0	1.4	80		2.0	5.0	50	50			30m	12uZ	Y204a	C		
30	DTG603M†	1.0	60	#J	15	2.5	1.4	80		100m*	2.0	5.0	50	250		13uZ		Y204a	C		
31	DTG2000†	1.0	60	#J	15	5.0	1.0	30		100mΔ	2.0	8.0	25	25	250kΔ	36m	9.0u	Y204a	C		
32	DTG2100†	1.0	60	#J	15	5.0	1.0	60		100mΔ	2.0	8.0	25	25	250kΔ	36m	9.0u	Y204a	C		
33	DTG2200†	1.0	60	#J	15	5.0	1.0	80		100mΔ	2.0	8.0	25	25	250kΔ	36m	9.0u	Y204a	C		
34	DTG2300†	1.0	60	#J	15	5.0	1.0	100		100mΔ	2.0	8.0	25	25	250kΔ	36m	9.0u	Y204a	C		
35	DTG2400†	1.0	60	#J	15	5.0	1.0	120		100mΔ	2.0	8.0	25	25	250kΔ	36m	9.0u	Y204a	C		
36	DTG2400M†	1.0	60	#J	15	5.0	1.5	120		20m#	2.0	10	25	125		36m	18uZ	Y204a	C		
37	HEPG6000-RT	1.0	90	#J	3.0		30	10	30	6.0m	1.0	40	60	60	600k			TO3	C		
38	HEPG6003-RT	1.0	90	#J	5.0		30	10	30	3.0m	1.0	60	60	60	600k			TO3	C		
39	HEPG6005-RT	1.0	90	#J	7.0		70	10	70	80u	3.0	60	60	60	600k			TO3	C		
40	HEPG6013-RT	1.0	85	#J	15		60	20	35	1.0m	3.0	100	60	60	600k			TO3	C		
41	HEPG6014-RT	1.0	85	#C	20		80	2.0	50	10m	5.0	60	60	60	1.0m			TO3	C		
42	HEPG6015-RT	1.0	85	#J	10		80	5.0	80	20m	3.0	40	40	40	700k			TO3	C		
43	HEPG6017-RT	1.0	85	#J	10		160	5.0	160	3.0m	3.0	40	40	40	50k			TO3	C		
44	HSE803-RT	1.0	77	#J			60	20	35	1.0m	2.0	500m	30	20	100kΔ			TO3	C		
45	HSE812-RT	1.0	77	#J			60	20	35	1.0m	2.0	200m	30	20	100kΔ			TO3	C		
46	HSE814-RT	1.0	77	#J			60	20	35	1.0m	2.0	200m	80	30	100kΔ			TO3	C		
47	MN28	1.0		#J	3.0		30		30	5.0m	2.0	50	30	100	2.0		A				
48	MN29	1.0		#J	3.0		40		40	5.0m	2.0	50	30	100	2.0		A				
49	MP800†	1.0	85	#J	25	5.0	75	1.5	50	200u	2.0	5.0	50	50		30m	10uZ	ADE	F4r		
50	MP800A†	1.0	85	#J	25	5.0	75	1.5†	50	200u	2.0	5.0	50	50		30m	10uZ	ADE	F49c		
51	MP801†	1.0	85	#J	25	5.0	75	1.5	60	200u	2.0	5.0	50	50		30m	10uZ	ADE	F4r		
52	MP801A†	1.0	85	#J	25	5.0	75	1.5†	60	200u	2.0	5.0	50	50		30m	10uZ	ADE	F49c		
53	MP802†	1.0	85	#J	25	5.0	90	1.5	70	200u	2.0	5.0	50	50		30m	10uZ	ADE	F4r		
54	MP802A†	1.0	85	#J	25	5.0	90	1.5†	70	200u	2.0	5.0	50	50		30m	10uZ	ADE	F49c		
55	MP803†	1.0	85	#J	25	5.0	90	1.5	80	200u	2.0	5.0	50	50		30m	10uZ	ADE	F4r		
56	MP803A†	1.0	85	#J	25	5.0	90	1.5†	80	200u	2.0	5.0	50	50		30m	10uZ	ADE	F49c		
57	MP1612	1.0	85	#J	20		70	2.0	50		10	25	100		18MΔ	.03		TO3	C		
58	MP1612A	1.0	85	#J	20		110	2.0	75		10	25	100		18MΔ	.03		TO3	C		
59	MP1612B	1.0	85	#J	20		13	2.0	100		10	25	100		18MΔ	.03		TO3	C		
60	MP1613	1.0	85	#J	7.0	2.0	100	50	75	5.0m	1.0	40	40	70			A	TO3	C		
61	MP2060	1.0	85	#C	7.0	2.0	40	20	25	1.0m	2.0	3.0	30	200	600kΔ		A	TO3	C		
62	MP2061	1.0	85	#C	7.0	2.0	60	20	35	1.0m	2.0	3.0	30	200	600kΔ		A	TO3	C		
63	MP2062	1.0	85	#C	7.0	2.0	75	20	50	1.0m	2.0	3.0	30	200	600kΔ		A	TO3	C		
64	MP2063	1.0	85	#C	7.0	2.0	90	20	60	1.0m	2.0	3.0	30	200	600kΔ		A	TO3	C		
65#	OC19	1.0	50	#J	3.0		32	10	32	100u	1.0	2.0	10	56		266m		A	TO3	C	
66	SDG600	1.0	85	#J	10	1.0	75	1.5	50		2.0	5.0	50	50		30m		A	TO3	C	
67	SDG601	1.0	85	#J	10	1.0	75	1.5	60		2.0	5.0	50	50		30m		A	TO3	C	
68	SDG602	1.0	85	#J	10	1.0	75	1.5	70		2.0	5.0	50	50		30m		A	TO3	C	
69	SDG603	1.0	85	#J	10	1.0	90	1.5	80		2.0	5.0	50	50		30m		A	TO3	C	
70#	2G220	1.1		#J	10	5.0	40	30		2.0m	1.5	10	10	12	200k	.05	11u	A	F3	C	
71#	2G221	1.1		#J	10	5.0	60	30		2.0m	1.5	10	10	12	200k	.05	11u	A	F3	C	
72#	2G223	1.1		#J	15	5.0	40	30		2.0m	1.5	15	10	12	250k†	50m	11u	A	F3	C	
73#	2G224	1.1		#J	15	5.0	60			2.0m	1.5	15	10	12	250k†	50m	11u	A	F3	C	
74#	2G226	1.1		#J	20	5.0	40			2.0m	1.5	20	10	12	300k†	50m	10u	A	F3	C	
75#	2G227	1.1		#J	20	5.0	60			2.0m	1.5	20	10	12	300k†	50m	10u	A	F3	C	
76#	2G231	1.1		#J	25	5.0	80	30		2.0m	1.5	25	10	12	300k†	.05	10u	A	F3	C	
77	2N174†	1.2	30	#J	15	4.0	80	60		8.0m	2.0	5.0	25	50	10k		15u	A	TO36	C	
78	2N174A†	1.2	30	#J	15	4.0	80	60		8.0m	2.0	1.2	40	80	100kΔ	58m	15u	A	TO36	C	
79	2N176	1.2	90	#J	3.0		30	20	30	3.0m	2.0	500m									

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	MAX. P C A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/s/a TO200	# L O A D E
					Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcbo (V)	Vcb (V)	Ic (A)								
1	2N1099F	1.2	30	#J	15	4.0	80	40	80	8.0m	2.0	5.0	35	70	10k	58m	15u		TO36	C	
2	2N1100T	1.2	30	#J	15	4.0	100	80	80	8.0m	2.0	5.0	25	50	10k	58m	15u		TO36	C	
3	JAN2N1120	1.2	90	#J	15	5.0	80	40	40	10m	2.0	5.0	10	20	50	70m	3.0kΔ		TO41	C	
4	2N1146	1.2	87	#S	15	5.0	40	30	38	15m	2.0	5.0	60	150	66m	66m			TO3	C	
5	2N1146A	1.2	87	#S	15	5.0	60	30	58	15m	2.0	5.0	60	150	66m	66m			TO3	C	
6	2N1146B	1.2	87	#S	15	5.0	80	30	78	15m	2.0	5.0	60	150	66m	66m			TO3	C	
7	2N1146C	1.2	87	#S	15	5.0	100	30	98	15m	2.0	5.0	60	150	66m	66m			TO3	C	
8	2N1147	1.2	87	#S	15	5.0	40	30	38	15m	2.0	5.0	60	150	66m	66m			TO41	C	
9	2N1147A	1.2	87	#S	15	5.0	60	30	58	15m	2.0	5.0	60	150	66m	66m			TO41	C	
10	2N1147B	1.2	87	#S	15	5.0	80	30	78	15m	2.0	5.0	60	150	66m	66m			TO41	C	
11	2N1147C	1.2	87	#S	15	5.0	100	30	98	15m	2.0	5.0	60	150	66m	66m			TO41	C	
12	2N1162	1.2	87	#J	25	25	50	20	25	15m	1.0	25	15	65	1.0kΔ	32m			TO3	C	
13	2N1162A	1.2	87	#J	25	25	50	20	25	15m	1.0	25	15	65	3.0kΔ	32m			TO3	C	
14	2N1163	1.2	87	#J	25	25	50	20	25	15m	1.0	25	15	65	1.0kΔ	32m			TO41	C	
15	2N1163A	1.2	87	#J	25	25	50	20	25	15m	1.0	25	15	65	3.0kΔ	32m			TO41	C	
16	2N1164	1.2	87	#J	25	25	80	25	35	15m	1.0	25	15	65	1.0kΔ	32m			TO3	C	
17	2N1164A	1.2	87	#J	25	25	80	40	40	15m	1.0	25	15	65	3.0kΔ	32m			TO3	C	
18	2N1165	1.2	87	#J	25	25	80	25	35	15m	1.0	25	15	65	1.0kΔ	32m			TO41	C	
19	JAN2N1165	1.2	90	#J	25	25	80	40	40	15m	1.0	5.0	25	125	3.0kΔ	40m			TO41	C	
20	2N1165A	1.2	90	#J	25	25	80	40	40	15m	1.0	25	15	65	3.0kΔ	32m			TO41	C	
21	2N1166	1.2	87	#J	25	25	100	30	45	15m	1.0	25	15	65	1.0kΔ	32m			TO3	C	
22	2N1166A	1.2	87	#J	25	25	100	50	50	15m	1.0	25	15	65	3.0kΔ	32m			TO3	C	
23	2N1167	1.2	87	#J	25	25	100	30	45	15m	1.0	25	15	65	1.0kΔ	32m			TO41	C	
24	2N1167A	1.2	87	#J	25	25	100	50	50	15m	1.0	25	15	65	3.0kΔ	32m			TO41	C	
25	2N1182	1.2	106	#S	5.0	1.0	50	12	60	12m	1.0	500m	30	85	5.0kΔ	450m	15u		TO3	C	
26	2N1358T	1.2	30	#J	15	4.0	80	60	25	8.0m	2.0	1.2	40	80	100kΔ	58m			TO36	C	
27	2N1359	1.2	30	#C	3.0	3.0	50	25	40	20m	4.0	1.0	35	90	5.0kΔ	500m			TO3	C	
28	2N1360	1.2	87	#C	3.0	3.0	50	25	40	20m	4.0	1.0	60	140	5.0kΔ	500m			TO3	C	
29	2N1362	1.2	87	#C	3.0	3.0	100	50	75	20m	4.0	1.0	35	90	5.0kΔ	500m			TO3	C	
30	2N1363	1.2	87	#C	3.0	3.0	100	50	75	20m	4.0	1.0	60	140	5.0kΔ	500m			TO3	C	
31	2N1364	1.2	87	#C	3.0	3.0	120	60	100	20m	4.0	1.0	35	90	5.0kΔ	500m			TO3	C	
32	2N1365	1.2	87	#C	3.0	3.0	120	60	100	20m	4.0	1.0	60	140	5.0kΔ	500m			TO3	C	
33	2N1412	1.2	87	#J	15	4.0	100	60	85	6.0m	2.0	5.0	25	50	5.0kΔ	60m			TO36	C	
34	2N1419T	1.2	87	#J	25	5.0	80	50	75	15m	2.0	25	40	100	28m	20uZ			TO3	C	
35	2N1518	1.2	87	#J	25	4.0	50	30	40	100uZ	4.0	15	15	60	28m				TO36	C	
36	2N1519	1.2	70	#J	25	4.0	80	30	60	100uZ	4.0	15	15	60	28m				TO36	C	
37	2N1520	1.2	70	#J	35	6.0	50	30	40	100uZ	4.0	15	17	68	17m				TO36	C	
38	2N1521	1.2	70	#J	35	6.0	80	30	60	100uZ	4.0	15	17	68	17m				TO36	C	
39	2N1522	1.2	70	#J	50	8.0	50	30	40	100	4.0	15	25	100	10m				TO36	C	
40	2N1523	1.2	70	#J	50	8.0	80	30	60	100	4.0	15	25	100	10m				TO36	C	
41	2N1529	1.2	87	#C	5.0	5.0	40	20	30	200uZ	2.0	3.0	20	40	2.0k	500m			TO3	C	
42	2N1530	1.2	87	#C	5.0	5.0	60	30	45	200uZ	2.0	3.0	20	40	2.0k	500m			TO3	C	
43	2N1531	1.2	87	#C	5.0	5.0	80	40	60	200uZ	2.0	3.0	20	40	2.0k	500m			TO3	C	
44	2N1532	1.2	87	#C	5.0	5.0	100	50	75	200uZ	2.0	3.0	20	40	2.0k	500m			TO3	C	
45	2N1533	1.2	87	#C	5.0	5.0	120	60	90	200uZ	2.0	3.0	20	40	2.0k	500m			TO3	C	
46	2N1534	1.2	87	#C	5.0	5.0	40	20	30	200uZ	2.0	3.0	35	70	2.0k	400m			TO3	C	
47	2N1535	1.2	87	#C	5.0	5.0	60	30	45	200uZ	2.0	3.0	35	70	2.0k	400m			TO3	C	
48	2N1536	1.2	87	#C	5.0	5.0	80	40	60	200uZ	2.0	3.0	35	70	2.0k	400m			TO3	C	
49	2N1537	1.2	87	#C	5.0	5.0	100	50	75	200uZ	2.0	3.0	35	70	2.0k	400m			TO3	C	
50	2N1538	1.2	87	#C	5.0	5.0	120	60	90	200uZ	2.0	3.0	35	70	2.0k	400m			TO3	C	
51	2N1539	1.2	87	#C	5.0	5.0	40	20	30	200uZ	2.0	3.0	50	100	1.0k	100m			TO3	C	
52	2N1539A	1.2	87	#C	5.0	5.0	40	20	20	20m	2.0	3.0	50	100	3.0kΔ	200m			TO3	C	
53	2N1540	1.2	87	#C	5.0	5.0	60	30	45	200uZ	2.0	3.0	50	100	1.0k	100m			TO3	C	
54	2N1540A	1.2	87	#C	5.0	5.0	60	30	30	20m	2.0	3.0	50	100	3.0kΔ	200m			TO3	C	
55	2N1541	1.2	87	#C	5.0	5.0	80	40	60	200uZ	2.0	3.0	50	100	1.0k	100m			TO3	C	
56	2N1541A	1.2	87	#C	5.0	5.0	80	40	40	20m	2.0	3.0	50	100	3.0kΔ	200m			TO3	C	
57	2N1542	1.2	87	#C	5.0	5.0	100	50	75	200uZ	2.0	3.0	50	100	1.0k	100m			TO3	C	
58	2N1542A	1.2	87	#C	5.0	5.0	100	50	50	20m	2.0	3.0	50	100	3.0kΔ	200m			TO3	C	
59	2N1543	1.2	87	#C	5.0	5.0	120	60	90	200uZ	2.0	3.0	50	100	1.0k	100m			TO3	C	
60	2N1544	1.2	87	#C	5.0	5.0	40	20	20	20m	2.0	3.0	75	150	1.0kΔ	66m			TO3	C	
61	2N1544A	1.2	87	#C	5.0	5.0	40	20	20	20m	2.0	3.0	75	150	3.0kΔ	66m			TO3	C	
62	2N1545	1.2	87	#C	5.0	5.0	60	30	30	20m	2.0	3.0	75	150	1.0kΔ	66m			TO3	C	
63	2N1545A	1.2	87	#C	5.0	5.0	60	30	30	20m	2.0	3.0	75	150	3.0kΔ	66m			TO3	C	
64	2N1546	1.2	87	#C	5.0	5.0	80	40	40	20m	2.0	3.0	75	150	1.0kΔ	66m			TO3	C	
65	2N1546A	1.2	87	#C	5.0	5.0	80	40	40	20m	2.0	3.0	75	150	3.0kΔ	66m			TO3	C	
66	2N1547	1.2	87	#C	5.0	5.0	100	50	50	20m	2.0	3.0	75	150	1.0kΔ	66m			TO3	C	
67	2N1547A	1.2	87	#C	5.0	5.0	100	50	50	20m	2.0	3.0	75	150	3.0kΔ	66m			TO3	C	
68	2N1548	1.2	87	#C	5.0	5.0	120	60	60	20m	2.0	3.0	75	150	1.0kΔ	66m			TO3	C	
69	2N1549	1.2	87	#C	15	15	40	20	20	20m	2.0	10	10	30	2.0kΔ	100m			TO3	C	
70	2N1549A	1.2	87	#J	15	15	40	20	20	3.0mZ	2.0	10	10	30	10k	100m	5.0uZ	AΔ	TO3	C	
71	2N1550	1.2	87	#C	15	15	60	30	30	20m	2.0	10	10	30	2.0kΔ	100m			TO3	C	
72	2N1550A	1.2	87	#J	15	15	60	30	30	3.0mZ	2.0	10	10	30	10k	100m	5.0uZ	AΔ	TO3	C	
73	2N1551	1.2	87	#C	15	15	80	40	40	20m	2.0	10	10	30	2.0kΔ	100m			TO3	C	
74	2N1551A	1.2	87	#J	15	15	80	40	40	3.0mZ	2.0	10	10	30	10k	100m	5.0uZ	AΔ	TO3	C	
75	2N1552	1.2	87	#C	15	15	100	50	50	20m	2.0	10	10	30	2.0kΔ	100m			TO3	C	
76	2N1552A	1.2	87	#J	1																

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D E	
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)									Ic (A)
1	2N2063A†	1.2	90	#	5.0	3.0	40	20	20	2.0m†	2.0	20	60	5.0kΔ	200m	12u†	TO3	CØ		
2	2N2064A†	1.2	90	#	5.0	3.0	40	20	20	2.0m†	2.0	50	140	1.0kΔ	140m	12u†	TO3	CØ		
3	2N2065A†	1.2	90	#	5.0	3.0	80	30	40	5.0m†	2.0	20	60	5.0kΔ	200m	12u†	TO3	CØ		
4	2N2066A†	1.2	90	#	5.0	3.0	80	30	40	5.0m†	2.0	50	140	1.0kΔ	140m	12u†	TO3	CØ		
5	2N2211	1.2	90	#	5.0	3.0	80	40	60	2.0m	4.0	60	140	5.0k			TO3	CØ		
6	2N2212	1.2	60	#	10	3.0	120	1.5	120	2.0m	5.0	50	120	450kΔ	200m		TO41	CØ		
7	2N2285	1.2	100	#	25	5.0	80†	1.5†	30	5.0m	2.0	10	35	140			TO3	CØ		
8	2N2286	1.2	100	#	25	5.0	100†	1.5†	60	5.0m	2.0	10	35	140			TO3	CØ		
9	2N2287	1.2	100	#	25	5.0	120†	1.5†	80	5.0m	2.0	10	35	140			TO3	CØ		
10	2N2445	1.2	90	#	15	5.0	100	50	50	20m†	2.0	10	30	60	100kΔ	100m		TO41	CØ	
11	2N2446†	1.2	90	#	7.0	3.0	60	20	50	2.0m†	2.0	5.0	15	45	214m	30u†	TO3	CØ		
12	2N2636†	1.2	100	#	25	2.5	100†	1.5†	60	10m†	2.0	25	20	80	26m		TO41	CØ		
13	2N2637†	1.2	100	#	25	2.5	100†	1.5†	60	10m†	2.0	25	20	80	26m		TO41	CØ		
14	2N2638†	1.2	100	#	25	2.5	100†	1.5†	60	10m†	2.0	25	20	80	26m		TO41	CØ		
15	2N2691†	1.2	100	#	20	5.0	100†	1.5†	80	5.0m†	1.5	20	30	100	60kΔ	700u†	TO41	CØ		
16	2N3124	1.2	90	#	15	5.0	40	20	30	20m	2.0	10	50	100	2.5kΔ	50m		TO41	CØ	
17	2N3125	1.2	90	#	3.3	1.7	80	40	40	15m	2.0	3.0	30	75	500m		TO41	CØ		
18	2N3126	1.2	90	#	15	3.0	100	12	75	3.0m	2.0	10	30	30	6.0kΔ	100m		TO41	CØ	
19	2N3132	1.2	90	#	5.0	5.0	100	40	40	5.0m	2.0	2.0	40	200	300m	20u†	Δ	TO3	CØ	
20	2N4242	1.2	106	#	10	3.0	80	40	40	2.0m	2.0	50	80	80	75m		TO3	CØ		
21	2N4243	1.2	106	#	10	3.0	80	40	40	2.0m	2.0	50	80	80	75m		TO3	CØ		
22	2N4244	1.2	106	#	10	3.0	40	20	40	2.0m	2.0	50	80	80	75m		TO3	CØ		
23	2N4245	1.2	106	#	10	3.0	80	40	40	2.0m	2.0	50	80	80	75m		TO3	CØ		
24	2N4246	1.2	106	#	10	3.0	60	30	30	2.0m	2.0	50	80	80	75m		TO3	CØ		
25	2N4247	1.2	106	#	10	3.0	40	20	40	2.0m	2.0	50	80	80	75m		TO3	CØ		
26	2N5156†	1.2	93	#	10	2.0	100	60	60	4.0m	2.0	25	60	150kΔ	100m	20u	TO3	CØ		
27	3N49	1.2	94	#	15	2.0	60	28	35	3.0m	2.0	30	120	800kΔ	80m		T70	GKØ		
28	3N50	1.2	94	#	15	2.0	80	28	50	3.0m	2.0	20	80	300kΔ	80m		T70	GKØ		
29	3N51	1.2	94	#	15	2.0	40	28	25	3.0m	2.0	30	120	500kΔ	80m		T70	GKØ		
30	3N52	1.2	94	#	15	2.0	60	28	40	3.0m	2.0	20	80	300kΔ	80m		T70	GKØ		
31#	ADY26†	1.2	100	#	25	3.0	80	40	60	4.0m	0.0	25	25	100kΔ		25u	A	ZA	CØ	
32#	ADZ11	1.2	45	#	20	2.0	50	30	40	8.0m	2.0	1.2	40	120	80kΔ	66m	AD	ZA	CØ	
33#	ADZ12	1.2	45	#	20	2.0	80	50	50	8.0m	2.0	1.2	40	120	100kΔ	66m	AD	ZA	CØ	
34	CQT940A	1.2	90	#	15	5.0	100	20	85	2.0m	2.0	10	20	90m			A	TO3	CØ	
35	CQT940B	1.2	90	#	15	5.0	80	60	60	2.0m	2.0	7.0	30	90m			A	TO3	CØ	
36	CQT1110	1.2	90	#	5.0		40	10	30	2.0m	2.0	1.0	50	250	250kΔ	200m		A	TO3	CØ
37	CQT1110A	1.2	90	#	5.0		40	10	30	2.0m	2.0	1.0	50	250	250kΔ	200m		A	TO3	CØ
38	CQT1111	1.2	90	#	5.0		60	10	50	2.0m	2.0	1.0	50	250	250kΔ	200m		A	TO3	CØ
39	CQT1111A	1.2	90	#	5.0		60	10	50	2.0m	2.0	1.0	50	250	250kΔ	200m		A	TO3	CØ
40	CQT1112	1.2	90	#	10		65	65	65	2.0m	2.0	1.0	75	300	250kΔ	100m		A	TO3	CØ
41	CTP1500	1.2	90	#	15	5.0	100	30	50	8.0m	2.0	30	75	70m			Δ	TO3	CØ	
42	CTP1504	1.2	90	#	15	5.0	60	30	30	8.0m	2.0	30	75	70m			Δ	TO3	CØ	
43	CTP1508	1.2	90	#	15	5.0	40	30	40	8.0m	2.0	30	75	70m			Δ	TO3	CØ	
44	CTP3500	1.2	90	#	15	5.0	100	30	70	8.0m	2.0	30	75	70m			Δ	TO41	CØ	
45	CTP3503	1.2	90	#	15	5.0	80	30	70	8.0m	2.0	30	75	70m			Δ	TO41	CØ	
46	CTP3504	1.2	90	#	15	5.0	60	30	50	8.0m	2.0	30	75	70m			Δ	TO41	CØ	
47	CTP3508	1.2	90	#	15	5.0	40	30	40	8.0m	2.0	30	75	70m			Δ	TO41	CØ	
48	CTP3544	1.2	90	#	25	5.0	60	30	40	15m	2.0	25	125	125	5.0k	40m		Δ	TO41	CØ
49	CTP3545	1.2	90	#	25	5.0	80	30	60	15m	2.0	25	125	125	5.0k	40m		Δ	TO41	CØ
50	CTP3552	1.2	90	#	25	5.0	40	30	30	10m	2.0	25	75	75	5.0k	40m		Δ	TO41	CØ
51	CTP3553	1.2	90	#	25	5.0	100	30	75	10m	2.0	25	75	75	5.0k	40m		Δ	TO41	CØ
52	DTG110	1.2	75	#	7.0	1.0	2.0		65	200u	2.0	1.0	74	250	200kΔ	250m		Δ	Y204a	CØ
53	DTG110B	1.2	75	#	15	3.0	2.0		40	10m*	2.0	1.0	65	300	500kΔ	100m		Δ	Y204a	CØ
54	DTG1000	1.2	106	#	15	3.0	100		325	#	2.0	4.0	22	150	450kΔ	160m	6.0u	A	TO3	CØ
55	DTG1010†	1.2	106	#	15	3.0	1.0		200	#	2.0	4.0	22	150	450kΔ	160m	6.0u	A	TO3	CØ
56	DTG1110†	1.2	106	#	15	3.0	1.0		200	#	2.0	4.0	22	150	450kΔ	160m	6.0u	A	TO3	CØ
57	DTG1110B†	1.2	106	#	15	3.0	250		80	#	2.0	4.0	22	150	350kΔ	160m	6.0u	A	TO3	CØ
58	DTG1200	1.2	106	#	15	3.0	1.0		120	Δ	100mΔ	1.0	8.0	22	350kΔ	430k	4.1m	A	TO3	CØ
59	DTG1210A†	1.2	106	#	15	3.0	250		80	2.0	2.0	1.0	35	50	350kΔ	160m	6.0u	A	TO3	CØ
60	HEPG6009-RT	1.2	106	#	25		80		2.0	200u	2.0	3.0	50	50	430k			A	TO3	CØ
61	HEPG6018-RT	1.2	90	#	10		100	50	50	5.0k	2.0	10	50	50	5.0k			A	TO3	CØ
62	HSE802-RT	1.2	90	#	10		50	20	30	3.0m	2.0	500m	50	50	100kΔ			A	TO3	CØ
63	HSE805-RT	1.2	90	#	10		65	20	30	1.0m	2.0	200m	50	50	100kΔ			A	TO3	CØ
64	HSE811-RT	1.2	90	#	10		40	10	10	3.0m	2.0	200m	30	30	100kΔ			A	TO3	CØ
65	MP110	1.2	106	#	7.0	2.0	90	2.0	65	#	2.0	1.0	74	250	320kΔ			A	TO3	CØ
66	MP110B	1.2	106	#	25	5.0	90	2.0	65	#	2.0	1.0	65	300	500kΔ			A	TO3	CØ
67	MP249A	1.2	106	#	8.0	1.0	90		55	*	5.0	3.0	50	100	4.0kΔ	4.0		ADEΔ	TO3	CØ
68	MP525	1.2	106	#	10		100		45	200u	2.0	3.0	30	200				A	TO3	CØ
69	MP1077	1.2	106	#	25		100		45	2.0	2.0	3.0	30	75				A	TO3	CØ
70	MP1529†	1.2	90	#	5.0		40	20	20	2.0m	2.0	3.0	20	40	500m	8.0u	A	TO41	CØ	
71	MP1530†	1.2	90	#	5.0		60	30	30	2.0m	2.0	3.0	20	40	500m	8.0u	A	TO41	CØ	
72	MP1531†	1.2	90	#	5.0		80	40	40	2.0m	2.0	3.0	20	40	500m	8.0u	A	TO41	CØ	
73	MP1532†	1.2	90	#	5.0		100	50	50	2.0m	2.0	3.0	20	40	500m	8.0u	A	TO41	CØ	
74	MP1533†	1.2	90	#	5.0		120	60	60	2.0m	2.0	3.0	20	40	400m	8.0u	A	TO41	CØ	
75	MP1534†	1.2	90	#	5.0		40	20	20	2.0m	2.0	3.0	35	70	400m	8.0u	A	TO41	CØ	
76	MP1535†	1.2	90	#	5.0		60	30	30	2.0m	2.0	3.0	35	70	400m	8.0u	A	TO41	CØ	
77	MP1536†	1.2	90	#	5.0		80	40	40	2.0m	2.0	3.0	35	70	400m	8.0u	A	TO41	CØ	
78	MP1537†	1.2	90	#	5.0		100	50	50	2.0m	2.0	3.0	35	70	400m	8.0u	A	TO41	CØ	
79	MP1538†	1.2	90	#	5.0		120	60	60	2.0m	2.0	3.0	35	70						

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG s/a TO200 Ser.	# C O D E				
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CB</sub> (V)	V <sub>EB</sub> (V)	V <sub>CE</sub> (V)	I <sub>c</sub> @ MAX V <sub>CB</sub> @ 25°C (A)	V <sub>CB</sub> (V)	I <sub>c</sub> (A)							MIN	MAX		
1	MP2400B	1.2	108	∅	∅	25	5.0	100	2.0	120	200	2.0	8.0	25	430k	24m	11u	ADE	F49c	∅		
2	PTC105A	1.2	25	∅	∅	3.0	∅	60	45	20	2.0	1.0	10	10	100m	∅	A	T03	∅			
3	T1366A	1.2	25	∅	∅	3.0	∅	60	45	10	1.0	1.0	50	∅	∅	∅	A	T03	∅			
4	T1367A	1.2	25	∅	∅	3.0	∅	60	45	20	1.0	1.0	30	∅	∅	∅	A	T03	∅			
5	T1368A	1.2	25	∅	∅	3.0	∅	45	25	10	1.0	1.0	50	∅	∅	∅	A	T03	∅			
6	T1369A	1.2	25	∅	∅	3.0	∅	45	23	20	1.0	1.0	30	∅	∅	∅	A	T03	∅			
7	T1370A	1.2	25	∅	∅	3.0	∅	30	45	20	1.0	1.0	30	∅	∅	∅	A	T03	∅			
8	2N1529A	1.3	∅	∅	#J	5.0	5.0	40	20	30	2.0	3.0	20	40	5.0k	.50	∅	T03	C			
9	2N1530A	1.3	∅	∅	#J	5.0	5.0	60	30	45	2.0	3.0	20	40	5.0k	.50	∅	T03	C			
10	2N1531A	1.3	∅	∅	#J	5.0	5.0	80	40	60	2.0	3.0	20	40	5.0k	.50	∅	T03	C			
11	2N1532A	1.3	∅	∅	#J	5.0	5.0	100	50	75	2.0	3.0	20	40	5.0k	.50	∅	T03	C			
12	2N1534A	1.3	∅	∅	#J	5.0	5.0	40	20	30	2.0	3.0	35	70	5.0k	.40	∅	T03	C			
13	2N1535A	1.3	∅	∅	#J	5.0	5.0	60	30	45	2.0	3.0	35	70	5.0k	.40	∅	T03	C			
14	2N1536A	1.3	∅	∅	#J	5.0	5.0	80	40	60	2.0	3.0	35	70	5.0k	.40	∅	T03	C			
15	2N1537A	1.3	∅	∅	#J	5.0	5.0	100	50	75	2.0	3.0	35	70	5.0k	.40	∅	T03	C			
16	2N2423	1.3	∅	∅	#J	5.0	5.0	100	30	80	5.0	2.0	20	100	∅	∅	A	T03	∅			
17	2SB430	1.3	80	∅	#C	20	∅	70	1.0	∅	2.0	2.0	10	10k	∅	2.0u	DA	T036	A			
18	B1181	1.3	∅	∅	#C	25	∅	160	2.0	160	1.5	15	60	2.0M	.03	∅	DA	T03	∅			
19	COT1075	1.3	90	∅	#J	25	∅	140	140	70	2.0	2.0	25	10	200k	∅	A	T03	∅			
20	COT1076	1.3	90	∅	#J	25	∅	115	115	60	2.0	2.0	25	15	200k	∅	A	T03	∅			
21	COT1077	1.3	90	∅	#J	15	∅	100	100	45	2.0	2.0	15	10	200k	∅	A	T03	∅			
22	DTG1011	1.3	∅	∅	#J	15	3.0	∅	∅	200	1.5	1.0	40	∅	420k	.71	4.0u	A	T041	∅		
23	DTG1040	1.3	∅	∅	#J	15	3.0	∅	∅	2.0	2.0	1.0	45	∅	420k	∅	A	T041	∅			
24	2N514	1.4	80	∅	#J	25	5.0	40	30	80	8.0	1.5	25	12	7.0k	25m	∅	A	F3	∅		
25	2N514A	1.4	80	∅	#J	25	5.0	60	30	80	8.0	1.5	25	12	7.0k	25m	∅	A	F3	∅		
26	2N514B	1.4	80	∅	#J	25	5.0	80	30	80	8.0	1.5	25	12	7.0k	25m	∅	A	F3	∅		
27	2N5435†	1.4	120	∅	#J	60	12	80	2.5	60	10	2.0	25	20	∅	∅	∅	A	T03	∅		
28	2N5436†	1.4	120	∅	#J	60	12	110	2.5	90	10	2.0	25	20	∅	∅	∅	A	T03	∅		
29	2N5437†	1.4	120	∅	#J	60	12	140	2.5	120	10	2.0	25	20	∅	∅	∅	A	T03	∅		
30	2N5438†	1.4	120	∅	#J	60	12	80	2.5	60	10	2.0	25	40	120	∅	∅	∅	A	T03	∅	
31	2N5439†	1.4	120	∅	#J	60	12	110	2.5	90	10	2.0	25	40	120	∅	∅	∅	A	T03	∅	
32	2N5440†	1.4	120	∅	#J	60	12	140	2.5	120	10	2.0	25	40	120	∅	∅	∅	A	T03	∅	
33	2N5692†	1.4	120	∅	#J	40	12	50	2.5	30	10	2.0	25	20	65	20u	∅	∅	∅	A	T03	∅
34	2N5693†	1.4	120	∅	#J	40	12	80	2.5	60	10	2.0	25	20	65	20u	∅	∅	∅	A	T03	∅
35	2N5694†	1.4	120	∅	#J	40	12	100	2.5	80	10	2.0	25	20	65	20u	∅	∅	∅	A	T03	∅
36	2N5695†	1.4	120	∅	#J	40	12	120	2.5	100	10	2.0	25	20	65	20u	∅	∅	∅	A	T03	∅
37	2N5696†	1.4	120	∅	#J	40	12	140	2.5	120	10	2.0	25	20	65	20u	∅	∅	∅	A	T03	∅
38	MP5435†	1.4	120	∅	#J	60	12	80	2.5	60	20	2.0	25	20	60	∅	∅	∅	A	F49d	∅	
39	MP5436†	1.4	120	∅	#J	60	12	110	2.5	90	20	2.0	25	20	60	∅	∅	∅	A	F49d	∅	
40	MP5437†	1.4	120	∅	#J	60	12	140	2.5	120	20	2.0	25	20	60	∅	∅	∅	A	F49d	∅	
41	MP5438†	1.4	120	∅	#J	60	12	80	2.5	60	20	2.0	25	40	120	∅	∅	∅	A	F49d	∅	
42	MP5439†	1.4	120	∅	#J	60	12	110	2.5	90	20	2.0	25	40	120	∅	∅	∅	A	F49d	∅	
43	MP5440†	1.4	120	∅	#J	60	12	140	2.5	120	20	2.0	25	40	120	∅	∅	∅	A	F49d	∅	
44	2SB410	1.5	40	∅	#J	15	∅	135	5.0	135	25	1.5	1.0	60	∅	∅	∅	∅	∅	∅	∅	
45	ASZ16#	1.5	30	∅	#J	10	20	60	20	32	3.0	1.0	60	35	80	250	∅	∅	∅	∅	∅	
46	2N5155†	1.6	60	∅	#J	15	5.0	140	1.5	120	10	2.0	8.0	25	100	∅	∅	∅	∅	∅	∅	
47	SDT1960	1.6	140	∅	#J	65	10	80	30	60	5.0	2.0	65	20	340k	36m	18u	∅	F4j	T23	∅	
48	SDT1961	1.6	140	∅	#J	65	10	60	30	45	5.0	2.0	65	20	340k	46m	10u	∅	T23	B	∅	
49	SDT1962	1.6	140	∅	#J	65	10	40	20	30	5.0	2.0	65	20	340k	46m	10u	∅	T23	B	∅	
50	2N2733†	1.7	66	∅	#C	65	10	80	30	60	5.0	2.0	25	30	120	∅	∅	∅	∅	∅	∅	
51	2N2734†	1.7	66	∅	#C	65	10	60	30	45	5.0	2.0	25	30	120	∅	∅	∅	∅	∅	∅	
52	2N2735†	1.7	66	∅	#C	65	10	40	20	30	5.0	2.0	25	30	120	∅	∅	∅	∅	∅	∅	
53	2N2736	1.7	66	∅	#C	65	10	80	30	60	5.0	2.0	25	30	120	∅	∅	∅	∅	∅	∅	
54	2N2737	1.7	66	∅	#C	65	10	60	30	45	5.0	2.0	25	30	120	∅	∅	∅	∅	∅	∅	
55	2N2738	1.7	66	∅	#C	65	10	40	20	30	5.0	2.0	25	30	120	∅	∅	∅	∅	∅	∅	
56	2G210	2.0	∅	∅	#J	6.0	2.0	60	20	60	1.0	5.0	25	90	400k	∅	∅	A	F4	∅	∅	
57	JAN2N174A	2.0	75	∅	#S	14	4.0	80	60	40	1.5	1.2	40	80	100k	60m	∅	∅	T56	∅	∅	
58	2N456B	2.0	150	∅	#J	7.0	3.0	40	30	30	2.0	1.5	5.0	30	90	200k	100m	∅	∅	∅	∅	
59	JAN2N456B†	2.0	150	∅	#J	7.0	3.0	40	30	30	7.0	1.5	5.0	30	120	∅	∅	∅	∅	∅	∅	
60	2N457B	2.0	150	∅	#J	7.0	3.0	60	30	40	2.0	1.5	5.0	30	90	200k	100m	∅	∅	∅	∅	
61	JAN2N457B†	2.0	150	∅	#J	7.0	3.0	60	35	40	7.0	1.5	5.0	30	120	∅	∅	∅	∅	∅	∅	
62	2N458B	2.0	150	∅	#J	7.0	3.0	80	30	45	2.0	1.5	5.0	30	90	200k	100m	∅	∅	∅	∅	
63	JAN2N458B†	2.0	150	∅	#J	7.0	3.0	80	40	45	7.0	1.5	5.0	30	120	∅	∅	∅	∅	∅	∅	
64	2N511	2.0	∅	∅	#J	25	5.0	40	30	20	5.0	2.0	10	20	60	2.0k	500m	∅	∅	∅	∅	
65	2N511A	2.0	∅	∅	#J	25	5.0	60	30	30	5.0	2.0	10	20	60	2.0k	50m	∅	∅	∅	∅	
66	2N511B	2.0	∅	∅	#J	25	5.0	80	30	40	5.0	2.0	10	20	60	2.0k	64m	∅	∅	∅	∅	
67	2N512	2.0	∅	∅	#J	25	5.0	40	30	20	5.0	2.0	15	20	60	2.0k	500m	∅	∅	∅	∅	
68	2N512A	2.0	∅	∅	#J	25	5.0	60	30	30	5.0	2.0	15	20	60	2.0k	50m	∅	∅	∅	∅	
69	2N512B	2.0	∅	∅	#J	25	5.0	80	30	40	5.0	2.0	15	20	60	2.0k	64m	∅	∅	∅	∅	
70	2N513	2.0	∅	∅	#J	25	5.0	40	30	20	5.0	2.0	20	20	60	2.0k	500m	∅	∅	∅	∅	
71	2N513A	2.0	∅	∅	#J	25	5.0	60	30	30	5.0	2.0	20	20	60	2.0k	50m	∅	∅	∅	∅	
72	2N513B	2.0	∅	∅	#J	25	5.0	80	30	40	5.0	2.0	20	20	60	2.0k	64m	∅	∅	∅	∅	
73	2N1021A	2.0	150	∅	#J	7.0	3.0	100	30	50	2.0	1.5	5.0	30								

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# L C O A D E			
					lc	lb	BVcbo (V)	BVcbo (V)	BVceo (V)	lcbo @ MAX Vcb @ 25°C (A)	Vcb (V)									lc (A)	MIN	MAX
					(A)	(A)	(V)	(V)	(V)	(A)	(V)									(A)		
1	2N2156	2.0	170	∅	J	30	30	45	25	30	4.0m	2.0	5.0	80	180	2.0kΔ	20m		T85	T0		
2	2N2156A	2.0	170	∅	J	30	30	45	25	30	4.0m	2.0	5.0	80	160	2.0kΔ	2.0		T85	T0		
3	2N2157	2.0	170	∅	J	30	30	60	30	45	4.0m	2.0	5.0	80	160	2.0kΔ	20m		T85	T0		
4	2N2157A	2.0	170	∅	J	30	30	60	30	45	4.0m	2.0	5.0	80	160	2.0kΔ	2.0		T85	T0		
5	2N2158	2.0	170	∅	J	30	30	75	40	60	4.0m	2.0	5.0	80	160	2.0kΔ	20m		T85	T0		
6	2N2158A	2.0	170	∅	J	30	30	75	40	60	4.0m	2.0	5.0	80	160	2.0kΔ	2.0		T85	T0		
7	2N2159	2.0	170	∅	J	30	30	90	45	75	4.0m	2.0	5.0	80	160	2.0kΔ	20m		T85	T0		
8	2N2159A	2.0	170	∅	J	30	30	90	45	75	4.0m	2.0	5.0	80	160	2.0kΔ	2.0		T85	T0		
9	2N2357	2.0	170	∅	J	50	5.0	60	1.5	30	50m	1.5	20	30	90		18m	15u	T041	C0		
10	2N2358	2.0	170	∅	C	50	5.0	100	1.5	60	50m	1.5	20	30	90		18m	15u	T041	C0		
11	2N2359	2.0	170	∅	C	50	5.0	120	1.5	80	50m	1.5	20	30	90		18m	15u	T041	C0		
12	2N2490	2.0	170	∅	C	12	4.0	70	1	40	200u	2.0	5.0	20	40	5.0kΔ	58m	25u	T036	C0		
13	2N2491	2.0	170	∅	C	12	4.0	60	1	30	200u	2.0	5.0	35	70	5.0kΔ	58m	25u	T036	C0		
14	2N2492	2.0	170	∅	C	12	4.0	80	1	60	200u	2.0	5.0	25	50	5.0kΔ	50m	25u	T036	C0		
15	2N2493	2.0	170	∅	C	12	4.0	100	1	80	200u	2.0	5.0	25	50	5.0kΔ	41m	25u	T036	C0		
16	2N2691A	2.0	170	∅	C	20	5.0	120	5.0	80	5.0m	1.5	20	50	100	600kΔ	30m	700u	T041	C0		
17	2N2728	2.0	170	∅	C	50	10	15	15	5.0	10m	2.0	20	40	130	3.0kΔ	2.0m	25u	T036	C0		
18	2N2730	2.0	80	∅	C	65	10	80	30	60	5.0m	2.0	25	30	120		18u	18u	T036	C0		
19	2N2731	2.0	80	∅	C	65	10	60	30	45	5.0m	2.0	25	30	120		18u	18u	T036	C0		
20	2N2732	2.0	80	∅	C	65	10	40	20	30	5.0m	2.0	25	30	120		18u	18u	T036	C0		
21	2N2793	2.0	170	∅	C	60	10	75	40	60	4.0m	2.0	15	50	100	2.0kΔ	9.0m		T036	C0		
22	2N3146	2.0	150	∅	C	15	3.0	150	60	65	10m	1.5	5.0	30	90	200kΔ	80m		T03	∅		
23	2N3147	2.0	150	∅	C	15	3.0	180	80	75	10m	1.5	5.0	30	90	200kΔ	80m		T03	∅		
24	2N3311	2.0	170	∅	J	5.0	5.0	30	20	20	5.0m	2.0	3.0	60	120	1.0kΔ			T036	C0		
25	2N3312	2.0	170	∅	J	5.0	5.0	45	25	30	5.0m	2.0	3.0	60	120	1.0kΔ			T036	C0		
26	2N3313	2.0	170	∅	J	5.0	5.0	60	30	40	5.0m	2.0	3.0	60	120	1.0kΔ			T036	C0		
27	2N3314	2.0	170	∅	J	5.0	5.0	30	20	20	5.0m	2.0	3.0	100	200	1.0kΔ			T036	C0		
28	2N3315	2.0	170	∅	J	5.0	5.0	45	25	30	5.0m	2.0	3.0	100	200	1.0kΔ			T036	C0		
29	2N3316	2.0	170	∅	J	5.0	5.0	60	30	40	5.0m	2.0	3.0	100	200	1.0kΔ			T036	C0		
30	2N4048	2.0	170	∅	J	60	10	45	1	25	4.0m	2.0	15	60	180	2.0kΔ			T036	C0		
31	2N4049	2.0	170	∅	J	60	10	60	1	30	4.0m	2.0	15	60	180	2.0kΔ			T036	C0		
32	2N4050	2.0	170	∅	J	60	10	75	1	40	4.0m	2.0	15	60	180	2.0kΔ			T036	C0		
33	2N4051	2.0	170	∅	J	60	10	45	1	25	4.0m	2.0	15	60	240	2.0kΔ			T036	C0		
34	2N4052	2.0	170	∅	J	60	10	60	1	30	4.0m	2.0	15	80	240	2.0kΔ			T036	C0		
35	2N4053	2.0	170	∅	J	60	10	75	1	40	4.0m	2.0	15	80	240	2.0kΔ			T036	C0		
36	2N4276	2.0	170	∅	J	60	10	30	1	20	4.0m	2.0	15	60	180	2.0kΔ			T03	C0		
37	2N4277	2.0	170	∅	J	60	10	30	1	20	4.0m	2.0	15	80	240	2.0kΔ			T03	C0		
38	2N4278	2.0	170	∅	J	60	10	45	1	25	4.0m	2.0	15	60	180	2.0kΔ			T03	C0		
39	2N4279	2.0	170	∅	J	60	10	45	1	25	4.0m	2.0	15	80	240	2.0kΔ			T03	C0		
40	2N4280	2.0	170	∅	J	60	10	60	1	30	4.0m	2.0	15	60	180	2.0kΔ			T03	C0		
41	2N4281	2.0	170	∅	J	60	10	60	1	30	4.0m	2.0	15	80	240	2.0kΔ			T03	C0		
42	2N4282	2.0	170	∅	J	60	10	75	1	40	4.0m	2.0	15	60	180	2.0kΔ			T03	C0		
43	2N4283	2.0	170	∅	J	60	10	75	1	40	4.0m	2.0	15	80	240	2.0kΔ			T03	C0		
44	2SB407	2.0	30	∅	J	7.0	3.0	10	30	30	500u	1.5	1.0	80	∅	350kΔ			T03	C0		
44#	HEPG6002-RT	2.0	170	∅	J	60	10	45	25	30	4.0m	2.0	15	50	100	2.0kΔ	20m		T036	A		
46	HEPG6004-RT	2.0	170	∅	J	15	3.0	10	30	30	6.0m	2.0	5.0	40	∅	500k			T036	A		
47	HEPG6006-RT	2.0	170	∅	J	15	3.0	60	60	65	20m	5.0	55	∅	∅	500k			T036	A		
48	HEPG6010-RT	2.0	170	∅	J	30	7.0	75	40	75	900u	15	50	∅	∅	2.7k			T036	A		
49	MP500	2.0	170	∅	J	60	10	45	25	30	200u	2.0	15	30	75	2.0kΔ	9.0m		T85	T0		
50	MP500A	2.0	170	∅	J	60	10	45	25	30	200u	2.0	50	12	20	2.0kΔ	9.0m		T036	C0		
51	MP500A	2.0	170	∅	J	60	10	45	25	30	200u	2.0	15	30	75	2.0kΔ	13m		T068	C0		
52	MP501	2.0	170	∅	J	60	10	60	30	45	200u	2.0	15	30	75	2.0kΔ	9.0m		T85	T0		
53	MP501A	2.0	170	∅	J	60	10	60	30	45	200u	2.0	50	12	20	2.0kΔ	9.0m		T036	C0		
54	MP501A	2.0	170	∅	J	60	10	60	30	45	200u	2.0	15	30	75	2.0kΔ	13m		T068	C0		
55	MP502	2.0	170	∅	J	60	10	75	40	60	200u	2.0	15	30	75	2.0kΔ	9.0m		T85	T0		
56	MP502A	2.0	170	∅	J	60	10	75	40	60	200u	2.0	50	12	20	2.0kΔ	9.0m		T036	C0		
57	MP502A	2.0	170	∅	J	60	10	75	40	60	200u	2.0	15	30	75	2.0kΔ	13m		T068	C0		
58	MP503	2.0	170	∅	J	60	10	90	45	75	4.0m	2.0	15	30	75	2.0kΔ	9.0m		T85	T0		
59	MP504	2.0	170	∅	J	60	10	45	25	30	200u	2.0	15	50	125	2.0kΔ	9.0m		T85	T0		
60	MP504A	2.0	170	∅	J	60	10	45	25	30	200u	2.0	50	12	20	2.0kΔ	9.0m		T036	C0		
61	MP504A	2.0	170	∅	J	60	10	45	25	30	200u	2.0	15	50	125	2.0kΔ	13m		T068	C0		
62	MP505	2.0	170	∅	J	60	10	60	30	45	200u	2.0	15	50	125	2.0kΔ	9.0m		T85	T0		
63	MP505A	2.0	170	∅	J	60	10	60	30	45	200u	2.0	50	12	20	2.0kΔ	9.0m		T036	C0		
64	MP505A	2.0	170	∅	J	60	10	60	30	45	200u	2.0	15	50	125	2.0kΔ	13m		T068	C0		
65	MP506	2.0	170	∅	J	60	10	75	40	60	200u	2.0	15	50	125	2.0kΔ	9.0m		T85	T0		
66	MP506A	2.0	170	∅	J	60	10	75	40	60	200u	2.0	50	12	20	2.0kΔ	9.0m		T036	C0		
67	MP506A	2.0	170	∅	J	60	10	75	40	60	200u	2.0	15	50	125	2.0kΔ	13m		T068	C0		
68	MP507	2.0	170	∅	J	60	10	90	45	75	4.0m	2.0	15	50	125	2.0kΔ	9.0m		T85	T0		
69	MP2357	2.0	170	∅	J	50	10	60	2.5	30	200u	1.5	20	30	90		10m	12u	ADE	F49c		
70	MP2358	2.0	170	∅	J	50	10	100	2.5	60	200u	1.5	20	30	90		10m	12u	ADE	F49c		
71	MP2359	2.0	170	∅	J	50	10	120	2.5	80	200u	1.5	20	30	90		10m	12u	ADE	F49c		
72	MP4048	2.0	170	∅	J	60	10	45	25	30	4.0m	2.0	15	60	180	2.0kΔ	10m	20u	ADE	T068		
73	MP4049	2.0	170	∅	J	60	10	60	30	45	4.0m	2.0	15	60	180	2.0kΔ	10m	20u		T068		
74	MP4050	2.0	170	∅	J	60	10	75	40	60	4.0m	2.0	15	60	180	2.0kΔ	10m	20u		T068		
75	MP4051																					



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>c</sub>	M A X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>c</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	BIAS			MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# L C O A D E
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ceo</sub> (V)		V <sub>cb</sub> (V)	I <sub>c</sub> (A)	h <sub>FE</sub>								
1	2N1157	2.5	187 ∅	#J	40	6.0	80	28	60	7.0m	2.0∅	10	38	84	75kΔ				Δ	T7	F∅	
2	2N1157A	2.5	187 ∅	#J	40	6.0	80	28	80	20m	2.0∅	10	38	84	75kΔ				Δ	T7	F∅	
3	JAN2N1157A	2.5	187 ∅	#J	40		80	28	50	20m	2.0∅	10	38	84						T7		
4#	AD139	2.5	13	#J	3.0	200m	32	10	32	25u∅	0.0	1.0 Δ	33	110					A	F7		
5	DA3F3	2.5	187 ∅	#J	10	2.5	60		35		2.0∅	10	25	110						T7		

# 9. GERMANIUM NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	2	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
							Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)		Vcb (V)	Ic (A)								
1#		AC181K		2.5		#J	1.0				20u	1.0	50			1.0MΔ						
2#		GT705A		15		#A	3.5			32	10	20	70			10k						
3#		GT705B		15		#A	3.5				20	100	10k			10k						
4#		GT705D		15		#A	3.5				20	90	10k			10k						
5#		GT705G		15		#A	3.5				30	100	10k			10k						
6#		GT705V		15		#A	3.5				30	70	10k			10k						
7#		AC194	2.5m	1.0	#	#C	1.0			25	10	25	5.0M	200	∅	5.0M			A		T01	
8#		AC194K	2.5m	1.0	#	#C	1.0			25	10	25	5.0M	200	∅	5.0M			A		T01	
9#		2SD367	3.0m	150m		#J	500m			25	6.0	20u	334			30k			A		F	
10#		2SD170	10m	600m		#J	500m			25	6.0	18	5.0M	1.0	150m	70	300		A		T01	
11#		2SD352	10m	650m		#J	1.0			32	10	25u	0.0	300m	69	273	10kΔ		A		T01	
12#		AC187/01	22m	1.0		#J	1.0			25	10	15	100u	1.0	300m	100	500	5.0MΔ	A		X9c	
13		2N4105	25m	1.6	∅	#S	1.0			25	10	25u	10	5.0mΔ	70	350			A		T01	
14#		AC179	25m	1.1	∅*	#J	700m			20	10	15	100u	2.0	150m	60	#		A		X9	
15#		AC187	25m	1.0		#J	1.0			25	10	15	100u	1.0	300m	100	500	5.0MΔ	A		T01	
16		2N95	57m	2.5		∅A	1.5			25											R193	
17		2N102	71m	1.0		∅A	1.5			25		12									F0	
18		2N144	80m			∅J	800m			60	30	30	5.0m	12	50m	40	∅	400kt			R171	
19		JAN2N326	116m	7.0	∅	#J	2.0			35	15	35	500u	1.0	1.0	15	60	150ktΔ	1.2		T03	
20#		AD165	118m	5.3	∅*	#J	1.0			25	10	20	300u	1.0	500m	60	#	185	∅	A	F9	
21		2N326	125m	7.0	∅	#J	2.0			35	15	35	300u	1.0	1.0	15	60	150ktΔ	1.2		F5	
22#		AD161	222m	4.0	∅s	#J	1.0		100m	32	10	20	500u	1.0	500m	80	320	3.0MΔ	1.0		F8b	
23		2N1218	270m	20	∅	#C	3.0			45	15	45	3.0m	1.5	1.0	30	120	7.0kΔ	1.0		T03	
24		2N1292	333m	25		#J	3.0			35	15	30	1.0m	2.0	500m	30			1.0		T03	
25		2N1294	333m	25		#J	3.0			60	15	45	2.0m	2.0	500m	30			1.0		T03	
26		2N1296	333m	25		#J	3.0			80	15	60	3.0m	2.0	500m	30			1.0		T03	
27		2N1298	333m	25		#J	3.0		100	100	15	80	4.0m	2.0	500m	30			1.0		T03	
28		2N1321	333m	25		#J	3.0			35	15	30	1.0m	2.0	500m	30			1.0		T010	
29		2N1323	333m	25		#J	3.0			60	15	45	2.0m	2.0	500m	30			1.0		T010	
30		2N1325	333m	25		#J	3.0			80	15	60	3.0m	2.0	500m	30			1.0		T010	
31		2N1327	333m	25		#J	3.0		100	100	15	80	4.0m	2.0	500m	30			1.0		T010	
32		2N1329	333m	25		#J	3.0			35	15	30	1.0m	2.0	500m	30			1.0		T013	
33		2N1330	333m	25		#J	3.0			60	15	45	2.0m	2.0	500m	30			1.0		T013	
34		2N1332	333m	25		#J	3.0			80	15	60	3.0m	2.0	500m	30			1.0		T013	
35		2N1334	333m	25		#J	3.0		100	100	15	80	4.0m	2.0	500m	30			1.0		T013	
36#		PT4	2.0	4.0	∅s	#J	2.0	#		32	10	20	500u	1.0	50m	74	300	3.0MΔ		A	F4n	
37		2N4077	2.2	7.5	∅	#J	1.0			32	10	20	25u	0.0	500m	75	300	1.0MΔ	600m		F4	

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C						MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E		
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Ic (A)									MIN	MAX
1#	2SA489		30	∅	∅	∅	4.0	∅	70	5.0	80	300∅	5.0∅	500m	40	240	5.0M∅		ED	B17	A		
2#	2SA565		350	∅	∅	∅	500m	∅	50	4.0	50	500∅	3.0∅	10	40	200			PE	TO1	A		
3#	2SA597		6.0	∅	∅	∅	1.0	∅	50	4.0	40	1.0∅	3.0∅	150m	10	250	400k∅		PE	TO39	A		
4#	2SA863		80	∅	∅	∅	7.0	∅	100	5.0	80	1.0m∅	5.0∅	1.0	30	200	6.0M∅		EM	TO3	A		
5#	2SA670#		25	∅	∅	∅	3.0	∅	50	4.0	50	100∅	4.0∅	0.1	35	320	3.0MΔ		PE	TO220	C		
6#	2SA683NC		1.0	∅	∅	∅	1.0	∅	30	5.0	25	0.1u	10∅	500m	60	340	200M∅		PE	R245	B		
7#	2SA884NC		1.0	∅	∅	∅	1.0	∅	60	5.0	50	0.1u	10∅	500m	60	340	200M∅		PE	R245	B		
8#	2SA740		25	∅	∅	∅	1.5	∅	150	5.0	150	20u∅	10∅	500m	40	140	8.0M∅		DM	Y220b	D∅		
9#	2SA777NC		1.0	∅	∅	∅	500m	∅	80	5.0	80	0.1u	10∅	15m	65	330	120M∅		PE	R245	B		
10#	2SA877		100	∅	∅	∅	10	∅	80	6.0	80	100u∅	4.0∅	3.0	30		15M∅		PL	TO3	A∅		
11#	2SA878		100	∅	∅	∅	10	∅	120	6.0	120	100u∅	4.0∅	3.0	30		15M∅		PL	TO3	A∅		
12#	2SA879NC		1.0	∅	∅	∅	70m	∅	250	5.0	200	2.0u	10∅	5m	30				PL	R245	A∅		
13	2SA964		1.5	∅	∅	∅	200m∇	∅	70	5.0	200	200∇	-10∇	10m∇	60	400							
14	2SA964A		1.5	∅	∅	∅	200m∇	∅	70	5.0	250	250∇	-10∇	10m∇	60	400							
15#	2SA1096		1.2	∅	∅	∅	2.0	∅	70	5.0	50	1.0u	5∅	1.0	80	220	150M∅		PE	Y202	B		
16#	2SA1097-1		95	∅	∅	∅	10	∅	100	5.0	100	10u	2.0∅	1.0	50		60M∅		PEΔ	TO126	B		
17#	2SA1097-2		95	∅	∅	∅	10	∅	130	5.0	130	10u	2.0∅	4.5	30		60M∅		PEΔ				
18#	2SA1102		60	∅	∅	∅	6.0	∅	100	6.0	100	100u∅	4.0∅	2.0	30		20M∅		PEΔ				
19#	2SA1103		70	∅	∅	∅	7.0	∅	100	6.0	100	100u∅	4.0∅	3.0	30		15M∅			B62	D		
20#	2SA1104		80	∅	∅	∅	8.0	∅	120	6.0	120	100u∅	4.0∅	3.0	30		20M∅			B62	D		
21#	2SA1105		90	∅	∅	∅	9.0	∅	120	6.0	120	100u∅	4.0∅	3.0	30		15M∅			B62	D		
22#	2SA1106		100	∅	∅	∅	10	∅	140	6.0	140	100u∅	4.0∅	3.0	30		20M∅			B62	D		
23#	2SA1116		150	∅	∅	∅	15	∅	200	6.0	200	100u∅	4.0∅	5.0	30		20M∅			TO3	A∅		
24#	2SA1117		200	∅	∅	∅	17	∅	200	6.0	200	100u∅	4.0∅	8.0	20		20M∅			TO3	A∅		
25#	2SA1135		55	∅	∅	∅	4.0	∅	80	6.0	80	1.0m∅	4.0∅	1.0	40		10M∅			B62	D		
26#	2SA1160		900m	∅	∅	∅	-2	∅	20	6.0∇	-10	100m∇	-1∇	-5	140	600	140M∅		Ef	R195h	B		
27#	2SA1209		1.0	∅	∅	∅	140m	∅	180	5.0	160	100∅	5.0∅	10	100	400	150M∅		PE	TO126	B		
28#	2SA1210		1.0	∅	∅	∅	140m	∅	200	5.0	200	100∅	5.0∅	10m	100	400	150M∅		PE	TO126	B		
29#	2SA1220		20	∅	∅	∅	1.2	∅	120	5.0	120	1.0u	5.0∅	300m	60	320	175M∅			B7a	B		
30#	2SA1220A		20	∅	∅	∅	1.2	∅	160	5.0	160	1.0u	5.0∅	300m	60	320	175M∅			B7a	B		
31#	2SA1263		80	∅	∅	∅	-8	∅	80	5.0∇	-80	-5u∇	-5∇	-1	55	160	30M∅		DT	B77	D∅		
32#	2SA1264		80	∅	∅	∅	-8	∅	120	5.0∇	120	-5u∇	-5∇	-1	55	160	30M∅		DT	B77	D∅		
33#	2SA1265		100	∅	∅	∅	-10	∅	140	5.0∇	140	-5u∇	-5∇	-1	55	160	30M∅		DT	B77	D∅		
34#	2SA1277		20	∅	∅	∅	-3	∅	30	5.0∇	-30	-1u∇	-2∇	-5	70	240	100M∅		Ef	B79	D∅		
35#	2SA1278		25	∅	∅	∅	-2	∅	160	5.0∇	160	-1u∇	-5∇	-1	70	240	100M∅		Ef	B79	D∅		
36#	2SA1301		120	∅	∅	∅	-12	∅	160	5.0∇	160	-5u∇	-5∇	-1	55	160	30M∅		DT	B80	D∅		
37#	2SA1302		150	∅	∅	∅	-15	∅	200	5.0∇	200	-5u∇	-5∇	-1	55	160	30M∅		DT	B80	D∅		
38#	2SB435#		25	∅	∅	∅	3.0	∅	40	5.0	40	10m∅	1.0∅	500m	40	240	3.0M∅			Y220	B		
39#	2SB507		30	∅	∅	∅	3.0	∅	60	5.0	60	100u∅	2.0∅	1.0	40	320	8.0M∅			Y220b	D		
40#	2SB508		30	∅	∅	∅	3.0	∅	60	5.0	60	100u∅	2.0∅	1.0	40	320	8.0M∅			Y220a	D		
41#	2SB509		35	∅	∅	∅	3.0	∅	60	5.0	60	100u∅	2.0∅	1.0	40	320	8.0M∅			TO66	C∅		
42#	2SB510		800m	∅	∅	∅	1.5 #	∅	80	7.0	60	1.0u	2.0∅	200m	60	320	5.0M∅	1.0	PE	TO39	A∅		
43#	2SB511		10	∅	∅	∅	1.5	∅	35	5.0	35	100u∅	2.0∅	1.0	40	320	8.0M∅			Y220b	D		
44#	2SB514		20	∅	∅	∅	2.0	∅	50	5.0	50	100u∅	2.0∅	1.0	40	320	8.0M∅			Y220b	D		
45#	2SB515		20	∅	∅	∅	2.0	∅	50	5.0	50	100u∅	2.0∅	1.0	40	320	8.0M∅			Y220a	D∅		
46#	2SB518		60	∅	∅	∅	7.0	∅	90	8.0	90	100u∅	2.0∅	3.0	50	∅	3.0MΔ			TO3	C∅		
47#	2SB519		100	∅	∅	∅	10	∅	110	8.0	110	100u∅	2.0∅	4.0	50	∅	3.0MΔ			TO3	C∅		
48#	2SB520		120	∅	∅	∅	12	∅	140	8.0	140	100u∅	2.0∅	5.0	50	∅	3.0MΔ			TO3	C∅		
49#	2SB521		43	∅	∅	∅	5.0	∅	60	8.0#	60	2.0u∅	2.0∅	100m	45	250	7.0M∅	50 #		Y220a	A		
50#	2SB522		43	∅	∅	∅	5.0	∅	60	8.0#	60	2.0u∅	2.0∅	100m	45	250	7.0M∅	50 #		Y220a	T		
51#	2SB544P1		1.2	∅	∅	∅	1.0	∅	25	5	25	1.0u	2.0∅	50m	60	560			EPL				
52#	2SB544P2		1.2	∅	∅	∅	1.0	∅	25	5	25	1.0u	2.0∅	50m	60	560			EPL				
53	2SB628A		1.5	∅	∅	∅	1.5 #∇	∅	180	5.0	180	-5∇	300m∇	40	200								
54#	2SB713		100	∅	∅	∅	9.0	∅	200	5.0	140	50u	5∅	1.0	40	200	7M∅		EM	B59	X		
55#	2SB747		55	∅	∅	∅	5.0	∅	80	5.0	80	50u	5∅	1.0	40	200	7M∅		EM	Y220b	D		
56#	2SB775		60	∅	∅	∅	6	∅	100	6	85	0.1m∅	5∅	1	60	200	18M∅		PL	B38	B		
57#	2SB776		70	∅	∅	∅	7	∅	120	6	100	0.1m∅	5∅	1	60	200	15M∅		PL	B38	B		
58#	2SB805		2.0	∅	∅	∅	-7	∅	100	∇	-5	100∇	-1∇	-1	90	#	400	75M∅			X166	B	
59#	2SB806		2.0	∅	∅	∅	-7	∅	120	∇	-5	120∇	-1∇	-1	90	#	400	75M∅			X166	B	
60#	2SB816		80	∅	∅	∅	8	∅	150	6	120	0.1m∅	5∅	1	60	200	15M∅		PL	B38	B		
61#	2SB817		100	∅	∅	∅	12	∅	180	6	140	0.1m∅	5∅	1	60	200	15M∅		PL	B38	B		
62#	2SB823		40	∅	∅	∅	6	∅	100	6	85	0.1m∅	5∅	1	60	200	15M∅		PL	B56	D		
63#	2SB825		40	∅	∅	∅	7	∅	60	6	50	0.1m∅	20∅	1	60	200	10M∅		PEE	B56	D		
64#	2SB828		40	∅	∅	∅	12	∅	60	6	50	0.1m∅	20∅	1	60	200	10M∅		PE	B56	D		
65#	2SB827		60	∅	∅	∅	7	∅	60	6	50	0.1m∅	20∅	1	60	200	10M∅		PE	B38	B		
66#	2SB828		80	∅	∅	∅	12	∅	60	6	50	0.1m∅	20∅	1	60	200	10M∅		PE	B38	B		
67#	2SB829		90	∅	∅	∅	15	∅	80	6.0	50	100u∅	2.0∅	1.0	70	280	20M∅		PE	B73	B		
68#	2SB894		30	∅	∅	∅	-3	∅	60	7.0∇	60	100u∇	-5∇	-5	60	200	9M∅		DT	B79	D∅		
69#	2SB895		40	∅	∅	∅	-5	∅	100	∇	50	100u∇	-5∇	-1	40	240	5M∅		DT	B79	D∅		
70#	2SB896		30	∅	∅	∅	-3	∅	80	∇	50	-30u∇	-5∇	-5	40	240	9M∅		DT	B79	D∅		
71#	2SC2224		10	∅	∅	∅	200m	∅	200	5.0	200	1.0u	1.0m	40	150	∅	250MΔ			B68	B		

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ MAX Vcb @ 25°C (A)	hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
						Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)		MIN	MAX						
1#	BD244B	2.0	65		J	8	-2	-80	-5	-80	-7m	100	30	3.0MΔ			Y220	D	
2#	BD244B#1	2.0	65		J	6.5	1.0	100	-5	80	-7m	100	30	3.0MΔ			Y220b	D	
3#	BD244C	2.0	65		J	6.5	1.0	100	-5	80	-7m	100	30	3.0MΔ			Y220	D	
4#	BD244C#1	2.0	65		J	6.5	1.0	100	-5	80	-7m	100	30	3.0MΔ			Y220b	D	
5#	BD370A-6	1.2	1.2		J	1.5	#	45	5.0	45	1.0	100m	40	50MΔ			TO92		
6#	BD370A-10	1.2	1.2		J	1.5	#	45	5.0	45	1.0	100m	63	50MΔ			TO92		
7#	BD370A-16	1.2	1.2		J	1.5	#	45	5.0	45	1.0	100m	100	50MΔ			TO92		
8#	BD370B-6	1.2	1.2		J	1.5	#	60	5.0	60	1.0	100m	40	50MΔ			TO92		
9#	BD370B-10	1.2	1.2		J	1.5	#	60	5.0	60	1.0	100m	63	50MΔ			TO92		
10#	BD370B-16	1.2	1.2		J	1.5	#	60	5.0	60	1.0	100m	100	50MΔ			TO92		
11#	BD370C-6	1.2	1.2		J	1.5	#	80	5.0	80	1.0	100m	40	50MΔ			TO92		
12#	BD370C-10	1.2	1.2		J	1.5	#	80	5.0	80	1.0	100m	63	50MΔ			TO92		
13#	BD372A-6	1.2	1.2		J	1.5	#	45	5.0	45	1.0	100m	40	50MΔ			TO92		
14#	BD372A-10	1.2	1.2		J	1.5	#	45	5.0	45	1.0	100m	63	50MΔ			TO92		
15#	BD372A-16	1.2	1.2		J	1.5	#	45	5.0	45	1.0	100m	100	50MΔ			TO92		
16#	BD372B-6	1.2	1.2		J	1.5	#	60	5.0	60	1.0	100m	40	50MΔ			TO92		
17#	BD372B-10	1.2	1.2		J	1.5	#	60	5.0	60	1.0	100m	63	50MΔ			TO92		
18#	BD372B-16	1.2	1.2		J	1.5	#	60	5.0	60	1.0	100m	100	50MΔ			TO92		
19#	BD372C-6	1.2	1.2		J	1.5	#	80	5.0	80	1.0	100m	40	50MΔ			TO92		
20#	BD372C-10	1.2	1.2		J	1.5	#	80	5.0	80	1.0	100m	63	50MΔ			TO92		
21#	BD416	2.0	2.0		J	1.0	#	60	5.0	60	1.0	50m	80	75MΔ			Y220b	B	
22#	BD418	2.0	2.0		J	1.0	#	60	5.0	60	1.0	50m	80	75MΔ			Y220b	B	
23#	BD430	10	10		J	4	12	30	5.0	20	10	500m	85	375			Y202c	B	
24#	BD487	13	13		J	4	12	45	5.0	25	1.0	70	12	25			Y202c	B	
25#	BD488	13	13		J	4	12	45	5.0	25	1.0	70	12	25			Y202c	B	
26#	BD533%	50	50		J	4.0	1.0	45	5.0	45	100u	2.0	2.0	25	3.0MΔ		Y220a	B	
27#	BD534	50	50		J	4.0	1.0	45	5.0	45	2.0	2.0	25	3.0MΔ			Y220a	B	
28#	BD534J	50	50		J	4.0	1.0	45	5.0	45	100u	2.0	2.0	25	3.0MΔ		Y220a	B	
29#	BD534J	50	50		J	4.0	1.0	45	5.0	45	2.0	2.0	30	10MΔ			Y220	B	
30#	BD534K	50	50		J	4.0	1.0	45	5.0	45	2.0	2.0	40	10MΔ			Y220	B	
31#	BD534L	50	50		J	4.0	1.0	45	5.0	45	2.0	2.0	60	10MΔ			Y220	B	
32#	BD535%	50	50		J	4.0	1.0	60	5.0	60	100u	2.0	2.0	25	3.0MΔ		Y220a	B	
33#	BD536	50	50		J	4.0	1.0	60	5.0	60	2.0	2.0	25	3.0MΔ			Y220a	B	
34#	BD536J	50	50		J	4.0	1.0	60	5.0	60	100u	2.0	2.0	25	3.0MΔ		Y220a	B	
35#	BD536J	50	50		J	4.0	1.0	60	5.0	60	2.0	2.0	30	10MΔ			Y220	B	
36#	BD536K	50	50		J	4.0	1.0	60	5.0	60	2.0	2.0	40	10MΔ			Y220	B	
37#	BD537%	50	50		J	4.0	1.0	80	5.0	80	100u	2.0	2.0	25	3.0MΔ		Y220a	B	
38#	BD538	50	50		J	4.0	1.0	80	5.0	80	2.0	2.0	15	3.0MΔ			Y220a	B	
39#	BD538J	50	50		J	4.0	1.0	80	5.0	80	100u	2.0	2.0	25	3.0MΔ		Y220a	B	
40#	BD538J	50	50		J	4.0	1.0	80	5.0	80	2.0	2.0	30	10MΔ			Y220	B	
41#	BD538K	50	50		J	4.0	1.0	80	5.0	80	2.0	2.0	40	10MΔ			Y220	B	
42#	BD612	15	15		J	4.0	1.0	22	5.0	22	100	1.0	500m	85			Y202c	B	
43#	BD614	15	15		J	4.0	1.0	32	5.0	32	100	1.0	500m	85			Y202c	B	
44#	BD616	15	15		J	4.0	1.0	45	5.0	45	100	1.0	500m	85			Y202c	B	
45#	BD618	15	15		J	4.0	1.0	60	5.0	60	100	1.0	500m	40			Y202c	B	
46#	BD820	15	15		J	4.0	1.0	80	5.0	80	100	1.0	500m	40			Y202c	B	
47#	BD834J	30	30		J	2.0	2.0	45	5.0	45	1.0	1.0	25	3.0MΔ			Y220b	B	
48#	BD836J	30	30		J	2.0	2.0	60	5.0	60	2.0	1.0	25	3.0MΔ			Y220b	B	
49#	BD838J	30	30		J	2.0	2.0	80	5.0	80	2.0	1.0	25	3.0MΔ			Y220b	B	
50#	BD750	200	200		J	20	5.0	100	5.0	90	1.0mΔ	2.0	7.5	15	4.0MΔ		TO3	B	
51#	BD750A	200	200		J	20	5.0	130	5.0	120	1.0mΔ	2.0	5.0	25	100	4.0MΔ	TO3	B	
52#	BD750B	250	250		J	20	5.0	110	5.0	100	1.0mΔ	2.0	7.5	15	60	4.0MΔ	TO3	B	
53#	BD750C	250	250		J	20	5.0	140	5.0	130	1.0mΔ	2.0	5.0	25	100	4.0MΔ	TO3	B	
54#	BD751	200	200		J	20	5.0	100	5.0	90	1.0mΔ	2.0	7.5	15	60	4.0MΔ	TO3	B	
55#	BD751A	200	200		J	20	5.0	130	5.0	120	1.0mΔ	2.0	5.0	25	100	4.0MΔ	TO3	B	
56#	BD751B	250	250		J	20	5.0	110	5.0	100	1.0mΔ	2.0	7.5	15	60	4.0MΔ	TO3	B	
57#	BD751C	250	250		J	20	5.0	140	5.0	130	1.0mΔ	2.0	5.0	25	100	4.0MΔ	TO3	B	
58#	BD796	65	65		J	4.0	1.0	45	5.0	45	2.0	3.0	25	10MΔ			Y220b	B	
59#	BD798	65	65		J	4.0	1.0	60	5.0	60	2.0	3.0	25	10MΔ			Y220b	B	
60#	BD800	65	65		J	4.0	1.0	80	5.0	80	2.0	3.0	15	10MΔ			Y220b	B	
61#	BD802	65	65		J	4.0	1.0	100	5.0	100	2.0	3.0	15	10MΔ			Y220b	B	
62#	BD826-6	8.0	8.0		J	1.5	0.2	45	5.0	45	100n	2.0	5.0m	25	50MΔ		Y202	B	
63#	BD826-10	8.0	8.0		J	1.5	0.2	45	5.0	45	100n	2.0	5.0m	25	50MΔ		Y202	B	
64#	BD826-16	8.0	8.0		J	1.5	0.2	45	5.0	45	100n	2.0	5.0m	25	50MΔ		Y202	B	
65#	BD828-6	8.0	8.0		J	1.5	0.2	60	5.0	60	100n	2.0	150m	40	100	50MΔ		Y202	B
66#	BD828-10	8.0	8.0		J	1.5	0.2	60	5.0	60	100n	2.0	150m	63	160	50MΔ		Y202	B
67#	BD830-6	8.0	8.0		J	1.5	0.2	100	5.0	80	100n	2.0	500m	25	50MΔ		Y202	B	
68#	BD830-10	8.0	8.0		J	1.5	0.2	100	5.0	80	100n	2.0	500m	25	50MΔ		Y202	B	
69#	BD840	2.0	2.0		J	1.5	0.2	40	5.0	45	100n	2.0	150m	40	250	50MΔ		Y202c	A
70#	BD842	2.0	2.0		J	1.5	0.2	60	5.0	60	100n	2.0	150m	40	180	50MΔ		Y202c	A
71#	BD844	2.0	2.0		J	1.5	0.2	80	5.0	80	100n	2.0	150m	40	180	50MΔ		Y202c	A
72#	BD846	2.0	2.0		J	1.5	0.2	100	5.0	100	1.0u	2.0	150m	40	250	75MΔ		Y202c	A
73#	BD848	2.0	2.0		J	1.5	0.2	120	5.0	120	1.0u	2.0	150m	40	250	75MΔ		Y202c	A
74#	BD850	2.0	2.0		J	1.5	0.2	140	5.0	140	1.0u	2.0	150m	40	250	75MΔ		Y202c	A
75#	BDT30	30	30		J	1.0	400m	40	5.0	40	300mΔ	4.0	1.0	15	75	3.0MΔ		Y220a	A
76#	BDT30A	30	30		J	1.0	400m	60	5.0	60	300mΔ	4.0	1.0	15	75	3.0MΔ		Y220a	D
77#	BDT30B	30	30		J	1.0	400m	80	5.0	80	300mΔ	4.0	1.0	15	75	3.0MΔ		Y220a	D
78#	BDT30C	30	30		J	1.0	400m	100	5.0	100	300mΔ	4.0	1.0	15	75	3.0MΔ		Y220a	D
79#	BDT32	40	40		J	3.0	1.0	45	5.0	45	300mΔ	4.0	3.0	10	50	3.0u		Y220a	D
80#	BDT32A	40	40		J	3.0	1.0	60	5.0	60	300mΔ	4.0	3.0	10	50	3.0u		Y220a	D
81#	BDT32B	40	40		J	3.0	1.0	80	5.0	80	300mΔ	4.0	3.0	10	50	3.0u		Y220a	D
82#	BDT32C	40	40		J	3.0	1.0	100	5.0	100	300mΔ	4.0	3.0	10	50	3.0u		Y220a	D
83#	BDT42	85	85		J	6.0	3.0	40	5.0	40	700m	4.0	3.0	15	75	3.0MΔ		Y220a	D

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>CBO</sub> @ 25°C (A)	BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #200 s/a TO200 Ser.	L O D E
						I <sub>C</sub> (A)	I <sub>B</sub> (A)	V <sub>CB0</sub> (V)	V <sub>EB0</sub> (V)	V <sub>CE0</sub> (V)		V <sub>CB</sub> (V)	I <sub>C</sub> (A)								
1#	BFR23Z		7.0			1.0				65	1.0	150m	40	140						T039	A
2#	BFR24Z		7.0			1.0				40	1.0	150m	50	250						T039	A
3#	BFY94		3.0							40	1.0	100u	40		100MΔ					T039	A
4#	BSV15Z		5.0			1.0				40	1.0	100m	40	250	50MΔ					T039	A
5#	BSV16Z		5.0			1.0				60	1.0	100m	40	250	50MΔ					T039	A
6#	BSV17Z		5.0			1.0				80	1.0	100m	40	250	50MΔ					T039	AA
7#	BSV82		10		J						1.0	500m	15		120MΔ		50n			T039	A
8#	BU109DP		50			10				330	7.0	7.0	10		10MΔ		0.8u			Y220b	A
9#	BUW48		150							60	4.0	10			8.0MΔ		0.5u			B46	A
10#	BUW49		150							80	3.0	10			8.0MΔ		0.4u			B46	A
11#	BUX69		125			30				90	2.0	8.0			8.0MΔ		0.3u			B46	A
12#	BUX70		125			20				125	1.5	8.0			8.0MΔ		0.4u			B46	A
13#	CX754		30			4.0					1.0	2.0m	40	240	3.0MΔ					Y220b	A
14#	HA7730		1.0						40	20	5.0u	10	5.0mΔ	22		1.0MΔ				R192	A
15#	HA7731		1.0						80	40	2.0u	10	5.0mΔ	22		1.0MΔ				R192	A
16#	HA7732		1.0						40	20	5.0u	10	5.0mΔ	60		1.0MΔ				R192	A
17#	HA7733		1.0						80	40	2.0u	10	5.0mΔ	60		1.0MΔ				R192	A
18#	KT820A-1		10			500m	300m			50	0.03m	2.0	500mΔ	35							A
19#	KT820B-1		10			500m	300m			70	0.03m	2.0	500mΔ	25							A
20#	KT820V-1		10			500m	300m			100	0.03m	2.0	500mΔ	20							A
21#	KT822A-1		20			500m	500m			50	0.05m	2.0	2.0 Δ	20						X185	A
22#	KT822B-1		20			500m	500m			70	0.05m	2.0	2.0 Δ	20						X185	A
23#	KT822V-1		20			500m	500m			100	0.05m	2.0	2.0 Δ	15						X185	A
24#	MO810		12			3.0				30	2.0	500m	40	240	30MΔ					Y220b	A
25#	MO816		10			1.0				60	2.0	200m	40	240	50MΔ					Y220b	A
26#	MO818		10			1.0				80	2.0	200m	40	240	50MΔ					Y220b	A
27#	MO870		10			4.0				50	2.0	1.0m	40	240	5.0MΔ					Y220b	A
28#	MH0810		12			3.0				30	2.0	500m	40	240	30MΔ					Y220b	B
29#	MH0816		10			1.0				80	2.0	200m	40	240	50MΔ					Y220b	B
30#	MH0818		10			1.0				80	2.0	200m	40	240	50MΔ					Y220b	B
31#	MH0870		30			4.0				50	2.0	1.0	40	240	5.0MΔ					Y220b	B
32#	NTA9591		150			15			7.0	7.0	100u	15	20				700n			T03	C
33#	NTA10081		40			7.0			7.0	7.0	100u	15	20				500n			Y220	A
34#	NTA1010T		65			7.0			7.0	7.0	100u	15	20				800n			Y220	A
35#	PTC111		12			3.0			70	7.0	100	200m	40	120	50MΔ					B17a	D
36#	PTC141		7.0			1.0			105	8.0	100	100	100		90MΔ					T05	A
37#	PTC142		6.0			3.0			65	8.0	45	500u	60		8.0MΔ					T05	A
38#	PTC160		40			4.0			60	5.0	60	100u	70		8.0MΔ					B16	B
39#	Q2T3467		1.5						40	5.0	40	500m	40	120	175MΔ					S17	B
40#	R4918		30			3.0				40	1.0	500m	20	100	3.0MΔ					Y220b	A
41#	R4919		30			3.0				60	1.0	500m	20	100	3.0MΔ					Y220b	A
42#	R4920		30			3.0				80	1.0	500m	20	100	3.0MΔ					Y220b	A
43#	SDT695011		7.0			2.0	1.0		60	8.0	40	10u	5.0	30	25MΔ		250n			T039	A
44#	SDT695021		7.0			2.0	1.0		80	8.0	60	10u	5.0	30	25MΔ		250n			T039	A
45#	SDT695031		7.0			2.0	1.0		100	8.0	80	10u	5.0	30	25MΔ		250n			T039	A
46#	SDT695041		7.0			2.0	1.0		120	8.0	100	10u	5.0	30	25MΔ		250n			T039	A
47#	SDT695051		7.0			2.0	1.0		140	8.0	120	10u	5.0	30	25MΔ		250n			T039	A
48#	SDT695091		7.0			2.0	1.0		60	8.0	40	10u	5.0	50	25MΔ		250n			T039	A
49#	SDT695101		7.0			2.0	1.0		80	8.0	60	10u	5.0	50	25MΔ		250n			T039	A
50#	SDT695111		7.0			2.0	1.0		100	8.0	80	10u	5.0	50	25MΔ		250n			T039	A
51#	SDT695121		7.0			2.0	1.0		120	8.0	100	10u	5.0	50	25MΔ		250n			T039	A
52#	SDT695131		7.0			2.0	1.0		140	8.0	120	10u	5.0	50	25MΔ		250n			T039	A
53#	SK3025-RT		7.0			1.0			90	7.0	90	10	150m	100	100MΔ					T05	A
54#	SK3053-RT		10			1.0			200	4.0	200	10	50m	90	50MΔ					T05	A
55#	SK3084-RT		40			7.0			40	5.0	30	2.0	3.0	100	20MΔ					Y220b	D
56#	SK3085-RT		40			6.0			90	5.0	80	2.0	1.5	60	12MΔ					T066	D
57#	SK3179-RT		25			2.0			100	7.0	75	4.0	300m	100	145MΔ					B24	A
58#	SK3181-RT		60			8.0			40	5.0	40	5.0	5.0	25k	15MΔ					B51	D
59#	SK3183-RT		70			10			40	5.0	40	5.0	4.0	30k	15MΔ					F6p	C
60#	SK3189-RT		90			15			100	5.0	80	2.0	4.0	50	2.0MΔ					B48	D
61#	SK3221-RT		65			15			60	5.0	60	3.0	3.0	2.5k	40MΔ					B51	D
62#	SK3257-RT		40			6.0			50	5.0	40	4.0	1.0	100	12MΔ					F6n	C
63#	SK3258-RT		10			3.5			45	3.5	40	2.0	200m	150	20MΔ					R216k	A
64#	SK3259-RT		10			3.5			80	5.0	65	2.0	200m	100	20MΔ					R216k	A
65#	SK3262-RT		7.0			1.0			60	7.0	40	10	150m	90	100MΔ					R216k	A
66#	SK3267-RT		10			2.0			75	5.0	50	4.0	400m	100	75MΔ					R216k	A
67#	SK3513-RT		10			2.0			100	7.0	90	4.0	400m	70	70MΔ					T05	A
68#	SK3623-RT		35			2.0			450	6.0	400	5.0	1.0	50	30MΔ					F6n	C
69#	SK3624-RT		35			2.0			275	6.0	225	5.0	1.0	50	30MΔ					F6n	C
70#	SK3626-RT		40			2.0			130	5.0	120	4.0	1.0	60	7.0MΔ					F6n	C
71#	SML2161		150			25			200	6.0	180	5.0	1.0	100	5MΔ					T03	A
72#	SML2165		125			10			500	5.0	400	5.0	2.5	20	20MΔ					T03	A
73#	SML2166		175			15			800	6.0	400	5.0	1.0	20	20MΔ					T03	C
74#	SML2183		30			4.0			200	5.0	200	1.0m	5.0	150m	35	200	100MΔ			Y220a	D
75#	SSP60		30			1.0				40				15	75		700m				A
76#	SSP60A		30			1.0				60				15	75		700m				A
77#	SSP60B		30			1.0				80				15	75		700m				A
78#	SSP60C		30			1.0				100				15	75		700m				A
79#	SSP64		40			3.0				40				10	50		400m				A
80#	SSP64A		40			3.0				60				10	50		400m				A
81#	SSP64B		40			3.0				80				10	50		400m				A
82#	SSP64C		40			3.0				100				10	50		400m				A
83#	SSP68		80			10				40				20	100		400m				A
84#	SSP68A		80			10				60				20	100		400m				A
85#	SSP6																				



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. Icbo @ MAX Vcb (A)	BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E
						Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ce0</sub> (V)	V <sub>cb</sub> (V)		V <sub>eb</sub> (V)	Ic (A)						
1#	TIP136	2.0	2.0		8	-3	-80	-5	-80	-5mΔ	100	100	1.0k	15k			E	Y220	D	
2#	TIP137	2.0	2.0		8	-3	-100	-5	-100	-5mΔ	100	100	1.0k	15k			E	Y220	D	
3	TRSP3254S	1.0	1.0		40	40	350	5.0	325	.02m	10	20	30		30M		E	T05		
4	TRSP3255S	2.0	2.0		40	40	350	5.0	325	.02m	10	20	30		30M		E	F8		
5	TRSP3504S	1.0	1.0		40	40	375	5.0	350	.02m	10	20	30		30M		E	T05		
6	TRSP3505S	2.0	2.0		40	40	375	5.0	350	.02m	10	20	30		30M		E	F8		
7	TRSP3754S	1.0	1.0		40	40	400	5.0	375	.02m	10	20	30		30M		E	T05		
8	TRSP3755S	2.0	2.0		40	40	400	5.0	375	.02m	10	20	30		30M		E	F8		
9#	BD376	200u	25		2.0	1.0	50	5.0	45	4.0	1.0	20	30		50MΔ	75n	PE	TO126	B	
10#	BD378	200u	25		2.0	1.0	75	5.0	60	4.0	1.0	20	30		50MΔ	75n	PE	TO126	B	
11#	BD380	200u	25		2.0	1.0	100	5.0	80	4.0	500m	30	30		50MΔ	75n	PE	TO126	B	
12	2N5023†	2.2m	1.0		500m		30	5.0	3.0	1.0u	100	500m	40	100	200MΔ	1.7		TO39	A	
13#	BCY77IX†	2.2m	1.0		100m			5.0	60	5.0	2.0m	350	∅		180M	50n	PE	TO18	A	
14#	BCY77VII†	2.2m	1.0		100m			5.0	60	5.0	2.0m	170	∅		180M	50n	PE	TO18	A	
15#	BCY77VIII†	2.2m	1.0		100m			5.0	60	5.0	2.0m	250	∅		180M	50n	PE	TO18	A	
16#	TIP30#†	2.5m	30		3.0	1.0	40	5.0	40	.30 Δ	100	20	20	†	3.0M	.20	E	Y220b	D	
17#	TIP30A#†	2.5m	30		3.0	1.0	40	5.0	40	.30 Δ	100	20	20	†	3.0M	.20	E	Y220b	D	
18#	TIP30B#†	2.5m	30		3.0	1.0	40	5.0	40	.30 Δ	100	20	20	†	3.0M	.20	E	Y220b	D	
19#	TIP30C#†	2.5m	30		3.0	1.0	40	5.0	40	.30 Δ	100	20	20	†	3.0M	.20	E	Y220b	D	
20	2N5091	2.6m	2.0		1.0	500m	350	6.0	300	500n	150	100m	20	200	20MΔ	120		T05	A	
21	2N5093	2.6m	2.0		1.0	500m	400	6.0	350	500n	150	100m	20	200	20MΔ	120		T05	A	
22	2N5094	2.6m	2.0		1.0	500m	450	6.0	400	500n	150	100m	20	200	20MΔ	120		T05	A	
23	2N5096	2.6m	2.0		1.0	500m	500	6.0	450	500n	150	100m	20	200	20MΔ	120		T05	A	
24	KF3509	2.6m	1.0		J	200m	40	2.5	20	500n	20	20m	20		1.8G		PE	TO39	A	
25	JAN2N3635†	2.8m	1.0		J	1.0	140	5.0	140	100u	100	50m	100	300	200MΔ	3.0	400n	T05	A	
26	JAN2N3636†	2.8m	1.0		J	1.0	175	5.0	175	100u	100	50m	50	150	150MΔ	3.0	400n	T05	A	
27	JAN2N3637†	2.8m	1.0		J	1.0	175	5.0	175	100u	100	50m	100	300	200MΔ	3.0	400n	T05	A	
28	2N5160	2.8m	5.0		400m		60	4.0	40	1.0u	5.0	50m	10		500MΔ			TO39	A	
29	2N5281	2.8m	2.0		1.0	500m	175	5.0	150	1.0u	100	1.0m	20	200	20MΔ	5.0m		T05	A	
30	2N5282	2.8m	2.0		1.0	500m	325	5.0	300	1.0u	100	1.0m	20	200	20MΔ	5.0m		T05	A	
31	40406	2.8m	1.0		J	700m	200m	4.0	50	1.0uΔ	100	100u	30	200	100M		D	T05	A	
32#	BSV15†	5.0m	5.0		J	1.0	200m	5.0	40	100n	1.0	100m	40	250	50MΔ	2.0	500n	TO39	A	
33#	BSV15-6†	5.0m	5.0		J	1.0	200m	5.0	40	100n	1.0	100m	63	∅	50MΔ		PE	TO39	A	
34#	BSV15-10†	5.0m	1.0		J	1.0		5.0	40	100n	1.0	100m	100	∅	50MΔ	500n	PE	TO39	A	
35#	BSV15-16†	5.0m	1.0		J	1.0		5.0	40	100n	1.0	100m	160	∅	50MΔ	500n	PE	TO39	A	
36#	BSV16†	5.0m	5.0		J	1.0	200m	5.0	60	100n	1.0	100m	40	250	50MΔ	2.0	500n	TO39	A	
37#	BSV16-6†	5.0m	1.0		J	1.0		5.0	60	100n	1.0	100m	63	∅	50MΔ	500n	PE	TO39	A	
38#	BSV16-10†	5.0m	1.0		J	1.0		5.0	60	100n	1.0	100m	100	∅	50MΔ	500n	PE	TO39	A	
39#	BSV16-16†	5.0m	1.0		J	1.0		5.0	60	100n	1.0	100m	160	∅	50MΔ	500n	PE	TO39	A	
40#	BSV17†	5.0m	5.0		J	1.0	200m	5.0	80	100n	1.0	100m	63	∅	50MΔ	500n	PE	TO39	A	
41#	BSV17-6†	5.0m	1.0		J	1.0		5.0	80	100n	1.0	100m	63	∅	50MΔ	500n	PE	TO39	A	
42#	BSV17-10†	5.0m	1.0		J	1.0		5.0	80	100n	1.0	100m	100	∅	50MΔ	500n	PE	TO39	A	
43	2N3467†	5.6m	1.0		1.0		40	5.0	40	100n	1.0	500m	40	125	175MΔ	30n		T05	A	
44	2N3468†	5.6m	1.0		1.0		50	5.0	50	100n	1.0	500m	25	75	150MΔ	30n		T05	A	
45	2N4037	5.6m	1.0		1.0	500m	60	7.0	40	250n	100	150m	50	250	60MΔ	930m		T05	A	
46	2N4234	5.6m	1.0		1.0	200m	40	7.0	40	100u	1.0	250m	30	150	3.0MΔ			T05	A	
47	2N4235	5.6m	1.0		1.0	200m	60	7.0	60	100u	1.0	250m	30	150	3.0MΔ			T05	A	
48	2N4236	5.6m	1.0		1.0	200m	80	7.0	80	100u	1.0	250m	30	150	3.0MΔ			T05	A	
49	2N4314	5.6m	1.0		1.0	500m	90	7.0	65	250n	100	150m	50	250	200MΔ	9.3		T05	A	
50	MM4001	5.6m	1.0		J	500m	150	4.0	150	1.0u	100	10m	20	#			EA	TO39	A	
51	MM4002	5.6m	1.0		J	500m	200	4.0	200	5.0u	100	10m	20	#			EA	TO39	A	
52	MM4003	5.6m	1.0		J	500m	250	4.0	250	5.0u	100	10m	20	#			EA	TO39	A	
53	JAN2N3467†	5.7m	1.0		1.0		40	5.0	40	100n	1.0	500m	40	120	175MΔ	1.2	30n	T05	A	
54	JAN2N3468†	5.7m	1.0		1.0		50	5.0	50	100n	1.0	500m	25	75	150MΔ	1.2	30n	T05	A	
55	JAN2N4405	5.7m	1.0		1.0	500m	80	5.0	80	25n	5.0	150m	100	300	200MΔ	2.0	25n	TO39	A	
56	2N5679	5.7m	1.0		1.0	500m	100	4.0	100	1.0u	2.0	1.0	40	150	30MΔ	2.0		T05	A	
57	2N5680	5.7m	1.0		1.0	500m	120	4.0	120	1.0u	2.0	1.0	40	150	30MΔ	2.0		T05	A	
58	2N6303†	5.7m	1.0		3.0	500m	80	4.0	80	1.0u	2.0	1.5	30	150	60MΔ	600m	65n	TO5	A	
59#	2SA799†	5.7m	1.0		J	1.5	60	5.0	60	500n	1.0	500m	54	∅			PE	TO39	A	
60	40537	5.7m	1.0		J	700m	200m	5.0	55	10u*	4.0	50m	50	300	100M	22	DPE	TO5	A	
61	40537L	5.7m	1.0		J	700m	200m	5.0	55	10u*	4.0	50m	50	300	100M	22	DPE	TO5	A	
62	40537S	5.7m	1.0		J	700m	200m	5.0	55	10u*	4.0	50m	50	300	100M	22	DPE	TO5	A	
63	40538	5.7m	1.0		J	700m	200m	5.0	55	10u*	4.0	500m	15	90	100M	4.0	DPE	TO5	A	
64	40538L	5.7m	1.0		J	700m	200m	5.0	55	10u*	4.0	500m	15	90	100M	4.0	DPE	TO5	A	
65	40538S	5.7m	1.0		J	700m	200m	5.0	55	10u*	4.0	500m	15	90	100M	4.0	DPE	TO39	A	
66#	ZTX750†	5.7m	2.5		J	-2	-60	-5	-45	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
67#	ZTX750K†	5.7m	2.5		J	-2	-60	-5	-45	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
68#	ZTX750L†	5.7m	2.5		J	-2	-60	-5	-45	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
69#	ZTX750M†	5.7m	2.5		J	-2	-60	-5	-45	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
70#	ZTX750S†	5.7m	2.5		J	-2	-60	-5	-45	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
71#	ZTX751†	5.7m	2.5		J	-2	-60	-5	-60	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
72#	ZTX751K†	5.7m	2.5		J	-2	-60	-5	-60	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
73#	ZTX751L†	5.7m	2.5		J	-2	-60	-5	-60	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
74#	ZTX751M†	5.7m	2.5		J	-2	-60	-5	-60	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
75#	ZTX751S†	5.7m	2.5		J	-2	-60	-5	-60	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
76#	ZTX752†	5.7m	2.5		J	-2	-100	-5	-80	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
77#	ZTX752L†	5.7m	2.5		J	-2	-100	-5	-80	100n	-2	-5	100	#	300	300m	40n	PLA	B58	A
78#	ZTX752M†	5.7m																		

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo @ 25°C (A)	Vcb (V)	Ic (A)	MIN						
1	SRSP3014S	8.8m	1.0	1.0	1.0	400m	50m	325	5.0	300	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
2	SRSP3504	8.8m	1.0	1.0	1.0	400m	50m	350	5.0	350	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
3	SRSP3514S	8.8m	1.0	1.0	1.0	400m	50m	375	5.0	350	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
4	SRSP4014	8.8m	1.0	1.0	1.0	400m	50m	400	5.0	400	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
5	SRSP4014S	8.8m	1.0	1.0	1.0	400m	50m	425	5.0	400	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
6	SRSP4504	8.8m	1.0	1.0	1.0	400m	50m	450	5.0	450	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
7	SRSP5014	8.8m	1.0	1.0	1.0	400m	50m	500	5.0	500	3.0φ	100	25	5.0MΔ	200		EM	T05	Aφ	
8	TRLP3034S	8.8m	1.0	1.0	1.0	400m	50m	325	4.0	300	10u	100	15	20MΔ	20	35 φ	DMΔ	T05		
9	TRSP2254	8.8m	1.0	1.0	1.0	400m	50m	225	5.0	225	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
10	TRSP2254S	8.8m	1.0	1.0	1.0	400m	50m	250	5.0	225	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
11	TRSP2504	8.8m	1.0	1.0	1.0	400m	50m	250	5.0	250	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
12	TRSP2504S	8.8m	1.0	1.0	1.0	400m	50m	275	5.0	250	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
13	TRSP2754	8.8m	1.0	1.0	1.0	400m	50m	275	5.0	275	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
14	TRSP2754S	8.8m	1.0	1.0	1.0	400m	50m	300	5.0	275	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
15	TRSP3014	8.8m	1.0	1.0	1.0	400m	50m	300	5.0	300	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
16	TRSP3014S	8.8m	1.0	1.0	1.0	400m	50m	325	5.0	300	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
17	TRSP3504	8.8m	1.0	1.0	1.0	400m	50m	350	5.0	350	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
18	TRSP3514S	8.8m	1.0	1.0	1.0	400m	50m	375	5.0	350	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
19	TRSP4014	8.8m	1.0	1.0	1.0	400m	50m	400	5.0	400	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
20	TRSP4014S	8.8m	1.0	1.0	1.0	400m	50m	425	5.0	400	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
21	TRSP4254S	8.8m	1.0	1.0	1.0	400m	50m	450	5.0	425	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
22	TRSP4504	8.8m	1.0	1.0	1.0	400m	50m	450	5.0	450	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
23	TRSP4504S	8.8m	1.0	1.0	1.0	400m	50m	475	5.0	450	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
24	TRSP4754S	8.8m	1.0	1.0	1.0	400m	50m	500	5.0	475	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
25	TRSP5014	8.8m	1.0	1.0	1.0	400m	50m	500	5.0	500	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
26	TRSP5014S	8.8m	1.0	1.0	1.0	400m	50m	525	5.0	500	3.0φ	100	25 #	50 φ	20MΔ	200	200p	DMΔ	T05	
27	2N2894	8.8m	1.2	1.2	1.0	200m	80n	12	4.0	12	10u	50φ	30m	40	150	60nφ	DMΔ	T018	A	
28	2N3209	8.8m	1.2	1.2	1.0	200m	80n	20	4.0	20	80n	50φ	30m	30	120	60nφ	PE	T018	A	
29 #	2SA683	8.8m	1.75m	1.75m	1.0	1.5 #		30	5.0	25	100n	100	500m	60	340	200M\$	PE	R182a	B	
30	TN2904A	8.8m	2.0	2.0	1.0	800m	300	60	5.0	60	10nφ	100	150m	40	120	200MΔ	PLT	B32	A	
31	TN2905	8.8m	2.0	2.0	1.0	800m	300	60	5.0	40	20nφ	100	150m	100	300	200MΔ	PLT	B32	A	
32	TN2905A	8.8m	2.0	2.0	1.0	800m	300	60	5.0	60	10nφ	100	150m	100	300	200MΔ	PLT	B32	A	
33	TN3244	8.8m	2.0	2.0	1.0	500m	40	5.0	40	50nφ	1.0φ	500m	50	150	175MΔ	35nφ	PLT	Y237	A	
34	TN3245	8.8m	2.0	2.0	1.0	500m	50	5.0	50	50nφ	1.0φ	500m	30	90	150MΔ	40nφ	PLT	Y237	A	
35	TN3467	8.8m	2.0	2.0	1.0	500m	40	5.0	40	30nφ	1.0φ	500m	40	120	175MΔ	30nφ	PLT	Y237	A	
36	TN3468	8.8m	2.0	2.0	1.0	500m	50	5.0	50	100nφ	1.0φ	500m	25	75	150MΔ	30nφ	PLT	Y237	A	
37	TN4030	8.8m	2.0	2.0	1.0	500m	60	5.0	60	50nφ	5.0φ	100u	30		100MΔ		PLT	Y237	A	
38	TN4033	8.8m	2.0	2.0	1.0	500m	80	5.0	80	50nφ	5.0φ	100u	100	300	150MΔ		PLT	B32	A	
39	TN4036	8.8m	2.0	2.0	1.0	500m	90	7.0	65	20nφ	100	150m	40	140	60MΔ		PLT	B32	A	
40	TN4037	8.8m	2.0	2.0	1.0	500m	60	7.0	40	250nφ	100	150m	50	250	60MΔ		PLT	B32	A	
41	TN4234	8.8m	2.0	2.0	1.0	500m		40	40	100u	1.0φ	250m	30	150	3.0MΔ		PLT	Y237	A	
42	TN4235	8.8m	2.0	2.0	1.0	500m		60	60	100u	1.0φ	250m	30	150	3.0MΔ		PLT	Y237	A	
43	TN4236	8.8m	2.0	2.0	1.0	500m		80	80	100u	1.0φ	250m	30	150	3.0MΔ		PLT	Y237	A	
44	TN4314	8.8m	2.0	2.0	1.0	500m	90	5.0	65	250n	1.0φ	150m	50	250	60MΔ		PLT	Y237	A	
45	TN5022	8.8m	2.0	2.0	1.0	500m		50	50	100n	1.0φ	500m	25	100	170MΔ	30nφ	PLT	Y237	A	
46	TN5023	8.8m	2.0	2.0	1.0	500m		30	5.0	30	100n	1.0φ	500m	40	100	200MΔ	PE	Y237	A	
47 #	2SA777	7.0m	750m	750m	1.0	1.0 #		80	5.0	80	100n	100	150m	65	330	120M\$	PLT	R182a	B	
48	2N5864	7.1m	1.2	1.2	1.0	1.5 #		90	5.0	70	500nφ	100	150m	50	500	50MΔ	3.0	T039	Aφ	
49	HA7515	7.1m	1.0	1.0	1.0			150	150		100n	5.0	1.0mΔ	20		800k†	A	R192		
50	HA7520	7.1m	1.0	1.0	1.0	100m		35	35		100n	5.0	1.0mΔ	12		1.2M†	A	R192		
51	HA7521	7.1m	1.0	1.0	1.0	100m		60	60		100n	5.0	1.0mΔ	12		1.2M†	A	R192		
52	HA7522	7.1m	1.0	1.0	1.0			15	15		100n	5.0φ	1.0mΔ	20		1.2M†	F			
53	HA7523	7.1m	1.0	1.0	1.0			35	35		100n	5.0φ	1.0mΔ	20		1.2M†	F			
54	HA7524	7.1m	1.0	1.0	1.0			60	60		100n	5.0φ	1.0mΔ	20		1.0M†	F			
55	HA7525	7.1m	1.0	1.0	1.0			110	110		100n	5.0φ	1.0mφ	20		800k†	F			
56	HA7526	7.1m	1.0	1.0	1.0			15	15		100n	5.0φ	1.0mΔ	42		1.2M†	F			
57	HA7527	7.1m	1.0	1.0	1.0			35	35		100n	5.0φ	1.0mΔ	42		1.2M†	F			
58	HA7528	7.1m	1.0	1.0	1.0			60	60		100n	5.0φ	1.0mφ	42		1.0M†	F			
59	HA7529	7.1m	1.0	1.0	1.0			90	90		100n			14		1.4	A	R192		
60	HA7723	7.1m	1.0	1.0	1.0	50m		50	10		1.0u	6.0φ	1.0mΔ	25		100k†	A	R192		
61	HA7725	7.1m	1.0	1.0	1.0	50m		100	60		1.0u	6.0φ	1.0mΔ	14		100k†	A	R192		
62	HA7734	7.1m	1.0	1.0	1.0	50m		50	20		1.0u	6.0φ	1.0mΔ	14		200k†	A	R192		
63	HA7735	7.1m	1.0	1.0	1.0	50m		50	20		1.0u	6.0φ	1.0mΔ	25		300k†	A	R192		
64	HA7736	7.1m	1.0	1.0	1.0	50m		50	20		1.0u	6.0φ	1.0mΔ	50		400k†	A	R192		
65	HA7737	7.1m	1.0	1.0	1.0	50m		50	20		1.0u	6.0φ	1.0mΔ	18		300k†	A	R192		
66	2N1238	7.4m	1.0	1.0	1.0			15	15	15	100nφ	5.0	1.0mΔ	14	32	1.2M†	F	R192		
67	2N1239	7.4m	1.0	1.0	1.0			15	15	15	100nφ	5.0	1.0mΔ	28	65	1.2M†	F	R192		
68	2N1240	7.4m	1.0	1.0	1.0			35	35	35	100nφ	5.0	1.0mΔ	14	32	1.2M†	F	R192		
69	2N1241	7.4m	1.0	1.0	1.0			35	35	35	100nφ	5.0	1.0mΔ	28	65	1.2M†	F	R192		
70	2N1242	7.4m	1.0	1.0	1.0			60	60	60	100nφ	5.0	1.0mΔ	14	32	1.0M†	F	R192		
71	2N1243	7.4m	1.0	1.0	1.0			60	60	60	100nφ	5.0	1.0mΔ	28	65	1.0M†	F	R192		
72	2N1244	7.4m	1.0	1.0	1.0			110	110	110	100nφ	5.0	1.0mΔ	14	32	800k†	F	R192		
73 #	2SA607	8.0m	1.0	1.0	1.0	700m		100	5.0	80	3.0φ	5.0φ	200m	40	200 #	50MΔ	PE	T037	Aφ	
74 #	2SA898	8.0m	1.0	1.0	1.0	50m		150	5.0	120	1.0φ	5.0φ	10m	150	φ	100M\$	PEΔ	B5c	B	
75 #	2SA899	8.0m	1.0</																	



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. HFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O D E			
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcbo @ 25°C (A)	Vcb (V)									Ic (A)		
1	92PU57	20m	1.2	#J	2.0	500m	100	4.0	100	100n#	1.0	50m	80	50MΔ			PLT	B32	A			
2	92PU200	20m	1.2	#J	2.0	500m	100	7.0	80	100n	2.0	350m	100	300			PLT	B31	A			
3	40391	20m	3.5	#J	1.0	500m	60	7.0	40	250n	1.0	1.0m	15	60MΔ	9.3		DPEΔ	F32	A			
4	40410	20m	3.0 #	#J	700m	200m	4.0	90	5	1.0u*	4.0	150m	50	250	100MΔ		D	F31	A			
5	BD370A	20m	2.0	#J	2.0	500m	45	5.0	45	100n	1.0	100m	40	400	50MΔ		PLT	B32	A			
6	BD370B	20m	1.2	#J	2.0	500m	60	5.0	60	100n	1.0	100m	40	400	50MΔ		PLT	B32	A			
7	BD370C	20m	1.2	#J	2.0	500m	80	5.0	80	100n	1.0	100m	40	400	50MΔ		PLT	B32	A			
8	BD370D	20m	1.2	#J	2.0	500m	100	5.0	100	100n	1.0	100m	40	400	50MΔ		PLT	B32	A			
9	BD372A	20m	1.2	#J	2.0	500m	45	5.0	45	100n	1.0	100m	40	400	50MΔ		PLT	B32	A			
10	BD372B	20m	1.2	#J	2.0	500m	80	5.0	80	100n	1.0	100m	40	400	50MΔ		PLT	B32	B			
11	BD372C	20m	1.2	#J	2.0	500m	80	5.0	80	100n	1.0	100m	40	400	50MΔ		PLT	B32	B			
12	BD372D	20m	1.2	#J	2.0	500m	100	5.0	100	100n	1.0	100m	40	400	50MΔ		PLT	B32	B			
13	2N3782T	22m	1.0	#S	1.5	500m	40	5.0	40	100n#	1.5	1.0	30	120	180MΔ	10		40n	T05	A		
14	2N3782A1	22m	1.0	#S	1.5	500m	50	5.0	50	100n#	1.5	1.0	20	80	150MΔ	1.4		35n	T05	A		
15	2N3782S1	22m	1.0	#S	1.5	500m	40	5.0	40	100n#	1.5	1.0	30	120	180MΔ	10		40n	T039	A		
16	2N3783T	22m	1.0	#S	1.5	500m	60	5.0	60	100n#	1.5	1.0	20	80	150MΔ	10		40n	T05	A		
17	2N3783S1	22m	1.0	#S	1.5	500m	60	5.0	60	100n#	1.5	1.0	20	80	150MΔ	10		40n	T05	A		
18	NS3782	22m	1.0	#J	1.5	500m	60	5.0	60	100n#	1.5	1.0	30	120	1.8MΔ			35n	PEΔ	T039	A	
19	NS3783	22m	1.0	#J	1.5	500m	60	5.0	60	100n#	1.5	1.0	20	80	1.5MΔ			35n	PEΔ	T039	A	
20	2N5022T	25m	1.0	#J	500m	50	5.0	50	50	100n#	1.0	500m	25	100	170MΔ	800m		30n	T039	A		
21#	2SA762-1	25m	1.5	#J	2.0	500m	110	5.0	110	100n	2.0	400m	50	240	80MΔ	1.2				T066	C	
22#	2SA762-2	25m	1.5	#J	2.0	500m	140	5.0	140	100n	2.0	400m	50	240	80MΔ	1.2				T066	C	
23	2N3408	27m	4.0	#J	500m	40	3.0	25	400n	1.5	15	40m	10	100	200MΔ			35n	T30	A		
24	2N3244T	28m	1.0	#J	1.0	500m	40	5.0	40	50n	1.0	500m	50	150	175MΔ					T05	A	
25	2N3245T	28m	1.0	#J	1.0	500m	50	5.0	50	50n	1.0	500m	30	90	150MΔ					T05	A	
26	2N3634T	28m	1.0	#S	1.0	500m	140	5.0	140	100n	1.0	50m	50	150	150MΔ					T05	A	
27	JAN2N3634T	28m	1.0	#J	1.0	500m	140	5.0	140	100n	1.0	50m	50	150	150MΔ	3.0 #				T05	A	
28	2N3635T	28m	1.0	#S	1.0	500m	140	5.0	140	100n	1.0	50m	100	300	200MΔ					T05	A	
29	2N3636T	28m	1.0	#S	1.0	500m	175	5.0	175	100n	1.0	50m	50	150	150MΔ					T05	A	
30	2N3637T	28m	1.0	#S	1.0	500m	175	5.0	175	100n	1.0	50m	100	300	200MΔ					T05	A	
31	2N3743	28m	1.0	#S	50m	300	5.0	300	300n	1.0	30m	25	250	30MΔ	500					T039	A	
32	JAN2N3743	28m	1.0	#J	50m	300	5.0	300	100n	1.0	30m	50	200	40MΔ						T039	A	
33	2N4404T	28m	5.0	#J	500m	80	5.0	80	25n	5.0	150m	40	120	200MΔ				25n		T039	A	
34	2N4405T	28m	5.0	#J	500m	80	5.0	80	25n	5.0	150m	100	300	200MΔ				25n		T039	A	
35	2N4406T	28m	5.0	#J	500m	80	5.0	80	25n	5.0	150m	30	120	150MΔ				60n		T039	A	
36	2N4407T	28m	5.0	#J	500m	80	5.0	80	25n	5.0	150m	80	240	150MΔ				60n		T039	A	
37	2N4890T	28m	1.0	#S	500m	60	5.0	40	250n#	1.0	150m	50	250	100MΔ	9.3					T05	A	
38	2N4929	28m	1.0	#S	50m	150	4.0	150	500n	1.0	10m	25	200	100MΔ	50 #					T039	A	
39	2N4930	28m	1.0	#S	50m	200	4.0	200	1.0u	1.0	10m	20	200	20MΔ	500 #					T039	A	
40	JAN2N4930	28m	1.0	#J	50m	200	5.0	200	100n	1.0	30m	50	200	40MΔ						T039	A	
41	2N4931	28m	1.0	#S	50m	250	4.0	250	1.0u	1.0	10m	20	200	20MΔ	500 #					T039	A	
42	JAN2N4931	28m	1.0	#J	50m	250	5.0	250	100n	1.0	30m	50	200	40MΔ						T039	A	
43	2N4931S	28m	1.0	#S	50m	250	5.0	250	1.0u	1.0	10m	20	200	20MΔ	500 #					T039	A	
44	2N5583	28m	5.0	#S	500m	30	3.0	30	50n	2.0	100m	25	100	20MΔ						T039	P	
45	2N5834*	28m	5.0	#S	1.0	500m	60	4.0	40	10m†	5.0	250m	10	100	20MΔ					T039	A	
46	40319	28m	1.0	#J	700m	200m	2.5	40	250n	4.0	50m	35	200	100MΔ	9.3		PE			T05	A	
47	40319L	28m	1.0	#J	700m	200m	2.5	40	250n	4.0	50m	35	200	100MΔ	9.3		D			T05	A	
48	40319S	28m	1.0	#J	700m	200m	2.5	40	250n	4.0	50m	35	200	100MΔ	9.3		D			T039	A	
49	40362	28m	5.0	#J	700m	200m	4.0	70	10mΔ	4.0	50m	35	200	100MΔ			PE			T05	A	
50	40362L	28m	1.0	#J	700m	200m	4.0	70	1.0u*	4.0	50m	35	200	100MΔ	9.3		D			T05	A	
51	40362S	28m	1.0	#J	700m	200m	4.0	70	1.0u*	4.0	50m	35	200	100MΔ	9.3		D			T039	A	
52	40406L	28m	1.0	#J	700m	200m	4.0	50	1.0uΔ	1.0	100m	30	200	100MΔ			D			T05	A	
53	40406S	28m	1.0	#J	700m	200m	4.0	50	1.0uΔ	1.0	100m	30	200	100MΔ			D			T039	A	
54	40634	28m	1.0	#A	700m	200m	7.0	70	10u*	4.0	150m	50	250	100MΔ	2.7		PE			T05	A	
55	40634L	28m	1.0	#A	700m	200m	7.0	75	10u*	4.0	150m	50	250	100MΔ						T05	A	
56	40634S	28m	1.0	#A	700m	200m	7.0	75	10u*	4.0	150m	50	250	100MΔ						T039	A	
57#	BC180T	28m*	3.2	#J	1.0	100m	40	5.0	40	100n#	1.0	100m	40	250	50MΔ	1.0		E		500n	T039	A
58#	BC180A1	28m*	3.7	#J	1.0	100m	40	5.0	40	100n	1.0	100m	40	100	50MΔ	1.0		PL		500n	R216h	A
59#	BC180B1	28m*	3.7	#J	1.0	100m	40	5.0	40	100n	1.0	100m	63	180	50MΔ	1.0		PL		500n	R216h	A
60#	BC180C1	28m*	3.7	#J	1.0	100m	40	5.0	40	100n	1.0	100m	100	250	50MΔ	1.0		PL		500n	R216h	A
61#	BC181T	28m*	3.2	#J	1.0	100m	60	5.0	60	100n#	1.0	100m	40	250	50MΔ	1.0		E		500n	T039	A
62#	BC181A1	28m*	3.7	#J	1.0	100m	60	5.0	60	100n	1.0	100m	40	100	50MΔ	1.0		PL		500n	R216h	A
63#	BC181B1	28m*	3.7	#J	1.0	100m	60	5.0	60	100n	1.0	100m	63	180	50MΔ	1.0		PL		500n	R216h	A
64#	BC181C1	28m*	3.7	#J	1.0	100m	60	5.0	60	100n	1.0	100m	100	250	50MΔ	1.0		PL		500n	R216h	A
65#	BD748T	28m	3.5	#J	-20	-5	-50	-45	100u	-1.0	-5	20	#	150			DEL		120n	T03	D	
66#	BD748A1	28m	3.5	#J	-20	-5	-70	-60	100u	-4.0	-5	20	#	150			DEL		120n	T03	D	
67#	BD748B1	28m	3.5	#J	-20	-5	-90	-80	100u	-4.0	-5	20	#	150			DEL		120n	T03	D	
68#	BD748C1	28m	3.5	#J	-20	-5	-110	-100	100u	-4.0	-5	20	#	150			DEL		120n	T03	D	
69#	BD748D1	28m	3.5	#J	-20	-5	-130	-120	100u	-4.0	-5	20	#	150			DEL		120n	T03	D	
70#	BFS92T	28m#	5.0	#J	1.0	100m	60	60	50n	1.0	150m	30	70MΔ	15					35n	T039	A	
71#	BFS93T	28m#	5.0	#J	1.0	100m	60	60	50n	1.0	150m	70	70MΔ	15					35n	T039	A	
72#	BFS94T	28m#	5.0	#J	1.0	100m	80	60	40	50n	1.0	150m	40	70MΔ	10				35n	T039	A	
73#	BFS95T	28m#	5.0	#J	1.0	100m	40	60	35	50n	1.0	1										



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/s/a TO200 Ser.	L C E O D E			
						ic (A)	ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	icbo (A)	Vcb (V)									ic (A)	MIN	MAX
						(A)	(A)	(V)	(V)	(V)	(A)	(V)									(A)	(V)	(A)
1#	BFT37	34m	1.0		SA	5.0		120	5.0	100	100n∅	100	150m	50	200 #	100M∆	4.3	110n∅	PE	T039	A∅		
2	HEPS3003-RT	34m	6.0		SJ	5.0		80	5.0	80	100u\$	100	85	80	∅	30M∆			PE	T039	A		
3	HEPS5013-RT	34m	6.0		SJ	3.0		40	5.0	40	500u\$	100	150m	85	∅	4.0M∆			PE	T05	A		
4	2N4036f	40m	7.0		SJ	1.0	500m	90	7.0	65	100u	2.0	150m	20	200	60M∆	4.3	110n∅	PE	T05	A∅		
5	2N5147	40m	1.0		SJ	2.0	1.0	100	5.5	80	1.0m#	5.0	1.0	30	90 #	50M∆			PE	T039	A∅		
6	2N5149	40m	1.0		SJ	2.0	1.0	100	5.5	80	1.0m#	5.0	1.0	70	200 #	60M∆			PE	T039	A∅		
7	2N5675	40m	1.0		SJ	2.0	500m	125	6.0	100	100n∅	5.0	500m	50	150 #	50M∆			PE	T05	A∅		
8	2N5865f	40m	1.2		SS	1.0		70	5.0	50	200n∅	1.0	150m	40	200	100M∆	2.5	90n∅	PE	T039	A∅		
9#	2SA794	40m	5.0		SJ	500m		100	5.0	100	10u	100	150m	65	330	120M∆			PE	T0126	B		
10#	2SA885	40m	5.0		SJ	1.0		45	5.0	35	100n	100	500m	60	340	200M∆			PE	T0126	B		
11#	2SA886	40m	5.0		SJ	1.5		50	5.0	40	1.0u	5.0	1.0	30	220	150M∆			PE	T0126	B		
12	40394	40m	7.0		SJ	1.0	500m	60	7.0	40	250n	100	1.0m	15		60M∆	9.3		PE	F16a			
13#	40815	40m	7.0		SJ	1.0	500m	50	5.0	40	10u*	1.5	50m	70	250	60M∆			PE	T039	A∅		
14	41503	40m	7.0		SJ	1.0	500m	40	4.0	30	2.0u	10	150m	20	#	50M∆			PE	T039	A∅		
15#	BC303	40m	6.0		SJ	1.0		85	7.0	60	20n∅	100	150m	40	240	75M∆			PE	T039	A∅		
16#	BC304	40m	6.0		SJ	1.0		60	7.0	45	20n∅	100	150m	40	240	75M∆			PE	T039	A∅		
17#	BF472	40m	2.0		SJ	3.0		300	5.0	300	10n	20	25m	50	∅	80M∆			PE	T0126	B∅		
18#	BF870	40m	1.6		SJ	100m		250	5.0	250	10n∅	20	25m	50		80M∆			PE	Y202a	B∅		
19#	BF870	40m	1.6		SJ	50m		250	5.0	250	10n∅	20	25m	50		80M∆			EPL	Y202a	B		
20#	BF872	40m	1.6		SJ	100m		300	5.0	300	10n∅	20	25m	40		80M∆			PE	Y202a	B∅		
21#	BF872	40m	1.6		SJ	50m		300	5.0	300	10n*	20	25m	50		60M∆			EPL	Y202a	B		
22#	BFR24	40m	7.0		SS	1.0	500m	60	7.0	40	250n	100	150m	50	250	100M∆			PE	T039	A∅		
23	HEPS3012-RT	40m	7.0		SJ	1.0		70	5.0	50	200n∅	100	100	100		60M∆			PE	T039	A		
24	RCA1A02	40m	7.0		SJ	1.0	500m	40	4.0	50	1.0u∆	100	100u	30	200	60M∆			PE	T039	A∅		
25	RCA1A08	40m	7.0		SJ	1.0	50m	50	5.0	40	10u*	1.5	50m	70	250	60M∆	14		PE	T039	A∅		
26	RCA1A19	40m	7.0		SJ	1.0	500m	40	4.0	10	10u∆	4.0	10m	40	250	60M∆	100		DPE	T039	A∅		
27	SDT3501	40m	7.0		SJ	2.0		40	6.0	40	100n	5.0	500m	30		50M			PL	T05	A		
28	SDT3502	40m	7.0		SJ	2.0	1.0	60	6.0	60	100n	5.0	500m	30		50M			PL	T05	A		
29	SDT3503	40m	7.0		SJ	2.0	1.0	80	6.0	80	100n	5.0	500m	30		50M			PL	T05	A		
30	SDT3504	40m	7.0		SJ	2.0	1.0	100	6.0	100	100n	5.0	500m	30		50M			PL	T05	A		
31	SDT3505	40m	7.0		SJ	2.0	1.0	40	6.0	40	100n	5.0	500m	50	150	50M			PL	T05	A		
32	SDT3506	40m	7.0		SJ	2.0	1.0	60	6.0	60	100n	5.0	500m	50	150	50M			PL	T05	A		
33	SDT3507	40m	7.0		SJ	2.0	1.0	80	6.0	80	100n	5.0	500m	50	150	50M			PL	T05	A		
34	SDT3508	40m	7.0		SJ	2.0	1.0	100	6.0	100	100n	5.0	500m	50	150	50M			PL	T05	A		
35	SDT3550	40m	7.0		SJ	2.0	1.0	60	6.0	60	1.0m	1.0	250m	30	100	10M			PL	T05	A		
36	SDT3551	40m	7.0		SJ	2.0	1.0	80	6.0	80	1.0m	1.0	250m	30	100	10M			PL	T05	A		
37	SDT3552	40m	7.0		SJ	2.0	1.0	40	5.0	40	100u	1.0	500m	20	100	10M			PL	T05	A		
38	SDT3553	40m	7.0		SJ	2.0	1.0	60	5.0	60	100u	1.0	500m	20	100	10M			PL	T05	A		
39	SDT3554	40m	7.0		SJ	2.0	1.0	80	5.0	80	100u	1.0	500m	20	100	10M			PL	T05	A		
40	SDT3775	40m	7.0		SJ	5.0	2.0	40	6.0	40	75u	2.0	2.0	20	60	10M			PL	T05	A		
41	SDT3776	40m	7.0		SJ	5.0	2.0	60	6.0	60	75u	2.0	2.0	20	60	10M			PL	T05	A		
42	SDT3777	40m	7.0		SJ	5.0	2.0	80	6.0	80	75u	2.0	2.0	20	60	10M			PL	T05	A		
43	SDT3778	40m	7.0		SJ	5.0	2.0	40	6.0	40	75u	2.0	2.0	20	60	10M			PL	T05	A		
44	SE8542	40m	1.0		SJ	1.0		30	5.0	30	50n	1.0	150m	40	#	540	#	50M∆	750m	DPL	T039	A	
45	TIP508	40m	1.0		SJ	2.0	800m	150	5.0	150	1.0m	4.0	1.0	30	120	#	50M∆		PE	T039	A∅		
46	TIP508#	40m	7.0		SJ	2.0	0.6	150	5.0	150	200u∆	4.0	1.0	30	#	120			PE	T039	A∅		
47	TIP522	40m	1.0		SJ	2.0	800m	200	5.0	200	1.0m	4.0	1.0	20	100	#	50M∆		PE	T039	A∅		
48	TIP522#	40m	7.0		SJ	2.0	800m	200	5.0	200	200u∆	4.0	1.0	20	#	100			PE	T039	A∅		
49	RCS880	42m	7.5		SJ	1.0	500m	250	4.0	250	50u∆	10	50m	20	150	#			E	T039	A∅		
50	RCS881	42m	7.5		SJ	1.0	500m	250	4.0	250	50u∆	10	35m	20	#			E	T039	A∅			
51	RCS882	42m	7.5		SJ	1.0	500m	350	6.0	300	50u∆	10	35m	20	#	15M∆	70	60 #	E	T039	A∅		
52	2N6094	45m	8.0		SS	1.0		36	4.0	18	250u∅	5.0	250m	50		30M∆	3.3		AN	W52	R		
53	MM5005	45m	1.5		SJ	2.0		80	5.0	60	200n∅	2.5	150m	50	250	30M∆	3.3		AN	T039	A		
54	MM5006	45m	1.5		SJ	2.0		100	5.0	80	200n∅	2.5	200m	50	250	30M∆	3.3		AN	T039	A		
55	MM5007	45m	1.5		SJ	2.0		120	5.0	100	200n∅	2.5	250m	50	250	30M∆	3.3		AN	T039	A		
56	2N2881	50m	8.5		SJ	2.0	1.0	60	10	60	4.0	500m	20	60		10M∆			PE	T05	A∅		
57	2N2882	50m	8.5		SJ	2.0	1.0	100	10	100	4.0	500m	20	60		10M∆			PE	T05	A∅		
58	2N3202	50m	8.7		SC	3.0	1.5	40	10	40	75u#	2.0	1.0	20	80	1.0M∆	300m		PE	T05	A∅		
59	2N3203	50m	8.7		SC	3.0	1.5	60	10	60	75u#	2.0	1.0	20	80	1.0M∆	300m		PE	T05	A∅		
60	2N3204	50m	8.7		SC	3.0	1.5	80	10	80	75u#	2.0	1.0	20	80	1.0M∆	300m		PE	T05	A∅		
61	2N3208	50m	8.7		SC	2.0	1.0	40	10	40	75u#	2.0	500m	20	60	1.0M∆	300m		PE	T05	A∅		
62	2N3774f	50m	5.0		SJ	1.0	500m	40	8.0	40	500u#	2.0	200m	20	60 #	1.0M∆		3.0u∅	PE	T05	A∅		
63	2N3775f	50m	5.0		SJ	1.0	500m	60	8.0	60	500u#	2.0	200m	20	60 #								



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ 25°C (A)	BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/a TO200 Ser.	L O A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ceo</sub> (V)		V <sub>cb</sub> (V)	V <sub>eb</sub> (V)								
1	STIP20	56m#	1.0	1.0	1.0	500m	200	5.0	200	4.0	100	20m	30	200	30M			D	T05	A
2	STIP30	56m#	1.0	1.0	1.0	500m	300	5.0	300	4.0	100	20m	25	200	30M			D	T05	A
3	STIP40	56m#	1.0	1.0	1.0	500m	400	5.0	400	4.0	100	20m	25	200	30M			D	T05	A
4	TRSP15X	56m	1.0	1.0	1.0	500m	175	12	150	100u	100	30m	900	40k	25MΔ				T05	A
5	TRSP20X	56m	1.0	1.0	1.0	500m	200	12	200	100u	100	30m	900	40k	25MΔ				T05	A
6	TRSP25X	56m	1.0	1.0	1.0	500m	250	12	250	100u	100	30m	900	40k	25MΔ				T05	A
7	TRSP30X	56m	1.0	1.0	1.0	500m	300	12	300	100u	100	30m	900	40k	25MΔ				T05	A
8	TRSP3743	56m	2.0	1.0	1.0	500m	300	5.0	300	300n	10	30m	25	250	30M				F8	A
9	TRSP4000	56m	1.0	1.0	1.0	500m	100	4.0	100	1.0	10	10m	20	250	20M				T05	A
10	TRSP4001	56m	1.0	1.0	1.0	500m	150	4.0	150	1.0	10	10m	20	250	20M				T05	A
11	TRSP4002	56m	1.0	1.0	1.0	500m	200	4.0	200	3.0	10	10m	20	250	20M				T05	A
12	TRSP4003	56m	1.0	1.0	1.0	500m	250	4.0	250	3.0	10	10m	20	250	20M				T05	A
13	TRSP4930	56m	2.0	1.0	1.0	500m	200	4.0	200	1.0	10	10m	20	200	20M				F8	A
14	TRSP4931	56m	2.0	1.0	1.0	500m	250	4.0	200	1.0	10	10m	20	200	20M				F8	A
15	TRSP5281	56m	2.0	1.0	1.0	500m	175	6.0	150	1.0	10	10m	30	200	20M				F8	A
16	TRSP5282	56m	2.0	1.0	1.0	500m	325	8.0	300	1.0	10	10m	30	200	20M				F8	A
17	TRSP5415	56m	2.0	1.0	1.0	500m	500	8.0	200	50uΔ	10	50m	30	150	20M				F8	A
18	TRSP5416	56m	2.0	1.0	1.0	500m	350	6.0	300	50uΔ	10	50m	30	120	20M				F8	A
19	2N5781	57m	1.0	1.0	1.0	500m	80	5.0	80	1.0m#	2.0	1.0	20	100	8.0MΔ	625m			T05	P
20	2N5782	57m	1.0	1.0	1.0	500m	65	5.0	65	1.0m#	2.0	1.2	20	100	8.0MΔ	625m			T05	P
21	2N5783	57m	1.0	1.0	1.0	500m	45	3.5	45	1.0m#	2.0	1.6	20	100	8.0MΔ	625m			T05	P
22	2N6190†	57m	1.0	1.0	1.0	500m	80	6.0	80	10u+	2.0	2.0	30	120	30MΔ		100nΩ		T039	A
23	2N6191†	57m	1.0	1.0	1.0	500m	80	6.0	80	10u+	2.0	2.0	60	240	30MΔ		100nΩ		T039	A
24	2N6192†	57m	1.0	1.0	1.0	500m	100	6.0	100	10u+	2.0	2.0	30	120	30MΔ		100nΩ		T039	A
25	2N6193†	57m	1.0	1.0	1.0	500m	100	6.0	100	10u+	2.0	2.0	60	240	30MΔ		100nΩ		T039	A
26	40595L	57m	1.2	1.0	1.0	500m	4.0	95	95	10u*	4.0	300m	70	350	30MΔ	2.7			T05	A
27	40595S	57m	1.2	1.0	1.0	500m	4.0	95	95	10u*	4.0	300m	70	350	30MΔ	2.7			T039	A
28#	BSS17	57m	1.0	1.0	1.0	500m	100	7.0	75	500n	4.0	500m	30	130	50MΔ		100nΩ	PEΔ	T039	A
29#	BSS18	57m	1.0	1.0	1.0	500m	75	5.0	50	5.0u	4.0	500m	40	250	50MΔ		100nΩ	PEΔ	T039	A
30	MJ5415	57m	1.0	1.0	1.0	500m	200	4.0	200	50u+	1.0	50m	30	150	15MΔ	50 #			T039	A
31	MJ5416	57m	1.0	1.0	1.0	500m	350	7.0	300	50u+	1.0	50m	30	120	15MΔ				T039	A
32	MJ8100†	57m	1.0	1.0	1.0	500m	60	5.0	60	10u	2.0	2.0	25	180	30MΔ		100nΩ		T039	A
33	MJ8101†	57m	1.0	1.0	1.0	500m	60	5.0	60	10u	2.0	2.0	25	180	30MΔ		100nΩ		T039	A
34	MM4005	57m	1.0	1.0	1.0	500m	80	3.0	80	100n	1.0	1.0m	40		50MΔ			AN	T039	A
35	MM4006	57m	1.0	1.0	1.0	500m	80	3.0	80	100n	1.0	1.0m	40		50MΔ			AN	T039	A
36	MM4007	57m	1.0	1.0	1.0	500m	100	3.0	100	100n	1.0	1.0m	40		50MΔ			AN	T039	A
37	RCA1A04	57m	1.0	1.0	1.0	500m	95	4.0	95	10u*	4.0	300m	70	300	50MΔ	2.6		PE	T039	A
38	RCA1A10	57m	1.0	1.0	1.0	500m	175	5.0	175	10uΔ	1.0	10m	40	250	15MΔ	200		DE	T039	A
39	RCA1A16	57m	1.0	1.0	1.0	500m	100	5.0	100	10uΔ	1.0	10m	40	250	15MΔ	100		DE	T039	A
40	STIP105	57m#	2.0	1.0	1.0	500m	100	5.0	100	3.0	100	20m	30	200	30M			D	F8	A
41	STIP205	57m#	2.0	1.0	1.0	500m	200	5.0	200	4.0	100	20m	30	200	30M			D	F8	A
42	STIP305	57m#	2.0	1.0	1.0	500m	300	5.0	300	4.0	100	20m	25	200	30M			D	F8	A
43	STIP405	57m#	2.0	1.0	1.0	500m	400	5.0	400	4.0	100	20m	25	200	30M			D	F8	A
44	TRLP2004	57m	1.0	1.0	1.0	500m	200	4.0	200	10u	100	500m	15	35	20MΔ				T05	A
45	TRLP2005	57m	2.0	1.0	1.0	500m	200	4.0	200	10u	100	500m	15	35	20MΔ				F8	A
46	TRLP2254S	57m	1.0	1.0	1.0	500m	250	4.0	225	10u	100	500m	15	35	20MΔ				T05	A
47	TRLP2255S	57m	2.0	1.0	1.0	500m	250	4.0	225	10u	100	500m	15	35	20MΔ				F8	A
48	TRLP2504	57m	1.0	1.0	1.0	500m	250	4.0	250	10u	100	500m	15	35	20MΔ				T05	A
49	TRLP2505	57m	2.0	1.0	1.0	500m	250	4.0	250	10u	100	500m	15	35	20MΔ				F8	A
50	TRLP2505S	57m	2.0	1.0	1.0	500m	275	4.0	250	10u	100	500m	15	35	20MΔ				F8	A
51	TRLP2540S	57m	1.0	1.0	1.0	500m	275	4.0	250	10u	100	500m	15	35	20MΔ				T05	A
52	TRLP2754S	57m	1.0	1.0	1.0	500m	300	4.0	275	10u	100	500m	15	35	20MΔ				T05	A
53	TRLP2755S	57m	2.0	1.0	1.0	500m	300	4.0	275	10u	100	500m	15	35	20MΔ				F8	A
54	TRLP3004	57m	1.0	1.0	1.0	500m	300	4.0	300	10u	100	500m	15	35	20MΔ				T05	A
55	TRLP3004S	57m	1.0	1.0	1.0	500m	325	4.0	300	10u	100	500m	15	35	20MΔ				T05	A
56	TRLP3005	57m	2.0	1.0	1.0	500m	300	4.0	300	10u	100	500m	15	35	20MΔ				F8	A
57	TRLP3005S	57m	2.0	1.0	1.0	500m	325	4.0	300	10u	100	500m	15	35	20MΔ				F8	A
58	TRLP3504	57m	1.0	1.0	1.0	500m	350	4.0	350	10u	100	500m	15	35	20MΔ				T05	A
59	TRLP3504S	57m	1.0	1.0	1.0	500m	375	4.0	350	10u	100	500m	15	35	20MΔ				T05	A
60	TRLP3505	57m	2.0	1.0	1.0	500m	350	4.0	350	10u	100	500m	15	35	20MΔ				F8	A
61	TRLP3505S	57m	2.0	1.0	1.0	500m	375	4.0	350	10u	100	500m	15	35	20MΔ				F8	A
62	TRLP4004	57m	1.0	1.0	1.0	500m	200	4.0	400	10u	100	500m	15	35	20MΔ				T05	A
63	TRLP4004S	57m	1.0	1.0	1.0	500m	425	4.0	400	10u	100	500m	15	35	20MΔ				T05	A
64	TRLP4005	57m	2.0	1.0	1.0	500m	400	4.0	400	10u	100	500m	15	35	20MΔ				F8	A
65	TRLP4005S	57m	2.0	1.0	1.0	500m	425	4.0	400	10u	100	500m	15	35	20MΔ				F8	A
66	TRLP4504	57m	1.0	1.0	1.0	500m	450	4.0	450	10u	100	500m	15	35	20MΔ				T05	A
67	TRLP4504S	57m	1.0	1.0	1.0	500m	475	4.0	450	10u	100	500m	15	35	20MΔ				T05	A
68	TRLP4505	57m	2.0	1.0	1.0	500m	450	4.0	450	10u	100	500m	15	35	20MΔ				F8	A
69	TRLP4505S	57m	2.0	1.0	1.0	500m	475	4.0	450	10u	100	500m	15	35	20MΔ				F8	A
70	2N5151	60m	1.0	1.0	1.0	500m	100	5.5	80	1.0m#	5.0	2.5	30	90	60MΔ				T039	A
71	2N5153	60m	1.0	1.0	1.0	500m	100	5.5	80	1.0m#	5.0	2.5	70	200	70MΔ				T039	A
72	TIP524	60m	1.0	1.0	1.0	500m	200	5.0	200	1.0m#	4.0	2.5	20	100	40MΔ				T039	A
73#	2SA738	64m	8.0	8.0	1.5	500m	25	5.0	25	20u	2.0	500m	35	*	180M	500m		PE	B7a	B
74#	2SA743	64m	8.0	8.0	1.5	500m	50	4.0	50	20u	4.0	50m	6							

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y202a/s/a TO200 Ser.	# L E O D E	
						ic (A)	lb (A)	BVcbo (V)	BEVbo (V)	BVCeo (V)	icbo @ 25°C (A)	Vcb (V)									ic (A)
1#	2SA636	80m	10	10	\$	1.0		70	5.0	45	100u	5.0	500m	40	250 #	50M	1.3	E	Y202a	D0	
2#	2SA636A	80m	10	10	\$J	1.5	600m	70	5.0	60	1.0u	5.0	500m	40	250 #	40M		E	Y202a	D0	
3#	2SA715	80m	10	10	\$J	5.0		35	5.0	35	20u	2.0	500m	35 *	320 *	160M		E	B7a	B	
4#	2SA816	80m	1.5	10	\$J	750m	750m	80	5.0	80	500n	2.0	150m	70	240	100M	1.0	PE	B26	D	
5#	2SA887	80m	10	10	\$J	2.0		70	5.0	50	1.0u	5.0	1.0	30	220	150M		PE	B15b	B	
6#	2SA963	80m	10	10	\$J	1.5		50	5.0	40	1.0u	5.0	1.0	30	220	150M		PE	TO126	B	
7#	2SA1014	80m	10	10	\$J	1.0		160	6.0	160	1.0u	5.0	200m	60	320	20m		E	B14	A0	
8#	2SA1144	80m	10	10	\$J	-50m	-50m	150	5.0	150	100n	-5.0	-10m	80	240	200m		E	B7	B	
9#	2SA1217	80m	10	10	\$J	3.0	300m	40	5.0	40	100n	2.0	500m	80	240	200m		E	B41	B0	
10#	2SA1233	80m	10	10	\$J	100m		400	5.0	360	100u	2.0	20m	35	200	13M		D	B82	D0	
11#	2SA1233L	80m	10	10	\$J	100m		400	5.0	360	100u	2.0	20m	35	200	13M		D	B82a	D0	
12#	2SB523	80m	10	10	\$J	2.0		40	5.0	20	1.0u	4.0	500m	55 #	300 #	70M		PE			
13#	2SB524	80m	10	10	\$J	1.5		60	5.0	40	1.0u	4.0	500m	55 #	300 #	70M		PE			
14#	2SB526	80m	10	10	\$J	800m		90	5.0	80	10u	4.0	300m	55 #	300 #	70M		PE			
15#	2SB527	80m	10	10	\$J	800m		110	5.0	100	10u	4.0	300m	55 #	300 #	70M		PE			
16#	2SB528	80m	10	10	\$J	800m		130	5.0	120	10u	4.0	300m	55 #	300 #	70M		PE			
17#	2SB529	80m	10	10	\$J	2.0		40	5.0	20	1.0u	4.0	500m	55 #	300 #	70M		PE			
18#	2SB548	80m	10	10	\$J	800m		100	5.0	80	1.0u	5.0	200m	40	320	80M	4.0 #	E	TO126	B0	
19#	2SB549	80m	10	10	\$J	800m		100	5.0	100	1.0u	5.0	200m	40	320	80M	4.0 #	E	TO126	B0	
20#	2SB622	80m	10	10	\$J	300m	100m	400	6.0	400	100u	4.0	50m	30	200		DM	TO5	A0		
21#	2SB731	80m	10	10	\$J	1.0	500m	60	6.0	50	100n	2.0	100m	135	600 *	75M		E	B7a	B	
22#	2SB744	.08	10	10	\$J	-3		-70	-5	-45	-1u	-5.0	-5	60 #	320 *	45M		E	B16m	B	
23#	2SB744A	.08	10	10	\$J	-3		-70	-5	-45	-1u	-5.0	-5	60 #	320 *	45M		E	B16m	B	
24#	2SB772	.08	10	10	\$J	-3		-40	-5	-30	-1u	-2.0	-1	60 #	400 *	80M		E	B16m	B	
25	BD506	80m	1.0	10	\$J	2.0		30	5.0	20	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18b	A0	
26	BD506-1	80m	1.0	10	\$J	2.0		30	5.0	20	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18d	A0	
27	BD506-5	80m	1.0	10	\$J	2.0		30	5.0	20	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18c	A0	
28	BD508	80m	1.0	10	\$J	2.0		40	5.0	30	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18b	A0	
29	BD508-1	80m	1.0	10	\$J	2.0		40	5.0	30	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18d	A0	
30	BD508-5	80m	1.0	10	\$J	2.0		40	5.0	30	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18c	A0	
31	BD510	80m	1.0	10	\$J	2.0		50	5.0	40	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18b	A0	
32	BD510-1	80m	1.0	10	\$J	2.0		50	5.0	40	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18d	A0	
33	BD510-5	80m	1.0	10	\$J	2.0		50	5.0	40	100n	2.0	1.0	40	90 #	180M	700m #	AN	B18c	A0	
34	BD526	80m	1.0	10	\$J	2.0		60	4.0	60	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18b	A0	
35	BD526-1	80m	1.0	10	\$J	2.0		60	4.0	60	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18d	A0	
36	BD526-5	80m	1.0	10	\$J	2.0		60	4.0	60	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18c	A0	
37	BD528	80m	1.0	10	\$J	2.0		80	4.0	80	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18b	A0	
38	BD528-1	80m	1.0	10	\$J	2.0		80	4.0	80	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18d	A0	
39	BD528-5	80m	1.0	10	\$J	2.0		80	4.0	80	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18c	A0	
40	BD530	80m	1.0	10	\$J	2.0		100	4.0	100	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18b	A0	
41	BD530-1	80m	1.0	10	\$J	2.0		100	4.0	100	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18d	A0	
42	BD530-5	80m	1.0	10	\$J	2.0		100	4.0	100	100n	2.0	50m	60	153 #	100M	2.0 #	AN	B18c	A0	
43#	BF616	80m	2.0	10	\$J	300m #		250	5.0	250	50n	15	25m	30		70M		PE	Y202b	B	
44#	BF618	80m	2.0	10	\$J	300m #		300	5.0	300	50n	15	25m	30		70M		PE	Y202b	B	
45	HEPS3032-RT	80m	10	10	\$J	2.0		100	4.0	100	100n	2.0	50m	140		100M			B18	A	
46	HEPS3050-RT	80m	10	10	\$J	1.0		60	5.0	60	100n	1.0	50m	150		150M			B42	X	
47	MDS76	80m	10	10	\$J	3.0	1.0	60	7.0	40	100n	1.0	200m	40	200	50M	1.5	AN	Y202c	P	
48	MDS77	80m	10	10	\$J	3.0	1.0	60	7.0	60	100n	1.0	200m	40	200	50M	1.5	AN	Y202c	X	
49	MPSU55	80m	1.0	10	\$J	2.0		60	4.0	60	100n	1.0	50m	80	160	100M		AN	B18	A0	
50	MPSU56	80m	1.0	10	\$J	2.0		80	4.0	80	100n	1.0	50m	80	160	100M		AN	B18	A0	
51	MPSU57	80m	1.0	10	\$J	2.0		100	4.0	100	100n	1.0	50m	60	140	100M	2.0	AN	B18	A0	
52	MPSU60	80m	1.0	10	\$J	500m		300	5.0	300	200n	1.0	1.0m	25		60M	37	AN	B18	A0	
53	MPSU95	80m	1.0	10	\$J	2.0		50	12	40	100n	5.0	200m	25k	150k	320M	1.5		B18	A0	
54	NPC634	80m	10	10	\$J	2.0		40	5.0	30	100u	5.0	1.0	40	250 #	60M		E	Y202a	D0	
55	NPC836	80m	10	10	\$J	1.0		70	5.0	45	100u	5.0	500m	40	250 #	50M		E	Y202a	D0	
56	NSD202	80m	10	10	\$J	1.5		60	5.0	45	100n	5.0	100m	50	150	60M		PL	Y202a	A	
57	NSD203	80m	10	10	\$J	1.5		60	5.0	45	100n	5.0	100m	120	350	60M		PL	Y202a	A	
58	NSD204	80m	10	10	\$J	1.0		100	7.0	80	100n	5.0	100m	50	150	60M		PL	Y202a	A	
59	NSD205	80m	10	10	\$J	1.0		100	7.0	80	100n	5.0	100m	120	350	60M		PL	Y202a	A	
60	NSD206	80m	10	10	\$J	1.0		140	7.0	100	100n	5.0	100m	50	150	60M		PL	Y202a	A	
61	NSDU52	80m	10	10	\$J	2.0		40	5.0	30	100n	1.0	10m	55		50M		PL	Y202a	A	
62	NSDU56	80m	10	10	\$J	2.0		80	4.0	80	100n	1.0	250m	50		50M		PL	Y202a	A0	
63	NSDU57	80m	10	10	\$J	2.0		100	4.0	100	100n	1.0	250m	50		50M		PL	Y202a	A0	
64#	2SA706-2	83m	7.9	10	\$J	1.0	200m	60	6.0	60	1.0u	2.0	100m	51	138	120M	1.0	ET	B2	A	
65#	2SA706-3	83m	7.9	10	\$J	1.0	200m	60	6.0	60	1.0u	2.0	100m	102	276	120M	1.0	ET	B2	A	
66#	2SA706-4	83m	7.9	10	\$J	1.0	200m	100	6.0	100	1.0u	2.0	100m	204	442	120M	1.0	ET	B2	A	
67	NSD6180	83m	10	10	\$J	2.0	500m	100	5.0	75	500u	2.0	500m	40	250	50M		PL	Y202a	A	
68	NSD6181	83m	10	10	\$J	2.0	500m	75	5.0	50	500u	2.0	500m	40	250	50M		PL	Y202a	A	
69	NSDU51	83m	10	10	\$J	2.0		40	5.0	30	100n	1.0	10m	55 #		50M		PL	Y202a	A0	
70	NSDU51A	83m	10	10	\$J	2.0		50	5.0	40	100n	1.0	10m	55 #		50M		PL	Y202a	A0	
71	NSDU55	83m	10	10	\$J	2.0		60	5.0	60	100n	1.0	50m	80		50M		PL	Y202a	A0	
72	NSU170	83m	10	10	\$J	2.0		60	5.0	40	100n	1.0	100m	50	250	50M		PL	Y202a	A0	
73	NSU171	83m	10	10	\$J	2.0	500m	60	5.0	60	100n	1.0	100m	50	250	50M		PL	Y202a	D	
74#	2SA9111	84m	8.0	10	\$J	100m	200m	850	12	550	10u	5.0	10m	30	300	9.0M	300	500n	PE	TO5	A0
75#	2SB632	86m	10	10	\$J																



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A E M X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ MAX Vcb @ 25°C (A)	BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L O A D E
						Ic (A)	Ib (A)	Vcbo (V)	Vbebo (V)	Vbceo (V)		Vcb (V)	Ic (A)								
1	MJ3701	142m	25	0	0	3.0	500m	50	5.0	40	1.0m	4.0	250	20	100	3.0M	800m			T066	C0
2	2N3740	143m	25	0	0	1.0	2.0	60	7.0	60	100n	1.0	250m	30	100	4.0MΔ	600m			T066	C0
3	JAN2N3740†	143m	25	0	0	4.0	2.0	60	7.0	60	100n	1.0	250m	30	100	5.0MΔ	600m	400n		T066	C0
4	2N3740A	143m	25	0	0	1.0	2.0	60	7.0	60	100n	1.0	250m	30	100	4.0MΔ	600m			T066	C0
5	2N3741	143m	25	0	0	1.0	2.0	80	7.0	80	100n	1.0	250m	30	100	4.0MΔ	600m			T066	C0
6	JAN2N3741†	143m	25	0	0	4.0	2.0	80	7.0	80	100n	1.0	250m	30	100	5.0MΔ	600m	400n		T066	C0
7	2N3741A	143m	25	0	0	1.0	2.0	80	7.0	80	100n	1.0	250m	30	100	4.0MΔ	600m			T066	C0
8	2N4898	143m	25	0	0	1.0	1.0	40	5.0	40	100u	1.0	500m	20	100	30kΔ	600m			T066	C0
9	2N4899	143m	25	0	0	1.0	1.0	40	5.0	40	100u	1.0	500m	20	100	30kΔ	600m			T066	C0
10	2N4900	143m	25	0	0	1.0	1.0	80	5.0	80	100u	1.0	500m	100	100	30kΔ	600m			T066	C0
11	2N5605	143m	25	0	0	1.0	2.0	80	5.5	80	1.0m	5.0	2.5	70	200	70MΔ	600m			T066	C0
12	2N5607	143m	25	0	0	1.0	2.0	100	5.5	80	1.0m	5.0	2.5	90	90	60MΔ	600m			T066	C0
13	2N5609	143m	25	0	0	1.0	2.0	100	5.5	80	1.0m	5.0	2.5	70	200	70MΔ	600m			T066	C0
14	2N5611	143m	25	0	0	1.0	2.0	120	5.5	100	1.0m	5.0	2.5	30	90	60MΔ	600m			T066	C0
15	BD330	143m	15	*	0	3.0	3.0	5.0	5.0	20	1.0m	1.0	500m	85	375	100M	250m		PE	T0126	B
16	2N5333	150m	1.0	0	0	2.0	1.0	100	6.0	80	10u	4.0	1.0	30	120	30MΔ				T05	A0
17	2SA1008†	150m	1.5	0	0	-2	-1	100	7.0	100	-10u	-5.0	-1	40	200	30MΔ	400m	.50u	E	Y220a	X
18	SPT6145	150m	1.0	0	0	2.0	500m	350	5.0	350	50u	10	100m	20	150	15MΔ				F8	
19	2N5676	160m	2.0	0	0	2.0	500m	125	6.0	100	100n	5.0	500m	50	150	5.0MΔ				T066	C0
20	2SA483	160m	20	0	0	1.0	1.0	150	5.0	150	100u	10	100	30	250	9.0M			DM	T066	C0
21	2SA755	160m	20	0	0	2.0	1.0	50	4.0	50	100u	4.0	1.0	35	320	50M	866m		DM	B17	C0
22	2SA766	160m	20	0	0	1.2	#	150	5.0	150	30u	5.0	100m	30	150	20MΔ			DM	T066	C0
23	2SA843	160m	20	0	0	1.5	500m	200	5.0	150	50u	10	400m	60	200	30kΔ			EM	B26	D0
24	2SA1021	160m	20	0	0	1.5	#	150	6.0	150	1.0u	5.0	200m	60	320	20MΔ			EM	B26	D0
25	2SA1080	160m	20	0	0	1.0	500m	40	7.0	40	100n	5.0	10m	60	350	60MΔ	50		PE	B44	D0
26	2SA1111	160m	20	0	0	1.0	1.0	150	5.0	150	10	10	150m	65	330	200M			PE	B26	D0
27	2SA1112	160m	20	0	0	1.0	1.0	180	5.0	180	10	10	150m	65	330	200M			PE	B26	D0
28	2SB536	160m	20	0	0	1.1	1.0	140	5.0	120	1.0u	5.0	300m	40	250	40M				Y220b	X0
29	2SB537	160m	20	0	0	1.1	1.0	140	5.0	120	1.0u	5.0	300m	40	250	40M				Y220a	AJ
30	2SB628	160m	20	0	0	1.1	1.0	160	5.0	160	1.0u	5.0	300m	40	200	40M	2.0	#		Y220b	X0
31	2SB649AB	160m	20	0	0	1.1	1.0	180	5.0	180	10u	5.0	150m	60	120	140M				B7a	B
32	2SB649AC	160m	20	0	0	1.1	1.0	180	5.0	180	10u	5.0	150m	100	200	140M				B7a	B
33	2SB649B	160m	20	0	0	1.1	1.0	180	5.0	120	10u	5.0	150m	60	120	140M				B7a	B
34	2SB649C	160m	20	0	0	1.1	1.0	180	5.0	120	10u	5.0	150m	100	200	140M				B7a	B
35	2SB649D	160m	20	0	0	1.1	1.0	180	5.0	120	10u	5.0	150m	160	320	140M				B7a	B
36	2SB836	160m	20	0	0	2.2	2.5	25	5	25	20u	2.0	1.5	20	20	140M				B82	D0
37	2SB836L	160m	20	0	0	2.2	2.5	25	5	25	20u	2.0	1.5	20	20	140M				B82a	D0
38	2SB837B	160m	20	0	0	2.2	2.5	35	5.0	35	20u	2.0	500m	60	120	140M				B82	X
39	2SB837C	160m	20	0	0	2.2	2.5	35	5.0	35	20u	2.0	500m	100	200	140M				B82	X
40	2SB837D	160m	20	0	0	2.2	2.5	35	5.0	35	20u	2.0	500m	160	320	140M				B82	X
41	2SB837LB	160m	20	0	0	2.2	2.5	35	5.0	35	20u	2.0	500m	60	120	140M				B82a	X
42	2SB837LC	160m	20	0	0	2.2	2.5	35	5.0	35	20u	2.0	500m	100	200	140M				B82a	X
43	2SB837LD	160m	20	0	0	2.2	2.5	35	5.0	35	20u	2.0	500m	160	320	140M				B82a	X
44	2SB838B	160m	20	0	0	2	2	50	4	50	10u	4.0	50m	60	120	130M				B82	D0
45	2SB839B	160m	20	0	0	2	2	80	4	80	10u	4.0	50m	60	120	130M				B82	D0
46	2SB840B	160m	20	0	0	1.1	1.0	180	5.0	120	10u	5.0	150m	60	120	140M				B82	X
47	2SB840C	160m	20	0	0	1.1	1.0	180	5.0	120	10u	5.0	150m	100	200	140M				B82	X
48	2SB840LB	160m	20	0	0	1.1	1.0	180	5.0	120	10u	5.0	150m	60	120	140M				B82a	X
49	2SB841B	160m	20	0	0	1.1	1.0	180	5.0	180	10u	5.0	150m	60	120	140M				B82	X
50	2SB841C	160m	20	0	0	1.1	1.0	180	5.0	180	10u	5.0	150m	100	200	140M				B82	X
51	2SB841LB	160m	20	0	0	1.1	1.0	180	5.0	180	10u	5.0	150m	60	120	140M				B82a	X
52	2SB841LC	160m	20	0	0	1.1	1.0	180	5.0	180	10u	5.0	150m	100	200	140M				B82a	X
53	2SB855A	160m	20	0	0	2.0	2.0	50	4.0	50	100u	4.0	1.0	35	70	35M			D	Y220b	X
54	2SB855B	160m	20	0	0	2.0	2.0	50	4.0	50	100u	4.0	1.0	60	120	35M			D	Y220b	X
55	BD166	160m	20	0	0	1.1	500m	45	5.0	45	100u	2.0	150m	40	#	3.0MΔ	1.0			126	B0
56	BD166†	160m	20	0	0	1.1	500m	45	5.0	45	100u	2.0	150m	40	#	3.0MΔ	1.0			126	B0
57	BD168	160m	20	0	0	1.1	500m	60	5.0	60	100u	2.0	150m	40	#	3.0MΔ	1.0			126	B0
58	BD168†	160m	20	0	0	1.1	500m	60	5.0	60	100u	2.0	150m	40	#	3.0MΔ	1.0			126	B0
59	BD170	160m	20	0	0	1.1	500m	80	5.0	80	100u	2.0	150m	40	#	3.0MΔ	1.0			126	B0
60	BD170†	160m	20	0	0	1.1	500m	80	5.0	80	100u	2.0	150m	40	#	3.0MΔ	1.0			126	B0
61	MJE350	160m	20	0	0	1.5	500m	30	3.0	300	100u	10	50m	30	240	10M				B6	B
62	MJE710	160m	1.2	0	0	1.5	500m	40	5.0	40	500uΔ	1.0	150m	40		1.0				B16c	B
63	MJE711	160m	1.2	0	0	1.5	500m	60	5.0	60	500uΔ	1.0	150m	40		1.0				B16c	B
64	MJE712	160m	1.2	0	0	1.5	500m	80	5.0	80	500uΔ	1.0	150m	40		1.0				B16c	B
65	SDT3701	160m	28	0	0	1.0	1.0	40	6.0	40	1.0m	1.5	1.0	25	180	60M			PL	T066	A
66	SDT3702	160m	28	0	0	1.0	1.0	60	6.0	60	1.0m	1.5	1.0	25	180	60M			PL	T066	A
67	SDT3703	160m	28	0	0	1.0	1.0	40	6.0	40	100u	2.0	1.0	20	80	10M				T066	A
68	SDT3704	160m	28	0	0	1.0	1.0	60	6.0	60	100u	2.0	1.0	20	80	10M				T066	A
69	SDT3705	160m	28	0	0	1.0	1.0	80	6.0	80	100u	2.0	1.0	20	80	10M				T066	A
70	SDT3706	160m	28	0	0	1.0	1.0	30	4.0	30	200u	2.0	1.0	20	60	60M				T066	A
71	SDT3707	160m	28	0	0	1.0	1.0	45	4.0	45	200u	2.0	1.0	20	60	60M				T066	A
72	SDT3708	160m	28	0	0	1.0	1.0	60	4.0	60	200u	2.0	1.0	20	60	60M	</				



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE				f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cbco</sub> (V)	V <sub>bebo</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb0</sub> @ MAX @ 25°C (A)	V <sub>cb0</sub> (V)	I <sub>c</sub> (A)	MIN						
1	SDT3510	188m	29		2.0	1.0	80	8.0	80	100n	5.0	500m	30	50M			PL	T088 A0	
2	SDT3511	188m	29		2.0	1.0	80	8.0	80	100n	5.0	500m	30	50M		PL	T066 A0		
3	SDT3512	188m	29		2.0	1.0	100	6.0	100	100n	5.0	500m	30	50M		PL	T066 A0		
4	SDT3513	188m	29		2.0	1.0	40	8.0	40	100n	5.0	500m	50	150	50M	PL	T088 A0		
5	SDT3514	188m	29		2.0	1.0	60	6.0	60	100n	5.0	500m	50	150	50M	PL	T066 A0		
6	SDT3515	188m	29		2.0	1.0	80	6.0	80	100n	5.0	500m	50	150	50M	PL	T066 A0		
7	SDT3516	188m	30		2.0	1.0	100	6.0	100	100n	5.0	500m	50	150	50M	PL	T088 A0		
8	RCS30	171m	30		3.0	1.0	40	5.0	40	300uΔ	4.0	1.0	15	150	3.0MΔ	E	T066 C0		
9	RCS30A	171m	30		3.0	1.0	60	5.0	60	300uΔ	4.0	1.0	15	150	3.0MΔ	E	T066 C0		
10	RCS30B	171m	30		3.0	1.0	80	5.0	80	300uΔ	4.0	1.0	15	150	3.0MΔ	E	T088 C0		
11	RCS30C	171m	30		3.0	1.0	100	5.0	100	300uΔ	4.0	1.0	15	150	3.0MΔ	E	T066 C0		
12#	2SA1011	178m	25		1.5		180	6.0	180	10u	5.0	300m	60	320	120MΔ	PE	Y220b D		
13	2N4999	200m#	30		2.0	1.0	100	5.5	80	1.0m#	5.0	1.0	30	90	50MΔ		T059 A		
14	2N5001	200m#	30		2.0	1.0	100	5.5	80	1.0m#	5.0	1.0	70	200	60MΔ		T059 A		
15	2N5739	200m#	20		1.0	2.0	80	5.0	80	500uΔ	5.0	5.0	20	80	10MΔ		T066 C0		
16	2N5740	200m#	20		1.0	2.0	100	5.0	100	500uΔ	5.0	5.0	20	80	10MΔ		T066 C0		
17	2N6180†	200m#	10		2.0	1.0	100	7.0	100	1.0m#	5.0	500m	30	130	50MΔ		B24 A0		
18	2N6181†	200m#	10		2.0	1.0	75	5.0	75	1.0m#	4.0	500m	40	250	50MΔ		B24 A0		
19	2N6211†	200m#	20		2.0	1.0	275	6.0	275	15m	5.0	1.0	10	100	20MΔ		T066 C0		
20	JAN2N6211†	200m#	3.0		2.0	1.0	275	6.0	225	15m	5.0	1.0	30	175	20MΔ		T066 C0		
21	2N6212†	200m#	20		2.0	1.0	350	6.0	350	15m	5.0	1.0	10	100	20MΔ		T066 C0		
22	JAN2N6212†	200m#	3.0		2.0	1.0	350	6.0	300	15m	5.0	1.0	30	175	20MΔ		T066 C0		
23	2N6213†	200m#	20		2.0	1.0	400	6.0	400	15m	5.0	1.0	10	100	20MΔ		T066 C0		
24	JAN2N6213†	200m#	3.0		2.0	1.0	400	6.0	350	15m	5.0	1.0	30	175	20MΔ		T066 C0		
25	2N6214	200m#	20		2.0	1.0	450	6.0	400	10mΔ	5.0	1.0	10	100	20MΔ		T066 C0		
26	2N6420	200m	35		1.0	1.0	250	6.0	175	1.0m#	2.0	500m	40	200	10MΔ		T066 C0		
27	2N6421†	200m	35		1.0	1.0	375	6.0	250	1.0m#	2.0	1.0	8.0	80	10MΔ		T066 C0		
28	2N6422†	200m	35		1.0	1.0	500	6.0	300	1.0m#	2.0	1.0	8.0	80	10MΔ		T066 C0		
29	2N6423†	200m	35		1.0	1.0	500	6.0	300	2.0m#	2.0	750m	10	100	15MΔ		T066 C0		
30#	2SA490	200m	25		3.0		50	5.0	40	20u	2.0	500m	40	240	4.0MΔ		B17 D		
31#	2SA670	200m	25		3.0		50	4.0	50	100u	4.0	1.0	35	200	15MΔ	EM	B17a D		
32#	2SA671	200m	25		3.0		50	4.0	50	100u	4.0	1.0	35	200	15MΔ	EAT	B17 D		
33#	2SA839	200m	1.5		1.5	∅	150	5.0	150	20u	1.0	500m	40	240	6.0MΔ	DM	B26 D		
34#	2SA968	200m	25		1.5		180	5.0	180	1.0u	5.0	100m	70	240	100MΔ	PE	Y220b D0		
35#	2SA968A	200m	25		1.5		180	5.0	180	1.0u	5.0	100m	70	240	100MΔ	PE	Y220b D0		
36#	2SA968B	200m	25		1.5		200	5.0	180	1.0u	5.0	100m	70	240	100MΔ	PE	Y220b D0		
37#	2SA985	200m	25		1.5	-0.3	120	-5	120	-1u	-5	-3	60	320	180MΔ		B64 X		
38#	2SA985A	200m	25		1.5	-0.3	150	-5	150	-1u	-5	-3	60	320	180MΔ		B64 X		
39#	2SA1006	200m	25		1.5		180	-5	180	-1u	-5	150m	60	320	80MΔ		B64 X		
40#	2SA1006A	200m	25		1.5		200	-5	200	-1u	-5	150m	60	320	80MΔ		B64 X		
41#	2SA1006B	200m	25		1.5		250	-5	250	-1u	-5	150m	60	320	80MΔ		B64 X		
42#	2SA1012	200m	25		1.5		60	5.0	50	1.0u	1.0	1.0	70	240	60MΔ		Y220b D		
43#	2SA1078	200m	25		2.0		120	7.0	120	1.0u	5.0	300m	100	350	120MΔ	PE	B44 D0		
44#	2SB434	200m	25		3.0	∅	50	5.0	50	10u	5.0	500m	40	240	3.0MΔ	ME	B26a D		
45#	2SB435	200m	1.5		3.0	∅	50	5.0	40	10u	5.0	500m	40	240	3.0MΔ	ME	B26a D		
46#	2SB502A	200m	25		3.0		110	10	80	10u	5.0	500m	30	280	1.0MΔ	DM	T066 C0		
47#	2SB503A	200m	25		3.0		80	10	50	10u	5.0	500m	30	280	1.0MΔ	DM	T066 C0		
48#	2SB512	200m	25		3.0		80	8.0	60	30u	3.0	100m	40	70	70k		B17 B		
49#	2SB512A	200m	25		3.0		80	8.0	80	30u	3.0	100m	40	70	70k		B17 B		
50#	2SB513	200m	25		3.0		80	8.0	60	30u	3.0	100m	40	70	70k		B17a B		
51#	2SB513A	200m	25		3.0		80	8.0	80	30u	3.0	100m	40	70	70k		B17a B		
52#	2SB546A	200m	25		2.0		200	5.0	150	50u	10	400m	40	200	5.0MΔ	D	Y220b X0		
53#	2SB547A	200m	25		2.0		200	5.0	150	50u	10	400m	40	200	5.0MΔ	D	Y220a AJ		
54#	2SB550	200m	25		5.0		100	8.0	80	100u	5.0	1.0	30	200	200	ME	T066 C0		
55#	2SB563	200m	25		3.0	1.0	80	5.0	70	100u	2.0	1.0	30	200	35ms		T088 C0		
56#	2SB566A	200m	25		3.0		50	4.0	50	100u	4.0	1.0	35	70	35ms		Y220G D		
57#	2SB566B	200m	25		3.0		50	4.0	50	100u	4.0	1.0	60	70	35ms		Y220G D		
58#	2SB566C	200m	25		3.0		50	4.0	50	100u	4.0	1.0	100	200	35ms		Y220G D		
59#	BD234	200m	25		2.0	300m	45	5.0	45	100u	2.0	150m	40	250	3.0MΔ	E	T0126 B0		
60	BD234Z	200m	25		2.0	300m	45	5.0	45	100u	2.0	150m	40	250	3.0MΔ	E	T0126 B0		
61#	BD236	200m	25		2.0	300m	80	5.0	80	100u	2.0	150m	40	250	3.0MΔ	E	T0126 B0		
62	BD236Z	200m	25		2.0	300m	80	5.0	80	100u	2.0	150m	40	250	3.0MΔ	E	T0126 B0		
63#	BD238	200m	25		2.0	300m	100	5.0	80	100u	2.0	150m	40	180	3.0MΔ	E	T0126 B0		
64	BD238Z	200m	25		2.0	300m	100	5.0	80	100u	2.0	150m	40	180	3.0MΔ	E	T0126 B0		
65#	BUX68†	200m	35		2.0	1.0	200	6.0	150	10mΔ	5.0	1.0	10	150	20MΔ		T066 C0		
66#	BUX68A†	200m	35		2.0	1.0	300	6.0	250	10mΔ	5.0	1.0	10	150	20MΔ		T066 C0		
67#	BUX68B†	200m	35		2.0	1.0	350	6.0	300	5.0mΔ	5.0	1.0	10	150	20MΔ		T066 C0		
68#	BUX68C†	200m	35		2.0	1.0	400	6.0	350	5.0mΔ	5.0	1.0	10	150	20MΔ		T066 C0		
69#	BUY92†	200m	30		7.5		100	7.0	60	10u	5.0	1.0	40	80	60MΔ	PL	T039 A0		
70	HEP55028-RT	200m	25		3.0		30	4.0	30	100u	2.0	1.0	60		2.0MΔ		B18 C0		
71	HSE909-RT	200m	25		3.0		90	4.0	80	100u	2.0	1.5	30		3.0MΔ		T066 C0		
72#	KT816A	200m	20		3.0		5.0	4.0	40	100u	2.0	2.0m	20		3.0MΔ		B55 B		
73#	KT816B	200m	20		3.0	1.0	5.0	5.0	50	100u	2.0	2.0m	35		3.0MΔ		B55 B		
74#	KT816G	200m	20		3.0	1.0	5.0	100	100	100u	2.0	2.0m	15		3.0MΔ		B55 B		
75#	KT816V	200m	20		3.0	1.0	5.0	70	100	100u	2.0	2.0m	30		3.0MΔ		B55 B		
76	MJ4240†	200m	35		2.0	1.0	500	6.0	300	5.0mΔ	2.0	1.0	8.0	80	15MΔ		T088 C0		
77	MJE370	200m	25		3.0	2.0	30	4.0	30	100u	1.0	1.0	25		1.0MΔ		B18d C0		
78#	PN4054	200m	25		4.0		50	4.0	50	100u	4.0	500m	30		800k		B17 D		
79	RCA1E03	200m	35		2.0	1.0	200	5.0	175	100u	2.0	300m	30	150			T088 C0		
80	SDT3801	200m	35		10		60	6.0	60	1.0m	2.0	1.0	25	90	10M		T066 A0		
81	SDT3802	200m	35		10		80	6.0	80	1.0m	2.0	1.0	25	90	10M		T066 A0		
82	SDT3803	200m	35		10		60	6.0	60	1.0m	2.0	1.0	50	180	10M		T066 A0		
83	SDT3804	200m	35		10		60	6.0	80	1.0m									



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icb @ MAX Vcb @ 25°C (A)	BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O D E	
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)		Vcb (V)	Ic (A)									MIN
1	2N3200	227m	40	0.000	IC	3.0	1.5	80	10	80	75u#	2.00	1.0	20	60	1.0MΔ	300m			T42c	A0	
2	2N3201	227m	40	0.000	IC	3.0	1.5	80	10	80	75u#	2.00	1.0	20	60	1.0MΔ	300m			T42c	A0	
3	2N3205	227m	40	0.000	IC	2.0	1.0	40	10	40	75u#	2.00	500m	20	60	1.0MΔ	800m			T059	A0	
4	2N3206	227m	40	0.000	IC	2.0	1.0	80	10	80	75u#	2.00	500m	20	60	1.0MΔ	800m			T059	A0	
5	2N3207	227m	40	0.000	IC	2.0	1.0	100	10	100	75u#	2.00	500m	20	60	1.0MΔ	800m			T059	A0	
6#	BUX781	227m	40	0.000	IC	2.0	1.0	100	10	100	75u#	2.00	500m	20	60	1.0MΔ	800m			T059	A0	
7	2N5344†	228m	40	0.000	SJ	1.0 †	500m	250 †	5.0 †	250	100u†	5.00	500m	25	150 #	60MΔ	3.0 #	200n0	PE	T066	C0	
8	2N5345†	228m	40	0.000	SJ	1.0 †	500m	300 †	5.0 †	300	100u†	5.00	500m	25	150 #	60MΔ	3.0 #	200n0	PE	T066	C0	
9	2N6096	228m	40	0.000	SJ	4.0	2.0	36 †	4.0 †	18	1.0m0	5.00	500m	15	60	100MΔ	1.8	1.8		T059	A0	
10#	BDX27-6	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	40	100	50MΔ	500n0			F39	A0	
11#	BDX27-10	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	63	160	50MΔ	500n0			F39	A0	
12#	BDX27-16	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	100	250	50MΔ	500n0			F39	A0	
13#	BDX28-6	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	40	100	50MΔ	500n0			F39	A0	
14#	BDX28-10	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	63	160	50MΔ	500n0			F39	A0	
15#	BDX28-16	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	100	250	50MΔ	500n0			F39	A0	
16#	BDX29-6	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	40	100	50MΔ	500n0			F39	A0	
17#	BDX29-10	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	63	160	50MΔ	500n0			F39	A0	
18#	BDX30-6	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	40	100	50MΔ	500n0			F39	A0	
19#	BDX30-10	228m	40	0.000	SJ	5.0	600m	40	5.0	40	100u†	1.00	1.0	63	160	50MΔ	500n0			F39	A0	
20	2N5112	229m	34	0.000	SJ	1.0	500m	40	10	40	75u#	4.00	500m	15	60	100MΔ	1.8	1.8		T059	A0	
21	2N5113	229m	34	0.000	SJ	1.0	500m	40	10	40	75u#	4.00	500m	15	60	100MΔ	1.8	1.8		T059	A0	
22	2N5954	232m	40	0.000	SJ	6.0	2.0	90 †	5.0 †	85	1.0mΔ	4.00	2.0	20	100	5.0MΔ	333m			T066	C0	
23	2N5955	232m	40	0.000	SJ	6.0	2.0	70 †	5.0 †	65	2.0m#	4.00	2.5	20	100	5.0MΔ	333m			T066	C0	
24	2N5956	232m	40	0.000	SJ	6.0	2.0	50 †	5.0 †	45	2.0m#	4.00	3.0	20	100	5.0MΔ	333m			T066	C0	
25	2N6467	232m	23	0.000	SJ	4.0 †	2.0	110 †	5.0 †	110	1.0mΔ	4.00	1.5	15	150 #	5.0MΔ	1.0 #	200n0			T066	C0
26	2N6468	232m	23	0.000	SJ	4.0 †	2.0	130 †	5.0 †	130	1.0mΔ	4.00	1.5	15	150 #	5.0MΔ	1.0 #	200n0			T066	C0
27	RCS32	232m	40	0.000	SJ	5.0	1.0	40	5.0	40	500uΔ	4.00	3.0	10	50	3.0MΔ	200n0			T066	C0	
28	RCS32A	232m	40	0.000	SJ	5.0	1.0	80	5.0	80	500uΔ	4.00	3.0	10	50	3.0MΔ	200n0			T066	C0	
29	RCS32B	232m	40	0.000	SJ	5.0	1.0	80	5.0	80	500uΔ	4.00	3.0	10	50	3.0MΔ	200n0			T066	C0	
30	RCS32C	232m	40	0.000	SJ	5.0	1.0	100	5.0	100	500uΔ	4.00	3.0	10	50	3.0MΔ	200n0			T066	C0	
31	2N4918	238m	30	0.000	SJ	1.0	1.0	40	5.0	40	100u	1.00	500m	30	150	3.0MΔ				B16	B0	
32	2N4919	238m	30	0.000	SJ	1.0	1.0	60	5.0	60	100u	1.00	500m	30	150	3.0MΔ				B16	B0	
33	2N4920	238m	30	0.000	SJ	1.0	1.0	80	5.0	80	100u	1.00	500m	30	150	3.0MΔ				B16	B0	
34#	BD240†	238m	2.0	0.000	SJ	1.0	400m	5.0	45	200u	4.00	200m	40 #			3.0MΔ	700m	200n0	D	B1	D	
35#	BD240A†	238m	2.0	0.000	SJ	1.0	400m	5.0	40	200u	4.00	200m	40 #			3.0MΔ	700m	200n0	D	B1	D	
36#	BD240B†	238m	2.0	0.000	SJ	1.0	400m	5.0	80	200u	4.00	200m	40 #			3.0MΔ	700m	200n0	D	B1	D	
37#	BD240C†	238m	2.0	0.000	SJ	1.0	400m	5.0	100	200u	4.00	200m	40 #			3.0MΔ	700m	200n0	D	B1	D	
38	D45C1†	238m	3.0	0.000	SJ	4.0	5.0	30	30	10u	1.00	200m	25	120	40MΔ	50n0				B22	B0	
39	D45C2†	238m	1.6	0.000	SJ	4.0	5.0	30	30	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
40	D45C3†	238m	1.6	0.000	SJ	4.0	5.0	30	30	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
41	D45C4†	238m	1.6	0.000	SJ	4.0	5.0	45	45	10u	1.00	200m	25	120	40MΔ	50n0				B22	B0	
42	D45C5†	238m	1.6	0.000	SJ	4.0	5.0	45	45	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
43	D45C6†	238m	3.0	0.000	SJ	4.0	5.0	45	45	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
44	D45C7†	238m	3.0	0.000	SJ	4.0	5.0	60	60	10u	1.00	200m	25	120	40MΔ	50n0				B22	B0	
45	D45C8†	238m	3.0	0.000	SJ	4.0	5.0	60	60	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
46	D45C9†	238m	3.0	0.000	SJ	4.0	5.0	60	60	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
47	D45C10†	238m	3.0	0.000	SJ	4.0	5.0	80	80	10u	1.00	200m	25	120	40MΔ	50n0				B22	B0	
48	D45C11†	238m	3.0	0.000	SJ	4.0	5.0	80	80	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
49	D45C12†	238m	3.0	0.000	SJ	4.0	5.0	80	80	10u	1.00	200m	40	120	40MΔ	50n0				B22	B0	
50	RCA30†	239m	2.0	0.000	SJ	3.0	1.0	40	5.0	40	300uΔ	4.00	1.0	15	150 #	3.0MΔ	200n0				X0	
51	RCA30A†	239m	2.0	0.000	SJ	3.0	1.0	60	5.0	60	300uΔ	4.00	1.0	15	150 #	3.0MΔ	200n0				X0	
52	RCA30B†	239m	2.0	0.000	SJ	3.0	1.0	80	5.0	80	300uΔ	4.00	1.0	15	150 #	3.0MΔ	200n0				X0	
53	RCA30C†	239m	2.0	0.000	SJ	3.0	1.0	100	5.0	100	300uΔ	4.00	1.0	15	150 #	3.0MΔ	200n0				X0	
54	2N5357†	240m	30	0.000	SJ	3.0	1.0	300	4.0	300	25u#	5.00	500m	25	100	50MΔ	3.0	100n0			T037	A0
55#	2SA788	240m	30	0.000	SJ	4.0	1.0	60	6.0	60	1.0m	4.00	1.0	40	400	10MΔ	500m				B26	D0
56#	2SA789	240m	30	0.000	SJ	4.0	1.0	80	6.0	80	1.0m	4.00	1.0	40	400	10MΔ	500m				B26	D0
57#	2SA957	240m	30	0.000	SJ	2.0	1.0	150	6.0	150	100u	100	700m	40 #	320 #	10MΔ	2.1		PE	B54	D0	
58#	2SA958	240m	30	0.000	SJ	2.0	1.0	200	6.0	200	100u	100	700m	40 #	320 #	10MΔ	2.1		PE	B54	D0	
59#	2SA1133	240m	30	0.000	SJ	2.0	1.0	200	6.0	150	50	100	150m	60	240	3.0MΔ			DM	B26	D0	
60#	2SB596	240m	30	0.000	SJ	4.0	3.0	80	5.0	80	30u	5.00	500m	40	240	3.0MΔ			DM	Y220b	D0	
61#	2SB804	240m	30	0.000	TJ	4.0	7.0	70	5.0	70	30u0	5.00	500m	40	240	10MΔ			EM	B17	D0	
62#	2SB760	240m	30	0.000	SJ	1.0	60	5.0	60	300uΔ	4.00	0.2	40	450			1.4u*		EM	B26	D0	
63#	2SB760A	240m	30	0.000	SJ	1.0	60	5.0	60	300uΔ	4.00	0.2	40	450			1.4u*		EM	B26	D0	
64#	2SB765K†	240m	30	0.000	SJ	3.0	500m	7.0	120	100u	3.00	1.5	10k#	20k#							Y220b	D0
65#	2SB834	240m	30	0.000	SJ	2.0	500m	-60	-7	-100u	5.00	500m	60	200	60	9.0MΔ			PL	Y220b	D0	
66#	2SB861B	240m	30	0.000	SJ	2.0	6.0	150	1.0u	1.0u	4.00	50m	60	120							Y220b	D0
67#	2SB861C	240m	30	0.000	SJ	2.0	6.0	150	1.0u	1.0u	4.00	50m	100	200							Y220b	D0
68#	2SB861D	240m	30	0.000	SJ	2.0	6.0	150	1.0u	1.0u	4.00	50m	160	320								

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E	
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CB</sub> (V)	V <sub>EB</sub> (V)	V <sub>CE</sub> (V)	I <sub>CO</sub> @ MAX V <sub>CB</sub> @ 25°C (A)	V <sub>CB</sub> (V)	I <sub>c</sub> (A)							MIN
1	TIP544 #	288m	150	5J	8.0	4.0	100	7.0	100	1.0m	2.0	3.0	25 #	100			T03		
2	TIP545 #	288m	150	5J	6.0	4.0	120	7.0	120	1.0m	2.0	3.0	20 #	80			T03		
3	TIP546 #	288m	150	5J	6.0	4.0	140	7.0	140	1.0m	2.0	3.0	15	60			T03		
4	2N6021	288m	38	5J	4.0	2.0	80	7.0	70	100mΔ	4.0	500m	30	120 #			B17a	T03	
5	2N6022	288m	38	5J	4.0	2.0	80	7.0	70	100mΔ	4.0	500m	30	120 #			B17a	T03	
6	2N6023	288m	38	5J	4.0	2.0	60	5.0	40	100mΔ	4.0	1.0	30	120 #			B17a	T03	
7	2N6024	288m	38	5J	4.0	2.0	60	5.0	40	100mΔ	4.0	1.0	30	120 #			B17a	T03	
8	2N6025	288m	38	5J	4.0	2.0	80	5.0	60	100mΔ	4.0	1.5	30	120 #			B17a	T03	
9	2N6026	288m	38	5J	4.0	2.0	80	5.0	60	100mΔ	4.0	1.5	30	120 #			B17a	T03	
10 #	BDY82	288m	38	5J	4.0	2.0	35	1.0	35	200uΔ	5.0	500m	40	240 #	3.0M		B17	D0	
11 #	BDY83	288m	38	5J	4.0	2.0	50	1.0	50	200uΔ	5.0	500m	40	240 #	3.0M		B17	D0	
12 #	SDI445	288m	1.8	5A	4.0	2.0	5.0	4.0	5.0	1.0m #	4.0	1.5	25	125			Y220a	D	
13	SDJ445	288m	1.8	5A	4.0	2.0	5.0	4.5	5.0	1.0m #	4.0	2.0	20	100	666m		DMET	Y220a	D
14	SDK445	288m	1.8	5A	4.0	2.0	5.0	4.5	5.0	1.0m #	4.0	2.5	20	100	480m		DMET	Y220a	D
15	SDL445	288m	1.8	5A	4.0	2.0	5.0	5.5	5.0	1.0m #	4.0	2.5	20	100	480m		DMET	Y220a	D
16	SDM445	288m	1.8	5A	4.0	2.0	5.0	4.5	5.0	1.0m #	4.0	200m	40	200	1.0		DMET	Y220a	D
17	SDN445	288m	1.8	5A	4.0	2.0	5.0	5.0	5.0	1.0m #	4.0	300m	40	200	1.0		DMET	Y220a	D
18	SDP445	288m	1.8	5A	4.0	2.0	4.0	4.0	100	1.0m #	4.0	500m	40	200	1.0		DMET	Y220a	D
19	2N5408†	300m	30	5J	5.0	2.0	80	6.0	80	10u #	5.0	2.0	20	60	40MΔ			T0111	A
20	2N5409†	300m	30	5J	5.0	2.0	100	6.0	100	10u #	5.0	2.0	20	60	40MΔ			T0111	A
21	2N5410†	300m	30	5J	5.0	2.0	80	6.0	80	10u #	5.0	2.0	40	120	40MΔ	800m		T0111	A
22	2N5411†	300m	30	5J	5.0	2.0	100	6.0	100	10u #	5.0	2.0	40	120	40MΔ	800m		T0111	A
23	SDT3125	300m	52	5J	5.0	2.0	40	6.0	40	10u #	5.0	5.0	20	80	40M			T0111	G
24	SDT3126	300m	52	5J	5.0	2.0	60	6.0	60	10u #	5.0	5.0	20	80	40M			T0111	G
25	SDT3127	300m	52	5J	5.0	2.0	80	6.0	80	10u #	5.0	5.0	20	80	40M			T0111	G
26	SDT3128	300m	52	5J	5.0	2.0	100	6.0	100	10u #	5.0	5.0	20	80	40M			T0111	G
27	SDT3129	300m	52	5J	5.0	2.0	120	6.0	120	10u #	5.0	5.0	20	80	40M			T0111	G
28	SDT3750	300m	52	5J	5.0	1.0	40	6.0	40	1.0m	1.5	1.0	25	180	60M			T03	C0
29	SDT3751	300m	52	5J	5.0	1.0	60	6.0	60	1.0m	1.5	1.0	25	180	60M			T03	C0
30	SDT3752	300m	52	5J	5.0	1.0	40	6.0	40	1.0m	3.0	1.0	12	36	10M			T03	C0
31	SDT3753	300m	52	5J	5.0	1.0	60	6.0	60	1.0m	3.0	1.0	12	36	10M			T03	C0
32	SDT3754	300m	52	5J	5.0	1.0	80	6.0	80	1.0m	3.0	1.0	12	36	10M			T03	C0
33	SDT3755	300m	52	5J	5.0	1.0	100	6.0	100	1.0m	3.0	1.0	12	36	10M			T03	C0
34	SDT3756	300m	52	5J	5.0	1.0	40	6.0	40	1.0m	3.0	1.0	40	30	10M			T03	C0
35	SDT3757	300m	52	5J	5.0	2.0	40	6.0	40	1.0m	3.0	2.0	10	30	10M			T03	C0
36	SDT3758	300m	52	5J	5.0	2.0	60	6.0	60	1.0m	3.0	2.0	10	30	10M			T03	C0
37	SDT3759	300m	52	5J	5.0	2.0	80	6.0	80	1.0m	3.0	2.0	10	30	10M			T03	C0
38	SDT3760	300m	52	5J	5.0	2.0	100	6.0	100	1.0m	3.0	2.0	10	30	10M			T03	C0
39	SDT3761	300m	52	5J	5.0	2.0	40	6.0	40	1.0m	3.0	2.0	40	30	10M			T03	C0
40	SDT3762	300m	52	5J	5.0	2.0	40	6.0	40	1.0m	3.0	3.0	10	30	10M			T03	C0
41	SDT3763	300m	52	5J	5.0	2.0	60	6.0	60	1.0m	3.0	3.0	10	30	10M			T03	C0
42	SDT3764	300m	52	5J	5.0	2.0	80	6.0	80	1.0m	3.0	3.0	10	30	10M			T03	C0
43	SDT3765	300m	52	5J	5.0	2.0	100	6.0	100	1.0m	3.0	3.0	10	30	10M			T03	C0
44	SDT3766	300m	52	5J	5.0	2.0	40	6.0	40	1.0m	3.0	3.0	40	30	10M			T03	C0
45	TIP513	300m	2.0	5J	5.0	2.0	150	5.0	150	1.0m #	4.0	2.5	30	150 #	40MΔ		PEA	T059	A
46	TIP513 #	300m	53	5J	5.0	2.0	150	5.0	150	300uΔ	4.0	2.5	30	150 #	40MΔ		PEA	T059	A
47	TIP523	300m	2.0	5J	5.0	2.0	200	5.0	200	1.0m #	4.0	2.5	20	100 #	40MΔ		PEA	T059	A
48	2N5003	303m #	50	5J	5.0	2.0	100	5.5	80	1.0m #	5.0	2.5	30	90 #	60MΔ			T059	A
49	2N5005	303m #	50	5J	5.0	2.0	100	5.5	80	1.0m #	5.0	2.5	70	200 #	70MΔ			T059	A
50	2N5384	303m #	2.0	5J	5.0	1.0	100	6.0	80	10u #	4.0	2.0	20	80 #	30MΔ			T0111	A
51	2N5385	303m #	2.0	5J	5.0	1.0	100	6.0	80	10u #	4.0	2.0	20	80 #	30MΔ			T0111	A
52	SDT3301†	303m	52	5J	5.0	2.0	40	6.0	40	10m #	5.0	2.0	40	120 #	40MΔ	500m	PE	T0111	G
53	SDT3302†	303m	52	5J	5.0	2.0	60	6.0	60	10m #	5.0	2.0	40	120 #	40MΔ	500m	PE	T0111	G
54	SDT3303†	303m	52	5J	5.0	2.0	80	6.0	80	10m #	5.0	2.0	40	120 #	40MΔ	500m	PE	T0111	G
55	SDT3304†	303m	52	5J	5.0	2.0	100	6.0	100	10m #	5.0	2.0	40	120 #	40MΔ	500m	PE	T0111	G
56	SDT3305†	303m	52	5J	5.0	2.0	40	6.0	40	10u #	5.0	2.0	20	60 #	40MΔ	500m	PE	T0111	G
57	SDT3308†	303m	52	5J	5.0	2.0	60	6.0	60	10u #	5.0	2.0	20	60 #	40MΔ	500m	PE	T0111	G
58	SDT3307†	303m	52	5J	5.0	2.0	80	6.0	80	10u #	5.0	2.0	20	60 #	40MΔ	500m	PE	T0111	G
59	SDT3308†	303m	52	5J	5.0	2.0	100	6.0	100	10u #	5.0	2.0	20	60 #	40MΔ	500m	PE	T0111	G
60	SDT3309†	303m	52	5J	5.0	2.0	120	6.0	120	10u #	5.0	2.0	20	60 #	40MΔ	500m	PE	T0111	G
61	2N5193	320m	40	5J	4.0	1.0	40	5.0	40	100u	2.0	1.5	25	100	2.0MΔ	350m		B16	B0
62	2N5194	320m	40	5J	4.0	1.0	60	5.0	60	100u	2.0	1.5	25	100	2.0MΔ	350m		B16	B0
63	2N5195	320m	40	5J	4.0	1.0	80	5.0	80	100u	2.0	1.5	20	80	2.0MΔ	350m		B16	B0
64	2N6106	320m	40	5J	7.0	3.0	80	5.0	70	1.0mΔ	4.0	2.0	30	150	10MΔ	500m		Y220a	T0
65	2N6107	320m	40	5J	7.0	3.0	80	5.0	70	1.0mΔ	4.0	2.0	30	150	10MΔ	500m		Y220b	T0
66	2N6108	320m	40	5J	7.0	3.0	60	5.0	50	1.0mΔ	4.0	2.5	30	150	10MΔ	500m		Y220a	T0
67	2N6109	320m	40	5J	7.0	3.0	60	5.0	50	1.0mΔ	4.0	2.5	30	150	10MΔ	500m		Y220b	T0
68	2N6110	320m	40	5J	7.0	3.0	40	5.0	30	1.0mΔ	4.0	3.0	30	150	10MΔ	500m		Y220a	T0
69	2N6111	320m	40	5J	7.0	3.0	40	5.0	30	1.0mΔ	4.0	3.0	30	150	10MΔ	500m		Y220b	T0
70	2N6124	320m	40	5J	4.0	1.0	45	5.0	45	100u	2.0	1.5	25	100 #	2.5MΔ	350m #		Y220b	D0
71	2N6125	320m	40	5J	4.0	1.0	60	5.0	60	100u	2.0	1.5	25	100 #	2.5MΔ	350m #		Y220b	D0
72	2N6126	320m	40	5J	4.0	1.0	80	5.0	80	100u	2.0	1.5	20	80 #	2.5MΔ	350m #		Y220b	D0
73	2N6475	320m	18	5J	4.0	1.0	110	5.0	110	1.0mΔ	4.0	1.5	15	150	5.0MΔ	625m #		Y220b	D0
74	2N6476	320m	18	5J	4.0	1.0	130	5.0	130	1.0mΔ	4.0	1.5	15	150	5.0MΔ	625m #		Y220b	D0
75 #	2SA770	320m	40	5J	6.0	3.0	60	6.0	60	1.0m	4.0	1.0	40	400	10M	333m		B26	D0
76 #	2SA771	320m	40	5J	6.0	3.0	80	6.0	80	1.0m</									

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	BIAS		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	Y200 s/a TO200 Ser.	L C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)		V <sub>cb</sub> (V)	I <sub>c</sub> (A)	MIN	MAX							
1	BD188	320m	40	0	4.0	2.0	55	5.0	45	100u	2.0	500m	40	#	2.0MΔ	500m#		↑	B18	B	D
2	BD190	320m	40	0	4.0	2.0	70	5.0	60	100u	2.0	500m	40	#	2.0MΔ	500m#		↑	B16	B	D
3	BD223	320m	40	0	5.0	2.0	70	5.0	70	10mZ	4.0	500m	30		120			ME	Y220b	D	D
4	BD224	320m	40	0	5.0	2.0	40	5.0	40	10mZ	4.0	1.0	30		120			ME	Y220b	D	D
5	BD225	320m	40	0	5.0	2.0	60	5.0	60	10mZ	4.0	1.5	20		80			ME	Y220b	D	D
6#	BD242	320m	40	0	5.0	1.0		5.0	45	200us	4.0	1.0	25					EA	Y220b	D	D
7#	BD242A	320m	40	0	5.0	1.0		5.0	60	200us	4.0	1.0	25					EA	Y220b	D	D
8#	BD242B	320m	40	0	5.0	1.0		5.0	80	200us	4.0	1.0	25					EA	Y220b	D	D
9#	BD242C	320m	40	0	5.0	1.0		5.0	100	200us	4.0	1.0	25					EA	Y220b	D	D
10	BD562	320m	40	0	4.0	2.0	45	5.0	40	100u	1.0	2.0	60	#				↑	B16h	B	D
11	BD576	320m	40	0	3.0	1.0	45	5.0	45	100u	2.0	150m	40	#				↑	B16h	B	D
12	BD578	320m	40	0	3.0	1.0	60	5.0	60	100u	2.0	150m	40	#				↑	B16h	B	D
13	BD580	320m	40	0	3.0	1.0	80	5.0	80	100u	2.0	150m	30	#				↑	B16h	B	D
14	BD582	320m	40	0	3.0	1.0	100	5.0	100	100u	2.0	150m	30	#				↑	B16h	B	D
15	BD588Z	320m	40	0	3.0	1.5	45	5.0	45	100u	2.0	500m	40	#				↑	B16h	B	D
16	BD588Z	320m	40	0	4.0	1.5	60	5.0	60	100u	2.0	500m	40	#				↑	B16h	B	D
17	BD590Z	320m	40	0	4.0	1.5	80	5.0	80	100u	2.0	500m	30	#				↑	B16h	B	D
18	BD592	320m	40	0	4.0	1.5	100	5.0	100	100u	2.0	500m	30	#				↑	B16h	B	D
19#	BD734	320m	2.0	0	4.0	1.0	22	5.0	22	200us	1.0	2.0	50					Δ	B1	D	D
20#	BD736	320m	2.0	0	4.0	1.0	32	5.0	32	200us	1.0	2.0	50					Δ	B1	D	D
21#	BD738	320m	2.0	0	4.0	1.0	45	5.0	45	200us	1.0	2.0	40					Δ	B1	D	D
22#	BD944	320m	40	0	5.0	1.0	22	5.0	22	100u	1.0	500m	85		475			ET	Y220b	D	D
23#	BD946	320m	40	0	5.0	1.0	32	5.0	32	100u	1.0	500m	85		475			ET	Y220b	D	D
24#	BD948	320m	40	0	5.0	1.0	45	5.0	45	100u	1.0	500m	85		475			ET	Y220b	D	D
25#	BD950	320m	40	0	5.0		60	5.0	60	100u	4.0	2.0	20					ET	Y220b	D	D
26#	BD952	320m	40	0	5.0		80	5.0	80	100u	4.0	2.0	20					ET	Y220b	D	D
27#	BD954	320m	40	0	5.0		100	5.0	100	100u	4.0	2.0	20					ET	Y220b	D	D
28#	BD956	320m	40	0	5.0		120	5.0	120	100u	4.0	2.0	20					ET	Y220b	D	D
29	FT417	320m	0	0	8.0	#	2.0	#	100	10u	2.0	1.0	35					↑	Y220b	D	D
30	FT417A	320m	0	0	8.0	#	2.0	#	120	10u	2.0	1.0	35					↑	Y220b	D	D
31	FT417B	320m	0	0	8.0	#	2.0	#	140	10u	2.0	1.0	35					↑	Y220b	D	D
32	HEP5006-RT	320m	40	0	4.0		80	5.0	80	100u	1.5	60	20						B5a	B	B
33	HSE2010-RT	320m	40	0	4.0		40	5.0	40	50u	4.0	1.0	25						B1	B	B
34	HSE2011-RT	320m	40	0	4.0		80	5.0	80	50u	4.0	1.0	25						B1	B	B
35	HSE2012-RT	320m	40	0	4.0		80	5.0	80	50u	4.0	1.0	25						B1	B	B
36	MJE321	320m	40	0	3.0	1.0	40	5.0	40	300uΔ	4.0	1.0	25						B16f	B	D
37	MJE32A1	320m	40	0	3.0	1.0	60	5.0	60	300uΔ	4.0	1.0	25						B16f	B	D
38	MJE32B1	320m	40	0	3.0	1.0	80	5.0	80	300uΔ	4.0	1.0	25						B16f	B	D
39	MJE32C1	320m	40	0	3.0	1.0	100	5.0	100	300uΔ	4.0	1.0	25						B16f	B	D
40	MJE370K	320m	40	0	3.0	2.0	30	4.0	30	100u	1.0	1.0	25					Δ	B23	B	D
41	MJE371	320m	40	0	3.0	2.0	40	4.0	40	100u	1.0	1.0	40						B16d	B	D
42	MJE700	320m	40	0	4.0	0.1			60	↓									TO126	B	B
43	MJE701	320m	40	0	4.0	0.1			60	↓									TO126	B	B
44	MJE702	320m	40	0	4.0	0.1			80	↓									TO126	B	B
45	MJE703	320m	40	0	4.0	0.1			80	↓									TO126	B	B
46	MJE2370	320m	40	0	3.0	1.0	40	5.0	40	200us	4.0	200m	40		200				B23	B	D
47#	PC200	320m	40	0	4.0		50	5.0	40	100u	1.0	500m	40		250				B19	B	B
48#	PC210	320m	40	0	4.0		60	5.0	60	100u	1.0	500m	40		250				B19	B	B
49#	PC220	320m	40	0	4.0		60	5.0	60	100u	1.0	500m	40		250				B19	B	B
50	RCA1C04	320m	40	0	4.0	2.0	120	5.0	100	1.0m*	4.0	1.0	50		250				Y220b	D	D
51	RCA1C06	320m	40	0	7.0	3.0	60	5.0	50	1.0m*	4.0	3.0	20		120				Y220b	D	D
52	RCA1C11	320m	40	0	7.0	3.0	40	5.0	40	1.0m*	4.0	1.5	50		250				Y220b	D	D
53	RCA1C13	320m	40	0	7.0	2.0	140	5.0	120	1.0m*	4.0	1.0	40		250				Y220b	D	D
54	RCA321	320m	40	0	5.0	1.0	40	5.0	40	300uΔ	4.0	3.0	10		50				Y220b	X	X
55	RCA32A1	320m	2.0	0	5.0	1.0	60	5.0	60	300uΔ	4.0	3.0	10		50				Y220b	X	X
56	RCA32B1	320m	2.0	0	5.0	1.0	80	5.0	80	300uΔ	4.0	3.0	10		50				Y220b	X	X
57	RCA32C1	320m	2.0	0	5.0	1.0	100	5.0	100	300uΔ	4.0	3.0	10		50				Y220b	X	X
58#	ST1237	320m	40	0	4.0	0	100	5.0	90	200u	5.0	500m	40		200				B26a	B	D
59	SP32	320m	40	0	5.0	2.0	40	5.0	40	4.0	3.0	10	#						Y220	B	D
60	TIP321	320m	2.0	0	3.0	1.0	40	5.0	40	300uΔ	4.0	3.0	10		50				B1	B	D
61	TIP32Z1	320m	2.0	0	5.0	1.0	40	5.0	40	200us	4.0	3.0	10		50				Y220b	X	X
62	TIP32A1	320m	2.0	0	5.0	1.0	60	5.0	60	300uΔ	4.0	3.0	10		50				B1	B	D
63	TIP32A2	320m	2.0	0	5.0	1.0	60	5.0	60	200us	4.0	3.0	10		50				Y220b	X	X
64	TIP32B1	320m	2.0	0	3.0	1.0	80	5.0	80	300uΔ	4.0	3.0	10		50				B1	B	D
65	TIP32B2	320m	2.0	0	5.0	1.0	80	5.0	80	200us	4.0	3.0	10		50				Y220b	X	X
66	TIP32C1	320m	2.0	0	3.0	1.0	100	5.0	100	300uΔ	4.0	3.0	10		50				B1	B	D
67	TIP32C2	320m	2.0	0	5.0	1.0	100	5.0	100	200us	4.0	3.0	10		50				Y220b	X	X
68#	TIP32D1	320m	40	0	3.0	1.0	180	5.0	120	0.3mΔ	4.0	1.0	25		#				B1	B	D
69#	TIP32E1	320m	40	0	3.0	1.0	160	5.0	140	0.3mΔ	4.0	1.0	25		#				B1	B	D
70#	TIP32F1	320m	40	0	3.0	1.0	200	5.0	180	0.3mΔ	4.0	1.0	25		#				B1	B	D
71	2N5613	330m#	50	0	5.0	2.0	100	5.5	60	1.0m#	5.0	2.5	70		200				TO3	C	C
72	2N5615	330m#	50	0	5.0	2.0	100	5.5	80	1.0m#	5.0	2.5	30		90				TO3	C	C
73	2N5817	330m#	50	0	5.0	2.0	100	5.5	80	1.0m#	5.0	2.5	70		200				TO3	C	C
74	2N5819	330m#	50	0	5.0	2.0	120	5.5	100	1.0m#	5.0	2.5	30		90				TO3	C	C
75	2N5286	333m#	50	0	5.0	2.0	100	5.5	100	1.0m#	5.0	2.5	30		90				TO59	A	A
76	2N5287	333m#	50	0	5.0	2.0	100	5.5	100	1.0m#	5.0	2.5	70		200				TO59	A	A
77	2N6097	343m	60	0	8.0		36	4.0	18	2.5m	5.0	50m	30		15						

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L C O D E
					lc (A)	lb (A)	BVcbo (V)	BVbeo (V)	BVceo (V)	lcbo (A)	Vcb (V)	lc (A)	hFE MIN								
1	D45H11	400m	50	5	10			5.0	30	10u	1.0	2.0	35		40M	125m	135n	B22	B0		
2	D45H21	400m	50	5	10			5.0	30	10u	1.0	2.0	60		40M	125m	135n	B22	B0		
3	D45H41	400m	50	5	10			5.0	45	10u	1.0	2.0	35		40M	125m	135n	B22	B0		
4	D45H51	400m	50	5	10			5.0	45	10u	1.0	2.0	60		40M	125m	135n	B22	B0		
5	D45H71	400m	50	5	10			5.0	60	10u	1.0	2.0	35		40M	125m	135n	B22	B0		
6	D45H81	400m	50	5	10			5.0	60	10u	1.0	2.0	60		40M	125m	135n	B22	B0		
7	D45H91	400m	50	5	10			5.0	60	10u	1.0	2.0	60		40M	125m	135n	B22	B0		
8	D45H101	400m	50	5	10			5.0	80	10u	1.0	2.0	35		40M	125m	135n	B22	B0		
9	D45H111	400m	50	5	10			5.0	80	10u	1.0	2.0	60		40M	125m	135n	B22	B0		
10	D45H121	400m	50	5	10			5.0	80	10u	1.0	2.0	60		40M	125m	135n	B22	B0		
11	MJE341	400m	80	5	10	3.0	40	5.0	40	700uΔ	4.0	3.0	20		2.0MΔ	333m	500n	B16h	D		
12	MJE700T	400m	50	5	4.0	0.1												B61	X0		
13	MJE701T	400m	50	5	4.0	0.1												B61	X0		
14	MJE702T	400m	50	5	4.0	0.1												B61	X0		
15	MJE703T	400m	50	5	4.0	0.1												B61	X0		
16	MJE15029	400m	50	5	8.0	2.0	120	5.0	120	10u	2.0	4.0	20 #		30MΔ	500m		B61	X0		
17	MJE15031	400m	50	5	8.0	2.0	150	5.0	150	10u	2.0	4.0	20 #		30MΔ	500m		B61	X0		
18 #	S1351	400m	50	5	6.0		90	5.0	80	100u	5.0	1.0	240	240	4.0M	625m		DME	B26a	D	
19 #	2SA757	408m	60	5	7.0	2.0	120	6.0	90	1.0	5.0	1.0	25	200 *	2.4M	400m		D	T03	A	
20	2N6049	430m	75	5	4.0	2.0	90	7.0	55	1.0m	4.0	500m	25	100	3.0MΔ	500m			T066	C0	
21	2N6312	430m	75	5	5.0	2.0	40	4.0	40	5.0	4.0	1.5	25	100	4.0MΔ				T066	C0	
22	2N6313	430m	75	5	5.0	2.0	60	5.0	60	5.0	4.0	1.5	25	100 #	4.0MΔ				T066	C0	
23	2N6314	430m	75	5	5.0	2.0	80	5.0	80	5.0	4.0	1.5	25	100 #	4.0MΔ				T066	C0	
24	MJ3237	430m	90	5	8.0	2.0				10u	1.20							PA		T066	C0
25	MJ3238	430m	75	5	8.0	2.0				10u	1.50							PA		T066	C0
26	2N3171	434m	75	5	3.0	1.0	40	10	40	10m	3.0	1.0	12	36	1.0MΔ	750m			T03	C0	
27	2N3172	434m	75	5	3.0	1.0	60	10	60	10m	3.0	1.0	12	36	1.0MΔ	750m			T03	C0	
28	2N3173	434m	75	5	3.0	1.0	80	10	80	10m	3.0	1.0	12	36	1.0MΔ	750m			T03	C0	
29	2N3174	434m	75	5	3.0	1.0	100	10	100	10m	3.0	1.0	12	36	1.0MΔ	750m			T03	C0	
30	2N3183	434m	75	5	5.0	2.0	40	10	40	10m	3.0	2.0	10	30	1.0MΔ	500m			T03	C0	
31	2N3184	434m	75	5	5.0	2.0	60	10	60	10m	3.0	2.0	10	30	1.0MΔ	500m			T03	C0	
32	2N3185	434m	75	5	5.0	2.0	80	10	80	10m	3.0	2.0	10	30	1.0MΔ	500m			T03	C0	
33	2N3186	434m	75	5	5.0	2.0	100	10	100	10m	3.0	2.0	10	30	1.0MΔ	500m			T03	C0	
34	2N3195	434m	75	5	5.0	2.0	40	10	40	10m	3.0	3.0	10	30	1.0MΔ	300m			T03	C0	
35	2N3196	434m	75	5	5.0	2.0	60	10	60	10m	3.0	3.0	10	30	1.0MΔ	300m			T03	C0	
36	2N3197	434m	75	5	5.0	2.0	80	10	80	10m	3.0	3.0	10	30	1.0MΔ	300m			T03	C0	
37	2N3198	434m	75	5	5.0	2.0	100	10	100	10m	3.0	3.0	10	30	1.0MΔ	300m			T03	C0	
38 #	BD302	440m	55	5	8.0	2.0				1.0m	2.0	3.0	30		3.0MΔ	330m		EE	Y220b	D0	
39 #	BD304	440m	55	5	8.0	2.0				1.0m	2.0	3.0	30		3.0MΔ	330m		EE	Y220b	D0	
40	2N3163	454m	85	5	3.0	1.0	40	10	40	10m	3.0	1.0	12	36	1.0MΔ	750m			T03	C0	
41	2N3164	454m	85	5	3.0	1.0	60	10	60	10m	3.0	1.0	12	36	1.0MΔ	750m			T10	A0	
42	2N3165	454m	85	5	3.0	1.0	80	10	80	10m	3.0	1.0	12	36	1.0MΔ	750m			T10	A0	
43	2N3166	454m	85	5	3.0	1.0	100	10	100	10m	3.0	1.0	12	36	1.0MΔ	750m			T10	A0	
44	2N3167	454m	85	5	3.0	1.0	40	10	40	10m	3.0	1.0	12	36	1.0MΔ	750m			T053	A0	
45	2N3168	454m	85	5	3.0	1.0	60	10	60	10m	3.0	1.0	12	36	1.0MΔ	750m			T053	A0	
46	2N3169	454m	85	5	3.0	1.0	80	10	80	10m	3.0	1.0	12	36	1.0MΔ	750m			T053	A0	
47	2N3170	454m	85	5	3.0	1.0	100	10	100	10m	3.0	1.0	12	36	1.0MΔ	750m			T053	A0	
48	2N3175	454m	85	5	5.0	2.0	40	10	40	10m	3.0	2.0	10	30	1.0MΔ	500m			T10	A0	
49	2N3176	454m	85	5	5.0	2.0	60	10	60	10m	3.0	2.0	10	30	1.0MΔ	500m			T10	A0	
50	2N3177	454m	85	5	5.0	2.0	80	10	80	10m	3.0	2.0	10	30	1.0MΔ	500m			T10	A0	
51	2N3178	454m	85	5	5.0	2.0	100	10	100	10m	3.0	2.0	10	30	1.0MΔ	500m			T10	A0	
52	2N3179	454m	85	5	5.0	2.0	40	10	40	10m	3.0	2.0	10	30	1.0MΔ	500m			T053	A0	
53	2N3180	454m	85	5	5.0	2.0	60	10	60	10m	3.0	2.0	10	30	1.0MΔ	500m			T053	A0	
54	2N3181	454m	85	5	5.0	2.0	80	10	80	10m	3.0	2.0	10	30	1.0MΔ	500m			T053	A0	
55	2N3182	454m	85	5	5.0	2.0	100	10	100	10m	3.0	2.0	10	30	1.0MΔ	500m			T053	A0	
56	2N3187	454m	85	5	5.0	2.0	40	10	40	10m	3.0	2.0	10	30	1.0MΔ	300m			T10	A0	
57	2N3188	454m	85	5	5.0	2.0	60	10	60	10m	3.0	2.0	10	30	1.0MΔ	300m			T10	A0	
58	2N3189	454m	85	5	5.0	2.0	80	10	80	10m	3.0	2.0	10	30	1.0MΔ	300m			T10	A0	
59	2N3190	454m	85	5	5.0	2.0	100	10	100	10m	3.0	2.0	10	30	1.0MΔ	300m			T10	A0	
60	2N3191	454m	85	5	5.0	2.0	40	10	40	10m	3.0	2.0	10	30	1.0MΔ	300m			T053	A0	
61	2N3192	454m	85	5	5.0	2.0	60	10	60	10m	3.0	2.0	10	30	1.0MΔ	300m			T053	A0	
62	2N3193	454m	85	5	5.0	2.0	80	10	80	10m	3.0	2.0	10	30	1.0MΔ	300m			T053	A0	
63	2N3194	454m	85	5	5.0	2.0	100	10	100	10m	3.0	2.0	10	30	1.0MΔ	300m			T053	A0	
64 #	2SA807	454m	50	5	6.0	3.0	80	6.0	60	1.0m	4.0	3.0	20	50	1.0M	500m		EM	T03	C0	
65 #	2SA808	454m	50	5	6.0	3.0	80	6.0	80	1.0m	4.0	3.0	20	50	1.0M	500m		EM	T03	C0	
66 #	2SA808A	454m	50	5	6.0	3.0	100	6.0	100	1.0m	4.0	3.0	20	50	1.0M	500m		EM	T03	C0	
67	SDT3825	454m	78	5	10	2.0	40	5.0	40	100u	5.0	5.0	20	80	10M				T03	C0	
68	SDT3826	454m	78	5	10	2.0	80	5.0	80	100u	5.0	5.0	20	80	10M				T03	C0	
69	SDT3827	454m	78	5	10	2.0	40	5.0	40	100u	5.0	5.0	40		10M				T03	C0	
70 #	2SA626	480m	60	5	6.0	2.0	80	5.0	70	100u	5.0	2.0	30	120 #	1.0M	300m		EM	T03	C0	
71 #	2SA627	480m	60	5	7.0	2.0	80	5.0	80	100u	5.0	2.0	30	120 #	1.0M	300m		EM	T03	C0	
72 #	2SA648	480m	60	5	7.0	2.0	120	5.0	80	2.0m	5.0	3.0	30 #	120 #	1.0M			EM	T03	C0	
73 #	2SA1060	480m	60	5	5.0		80	5.0	80	5.0	5.0	1.0	40	200	15M			EM	B38	D	
74 #	2SA1077T	480m	60	5	7.0		120	5.0	120	5.0	5.0	1.0	60 *	200 #	60M	360m	150n	EM	Y220a	D	
75 #	2SA1185	480m	60	5	7.0		50	5.0	50	1.0m	5.0	1.0	60	320				EM	B38	D	
76 #	2SB558	480m	60	5	7.0		100	5.0	100	100u	5.0	1.0	40	140	7.0M			DM	T03	C0	
77 #	2SB616	480m	60	5	5.0	1.0	100</														



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	T M A E X M P	ABSOLUTE MAX. RATINGS @25°C						MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E		
						ic (A)	lb (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	icbo @ 25°C (A)	Vcb (V)	ic (A)									MIN	MAX
						(A)	(A)	(V)	(V)	(V)	(A)	(V)	(A)										
1	2N5888†	500m	87 ∅	∅	SJ	5.0	2.0	80 †	5.0†	80	100u†	4.0∅	1.5	20	100	4.0M∅	500m	700nZ	TO3	C∅			
2	MJ490	500m	5.0	∅	SJ	4.0	1.0	40	5.0	40	1.0m	2.0∅	1.0	30	200	4.0M∅	400m		TO3	C∅			
3	MJ491	500m	5.0	∅	SJ	4.0	1.0	60	5.0	60	1.0m	2.0∅	1.0	30	200	4.0M∅	400m		TO3	C∅			
4	SDT3101†	500m	87 ∅	∅	SJ	20	5.0	40	60.0	40	10u#	5.0∅	10	20	80 #	30M∅		500n	PE	TO61	A∅		
5	SDT3102†	500m	87 ∅	∅	SJ	20	5.0	60	60.0	60	10u#	5.0∅	10	20	80 #	30M∅		500n	PE	TO61	A∅		
6	SDT3103†	500m	87 ∅	∅	SJ	20	5.0	80	60.0	80	10u#	5.0∅	10	20	80 #	30M∅		500n	PE	TO61	A∅		
7	SDT3104†	500m	87 ∅	∅	SJ	20	5.0	100	60.0	100	10u#	5.0∅	10	20	80 #	30M∅		500n	PE	TO61	A∅		
8	SDT3105†	500m	87 ∅	∅	SJ	10	4.0	40	60.0	40	10u#	5.0∅	5.0	20	80 #	30M∅		200n	PE	TO61	A		
9	SDT3106†	500m	87 ∅	∅	SJ	10	4.0	60	60.0	60	10u#	5.0∅	5.0	20	80 #	30M∅		200n	PE	TO61	A		
10	SDT3107†	500m	87 ∅	∅	SJ	10	4.0	80	60.0	80	10u#	5.0∅	5.0	20	80 #	30M∅		200n	PE	TO61	A		
11	SDT3108†	500m	87 ∅	∅	SJ	10	4.0	100	60.0	100	10u#	5.0∅	5.0	20	80 #	30M∅		200n	PE	TO61	A		
12	SDT3109†	500m	87 ∅	∅	SJ	10	4.0	120	60.0	120	10u#	5.0∅	5.0	20	80 #	30M∅		200n	PE	TO61	A		
13	SDT3115	500m	87 ∅	∅	SJ	10		40	60.0	40	10u	5.0∅	5.0	20	80	40M	150m		TO61	A∅			
14	SDT3116	500m	87 ∅	∅	SJ	10		60	60.0	60	10u	5.0∅	5.0	20	80	40M	150m		TO61	A∅			
15	SDT3117	500m	87 ∅	∅	SJ	10		80	60.0	80	10u	5.0∅	5.0	20	80	40M	150m		TO61	A∅			
16	SDT3118	500m	87 ∅	∅	SJ	10		100	60.0	100	10u	5.0∅	5.0	20	80	40M	150m		TO61	A∅			
17	SDT3119	500m	87 ∅	∅	SJ	10		120	60.0	120	10u	5.0∅	5.0	20	80	40M	150m		TO61	A∅			
18	TIP519	500m	4.0	∅	SJ	8.0 †	3.0	150 †	5.0†	150	1.0m∅	4.0∅	4.0	30	150 #	40M∅			PEΔ	TO3	C∅		
19	TIP519#	500m	88	∅	SJ	8.0	3.0	150	5.0†	150	500u∅	4.0∅	4.0	30 #	150				PEΔ	TO3	A		
20	TIP520	500m	3.5	∅	SJ	8.0 †	3.0	150 †	5.0†	150	1.0m∅	4.0∅	4.0	30	150 #				PEΔ	TO61	A		
21	TIP520#	500m	88	∅	SJ	8.0	3.0	150	5.0†	150	500u∅	4.0∅	4.0	30 #	150				PEΔ	TO61	A		
22	MJ4237	510m	90	∅	SJ	8.0	2.0	60	5.0	60	10u	120	3.0	20	100		333m		PA	TO3	C∅		
23	MJ4238	510m	90	∅	SJ	8.0	2.0	60	5.0	60	10u	150	3.0	20	100		333m		PA	TO3	C∅		
24	SCC421	511m	100	∅	SA	10	4.0	60	5.0	60	1.0m∅	4.0∅	4.0	20	100		333m		PA	TO3	C∅		
25	2N6317†	515m	90	∅	SJ	7.0	2.0	60 †	5.0†	60	250u#	4.0∅	2.5	20	100 #	4.0M∅		700nZ	E	TO66	C∅		
26	2N6318†	515m	90	∅	SJ	7.0	2.0	80 †	5.0†	80	250u#	4.0∅	2.5	20	100 #	4.0M∅		700nZ	E	TO66	C∅		
27#	BDX92†	515m	90	∅	SJ	8.0		60	5.0	60	100u	2.0∅	3.0	20 #		4.0M∅	266m	1.0uZ	E	TO3	C∅		
28#	BDX94†	515m	90	∅	SJ	8.0		80	5.0	80	100u	2.0∅	3.0	20 #		4.0M∅	266m	1.0uZ	E	TO3	C∅		
29#	BDX96†	515m	90	∅	SJ	8.0		100	5.0	100	100u	2.0∅	3.0	20 #		4.0M∅	266m	1.0uZ	E	TO3	C∅		
30#	BD2441	520m	65	∅	SJ	6.0	3.0	45	5.0	45	400u∅	4.0∅	3.0	15		3.0M∅	250m	200n∅	D	B1	D		
31#	BD244A†	520m	65	∅	SJ	6.0	3.0	60	5.0	60	400u∅	4.0∅	3.0	15		3.0M∅	250m	200n∅	D	B1	D		
32#	BD244B†	520m	65	∅	SJ	6.0	3.0	80	5.0	80	400u∅	4.0∅	3.0	15		3.0M∅	250m	200n∅	D	B1	D		
33#	BD244C†	520m	65	∅	SJ	6.0	3.0	100	5.0	100	400u∅	4.0∅	3.0	15		3.0M∅	250m	200n∅	D	B1	D		
34	HEPS3054-RT	520m	65	∅	SJ	6.0		60	5.0	60	500u	3.0	3.0	40	∅	3.0M∅			E†	Y220b	X∅		
35	HEPS3055-RT	520m	65	∅	SJ	6.0		100	5.0	100	500u	3.0	3.0	40	∅	3.0M∅			E†	Y220b	X∅		
36	RCA42†	520m	2.0	∅	SJ	7.0	3.0	40	5.0	40	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	E†	Y220b	X∅		
37	RCA42A†	520m	2.0	∅	SJ	7.0	3.0	60	5.0	60	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	E†	Y220b	X∅		
38	RCA42B†	520m	2.0	∅	SJ	7.0	3.0	80	5.0	80	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	E†	Y220b	X∅		
39	RCA42C†	520m	2.0	∅	SJ	7.0	3.0	100	5.0	100	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	E†	Y220b	X∅		
40#	TIP41	520m	65	∅	SJ	6.0		40	5.0	40	0.7mΔ	4.0∅	3.0	15	75		1.3u*	PE	B26	B			
41#	TIP41A	520m	65	∅	SJ	6.0		60	5.0	60	0.7mΔ	4.0∅	3.0	15	75		1.3u*	PE	B26	B			
42#	TIP41B	520m	65	∅	SJ	6.0		80	5.0	80	0.7mΔ	4.0∅	3.0	15	75		1.3u*	PE	B26	B			
43#	TIP41C	520m	65	∅	SJ	6.0		100	5.0	100	0.7mΔ	4.0∅	3.0	15	75		1.3u*	PE	B26	B			
44	TIP42†	520m	2.0	∅	SJ	7.0 †	3.0	40 †	5.0†	40	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	DM	B1	X∅		
45	TIP42†	520m	2.0	∅	SJ	7.0 †	3.0	40 †	5.0†	40	400u∅	4.0∅	3.0	15	150 #	3.0M∅		600n∅	E†	Y220b	X∅		
46	TIP42A†	520m	2.0	∅	SJ	7.0 †	3.0	60 †	5.0†	60	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	DM	B1	X∅		
47	TIP42A†	520m	2.0	∅	SJ	7.0 †	3.0	60 †	5.0†	60	400u∅	4.0∅	3.0	15	150 #	3.0M∅		400n∅	E†	Y220b	X∅		
48	TIP42B†	520m	2.0	∅	SJ	7.0 †	3.0	80 †	5.0†	80	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	DM	B1	X∅		
49	TIP42B†	520m	2.0	∅	SJ	7.0 †	3.0	80 †	5.0†	80	400u∅	4.0∅	3.0	15	150 #	3.0M∅		400n∅	E†	Y220b	X∅		
50	TIP42C†	520m	2.0	∅	SJ	7.0 †	3.0	100 †	5.0†	100	700u∅	4.0∅	3.0	15	75 #	3.0M∅		400n∅	DM	B1	X∅		
51	TIP42C†	520m	2.0	∅	SJ	7.0 †	3.0	100 †	5.0†	100	400u∅	4.0∅	3.0	15	150 #	3.0M∅		400n∅	E†	Y220b	X∅		
52#	TIP42D†	520m	65	∅	SC	6.0 †	3.0	160 †	5.0†	120	0.7mΔ	4.0∅	3.0	15 #		3.0M∅		0.4u∅	DMA	B1	B∅		
53#	TIP42E†	520m	65	∅	SC	6.0 †	3.0	180 †	5.0†	140	0.7mΔ	4.0∅	3.0	15 #		3.0M∅		0.4u∅	DMA	B1	B∅		
54#	TIP42F†	520m	65	∅	SC	6.0 †	3.0	200 †	5.0†	160	0.7mΔ	4.0∅	3.0	15 #		3.0M∅		0.4u∅	DMA	B1	B∅		
55	TIP125	520m	65	∅	SJ	8.0	100m	60	5.0	60	0.2m	3.0	3.0	1.0k			700u*	PLT	Y220b	D			
56	SP42	521m	65	∅	SJ	7.0	3.0	40	5.0	40	700u∅	4.0∅	3.0	15	150			†	Y220	B			
57	BD196	522m	65	∅	SJ	6.0	2.5	40	5.0	30	100u	2.0∅	1.0	30 #		2.0M∅	333m#		†	B16g	B		
58	BD198	522m	65	∅	SJ	6.0	2.5	55	5.0	45	100u	2.0∅	1.0	30 #		2.0M∅	333m#		†	B16g	B		
59	BD200	522m	65	∅	SJ	6.0	2.5	70	5.0	60	100u	2.0∅	1.0	30 #		2.0M∅	333m#		†	B16g	B		
60	MJE105	522m	65	∅	SJ	5.0	2.5	50	4.0	50	1												



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	T MIN. DERATE J to C (W/C)	FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>CO</sub> @ 25°C		BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
						I <sub>C</sub> (A)	I <sub>B</sub> (A)	V <sub>CB0</sub> (V)	V <sub>BE0</sub> (V)	V <sub>CE0</sub> (V)	I <sub>CO</sub> (A)	V <sub>CB</sub> (V)	I <sub>C</sub> (A)	V <sub>CB</sub> (V)								
1#	2SA982	840m	80	80	8J	8.0	3.0	140	8.0	140	100μ	5.0	3.0	30	180	20MΔ	500m	850n	EM	T03	C0	
2#	2SA1062	640m	80	80	8J	7.0		120	5.0	120	50μ	5.0	1.0	40	200	15MΔ			EM	B38	D0	
3#	2SA1093	640m	80	80	8J	-8		120	-5	120	50μ	5.0	-1	55	240	90MΔ			EM	B60	D0	
4#	2SB541	640m	80	80	8J	12		110	8.0	100	100μ	5.0	1.0	40	200	9.0MΔ			ME	T03	C0	
5#	2SB557	640m	80	80	8J	8.0		120	5.0	120	100μ	5.0	1.0	40	140	7.0MΔ			DM	T03	C0	
6#	2SB618	640m	80	80	8J	7.0		150	5.0	120	50μ	5.0	1.0	40	200	6.0MΔ	400m		DM	B33	X0	
7#	2SB618A	84	80	80	8J	-7		150	-5	130	50μ	5.0	-1	40	200	14MΔ			D	B66	X	
8#	2SB688	640m	80	80	8J	8.0	800m	120	5.0	120	10μ	5.0	1.0	55	180	10MΔ			DM	B41	D0	
9#	2SB696	640m	80	80	8J	8.0		150	8.0	120	100μ	5.0	1.0	40	320	15MΔ			EM	T03	C0	
10#	2SB696K	640m	80	80	8J	8.0		150	8.0	140	100μ	5.0	1.0	40	320	15MΔ			EM	T03	C0	
11#	2SB849	640m	80	80	8J	7.0		120	5.0	120	50μ	5.0	1.0	40	200	14MΔ				B65	C0	
12#	2SB849A	640m	80	80	8J	7.0		130	5.0	130	50μ	5.0	1.0	40	200	14MΔ				B65	C0	
13#	MD34	640m	80	80	8J	10		40	5.0	40	400μ	4.0	3.0	20		3.0MΔ	400m		ME	B19	B	
14#	MD34A	640m	80	80	8J	10		60	5.0	60	400μ	4.0	3.0	20		3.0MΔ	400m		ME	B19	B	
15#	MD34B	640m	80	80	8J	10		80	5.0	80	400μ	4.0	3.0	20		3.0MΔ	400m		ME	B19	B	
16#	MJE2010	640m	80	80	8J	5.0	3.0	40	5.0	40	400μ	4.0	1.0	25	125	3.0MΔ				B23	D	
17#	MJE2011	640m	80	80	8J	5.0	3.0	40	5.0	60	400μ	4.0	1.0	25	125	3.0MΔ				B23	D	
18#	MJE5850†	640m	80	80	8J	7.0	4.0	300	7.0	350	2.5MΔ	5.0	2.0	15		3.0MΔ				B23	D	
19#	MJE5851†	640m	80	80	8J	7.0	4.0	300	7.0	350	2.5MΔ	5.0	2.0	15		3.0MΔ	100n			Y220b	X0	
20#	MJE5852†	640m	80	80	8J	7.0	4.0	400	7.0	400	2.5MΔ	5.0	2.0	15		3.0MΔ	100n			Y220b	X0	
21#	TIP34†	640m	3.5	80	8J	10	3.0	40	5.0	40	700μ	4.0	3.0	20	100	3.0MΔ	400n		DM	B3	B0	
22#	TIP34A†	640m	3.5	80	8J	10	3.0	80	5.0	80	700μ	4.0	3.0	20	100	3.0MΔ	400n		DM	B3	B0	
23#	TIP34B†	640m	3.5	80	8J	10	3.0	80	5.0	80	700μ	4.0	3.0	20	100	3.0MΔ	400n		DM	B3	B0	
24#	TIP34C†	640m	3.5	80	8J	10	3.0	100	5.0	100	700μ	4.0	3.0	20	100	3.0MΔ	400n		DM	B3	B0	
25#	TIP34D†	640m	80	80	8C	10	3.0	180	5.0	120	0.7MΔ	4.0	1.0	40	#	3.0MΔ	0.4μ		DMΔ	B3	B0	
26#	TIP34E†	640m	80	80	8C	10	3.0	180	5.0	140	0.7MΔ	4.0	1.0	40	#	3.0MΔ	0.4μ		DMΔ	B3	B0	
27#	TIP34F†	640m	80	80	8C	10	3.0	200	5.0	160	0.7MΔ	4.0	1.0	40	#	3.0MΔ	0.4μ		DMΔ	B3	B0	
28#	TIP74†	640m	80	80	8S	15	5.0	50	5.0	40	50μ	4.0	5.0	20	150	5.0MΔ	280m		DM†	B1	B0	
29#	TIP74A†	640m	80	80	8S	15	5.0	70	5.0	60	50μ	4.0	5.0	20	150	5.0MΔ	280m		DM†	B1	B0	
30#	TIP74B†	640m	80	80	8S	15	5.0	90	5.0	80	50μ	4.0	5.0	20	150	5.0MΔ	280m		DM†	B1	B0	
31#	TIP74C†	640m	80	80	8S	15	5.0	110	5.0	100	50μ	4.0	5.0	20	150	5.0MΔ	280m		DM†	B1	B0	
32#	2N5741	650m	65	65	8J	20	4.0	60	5.0	60	500μ	5.0	1.0	20	80	10MΔ	250m			T03	C0	
33#	2N5742	650m	65	65	8J	20	4.0	100	5.0	100	500μ	5.0	1.0	20	80	10MΔ	250m			T03	C0	
34#	MJ2901	657m	115	115	8J	15	7.0	50	7.0	40	5.0μ	4.0	8.0	15	60	1.0MΔ	300m			T03	C0	
35#	MJ2955	657m	115	115	8J	15	7.0	100	7.0	60	700μ	4.0	4.0	20	70	2.5MΔ	300m			T03	C0	
36#	MJ2955A†	657m	115	115	8J	15	7.0	100	7.0	60	700μ	4.0	4.0	20	70	2.2MΔ	333m	4.0μ		T03	C0	
37#	2N5871†	658m	115	115	8J	7.0	2.0	80	5.0	80	250μ	4.0	2.5	20	100	4.0MΔ	250m	700n		T03	C0	
38#	2N5872†	658m	115	115	8J	7.0	2.0	80	5.0	80	250μ	4.0	2.5	20	100	4.0MΔ	250m	700n		T03	C0	
39#	2N5853	660m	66	66	8J	3.0	100	60	80	500μ	5.0	5.0	30	90	15MΔ	150m				TO61	A	
40#	2N5854	660m	66	66	8J	10	3.0	100	6.0	80	500μ	5.0	5.0	30	90	20MΔ	150m			TO61	A	
41#	2SA1061	660m	70	70	8J	6.0	100	80	100	50	5.0	5.0	1.0	40	200	15MΔ			EM	B38	D	
42#	D45VH1	660m	83	83	8J	15	5.0	80	30	10	2.0	1.0	35		50M	300n		FE	B22	B0		
43#	D45VH4	660m	83	83	8J	15	5.0	80	45	10	2.0	1.0	35		50M	300n		FE	B22	B0		
44#	D45VH7	660m	83	83	8J	15	5.0	80	60	10	2.0	1.0	35		50M	300n		FE	B22	B0		
45#	D45VH10	660m	83	83	8J	15	5.0	80	80	10	2.0	1.0	35		50M	300n		FE	B22	B0		
46#	RCS618	660m	115	115	8J	15	7.0	100	7.0	80	1.0μ	4.0	5.0	20	70	2.5MΔ	2.2		E	Y204a	C0	
47#	2N5007	666m	100	100	8J	10	3.0	100	5.5	80	1.0μ	5.0	5.0	30	90	3.0MΔ				T16	A	
48#	2N5009	666m	100	100	8J	10	3.0	100	5.5	80	1.0μ	5.0	5.0	70	200	4.0MΔ				T16	A	
49#	2N5290	666m	100	100	8J	10	3.0	100	5.5	100	1.0μ	5.0	5.0	30	90	3.0MΔ				T16	A	
50#	2N5291	666m	100	100	8J	10	3.0	100	5.5	100	1.0μ	5.0	5.0	70	200	4.0MΔ				T16	A	
51#	2SA566	666m	10	10	8J	700m	100	40	5.0	100	4.0μ	5.0	50m	35	200	100MΔ	3.0		FE	TO66	C0	
52#	2SA744	666m	70	70	8J	8.0	3.0	80	6.0	80	1.0μ	4.0	3.0	30		15MΔ	400m		EM	T03	C0	
53#	2SA745	666m	70	70	8J	8.0	3.0	100	6.0	100	1.0μ	4.0	3.0	30		15MΔ	400m		EM	T03	C0	
54#	2SA745A	666m	70	70	8J	8.0	3.0	120	6.0	120	1.0μ	4.0	3.0	30		15MΔ	500m		EM	T03	C0	
55#	2SA837	666m	50	50	8J	4.0	80	50	80	1.0μ	4.0	1.0	40	200	10MΔ			EM	T03	C		
56#	BDX18	666m	117	117	8J	15	7.0	100	7.0	60	5.0μ	4.0	4.0	20	70	800kΔ			HA	T03	C0	
57#	BDX20	666m	117	117	8J	10	7.0	180	7.0	140	1.0μ	4.0	3.0	20	70	800kΔ	333m		HA	T03	C0	
58#	2N5621	667m	100	100	8J	10	3.0	80	5.5	80	1.0μ	5.0	5.0	70	200	4.0MΔ				T03	C0	
59#	2N5623	667m	100	100	8J	10	3.0	100	5.5	80	1.0μ	5.0	5.0	30	90	3.0MΔ				T03	C0	
60#	2N5625	667m	100	100	8J	10	3.0	100	5.5	80	1.0μ	5.0	5.0	70	200	4.0MΔ				T03	C0	
61#	2N5627	667m	100	100	8J	10	3.0	120	5.5	100	1.0μ	5.0	5.0	30	90	3.0MΔ				T03	C0	
62#	2SA1040†	667m	100	100	8J	10	3.0	120	5.0	120	50μ	5.0	1.0	35	200	60MΔ	240m	100n	PEΔ	T03	C0	
63#	2SA1041†	667m	100	100	8J	15	5.0	120	5.0	120	50μ	5.0	1.5	35	200	60MΔ	214m	100n	PEΔ	T03	C0	
64#	2SA1042†	667m	100	100	8J	15	5.0	70	5.0	70	50μ	5.0	1.5	35	200	60MΔ	214m	100n	PEΔ	T03	C0	
65#	2SA1180	667m	100	100	8J	10	5.0	180	7.0	180	50μ	1.0	5.0	10	#	40	200m	#	PEΔ	T03	C0	
66#	2N6127	670m	67	67	8J	10	3.0	100	5.0	80	100μ	5.0	5.0	30	120	4.0MΔ				TO61	A	
67#	BD546	680m	85	85	8J	15	7.0	40	5.0	40	400μ	4.0	5.0	25		3.0MΔ	300m	400n	E	B3	B0	
68#	BD546A	680m	85	85	8J	15	7.0	60	5.0	60	400μ	4.0	5.0	25		3.0MΔ	300m	400n	E	B3	B0	
69#	BD546B	680m	85	85	8J	15	7.0	80	5.0	80	400μ	4.0	5.0	25		3.0MΔ	300m	400n	E	B3	B0	
70#	BD546C	680m	85	85	8J	15	7.0	100	5.0	100	400μ	4.0	5.0	25		3.0MΔ	300m	400n	E	B		

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1) MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A E X M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icbo @ MAX Vcb @25°C		BIAS hFE		fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E	
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (A)	Vcb (V)	MIN	MAX							
1	MJE1290	720m	90		S	15	5.0	40	5.0	40	700	4.0	5.0	20	100 #	3.0MΔ		Δ	B16a	B	
2	MJE1291	720m	90		S	15	5.0	60	5.0	60	700	4.0	5.0	20	100 #	3.0MΔ		Δ	B16a	B	
3	MJE2901	720m	90		S	10	5.0	60	4.0	60	100	2.0	3.0	25	100				B16d	B	
4	MJE2901K	720m	90		S	10	5.0	60	4.0	60	100	2.0	3.0	25	100				B23	D	
5	MJE2955	720m	115		S	10	6.0	70	5.0	60	1.0	4.0	4.0	70	#	2.0MΔ	800m	Δ	B16d	B	
6	TIP2955†	720m	3.5		S	15 †	7.0	100 †	7.0 †	70	1.0	4.0	4.0	20	70	#	2.0MΔ	400n	DM	B19	B
7	2N5986	800m	100		S	12	4.0	60 †	5.0 †	40	2.0	4.0	2.0	6.0	20	120 #	2.0MΔ			B16a	B
8	2N5987	800m	100		S	12	4.0	80 †	5.0 †	60	2.0	4.0	2.0	6.0	20	120 #	2.0MΔ			B16a	B
9	2N5988	800m	100		S	12	4.0	100 †	5.0 †	80	2.0	4.0	2.0	6.0	20	120 #	2.0MΔ			B16a	B
10#	2SA679	800m	100		S	12	12 ∅	120	5.0	120	100	5.0	2.0	4.0	140	6.0MΔ	330m	DM	T03	C	
11#	2SA680	800m	100		S	12	12 ∅	100	5.0	100	100	5.0	2.0	4.0	140	6.0MΔ	330m	DM	T03	C	
12#	2SA699	800m	10		S	3.0 #	600m	40	5.0	20	1.0	5.0	1.0	30	220	150MΔ	500m	PE	B15a	B	
13#	2SA699A	800m	10		S	3.0 #	600m	50	5.0	40	1.0	5.0	1.0	30	220	150MΔ	500m	PE	B15a	B	
14#	2SA753	800m	100		S	10	2.0	140	5.0	110	1.0	5.0	1.0	30	200 *	20MΔ	300m	D	T03	C	
15#	2SA959†	.80	100		S	-10	-3	100	-7	100	1.0	-5	-5	30	200 *		1.0u	E	T03	C	
16#	2SA1007†	.80	100		S	-10		150	4.5	130	-5	-2	-2	40	320 *	50MΔ	.20u	E	Y204a	C	
17#	2SA1007A†	.80	100		S	-10		150	4.5	150	-5	-2	-2	40	320 *	50MΔ	.20u	E	Y204a	C	
18#	2SA1064	800m	100		S	8.0		150	5.0	150	1.0	5.0	1.0	40	280	50MΔ		EM	T03	C	
19#	2SA1067	800m	100		S	10	2.0	120	5.0	120	100	4.0	3.0	30	200	40MΔ	400m	PE	T03	C	
20#	2SA1068	800m	100		S	10	2.0	150	5.0	150	100	4.0	3.0	30	200	40MΔ	400m	PE	T03	C	
21#	2SA1146	800m	100		S	-10		140	-5	140	-5	-1	-1	55	240	70MΔ		E	B41	D	
22#	2SA1186	0.8	100		S	10	2.0	150	5.0	150	100	4.0	3.0	30	200	60MΔ	400m	PE	B62	D	
23#	2SA1205	800m	100		S	12	4.0	70	6.0	50	100	5.0	5.0	40	200	20MΔ		PE	B62	D	
24#	2SB539	800m	100		S	15 #		130	6.0	120	100	5.0	2.0	40	200 #	8.0MΔ		PE	T03	C	
25#	2SB539A	800m	100		S	15	2.0	130	6.0	120	100	5.0	2.0	40	200 #	8.0MΔ	250m	DM	T03	C	
26#	2SB539B	800m	100		S	15	2.0	140	6.0	140	100	5.0	2.0	40	200 #	8.0MΔ	250m	DM	T03	C	
27#	2SB539C	800m	100		S	15	2.0	160	6.0	160	100	5.0	2.0	40	200 #	8.0MΔ	250m	DM	T03	C	
28#	2SB555	800m	100		S	12		120	5.0	140	100	5.0	2.0	40	140	6.0MΔ		DM	T03	C	
29#	2SB556	800m	100		S	12		120	5.0	120	100	5.0	2.0	40	140	6.0MΔ		DM	T03	C	
30#	2SB681	800m	100		S	12		150	5.0	150	100	5.0	1.0	40	140 #	13MΔ		DM	T03	C	
31#	2SB697	800m	100		S	12		160	6.0	140	100	5.0	1.0	40	320	15MΔ		EM	T03	C	
32#	2SB697K	800m	100		S	12		180	6.0	160	100	5.0	1.0	40	320	15MΔ		EM	T03	C	
33#	2SB853K†	800m	100		S	15	3	100	7	100	1	3	8	1k #	20k #			E	F57	D	
34#	2SB863	800m	100		S	10	1.0	140	5.0	140	5.0	2.0	1.0	55	160				B7	B	
35	PTC164	800m	100		S	12		80	5.0	80	2.0	2.0	6.0	20	120	2.0MΔ			B16k	B	
36	PTC168	800m	100		S	12		80	5.0	80	1.0	2.0	6.0	20	120	2.0MΔ			B16k	D	
37	2N4907	833m	150		S	10	7.0	40	5.0	40	2.0	4.0	4.0	20	80	4.0MΔ	200m		T03	C	
38	2N4908	833m	150		S	10	7.0	60	5.0	60	2.0	4.0	4.0	20	80	4.0MΔ	200m		T03	C	
39	2N4909	833m	150		S	10	7.0	80	5.0	80	2.0	4.0	4.0	20	80	4.0MΔ	200m		T03	C	
40	2N3789	854m	150		S	10	4.0	60	7.0	60	5.0	2.0	1.0	25	90	30kΔ	250m		T03	C	
41	2N3790	854m	150		S	10	4.0	80	7.0	80	5.0	2.0	1.0	25	90	30kΔ	250m		T03	C	
42	2N3791	854m	150		S	10	4.0	80	7.0	80	5.0	2.0	1.0	25	180	30kΔ	200m		T03	C	
43	2N3792	854m	150		S	10	4.0	80	7.0	80	5.0	2.0	1.0	50	180	30kΔ	200m		T03	C	
44	MJ450	854m	150		S	30	5.0	40	5.0	40	1.0	2.0	1.0	20	#	2.0MΔ		Δ	F4d	A	
45	MJ2940	854m	150		S	10	4.0	60	4.0	60	100	2.0	3.0	20	100 #	4.0MΔ			F4c	A	
46	MJ2941	854m	150		S	10	4.0	80	4.0	80	100	2.0	4.0	20	100 #	4.0MΔ			F4c	A	
47	JAN2N3791†	857m	150		S	10	4.0	60	7.0	60	1.0	2.0	3.0	30	120 #	4.0MΔ	200m	1.5u	T03	C	
48	JAN2N3792†	857m	150		S	10	4.0	80	7.0	80	1.0	2.0	3.0	30	120 #	4.0MΔ	200m	1.5u	T03	C	
49	2N5875†	857m	150		S	10	4.0	60 †	5.0 †	60	500	4.0	4.0	20	100	4.0MΔ	200m		T03	C	
50	2N5876†	857m	150		S	10	4.0	80 †	5.0 †	80	500	4.0	4.0	20	100	4.0MΔ	200m		T03	C	
51	2N6226	857m	150		S	6.0	4.0	100 †	7.0 †	100	1.0	2.0	3.0	25	100 #	4.0MΔ	700n		F4h	C	
52	2N6227	857m	150		S	6.0	4.0	120 †	7.0 †	120	1.0	2.0	3.0	20	80 #				F4h	C	
53	2N6228	857m	150		S	6.0	4.0	140 †	7.0 †	140	1.0	2.0	3.0	15	60 #				F4h	C	
54	2N6229	857m	150		S	10	5.0	100 †	7.0 †	100	1.0	2.0	5.0	25	100 #				T03	C	
55	2N6230	857m	150		S	10	5.0	120 †	7.0 †	120	1.0	2.0	5.0	20	80 #				T03	C	
56	2N6231	857m	150		S	10	5.0	140 †	7.0 †	140	1.0	2.0	5.0	15	60 #				T03	C	
57	BD312	857m	150		S	10	4.0	60	5.0	60	1.0	2.0	5.0	25	#	4.0MΔ	200m		T03	C	
58	BD314	857m	150		S	10	4.0	80	5.0	80	1.0	2.0	4.0	25	#	4.0MΔ	200m		T03	C	
59	HEPS7003-RT	857m	150		S	10		60	5.0	60	500	4.0	4.0	60	∅	6.0MΔ			T03	C	
60	SCE421	857m	150		S	10	4.0	40	4.0	100	1.0	4.0	4.0	20	100		250m		T03	C	
61	TIP544	857m	5.0		S	6.0 †	4.0	100 †	7.0 †	100	1.0	2.0	3.0	25	100 #	1.0MΔ		DME	T03	C	
62	TIP545	857m	5.0		S	6.0 †	4.0	120 †	7.0 †	120	1.0	2.0	3.0	20	80 #	1.0MΔ		DMA	T03	C	
63	TIP546	857m	5.0		S	6.0 †	4.0	140 †	7.0 †	140	1.0	2.0	3.0	15	60 #	1.0MΔ		DMA	T03	C	
64	MJ2267	866m	150		S	5.0	3.0	40	5.0	40	1.0	2.0	1.0	20	20	3.0MΔ			T03	C	
65	MJ2268	866m	150		S	5.0	3.0	55	5.0	55	1.0	2.0	1.0	20	20	3.0MΔ			T03	C	
66#	2SA746	909m	100		S	10	4.0	80	6.0	80	1.0	4.0	3.0	30	30	15MΔ	500m	EM	T03	C	
67#	2SA747	909m	100		S	10	4.0	120	6.0	120	1.0	4.0	3.0	30	30	15MΔ	500m	EM	T03	C	
68#	2SA747A	909m	100		S	10	4.0	140	6.0	140	1.0	4.0	3.0	30	30	15MΔ	400m	EM	T03	C	
69	2N5879†	915m	160		S	15	5.0	60 †	5.0 †	60	500	4.0	6.0	20	100	4.0MΔ	142m	700n	T03	C	
70	2N5880†	915m	160		S	15	5.0	80 †	5.0 †	80	500	4.0	6.0	20	100	4.0MΔ	142m	700n	T03	C	
71	HSE829-RT	920m	115		S	10		80	5.0	60	1.0	4.0	4.0	20		800kΔ			T03	C	
72	HSE830-RT	920m	115		S	10		100	4.0	80	5.0	4.0	1.5	50		1.0MΔ			T03	C	
73#	2SA1065	960m	120		S	10		150	5.0	150	1.0	5.0	2.0	40	280	50MΔ		EM	T03	C	
74#	2SA1072	960m	120		S	10		120	7.0	120	50	5.0	1.0	60	120	60MΔ	400m	PE	T03	C	
75#	2SA1073	960m	120		S	10		180	7.0	160	50	5.0	1.0	60	120	60MΔ	400m	PE	T03	C	
76#																					

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcbo @ 25°C (A)		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a	L C O A D E
						Ic (A)	Ib (A)	Vcbo (V)	VBevo (V)	VBevo (V)	Icbo (A)	Vcbo (V)	Ic (A)	MIN						
1	P1743-0830	1.0	175	30	10	110	70	100	4.0	30	20	100	30MΔ	70u	FE	T03	C			
2	P1743-1030	1.0	175	30	10	150	70	140	4.0	30	20	100	30MΔ	70u	FE	T03	C			
3	P1743-1430	1.0	175	30	10	180	70	180	4.0	30	20	100	30MΔ	70u	FE	T03	C			
4	P1743-1830	1.0	175	30	10	180	70	180	4.0	30	20	100	30MΔ	70u	FE	T03	C			
5	PN5935	1.0	175	30	10	130	70	90	4.0	30	20	100	30MΔ	70u	FE	T03	C			
6	PN5936	1.0	175	30	10	170	70	120	4.0	30	20	100	30MΔ	70u	FE	T03	C			
7	PN5937	1.0	175	30	10	300	10	300	100u	5.0	5.0	10	50 #	6.0MΔ	250m#	400n	Y204a	C		
8	SDT02353†	1.0	175	10	2.0	350	10	350	100u	5.0	5.0	10	50 #	6.0MΔ	250m#	400n	Y204a	C		
9	SDT02354†	1.0	175	10	2.0	400	10	400	100u	5.0	5.0	10	50 #	6.0MΔ	250m#	400n	Y204a	C		
10	SDT02355†	1.0	175	10	2.0	400	10	400	100u	5.0	5.0	10	50 #	6.0MΔ	250m#	400n	Y204a	C		
11	SDT3801	1.0	175	60	10	40	5.0	40	10u	10	40	10	40	25M			PL	T068	A	
12	SDT3802	1.0	175	60	10	80	5.0	80	10u	10	40	10	40	25M			PL	T068	A	
13	SDT3803	1.0	175	60	10	80	5.0	80	10u	10	40	10	40	25M			PL	T068	A	
14	SDT3804	1.0	175	60	10	100	5.0	100	10u	10	40	10	40	25M			PL	T068	A	
15	TIP36†	1.0	3.5	25	5.0	40	5.0	40	1.0mΔ	4.0	15	10	50 #	3.0MΔ	1.1u		DM	B19	B	
16	TIP36A†	1.0	3.5	25	5.0	80	5.0	80	1.0mΔ	4.0	15	10	50 #	3.0MΔ	1.1u		DM	B19	B	
17	TIP36B†	1.0	3.5	25	5.0	80	5.0	80	1.0mΔ	4.0	15	10	50 #	3.0MΔ	1.1u		DM	B19	B	
18	TIP36C†	1.0	3.5	25	5.0	100	5.0	100	1.0mΔ	4.0	15	10	50 #	3.0MΔ	1.1u		DM	B19	B	
19	TIP36D†	1.0	125	25	5.0	160	5.0	120	1.0mΔ	4.0	15	25 #	3.0MΔ	1.1u		DM	B3	B		
20	TIP36E†	1.0	125	25	5.0	180	5.0	140	1.0mΔ	4.0	15	25 #	3.0MΔ	1.1u		DM	B3	B		
21	TIP36F†	1.0	125	25	5.0	200	5.0	160	1.0mΔ	4.0	15	25 #	3.0MΔ	1.1u		DM	B3	B		
22	2N4398†	1.1	200	30	7.5	40	5.0	40	1.0mΔ	4.0	15	15	60 #	4.0MΔ	400n		F4f	T03	C	
23	2N4399†	1.1	200	30	7.5	60	5.0	60	1.0mΔ	4.0	15	15	60 #	4.0MΔ	400n		F4f	T03	C	
24	JAN2N4399†	1.1	200	30	7.5	60	5.0	60	1.0mΔ	2.0	15	15	60 #	4.0MΔ	400n		F4f	T03	C	
25	2N5745†	1.1	200	20	7.5	80	5.0	80	1.0mΔ	2.0	15	15	60 #	2.0MΔ	1.0u		F4f	T03	C	
26	JAN2N5745†	1.1	200	20	7.5	80	5.0	80	1.0mΔ	2.0	15	15	60 #	2.0MΔ	1.0u		F4f	T03	C	
27	2N5883†	1.1	200	25	7.5	60	5.0	60	1.0mΔ	4.0	10	20	100	4.0MΔ	66m	700n		T03	C	
28	2N5884†	1.1	200	25	7.5	80	5.0	80	1.0mΔ	4.0	10	20	100	4.0MΔ	66m	700n		T03	C	
29	2N6029	1.1	200	16	5.0	100	7.0	100	2.0mΔ	2.0	8.0	25	100	4.0MΔ				F11a	C	
30	2N6030	1.1	200	16	5.0	120	7.0	120	2.0mΔ	2.0	8.0	20	80	4.0MΔ				F11a	C	
31	2N6031	1.1	200	16	5.0	140	7.0	140	2.0mΔ	2.0	8.0	15	60	4.0MΔ				F11a	C	
32	2N6329	1.1	114	30	10	60	5.0	60	1.0mΔ	4.0	30	60	30	3.0MΔ				T03	C	
33	2N6330	1.1	114	30	10	80	5.0	80	1.0mΔ	4.0	30	60	30	3.0MΔ				T03	C	
34	2N6331	1.1	114	30	10	100	5.0	100	1.0mΔ	4.0	30	60	30	3.0MΔ				T03	C	
35	2N6436	1.1	200	25	10	100	6.0	80	1.0mΔ	2.0	10	20	80	4.0MΔ	300n			T03	C	
36	2N6437	1.1	200	25	10	120	6.0	100	1.0mΔ	2.0	10	20	80	4.0MΔ	300n			T03	C	
37	JAN2N6437†	1.1	200	25	10	120	6.0	100	1.0mΔ	2.0	10	25	100	4.0MΔ	72m#	500n		T03	C	
38	2N6438	1.1	200	25	10	140	6.0	120	1.0mΔ	2.0	10	20	80	4.0MΔ	300n			T03	C	
39	JAN2N6438†	1.1	200	25	10	140	6.0	100	1.0mΔ	2.0	10	25	100	4.0MΔ	72m#	500n		T03	C	
40	BD316	1.1	200	16	5.0	80	7.0	80	1.0mΔ	4.0	8.0	25	100	1.0MΔ	125m#			T03	C	
41	BD318	1.1	200	16	5.0	100	7.0	100	1.0mΔ	4.0	5.0	25	100	1.0MΔ	125m#			T03	C	
42	HEPS7001-RT	1.1	200	25	7.5	80	5.0	80	1.0mΔ	4.0	10	40	100	2.0MΔ			EΔ	T03	C	
43	HEPS7007-RT	1.1	200	30	10	100	4.0	90	5.0M	7.5	4.0	20	100	2.0MΔ	106m	2.8u		T03	C	
44	IR4502	1.1	200	30	7.5	100	4.0	90	1.0mΔ	2.0	7.5	25	100	2.0MΔ				T03	C	
45	MJ4502	1.1	200	30	7.5	100	4.0	90	1.0mΔ	2.0	7.5	25	100	2.0MΔ				F4d	C	
46	MJ15002	1.1	200	15	5.0	140	5.0	140	100u#	2.0	4.0	25	150	2.0MΔ	250m			F49a	C	
47	MJ15012	1.1	200	10	2.0	150	5.0	250	1.0mΔ	2.0	2.0	20	100	2.0MΔ	625m			F49	C	
48	RCA9116C	1.1	200	20	5.0	140	5.0	140	1.0mΔ	2.0	5.0	25	150	2.0MΔ	500m#			Y204a	C	
49	RCA9116D	1.1	200	20	5.0	120	5.0	120	1.0mΔ	2.0	5.0	25	150	2.0MΔ	500m#			Y204a	C	
50	RCA9116E	1.1	200	20	5.0	100	5.0	100	1.0mΔ	2.0	7.5	10	100	2.0MΔ	200m#			Y204a	C	
51	ST29045	1.1	150	30	8.0	70	10	40	500u	10	15	30	150	1.0M	130m			T03	C	
52	ST29046	1.1	150	30	8.0	90	10	60	500u	10	15	30	150	1.0M	130m			T03	C	
53	ST29047	1.1	150	30	8.0	110	10	80	500u	10	15	30	150	1.0M	130m			T03	C	
54	ST29048	1.1	150	30	8.0	70	10	40	500u	10	10	30	150	1.0M	130m			T03	C	
55	ST29049	1.1	150	30	8.0	90	10	60	500u	10	10	30	150	1.0M	130m			T03	C	
56	ST29050	1.1	150	30	8.0	110	10	80	500u	10	10	30	150	1.0M	130m			T03	C	
57	2N5967†	1.2	125	30	5.0	100	10	100	500u	10	10	25	120	1.0MΔ	80m#	1.1u		T063	A	
58	JAN2N5967†	1.2	125	30	5.0	100	10	100	100u	10	15	25	100	1.0MΔ	80m#	1.1u		T063	A	
59	2N5969†	1.2	125	30	5.0	100	10	100	500u	10	10	25	120	1.0MΔ	80m#	1.1u		T063	A	
60	JAN2N5969†	1.2	125	30	5.0	100	10	100	100u	10	15	25	100	1.0MΔ	80m#	1.1u		T063	A	
61	2SA907	1.2	150	15	5.0	100	6.0	100	1.0m	4.0	5.0	30	180	1.0M			FE	T03	C	
62	2SA908	1.2	150	15	5.0	150	6.0	150	1.0m	4.0	5.0	30	180	1.0M			FE	T03	C	
63	2SA909	1.2	150	15	5.0	200	6.0	200	1.0m	4.0	5.0	30	180	1.0M			FE	T03	C	
64	2SA971	1.2	150	15	150	6.0	150	100u	4.0	5.0	30	180	1.0M			FE	T03	C		
65	2SA1095	1.2	150	15	160	5.0	160	5.0	5.0	1.0	55	240	60M			FE	B60	D		
66	2SA1169	1.2	150	15	5.0	200	6.0	200	100u	4.0	5.0	30	200	2.0M	300m		FE	T03	C	
67	2SA1215	1.2	150	15	4.0	180	5.0	160	100u	4.0	5.0	30	200	5.0M			FE	B45	D	
68	2SB552	1.2	150	15	220	5.0	180	500u	5.0	5.0	25	80	4.0M		1.0u	DM	T03	C		
69	2SB554	1.2	150	15	160	5.0	160	100u	5.0	2.0	40	140	6.0M			DM	T03	C		
70	SDT3901	1.2	220	60	10	40	5.0	40	10u	10	40	10	40	25M				T0114	A	
71	SDT3902	1.2	220	60	10	60	5.0	60	10u	10	40	10	40	25M				T0114	A	
72	SDT3903	1.2	220	60	10	80	5.0	80	10u	10	40	10	40	25M				T0114	A	
73	SDT3904	1.2	220	60	10	80	5.0	80	10u	10	40	10	40	25M				T0114	A	
74	2N6377†	1.4	250	50	20	100	6.0	80	50uΔ	4.0	20	30	120	25MΔ	50m#	350n		F11a	C	
75	2N6378†	1.4	250	50	20	120	6.0	100	50uΔ	4.0	20	30	120	25MΔ	50m#	350n		F11a	C	
76	JAN2N6378†	1.4	250	50	20	120	6.0	100	10uΔ	4.0	20	30	120	30MΔ	60m#	500n		T03	C	
77	2N6379†	1.4	250	50	20	140	6.0	120	50uΔ	4.0	20	30	120	25MΔ	50m#	350n		F11a	C	
78	JAN2N6379†	1.4	250	50	20	140	6.													

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1] MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E
						Ic	Ib	BVcbo	BVebo	BVceo	Icbo @ MAX Vcb @25°C	BIAS Vcb	Ic								
						(A)	(A)	(V)	(V)	(V)	(A)	(V)	(A)								
1#	JE8550D	8.0	2.0	∅	\$J	1.5	500m	40	6.0	25	100n	1.0	100m	180	300	200M				T092	A
2#	JE9112A	8.0	2.0	∅	\$J	1.5	500m	35	6.0	25	100n	1.0	100m	60	120	50M				T092	A
3#	JE9112B	8.0	2.0	∅	\$J	1.5	500m	35	6.0	25	100n	1.0	100m	85	160	50M				T092	A
4#	JE9112C	8.0	2.0	∅	\$J	1.5	500m	35	6.0	25	100n	1.0	100m	120	200	50M				T092	A
5#	JE9112D	8.0	2.0	∅	\$J	1.5	500m	35	6.0	25	100n	1.0	100m	200	300	50M				T092	A
6	2N6732	20	2.0	∅	\$J	1.0	500m	100	5.0	80	100n	2.0	350m	100	300	50MΔ			PLT	B32	A

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc M X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	Y200 S/A200 Ser.	DWG # L C O A D E				
					Ic	Ib	V <sub>cb0</sub>	V <sub>eb0</sub>	V <sub>ceo</sub>	Icbo @ MAX 25°C	V <sub>cb</sub>							Ic	MIN	MAX	
					(A)	(A)	(V)	(V)	(V)	(A)	(V)							(A)			
1	2N3055	117	∅	SJ	15	7.0	450	7.0	80	5.0m#	4.0	4.0	20	#	70	800k	275m	D	T03	A0	
2	2N3439†	10	∅	SJ	1.0	50	450	7.0	350	20u#	10	20m	40	#	160	15MΔ	10		T05	A0	
3	2N3440†	10	∅	SJ	1.0	50	300	7.0	250	20u#	10	20m	40	#	160	15MΔ	10		T05	A0	
4	2N5466	70	∅	SJ	3.0	1.0	500	8.0	400	250u#	5.0	3.0	15	#	60	2.5MΔ		PL	T05	A0	
5	2N5467	70	∅	SJ	3.0	1.0	700	8.0	400	250u#	5.0	3.0	15	#	60	2.5MΔ		PL	T05	A0	
6	2N6216†	125	∅	SJ	10	2.0	200	8.0	150	1.0u	5.0	5.0	20	#	80	20MΔ		PL	T03	A0	
7	2N6217†	125	∅	SJ	10	2.0	140	20	80	1.0u	5.0	5.0	20	#	80	20MΔ		PL	T03	A0	
8	2N6835†	150	∅	SJ	8	6	850	6	450	1.5m	5	5	8	#	30	10MΔ			Y204c	C0	
9	2N6837†	250	∅	SJ	20	15	850	6	450	1.5m	5	15	8	#	30	10MΔ			Y204e	C0	
10	2SC140	1.7	∅	SJ	1.0		60			12u	10	50m	30	∅		200M		ME	T09		
11	2SC291	1.0	∅	SJ	3.0		70	5.0	40	3.0u	2.0	1.0	40	∅		90M		PE	T05		
12	2SC292	1.0	∅	SJ	3.0		100	5.0	60	3.0u	2.0	100m	70	∅		90M		PE	T05		
13	2SC571	6.0	∅	SJ	1.5		36	4.0	18	5.0u	13	100m	30	∅		250M		PE	T039		
14	2SC572	10	∅	SJ	3.0		36	4.0	18	5.0u	13	200m	30	∅		250M		PE	T060		
15	2SC573	20	∅	SJ	4.0		36	4.0	18	10u	13	400m	40	∅		250M		PE	T060		
16	2SC684	50	∅	SJ	5.0	1.5	100	5.0	5.0	5.0	1.0	35	200		300k			TD	T03		
17	2SC685	3.0	†	SJ	.10		300	3.0	300	10	.05		150		20M			TD	T03		
18	2SC690A	35	∅	SJ	4.0		60	5.0		500u					150M			PE	T0117		
19	2SC756	10	∅	SJ	4.0	800m	130	6.0	40	3.0u	2.0	100m	80	∅		60M	450m	EM	T05		
20	2SC792	50	∅	SJ	1.5		400	5.0	300	50u	10	300m	30	∅		10M		DM	T03	C0	
21	2SC795	9.0	∅	SJ	100m	10m	250	6.0	200	10u	10	10m	70	∅		200		DM	F9	C0	
22	2SC830	25	∅	SJ	3.0		50	4.0	50	4.0	1.0	35	200		20M			D	T066		
23	2SC897	60	∅	SJ	7.0	2.0	150	6.0	90	5.0	1.0	25	200		15M			D	F6h	A	
24	2SC984	350m	∅	SJ	500m		50	4.0	50	500u	3.0	10m	40	∅		100M		PE	T01		
25	2SC1012	2.5	∅	SJ	60m	10m	165	5.0	165	2.0u	2.0	40m	20		100M			DPL	T039	A	
26	2SC1025	25	∅	SJ	3.0		120	4.0	80	1.0m	4.0	200m	80	∅		100M		DM	T066		
27	2SC1050	40	∅	SJ	1.0		300	6.0	300	1.0m	5.0	300m	40	∅		5.0M		DM	T03	C0	
28	2SC1051	60	∅	SJ	7.0		150	6.0	100	1.0m	5.0	1.0	40	∅		8.0M		D	T03	C0	
29	2SC1170	50	∅	SJ	3.5		1.2k	5.0	500	10u	10	3.0	5.0	∅		4.0M		ME	T03	C0	
30	2SC1295	40	∅	SJ	2.0		1.0k	7.0	350	100u	5.0	1.5	3.0	∅		13		D	T03	C0	
31	2SC1308	50	∅	SJ	7.0		1.5k	6.0	400	100u	5.0	4.0	3.0	∅		5.0M		D	T03	C0	
32	2SC1348	125	∅	SJ	4.0		1.0k	5	25	2.0m	3.0	2.0	4.5		19	5.0M		PE	T03	C0	
33	2SC1383NC	1.0	∅	SJ	1.0		30	5	25	0.1u	10	500m	60	∅		200M		PE	R245	B	
34	2SC1384NC	1.0	∅	SJ	1.0		60	5	50	0.1u	10	500m	60	∅		200M		PE	R245	B	
35	2SC1448	25	∅	SJ	1.5		150	5.0	150	20u	10	500m	40	∅		3.0MΔ		DM	Y220b	X0	
36	2SC1448A	25	∅	SJ	1.5		150	5.0	150	10u	10	500m	40	∅		3.0M		DM	Y220b	D0	
37	2SC1449	1.0	∅	SJ	2.0		40	35	35	2.0	300m	40	250		10M			PE	T0126	B	
38	2SC1477	80	∅	SJ	9.0	4.0	230	6.0	230	1.0m	4.0	5.0	10	∅		10M		PE	T03	A0	
39	2SC1509NC	1.0	∅	SJ	500m		80	5	80	0.1u	10	150m	65	∅		120M		PE	R245	B	
40	2SC1518NC	1.0	∅	SJ	1.0		25	5	20	0.1u	2	500m	65	∅		150M		PE	R245	B	
41	2SC1679	10	∅	SJ	3.0	400m	65	4.0	65	10u	5.0	500m	15			100MΔ		PE	Y220b	D0	
42	2SC1755	15	∅	SJ	700m#		300	7.0	300	100n	10	10m	200		50MΔ		PL	Y220b	X		
43	2SC1756	15	∅	SJ	700m#		300	7.0	300	100n	10	10m	200		50MΔ		PL	B8	D		
44	2SC1757	15	∅	SJ	700m#		300	7.0	300	100n	10	10m	200		50MΔ		PL	Y220a	X		
45	2SC1777	50	∅	SJ	6.0		70	6.0	70	1.0m	4.0	5.0	30		150	10M		EM	T03	C0	
46	2SC1783	100	∅	SJ	10	4.0	180	6.0	120	100u	4.0	3.0	30		10M			PE	T03	A0	
47	2SC1786	100	∅	SJ	15	5.0	230	6.0	230	100u	4.0	5.0	12		10M			PE	T03	A0	
48	2SC1846	1.2	∅	SJ	1.0		45	5.0	35	100u	10	500m	60	∅		200M		PE	T0126	B	
49	2SC1847	1.2	∅	SJ	1.5		50	5.0	40	1.0u	5.0	1.0	30	∅		220	150M		PE	T0126	B
50	2SC1965A	15	∅	SJ	2.0		40	4.0		500u								PE	T017	†	
51	2SC2126†	30	∅	SJ	3.0	1.0	200	6.0	200	250u	3.0	3.0	25	75		330m	1.0u	D	T066	C0	
52	2SC2127†	100	∅	SJ	10	4.0	200	6.0	200	250u	3.0	10	20	60		100m	1.0u	D	T03	C0	
53	2SC2128†	200	∅	SJ	30	10	200	6.0	200	500u	3.0	30	15	45		30m	1.0u	D	F29a	C0	
54	2SC2221	7.5	∅	SJ	750m		25	2.5	25	250u	7.0	200m	20	200				E	T039	A	
55	2SC2222	17	∅	SJ	1.5		25	2.5	25	500u	7.0	400m	20	200				E	T136	S	
56	2SC2224	10	∅	SJ	200m	100m	200	5.0	200	1.0u	10	10m	150	∅		250MΔ		E	B68		
57	2SC2224A	1.5	∅	SJ	200m	200m	200	5.0	200	1.0u	10	10m	60	∅		400		E	Y202		
58	2SC2258	1.0	∅	SJ	100m		250	7	250	50	5	30	∅		100M		PL	T0126	B		
59	2SC2276	3.0	∅	SJ	7.0		130			5.0	10	60	320					E	B33		
60	2SC2281	17	∅	SJ	1.5		38	3.0	3.0	500u	10	400m	20	200				E	T136	S	
61	2SC2282	34	∅	SJ	3.0		38	3.0	3.0	1.0m	10	800m	20	200				E	W164	S	
62	2SC2287K	17	∅	SJ	1.5		38	3.0	3.0	500u	10	400m	20	200				E	W163	V	
63	2SC2287M	17	∅	SJ	1.5		38	3.0	3.0	500u	10	400m	20	200				E	W161	†	
64	2SC2288K	34	∅	SJ	3.0		38	3.0	3.0	1.0m	10	800m	20	200				E	W163	V	
65	2SC2288M	34	∅	SJ	3.0		38	3.0	3.0	1.0m	10	800m	20	200				E	W161	†	
66	2SC2289K	17	∅	SJ	1.5		25	2.5	2.5	500u	7.0	400m	20	200				E	W163	V	
67	2SC2289M	17	∅	SJ	1.5		25	2.5	2.5	500u	7.0	400m	20	200				E	W161	†	
68	2SC2302	40	∅	SJ	7.0	2.0	500	10	400	100u</											



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J TO C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A X P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icbo @ 25°C (A)	BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/a TO200 Ser.	L O A D E
						Ic (A)	Ib (A)	Vcbo (V)	Vcbo (V)	Vcbo (V)		Vcb (V)	Ic (A)								
1#	2SC2879		250		SJ	25		45	4.0	18	12mφ	5.0	10	10	150	100M			PE	W52J	H B
2#	2SC2911		1.0		SJ	140m		180	5.0	160	100nφ	5.0	10m	100	400	150M			PE	TO126	B B
3#	2SC2912		1.0		SJ	140m		200	5.0	200	100nφ	5.0	10m	100	400	150M			PE	TO126	B B
4#	2SC2913		40		SJ	7.0	2.0	500	7.0	400	100uφ	5.0	3.0	12					DA	T066	
5#	2SC2920		150		SJ	15	5	450	7	400	100u	2.0	10	#	30	30M	1.0u		PL	TO3	Aφ
6#	2SC2964		150		SJ	15	5	600	7	450	100u	5.0	10	#	20	28M	150n		PL	TO3	Aφ
7#	2SC2965		150		SJ	15	5	600	7	450	100u	5.0	10	#	20	28M	150n		PL	TO3	Aφ
8#	2SC3007		800m		SJ	2.0	2.0	50	5.0	50	1.0u	2.0	0.5	70	240	100M	0.1u		EA	TO39	Aφ
9#	2SC3051		10		SJ	0.8	0.5	500	7.0	400	100uφ	5.0	0.1	20	100		0.1u		EA	TO126	B
10#	2SC3075		10		SJ	0.8	0.5	50	7.0	400	100uφ	5.0	0.1	20	100		0.1u		EA	B78	Dφ
11#	2SC3076		10		SJ	2.0	1.0	50	5.0	50	1.0u	2.0	0.5	70	240	100M			EA	B78	Dφ
12#	2SC3180		60		SJ	6.0		80	5.0	80	5.0uφ	5.0	1.0	55	180	30M			EA	B77	Dφ
13#	2SC3182		100		SJ	10	0.5	140	5.0	140	5.0uφ	5.0	1.0	55	180	30M			EA	B77	Dφ
14#	2SC3225		900m		SJ	2.0		40	7.0	40	10u	1.0	400M	500	220M		1.0u		EA	R195h	B
15#	2SC3237		20		SJ	3.0		30	5.0	30	1.0uφ	2.0	0.5	70	240	100M			EA	B79	Dφ
16#	2SC3238		25		SJ	1.5		180	5.0	180	1.0uφ	5.0	0.1	70	240	100M			EA	B79	Dφ
17#	2SC3279		750m		SJ	2.0		30	6.0	10	100nφ	1.0	0.5	140	600	150M			EA	TO92	B
18#	2SC3280		120		SJ	12		180	5.0	180	5.0uφ	5.0	1.0	55	180	30M			EA	B80	Dφ
19#	2SC3281		150		SJ	15		200	5.0	200	5.0uφ	5.0	1.0	55	180	30M			EA	B80	Dφ
20#	2SD24		6.0		SJ	100m		300	2.0	300	1.5u	10φ	50m	60	25M			ME	TO66		
21#	2SD51		50		SJ	5.0	1.5	100	6.0	50	5.0mφ	2.0	2.0	30	120	10k	500m		ME	TO3	
22#	2SD68		50		SJ	5.0		75	5.0	75	5.0m	5.0	1.0	50	100M			ME	TO3		
23#	2SD69		50		SJ	3.0		140	8.0	140	100uφ	5.0	1.0	35	170	10M			ME	TO3	Cφ
24#	2SD88		83		SJ	5.0		300	8.0	300	100uφ	3.0	2.0	34	517	12M	400m		DM	TO3	
25#	2SD88A		125		SJ	10	2.0	300	8.0	300	100uφ	3.0	2.0	34	517	12M	400m		DM	TO3	
26#	2SD219F		10		SJ	1.0	500m	40	6.0	40	1.0u	4.0	200m	40	8.0				DM	F61	A
27#	2SD220F		10		SJ	1.0	500m	80	6.0	50	1.0u	4.0	200m	40	8.0				DM	F61	A
28#	2SD221F		10		SJ	1.0	500m	110	6.0	80	1.0u	4.0	200m	40	8.0				DM	F61	A
29#	2SD313		30		SJ	3.0		80	5.0	60	100uφ	2.0	1.0	40	320	8.0M			D	Y220b	Dφ
30#	2SD314		30		SJ	3.0		80	5.0	60	100uφ	2.0	1.0	40	320	8.0M			D	Y220a	Cφ
31#	2SD315		35		SJ	4.0		80	5.0	60	100uφ	2.0	1.0	40	320	8.0M			DM	T066	Cφ
32#	2SD320		50		SJ	2.0		300	6.0	230	100uφ	1.5	1.0	10	50	8.0M			D	TO3	Cφ
33#	2SD325		10		SJ	1.5		35	5.0	35	100uφ	2.0	1.0	40	320	8.0M			D	Y220b	Cφ
34#	2SD326		23		SJ	1.0		330	5.0	220	15uφ	5.0	100m	42	230	6.5M			PE	F9	Aφ
35#	2SD328		800m		SJ	1.5	#	100	7.0	60	1.0uφ	2.0	200m	60	320	5.0M	1.0		PE	TO39	Aφ
36#	2SD330		20		SJ	2.0		50	5.0	50	100uφ	2.0	1.0	40	320	8.0M			D	B17	Cφ
37#	2SD331		20		SJ	2.0		50	5.0	50	100uφ	2.0	1.0	40	320	8.0M			D	Y220a	Dφ
38#	2SD338		60		SJ	7.0		90	8.0	90	100uφ	2.0	3.0	50	320	3.0MΔ			D	TO3	Cφ
39#	2SD339		100		SJ	12		110	8.0	110	100uφ	2.0	4.0	50	320	3.0MΔ			D	TO3	Cφ
40#	2SD340		120		SJ	12		140	8.0	140	100uφ	2.0	5.0	4.5	40	3.0MΔ			D	TO3	Cφ
41#	2SD348		50		SJ	12	#	1.5k	6.0	400	100uφ	5.0	5.0			8.0M			D	TO3	Cφ
42#	2SD353		60		SJ	6.0	#	150	6.0	150	100uφ	5.0	100m			8.0M			D	TO3	Cφ
43#	2SD386		25		SJ	2.0	#	200	6.0	120	1.0mφ	2.0	500m	320	8.0M			DM	Y220b	Dφ	
44#	2SD386A		25		SJ	2.0	#	200	6.0	150	1.0mφ	2.0	500m	320	8.0M			DM	Y220b	Dφ	
45#	2SD387		25		SJ	2.0	#	200	6.0	120	1.0mφ	2.0	500m	320	8.0M			DM	Y220a	Cφ	
46#	2SD387A		25		SJ	2.0	#	200	6.0	150	1.0mφ	2.0	500m	320	8.0M			DM	Y220a	Cφ	
47#	2SD400P1		1.2		SJ	1.0		25	5.0	25	1.0u	2.0	50m	60	560			EPL	TO3	Cφ	
48#	2SD400P2		1.2		SJ	1.0		25	5.0	25	1.0u	2.0	50m	60	560			EPL	TO3	Cφ	
49#	2SD437W		80		SJ	2.0	#	500	6.0	350	100uφ	5.0	2.0	45	200	2.5M			D	TO3	Cφ
50#	2SD531		43		SJ	5.0	1.0	100	8.0	80	2.0uφ	2.0	100mφ	45	250	9.0M	.50 #		DM	Y220a	D
51#	2SD544		43		SJ	5.0	1.0	100	8.0	80	2.0uφ	2.0	100mφ	45	250	9.0M	.50 #		DM	Y220a	D
52#	2SD575		50		SJ	2.5		1.4k	5.0	800	50uφ	5.0	2.0	2.5				D	TO3	Cφ	
53#	2SD575L		50		SJ	2.5		1.2k	5.0	800	50uφ	5.0	2.0	2.5				D	TO3	Cφ	
54#	2SD588A		80		SJ	1.5	#	150	5.0	130	50u	5.0	50m	60	100M			D	TO3	Cφ	
55	2SD608A		1.5		SJ	1.5	#	25	5	180	0.1m	5.0	300m	40	200			D	Y220b	Dφ	
56#	2SD626		80		SJ	6.0		110	7	25	30u	2.0	3.5	40	300			D	TO3	Cφ	
57#	2SD750		100		SJ	15		80	4	80	30u	4.0	4.0	40	10M	1.0M			ME	Y220b	Cφ
58#	2SD762		25		SJ	3.0		80	4	80	30u	4.0	4.0	40	10M	25k			ME	TO3	Aφ
59#	2SD792		35		SJ	8.0	2.5	1.5k	7.0	700	100uφ	4.0	4.0	4	8				ME	TO3	Aφ
60#	2SD807		50		SJ	4.0	1.0	1.2k	7.0	800	100uφ	4.0	1.0	4	8				ME	TO3	Aφ
61#	2SD810		30		SJ	5.0	1.0	20	20	20	1.0mφ	4.0	1.0	200	200	7M			†	B61	D
62#	2SD812		40		SJ	5.0	1.0	80	5	80	50u	5.0	1.0	40	15				†	Y220b	Dφ
63#	2SD830		50		SJ	3.0		2.5k	6.0	900	50uφ	10	1.5	30	15				PL	TO3	Cφ
64#	2SD895		60		SJ	7		100	8	85	0.1mφ	5.0	1	60	200	15M			PL	B38	
65#	2SD898		70		SJ	7		120	8	100	0.1mφ	5.0	1	60	200	15M			PL	B38	
66#	2SD903		50		SJ	7		60	6	60	1.0m	5.0	4	50	11				DM	TO3	Cφ
67#	2SD904		50		SJ	7		1.5k	6.0	600	1.0m	5.0	3.0	40	10				DM	TO3	Cφ
68#	2SD951		65		SJ	3.0		1.5k	5	1.5k	50u	5.0	2.5	3	15				DM	TO3	Cφ
69#	2SD953		65		SJ	3.0		1.5k	5	1.5k	1m	5.0	2	3	15				DM	TO3	Cφ
70#	2SD954		65		SJ	3.0		1.5k	5	1.5k	1m	5.0	2	3	15				DM	TO3	Cφ
71#	2SD985		2.0		SJ	70		2.5k	50	800	1m	10	1.5	3	15				DM	TO3	Cφ
72#	2SD1006		2.0		SJ	70		100	100	100	100m	1.0	100m	200	#	90M			DM	X186	B
73#	2SD1007		2.0		SJ	70		120	120	100	100m	1.0	100m	200	#	90M			DM	X186	B
74#	2SD1017		50		SJ	2.0		250	50	250	100u	3.0	0.4	40	250	15M			DM	B65	D
75#	2SD1022		50		SJ	2.0		100	100	100	100u	3.0	3.0	15					DM		
76#	2SD1024		50		SJ	8.0	500m	100	70	100	100u	5.0	6.0	15					DM		
77#	2SD1031		40		SJ	6.0	1.0	120	60	120	100u	4.0	4.0	700	50				DM		
78#	2SD1035		40																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	Y200 s/a TO200 Ser.	DWG #	L C O D E
					Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ce0</sub> (V)	Icbo (A)	V <sub>cb</sub> (V)	Ic (A)	MIN							
1	AP30-12	85	85	1J	8.0			4.0	38					50M#				Y220	C	
2	AP30-12L	85	85	1J	8.0			4.0	36				50M#				Y220	C		
3	B40-12A	85	85	1J	12			4.0	36				175M#				T91			
4	BAL0002-100	270m	250m	1J	20			4.0	78	50m	5.0	.50	10	180M#			W171			
5	BAL0101-150				20			4.5	20	15m				108M#			W171			
6	BAL0101-150A				20			4.5	20	15m				108M#			W171			
7	BAL0101-200	250	320m	1J	20			4.0	33	50m	5.0	2.0	10	110M#			W171			
8	BAM150	175	175	1J	15			3.5	33	50m	5.0	1.0	10	108M#			W171			
9	BC517W	1.0		1J	400m			40	10	30	2.0	20m		30k			T092			
10	BCX40Z	1.0		1J	2.0			2.0	2.0	80	4.0	500m	40	250	50M#		T039	A		
11	BCX54-6	3.0		1J	1.0	100m		45	5.0	45	2.0	150m	40	250	50M#	EPLT	X186	B		
12	BCX54-10	3.0		1J	1.0	100m		45	5.0	45	2.0	150m	40	250	50M#	EPLT	X186	B		
13	BCX54-18	3.0		1J	1.0	100m		45	5.0	45	2.0	150m	40	250	50M#	EPLT	X186	B		
14	BCX55-6	3.0		1J	1.0	100m		60	5.0	60	2.0	150m	40	180	50M#	EPLT	X186	B		
15	BCX55-10	3.0		1J	1.0	100m		60	5.0	60	2.0	150m	40	180	50M#	EPLT	X186	B		
16	BCX56-6	3.0		1J	1.0	100m		60	5.0	60	2.0	150m	40	180	50M#	EPLT	X186	B		
17	BCX56-10	3.0		1J	1.0	100m		60	5.0	60	2.0	150m	40	180	50M#	EPLT	X186	B		
18	BCX80	1.0		1J	2.0			80		80	4.0	500m	40	250	50M#		T039	A		
19	BCX80Z	1.0		1J	2.0			80		80	4.0	500m	40	250	50M#		T039	A		
20	BCX88-10	3.0		1J	1.0	100m		25	5.0	20	1.0	0.5	85	375	65M#	EPLT	X186	B		
21	BCX88-18	3.0		1J	1.0	100m		25	5.0	20	1.0	0.5	85	375	65M#	EPLT	X186	B		
22	BCX88-25	3.0		1J	1.0	100m		25	5.0	20	1.0	0.5	85	375	65M#	EPLT	X186	B		
23	BD111A	82		1J	10			60	5.0	60	1.0	500m	40	100	100M#	PEA	T03			
24	BD135-6Z	8.0		1J	1.0			45	5.0	45	2.0	150m	40	100	60M#		B16m	B		
25	BD135-10Z	8.0		1J	1.0			45	5.0	45	2.0	150m	63	180	60M#		B16m	B		
26	BD135-18Z	8.0		1J	1.0			45	5.0	45	2.0	150m	100	250	60M#		B16m	B		
27	BD135Z	8.0		1J	1.0			45	5.0	45	2.0	150m	40	250	60M#		B16m	B		
28	BD137-6Z	8.0		1J	1.0			60	5.0	60	2.0	150m	40	100	60M#		B16m	B		
29	BD137-10Z	8.0		1J	1.0			60	5.0	60	2.0	150m	63	180	60M#		B16m	B		
30	BD137Z	8.0		1J	1.0			60	5.0	60	2.0	150m	40	180	60M#		B16m	B		
31	BD139-6Z	8.0		1J	1.0			100	5.0	80	2.0	150m	40	100	60M#		B16m	B		
32	BD139-10Z	8.0		1J	1.0			100	5.0	80	2.0	150m	63	180	60M#		B16m	B		
33	BD139Z	8.0		1J	1.0			100	5.0	80	2.0	150m	40	180	60M#		B16m	B		
34	BD239Z	2.0		1J	2.0	80		5.0	5.0	45	4.0	.20	40	40			Y220	B		
35	BD239AZ	2.0		1J	2.0	80		5.0	5.0	60	3.0m	4.0	.20	40			Y220	D		
36	BD239A#1	2.0		1J	2.0	1.0		5.0	5.0	80	1.0	200m	20	3.0M#			Y220b	B		
37	BD239BZ	2.0		1J	2.0	80		5.0	5.0	80	3.0m	4.0	.20	40			Y220	D		
38	BD239B#1	2.0		1J	2.0	1.0		5.0	5.0	80	1.0	200m	20	3.0M#			Y220b	B		
39	BD239CZ	2.0		1J	2.0	80		5.0	100	100	3.0m	4.0	.20	40			Y220	D		
40	BD239C#1	2.0		1J	2.0	1.0		5.0	100	100	1.0	200m	20	3.0M#			Y220b	B		
41	BD240Z	2.0		1J	3.0	1.0		5.0	45	45	4.0	.20	25				Y220	D		
42	BD240AZ	2.0		1J	3.0	1.0		5.0	452	452	3.0m	4.0	.20	25			Y220	D		
43	BD240BZ	2.0		1J	3.0	1.0		5.0	80	80	3.0m	4.0	.20	25			Y220	D		
44	BD240CZ	2.0		1J	3.0	1.0		5.0	100	100	3.0m	4.0	.20	25			Y220	D		
45	BD241#1	2.0		1J	5.0	1.0		45	5.0	45	2.0	500m	20	3.0M#			Y220b	B		
46	BD241A#1	2.0		1J	5.0	1.0		80	5.0	80	1.0	500m	20	3.0M#			Y220b	B		
47	BD241B#1	2.0		1J	5.0	1.0		80	5.0	80	2.0	500m	20	3.0M#			Y220b	B		
48	BD241C#1	2.0		1J	5.0	1.0		100	5.0	100	2.0	500m	20	3.0M#			Y220b	B		
49	BD243Z	85		1J	6.0	2.0		45	5.0	45	4.0	.30	30				Y220	D		
50	BD243AZ	85		1J	6.0	2.0		60	5.0	60	4.0	.30	30				Y220	D		
51	BD243A#1	2.0		1J	6.5	1.0		80	5.0	80	4.0	500m	20	3.0M#			Y220	D		
52	BD243BZ	85		1J	6.5	1.0		80	5.0	80	4.0	.30	30				Y220	D		
53	BD243B#1	2.0		1J	6.5	1.0		80	5.0	80	4.0	500m	20	3.0M#			Y220	D		
54	BD243CZ	85		1J	6.0	2.0		100	5.0	100	4.0	.30	30				Y220	D		
55	BD371A-6	1.2		1J	1.5			45	5.0	45	1.0	100m	40	100	50M#		T092			
56	BD371A-10	1.2		1J	1.5			45	5.0	45	1.0	100m	63	180	50M#		T092			
57	BD371A-18	1.2		1J	1.5			45	5.0	45	1.0	100m	100	250	50M#		T092			
58	BD371B-6	1.2		1J	1.5			60	5.0	60	1.0	100m	40	100	50M#		T092			
59	BD371B-10	1.2		1J	1.5			60	5.0	60	1.0	100m	63	180	50M#		T092			
60	BD371B-18	1.2		1J	1.5			60	5.0	60	1.0	100m	100	250	50M#		T092			
61	BD371C-6	1.2		1J	1.5			80	5.0	80	1.0	100m	40	100	50M#		T092			
62	BD371C-10	1.2		1J	1.5			80	5.0	80	1.0	100m	63	180	50M#		T092			
63	BD373A-6	1.2		1J	1.5			45	5.0	45	1.0	100m	40	100	50M#		T092			
64	BD373A-10	1.2		1J	1.5			45	5.0	45	1.0	100m	63	180	50M#		T092			
65	BD373A-18	1.2		1J	1.5			45	5.0	45	1.0	100m	100	250	50M#		T092			
66	BD373B-6	1.2		1J	1.5			60	5.0	60	1.0	100m	40	100	50M#		T092			
67	BD373B-10	1.2		1J	1.5			60	5.0	60	1.0	100m	63	180	50M#		T092			
68	BD373B-18	1.2		1J	1.5			60	5.0	60	1.0	100m	100	250	50M#		T092			
69	BD373C-6	1.2		1J	1.5			80	5.0	80	1.0	100m	40	100	50M#		T092			
70	BD373C-10	1.2		1J	1.5			80	5.0	80	1.0	100m	63	180	50M#		T092			
71	BD415	2.0		1J	1.0			80	5.0	80	1.0	50m	80	300	75M#		Y220b	B		
72	BD417	2.0		1J	1.0			80	5.0	80	1.0	50m	80	300	75M#		Y220b	B		
73	BD424	2.5		1J	800m			5.0	100	100	1.0	100m	40	75	130M#		Y202c	B		
74	BD429	10		1J	3.0			5.0	20	20	1.0	500m	85	375			Y202c	B		
75	BD533	50		1J	4.0	1.0		45	5.0	45	2.0	2.0	25	3.0M#			Y220a	B		
76	BD533Z	50		1J	4.0			45	5.0	45	2.0	2.0	25	3.0M#			Y220b	B		
77	BD533J	50		1J	4.0			45	5.0	45	2.0	2.0	30	8.0M#			Y220	B		
78	BD533K	50		1J	4.0			45	5.0	45	2.0	2.0	40	8.0M#			Y220	B		
79	BD533L	50		1J	4.0			45	5.0	45	2.0	2.0	60	150	8.0M#		Y220	B		
80	BD535	50		1J	4.0	1.0		60	5.0	60	2.0	2.0	25	3.0M#			Y220a	B		
81	BD535Z	50		1J	4.0			60	5.0	60	2.0	2.0	25	3.0M#			Y220b	B		
82	BD535J	50		1J	4.0			60	5.0	60	2.0	2.0	40	75	4.0M#		Y220	B		
83	BD535K	50		1J	4.0			60	5.0	60	2.0	2.0	40	100	4.0M#		Y220	B		
84	BD537	50		1J	4.0	1.0		80	5.0	80	2.0	2.0	25	3.0M#			Y220a	B		
85	BD537Z	50		1J	4.0			80	5.0	80	2.0	2.0	15	3.0M#			Y220b	B		
86	BD811	15		1J	4.0			22	5.0	22	1.0	500m	85	3.0M#			Y202c	B		
87	BD813	15		1J	4.0															

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ MAX Vcb @ 25°C (A)	BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 TO200 Ser.	L C O A D E	
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)		Vcb (V)	Ic (A)									
1#	BDT31B		40	\$J	3.0	1.0	80	5.0	80	300mΔ	4.0Φ	3.0	10	50			.30uΦ	PE	Y220a	D	
2#	BDT31C		40	\$J	3.0	1.0	100	5.0	100	300mΔ	4.0Φ	3.0	10	50			.30uΦ	PE	Y220a	D	
3#	BDT41		65	\$J	6.0	3.0	40	5.0	40	700m	4.0Φ	3.0	15	75	3.0M\$		.60uΦ	PE	Y220a	D	
4#	BDT41A		65	\$J	6.0	3.0	60	5.0	60	700m	4.0Φ	3.0	15	75	3.0M\$		.60uΦ	PE	Y220a	D	
5#	BDT41B		65	\$J	6.0	3.0	80	5.0	80	700m	4.0Φ	3.0	15	75	3.0M\$		.60uΦ	PE	Y220a	D	
6#	BDT41C		65	\$J	6.0	3.0	100	5.0	100	700m	4.0Φ	3.0	15	75	3.0M\$		.60uΦ	PE	Y220a	D	
7#	BDX23/40636		117	\$J	15	7.0	7.0		95 \$	500u*	4.0Φ	500m	120	250 *				H	T03	C	
8	BDX24Z		29	\$J	4.0				40			1.5	25					H	T066	C	
9#	BDX53E		6.0	\$J	8.0	.20	140	5.0	140	20m	5.0Φ	2.0	500			1.0M\$		H	Y220	D	
10#	BDX53F		6.0	\$J	8.0	.20	180	5.0	180	.20m	5.0Φ	2.0	500					H	Y220	D	
11#	BDX53S		1.0	\$J	6.0	.20	150	5.0	150	.20m	5.0Φ	2.0	500					H	T039	A	
12#	BDX61		150	\$J	6.0	.20	80		60		4.0Φ	500m	20	250				H	T03	C	
13#	BDY12		26 *	\$J	5.0	0.3	60	5.0	40	1.0u\$	1.0Φ	1.0	40	100	70MΔ\$		0.3uΦ	EPLA	F9a	C	
14#	BDY13		26 *	\$J	5.0	0.3	80	5.0	60	1.0u\$	1.0Φ	1.0	63	180	70MΔ\$		0.3uΦ	EPLA	F9a	C	
15#	BDY13-16		26 *	\$J	5.0	0.3	80	5.0	60	1.0u\$	1.0Φ	1.0	100	250	70MΔ\$		0.3uΦ	EPLA	F9a	C	
16#	BDY57Z		175	\$J	25	6.0	120	10	80	1.0m	4.0Φ	10	20	60	7.0M\$		1.0uΦ	PL	T03	C	
17#	BDY58Z		175	\$J	25	6.0	160	10	125	1.0m	4.0Φ	10	20	60	7.0M\$		1.0uΦ	PL	T03	C	
18	BDY58R†		175	\$J	25	8.0			8\$	1.0m	4.0Φ	10	20	#	60 #	48M\$		3.0u*Z	PL	Y204a	C
19#	BDY90Z†		60	\$J	10	2.0	120	6.0	100	1.0m	5.0Φ	5.0	30	120	70M\$		.35uΦ	PE	T03	C	
20#	BF297W2		1.2		100mm		160	5.0	160		10Φ	30m	30	150	95M\$					T092	C
21#	BF297W		1.2		100mm		160	5.0	160		10Φ	30m	30	150	95M\$					T092	C
22#	BF298W2		1.2		100mm		250	5.0	250		10Φ	30m	30	150	95M\$					T092	C
23#	BF298W		1.2		100mm		250	5.0	250		10Φ	30m	30	150	95M\$					T092	C
24#	BF299W2		1.2		100mm		300	5.0	300		10Φ	30m	30	150	95M\$					T092	C
25#	BF299W		1.2		100mm		300	5.0	300		10Φ	30m	30	150	95M\$					T092	C
26#	BF391W1		1.2		200mm		200	6.0	200		10Φ	10m	40		95M\$					T092	C
27#	BF391W2		1.2		200mm		200	6.0	200		10Φ	10m	40		95M\$					T092	C
28#	BF392W1		1.2		200mm		250	8.0	250		10Φ	10m	40		50MΔ\$					T092	C
29#	BF392W2		1.2		200mm		250	8.0	250		10Φ	10m	40		50MΔ\$					T092	C
30#	BF393W1		1.2		200mm		300	8.0	300		10Φ	10m	40		50MΔ\$					T092	C
31#	BF393W2		1.2		200mm		300	8.0	300		10Φ	10m	40		50MΔ\$					T092	C
32#	BF419Δ1		60	\$J	100mm		300	5.0	250	50n	10Φ	20m	45				5.0u\$	†	T0126	B	
33#	BF422W3		1.0		100mm		250	5.0	250		20Φ	25m	50		60MΔ\$					T092	C
34#	BF422W		1.0		100mm		250	5.0	250		20Φ	25m	50		60MΔ\$					T092	C
35#	BF460		2.0	\$J	500m	250m	250	6.0	250	0.2u	10Φ	30m	40	180	200M\$Z			PE	T0202	A	
36#	BF461		2.0	\$J	500m	250m	300	6.0	300	0.2u	10Φ	30m	40	180	200M\$Z			PE	T0202	A	
37#	BF462		2.0	\$J	500m	250m	350	6.0	350	0.2u	10Φ	30m	40	180	200M\$Z			PE	T0202	A	
38	BF622		1.0	\$J	20m		250	5.0	250	100n	20Φ	25m	51		60M\$			PE	Z166	Φ	
39#	BF819		6.0	\$J	100mm	50m	300	5.0	250	50n	10Φ	20m		45	60M\$			†	Y202a	Φ	
40#	BF819A		6.0	\$J	100mm		300	5.0	250	50n	10Φ	20m	45	Φ			500n\$	†	Y202	A	
41#	BFN16		2.0	\$J	200mm		250		250		10Φ	10m	40		60MΔ\$				X166	B	
42#	BFN18		2.0	\$J	200mm		300		300		10Φ	10m	40		60MΔ\$				X166	B	
43#	BFP11		1.2	\$J	500m		150	6.0	100	5.0u	1.0Φ	20m	25		60M\$			PL	T092	B	
44#	BFP12		1.2	\$J	500m		250	6.0	200	5.0u	1.0Φ	20m	25		60M\$			PL	T092	B	
45#	BFP13		1.2	\$J	500m		350	6.0	300	5.0u	1.0Φ	20m	25		60M\$			PL	T092	B	
46#	BFP14		1.2	\$J	500m		450	6.0	400	10u	1.0Φ	20m	25		60M\$			PL	T092	B	
47#	BFR22Z		5.0		1.0				65		10Φ	150m	40	120						T039	A
48#	BFT47		5.0		100mm				160		10Φ	30m	25		50MΔ\$					T039	A
49#	BFT48		5.0		100mm				250		10Φ	30m	25		50MΔ\$					T039	A
50#	BFT49		5.0		100mm				300		10Φ	30m	25		50MΔ\$					T039	A
51#	BFT51		2.8		400m		30	3.0			75m	50			3.0G\$					T039	C
52#	BFT72		1.2						160		10Φ	30m	50		60M\$					T0126	D
53#	BFT73		1.2						250		10Φ	30m	25		60M\$					T0126	D
54#	BFT74		1.2						300		10Φ	30m	25		60M\$					T0126	D
55#	BFY46		2.6		500m				30		10Φ	150m	100	300						T039	A
56#	BLW75		60	\$J	12 #		60	4.0	32		25Φ	2.0	20	45	Φ	800M\$		PE	T72u	R	
57#	BLW96		340	\$J	12 #			4.0	55	10m\$	5.0Φ	7.0	15	#	50	235M\$		PE	W52u	R	
58#	BLX37		4.0	\$J	400m		30	3.0	16		5.0Φ	75m	50		3.0G\$Δ					T137	C
59#	BLX38		7.0	\$J	800m		30	3.0	16		5.0Φ	150m	50		3.0G\$Δ					T137	C
60	BLY11St		4.0	\$J	1.2		55	6.0	30	1.0u	1.0Φ	100m	50	#	150	240 \$			45nZ	T03	D
61	BP8-12		25	\$J	2.5			4.0	36						175M#					Y220	C
62	BP15-12		30	\$J	4.0			4.0	36						175M#					Y220	C
63	BP30-12		65	\$J	8.0			4.0	36						175M#					Y220	C
64	BP30-12L		65	\$J	8.0			4.0	36						175M#					Y220	C
65	BRT60		250	\$	60		85	7.0	80	1.0m	4.0Φ	20	25	60	100MΔ\$			DM	T03	C	
66#	BU100A		62 \$	\$	10		150	5.0	150	1.0m	5.0Φ	2.0	40	90	Φ	1.0M\$			500nΦ	PEΔ	T03
67	BU104D		85	\$	7.0	1.0			400	#		7.0	7		10M\$				0.8 #	D	T03
68	BU104DP*		50 Δ	\$	7.0	1.0			400	#		7.0	7		10M\$				0.8 #	D	u220b
69	BU104P*		50 Δ	\$	7.0	1.0			400	#		5.0	10		10M\$				1.0 #	D	u220b
70	BU109D		85 Δ	\$	7.0	1.0			330	#		7.0	7		10M\$				0.8 #	D	T03
71#	BU109DP		50 Δ	\$	7.0	1.0			330	#		7.0	7.0		10M\$				0.8u#	D	Y220b
72	BU109P*		50 Δ	\$	7.0	1.0			330	#		5.0	15		10M\$				1.0 #	D	u220b
73#	BU127Z		63	\$J	10		200	5.0	120	1.0m	5.0Φ	1.0	40	120	80M\$			PE	T03	C	
74#	BU128		62 \$	\$	10		300	5.0	200	1.0m	5.0Φ	1.0	40	120	Φ	80M\$			PEΔ	T03	C
75	BU142†		70		12	1.8			900	#					1.0u#					T03	C
76	BU143†		70		12	1.8			1.0k	#					1.0u#					T03	C
77#	BU208B		80	\$J	5.0	4.0		5.0	700	#	1.0m\$	5.0Φ	4.0	2.5		7.0M\$			700n#	D	T03
78#	BU208Dt		80	\$J	5.0	4.0		5.0	700	#	1.0m\$	5.0Φ	4.5	2.5		6.5u\$				D	T03
79#	BU406Z†		60	\$J	7.0	4.0	400	5.0	140	#	1.0m\$	10Φ	4.0	12 #		6.0M\$				Y220	D
80#	BU407Z†		60	\$J	7.0	4.0	330	5.0	140	#	1.0m\$	10Φ	4.0	12 #		6.0M\$				Y220	D
81#	BU508A		125	\$S	8.0	4.0			700	#	1.0m\$										

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W/C)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. @ 25°C		BIAS		hFE		fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	# L C O D E	
						Ic (A)	Ib (A)	BVcbo (V)	BEVbo (V)	BVceo (V)	Icbo @ 25°C (A)	MAX Vcb (A)	Vcb (V)	Ic (A)	MIN	MAX							
1	BUV98F		150		#J	30	8.0		7.0	400	40m#	20 ∅	5.0		5.0M\$	1.0u∅	N						
2	BUV98AT		150		#J	30	8.0		7.0	450	40m#	16 ∅	5.0		5.0M\$	1.0u∅	N						
3#	BUW16		100					450	7.0		1.0m	5.0	4.0										
4#	BUW17		100					450	7.0		1.0m	5.0	4.0										
5#	BUW18		200					450	7.0		1.0m	5.0	4.0										
6#	BUW19		200					450	7.0		1.0m	5.0	4.0										
7#	BUW48		150							60 #		40	10		8.0M\$	0.5u#			B46				
8#	BUW49		150							80 #		30	10		8.0M\$	0.4u#			B46				
9#	BUW70		80		#J	10	3	150	7.0	100	100u	5.0	4.0	40									
10#	BUW71		100		#J	10	1.5	450	7.0	400	100u	5.0	2.0	15									
11#	BUW72		100		#J	10	3	450	7.0	400	100u	5.0	4.0	15									
12#	BUW85†		50		#J	2.0	.75			450 #	200u\$	5.0∅	1.0	50		20M\$			Δ	B13	D∅		
13#	BUX11N		150		#J	20	5.0			400 #	1.5mΔ	2∅	8	20	60				PE		T03	C∅	
14	BUX37†		35 #		#J	15				400 #		4.0∅	10	15	45	50MΔ\$			DE		T03	C∅	
15	BUX40A		120							125 #		4.0∅	8	15	45				DE		Y204a		
16#	BUX41N		120		#J	18	3.8				1.0mΔ	4∅	8	15	45				PE		T03	C∅	
17#	BUX46†		100		#J	5.0	2.0			400 #	1.0m*								DPS		T03	C∅	
18#	BUX46AT		100		#J	5.0	2.0			450 #	1.0m*								DPS		T03	C∅	
19#	BUX47†		125		#J	5.0	2.0			400 #	1.0m*	6.0 ∅	5.0						DPS		T03	C∅	
20#	BUX47A†		125		#J	5.0	2.0			450 #	1.0m*								DPS		T03	C∅	
21#	BUX48A†		175		#J	15	6.0			450 #	1.0m*								DPS		T03	C∅	
22#	BUX89		125							90 #		20	8.0		8.0M\$	0.3u#					B46		
23#	BUX70		125							125 #		15	8.0		8.0M\$	0.4u#					B46		
24#	BUX98 #	#	250		#J	30	6.0			400 #	1.0m*								Δ		T03	C	
25#	BUX98A #	#	250		#J	30	6.0			450 #	1.0m*								Δ		T03	C	
26	BUY10†		4.0		#J	1.2		55	6.0	30	1.0u	5.0∅	1.0	30 #	60 ∅	240 \$		45n∅			T03	C∅	
27#	BUY24		15		#J	5.0	2.0	120	6.0	60	10u	2.0	2.0	40	75 ∅	100M\$		350n∅	PE		T03	D∅	
28	BUY29		125							200 #	0.1m∅	5.0∅	3.0	15	20M\$	0.5u			DE		T03	C∅	
29	BUY30		125							250 #	0.1m∅	5.0∅	3.0	15	20M\$	0.5u			DE		T03	C∅	
30#	BUY50†		95 ∅		#J	15	5.0	400	7.0	250 #	1.0m\$	2.0∅	2.0	20	13M\$	1.0u#			DE		Y204a	C∅	
31	BUY55		90 ∅		#J	10				125	1.5∅	7.0	8.0 ∅		50MΔ	2.14m	2.0u∅				T03	C∅	
32	BUY56		90 ∅		#J	10				180	1.5∅	7.0	8.0 ∅		50MΔ	2.14m	2.0u∅				T03	C∅	
33	BUY57		117 ∅		#J	15				125	1.5∅	10	12 ∅		20MΔ	1.30m	1.8u∅				T03	C∅	
34	BUY58		117 ∅		#J	15				180	1.5∅	10	12 ∅		20MΔ	1.30m	1.8u∅				T03	C∅	
35	BUY72		90 ∅		#J	15				200	1.5∅	7.0	8.0 ∅		50MΔ	2.14m	2.0u∅				T03	C∅	
36	BUY73		117 ∅		#J	15				200	1.5∅	10	10 ∅		20MΔ	1.40m	1.0u∅				T03	C∅	
37	BUY77		90 ∅		#J	8.0				250	1.5∅	5.0	5.0 ∅		15MΔ	280m	1.0u∅				T03	C∅	
38	BUY78		90 ∅		#J	8.0				300	1.5∅	5.0	5.0 ∅		15MΔ	280m	1.0u∅				T03	C∅	
39	BUY79		90 ∅		#J	8.0				350	1.5∅	5.0	4.0 ∅		15MΔ	130m	1.0u∅				T03	C∅	
40#	BUY89		80		#J	8.0	4.0			800 #	2.0m\$	5.0∅	4.5	2.5	7.0M\$	3.5u\$			DPS		T03	C∅	
41	CD4024		90			12				36 ∅					175M #						W52c	R	
42	CD4262		270			25		60 #	4.0	32 #	50m	5.0∅	5.0	10	108m#						W171		
43	CX701		25			2.0				120	5.0∅	500m	30	120								Y220b	A
44	CX701A		25			2.0				150	5.0∅	500m	30	120								Y220b	A
45	CX702		40			5.0				80	5.0∅	4.0m	15	70								Y220b	A
46	CX702A		40			5.0				100	5.0∅	4.0m	15	70								Y220b	A
47	CX704		30			4.0				50	2.0∅	1.0m	40	240	3.0M\$Δ							Y220b	A
48	ESM738†		350			30				400 #		30	8									T083	
49	ESM837†		100			20				400 #		10	60									T03	
50	GSDS50018†		100		#J	50	20	180	7.0	180	50uΔ	4.0∅	50	8.0 #								T03	C
51	GSRU15030†		175		#J	20	10	400	8.0	300	100u	5.0∅	15	10 #	15M\$Δ	.20u			DE		Y204a	C	
52	GSRU15035†		175		#J	20	10	450	8.0	350	100u	5.0∅	15	10 #	15M\$Δ	.40u					Y204a	C	
53	GSRU15040†		175		#J	20	10	500	8.0	400	100u	5.0∅	15	10 #	15M\$Δ	.40u					Y204a	C	
54	GSRU20030†		200		#J	25	10	400	8.0	300	100u	5.0∅	20	8.0 #	20M\$Δ	.50u					Y204a	C	
55	GSRU20035†		200		#J	25	10	450	8.0	350	100u	5.0∅	20	8.0 #	20M\$Δ	.50u					Y204a	C	
56	GSRU20040†		200		#J	25	10	500	8.0	400	100u	5.0∅	20	8.0 #	20M\$Δ	.50u					Y204a	C	
57#	GSTU8030†		175		#J	12	4	400	8	300 #	100u	5∅	8	10 #	25M\$Δ	250n∅					Y204a	C∅	
58	GSTU10030†		175		#J	15	5.0	400	8.0	300	100u	5.0∅	10	8.0 #	25M\$Δ	.25u					Y204a	C	
59	GSTU10035†		175		#J	15	5.0	450	8.0	350	100u	5.0∅	10	8.0 #	25M\$Δ	.25u					Y204a	C	
60	GSTU10040†		175		#J	15	5.0	500	8.0	400	100u	5.0∅	10	8.0 #	25M\$Δ	.25u					Y204a	C	
61#	GSTU15018†		140		#J	20	5	250	8	180 #	100u	5∅	15	10 #	25M\$Δ	600n∅					Y204a	C∅	
62#	GSTU15020†		140		#J	20	5	300	8	200 #	100u	5∅	15	10 #	25M\$Δ	600n∅					Y204a	C∅	
63#	GSTU30018†		175		#J	30	10	250	8	180 #	500u	5∅	30	10 #	20M\$Δ	500n∅					Y204a	C∅	
64#	GSTU30020†		175		#J	30	10	300	8	200 #	500u	5∅	30	10 #	20M\$Δ	500n∅					Y204a	C∅	
65	HEP3002-RT		6.0 %		#J	5.0 #		80	5.0	80	100u	5.0∅	200m	80	30M\$							T039	A
66#	IR801		100		#J	3.0 #	0.5			800 #	0.5m	5.0∅	200m	20	1.5M\$Δ							T03	A
67	IR13086†		80		#J	8.0	4.0			300 #	1.0m∅	5.0∅	2.0	8.0	4.0M\$Δ	500n					Y220b	D	
68	JE8550		1.0		#J	1.5		40		25 #	1.0∅	100m	85	300	2.00M\$							Y220b	D
69#	KPD140A		50		#J	4.0	2.0			7\$	140 ∅	4.0∅	0.5	20	150							T03	C
70#	KT704A		15 ∅		#J	2.5				500 #	5.0m\$*	15	1.0mΔ	10	100	3.0M\$							
71#	KT704B		15 ∅		#J	2.5				400 #	5.0m\$*	15	1.0mΔ	10	100	3.0M\$							
72#	KT704V		15 ∅		#J	2.5				400 #	5.0m\$*	15	1.0mΔ	10	100	3.0M\$							
73#	KT807AM		10		#J	500m	200m			100 #	5m\$*	5.0	0.5	15	45								
74#	KT807BM		10		#J	500m	200m			100 #	5m\$*	5.0	0.5	30	100								
75#	KT808AM		50 #		#J	10	4			120 #		3.0	6.0	10	50							T03	
76#	KT808BM		50 #		#J	10	4			100 #		3.0	6.0	10	50							T03	
77#	KT808GM		50 #		#J	10	4			70 #		3	6	10	50							T03	
78#	KT808VM		50 #		#J	10	4			80 #		3.0	6.0	10	50							T03	
79#	KT821A-1		20		#J	500m	300m			50 #	0.3m\$	2.0	0.5 Δ	35 ∅									

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX P <sub>c</sub> FREE AIR @ 25°C (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #/s/a TO200 Ser.	L C O A D E		
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ce0</sub> (V)	I <sub>cb0</sub> @ MAX V <sub>cb0</sub> (A)	V <sub>cb</sub> (V)									I <sub>c</sub> (A)	
1#	MH8100		12		3.0				30	2.00	500m	40	240	30MΔ			Y220b	B			
2#	MH8106		10		1.0				60	2.00	200m	40	240	50MΔ			Y220b	B			
3#	MH8108		10		1.0				80	2.00	200m	40	240	50MΔ			Y220b	B			
4#	MH8500		40		4.0				60	2.00	1.0	40	240	5.0MΔ			Y220b	B			
5#	MH8700		30		4.0				50	2.00	1.0	40	240	5.0MΔ			Y220b	B			
6	MHT7908		43	\$J	10	5.0	250	5.0	250	5.00	5.0	15					T066				
7	MHT7909		43	\$J	10	5.0	300	5.0	300	5.00	5.0	15					T066				
8	MHT7910		43	\$J	10	5.0	150	5.0	150	5.00	5.0	10					T066				
9	NTC18601		15	\$J	2.0		7.0	100	10u#	5.00	2.0	20			400n	E	T039	A0			
10	NTC18611		15	\$J	2.0		7.0	250	10u#	5.00	1.0	15			900n	E	T039	A0			
11	NTC18621		15	\$J	2.0		7.0	400	10u#	5.00	500m	10			900n	D	T039	A0			
12	NTC18631		50	\$J	7.0		7.0	100	100u#	5.00	7.0	15			700n	EME	T03	C0			
13	NTC18641		50	\$J	7.0		7.0	250	100u#	5.00	5.0	15			900n	EME	T03	C0			
14	NTC18651		50	\$J	7.0		7.0	400	100u#	5.00	5.0	10			900n	ME	T03	C0			
15	NTC18661		100	\$J	7.0		7.0	100	100u#	5.00	7.0	15			900n	EME	T03	C0			
16	NTC18671		100	\$J	7.0		7.0	250	100u#	5.00	5.0	15			900n	EME	T03	C0			
17	NTC18681		100	\$J	7.0		7.0	400	100u#	5.00	5.0	10			900n	ME	T03	C0			
18	NTC18691		150	\$J	15		7.0	100	100u#	5.00	15	20			900n	EME	T03	C0			
19	NTC18701		150	\$J	15		7.0	250	100u#	5.00	10	15			900n	EME	T03	C0			
20	NTC1871A†		150	\$J	15		7.0	400	100u#	5.00	10	10			900n	ME	T03	C0			
21	NTC23311		40	\$J	2.0		7.0	100	100u#	5.00	2.0	20			500n	E	Y220				
22	NTC23331		40	\$J	2.0		7.0	400	100u#	5.00	500m	10			1.0u	D	Y220				
23	NTC23341		65	\$J	7.0		7.0	100	100u#	5.00	5.0	20			800n	E	Y220				
24	NTC23351		65	\$J	7.0		7.0	400	100u#	5.00	3.0	10			1.0u	D	Y220				
25	PTC110		12		3.0		7.0	7.0	7.0	1.0	220m	40	120	50MΔ			B17a	D0			
26	PTC116		125		10		7.0	4.0	60	1.5m	1.0	50	60	2.0MΔ			T03	C0			
27	PTC118		125		10		320	4.0	300	5.0m	2.00	500m	20	65	1.0MΔ		T03	C0			
28	PTC119		115		15		80	5.0	60	1.00	4.0	20	40				T03	C0			
29	PTC129A		100		5.0		700	3.0	600	500u#	1.0	90		1.0M#	1.0u#		T03	C0			
30	PTC140		115		15		105	7.5	65	500u#	100	1.0		1.0M#			T03	C0			
31	PTC143		6.0		3.0		65	8.0	45	500u#	100	500m	60	8.0M\$			T05	A0			
32	PTC144		5.0		1.0		130	8.0	100	100n	100	250m	70	150M\$			T05	A0			
33	PTC146		65		7.0		1.5k	5.0	1.5k	15u	1000	3.0	4.0	10M\$	1.5u#		T03	C0			
34	PTC148		40		5.0		160	6.0	120	500u#	100	80m	60	20M#			T066				
35	PTC154		50		7.0		90	5.0	70	120u	1.00	200m	70	2.0M#			B17a	D0			
36	PTC1931		7.0		1.5		50	5.0	40	1.0u	4.00	50m	70	70M\$	1.0	200n	B15a	P			
37	R4921		30		3.0				40	1.00	500m	20	100	3.0MΔ			Y220b	A			
38	R4922		30		3.0				60	1.00	500m	20	100	3.0MΔ			Y220b	A			
39	R4923		30		3.0				80	1.00	500m	20	100	3.0MΔ			Y220b	A			
40#	RT6105		50	\$J			60	4.0	30	10uΔ	1.00	1.0	15	150	900M\$		T132				
41	S15-12		35		4.0			4.0	36					30M#			W159				
42	S15-28		35		2.0			4.0	33		5.00	1.0	10	30M#			W159				
43	S25-12		80	\$J	8.0			4.0	18		5.00	1.0	10	30M#			W159				
44	S30-28		65		4.0			4.0	33		5.00	1.0	10	30M#			W159				
45	SD1144-1						36	3.5	14	1.0m	5.00	100m	20	400MΔ			T039	A			
46	SD1272		65	J	4.0		36	4.0	18	5.0m	5.00	5.0	20			EPL	T72n				
47	SD1430		87	J	7.0		36	4.0	16	5.0m	5.00	1.0	5.0			EPL	T72n				
48	SDT4011		100	\$J	2.0	1.0	400	5.0	400	.25mΔ	5.00	.50	20	#	100	2.0M\$	80u	T03	A0		
49	SDT701		116	\$J	2.0	1.0		5.0	800		5.00	150m	20		1.5M\$		PL	T03	A		
50	SDT702		116	\$J	3.0	1.0		5.0	750		5.00	2.0	2.5		1.5M\$		PL	T03	A		
51	SDT704		116	\$J	3.0	1.0		5.0	800		5.00	2.0	2.5		1.5M\$		PL	T03	A		
52	SDT708		116	\$J	3.0	2.0		5.0	900		250u				1.5M\$		PL	T03	A		
53	SDT710		116	\$J	3.0	1.0		5.0	900		250uΔ				1.5M\$		PL	T03	A		
54	SDT712		116	\$J	3.0	1.0		5.0	900		500u				1.5M\$		PL	T03	A		
55	SDT714		116	\$J	3.0	1.0		5.0	900		500u				1.5M\$		PL	T03	A		
56	SDT720		100	\$J	5.0	2.0		5.0	750		250u				1.5M\$		PL	T03	A		
57	SDT723		100	\$J	5.0	2.0		5.0	800		500u				1.5M\$		PL	T03	A		
58	SDT801		100	\$J	2.0	500m		5.0	800		500u				1.5M\$		PL	T03	A		
59	SDT802		100	\$J	5.0	2.0		5.0	750		500u				1.5M\$		PL	T03	A		
60	SDT804		100	\$J	5.0	2.0		5.0	800		500u				1.5M\$		PL	T03	A		
61	SDT812		100	\$J	5.0	2.0		5.0	900		500u				1.5M\$		PL	T03	A		
62	SDT814		100	\$J	5.0	2.0		5.0	900		500u				1.5M\$		PL	T03	A		
63	SDT3055		117						60						1.5M\$		PL	T03	A		
64	SDT4813		9.0		5.0				60		1.0	20	60	20MΔ	275m		DM	T03	C0		
65	SDT4814		9.0		5.0				60		1.0	40	120	20MΔ	300m			T05	A0		
66	SDT5635		44		5.0				80		1.0	30	90	30MΔ	500m			T0111	A0		
67	SDT5636		44		5.0				80		1.0	50	150	30MΔ	500m			T0111	A0		
68	SDT6383		52		5.0				80		1.0	50	150	30MΔ	500m			T0111	A0		
69	SDT6417		52		5.0				80		1.0	20	60	30MΔ	250m			T0111	A0		
70	SDT6418		52		5.0				80		1.0	40	120	30MΔ	250m			T0111	A		
71	SDT6419		52		5.0				80		1.0	20	60	30MΔ	250m			T0111	A		
72	SDT6420		52		5.0				80		1.0	40	120	30MΔ	250m			T0111	A		
73	SDT7471		17		10				60		5.0	40	120	15MΔ	120m			T05	A0		
74	SDT7472		17		10				80		5.0	40	120	15MΔ	120m			T05	A0		
75	SDT7473		17		10				100		5.0	40	120	15MΔ	120m			T05	A0		
76	SDT7474		17		10				120		5.0	40	120	15MΔ	120m			T05	A0		
77	SDT7475		17		10				60		5.0	20		15MΔ	120m			T05	A0		
78	SDT7476		17		10				80		5.0	20		15MΔ	120m			T05	A0		
79	SDT7477		17		10				100		5.0	20		15MΔ	120m			T05	A0		
80	SDT7478		17		10				120		5.0	20		15MΔ	120m			T05	A0		
81	SDT7530		140		20				90		15	20		20MΔ	83m			T03	C0		
82	SDT7531		140		20				75		10	20		20MΔ	100m			T03	C0		
83	SDT7618		120		10				60		10	15	60	15MΔ	140m			T03	C0		
84	SDT7619		120		8.0				140		8.0	15	60	15MΔ	175m			T03	C0		
85	SDT14411†		220	\$J	15	4.0	300	10	200	100u	5.00	10	15	#	60	#	10MΔ	400n	PL	T063	A0
86	SDT14412†		220	\$J	15	4.0	325	10	225	100u	5.00	10	15	#	60	#	10MΔ	400n	PL	T063	A0
87	SDT14413†		220	\$J	15	4.0	350	10	250	100u	5.00	10	15	#	60	#	10MΔ	400n	PL	T063	A0
88	SDT14414†		220	\$J	15	4.0	375	10	275	500u	5.00	10	15	#	60	#	10MΔ	400n	PL	T063	



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ MAX @ 25°C (A)	hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O A D E
					Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)		Vcb (V)	Ic (A)								
1	SK3049-RT	10	10	1.5	80	2.5	30	1.2	300m	80	200ms			200ms			PL	T05	A	
2	SK3054-RT	50	50	7.0	90	5.0	140	4.0	1.0	70	2.0ms			1.0ms			H	Y220b	C	
3	SK3079-RT	117	117	15	160	7.0	140	4.0	500m	80	1.0ms			1.0ms			H	T03	C	
4	SK3103-RT	20	20	1.0	450	6.0	350	1.0	50m	75	30ms			30ms			H	B24	A	
5	SK3104-RT	20	20	1.0	300	6.0	250	1.0	50m	75	30ms			30ms			H	B24	A	
6	SK3111-RT	22	22	1.0	1.2k	6.0	500	2.0	1.5	75	10ms			10ms			H	T03	C	
7	SK3131-RT	20	20	2.0	200	6.0	140	1.0	200m	75	1.0ms			1.0ms			H	F6n	C	
8	SK3178-RT	25	25	2.0	100	7.0	75	4.0	300m	100	145ms			145ms			H	B24	A	
9	SK3188-RT	30	30	2.0	100	7.0	75	2.0	300m	100	2.0ms			2.0ms			H	S23	D	
10	SK3217-RT	150	150	7.0	275	5.0	250	5.0	2.0	30	6.0ms			6.0ms			H	B42a	D	
11	SK3219-RT	40	40	2.0	400	5.0	300	3.0	300m	80	2.0ms			2.0ms			H	B51	D	
12	SK3222-RT	65	65	1.5	400	5.0	300	3.0	300m	80	4.0ms			4.0ms			H	B51	D	
13	SK3258-RT	10	10	2.0	40	5.0	30	5.0	3.0	125k	60ms			60ms			H	B50	D	
14	SK3256-RT	40	40	2.0	40	5.0	30	4.0	1.0	80	7.0ms			7.0ms			H	B51	D	
15	SK3268-RT	150	150	3.0	160	7.0	140	4.0	1.0	70	1.5ms			1.5ms			H	F6p	C	
16	SK3283-RT	50	50	1.0	60	7.0	45	1.0	150m	120	140ms			140ms			H	R216k	A	
17	SK3264-RT	20	20	500m	60	7.0	45	1.0	150m	120	100ms			100ms			H	R216k	A	
18	SK3265-RT	50	50	700m	60	7.0	40	1.0	150m	125	150ms			150ms			H	R216k	A	
19	SK3268-RT	10	10	2.0	75	5.0	50	4.0	400m	100	75ms			75ms			H	R216k	A	
20	SK3268-RT	100	100	5.0	300	6.0	225	1.0	100	30	15ms			15ms			H	F6p	C	
21	SK3269-RT	175	175	10	300	6.0	225	3.0	1.0	80	8.0ms			8.0ms			H	F6p	C	
22	SK3270-RT	125	125	1.5	50	6.0	40	4.0	4.0	100	1.0ms			1.0ms			H	F6p	C	
23	SK3271-RT	35	35	2.0	375	6.0	250	1.0	5.0	100	15ms			15ms			H	F6n	C	
24	SK3272-RT	40	40	2.0	375	6.0	250	4.0	2.0	80	12ms			12ms			H	F6n	C	
25	SK3273-RT	38	38	4.0	80	5.0	40	4.0	500m	80	1.5ms			1.5ms			H	B51	D	
26	SK3357-RT	10	10	3.0	40	5.0	20	5.0	1.0	120	150ms			150ms			H	B42a	D	
27	SK3438-RT	125	125	6.0	500	6.0	250	5.0	3.0	35	5.0ms			5.0ms			H	F6p	C	
28	SK3479-RT	15	15	500m	80	5.0	80	1.0	100m	50	100ms			100ms			H	R196j	A	
29	SK3510-RT	115	115	1.5	100	5.0	80	4.0	6.0	30	1.5ms			1.5ms			H	T03	C	
30	SK3511-RT	150	150	3.0	90	5.0	80	4.0	8.0	40	1.5ms			1.5ms			H	T03	C	
31	SK3512-RT	10	10	2.0	100	5.0	90	1.0	400m	90	70ms			70ms			H	T05	A	
32	SK3529-RT	50	50	3.0	75	5.0	50	1.0	500m	50	350ms			350ms			H	R216k	A	
33	SK3530-RT	25	25	3.0	100	5.0	55	4.0	500m	30	1.0ms			1.0ms			H	R177f	A	
34	SK3534-RT	75	75	1.0	80	6.0	70	4.0	1.0	55	2.0ms			2.0ms			H	B51	D	
35	SK3536-RT	4.4	4.4	3.0	160	6.0	140	4.0	150m	100	1.0ms			1.0ms			H	R216m	A	
36	SK3537-RT	4.0	4.0	1.0	200	3.0	200	1.0	50m	75	10ms			10ms			H	R216m	A	
37	SK3538-RT	40	40	4.0	180	7.0	140	4.0	500m	30	1.0ms			1.0ms			H	F6n	C	
38	SK3560-RT	120	120	7.0	350	6.0	300	3.0	1.0	35	6.0ms			6.0ms			H	F6p	C	
39	SK3561-RT	140	140	20	150	7.0	90	5.0	2.0	75	60ms			60ms			H	F6p	C	
40	SK3562-RT	35	35	7.0	120	7.0	75	5.0	4.0	80	40ms			40ms			H	F6p	C	
41	SK3563-RT	125	125	1.5	90	5.0	80	4.0	1.0	300	40ms			40ms			H	F6p	C	
42	SK3619-RT	140	140	3.0	150	7.0	120	3.0	1.0	80	60ms			60ms			H	F6p	C	
43	SK3620-RT	75	75	1.5	90	5.0	80	4.0	4.0	100	60ms			60ms			H	B51	D	
44	SK3621-RT	140	140	4.0	150	6.5	120	2.0	3.0	60	60ms			60ms			H	F6p	C	
45	SK3622-RT	35	35	4.0	100	6.0	50	2.0	2.0	40	60ms			60ms			H	F6n	C	
46	SML2160	150	150	25	200	6.0	180	1.0	500	100	320			5.0ms			Δ	T03	A	
47	SML2164	125	125	15	800	7.0	400	5.0	5.0	5.0	50			20ms			P	T03	C	
48	SML2188	40	40	10	300	6.0	150	1.0	50	40	250			100ms			P	T066	C	
49	SML2189	10	10	7.0	300	6.0	150	1.0	50	40	250			100ms			P	T039	A	
50	SML2170	10	10	3.0	300	6.0	200	1.0	50	30	150			70ms			P	T039	A	
51	SML2171	10	10	1.0	100	6.0	80	1.0	100	40	100			100ms			P	T039	C	
52	SML2172	125	125	20	200	5.0	180	1.0	1.0	30	200			10ms			†	F57	D	
53	SML2176	90	90	15	100	7.0	100	500u	4.0	50	250			5.0ms			E	Y220a	D	
54	SML2178	30	30	4.0	200	5.0	200	1.0	500m	35	100ms			100ms			E	Y220a	D	
55	SML2179	25	25	3.0	250	5.0	200	1.0	5.0	30	200			50ms			Δ	T0126	B	
56	SML2180	20	20	8.0	20	5.0	15	1.0	1.0	50	150ms			150ms			Δ	T0126	B	
57	SML4005†	250	250	40	350	7.0	250	1.0	100u	20	10ms			10ms			PE	T03	C	
58	SP4007†	350	350	70	200	10	125	4.0	5.0	20	100			1.2u			PE	T03	C	
59	SP44Q1†	1.6	1.6	4.0	125	7.0	200	1.0	10u	20	50ms			600n			PL	Y220b	A	
60	SP44Q3†	1.6	1.6	4.0	175	7.0	250	1.0	10u	20	50ms			600n			PL	Y220b	A	
61	SP6306						250	2.5m	5.0	15	75			600n			PL	Y220	A	
62	SP6307						300	2.5m	5.0	15	75			600n			PL	Y220	A	
63	SP6308						350	2.5m	5.0	12	60			600n			PL	Y220	A	
64	SP13006	80	80	8.0	90	9.0	300	5.0	2.0	8.0	40			4.0ms			PE	Y220	A	
65	SP13007	80	80	8.0	90	9.0	400	5.0	2.0	8.0	40			4.0ms			PE	Y220	A	
66	SPC431M	125	125	5.0	400	5.0	325	2.5	2.5	15	35			240m			PE	Y220	A	
67	SS2000	65	65		80	8.0	30		10	40	120			75m			PE			
68	SS2001	65	65		80	8.0	50		10	40	120			75m			PE			
69	SS2002	65	65		100	8.0	70		10	40	120			75m			PE			
70	SS2003	65	65		100	8.0	70		10	40	120			75m			PE			
71	SS2004	65	65		60	8.0	30		10	20	60			100m			PE			
72	SS2005	65	65		80	8.0	50		10	20	60			100m			PE			
73	SS2006	65	65		100	8.0	70		10	20	60			100m			PE			
74	SS2007	65	65		100	8.0	90		10	20	60			100m			PE			
75	SS2008	65	65		80	8.0	30		10	100	300			75m			PE			
76	SS2009	65	65		80	8.0	50		10	100	300			75m			PE			
77	SS2010	65	65		100	8.0	70		10	100	300			75m			PE			
78	SS2011	65	65		100	8.0	90		10	100	300			75m			PE			
79	SS2012	65	65		80	8.0	30		10	20	80			70m			PE			
80	SS2013	65	65		80	8.0	50		10	20	60			70m			PE			
81	SS2014	65	65		100	6.0	70		10	20	60			70m			PE			
82	SS2015	65	65		100	6.0	90		10	20	60			70m			PE			
83	SS2016	65	65		80	6.0	30		10	40	120			70m			PE			
84	SS2017	65	65		80	6.0	50		10	40	120			70m			PE			
85	SS2018	65	65		100	6.0	70		10	40	120			70m			PE			
86	SS2019	65	65		100	6.0	90													

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc M T A E M P X	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 Ser.	L C O D E			
					Ic (A)	Ib (A)	BVcbo (V)	BEVbo (V)	BEVceo (V)	Icbo @ MAX Vcb @ 25°C (A)	Vcb (V)									Ic (A)		
1	SSP3055		90			15						4.0	20	70	300m							
2	ST42R2		15					500	80	300	1.0m#	50m	30		55M#		Y220a	B				
3	ST44R4		30					400	300	300	1.0m#	50m	75		40M#		Y220a	B				
4	STC9142		500			120			60	100	5.0m#	4.0	100	10	0.2M#	10uø	D	T03	C			
5	STI340		20					300	300	150	0.1m#	0.05m	30		10M#			TO126	B			
6	STI341		20					175	150	150	0.3m#	0.05m	25		15M#			TO126	B			
7	STI344		20					200	200	200	0.1m#	0.05m	30		15M#			TO126	B			
8	STI3004		75					400	300	300	1.0m#	2.0	8.0		4.0M#			Y220b	B			
9	STI3005		75					500	400	400	1.0m#	2.0	8.0		4.0M#			Y220b	B			
10	STI3008		100					400	300	300	1.0m#	8.0	6.0		4.0M#			Y220b	B			
11	STI3009		100					500	400	400	1.0m#	8.0	6.0		4.0M#			Y220b	B			
12	STI3439		15					450	400	400	0.5m#	2.0m	30		15M#			TO126	B			
13	STI3440		15					350	250	250	0.5m#	2.0m	30		15M#			TO126	B			
14	STP47		40					350	250	250	1.0m#	3.0m	30		10M#			Y220a	B			
15	STP48		40					400	300	300	1.0m#	3.0m	30		10M#			Y220a	B			
16	STP49		40					450	350	350	1.0m#	3.0m	30		10M#			Y220a	B			
17	STP50		40					500	400	400	1.0m#	3.0m	30		10M#			Y220a	B			
18	STP55		40					500	500	500	1.0m#	3.0m	30		10M#			Y220a	B			
19	SVT80-5T		11			5.0	2.5	60	6.0	60	100u	2.0	1.0	40 #	50M#	140n		T039	A			
20	SVT80-5T		11			5.0	2.5	80	6.0	80	100u	2.0	1.0	40 #	50M#	140n		T039	A			
21	TIP31		2.0					80	5.0	80	50mΔ	4.0	4.0	1.0k	15k		E	Y220	D			
22	TIP32		2.0					100	5.0	100	50mΔ	4.0	4.0	1.0k	15k		E	Y220	D			
23	TIP100Z		2.0					60	5.0	60	50uΔ	4.0	3.0	1.0k	20k		E	Y220	D			
24	TIP101Z		2.0					80	5.0	80	50uΔ	4.0	3.0	1.0k	20k		E	Y220	D			
25	TIP102Z		2.0					100	5.0	100	50uΔ	4.0	3.0	1.0k	20k		E	Y220	D			
26	TIPL751T		120					375	1.0u	375	5.0	500m	20	60	12M#	2.5uZ	PLA	T03	D			
27	TIPL751AT		120					420	1.0u	420	5.0	500m	20	60	12M#	2.5uZ	PLA	T03	D			
28	TIPL752T		150					350	1.0u	350	5.0	500m	15	60	7.0M#	2.5uZ	PLA	T03	D			
29	TIPL752AT		150					400	1.0u	400	5.0	500m	15	60	7.0M#	2.5uZ	PLA	T03	D			
30	TIPL753T		150					350	1.0u	350	5.0	500m	20	60	8.0M#	2.5uZ	PLA	T03	D			
31	TIPL753AT		150					400	1.0u	400	5.0	500m	20	60	8.0M#	2.5uZ	PLA	T03	D			
32	TIPL760T		80					375	1.0u	375	5.0	500m	20	60	12M#	2.5uZ	PLA	Y220b	B			
33	TIPL760AT		80					420	1.0u	420	5.0	500m	20	60	12M#	2.5uZ	PLA	Y220b	B			
34	TIPL761T		100					375	100u	375	5.0	500m	20	60	12M#	2.5uZ	PLA	Y218	D			
35	TIPL761AT		100					420	100u	420	5.0	500m	20	60	12M#	2.5uZ	PLA	Y218	D			
36	TIPL762T		120					350	1.0u	350	5.0	500m	15	60	7.0M#	2.5uZ	PLA	Y218	D			
37	TIPL762AT		120					400	1.0u	400	5.0	500m	15	60	7.0M#	2.5uZ	PLA	Y218	D			
38	TIPL763T		120					350	1.0u	350	5.0	500m	20	60	8.0M#	2.5uZ	PLA	Y218	D			
39	TIPL763AT		120					400	1.0u	400	5.0	500m	20	60	8.0M#	2.5uZ	PLA	Y218	D			
40	TRF401		25						4	30	50	1	10					T93b	A			
41	TRF450		50					40	4	20	50	1m	10					W52H	A			
42	TRF450A		50					40	4	20	50	1m	10					T72a	A			
43	TRF454		80						4	18	50	5	10	150				W52n	A			
44	TRF454A		80						4	18	50	5	10	150				T93d	A			
45	TRF641		50						4	16	50	1	30	150				W65	A			
46	TRF644		17						4	18	50	4	40	100				W65	A			
47	TRF646		175						4	16	10m#	50	4	20	150			W65	A			
48	TRF648		233						4	16	15m#	50	6	20	150			W65	A			
49	TSB3055		70									4.0	4.0	20	100	8.0M#		D	B77	D		
50	XGSA1530#1		7.5					10	6.0	1.0	350	7.0	300	10u	2.0	1.0	10 #			T05	A	
51	XGSA1535#1		7.5					2.0	1.0	400	7.0	350	10u	2.0	1.0	10 #				T05	A	
52	XGSA1540#1		7.5					2.0	1.0	450	7.0	400	10u	2.0	1.0	10 #				T05	A	
53	XGSA3030#1		10					5.0	1.0	350	7.0	300	250u	5.0	3.0	10 #				T05	A	
54	XGSA3035#1		10					5.0	1.0	400	7.0	300	250u	5.0	3.0	10 #				T05	A	
55	XGSA3040		10					5.0	1.0	450	7.0	400	250u	5.0	3.0	10 #				T05	A	
56	XGSA5030#1		10					7.0	2.0	350	7.0	300	250u	5.0	5.0	10 #				T05	A	
57	XGSA5035#1		10					7.0	2.0	400	7.0	350	250u	5.0	5.0	10 #				T05	A	
58	XGSA5040#1		10					7.0	2.0	450	7.0	400	250u	5.0	5.0	10 #				T05	A	
59	ZTX449K		2.0					1.0	200m	50	5.0	30	0.1u	2.0	500m	100	300	150M#Δ	PL	B58	A	
60	ZTX449L		2.0					1.0	200m	50	5.0	30	0.1u	2.0	500m	100	300	150M#Δ	PL	B58	A	
61	ZTX449M		2.0					1.0	200m	50	5.0	30	0.1u	2.0	500m	100	300	150M#Δ	PL	B58	A	
62	ZTX454		1					1	200m	140	5.0	120	100n	10	150m	100 #	300 #	100M#Δ	PL	T092	A	
63	ZTX455		1					1	200m	160	5.0	140	100n	10	150m	100 #	300 #	100M#Δ	PL	T092	A	
64	BF391P		9.6n					1.2	500n	200	8.0	200	0.1u	100	10m	40			EPL	T092	A	
65	BF392P		9.6n					1.2	500n	250	6.0	250	0.1u	100	10m	40			EPL	T092	A	
66	BF393P		9.6n					1.2	500n	300	6.0	300	0.1u	100	10m	40			EPL	T092	A	
67	BUX48T		833n					175	15	4.0	7.0	400	200u	5.0	10	5.0			EM	T03	C	
68	SPT6502		200u					35	2.0	1.0	10	700 #	100u	5.0	500m	10	45 #	10M#Δ		T066	C	
69	SPT6503		200u					35	2.0	1.0	10	800 #	100u	5.0	500m	10	45 #	10M#Δ		T066	C	
70	TIP29#1		2.5m					30	3.0	1.0	40	5.0	40	30 Δ	100	20	20	3.0M#	E	Y220b	D	
71	TIP29A#1		2.5m					30	3.0	1.0	50	5.0	60	30 Δ	100	20	20	3.0M#	E	Y220b	D	
72	1768-0420		1.1m					200	30	10	80	5.0	7.0	40	20m#	4.0	20	20 #	EM	T063	D	
73	BSX48T		2.0mø					1.0	800m	50	5.0	25	120nø	1.0	100mø				DPE	T018	A	
74	BSX49T		2.0mø					1.0	800m	50	5.0	40	70nø	1.0	100mø				DPE	T018	A	
75	2N3959		2.2m					400			20	4.5	12	5.0n#	1.0	10m	40	200	1.0M#		T018	A
76	2N3980		2.2m					400			20	4.5	12	5.0n#	1.0	10m	40	200	1.2M#		T018	A
77	BCY65EIXT		2.2mø					1.0	200m	7.0	60			5.0	2.0mø	350	ø		PEø	T018	A	
78	BCY65EVIIT		2.2mø					1.0	200m	7.0	60			5.0	2.0mø	170	ø		PEø	T018	A	
79	BCY65EVIIT		2.2mø					1.0	200m	7.0	60			5.0	2.0mø	250	ø		PEø	T018	A	
80	TIP29B#1		2.5m					40	3.0	1.0	80	5.0	80	30 Δ	4.0	3.0	10	50	3.0M#	E	Y220b	D
81	TIP29C#1		2.5m					30	3.0	1.0	100	5.0	100	30 Δ	4.0	3.0	10	50	3.0M#	E	Y220b	D
82	TIP31A#		2.5m					40	3.0	1.0	80	5.0	80	30 Δ	4.0	3.0	10	50	3.0M#	E	Y220b	D
83	TIP31B#		2.5m					40	3.0	1.0	80	5.0	80	30 Δ	4.0	3.0	10	50	3.0M#	E	Y220b	D
84	T																					

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
(2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc M T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		BIAS Ic	MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E
					Ic (A)	Ib (A)	BVcbo (V)	BVbeo (V)	BVCeo (V)	Icbo (A)	Vcbo (V)									
1	TR5550MP	4.5m	1.0	400m	400m	550	8.0	550	10m	4.0	25m	20	#	50MSΔ					T05	
2	TR5575MP	4.5m	1.0	400m	400m	575	8.0	575	10m	4.0	25m	22	#	50MSΔ					T05	
3	TR5601MP	4.5m	1.0	400m	400m	600	8.0	600	10m	4.0	25m	30	#	50MSΔ					T05	
4#	BSX45	5.0m	5.0	1.0	1.0	200m	7.0	40	30n	1.0	150m	40	120	50MSΔ	700m	250n	15n	AN	T039	A
5#	BSX45Zt	5.0m	5.0	1.0	1.0	100m	7.0	40	10n	1.0	150m	40	120	50MSΔ	700m	250n	15n	AN	T039	A
6#	BSX46	5.0m	5.0	1.0	1.0	200m	7.0	60	30n	1.0	150m	40	120	50MSΔ	700m	250n	15n	AN	T039	A
7#	BSX46Zt	5.0m	5.0	1.0	1.0	100m	7.0	60	10n	1.0	150m	40	120	50MSΔ	700m	250n	15n	AN	T039	A
8#	BSX47	5.0m	5.0	1.0	1.0	200m	7.0	80	30n	1.0	150m	40	120	50MSΔ	700m	250n	15n	AN	T039	A
9#	T-TIP47L	5.0m	25	1.0	0.6	350	5.0	250	1.0	100	0.3	30	150	150MS		0.2u		DPS	Y220A	D
10#	T-TIP48L	5.0m	25	1.0	0.8	400	5.0	300	1.0	100	0.3	30	150	150MS		0.2u		DPS	Y220A	D
11#	T-TIP49L	5.0m	25	1.0	0.8	450	5.0	350	1.0	100	0.3	30	150	150MS		0.2u		DPS	Y220A	D
12#	T-TIP50L	5.0m	25	1.0	0.8	500	5.0	400	1.0	100	0.3	30	150	150MS		0.2u		DPS	Y220A	D
13#	2SC2056	5.3m	800m	1.0	1.0	800m	18	4.0	9.0	100	7.0	100m	10	180	800MS			PE	T039	A
14#	2SC2131	5.3m	800m	1.0	1.0	800m	40	4.0	18	100	10	100m	10	180	1.7G			PE	T039	A
15#	2SC2776	5.5m	1.0	1.0	1.0	75	4.0	75	10	100	100	100m	5.0	200MS			PE	T039	A	
16#	2SC816	5.5m	1.0	1.0	1.0	80	4.0	30	10	6.0	100	55		140MS			PE	T05	A	
17#	2SC2053	5.5m	600m	1.0	1.0	300m	40	4.0	17	20	10	10	180	500MS			PE	T092	A	
18	MRF402	5.6m	1.0	1.0	1.0	36	4.0	18	500m	5.0	250m	5.0					PE	T039	A	
19	2N2270	5.7m	1.0	1.0	1.0	60	7.0	45	50	100	150m	50	200	100MSΔ	60		Δ	T039	A	
20	2N2270S	5.7m	1.0	1.0	1.0	60	7.0	45	50	100	150m	50	200	100MSΔ	60			T039	A	
21	2N2405	5.7m	1.0	1.0	1.0	120	7.0	90	10	100	150m	60	200					T05	A	
22	2N2405S	5.7m	1.0	1.0	1.0	120	7.0	90	10	100	150m	60	200					T039	A	
23	2N2987	5.7m	1.0	1.0	1.0	95	7.0	80	30n	5.0	200m	25	75	30MSΔ				T05	A	
24	2N2988	5.7m	1.0	1.0	1.0	155	7.0	100	30n	5.0	200m	25	75	30MSΔ				T05	A	
25	2N2989	5.7m	1.0	1.0	1.0	95	7.0	80	30n	5.0	200m	60	120	30MSΔ				T05	A	
26	2N2990	5.7m	1.0	1.0	1.0	155	7.0	100	30n	5.0	200m	60	120	30MSΔ				T05	A	
27	2N34181	5.7m	1.0	1.0	1.0	85	8.0	60	50n	2.0	1.0	20	60	40MSΔ		300n		T05	A	
28	2N34181	5.7m	1.0	1.0	1.0	125	8.0	80	50n	2.0	1.0	20	60	40MSΔ		300n		T05	A	
29	2N34201	5.7m	1.0	1.0	1.0	85	8.0	60	50n	2.0	1.0	40	120	40MSΔ		300n		T05	A	
30	2N34211	5.7m	1.0	1.0	1.0	125	8.0	80	50n	2.0	1.0	40	120	40MSΔ		300n		T05	A	
31	2N34441	5.7m	1.0	1.0	1.0	80	8.0	50	500n	1.0	500m	20	60	150MSΔ		35n		T05	A	
32	2N3488	5.7m	1.0	1.0	1.0	100	6.0	100	50n	1.0	150m	40	120	150MSΔ				T05	A	
33	2N3499	5.7m	1.0	1.0	1.0	100	6.0	100	50n	1.0	150m	100	300	150MSΔ				T05	A	
34	2N3500	5.7m	1.0	1.0	1.0	150	6.0	150	50n	1.0	150m	40	120	150MSΔ				T05	A	
35	2N3501	5.7m	1.0	1.0	1.0	150	6.0	150	50n	1.0	150m	100	300	150MSΔ				T05	A	
36	2N35061	5.7m	1.0	1.0	1.0	60	5.0	40	1.0	2.0	1.5	40	200	60MSΔ	1.0	30n		T05	A	
37	2N35071	5.7m	1.0	1.0	1.0	80	5.0	50	1.0	2.0	1.5	30	150	80MSΔ	1.0	30n		T05	A	
38	2N51891	5.7m	1.0	1.0	1.0	60	5.0	35	100u	1.0	1.0	15	15	400MSΔ				R179	A	
39	2N52621	5.7m	1.0	1.0	1.0	75	5.0	50	1.0	5.0	500m	40	0	350MS			PE	T039	A	
40	2N5681	5.7m	1.0	1.0	1.0	100	4.0	100	1.0	2.0	250m	40	150	30MSΔ	2.0			T05	A	
41	2N5682	5.7m	1.0	1.0	1.0	120	4.0	120	1.0	2.0	250m	40	150	30MSΔ	2.0			T05	A	
42#	2N5943	5.7m	1.0	1.0	1.0	40	3.5	30	10u	15	50m	25	300					T039	A	
43	HEPS3011-RT	5.7m	1.0	1.0	1.0	80	5.0	50	200n	1.0	100m	100	0	100MSΔ				T039	A	
44	MM1812	5.7m	1.0	1.0	1.0	175	4.0	175	100n	1.0	10m	35	200					T05	A	
45	MM2258	5.7m	1.0	1.0	1.0	120	5.0	120	50n	1.0	10m	35	#	150MSΔ	16		AN	T05	A	
46	MM2259	5.7m	1.0	1.0	1.0	175	5.0	175	50n	1.0	10m	50	#	150MSΔ	16		AN	T05	A	
47	MM2260	5.7m	1.0	1.0	1.0	175	5.0	175	50n	1.0	10m	50	#	150MSΔ	16		AN	T05	A	
48	MM3000	5.7m	1.0	1.0	1.0	5.0	100	*	1.0	1.0	10m	20		150MSΔ			E	T039	A	
49	MM3001	5.7m	1.0	1.0	1.0	5.0	150	*	1.0	1.0	10m	20		150MSΔ			E	T039	A	
50	MM3002	5.7m	1.0	1.0	1.0	5.0	200	*	5.0	1.0	10m	20		150MSΔ			E	T039	A	
51	MM3003	5.7m	1.0	1.0	1.0	5.0	250	*	5.0	1.0	10m	20		150MSΔ			E	T039	A	
52	MM3008	5.7m	1.0	1.0	1.0	8.0	120	*	100n	1.0	10m	40		50k				T039	A	
53	MM3009	5.7m	1.0	1.0	1.0	8.0	180	*	100n	1.0	10m	40		50MSΔ				T039	A	
54	MRF404	5.7m	1.0	1.0	1.0	60	3.0	30	100n	2.0	40m	10						T039	A	
55	MRF8003	5.7m	1.0	1.0	1.0	50	3.0	30	100n	1.0	100m	20						T039	A	
56	MS300CE	5.7m	1.0	1.0	1.0	30	1.0	20	1.0	1.0	5.0m	20		4.5G				W67	A	
57	MS300TE	5.7m	1.0	1.0	1.0	30	1.0	20	1.0	1.0	5.0m	20		4.5G				W55	A	
58	MS300YE	5.7m	1.0	1.0	1.0	30	1.0	20	1.0	1.0	5.0m	40		2.0G				W87a	A	
59	UMT10061	5.7m	100	1.0	1.0	5.0	7.0	300	3.0m	2.0	15	12	#	24MSZ		4.0n	PSΔ	T03	C	
60	UMT10071	5.7m	100	1.0	1.0	5.0	7.0	400	3.0m	2.0	15	12	#	24MSZ		4.0n	PSΔ	T03	C	
61#	ZTX449	5.7m	2.5	1.0	1.0	200m	50	5	30	100n	2	500m	100	300	150MSΔ			PL	T092	A
62#	ZTX6501	5.7m	2.5	1.0	1.0	50	5.0	45	100n	2.0	500m	100	300	75MS	300m	45n	PLΔ	B58a	A	
63#	ZTX6501Kt	5.7m	2.5	1.0	1.0	60	5.0	45	100n	2.0	500m	100	300	75MS	300m	45n	PLΔ	B58a	A	
64#	ZTX6501T	5.7m	2.5	1.0	1.0	60	5.0	45	100n	2.0	500m	100	300	75MS	300m	45n	PLΔ	B58a	A	
65#	ZTX6501M1	5.7m	2.5	1.0	1.0	60	5.0	45	100n	2.0	500m	100	300	75MS	300m	45n	PLΔ	B58a	A	
66#	ZTX6501S1	5.7m	2.5	1.0	1.0	60	5.0	45	100n	2.0	500m	100	300	75MS	300m	45n	PLΔ	B58a	A	
67#	ZTX6511	5.7m	2.5	1.0	1.0	80	5.0	60	100n	2.0	500m	100	300	75MS	300m	45n	PLΔ			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C	MAX. FREE AIR @ 25°C	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb0</sub> @ MAX V <sub>cb0</sub> @ 25°C	hFE		f <sub>ae</sub>	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #/s/a TO200 Ser.	L C O D E	
					I <sub>c</sub>	I <sub>b</sub>	V <sub>cb0</sub>	V <sub>eb0</sub>	V <sub>ce0</sub>		MIN	MAX							
1	SRL1014	6.6m	1.0	\$J	3.0	1.0	100	4.0	100	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
2	SRL2014	6.6m	1.0	\$J	3.0	1.0	200	4.0	200	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
3	SRL2254S	6.6m	1.0	\$J	3.0	1.0	250	4.0	225	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
4	SRL2504	6.6m	1.0	\$J	3.0	1.0	250	4.0	250	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
5	SRL2504S	6.6m	1.0	\$J	3.0	1.0	275	4.0	250	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
6	SRL2754S	6.6m	1.0	\$J	3.0	1.0	300	4.0	275	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
7	SRL3014	6.6m	1.0	\$J	3.0	1.0	300	4.0	300	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
8	SRL3014S	6.6m	1.0	\$J	3.0	1.0	325	4.0	300	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
9	SRL3504	6.6m	1.0	\$J	3.0	1.0	350	4.0	350	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
10	SRL3504S	6.6m	1.0	\$J	3.0	1.0	375	4.0	350	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
11	SRL4014	6.6m	1.0	\$J	3.0	1.0	400	4.0	400	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
12	SRL4014S	6.6m	1.0	\$J	3.0	1.0	425	4.0	400	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
13	SRL4504	6.6m	1.0	\$J	3.0	1.0	450	4.0	450	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
14	SRL5014	6.6m	1.0	\$J	3.0	1.0	500	4.0	500	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
15	SRL5504	6.6m	1.0	\$J	3.0	1.0	550	4.0	550	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
16	SRL6014	6.6m	1.0	\$J	3.0	1.0	600	4.0	600	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
17	SRL6504	6.6m	1.0	\$J	3.0	1.0	650	4.0	650	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
18	SRL7014	6.6m	1.0	\$J	3.0	1.0	700	4.0	700	10u	100	500m	15	35	10MSΔ	400n	EMΔ	T05	A0
19	SRM1004	6.6m	1.0	\$J	3.0	1.0	100	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
20	SRM2014	6.6m	1.0	\$J	3.0	1.0	200	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
21	SRM2254S	6.6m	1.0	\$J	3.0	1.0	250	6.0	225	3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
22	SRM2504	6.6m	1.0	\$J	3.0	1.0	250	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
23	SRM2504S	6.6m	1.0	\$J	3.0	1.0	275	6.0	250	3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
24	SRM2754S	6.6m	1.0	\$J	3.0	1.0	300	6.0	275	3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
25	SRM3014	6.6m	1.0	\$J	3.0	1.0	300	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
26	SRM3014S	6.6m	1.0	\$J	3.0	1.0	325	6.0	300	3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
27	SRM3504	6.6m	1.0	\$J	3.0	1.0	350	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
28	SRM3504S	6.6m	1.0	\$J	3.0	1.0	375	6.0	350	3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
29	SRM4014	6.6m	1.0	\$J	3.0	1.0	400	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
30	SRM4014S	6.6m	1.0	\$J	3.0	1.0	425	6.0	400	3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
31	SRM4504	6.6m	1.0	\$J	3.0	1.0	450	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
32	SRM5014	6.6m	1.0	\$J	3.0	1.0	500	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
33	SRM5504	6.6m	1.0	\$J	3.0	1.0	550	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
34	SRM6014	6.6m	1.0	\$J	3.0	1.0	600	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
35	SRM6504	6.6m	1.0	\$J	3.0	1.0	650	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
36	SRM7014	6.6m	1.0	\$J	3.0	1.0	700	6.0		3.0u	100	1.0	10	15	10MSΔ	400n	EMΔ	T05	A0
37	TRL2014	6.6m	1.0	\$S	3.0	1.0	200	4.0	200	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
38	TRL2254S	6.6m	1.0	\$S	3.0	1.0	250	4.0	225	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
39	TRL2504	6.6m	1.0	\$S	3.0	1.0	250	4.0	250	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
40	TRL2504S	6.6m	1.0	\$S	3.0	1.0	275	4.0	250	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
41	TRL2754S	6.6m	1.0	\$S	3.0	1.0	300	4.0	275	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
42	TRL3014	6.6m	1.0	\$S	3.0	1.0	300	4.0	300	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
43	TRL3014S	6.6m	1.0	\$S	3.0	1.0	325	4.0	300	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
44	TRL3504	6.6m	1.0	\$S	3.0	1.0	350	4.0	350	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
45	TRL4014	6.6m	1.0	\$S	3.0	1.0	400	4.0	400	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
46	TRL4014S	6.6m	1.0	\$S	3.0	1.0	425	4.0	400	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
47	TRL4504	6.6m	1.0	\$S	3.0	1.0	450	4.0	450	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
48	TRL5014	6.6m	1.0	\$S	3.0	1.0	500	4.0	500	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
49	TRL5014S	6.6m	1.0	\$S	3.0	1.0	525	4.0	500	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
50	TRL5504	6.6m	1.0	\$S	3.0	1.0	550	4.0	550	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
51	TRL6014	6.6m	1.0	\$S	3.0	1.0	600	4.0	600	10m	100	500m	15	35	20MSΔ	400n	DM	T05	A0
52	TRL6504	6.6m	1.0	\$S	3.0	1.0	650	4.0	650	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
53	TRL7014	6.6m	1.0	\$S	3.0	1.0	700	4.0	700	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
54	TRL7504	6.6m	1.0	\$S	3.0	1.0	750	4.0	750	10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
55	TRM8014	6.6m	1.0	\$S	3.0	1.0	800	4.0		10u	100	500m	15	35	20MSΔ	400n	DM	T05	A0
56	TRM2014	6.6m	1.0	\$S	3.0	1.0	200	6.0		3.0u	100	1.0	10	15	20MSΔ	400m	DM	T05	A0
57	TRM2254S	6.6m	1.0	\$S	3.0	1.0	250	6.0	225	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
58	TRM2504	6.6m	1.0	\$S	3.0	1.0	250	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
59	TRM2504S	6.6m	1.0	\$S	3.0	1.0	275	6.0	250	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
60	TRM2754S	6.6m	1.0	\$S	3.0	1.0	300	6.0	275	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
61	TRM3014	6.6m	1.0	\$S	3.0	1.0	300	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
62	TRM3014S	6.6m	1.0	\$S	3.0	1.0	325	6.0	300	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
63	TRM3504	6.6m	1.0	\$S	3.0	1.0	350	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
64	TRM3514S	6.6m	1.0	\$S	3.0	1.0	375	6.0	350	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
65	TRM4014	6.6m	1.0	\$S	3.0	1.0	400	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
66	TRM4014S	6.6m	1.0	\$S	3.0	1.0	425	6.0	400	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
67	TRM4504	6.6m	1.0	\$S	3.0	1.0	450	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
68	TRM5014	6.6m	1.0	\$S	3.0	1.0	500	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
69	TRM5014S	6.6m	1.0	\$S	3.0	1.0	525	6.0	500	3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
70	TRM5504	6.6m	1.0	\$S	3.0	1.0	550	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
71	TRM6014	6.6m	1.0	\$S	3.0	1.0	600	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
72	TRM6504	6.6m	1.0	\$S	3.0	1.0	650	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
73	TRM7014	6.6m	1.0	\$S	3.0	1.0	700	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
74	TRM7504	6.6m	1.0	\$S	3.0	1.0	750	6.0		3.0u	100	1.0	10	15	20MSΔ	400n	DM	T05	A0
75																			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C E O D E	
					Ic (A)	Ib (A)	BVcbo (V)	BVceo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)									Ic (A)
1	TN3253	8.8m	2.0	♂J	2.0	500m	75	5.0	40	500n	1.0	375m	25	75	175MΔ	35n	PLT	Y237	A	
2	TN3440	6.8m	2.0	♂J	1.0	500m			250	200n	1.0	20m	40	160	300MΔ		PLT	B32	A	
3	TN3444	6.8m	2.0	♂J	2.0	500m	80	5.0	50	500n	1.0	500m	20	60	150MΔ		PLT	Y237	A	
4	TN3724	6.8m	2.0	♂J	2.0	500m	50	8.0	30	1.7u	1.0	100m	60	150	300MΔ		PLT	B32	A	
5	TN3725	6.8m	2.0	♂J	2.0	500m	80	6.0	50	1.7u	1.0	100m	60	150	300MΔ		PLT	B32	A	
6	TN3742	6.8m	2.0	♂J	2.0	500m	300	7.0	300	200n	1.0	30m	20	200	30MΔ		PLT	Y237	A	
7	2N2481	6.9m	1.2	♂J			40	5.0	15	50n	1.0	10m	40	120				T018	A	
8	2N3469	6.9m	1.2	♂C	5.0	500m	35	5.0	25	100n	1.0	500m	100	350	20MΔ	500m		T05	A	
9	JAN2N56621	6.9m	1.2	♂A	2.0	500m	250	6.0	200	1.0m	5.0	500m	40	120	20MΔ	250n		T05	A	
10	JAN2N56631	6.9m	1.2	♂A	2.0	500m	400	6.0	300	1.0m	5.0	500m	25	75	20MΔ	250n		T05	A	
11	JAN2N56661	6.9m	1.2	♂A	5.0	1.0	250	6.0	200	1.0m	5.0	1.0	40	120	20MΔ	250n		T05	A	
12	JAN2N56671	6.9m	1.2	♂A	5.0	1.0	400	6.0	300	1.0m	5.0	1.0	25	75	20MΔ	250n		T05	A	
13#	2SC1509	7.0m	750m	♂J	1.0	#	8.0	5.0	80	100n	1.0	150m	65	330	120MΔ	800m	PE	R182a	B	
14#	2SC2086	7.0m	800m	♂J	1.0		75	4.0	35	100u	1.0	100m	35	300			PE	T092	B	
15#	2SC3019	7.0m	0.6	♂J	0.4		35	4.0	17	500u	1.0	50n	20	180	2GΔ		PE			
16	2N5541F	7.1m	1.2	♂J	5.0	1.0	175	8.0	130	500n	5.0	5.0	30	90	20MΔ	500n		T05	A	
17	2N2106	8.0m	1.0	♂J	500m		60	8.0	60	10u	1.0	200m	12	36				T05	A	
18	2N2107	8.0m	1.0	♂J	500m		60	8.0	60	10u	1.0	200m	30	90				T05	A	
19	2N2108	8.0m	1.0	♂J	500m		60	8.0	60	10u	1.0	200m	75	200				T05	A	
20#	2SC384	8.0m	1.0	♂J	1.0	1.0	160	6.0	160	1.0u	5.0	200m	60	320	20MΔ		E	B14	A	
21#	2SC960	8.0m	1.0	♂J	700m		120	5.0	80	3.0u	5.0	200m	40	200	50MΔ	4.0		F47	A	
22#	2SC1380A	8.0m	1.0	♂J	50m		60	4.0	60	100n	1.0	100m	20	100			PE	R245	A	
23#	2SC1903	8.0m	1.0	♂J	50m		150	5.0	120	1.0u	5.0	10m	150	∅	130MΔ	50	PEΔ	B5c	B	
24#	2SC1904	8.0m	1.0	♂J	50m		150	5.0	150	1.0u	5.0	10m	150	∅	130MΔ	50	PEΔ	B5c	B	
25#	2SC1953	8.0m	1.0	♂J	100m	#	150	5.0	150	1.0u	5.0	10m	65	450	200MΔ	10		T0126	B	
26#	2SC2071	8.0m	1.0	♂J	50m		250	5.0	220	1.0u	5.0	10m	150	∅	100MΔ	50	PE	B7a	B	
27#	2SC2311t	8.0m	1.0	♂J	1.0		50	5.0	40	500n	1.0	500m	55	∅			PEΔ	B7a	B	
28#	2SC2384	8.0m	1.0	♂J	1.0	1.0	180	6.0	180	1.0u	5.0	200m	60	320	20MΔ		E	B14	A	
29#	2SC2632	8.0m	1.0	♂J	50m		150	5.0	150	1.0u	5.0	10m	65	450	160MΔ		E	XXXXA	B	
30#	2SC2824	8.0m	1.0	♂J	1.0	100m	120	5.0	120	100n	5.0	100m	80	240	120MΔ		PE	B7	B	
31#	2SC3209K	8m	1	♂J	200m		300	5	300	100n	100	10m	180	250	50MΔ		D	S26	B	
32#	2SC3209L	8m	1	♂J	200m		300	5	300	100n	100	10m	100	200	50MΔ		D	S26	B	
33#	2SC3209M	8m	1	♂J	200m		300	5	300	100n	100	10m	60	120	50MΔ		D	S26	B	
34#	2SD668AB	8m	1	♂J	50m		180	5	180	10u	50	10m	60	120	140MΔ		E	B7a	B	
35#	2SD668AC	8m	1	♂J	50m		180	5	180	10u	50	10m	100	200	140MΔ		E	B7a	B	
36#	2SD668B	8m	1	♂J	50m		180	5	120	10u	50	10m	60	120	140MΔ		E	B7a	B	
37#	2SD668C	8m	1	♂J	50m		180	5	120	10u	50	10m	100	200	140MΔ		E	B7a	B	
38#	2SD668D	8m	1	♂J	50m		180	5	120	10u	50	10m	160	320	140MΔ		E	B7a	B	
39#	2SD773	8.0m	1.0	♂J	2.0		20	6.0	16	100n	2.0	100m	135	600	110MΔ			S26	B	
40#	2SD774	8.0m	1.0	♂J	1.0		100	6.0	50	100n	2.0	100m	135	600	95MΔ		PE	S26	B	
41#	2SD781	8.0m	1.0	♂J	2.0		150	5.0	60	1.0u	5.0	1.5	100	150	∅	600n	PE	T0126	B	
42#	2SD966	8.0m	1.0	♂J	5.0		40	7.0	20	0.1u	2.0	0.5	180	600	150MΔ		PE	XXXXA	B	
43#	2SD975	8m	1	♂J	2		150	5	80	1u	50	1.5	150	#		600n	PE	B7a	B	
44#	BCX54	8.0m	1.0	♂J	1.0	100m	45	5.0	45	100n	2.0	150m	40	250	130MΔ	1.0	PEt	X166	B	
45#	BCX55	8.0m	1.0	♂J	1.0	100m	60	5.0	60	100n	2.0	150m	40	160	130MΔ	1.0	PEt	X166	B	
46#	BCX56	8.0m	1.0	♂J	1.0	100m	100	5.0	80	100n	2.0	150m	40	180	130MΔ	1.0	PEt	X166	B	
47	1R130061	8.0m	80	♂J	8.0	4.0	9.0	300	4	1.0m	5.0	2.0	8.0	40	4.0MΔ	500n	D	Y220b	D	
48	1R130071	8.0m	80	♂J	8.0	4.0	9.0	400	4	1.0m	5.0	2.0	8.0	40	4.0MΔ	500n	D	Y220b	D	
49#	MPS6714	8m	1	♂J	1		40	5	30	100n	10	1	50	250	500MΔ			R210d	A	
50#	MPS6715	8m	1	♂J	1		50	5	40	100n	10	1	50	250	500MΔ			R210d	A	
51#	MPS6716	8m	1	♂J	500m		60	5	60	100n	10	250m	50	250	50MΔ			R210d	A	
52#	MPS6717	8m	1	♂J	500m		60	5	80	100n	10	250m	50	250	50MΔ			R210d	A	
53#	MPS6733	8m	1	♂J	300m		300	6	300	100n	100	10m	40	200	50MΔ			R210d	A	
54#	MPS6734	8m	1	♂J	300m		250	6	250	100n	100	10m	40	200	50MΔ			R210d	A	
55#	MPS6735	8m	1	♂J	300m		200	6	200	100n	100	10m	40	200	50MΔ			R210d	A	
56	MPSU31	8.0m	1.0	♂J	500m		3.0	65	#	10u	100	100m	10	#	30MΔ		ANT	B18	A	
57#	MPSW01	8m	1	♂J	1		40	5	30	100n	10	10m	55		50MΔ			R210d	A	
58#	MPSW01A	8m	1	♂J	1		50	5	40	100n	10	10m	55		50MΔ			R210d	A	
59#	MPSW05	8m	1	♂J	500m		60	4	60	100n	10	50m	80		50MΔ			R210d	A	
60#	MPSW06	8m	1	♂J	500m		80	4	80	100n	10	50m	80		50MΔ			R210d	A	
61#	MPSW10	8m	1	♂J	300m		300	6	300	200n	100	1m	25		45MΔ			R210d	A	
62#	MPSW42	8m	1	♂J	300m		300	6	300	100n	10	30m	40		50MΔ			R210d	A	
63#	MPSW43	8m	1	♂J	300m		200	6	200	100n	10	30m	50	200	50MΔ			R210d	A	
64	MRF472	8.0m	10	♂S	1.0		65	3.0	30	100u	5.0	500m	20	100				B6	B	
65	UMT130081	8.0m	100	♂S	12	6.0	9.0	300	4	5.0m	5.0	5.0	8.0	#	40	4.0MΔ	1.0u	PSΔ	Y220b	X
66	UMT130091	8.0m	100	♂S	12	6.0	9.0	400	4	5.0m	5.0	5.0	8.0	#	40	4.0MΔ	1.0u	PSΔ	Y220b	X
67#	WT4323	8.0m	1.0k	♂J		50	100	7.0	80	5.0m	4.0	200m	10		500k		D	W178	C	
68	2N4073	8.5m	1.5	♂J	150m		40	4.0	20	100n	2.0	25m	10		300MΔ			T039	A	
69#	2SC1383	9.0m	750m	♂J	1.5	#	30	5.0	25	100n	100	500m	60	340	200MΔ		PE	R182a	B	
70#	2SC1384	9.0m	750m	♂J	1.5	#	60	5.0	50	100n	100	500m	60	340	200MΔ		PE	R182a	B	
71#	2SC1406	9.0m	1.0	♂J	1.5	#	30	5.0	25	100n	100	500m	60	340	200MΔ		PE	R209	D	
72#	2SC1407	9.0m	1.0	♂J	1.5	#	60	5.0	50	100n	100	500m	60	340	200MΔ		PE	R209	D	
73	PE8050	9.0m	1.1	♂J	1.5		30	6.0	25	100n	1.0	1.0	40	200		750m	DPL	T082	A	
74	PE8051	9.0m	1.1	♂J	1.5		45	6.0	35	100n	1.0	1.0	30	180		1.0	DPL	T082	A	
75#	2SC996	9.6m	1.2	♂J	100m		300	5.0	300	100n	100	50m	80	∅	100MΔ		DPL	T037	A	
76#	2SC1566	9.6m	1.2	♂J	100m		250	5.0	250	1.0m	2.0	40m	40		100MΔ	10	D	T0126	B	
77#	2SC1567	9.6m	1.2	♂J	500m		100	5.0	100	10u	100	150m	65	330	120MΔ	800m	PE	T0126	B	



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					Icbo @ MAX Vcb @ 25°C (A)	BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG # s/a TO200 Ser.	L C O D E	
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)		MIN (A)	MAX (A)							
1#	2SD999	.01	2.0	∅	\$J	1.0	30	5.0	25	∅	100n	1.0	100m	200 #	400 *	130M\$	E E E E	X166	B	
2#	2SD1000	.01	2.0	∅	\$J	.70	60	5.0	50	∅	100n	1.0	100m	200 #	400 *	110M\$	E E E E	X166	B	
3#	2SD1001	.01	2.0	∅	\$J	300m	80	5.0	80	∅	100n	1.0	50m	200 #	400 *	140M\$	E E E E	X166	B	
4#	2SD1005	.01	2.0	∅	\$J	1.0	100	5.0	80	∅	100n	2.0	100m	200 #	400 *	160M\$	E E E E	X166	B	
5#	BD165 #1	10m	1.2	∅	\$S	1.5	45	5.0	45	∅	2.0	500m	15 #	∅	3.0M\$Δ	E E E E	B16f	B		
6#	BD167 #1	10m	1.2	∅	\$S	1.5	45	5.0	60	∅	2.0	500m	15 #	∅	3.0M\$Δ	E E E E	B16f	B		
7#	BD169 #1	10m	1.2	∅	\$S	1.5	45	5.0	80	∅	2.0	500m	15 #	∅	3.0M\$Δ	E E E E	B16f	B		
8#	BD175 #1	10m	1.2	∅	\$S	3.0	80	5.0	45	∅	2.0	150m	40 #	236	3.0M\$Δ	E E E E	B16f	B		
9#	BD177 #1	10m	1.2	∅	\$S	3.0	60	5.0	60	∅	2.0	150m	40 #	236	3.0M\$Δ	E E E E	B16f	B		
10#	BD179 #1	10m	1.02	∅	\$S	3.0	80	5.0	80	∅	2.0	150m	40 #	236	3.0M\$Δ	E E E E	B16f	B		
11#	BD233 #1	10m	1.02	∅	\$S	2.0	45	5.0	45	∅	2.0	150m	40 #	∅	3.0M\$Δ	E E E E	B16f	B		
12#	BD235 #1	10m	1.02	∅	\$S	2.0	60	5.0	60	∅	2.0	150m	40 #	∅	3.0M\$Δ	E E E E	B16f	B		
13#	BD237 #1	10m	1.02	∅	\$S	2.0	80	5.0	80	∅	2.0	150m	40 #	∅	3.0M\$Δ	E E E E	B16f	B		
14#	BF415	10m	1.2	∅	\$S	200m	250	5.0	250	∅	50n	15	5.0m	25	∅	70M\$	EPL	B16f	B	
15#	BF417	10m	1.2	∅	\$S	200m	300	5.0	300	∅	50n	15	5.0m	25	∅	70M\$	EPL	B16f	B	
16#	BFY65	10m	1.3	∅*	\$J	100m	100	7.0	80	*	500	2.0	15m	30	∅	50M\$Δ	PE	T039	A	
17#	JE8050	.01	2.0	∅	\$J	1.5	.50	6.0	25	∅	100n	1.0	100m	160	300 *	190M\$	AN	T092	A	
18#	2N2991	11m	2.0	∅	\$C	1.0	200m	95	7.0	80	30n\$	5.0	200m	25	75 #	30M\$Δ	AN	T13	A	
19#	2N2992	11m	2.0	∅	\$C	1.0	200m	155	7.0	100	30n\$	5.0	200m	25	75 #	30M\$Δ	AN	T13	A	
20#	2N2993	11m	2.0	∅	\$C	1.0	200m	95	7.0	80	30n\$	5.0	200m	60	120 #	30M\$Δ	AN	T13	A	
21#	2N2994	11m	2.0	∅	\$C	1.0	200m	155	7.0	100	30n\$	5.0	200m	60	120 #	30M\$Δ	AN	T13	A	
22#	2N5581f	11m	2.0	∅	\$S	800m	75	6.0	40	10n∅	10	100u	20	∅	250M\$Δ	PE	T046	A		
23#	2N5582f	11m	2.0	∅	\$S	800m	75	6.0	40	10n∅	10	100u	35	∅	300M\$Δ	PE	T046	A		
24#	JAN2N5660f	11m∅	2.0	∅	\$A	2.0	500m	250	6.0	200	1.0m	5.0	500u	40	120 #	20M\$Δ	PE	T066	A	
25#	JAN2N5661f	11m∅	2.0	∅	\$A	2.0	500m	400	6.0	300	1.0m	5.0	500u	25	75 #	20M\$Δ	PE	T066	A	
26#	25C2637	11m	1.4	∅	\$J	100m	300	7.0	300	∅	50	5.0	5.0m	50	250	100M\$	PE	B56	B	
27#	40081	11m	2.0	∅	\$J	250m	∅	2.0	∅	∅	10u	∅	∅	∅	∅	27M*	PE	T05	A	
28#	MM3736	11m	2.0	∅	\$J	1.5	50	5.0	30	500n∅	1.5	1.0	30	120 #	200M\$Δ	900m	40n∅	T046	A	
29#	MM3737	11m	2.0	∅	\$J	1.5	75	5.0	50	500n∅	1.5	1.0	20	80 #	200M\$Δ	900m	40n∅	T046	A	
30#	ST6510	11m∅	∅	∅	\$	∅	20	∅	20	\$	∅	1.0	20	∅	∅	∅	AN	T05	A	
31#	ST6511	11m∅	∅	∅	\$	∅	40	∅	20	\$	∅	.15	20	60	∅	∅	ME	T05	A	
32#	ST6512	11m∅	∅	∅	\$	∅	40	∅	20	\$	∅	.15	40	120	∅	∅	ME	T05	A	
33#	ST7200	11m	45	∅	\$A	5.0	5.0	8.0	8.0	∅	20m∅	15	1.0	12 #	∅	8.0M	6.0	T05	A	
34#	TS-1134	11m	1.9	∅	\$J	500m	75	8.0	4	∅	50	1.0	75	∅	200M\$Δ	∅	275n*	T0116	A	
35#	UPTA510f	11m	1.5	∅	\$A	500m	500m	150	5.0	100	10u\$	5.0	500m	8.0	15M\$	2.5	200n#	T092	A	
36#	UPTA520f	11m	1.5	∅	\$A	500m	500m	250	5.0	200	10u\$	5.0	500m	8.0	15M\$	2.5	200n#	T092	A	
37#	UPTA530f	11m	1.5	∅	\$A	500m	500m	350	5.0	300	10u\$	5.0	500m	8.0	15M\$	2.5	200n#	T092	A	
38#	UPTB520f	11m	1.5	∅	\$A	100m	100m	250	5.0	200	10u\$	5.0	100m	5.0	15M\$	24	1.0u#	T092	A	
39#	UPTB530f	11m	1.5	∅	\$A	100m	100m	350	5.0	300	10u\$	5.0	100m	5.0	15M\$	24	1.0u#	T092	A	
40#	UPTB540f	11m	1.5	∅	\$A	100m	100m	450	5.0	400	10u\$	5.0	100m	5.0	15M\$	24	1.0u#	T092	A	
41#	UPTB550f	11m	1.5	∅	\$A	100m	100m	550	5.0	500	10u\$	5.0	100m	5.0	15M\$	24	1.0u#	T092	A	
42#	ZTX450	11m	2.0	∅	\$S	1.0	200m	80	5.0	45	100n∅	10	150m	100 #	300 #	150M\$Δ	PLT	B58	A	
43#	ZTX451	11m	2.0	∅	\$S	1.0	200m	80	5.0	60	100n∅	10	150m	50 #	150 #	150M\$Δ	PLT	B58	A	
44#	ZTX452	11m	2.0	∅	\$C	1.0	200m	100	5.0	80	100n∅	10	150m	40 #	150 #	150M\$Δ	PLT	B58	A	
45#	ZTX453	11m	2.0	∅	\$C	1.0	200m	120	5.0	100	100n∅	10	150m	40 #	200 #	150M\$Δ	PLT	B58	A	
46#	2N2239	12m	1.0	∅	\$J	500m	60	8.0	50	∅	100	10	200m∅	30	200 #	200M\$Δ	∅	F8	A	
47#	2N2952	12m	1.8	∅	\$C	250m	50m	5.0	60	∅	100p	10	10	150	200M\$Δ	3.3	∅	T018	A	
48#	25C130	12m	1.8	∅	\$J	400m	60	5.0	50	∅	100	10	20Δ	20 t	150	160M	∅	T08	A	
49#	25C234	12m	1.8	∅	\$J	1.5	100	5.0	100	∅	1.0m	10	150mΔ	20 t	140M\$	∅	∅	T08	A	
50#	25C236	12m	1.8	∅	\$J	500m	90	5.0	200	∅	100p	10	20mΔ	17 t	100M\$	∅	∅	T08	A	
51#	25C2425f	12m∅	1.5	∅	\$J	100m	300	5.0	200	∅	1.0u	10	50m	80 ∅	∅	40	1.0u	B44	D	
52#	25C2833	12m	1.5	∅	\$J	50m	150	5.0	150	1.0u	5.0	10m	65	450 #	160M\$	∅	1.0u	B26	D	
53#	MJE2000Z	12m∅	1.5	∅	\$A	5.0	1.0	8.0	25	100n	1.0	2.0	45	180 #	65M\$Δ	∅	∅	T0126	B	
54#	2N1092f	13m	2.0	∅	\$A	500m	40	12	30	500u	4.0	200m	15	75	1.5M	10	1.2u	T05	A	
55#	2N1644	13m	2.0	∅	\$J	80	60	5.0	40	∅	100	10	150m	40	120	50M\$Δ	∅	T05	A	
56#	2N3295	13m	2.0	∅	\$C	250m	50m	5.0	60	∅	100n	10	10m	20	60	200M\$Δ	3.3	∅	T05	A
57#	2N5280	13m	1.5	∅	\$A	1.0	500m	400	7.0	300	∅	20u	10	160	15M\$Δ	10	∅	F8	A	
58#	25C22	13m	1.3	∅	\$J	800m	75	5.0	50	2.0u	10	150m	20	100	110M\$	2.4	∅	T08	A	
59#	25C23	13m	1.3	∅	\$J	500m	75	5.0	50	5.0u	10	150m	20	100	110M\$	2.4	∅	T08	A	
60#	25C24	13m	1.3	∅	\$J	500m	100	5.0	70	5.0u	10	150m	20	100	110M\$	2.4	∅	T08	A	
61#	25C916f	13m∅	2.0	∅	\$J	1.5	100	5.5	70	10u	1.0	400m	70 ∅	∅	∅	480m	63n∅	T08	A	
62#	25C1073	13m	2.0	∅	\$J	1.5 #	36	4.0	18	5.0u	13	100m	20	70 ∅	1.0G\$	∅	∅	T98	V	
63#	71T2	13m	2.0	∅	\$J	80	80	5.0	60	*	50uΔ	2.0	1.0	30	90 #	∅	∅	F8	A	
64#	72T2	13m	2.0	∅	\$J	80	80	5.0	60	*	50uΔ	2.0	1.0	75	200 #	∅	∅	F8	A	
65#	73T2	13m	2.0	∅	\$J	80	80	5.0	60	*	75u	10	200m	30	90 #	∅	∅	F8	A	
66#	74T2	13m	2.0	∅	\$J	80	80	5.0	60	*	75u	10	200m	75	200 #	∅	∅	F8	A	
67#	40885	13m∅	1.4	∅	TJ	1.0	500m	300	6.0	250	∅	50u	10	20m	30	190	21M\$	10	B24a	A
68#	40886	13m∅	1.4	∅	TJ	1.0	500m	350	6.0	300	∅	50u	10	20m	30	150	21M\$	10	B24a	A
69#	40887	13m∅	1.4	∅	TJ	1.0	500m	450	6.0	350	∅	20u	10	50m	30	150	21M\$	10	B24a	A
70#	SP44C1	13m	1.8	∅	\$J	4.0 #	∅	∅	∅	∅	1.0	200m	40	120	50M\$	500m	100n∅	PL	Y220b	D
71#	SP44C2	13m	1.8	∅	\$J	4.0 #	∅	∅	∅	∅	1.0	200m	40	120	50M\$	500m	100n∅	PL	Y220b	D
72#	SP44C3	13m	1.8	∅	\$J	4.0 #	∅	∅	∅	∅	1.0	200m	40	120	50M\$	500m	100n∅	PL	Y220b	D
73#	SP44C4	13m	1.8	∅	\$J	4.0 #	∅	∅	∅	∅	1.0	200m	40	120	50M\$	500m	100n∅	PL	Y220b	D
74#	SP44C5	13m	1.8	∅	\$J	4.0 #	∅	∅	∅	∅	1.0	200m	40	120	50M\$	500m	100n∅	PL	Y220b	D</

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS Vcb (V)	Ic (A)	MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (g)	STRUC-TURE	DWG #/a TO200 Ser.	L C O D E
						Ic (A)	Ib (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ceo</sub> (V)	Icbo @ 25°C (A)	hFE (A)										
1	TRM4015S	13m	2.0	3.0	3.0	1.0	4.25	6.0	4.0	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
2	TRM4505	13m	2.0	3.0	3.0	1.0	4.5	6.0	4.5	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
3	TRM5015	13m	2.0	3.0	3.0	1.0	5.0	6.0	5.0	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
4	TRM5015S	13m	2.0	3.0	3.0	1.0	5.25	6.0	5.0	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
5	TRM5505	13m	2.0	3.0	3.0	1.0	5.5	6.0	5.5	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
6	TRM8015	13m	2.0	3.0	3.0	1.0	8.0	6.0	8.0	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
7	TRM8505	13m	2.0	3.0	3.0	1.0	8.5	6.0	8.5	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
8	TRM7015	13m	2.0	3.0	3.0	1.0	7.0	6.0	7.0	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
9	TRM7505	13m	2.0	3.0	3.0	1.0	7.5	6.0	7.5	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
10	TRM8015	13m	2.0	3.0	3.0	1.0	8.0	6.0	8.0	3.0	100	1.0	10	15	20MΔ	400n	DM	F8				
11	TRS3015LC	13m	2.0	4.0	4.0	1.0	3.0	5.0	3.0	1.0	100	20	40	65	20MΔ		D	F8				
12	TRS3016LC	13m	2.0	4.0	4.0	1.0	3.0	5.0	3.0	1.0	100	20	40	65	20MΔ		D	T066				
13	TRS4015LC	13m	2.0	4.0	4.0	1.0	4.0	5.0	4.0	1.0	100	20	30	65	20MΔ		D	F8				
14	TRS4016LC	13m	2.0	4.0	4.0	1.0	4.0	5.0	4.0	1.0	100	20	30	65	20MΔ		D	T066				
15	TRS5015LC	13m	2.0	4.0	4.0	1.0	5.0	5.0	5.0	1.0	100	20	30	65	20MΔ		D	F8				
16	TRS5016LC	13m	2.0	4.0	4.0	1.0	5.0	5.0	5.0	1.0	100	20	30	65	20MΔ		D	T066				
17	TRS6015LC	13m	2.0	4.0	4.0	1.0	6.0	5.0	6.0	2.0	100	20	30	65	20MΔ		D	F8				
18	TRS6016LC	13m	2.0	4.0	4.0	1.0	6.0	5.0	6.0	2.0	100	20	30	65	20MΔ		D	T066				
19	JAN2N5864T	14m	2.5	5.0	5.0	1.0	2.5	4.0	2.0	1.0	5.0	1.0	40	120	20MΔ	250n	PLΔ	T066	C0			
20	JAN2N5865T	14m	2.5	5.0	5.0	1.0	4.0	4.0	3.0	1.0	25	75	25	75	20MΔ	250n	PLΔ	T066	C0			
21 #	ZTX651L	14m	2.5	2.0	2.0	1.0	80	80	80	100	2.0	500m	100	300	150MΔ	300m	PLΔ	B58A	A			
22 #	ZTX653M1	14m	2.5	2.0	2.0	1.0	120	120	120	100	2.0	500m	100	300	150MΔ	300m	PLΔ	B58A	A			
23 #	ZTX653S1	14m	2.5	2.0	2.0	1.0	120	120	120	100	2.0	500m	100	300	150MΔ	300m	PLΔ	B58A	A			
24	SPT3055-1	15m	115	15	15	7.0	80	80	80	150	3.0	15	15	500m	500m	D	T03	C0				
25	JAN2N43735T	16m	1.0	1.5	1.5	1.0	75	75	75	250	1.0	50	40	140	250MΔ	2.0	PE	T05	A0			
26 #	2N3889	16m	2.5	500m	500m	100m	40	40	20	2.0	500m	20	150	150	400MΔ	1.5	PE	T05	A0			
27	2N4296T	16m	2.0	1.0	1.0	250m	350	4.0	250	100	50	50	150	150	20MΔ	7.0	PE	T066	C0			
28	2N4297T	16m	2.0	1.0	1.0	250m	350	4.0	250	100	50	75	300	20MΔ	7.0	PE	T066	C0				
29	2N4298T	16m	2.0	1.0	1.0	250m	500	4.0	350	100	50	25	75	20MΔ	7.0	PE	T066	C0				
30	2N4299T	16m	2.0	1.0	1.0	250m	500	4.0	350	100	50	25	150	20MΔ	7.0	PE	T066	C0				
31	2N5421	16m	3.0	500m	250m	100m	38	4.0	18	1.0	5.0	100m	10	60	300MΔ	2.0	PE	T039	A0			
32	2N6551	16m	2.0	1.0	1.0	100m	60	60	60	100	1.0	50	80	300	75MΔ	2.0	PE	Y202C				
33	2N6552	16m	2.0	1.0	1.0	100m	80	80	80	100	1.0	50	80	250	75MΔ	2.0	PE	Y202C	P			
34	2N6553	16m	2.0	1.0	1.0	100m	100	100	100	100	1.0	50	80	250	75MΔ	2.0	PE	Y202C	P			
35	2N6557	16m	2.0	500m	250m	100m	250	250	250	200	1.0	30	40	180	45MΔ	2.0	PE	Y202C	G0			
36	2N6558	16m	2.0	500m	250m	100m	300	300	300	200	1.0	30	40	180	45MΔ	2.0	PE	Y202C	G0			
37	2N6559	16m	2.0	500m	250m	100m	350	350	350	200	1.0	30	40	180	45MΔ	2.0	PE	Y202C	G0			
38	2N6591	16m	2.0	500m	100m	100m	150	150	150	200	1.0	30	40	200	70MΔ	4.0	PE	Y202C	G0			
39	2N6592	16m	2.0	500m	100m	100m	200	200	200	200	1.0	30	40	200	70MΔ	4.0	PE	Y202C	G0			
40	2N6593	16m	2.0	500m	100m	100m	250	250	250	200	1.0	30	40	200	70MΔ	4.0	PE	Y202C	G0			
41	2N6737	16m	2.0	2.0	500m	80	80	6.0	45	1.7	1.0	500m	35	200	70MΔ	30n	PE	B37	A			
42 #	2SC731	16m	2.5	1.0	1.0	800m	40	4.0	20	1.0	1.3	100m	20	70	70MΔ	350MΔ	PE	T039	A			
43 #	2SC821	16m	2.5	800m	800m	40	40	4.0	20	1.0	1.3	100m	20	70	70MΔ	350MΔ	PE	T039	A			
44 #	2SC822	16m	2.5	800m	800m	40	40	4.0	20	1.0	1.3	100m	20	70	70MΔ	350MΔ	PE	T039	A			
45 #	BD7431	16m	2.0	1.5	5.0	50	50	4.0	45	100	4.0	50	20	150	400MΔ	350n	PE	Y220A	D			
46 #	BD743A1	16m	2.0	1.5	5.0	70	70	6.0	80	100	4.0	50	20	150	400MΔ	350n	PE	Y220A	D			
47 #	BD743B1	16m	2.0	1.5	5.0	90	90	6.0	80	100	4.0	50	20	150	400MΔ	350n	PE	Y220A	D			
48	BD743C1	16m	2.0	1.5	5.0	110	110	6.0	100	100	4.0	50	20	150	400MΔ	350n	PE	Y220A	D			
49	BD743D1	16m	2.0	1.5	5.0	130	130	6.0	120	100	4.0	50	20	150	400MΔ	350n	PE	Y220A	D			
50 #	MC107	16m	2.0	200m	200m	45	45	5.0	30	1.5	2.0	120	460	300MΔ	6.0	DPE	T0126	A				
51 #	MC109	16m	2.0	200m	200m	30	30	5.0	30	1.5	2.0	120	800	300MΔ	6.0	DPE	T0126	A				
52	MF120	16m	2.5	50m	50m	100	100	2.0	220	1.0	1.0	20	20	120MΔ	200	DPE	B16n	C				
53	MF177	16m	2.5	50m	50m	100	100	2.0	100	1.0	1.0	20	50	120MΔ	100	DPE	B16n	C				
54	MF178	16m	2.5	50m	50m	160	160	2.0	160	1.0	1.0	20	50	120MΔ	100	DPE	B16n	C				
55	MF179	16m	2.5	50m	50m	250	250	2.0	250	1.0	1.0	20	50	120MΔ	100	DPE	B16n	C				
56	MF179A	16m	2.5	50m	50m	250	250	2.0	160	1.0	1.0	20	50	120MΔ	100	DPE	B16n	C				
57	MF179B	16m	2.5	50m	50m	250	250	2.0	220	1.0	1.0	20	50	120MΔ	100	DPE	B16n	C				
58	MF179C	16m	2.5	50m	50m	250	250	2.0	250	1.0	1.0	20	50	120MΔ	100	DPE	B16n	C				
59	A1502	17m	3.0	1.0	1.0	100m	30	4.0	30	2.0	1.0	150m	20	50	120MΔ	100	PLΔ	W49	A0			
60	MS300KE	17m	3.0	100m	100m	30	30	4.0	20	2.0	1.0	150m	20	50	120MΔ	100	PLΔ	W49	A0			
61	2N2951	20m	3.0	250m	250m	60	60	1.0	60	100	1.0	20	150	200MΔ	3.3		T05	A0				
62	2N3917	20m	3.0	2.0	2.0	80	80	1.0	80	1.0	1.0	20	120	500MΔ	3.3		T03	A0				
63	2N3918	20m	3.0	2.0	2.0	80	80	1.0	40	1.0	1.0	100	300	80MΔ	3.3		T03	A0				
64	2N4133	20m	3.0	800m	800m	90	90	1.0	80	1.0	1.0	20	80	200MΔ	5.0		T05	A0				
65	2N4427	20m	3.0	400m	400m	40	40	1.0	20	2.0	1.0	100	200	500MΔ	5.0		T039	A0				
66 #	2N4428	20m	3.0	425m	425m	55	55	1.0	35	5.0	1.0	50	200	500MΔ	5.0		T039	A0				
67	2N5010	20m	2.0	500m	500m	500	500	5.0	500	5.0	1.0	25	30	180	20MΔ	58		T05	A0			
68	2N5011	20m	2.0	500m	500m	600	600	5.0	600	6.0	1.0	25	30	180	20MΔ	60		T05	A0			
69	2N5012	20m	2.0	500m	500m	700	700	5.0	700	6.0	1.0	25	30	180	20MΔ	64		T05	A0			
70	2N5013	20m	2.0	500m	500m	800	800	5.0	800	12	1.0	20	30	180	20MΔ	80		T05	A0			
71	2N5014	20m	2.0	500m	500m	800	800	5.0	800	12	1.0	20	30	180	20MΔ	80		T05	A0			
72	2N5015	20m	2.0	500m	500m	1.0k	1.0k	5.0	1.0k	12	1.0	20	30	180	20MΔ	80		T05	A0			
73 #	2N5108	20m	3.5	400m	400m	55	55	3.0	3.0	2.0	1.5	150m	6	120	1.2GΔ			T039A	A0			
74	2N5108A	20m	3.5	400m	400m	55	55	3.0	3.0	2.0	1.5	150m	6	120	1.2GΔ			T039	A0			
75	2N5109	20m	3.5	400m	400m	40	40	3.0	3.0	2.0	1.5	150m										

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J TO C (W/°C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/s/a TO200 Ser.	L C O D E			
					Ic (A)	Ib (A)	VCbo (V)	VEbo (V)	VEco (V)	Icbo @ MAX Vcb @ 25°C (A)	hFE Ic (A)											
1	92PE488	20m	1.2	\$J	300m	50m	250	7.0	250	50n	100	30	30				PLT	B32	B			
2	92PE489	20m	1.2	\$J	300m	50m	300	7.0	300	50n	100	30	30				PLT	B32	B			
3	92PU01	20m	1.2	\$J	2.0		40	5.0	30	100n	1.0	1.0	50	50MΔ	500m		DPLT	B32	A			
4	92PU01A	20m	1.2	\$J	2.0		50	5.0	40	100n	1.0	1.0	50	50MΔ	500m		DPLT	B32	A			
5	92PU05	20m	1.2	\$J	2.0	500m	60	4.0	60	100n	1.0	50	80	50MΔ			PLT	B32	A			
6	92PU06	20m	1.2	\$J	2.0	500m	80	4.0	80	100n	1.0	50	80	50MΔ			PLT	B32	A			
7	92PU07	20m	1.2	\$J	2.0	500m	100	4.0	100	100n	1.0	50	80	50MΔ			PLT	B32	A			
8	92PU10	20m	1.2	\$J	2.0	500m	300	7.0	300	100n	1.0	30	40				PLT	B32	A			
9	92PU36	20m	1.2	\$J	2.0	500m	175	6.0	150	1.0u	100	30	300				PLT	B32	A			
10	92PU36A	20m	1.2	\$J	2.0	500m	225	6.0	200	1.0u	100	30	300				PLT	B32	A			
11	92PU36B	20m	1.2	\$J	2.0	500m	275	6.0	250	1.0u	100	30	300				PLT	B32	A			
12	92PU36C	20m	1.2	\$J	2.0	500m	325	6.0	300	1.0u	100	30	300				PLT	B32	A			
13	92PU100	20m	1.2	\$J	2.0	500m	100	7.0	80	100n	2.0	350	100	300			PLT	B32	A			
14	92PU391	20m	1.2	\$J	2.0	500m	200	6.0	200	100n	1.0	1.0	25				PLT	B32	A			
15	92PU392	20m	1.2	\$J	2.0	500m	250	6.0	250	100n	1.0	1.0	25				PLT	B32	A			
16	92PU393	20m	1.2	\$J	2.0	500m	300	6.0	300	100n	1.0	1.0	25				PLT	B32	A			
17	40389	20m	3.5	\$J	700m		60	5.0	40	250n	1.0	150	50	250	#	100MΔ	9.3	DPL	F31	A		
18	40409	20m	3.0 #	\$J	700m	200m		4.0	90	1.0u*	4.0	150	50	250	#	100MΔ	9.3	D	F31	A		
19	40450†	20m	1.0	\$J			30	7.5	25	100n	1.0	10	100	200		175MΔ	1.2	PE	R119	A		
20	40451†	20m	1.0	\$J			40	8.0	40	10n	1.0	10	125	300		175MΔ	1.0	PE	R119	A		
21	40452	20m	1.0	\$J	300m	300m		8.0	40	10n	1.0	10	75	300		80MΔ	1.0	PE	R119	A		
22	40453	20m	1.0	\$J	200m			7.5	25	100n	1.0	10	165	800		80MΔ	1.2	PE	R119	A		
23	40454	20m	1.0	\$J	200m	25m		7.5	25	100n	1.0	10	75	300		80MΔ	1.2	PE	R119	A		
24	40455	20m	1.0	\$J	200m	25m		7.0	18	500n	1.0	10	165	600		80MΔ	2.0	PE	R119	A		
25	40456	20m	1.0	\$J	200m	25m		7.0	18	500n	1.0	10	75	300		80MΔ	2.0	PE	R119	A		
26	40459†	20m	1.0	\$J	1.0			60	8.0	40	10n	1.0	100	300		200MΔ	1.0	DPE	R119	A		
27	40608	20m	3.5	\$J	400m			40	2.0	40	100uΔ	150	35	120		700MΔ	20	PE	TO39	A		
28	40625	20m	3.5	\$A	1.0			7.0	45	250n	1.0	150	100	300					F38	A		
29	40625L	20m	3.5	\$A	1.0			7.0	45	250n	1.0	150	100	300					F38	A		
30	40625S	20m	3.5	\$A	1.0			7.0	45	250n	1.0	150	100	300					F38a	A		
31	40628	20m	3.5	\$A	1.0			7.0	55	250n	1.0	150	100	300					F38	A		
32	40628L	20m	3.5	\$A	1.0			7.0	55	250n	1.0	150	100	300					F38	A		
33	40628S	20m	3.5	\$A	1.0			7.0	55	250n	1.0	150	100	300					F38a	A		
34	40836	20m	2.5	\$J	200m			50	3.5	50	1.0m*					700MΔ	10	PE	W48a	C		
35	40964	20m	3.5	\$J	200m			36	2.0	14	100uΔ					700MΔ		PE	TO39	G		
36	40965	20m	3.5	\$J	200m			36	2.0	14	100uΔ					700MΔ		PE	TO39	G		
37	41039	20m	2.5	\$J	250m			40	3.5†	25	100u*	150	50	60	350		1.8GΔ		%	TO39	A	
38	BD233Z	20m	2.5	\$J	2.0	1.0		45	5.0	45	100u*	2.0	150	40	#	3.0MΔ	600m#		†	B16g	B	
39	BD235Z	20m	2.5	\$J	2.0	1.0		60	5.0	60	100u*	2.0	150	40	#	3.0MΔ	600m#		†	B16g	B	
40	BD237Z	20m	2.5	\$J	2.0	1.0		80	5.0	80	100u*	2.0	150	40	#	3.0MΔ	600m#		†	B16g	B	
41	BD371A	20m	1.2	\$J	2.0	500m		45	5.0	45	100n	1.0	100	40	400	50MΔ		PLT	B32	A		
42	BD371B	20m	1.2	\$J	2.0	500m		60	5.0	60	100n	1.0	100	40	400	50MΔ		PLT	B32	A		
43	BD371C	20m	1.2	\$J	2.0	500m		80	5.0	80	100n	1.0	100	40	400	50MΔ		PLT	B32	A		
44	BD371D	20m	1.2	\$J	2.0	500m		100	5.0	100	100n	1.0	100	40	400	50MΔ		PLT	B32	A		
45	BD373A	20m	1.2	\$J	2.0	500m		45	5.0	45	100n	1.0	100	40	400	50MΔ		PLT	B32	B		
46	BD373B	20m	1.2	\$J	2.0	500m		60	5.0	60	100n	1.0	100	40	400	50MΔ		PLT	B32	B		
47	BD373C	20m	1.2	\$J	2.0	500m		80	5.0	80	100n	1.0	100	40	400	50MΔ		PLT	B32	B		
48	BD373D	20m	1.2	\$J	2.0	500m		100	5.0	100	100n	1.0	100	40	400	50MΔ		PLT	B32	B		
49#	BFR98	20m	2.0	\$J	400m	400m		40	3.5	20	20uΔ	5.0	100m	10	†	200	†	500mΔ		PE	TO39	A
50#	BFW17A	20m	1.5	\$J	150m			40	2.0	25	20u†	5.0	50	25			1.1GΔ		PE	TO39	A	
51▼	MM8000	20m	3.5	\$J	400m			40	3.5	30	20uΔ	150	50	30			700MΔ			TO39	A	
52▼	MM8001	20m	3.5	\$J	400m			40	3.5	30	20uΔ	150	50	30			900MΔ			TO39	A	
53	MRF207	20m	3.5	\$S	400m			36	†	4.0	18	100u*	5.0	100	5.0		100u	225M#			TO39	A
54	MRF225	20m	3.5	\$S	250m			36	†	4.0†	18	100u*	5.0	100			100u*	225M#			TO39	A
55	MST10	20m	1.0	\$A	350m	100m		100	5.0	100	3.0u	100	55	30	55	40MΔ	25	DM	TO5	A		
56	MST15	20m	1.0	\$A	350m	100m		150	5.0	150	3.0u	100	55	30	55	40MΔ	25	DM	TO5	A		
57	MST20	20m	1.0	\$A	350m	100m		200	5.0	200	3.0u	100	55	30	55	40MΔ	25	DM	TO5	A		
58	MST25	20m	1.0	\$A	350m	100m		250	5.0	250	3.0u	100	55	30	55	40MΔ	25	DM	TO5	A		
59	MST30	20m	1.0	\$A	350m	100m		300	5.0	300	3.0u	100	55	30	55	40MΔ	25	DM	TO5	A		
60	MST35	20m	1.0	\$A	350m	100m		350	5.0	350	3.0u	100	55	30	55	40MΔ	25	DM	TO5	A		
61	MST40	20m	1.0	\$A	350m	100m		400	5.0	400	4.0u	100	45	30	55	40MΔ	30	DM	TO5	A		
62	MST45	20m	1.0	\$A	350m	100m		450	5.0	450	4.0u	100	45	30	55	40MΔ	30	DM	TO5	A		
63	MST50	20m	1.0	\$A	300m	100m		500	5.0	500	6.0u	100	25	30	55	40MΔ	55	DM	TO5	A		
64	MST55	20m	1.0	\$A	300m	100m		550	5.0	550	6.0u	100	25	30	55	40MΔ	60	DM	TO5	A		
65	MST60	20m	1.0	\$A	300m	100m		600	5.0	600	8.0u	100	25	30	55	40MΔ	60	DM	TO5	A		
66	MST65	20m	1.0	\$A	300m	100m		650	5.0	650	8.0u	100	25	30	55	40MΔ	60	DM	TO5	A		
67	MST70	20m	1.0	\$A	250m	100m		700	5.0	700	10u	100	25	30	55	40MΔ	65	DM	TO5	A		
68	MST75	20m	1.0	\$A	250m	100m		750	5.0	750	10u	100	22	30	55	40MΔ	73	DM	TO5	A		
69	MST80	20m	1.0	\$A	200m	50m		800	5.0	800	12u	100	22	25	50	40MΔ	73	DM	TO5	A		
70	MST85	20m	1.0	\$A	200m	50m		850	5.0	850	12u	100	20	25	50	40MΔ	80	DM	TO5	A		
71	MST90	20m	1.0	\$A	200m	50m		900	5.0	900	15u	100	20	25	50	40MΔ	80	DM	TO5	A		
72	MST95	20m	1.0	\$A	150m	50m		950	5.0	950	15u	100	15	25	50	40MΔ	100	DM	TO5	A		
73	MST100	20m	1.0	\$J	100m			1.0k	5.0	1.0k	12u	100	20	30		40k	90	D	TO5	A		
74	SD1006	20m	2.5	\$J	400m			50	5.0	30	100uΔ	150	50	30	300	1.8GΔ			TO39	A		
75	2N497	22m	4.0	\$J				60	8.0	60	10u	100	200	12	36			ME	TO5	A		
76	2N498	22m	4.0	\$J				100	8.0	100	10u	100	200	12	36			ME	TO5	A		
77	2N656	22m	4.0	\$J				60	8.0	60	10u	100	200	30	90			ME	TO5	A		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE TO C (W/C)	MAX. FREE AIR @ 25°C (W/C)	PC	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS V <sub>cb</sub> (V)	I <sub>c</sub> (A)	MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a To200	L C O D E
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>be</sub> (V)	V <sub>ceo</sub> (V)	I <sub>co</sub> (A)	V <sub>cb</sub> (V)										
1	2N1207	25m	3.0	∅	∅	150m		125	3.0	125	10u	10	50m	20	80	10M	70		PE	T05	A	
2	2N3152	25m	2.5	∅	∅	100m		120	4.0	120	50u	20	30m	40		200M					A	
3	2SC777	25m	2.0	∅	∅	1.0		75	4.0	75	10u	10	100m	5.0		150M					A	
4 #	2SC1800*	25m	4.4	∅	∅	250m		400	3.0	20	100u	10	100m	15	200	2.0G					A	
5 #	KTC191V	25m	3.2	∅	∅	200m		440			2.0m					1.3G					A	
6	2N5092	25m	2.0	∅	∅	1.0	500m	400	6.0	350	500u	10	100m	15	250	50M	20				A	
7	2N5095	25m	2.0	∅	∅	1.0	500m	500	6.0	400	500u	10	100m	15	250	50M	20				A	
8	2N5097	25m	2.0	∅	∅	1.0	500m	600	6.0	450	500u	10	100m	15	250	50M	20				A	
9	2N5098	25m	2.0	∅	∅	1.0	500m	700	6.0	500	500u	10	100m	15	250	50M	20				A	
10	2N5099	25m	2.0	∅	∅	1.0	500m	800	6.0	550	500u	10	100m	15	250	50M	20				A	
11 #	2SC3017	25m	4.0	∅	∅	1.0		20	3.5	9.0	200u	5.0	0.1	20	20				PE	T039	A	
12	HEP5024-RT	25m	4.0	∅	∅	100m		350	6.0	325	1.0u			25	∅						A	
13	MST16404	25m	1.0	∅	∅	400m	200m	650	5.0	640	10u	10	100m	20		50M	60		DM	T05	A	
14	MST6804	25m	1.0	∅	∅	400m	200m	800	5.0	680	10u	10	100m	20		50M	60		DM	T05	A	
15	SRS2004	25m	1.0	∅	∅	400m	50m	200	6.0	100	3.0u	4.0	50m	30		15M	30		EM	T05	A	
16	SRS2504	25m	1.0	∅	∅	400m	50m	200	6.0	200	2.0u	4.0	50m	20		15M	30		EM	T05	A	
17	SRS2804S	25m	1.0	∅	∅	400m	50m	250	6.0	250	2.0u	4.0	50m	20		15M	30		EM	T05	A	
18	SRS2804S	25m	1.0	∅	∅	400m	50m	340	5.0	250	2.0u	4.0	200m	25		15M	30		EM	T05	A	
19	SRS3014	25m	1.0	∅	∅	400m	50m	300	6.0	300	2.0u	4.0	50m	20		15M	30		EM	T05	A	
20	SRS3204S	25m	1.0	∅	∅	400m	50m	385	5.0	320	2.0u	4.0	200m	25		15M	30		EM	T05	A	
21	SRS3204S	25m	1.0	∅	∅	400m	50m	350	6.0	350	2.0u	4.0	50m	20		15M	30		EM	T05	A	
22	SRS3804S	25m	1.0	∅	∅	400m	50m	420	5.0	380	2.0u	4.0	200m	25		15M	30		EM	T05	A	
23	SRS4014	25m	1.0	∅	∅	400m	50m	400	6.0	400	2.0u	4.0	50m	20		15M	30		EM	T05	A	
24	SRS4014S	25m	1.0	∅	∅	400m	50m	440	5.0	440	1.0u	10	100m	20		15M	60		EM	T05	A	
25	SRS4404S	25m	1.0	∅	∅	400m	50m	530	5.0	440	1.0u	10	100m	20		15M	60		EM	T05	A	
26	SRS4504	25m	1.0	∅	∅	400m	50m	450	6.0	450	2.0u	4.0	50m	20		15M	30		EM	T05	A	
27	SRS4804S	25m	1.0	∅	∅	400m	50m	580	5.0	480	1.0u	10	100m	20		15M	60		EM	T05	A	
28	SRS5014	25m	1.0	∅	∅	400m	50m	500	6.0	500	2.0u	4.0	25m	30		15M	60		EM	T05	A	
29	SRS5504	25m	1.0	∅	∅	400m	50m	550	6.0	550	1.0u	5	25m	20		15M	60		EM	T05	A	
30	SRS9014	25m	1.0	∅	∅	400m	50m	600	6.0	600	1.0u	5	25m	30		15M	60		EM	T05	A	
31	SRS5504	25m	1.0	∅	∅	400m	50m	650	6.0	650	1.0u	5	25m	30		15M	60		EM	T05	A	
32	SRS7014	25m	1.0	∅	∅	400m	50m	700	6.0	700	1.0u	5	25m	30		15M	60		EM	T05	A	
33	SRS7504	25m	1.0	∅	∅	400m	50m	750	6.0	750	1.0u	5	25m	30		15M	60		EM	T05	A	
34	SRS9014	25m	1.0	∅	∅	400m	50m	800	6.0	800	1.0u	5	25m	30		15M	60		EM	T05	A	
35	TRS1004	25m	1.0	∅	∅	400m	50m	800	6.0	100	3.0u	4.0	25m	30		50k	30				A	
36	TRS1004LP	25m	1.0	∅	∅	400m	50m	100	3.0	100	1.0u	4.0	25m	30		50k	30				A	
37	TRS1204	25m	1.0	∅	∅	400m	50m	120	3.0	120	3.0u	4.0	25m	30		50k	30				A	
38	TRS1204LP	25m	1.0	∅	∅	400m	50m	120	3.0	120	1.0u	4.0	25m	30		50k	30				A	
39	TRS1404	25m	1.0	∅	∅	400m	50m	140	3.0	140	3.0u	4.0	25m	30		50k	30				A	
40	TRS1404LP	25m	1.0	∅	∅	400m	50m	140	3.0	140	1.0u	4.0	25m	30		50k	30				A	
41	TRS1804	25m	1.0	∅	∅	400m	50m	180	3.0	180	3.0u	4.0	25m	30		50k	30				A	
42	TRS1804LP	25m	1.0	∅	∅	400m	50m	180	3.0	180	1.0u	4.0	25m	30		50k	30				A	
43	TRS1804	25m	1.0	∅	∅	400m	50m	180	3.0	180	3.0u	4.0	25m	30		50k	30				A	
44	TRS1804LP	25m	1.0	∅	∅	400m	50m	180	3.0	180	1.0u	4.0	25m	30		50k	30				A	
45	TRS2004	25m	1.0	∅	∅	400m	50m	200	6.0	200	2.0u	4.0	50m	20		50k	30				A	
46	TRS2004LP	25m	1.0	∅	∅	400m	50m	200	3.0	200	1.0u	4.0	25m	30		50k	30				A	
47	TRS2254	25m	1.0	∅	∅	400m	50m	225	3.0	225	3.0u	4.0	25m	22		50k	30				A	
48	TRS2254LP	25m	1.0	∅	∅	400m	50m	225	3.0	225	1.0u	4.0	25m	30		50k	30				A	
49	TRS2504	25m	1.0	∅	∅	400m	50m	250	6.0	250	2.0u	4.0	25m	20		50k	30				A	
50	TRS2504LP	25m	1.0	∅	∅	400m	50m	250	3.0	250	1.0u	4.0	25m	30		50k	30				A	
51	TRS2754	25m	1.0	∅	∅	400m	50m	275	6.0	275	3.0u	4.0	25m	22		50k	30				A	
52	TRS2754LP	25m	1.0	∅	∅	400m	50m	275	3.0	275	1.0u	4.0	25m	30		50k	30				A	
53	TRS2804S	25m	1.0	∅	∅	400m	50m	340	5.0	280	2.0u	4.0	200m	25	45	∅	50M	30		DM	T05	A
54	TRS3014	25m	1.0	∅	∅	400m	50m	300	6.0	300	2.0u	4.0	50m	20		50M	30				A	
55	TRS3014LP	25m	1.0	∅	∅	400m	50m	300	3.0	300	1.0u	4.0	25m	30		50k	30				A	
56	TRS3204S	25m	1.0	∅	∅	400m	50m	385	5.0	320	2.0u	4.0	200m	25	45	∅	50M	30		DM	T05	A
57	TRS3254	25m	1.0	∅	∅	400m	50m	325	6.0	325	3.0u	4.0	50m	22		50k	30				A	
58	TRS3254LP	25m	1.0	∅	∅	400m	50m	325	3.0	325	1.0u	4.0	25m	30		50k	30				A	
59	TRS3504	25m	1.0	∅	∅	400m	50m	350	6.0	350	2.0u	4.0	25m	20		50M	38				A	
60	TRS3504LP	25m	1.0	∅	∅	400m	50m	350	3.0	350	1.0u	4.0	25m	30		50k	30				A	
61	TRS3804S	25m	1.0	∅	∅	400m	50m	420	5.0	380	2.0u	4.0	200m	25	45	∅	50M	30		DM	T05	A
62	TRS3754	25m	1.0	∅	∅	400m	50m	375	6.0	375	3.0u	4.0	50m	22		50k	30				A	
63	TRS3754LP	25m	1.0	∅	∅	400m	50m	375	3.0	375	1.0u	4.0	25m	30		50k	30				A	
64	TRS4004	25m	1.0	∅	∅	400m	50m	400	6.0	400	2.0u	4.0	50m	20		50M	30				A	
65	TRS4014	25m	1.0	∅	∅	400m	50m	400	6.0	400	2.0u	4.0	50m	20	65	∅	50k	30				A
66	TRS4014LP	25m	1.0	∅	∅	400m	50m	400	3.0	400	1.0u	4.0	25m	30		50k	30				A	
67	TRS4014S	25m	1.0	∅	∅	400m	50m	480	5.0	400	1.0u	10	100m	20	30	∅	50M	60		DM	T05	A
68	TRS4254	25m	1.0	∅	∅	400m	50m	425	6.0	425	3.0u	4.0	50m	22		50k	30				A	
69	TRS4254LP	25m	1.0	∅	∅	400m	50m	425	3.0	425	1.0u	4.0	25m	30		50k	30				A	
70	TRS4404S	25m	1.0	∅	∅	400m	50m	530	5.0	440	1.0u	10	100m	20	30	∅	50M	60		DM	T05	A
71	TRS4504	25m	1.0	∅	∅	400m	50m	450	6.0	450	2.0u	4.0	50m	20		50M	30				A	
72	TRS4504LP	25m	1.0	∅	∅	400m	50m	450	3.0	450	1.0u	4.0	25m	30		50k	30				A	
73	TRS4754	25m	1.0	∅	∅	400m	50m</															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C (A)		BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O A D E		
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	MAX Vcb (A)	Vcb (V)	Ic (A)										
1	2N2102S	28m	1.0	1.0	1.0	1.0	120	7.0	65	2.0	1.0	100	150	40	120	80MΔ	3.3	30nZ	Δ	T039	AQ		
2	2N2594	28m	1.0	1.0	1.0	1.0	80	7.0	80	1.0	1.0	100	10	20	40MΔ	5.0			Δ	T05	AQ		
3	2N2726	28m	1.0	1.0	1.0	1.0	500m	250m	200	1.0	1.0	100	200m	30	90	15MΔ	5.0			Δ	T05	AQ	
4	2N2727	28m	1.0	1.0	1.0	1.0	500m	250m	200	1.0	1.0	100	200m	30	90	15MΔ	5.0			Δ	T05	AQ	
5	2N3053	28m	5.0	5.0	5.0	5.0	700m	700m	60	5.0	4.0	100	150m	50	250	100MΔ	2.0			Δ	T05	AQ	
6	2N3053A	28m	5.0	5.0	5.0	5.0	700m	700m	60	5.0	4.0	100	150m	50	250	100MΔ	2.0			Δ	T05	AQ	
7	2N3053S	28m	5.0	5.0	5.0	5.0	700m	700m	60	5.0	4.0	100	150m	50	250	100MΔ	2.0			Δ	T05	AQ	
8	2N3252T	28m	1.0	1.0	1.0	1.0	1.0	1.0	60	5.0	3.0	50nZ	1.0	500m	30	90	200MΔ		30nZ	Δ	T039	AQ	
9	2N3252St	28m	1.0	1.0	1.0	1.0	1.0	1.0	60	5.0	3.0	50nZ	1.0	500m	30	90	200MΔ		30nZ	Δ	T039	AQ	
10	2N3253T	28m	1.0	1.0	1.0	1.0	1.0	1.0	75	5.0	4.0	50nZ	1.0	375m	25	75	175MΔ		35nZ	Δ	T05	AQ	
11	JAN2N3253T	28m	5.0	5.0	5.0	5.0	1.0	1.0	75	5.0	4.0	500nZ	1.0	500m	25	75	175MΔ	1.2	35nZ	E	T05	AQ	
12	2N3253St	28m	1.0	1.0	1.0	1.0	1.0	1.0	75	5.0	4.0	50nZ	1.0	375m	25	75	175MΔ		35nZ	Δ	T039	AQ	
13	JAN2N3253St	28m	5.0	5.0	5.0	5.0	1.0	1.0	75	5.0	4.0	500nZ	1.0	500m	25	75	175MΔ	1.2	35nZ	E	T05	AQ	
14	2N3309A*	28m	5.0	5.0	5.0	5.0	500m	100m	60	4.0	60	500nZ	2.0	75m	5.0	100	300MΔ	2.0				T039	AQ
15	2N3374*	28m	5.0	5.0	5.0	5.0	500m	200m	80	4.0	80	50nZ	2.0	170m	10		230MΔ	2.0				T05	AQ
16	2N3439S	28m	1.0	1.0	1.0	1.0	500m	500m	450	7.0	350	20uΔ	1.0	20m	40	160	15MΔ	1.0				T039	AQ
17	2N3440S	28m	1.0	1.0	1.0	1.0	500m	500m	300	7.0	250	20uΔ	1.0	20m	40	160	15MΔ	1.0				T039	AQ
18	JAN2N3444T	28m	5.0	5.0	5.0	5.0	1.0	1.0	80	5.0	5.0	500nZ	1.0	500m	20	60	175MΔ	1.2	35nZ	E	T05	AQ	
19	JAN2N3444St	28m	5.0	5.0	5.0	5.0	1.0	1.0	80	5.0	5.0	500nZ	1.0	500m	20	60	175MΔ	1.2	35nZ	E	T05	AQ	
20	2N3464	28m	5.0	5.0	5.0	5.0	1.0	1.0	60	5.0	4.0	100uΔ	1.0	200m	35	100	30MΔ					T05	AQ
21	JAN2N3498T	28m	1.0	1.0	1.0	1.0	500m	2.0	100	6.0	100	50nZ	1.0	150m	40	120	150MΔ		115nZ	Δ	T05	AQ	
22	JAN2N3498T	28m	1.0	1.0	1.0	1.0	500m	2.0	100	6.0	100	50nZ	1.0	150m	40	120	150MΔ		115nZ	Δ	T05	AQ	
23	JAN2N3500T	28m	1.0	1.0	1.0	1.0	300m	150	150	6.0	150	50nZ	1.0	150m	40	120	150MΔ		115nZ	Δ	T05	AQ	
24	JAN2N3501T	28m	1.0	1.0	1.0	1.0	300m	150	150	6.0	150	50nZ	1.0	150m	100	300	150MΔ		115nZ	Δ	T05	AQ	
25	JAN2N3506T	28m	1.0	1.0	1.0	1.0	3.0	3.0	60	5.0	4.0	1.0u*	2.0	1.5	40	200	60MΔ		45nZ	Δ	T05	AQ	
26	JAN2N3507T	28m	1.0	1.0	1.0	1.0	3.0	3.0	60	5.0	4.0	1.0u*	2.0	1.5	30	150	60MΔ		45nZ	Δ	T05	AQ	
27	2N3664	28m	5.0	5.0	5.0	5.0	500m	100m	60	4.0	60	50nZ	2.0	50m	8.0	80	300MΔ	3.0				T30	A
28	2N3665	28m	5.0	5.0	5.0	5.0	500m	100m	120	8.0	80	50nZ	1.0	150m	40	120	60MΔ					T05	AQ
29	2N3666	28m	5.0	5.0	5.0	5.0	500m	100m	120	8.0	80	50nZ	1.0	150m	100	300	60MΔ					T05	AQ
30	2N3724At	28m	1.0	1.0	1.0	1.0	1.2	1.2	50	6.0	30	500nZ	1.0	100m	60	150	300MΔ		30nZ	Δ	T039	AQ	
31	2N3725At	28m	1.0	1.0	1.0	1.0	1.2	1.2	80	6.0	50	500nZ	1.0	100m	60	150	300MΔ		30nZ	Δ	T039	AQ	
32	2N3742	28m	1.0	1.0	1.0	1.0	50m	300	7.0	300	200nZ	1.0	30m	20	200	30MΔ		75				T05	AQ
33	2N3742S	28m	1.0	1.0	1.0	1.0	50m	300	7.0	300	200nZ	1.0	30m	20	200	30MΔ		75				T039	AQ
34	JAN2N3866	28m	1.0	1.0	1.0	1.0	400m	60	3.5	30	20uΔ	5.0	50m	15	200	500MΔ	10					T039	AQ
35	2N3866A	28m	5.0	5.0	5.0	5.0	400m	55	3.5	30	100u*	5.0	50m	25	200	800MΔ	10					T039	AQ
36	JAN2N3866A	28m	1.0	1.0	1.0	1.0	400m	60	3.5	30	20uΔ	5.0	50m	25	200	800MΔ	10					T039	AQ
37	2N3945	28m	5.0	5.0	5.0	5.0	1.0	1.0	70	8.0	50	1.0	150m	40	150	60MΔ	3.3					T05	AQ
38	2N3948	28m	5.0	5.0	5.0	5.0	1.0	1.0	36	3.5	20	100nZ	5.0	50m	15	150	700MΔ					T039	A
39#	2N4429	28m	5.0	5.0	5.0	5.0	425m	150m	55	3.5	35	1.0m*	5.0	50m	20	200	100MΔ					T0117	R
40	2N4924	28m	1.0	1.0	1.0	1.0	200m	100	5.0	100	100nZ	1.0	150m	40	200	100MΔ						T039	AQ
41	2N4925	28m	1.0	1.0	1.0	1.0	200m	150	5.0	150	100nZ	1.0	150m	40	200	100MΔ						T039	AQ
42	2N4976	28m	5.0	5.0	5.0	5.0	400m	150m	55	3.5	30	5.0m*	5.0	50m	20	250	1.0MΔ					T66	
43	JAN2N5109	28m	1.0	1.0	1.0	1.0	1.0	40	3.0	20	20uΔ	1.5	50m	40	150	1.2GΔ						T039	AQ
44	2N5279	28m	1.0	1.0	1.0	1.0	1.0	500m	400	7.0	300	20uΔ	1.0	20m	40	150	15MΔ					T05	AQ
45	2N5422	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					T039	AQ
46	2N5527s	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					R179u	AQ
47	2N5531s	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					R179u	AQ
48	2N5535s	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					T061	AQ
49	2N5536s	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					T061	AQ
50	2N5537s	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					T061	AQ
51	2N5538s	28m	5.0	5.0	5.0	5.0	500m	36	4.0	18	100u*	5.0	500m	10	60	300MΔ	1.0					T061	AQ
52	2N5687	28m	5.0	5.0	5.0	5.0	500m	40	3.0	20	1.0mΔ	1.2	50m	15	150	1.0MΔ						T039	AQ
53	2N5698	28m	5.0	5.0	5.0	5.0	500m	40	3.0	18	1.0mΔ	1.2	40m	30	150	1.0MΔ						T0131	Z
54	2N5766	28m	5.0	5.0	5.0	5.0	200m	40m	55	3.5	25	3.0mZ	5.0	50m	20	100	300MΔ					T77	R
55	2N5859T	28m	1.0	1.0	1.0	1.0	2.0	80	6.0	40	250nZ	1.0	1.0	15	100	250MΔ	700m	30nZ	Δ	T039	AQ		
56	2N5860	28m	1.0	1.0	1.0	1.0	2.0	90	7.0	45	250nZ	1.0	500m	35	100	250MΔ	700m	18nZ	Δ	T039	AQ		
57	2N5861	28m	1.0	1.0	1.0	1.0	2.0	100	6.0	50	300nZ	1.0	500m	25	100	200MΔ	1.0					T039	AQ
58	2N5913	28m	3.5	3.5	3.5	3.5	330m	36	3.5	14	300uΔ	5.0	250m	5.0								T039	AQ
59	2N5922	28m	5.0	5.0	5.0	5.0	425m	55	3.5	35	4.0mZ	5.0	250m	5.0								T75d	R
60	2N6255	28m	5.0	5.0	5.0	5.0	1.0	36	4.0	18	250uZ	5.0	250m	5.0								T039	AQ
61#	2SC908	28m	860	860	860	860	500m	40	4.0	40	50uZ	1.0	100m	10	180	800MΔ						T039	A
62#	2SC1252	28m	5.0	5.0	5.0	5.0	300m	45	3.0	25	100nZ	1.0	50m	20	200	1.4GΔ						T039	A
63#	2SC1253	28m	5.0	5.0	5.0	5.0	300m	45	3.0	25	100nZ	1.0	50m	20	200	1.8GΔ						T039	A
64#	2SC1256	28m	3.0	3.0	3.0	3.0	500m	36	4.0	18	1.0u*	1.0	300m	20		500MΔ						T039	A
65#	2SC1365	28m	5.0	5.0	5.0	5.0	300m	45	3.0	25	100nZ	1.0	50m	20	200	1.2GΔ						T039	AQ
66	40082																						



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN DERATE TO C (W/°C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS Vcb (V)	MIN Ic (A)	MAX Ic (A)	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	Y200 s/a TO200 Ser.	L E O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	MAX Vcb (V)										
1	40618L	28m	1.0	SA	700m	200m	2.5	32	32	500n	4.0	50m	70	500						T05	A	
2	40616S	28m	1.0	SA	700m	200m	2.5	32	32	500n	4.0	50m	70	500						T039	A	
3	40635	28m	1.0	SA	700m	200m	7.0	75	75	10u*	4.0	150m	50	250				PL		T05	A	
4	40635L	28m	1.0	SA	700m	200m	7.0	75	75	10u*	4.0	150m	50	250						T05	A	
5	40635S	28m	1.0	SA	700m	200m	7.0	75	75	10u*	4.0	150m	50	250						T039	A	
6#	40814	28m	5.0	SA	1.0	500m	50	3.0	4.0	10uΔ	1.0	3.0m	50	250	120mSΔ			PL		T039	A	
7	40872	28m	3.5	SA	330m		36	3.5	14	1.0mS					175m#			PE		T039	G	
8#	BC140T	28m	3.7	SA	1.0	100m	80	7.0	40	100uS	1.0	100m	63	250	50mSΔ		250m	PE		T039	A	
9#	BC140A1	28m*	3.7	SA	1.0	100m	80	7.0S	40	100m	1.0	100m	40	100	50mSΔ	1.0	250m	PE		R216h	A	
10#	BC140B1	28m*	3.7	SA	1.0	100m	80	7.0S	40	100m	1.0	100m	63	180	50mSΔ	1.0	250m	PE		R216h	A	
11#	BC140C1	28m*	3.7	SA	1.0	100m	80	7.0S	40	100m	1.0	100m	100	250	50mSΔ	1.0	250m	PE		R216h	A	
12#	BC141T	28m	3.7	SA	1.0	100m	100	7.0	60	100uS	1.0	100m	63	250	50mSΔ		250m	PE		T039	A	
13#	BC141A1	28m*	3.7	SA	1.0	100m	100	7.0S	60	100m	1.0	100m	40	100	50mSΔ	1.0	250m	PE		R216h	A	
14#	BC141B1	28m*	3.7	SA	1.0	100m	100	7.0S	60	100m	1.0	100m	63	180	50mSΔ	1.0	250m	PE		R216h	A	
15#	BC141C1	28m*	3.7	SA	1.0	100m	100	7.0S	60	100m	1.0	100m	100	250	50mSΔ	1.0	250m	PE		R216h	A	
16#	BD745T	28m	3.5	SA	20	5.0	50	5.0	45	100u	4.0	5.0	20	#	150		350n	DEI		T03	D	
17#	BD745A1	28m	3.5	SA	20	5.0	70	5.0	60	100u	4.0	5.0	20	#	150		350n	DEI		T03	D	
18#	BD745B1	28m	3.5	SA	20	5.0	90	5.0	80	100u	4.0	5.0	20	#	150		350n	DEI		T03	D	
19#	BD745C1	28m	3.5	SA	20	5.0	110	5.0	100	100u	4.0	5.0	20	#	150		350n	DEI		T03	D	
20#	BD745D1	28m	3.5	SA	20	5.0	130	5.0	120	100u	4.0	5.0	20	#	150		350n	DEI		T03	D	
21#	BFR22	28m	5.0	SA	1.0		120	7.0	65	2.0m	1.0	10m	35							T039	A	
22#	BFR97	28m	5.0	SA	400m		55	3.5	30	20uΔ	5.0	50m	10	200	500mSΔ					T039	A	
23#	BFY44	28m	5.0	SA	1.0	200m	80	4.0	60	50n	5.0	500mΔ	20	∅	210m	200m		PE		T039	A	
24#	BFY70	28m	5.0	SA	1.0	200m	60	4.0	40	50n	5.0	500mΔ	5.0		210m	200m		PE		T039	A	
25#	BSS42T	28m	1.0	SA	1.5	200m	120	6.0	120	100n	5.0	10m	40	80	100m	350m	40m	PE		T039	A	
26#	BSW29	28m	1.0	SA	1.0		40	4.0	30	700n	2.0	500m	35		200m	40m	PE		T05	A		
27#	BSX45-6T	28m	5.0	SA	1.0	200m		7.0	40	30nS	1.0	100m	40	100	50mSΔ	1.0	15n	PE		T039	A	
28#	BSX45-10T	28m	5.0	SA	1.0	200m		7.0	40	30nS	1.0	100m	63	180	50mSΔ	1.0	15n	PE		T039	A	
29#	BSX45-16T	28m	5.0	SA	1.0	200m		7.0	40	30nS	1.0	100m	100	250	50mSΔ	1.0	15n	PE		T039	A	
30#	BSX46-6T	28m	5.0	SA	1.0	200m		7.0	60	30nS	1.0	100m	40	100	50mSΔ	1.0	15n	PE		T039	A	
31#	BSX46-10T	28m	5.0	SA	1.0	200m		7.0	60	30nS	1.0	100m	63	180	50mSΔ	1.0	15n	PE		T039	A	
32#	BSX46-16T	28m	5.0	SA	1.0	200m		7.0	60	30nS	1.0	100m	100	250	50mSΔ	1.0	15n	PE		T039	A	
33#	BSX47-6	28m	5.0	SA	1.0	200m		7.0	80	30nS	1.0	100m	40	100	50mSΔ	1.8	15n	PE		T039	A	
34#	BSX47-10	28m	5.0	SA	1.0	200m		7.0	80	30nS	1.0	100m	63	180	50mSΔ	1.8	15n	PE		T039	A	
35#	BSX62	28m	5.0	SA	3.0	500m		5.0	40	100nS	1.0	1.0	40	100	70mS		1.5uS	PE		T039	A	
36#	BSX62-6	28m	5.0	SA	3.0	500m	60	5.0	40	100mS	1.0	1.0	40	100	70mS		300n	PE		T039	A	
37#	BSX63T	28m	7.7	SA	3.0	500m		5.0	60	100nS	1.0	1.0	63	160	100mS	700m	300n	PE		T039	A	
38#	BSX63-6T	28m	5.0	SA	3.0	500m	80	5.0	60	100n	1.0	1.0	40	100	70mS			PE		T039	A	
39#	BSX64	28m	5.0	SA	3.0			80	80	100nS	1.0	1.0	63	160	30mSΔ			PE		T039	A	
40	BT3999	28m	5.0	SA	5.0	1.0	100	6.0	50	1.0u	2.0	1.0	40	240		1.2		PE		C16	AA	
41	BT3999T	28m	5.0	SA	5.0	1.0	100	6.0	50	1.0u	2.0	1.0	40	240		1.2		PE		C16	AA	
42	C1-12	28m	5.0	SA	250m			4.0	15						470m#			PE		W54	R	
43	C1-28	28m	5.0	SA	250m			4.0	33						400m#			PE		W54	R	
44#	MC140	28m	3.5	SA	1.0		80	7.0	40	100n	1.0	150m	40	300		1.0		DPE		TO126	A	
45#	MC141	28m	3.5	SA	1.0		100	7.0	60	100n	1.0	150m	40	300		1.0		DPE		TO126	A	
46#	MC142	28m	3.5	SA	1.0		100	5.0	100	100n	1.0	150m	20	300		1.0		DPE		TO126	A	
47#	MC160	28m	3.5	SA	1.5		80	7.0	40	500n	1.0	500m	40	250		1.0		DPE		TO126	A	
48#	MC161	28m	3.5	SA	1.5		100	7.0	60	500n	1.0	500m	40	250		1.0		DPE		TO126	A	
49#	MC338	28m	3.5	SA	800m#			5.0	20	100nS	1.0	100m	100	630	100mS	1.4		PE		B16n	A	
50	MM1893	28m	1.0	SA	1.0		120	7.0	80	10n	1.0	150m	40	120	50mSΔ	24		AN		T039	A	
51	MM2193A1	28m	1.0	SA	1.0		80	8.0	50	10n	1.0	150m	40	120	50mSΔ	1.6		AN		T039	A	
52	MM2261T	28m	1.0	SA	1.0		60	5.0	50	500n	1.0	50m	40	200	100mSΔ	3.3	1.0u	AN		T05	A	
53	MM2262T	28m	1.0	SA	1.0		100	5.0	100	500n	1.0	50m	60	300	100mSΔ	2.0	1.0u	AN		T05	A	
54	MM2263T	28m	1.0	SA	1.0		150	5.0	150	500n	1.0	50m	40	200	100mSΔ	1.3	1.0u	AN		T05	A	
55	MM2270	28m	1.0	SA	1.0		60	7.0	45	50n	1.0	150m	50	200	100mSΔ	6.0		AN		T039	A	
56	MM3004	28m	1.1	SA	1.5			25	100n	1.0	150m	70		50mSΔ		500m	AN		T039	A		
57	MM3019	28m	1.0	SA	1.0		140	7.0	80	10n	1.0	150m	100	300	80mSΔ			AN		T039	A	
58	MM3020	28m	1.0	SA	1.0		140	7.0	80	10n	1.0	100u	30	100	80mSΔ			AN		T039	A	
59	MM3053	28m	1.0	SA	1.0		80	6.0	50	100n	1.0	150m	40	300	100mSΔ	4.0		AN		T039	A	
60	MM3220T	28m	1.0	SA	1.0		50	6.5	30	1.0	500m	25	125	270mS	800m#	30n	AN		T039	A		
61	MM3724T	28m	1.0	SA	1.5			30	500n	2.0	500m	25	150	200mSΔ	900m		AN		T05	A		
62	MM3725T	28m	1.0	SA	1.5			6.0	500n	2.0	500m	25	150	200mSΔ	900m		AN		T05	A		
63	MRF227	28m	5.0	SA	400m		36	16	1.0m	5.0	100m	20	200	225mS			AN		T039	F		
64	MRF229*	28m	5.0	SA	500m		36	4.0T	18	500u	5.0	250m	5.0		90m#			AN		R216f	F	
65	MRF230	28m	5.0	SA	500m		36	4.0T	18	500u	5.0	250m	5.0		90m#			AN		T039	A	
66	MRF607	28m	3.5	SA	330m		36	4.0T	16	300mΔ	5.0	50m	20	150				AN		T039	A	
67	MRF8004	28m	5.0	SA	1.0		60	3.0T	30	10u	2.0	400m	10					AN		T039	A	
68	PT3500	28m	5.0	SA	500m		60	3.0	40	100u	2.0	50m	15	100	600mS			PL		T039	A	
69	SD1005	28m	5.0	SA	400m		50	5.0	30	100uΔ	2.0	70m	30	300	1.8G					T59i	R	
70	SD1144	28m	5.0	SA	400m		36	4.0	16	1.0m	5.0	100m	20				PE			T90	R	
71	SPT3440	28m	5.0	SA	1.0	500m	250	7.0	175	20u	1.0	20	40	160	20mSΔ					T05	B	
72	TIP3055T	28m	3.5	SA	15	1	100	7.0T	70	1.0m*	4.0	4.0	20	20			DM			B19	B	
73#	1N3866	28m	1.6	SA	400m	400m	55	35T	30	20u*	5.0	50m	10	200	500mS							

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J TO C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS Ic	MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C A D E		
					Ic (A)	Ib (A)	BVcbo (V)	BVceo (V)	BVcvo (V)	Icbo @ MAX Vcb @ 25°C (A)	Vcb (V)										Vcb (A)	
1	40250V1	33m	5.8	SJ	4.0	2.0	50	5.0	40	1.0m	4.0	1.5	25	100				DPL	F18	A		
2	40321	33m	1.0	SJ	1.0	500m		5.0	300	100	100	20	25	200				DPL	TO5	A		
3	40321L	33m	1.0	SJ	1.0	500m		5.0	300	100	100	20	25	200				DPL	TO5	A		
4	40321S	33m	1.0	SJ	1.0	500m		5.0	300	100	100	20	25	200				D	TO39	A		
5	40326	33m	1.0	SJ	700m	20		2.5	40	250	4.0	10	40	200				DPL	TO5	A		
6	40326L	33m	1.0	SJ	700m	200m		2.5	40	250	4.0	10	40	200				D	TO5	A		
7	40326S	33m	1.0	SJ	700m	200m		2.5	40	250	4.0	10	40	200				D	TO39	A		
8	40327	33m	1.0	SJ	1.0	500m		5.0	300	100	100	20	40	250				D	TO5	A		
9	40327L	33m	1.0	SJ	1.0	500m		5.0	300	100	100	20	40	250				D	TO5	A		
10	40327S	33m	1.0	SJ	1.0	500m		5.0	300	100	100	20	40	250				D	TO39	A		
11	40372	33m	5.8	SJ	4.0	2.0		90	7.0	55	1.0m	500	25	100	#	800kΔ		H	F18	C		
12	40373	33m	5.8	SJ	3.0	2.0		160	7.0	140	5.0m	500	25	100	#	800kΔ		H	F18	C		
13	40375	33m	5.8	SJ	7.0	5.0		120	7.0	50	5.0m	500	50	200				E	F18	C		
14	40837	33m	4.1	SJ	275m	50		50	3.5	50	1.0m	500				5.0		PE	W48a	C		
15	40898	33m	4.1	SJ	350m	45		35	4.5	2.0m	2.0m					10		PE	Y215a	A		
16	40910	33m	5.8	SJ	3.0	2.0		50	5.0	40	5.0m	4.0	1.5	20	100	#	800kΔ	H	F18	C		
17	40911	33m	5.8	SJ	4.0	2.0		90	7.0	80	500	1.5	25	100	#	800kΔ	H	F18	C			
18	40912	33m	5.8	SJ	3.0	2.0		140	7.0	120	2.0m	500	20	100	#	800kΔ	H	F18	C			
19	40913	33m	5.8	SJ	3.0	2.0		170	7.0	150	5.0m	2.0	1.0	20	80	#	800kΔ	H	F18	C		
20	BF257 #	33m	5.0	SJ	100m	160		5.0	160	50	50	30	25	90	#	90M	PE	TO39	A			
21	BF258 #	33m	5.0	SJ	100m	250		5.0	250	50	50	30	25	90	#	90M	PE	TO39	A			
22	BF259 #	33m	5.0	SJ	100m	300		5.0	300	50	50	30	25	90	#	90M	PE	TO39	A			
23	BF57	33m	5.0	SJ	100m	160		5.0	160	50	50	30	25	90	#	90M	PE	TO39	A			
24	BF58	33m	5.0	SJ	100m	250		5.0	250	50	50	30	25	90	#	90M	PE	TO39	A			
25	BF59	33m	5.0	SJ	100m	300		5.0	300	50	50	30	25	90	#	90M	PE	TO39	A			
26	BF589	33m	5.0	SJ	150m	300		5.0	300	50	50	30	25	90	#	90M	PE	TO39	A			
27	BF51	33m	6.0	SJ	1.0	80		4.0	80	1.0	100	15	15	180	#	180M	PL	TO5	A			
28	PE7058	33m	1.2	SJ	2.0 #	220		7.0	220	100	20	30	40	150	#	90M	DPE	TO92	A			
29	PE7059	33m	1.2	SJ	2.0 #	300		7.0	300	100	20	30	40	150	#	80M	DPE	TO92	A			
30	ZT90	33m	1.0	SJ	1.0 #	60		6.0	60	100	100	200	60	200	#	300M	PL	TO5	A			
31	ZT91	33m	1.0	SJ	1.0 #	120		6.0	100	1.0	100	200	40	120	#	250M	PL	TO5	A			
32	ZT92	33m	1.0	SJ	1.0 #	120		6.0	100	1.0	100	200	65	200	#	250M	PL	TO5	A			
33	ZT93	33m	1.0	SJ	1.0 #	120		6.0	80	100	100	150	40	120	#	300M	PL	TO5	A			
34	ZT94	33m	1.0	SJ	1.0 #	60		6.0	45	1.0	100	10	20	300	#	300M	PL	TO5	A			
35	ZT95	33m	1.0	SJ	1.0 #	60		6.0	60	100	100	350	30	200	#	300M	PL	TO5	A			
36	2N53341	34m	6.0	SJ	3.0	500m		60	8.0	60	5.0	2.0	1.0	30	150	#	40MΔ		50n	TO39	A	
37	2N53351	34m	6.0	SJ	3.0	500m		80	8.0	80	5.0	2.0	1.0	30	150	#	40MΔ		50n	TO39	A	
38	2N53361	34m	6.0	SJ	5.0	1.0		80	6.0	80	10	2.0	2.0	30	120	#	30MΔ		100n	TO39	A	
39	2N53371	34m	6.0	SJ	5.0	1.0		80	6.0	80	10	2.0	2.0	60	240	#	30MΔ		100n	TO39	A	
40	2N53381	34m	6.0	SJ	5.0	1.0		100	6.0	100	10	2.0	2.0	30	120	#	30MΔ		100n	TO39	A	
41	2N53391	34m	6.0	SJ	5.0	1.0		100	6.0	100	10	2.0	2.0	60	240	#	30MΔ		100n	TO39	A	
42	BFT32	34m	1.0	SA	5.0	80		5.0	60	100	100	150	50	300	#	100MΔ		2.0	PE	TO39	A	
43	BFT33	34m	1.0	SA	5.0	100		5.0	80	100	100	150	50	250	#	100MΔ		2.0	PE	TO39	A	
44	BFT34	34m	1.0	SA	5.0	120		5.0	100	100	100	150	50	200	#	100MΔ		2.0	PE	TO39	A	
45	HEPS5014-RT	34m	6.0	SJ	3.0	60		6.0	40	500	5.0	150	85	40	#	4.0M				TO5	A	
46	SPT5502	34m	6.0	SJ	1.0	500m		10	700	100	5.0	500	10	45	#	10MΔ		700n		TO5	A	
47	SPT5503	34m	6.0	SJ	1.0	500m		10	800	100	5.0	500	10	45	#	10MΔ		700n		TO5	A	
48	TIP5011	34m	1.0	SJ	3.0 †	500m		40 †	4.0	40	1.0	1.5	1.0	25	180	#	60MΔ		100n	TO39	A	
49	TIP501 #	34m	6.0	SJ	3.0	0.5		4.0	4.0	10	1.5	1.0	25	180	#	60MΔ		150n		TO39	A	
50	TIP5021	34m	1.0	SJ	3.0 †	500m		60 †	4.0	60	1.0	1.5	1.0	25	180	#	60MΔ		100n	TO39	A	
51	TIP502 #	34m	6.0	SJ	3.0	0.5		60	4.0	60	1.0	1.5	1.0	25	180	#	60MΔ		100n	TO39	A	
52	2N5923	35m	6.0	SS	750m	55 †		3.5 †	35	10m	10m									T75d	R	
53	2N26571	40m	1.2	SJ	5.0	500m		80	7.0	60	100	2.0	1.0	40	120	#	20MΔ		80n	TO5	A	
54	2N26581	40m	1.2	SJ	5.0	500m		100	7.0	80	100	2.0	1.0	40	120	#	20MΔ		80n	TO5	A	
55	2N2949	40m	6.0	SC	700m	100m		60 †	3.0 †	60	100	2.0	40m	5.0	100	#	100MΔ			R70	A	
56	2N2950	40m	6.0	SC	700m	100m		60 †	3.0 †	60	100	2.0	40m	5.0	100	#	100MΔ			T30	A	
57	2N3296	40m	6.0	SC	700m	100m		60 †	3.0 †	60	100	2.0	40m	5.0	50	#	50MΔ			T30	A	
58	2N3553	40m	7.0	SC	350m	100m		65 †	4.0 †	40	1.0m	5.0	250	15	150	#	350MΔ		4.0	TO39	A	
59	JAN2N3553	40m	1.0	SJ	1.0	65		4.0	40	200	5.0	150	15	150	#	50MΔ			TO39	A		
60	2N3593	40m	1.0	SC	500m	250m		200	10	200	1.0	8.0	200	30	90	#	15MΔ			T20	A	
61	2N3594	40m	1.0	SC	500m	250m		200	10	200	1.0	8.0	200	75	150	#	15MΔ			T20	A	
62	2N3916	40m	5.0	SJ	150m	150		5.0	150	1.0	100	150	40	200	#	50MΔ			F16	A		
63	2N3924	40m	7.0	SS	500m	36		4.0	18	100	5.0	500	10	100	#	150MΔ			TO39	A		
64	2N43491	40m	7.0	SJ	2.0	65		5.0	40	100	1.0	1.0	20	300	#	50MΔ		500m	130n	PE	TO5	A
65	2N4350	40m	7.0	SJ	350m	100m		65	4.0	40	100	5.0	350	10	200	#	300MΔ		2.9	TO5	A	
66	2N4862	40m	4.0	SJ	2.0	500m		140	8.0	120	100	5.0	500	50	150	#	50MΔ			TO46	A	
67	2N4863	40m	4.0	SJ	2.0	500m		140	8.0	120	100	5.0	500	50	150	#	50MΔ			TO5	A	
68	2N5090	40m	4.0	SJ	400m	400m		55	3.5	30	5.0m	5.0	50	10	200	#	50MΔ			TO60	A	
69	2N5102	40m	7.0	SS	3.3	1.0		90	4.0	50	5.0	500	10	100	#	150MΔ			TO60	A		
70	2N5148	40m	1.0	SJ	2.0	1.0		100 †	6.0 †	80	1.0m	4.0	1.0	30	90	#	50MΔ			TO39	A	
71	2N5150	40m	1.0	SJ	2.0	1.0		100 †	6.0 †	80	1.0m	4.0	1.0	70	200	#	60MΔ			TO39	A	
72	2N5252	40m	1.0	SS	1.0	250m		300	6.0	300	10	100	40	120	#	30MΔ		5.0	TO39	A		
73	2N5253	40m	1.0	SS	1.0	250m		300	6.0	300	10	100	80	250	#	30MΔ		5.0	TO39	A		
74	2N5916	40m	4.0	SS	200m	55 †		3.5 †	24	1.0m	1.5	50	20	20	#	1.0GΔ			T78	R		
75	2N5917	40m	4.0	SS	200m	55 †		3.5 †	24	1.0m	1.5	50	20	20	#	1.0GΔ			T78	R		
76	2N63761	40m	1.0	SS	1.5	75		6.0	40	200	1.0	500	30	90	#	300MΔ		2.5	20n			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1) MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo Vc @ 25°C (A)		BIAS hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a To200	L C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVceo (V)	BVceo (V)	Icbo (A)	Vcbo (V)	Ic (A)	hFE (A)	hFE (V)								
1 #	BFR63	40m	3.5	5	5	200m	40	3.5	25	10u	5.0	50m	25	1.1G	7.5						T89	R	
2 #	BFR64	40m	3.5	5	5	200m	40	3.5	25	10u	5.0	50m	25	1.2G	7.5						T89	R	
3	BLY33	40m	5.0	5	5	500m	40	4.0	33	5.0m	5.0	200m	10	60	450M						T039	A	
4	BLY34	40m	5.0	5	5	500m	40	4.0	20	5.0m	5.0	200m	10	60	450M						T039	A	
5 #	BSV601	40m	6.2	5	5	5.0 #	60	5.0	40	100n	2.0	2.0	40 #	120	50M	450m #	500n		PL		T039	A	
6 #	BSV641	40m	5.0	5	5	2.0	100	5.0	60	100n	2.0	2.0	40	40	100M	200m	600n		PE		T039	A	
7 #	BUY68	40m	8.70m	5	5	5.0	100	8.0	60	1.0m	1.0	1.0	40	250	100M		350n		PE		T039	A	
8	KSP1051	40m		5	5	5.0	1.0	225	8.0	200	1.0u	5.0	1.0	20	60	40M					T05		
9	KSP1052	40m		5	5	5.0	1.0	250	8.0	225	1.0u	5.0	1.0	20	60	40M					T05		
10	KSP1053	40m		5	5	5.0	1.0	275	8.0	250	1.0u	5.0	1.0	20	60	40M					T05		
11	KSP1054	40m		5	5	5.0	1.0	300	8.0	275	1.0u	5.0	1.0	20	60	40M					T05		
12	KSP1055	40m		5	5	5.0	1.0	325	8.0	300	1.0u	5.0	1.0	20	60	40M					T05		
13 #	KT9198	40m	5.0	5	5	350m	45	5.0	100	5.0m	5.0	50m	25	1.3G	100						W94	E	
14	MRF531	40m	2.5	5	5		100	3.5	200	10u	5.0	50m	25								T039	A	
15	MRF604	40m	2.5	5	5		40	4.0	200	1.0m	5.0	50m	200								T046	A	
16	MST20B	40m	2.0	5	5	1.0	400m	200	5.0	200	12u	100	60m	30	20M	34			DM		T05		
17	MST30B	40m	2.0	5	5	1.0	400m	300	5.0	300	12u	100	60m	30	20M	34			DM		T05		
18	MST40B	40m	2.0	5	5	1.0	400m	400	5.0	400	12u	100	60m	30	20M	34			DM		T05		
19	MST50B	40m	2.0	5	5	1.0	400m	500	5.0	500	12u	100	60m	30	20M	34			DM		T05		
20	MST80B	40m	2.0	5	5	1.0	400m	600	5.0	600	12u	100	60m	30	20M	34			DM		T05		
21	MST70B	40m	2.0	5	5	1.0	400m	700	5.0	700	12u	100	60m	30	20M	34			DM		T05		
22	RCA1A18	40m	7.0	5	5	1.0	500m	4.0	10	10u	4.0	10m	40	250	120M	100			DPL		T039	A	
23	SDT4451	40m	7.0	5	5	5.0		80	8.0	40	1.0u	5.0	1.0	20	60	20M			PL		T05	A	
24	SDT4452	40m	7.0	5	5	5.0		100	8.0	80	1.0u	5.0	1.0	20	60	20M			PL		T05	A	
25	SDT4453	40m	7.0	5	5	5.0		80	8.0	40	1.0u	5.0	1.0	40	120	20M			PL		T05	A	
26	SDT4454	40m	7.0	5	5	5.0		100	8.0	80	1.0u	5.0	1.0	40	120	20M			PL		T05	A	
27	SDT4455	40m	7.0	5	5	5.0		80	8.0	40	1.0u	5.0	1.0	100	20M			PL		T05	A		
28	SDT4456	40m	7.0	5	5	5.0		100	8.0	80	1.0u	5.0	1.0	100	20M			PL		T05	A		
29	SDT4483	40m	7.0	5	5	5.0		60	5.0	40	1.0u	5.0	1.0	20	60	20M			PL		T05	A	
30	SDT4921	40m	7.0	5	5	5.0	1.0	225	8.0	200	1.0u	5.0	1.0	20	60	30M			PL		T05	A	
31	SDT4922	40m	7.0	5	5	5.0	1.0	250	8.0	225	1.0u	5.0	1.0	20	60	30M			PL		T05	A	
32	SDT4923	40m	7.0	5	5	5.0	1.0	275	8.0	250	1.0u	5.0	1.0	20	60	30M			PL		T05	A	
33	SDT4924	40m	7.0	5	5	5.0	1.0	300	8.0	275	1.0u	5.0	1.0	20	60	30M			PL		T05	A	
34	SDT4925	40m	7.0	5	5	5.0	1.0	325	8.0	300	1.0u	5.0	1.0	20	60	30M			PL		T05	A	
35	SDT5001	40m	7.0	5	5	2.0	1.0	60	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T046	A	
36	SDT5002	40m	7.0	5	5	2.0	1.0	80	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T046	A	
37	SDT5003	40m	7.0	5	5	2.0	1.0	100	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T046	A	
38	SDT5004	40m	7.0	5	5	2.0	1.0	140	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T046	A	
39	SDT5005	40m	7.0	5	5	2.0	1.0	180	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T046	A	
40	SDT5006	40m	7.0	5	5	2.0	1.0	60	8.0	100n	5.0	500m	30	150	50M	700m	250n		PL		T046	A	
41	SDT5007	40m	7.0	5	5	2.0	1.0	80	8.0	100n	5.0	500m	30	150	50M	700m	250n		PL		T046	A	
42	SDT5008	40m	7.0	5	5	2.0	1.0	100	8.0	100n	5.0	500m	30	150	50M	700m	250n		PL		T046	A	
43	SDT5009	40m	7.0	5	5	2.0	1.0	140	8.0	100n	5.0	500m	30	150	50M	700m	150n		PL		T046	A	
44	SDT5010	40m	7.0	5	5	2.0	1.0	180	8.0	100n	5.0	500m	30	150	50M	700m	150n		PL		T046	A	
45	SDT5011	40m	7.0	5	5	2.0	1.0	60	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T046	A	
46	SDT5012	40m	7.0	5	5	2.0	1.0	80	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T046	A	
47	SDT5013	40m	7.0	5	5	2.0	1.0	100	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T046	A	
48	SDT5014	40m	7.0	5	5	2.0	1.0	140	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T046	A	
49	SDT5015	40m	7.0	5	5	2.0	1.0	180	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T046	A	
50	SDT5051	40m	7.0	5	5	2.0	1.0	175	8.0	100n	5.0	500m	50	150	50M	700m	200n		PL		T046	A	
51	SDT5052	40m	7.0	5	5	2.0	1.0	200	8.0	100n	5.0	500m	50	150	50M	700m	200n		PL		T046	A	
52	SDT5053	40m	7.0	5	5	2.0	1.0	225	8.0	100n	5.0	500m	50	150	50M	700m	200n		PL		T046	A	
53	SDT5054	40m	7.0	5	5	2.0	1.0	175	8.0	100n	5.0	500m	30	150	50M	700m	200n		PL		T046	A	
54	SDT5055	40m	7.0	5	5	2.0	1.0	200	8.0	100n	5.0	500m	30	150	50M	700m	200n		PL		T046	A	
55	SDT5056	40m	7.0	5	5	2.0	1.0	225	8.0	100n	5.0	500m	30	150	50M	700m	200n		PL		T046	A	
56	SDT5501	40m	7.0	5	5	2.0	1.0	60	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T05	A	
57	SDT5502	40m	7.0	5	5	2.0	1.0	80	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T05	A	
58	SDT5503	40m	7.0	5	5	2.0	1.0	100	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T05	A	
59	SDT5504	40m	7.0	5	5	2.0	1.0	140	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T05	A	
60	SDT5505	40m	7.0	5	5	2.0	1.0	180	8.0	100n	5.0	500m	50	150	50M	700m	150n		PL		T05	A	
61	SDT5506	40m	7.0	5	5	2.0	1.0	60	8.0	100n	5.0	500m	30	150	50M	700m	250n		PL		T05	A	
62	SDT5507	40m	7.0	5	5	2.0	1.0	80	8.0	100n	5.0	500m	30	150	50M	700m	250n		PL		T05	A	
63	SDT5508	40m	7.0	5	5	2.0	1.0	100	8.0	100n	5.0	500m	30	150	50M	700m	250n		PL		T05	A	
64	SDT5509	40m	7.0	5	5	2.0	1.0	140	8.0	100n	5.0	500m	30	150	50M	700m	150n		PL		T05	A	
65	SDT5510	40m	7.0	5	5	2.0	1.0	180	8.0	100n	5.0	500m	30	150	50M	700m	150n		PL		T05	A	
66	SDT5511	40m	7.0	5	5	2.0	1.0	60	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T05	A	
67	SDT5512	40m	7.0	5	5	2.0	1.0	80	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T05	A	
68	SDT5513	40m	7.0	5	5	2.0	1.0	100	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T05	A	
69	SDT5514	40m	7.0	5	5	2.0	1.0	140	8.0	100n	5.0	500m	120	150	50M	700m	150n		PL		T05	A	
70	SDT5515	40m	7.0	5	5	2.0	1.0	180	8.0	100n	5.0	500m	120	150	50M								

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS V <sub>cb</sub> (V)	MIN (A)	MAX (A)	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 TO200 Ser.	L C O A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb0</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	hFE (A)									
1	MRF237	45m	8.0	5	840m		36	4.0	18	2500	5.0	250m	5.0	225M			PE	T039	F	
2	BLY92A*	46m	32	5	1.5		65	4.0	36	10mΔ	5.0	500m	5.0	T72m			PE	T066	R	
3	HSE904-RT	48m	6.0	5	1.0	100m	120	2.0	120	100u	10	500m	10	T066			PE	T066	C	
4	2N2485	50m	8.8	5	1.0	100m	140	2.0	140	500u	10	500m	10	T05			PE	T05	A	
5	2N2486	50m	8.8	5	1.5		80	4.0	60	100n	10	300m	10	T05			PE	T05	A	
6	JAN2N2631	50m	8.7	5	1.0	100m	140	2.0	140	500u	10	500m	10	T05			PE	T05	A	
7	2N2650	50m	18	5	2.5		80	4.0	60	100n	10	500m	10	T05			PE	T05	A	
8	2N2876	50m	5.0	5	3.0	1.0	150	10	125	2.0	1.0	20	60	T05			PE	T05	A	
9	2N2911	50m	1.0	5	1.5		100	4.0	80	100n	4.0	500m	40	T05			PE	T05	A	
10	2N3262†	50m	7.5	5	2.5	500m	75	4.0	40	25u	5.0	1.0	40 #	T05			PE	T05	A	
11	2N3619	50m	7.5	5	5.0		75	4.0	40	25u	5.0	1.0	40 #	T05			PE	T05	A	
12	2N3620	50m	7.5	5	5.0		75	4.0	40	25u	5.0	1.0	40 #	T05			PE	T05	A	
13	2N3623	50m	7.5	5	2.5	500m	75	4.0	40	1.0u	5.0	1.0	40 #	T05			PE	T05	A	
14	2N3624	50m	7.5	5	2.5	500m	75	4.0	40	1.0u	5.0	1.0	40 #	T05			PE	T05	A	
15	2N3627	50m	7.5	5	2.5	500m	100	4.0	50	1.0u	5.0	1.0	40 #	T05			PE	T05	A	
16	2N3628	50m	7.5	5	2.5	500m	100	4.0	50	1.0u	5.0	1.0	40 #	T05			PE	T05	A	
17	2N3675†	50m	8.8	5	3.0	1.0	90	7.0	55	5.0m #	1.0	1.0	12	60	T05			PE	T05	A
18	2N3676†	50m	8.8	5	3.0	1.0	90	7.0	90	5.0m #	1.0	1.0	12	60	T05			PE	T05	A
19	2N3928†	50m	5.0	5	3.0	500m	80	4.0	40	1.0m #	1.5	20	300 #	T05			PE	T05	A	
20	2N4054	50m	4.0	5	100m		300	7.0	300	100u	10	50m	30	T05			PE	T05	A	
21	2N4055	50m	4.0	5	100m		250	7.0	250	100u	10	50m	30	T05			PE	T05	A	
22	2N4056	50m	4.0	5	100m		200	7.0	200	100u	10	50m	30	T05			PE	T05	A	
23	2N4057	50m	4.0	5	100m		150	7.0	150	100u	10	50m	30	T05			PE	T05	A	
24	2N4132	50m	7.5	5	600m	100m	90	5.0	80	100u	5.0	200m	10	T05			PE	T05	A	
25	2N4150†	50m	5.0	5	5.0	2.0	100	5.0	80	100n	5.0	5.0	40	T05			PE	T05	A	
26	JAN2N4150†	50m	1.5	5	10		100	7.0	70	100n	5.0	5.0	40	T05			PE	T05	A	
27	2N4225†	50m	5.0	5	3.0	50	80	6.0	40	1.0m	5.0	1.0	40	T05			PE	T05	A	
28	2N4226†	50m	5.0	5	3.0	50	100	6.0	40	1.0m	5.0	1.0	40	T05			PE	T05	A	
29	2N5237†	50m	5.0	5	5.0	2.0	150	5.0	120	10u #	5.0	5.0	40	T05			PE	T05	A	
30	JAN2N5237†	50m	1.5	5	10		150	7.0	120	100n	5.0	5.0	40	T05			PE	T05	A	
31	2N5238†	50m	5.0	5	5.0	2.0	200	5.0	170	10u #	5.0	5.0	40	T05			PE	T05	A	
32	JAN2N5238†	50m	1.5	5	10		200	7.0	170	100n	5.0	5.0	40	T05			PE	T05	A	
33	2N5237†	50m	5.0	5	10	2.0	100	5.0	80	2.0	1.0	100	300	T05			PE	T05	A	
34#	2SC495	50m	5.0	5	800m	800m	70	5.0	50	1.0u	2.0	50m	40	T05			PE	T05	A	
35#	2SC496	50m	5.0	5	800m	800m	40	5.0	30	1.0u	2.0	50m	40	T05			PE	T05	A	
36#	2SC582	50m	4.0	5	100m		300	3.0	300	100m	10	50m	30	T05			PE	T05	A	
37#	2SD156	50m	4.0	5	100m		200	3.0	200	10m	10	50m	20	T05			PE	T05	A	
38#	2SD157	50m	4.0	5	100m		300	3.0	300	10m	10	50m	20	T05			PE	T05	A	
39	40264	50m	4.0	5	100m		300	3.0	300	100u	10	50m	30	T05			PE	T05	A	
40	40347	50m	1.0	5	1.5	500m	60	7.0	40	1.0u*	4.0	450m	25	T05			PE	T05	A	
41	40347L	50m	1.0	5	1.5	500m	60	7.0	40	1.0u*	4.0	450m	25	T05			PE	T05	A	
42	40347S	50m	1.0	5	1.5	500m	60	7.0	40	1.0u*	4.0	450m	25	T05			PE	T05	A	
43	40348	50m	1.0	5	1.5	500m	90	7.0	65	1.0u*	4.0	300m	30	T05			PE	T05	A	
44	40348L	50m	1.0	5	1.5	500m	90	7.0	65	1.0u*	4.0	300m	30	T05			PE	T05	A	
45	40348S	50m	1.0	5	1.5	500m	90	7.0	65	1.0u*	4.0	300m	30	T05			PE	T05	A	
46	40349	50m	1.0	5	1.5	500m	160	7.0	140	1.0u*	4.0	150m	30	T05			PE	T05	A	
47	40349L	50m	1.0	5	1.5	500m	160	7.0	140	1.0u*	4.0	150m	30	T05			PE	T05	A	
48	40349S	50m	1.0	5	1.5	500m	160	7.0	140	1.0u*	4.0	150m	30	T05			PE	T05	A	
49#	BF469	50m	1.8	5	100m		250	5.0	250	10n	20	25m	50	T05			PE	T05	A	
50#	BF471	50m	2.0	5	100m		300	5.0	300	5	20	25m	50	T05			PE	T05	A	
51#	BF857	50m	1.8	5	300m	50m	160	5.0	160	50n	10	30m	25	T05			PE	T05	A	
52#	BF858	50m	1.8	5	300m	50m	270	5.0	250	50n	10	30m	25	T05			PE	T05	A	
53#	BF859	50m	1.8	5	300m	50m	300	5.0	300	50n	10	30m	25	T05			PE	T05	A	
54	D40C3	50m	1.3	5	1.0 #		13	3.0	30	20u†	5.0	200m	90k	T05			PE	T05	A	
55	D40D1†	50m	6.2	5	1.0	100m		5.0	30	100n	2.0	100m	50	T05			PE	T05	A	
56	D40D2†	50m	6.2	5	1.0	100m		5.0	30	100n	2.0	100m	120	T05			PE	T05	A	
57	D40D3†	50m	6.2	5	1.0			5.0	30	100n	2.0	100m	290	T05			PE	T05	A	
58	D40D4†	50m	6.2	5	1.0	100m		5.0	45	100n	2.0	100m	50	T05			PE	T05	A	
59	D40D5†	50m	6.2	5	1.0	100m		5.0	45	100n	2.0	100m	120	T05			PE	T05	A	
60	D40D7†	50m	6.2	5	1.0	100m		5.0	60	100n	2.0	100m	50	T05			PE	T05	A	
61	D40D8†	50m	6.2	5	1.0	100m		5.0	60	100n	2.0	100m	120	T05			PE	T05	A	
62	D40D10†	50m	6.2	5	1.0	100m		5.0	75	100n	2.0	100m	50	T05			PE	T05	A	
63	D40D11†	50m	6.2	5	1.0	100m		5.0	75	100n	2.0	100m	120	T05			PE	T05	A	
64	D40D13†	50m	6.2	5	1.0	100m		5.0	75	100n	2.0	100m	50	T05			PE	T05	A	
65	D40D14†	50m	6.2	5	1.0	100m		5.0	75	100n	2.0	100m	120	T05			PE	T05	A	
66	D40N1	50m	6.2	5	100m		250	5.0	250	10u	10	20m	30	T05			PE	T05	A	
67	D40N2	50m	6.2	5	100m		250	5.0	250	10u	10	20m	30	T05			PE	T05	A	
68	D40N3	50m	6.2	5	100m		300	5.0	300	10u	10	20m	30	T05			PE	T05	A	
69	D40N4	50m	6.2	5	100m		300	5.0	300	10u	10	20m	60	T05			PE	T05	A	
70	D40N5	50m	1.6	5	100m		5.0	300	10	10	10	20m	20	T05			PE	T05	A	
71	D40P1	50m	6.2	5	500m		200	7.0	120	10u	10	80m	40	T05			PE	T05	A	
72	D40P3	50m	6.2	5	500m		250	7.0	180	10u	10	80m	40	T05			PE	T05	A	
73	D40P5	50m	6.2	5	500m		300	7.0	225	10u	10	80m	40	T05			PE	T05	A	
74#	DT1311	50m	5.0	5	1.5	500m	60	12	80	1.5u	4.0	200m	20	T05			PE	T05	A	
75#	DT1312	50m	5.0	5	1.5	500m	100	12	100	1.5u	4.0	200m	20	T05			PE	T05	A	
76#	DT1321	50m	5.0	5	1.5	500m	60	12	80	1.5u	4.0	200m	40	T05			PE	T05	A	
77#	DT1322	50m	5.0	5	1.5	500m	100	12	100	1.5u	4.0	200m	40	T05			PE	T05	A	
78	KS6103†	50m	1.0	5	200m		60	4.5	60	500u	5.0	500m	15	T05			PE	T05	A	
79	KS6104†	50m	1.0	5	200m		40	4.5	40	500u	5.0	500m	15	T05			PE	T05	A	
80	MSP10	50m	2.0	5	400m	150m	100	5.0	100	3.0u	10	55m	30	T05			PE	T05	A	
81	MSP15	50m	2.0	5	400m															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. I <sub>cb</sub> @ 25°C (A)	hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a To200	L C O D E		
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	BV <sub>cb</sub> (V)	BV <sub>eb</sub> (V)	BV <sub>ceo</sub> (V)		I <sub>cb</sub> (A)	I <sub>cb</sub> (A)									I <sub>cb</sub> (A)	
1	SDT3421	50m	9.0	0.0		5.0	2.0	40	6.0	40	.01m	5.0	2.0	40	120	40MΔ	50	.50u	PEA	T05	A		
2	SDT3422	50m	9.0	0.0		5.0	2.0	60	6.0	60	.01m	5.0	2.0	40	120	40MΔ	50	.50u	PEA	T05	A		
3	SDT3423	50m	9.0	0.0		5.0	2.0	80	6.0	80	.01m	5.0	2.0	40	120	40MΔ	50	.50u	PEA	T05	A		
4	SDT3424	50m	9.0	0.0		5.0	2.0	100	6.0	100	.01m	5.0	2.0	40	120	40MΔ	50	.50u	PEA	T05	A		
5	SDT3425	50m	9.0	0.0		5.0	2.0	40	6.0	40	.01m	5.0	2.0	20	60	40MΔ	60	.50u	PEA	T05	A		
6	SDT3426	50m	9.0	0.0		5.0	2.0	60	6.0	60	.01m	5.0	2.0	20	60	40MΔ	60	.50u	PEA	T05	A		
7	SDT3427	50m	9.0	0.0		5.0	2.0	80	6.0	80	.01m	5.0	2.0	20	60	40MΔ	60	.50u	PEA	T05	A		
8	SDT3428	50m	9.0	0.0		5.0	2.0	100	6.0	100	.01m	5.0	2.0	20	60	40MΔ	60	.50u	PEA	T05	A		
9	SDT3429	50m	9.0	0.0		5.0	2.0	120	6.0	120	.01m	5.0	2.0	20	60	40MΔ	60	.50u	PEA	T05	A		
10	SDT4301	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	500m	20	80	4.0M			ME	T05			
11	SDT4302	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	500m	20	80	4.0M			ME	T05			
12	SDT4303	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	500m	20	80	4.0M			ME	T05			
13	SDT4304	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	500m	40	120	4.0M			ME	T05			
14	SDT4305	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	500m	40	120	4.0M			ME	T05			
15	SDT4306	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	500m	40	120	4.0M			ME	T05			
16	SDT4307	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	1.0	20	60	4.0M			ME	T05			
17	SDT4308	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	1.0	20	60	4.0M			ME	T05			
18	SDT4309	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	1.0	20	60	4.0M			ME	T05			
19	SDT4310	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	1.0	40	120	4.0M			ME	T05			
20	SDT4311	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	1.0	40	120	4.0M			ME	T05			
21	SDT4312	50m	8.7	0.0		2.0	500m	40	10	40	150u	4.0	1.0	40	120	4.0M			ME	T05			
22	SDT7401	50m	9.0	0.0		5.0	2.0	60	5.0	40	1.0u	5.0	5.0	40	120	15MΔ			PLA	T05	A		
23	SDT7402	50m	9.0	0.0		5.0	2.0	80	5.0	40	1.0u	5.0	5.0	40	120	15MΔ			PLA	T05	A		
24	SDT7403	50m	9.0	0.0		5.0	2.0	100	5.0	40	1.0u	5.0	5.0	40	120	15MΔ			PLA	T05	A		
25	SDT7411	50m	9.0	0.0		5.0	2.0	60	5.0	40	1.0u	5.0	5.0	20	60	15MΔ			PLA	T05	A		
26	SDT7412	50m	9.0	0.0		5.0	2.0	80	5.0	40	1.0u	5.0	5.0	20	60	15MΔ			PLA	T05	A		
27	SDT7413	50m	9.0	0.0		5.0	2.0	100	5.0	40	1.0u	5.0	5.0	20	60	15MΔ			PLA	T05	A		
28	SDT7414	50m	9.0	0.0		5.0	2.0	60	5.0	40	1.0u	5.0	5.0	40	120	15MΔ			PLA	T05	A		
29	SDT7415	50m	9.0	0.0		5.0	2.0	80	5.0	40	1.0u	5.0	5.0	40	120	15MΔ			PLA	T05	A		
30	SDT7416	50m	9.0	0.0		5.0	2.0	100	5.0	40	1.0u	5.0	5.0	40	120	15MΔ			PLA	T05	A		
31	SDT7417	50m	9.0	0.0		5.0	2.0	60	5.0	40	1.0u	5.0	5.0	100	#	15MΔ			PLA	T05	A		
32	SDT7418	50m	9.0	0.0		5.0	2.0	80	5.0	40	1.0u	5.0	5.0	100	#	15MΔ			PLA	T05	A		
33	SDT7419	50m	9.0	0.0		5.0	2.0	100	5.0	40	1.0u	5.0	5.0	100	#	15MΔ			PLA	T05	A		
34	SDT85501	50m	9.0	0.0		1.0	1.0	80	8.0	60	5.0u	5.0	2.0	40	120	40MΔ				T039	A0		
35	SDT85502	50m	9.0	0.0		1.0	1.0	80	8.0	60	5.0u	5.0	2.0	40	120	40MΔ				T039	A0		
36	SDT85503	50m	9.0	0.0		1.0	1.0	100	8.0	80	5.0u	5.0	2.0	40	120	40MΔ				T039	A0		
37	SDT85504	50m	9.0	0.0		1.0	1.0	140	8.0	120	5.0u	5.0	2.0	40	120	40MΔ				T039	A0		
38	SDT85505	50m	9.0	0.0		1.0	1.0	170	8.0	150	5.0u	5.0	2.0	40	120	40MΔ				T039	A0		
39	SDT85506	50m	9.0	0.0		1.0	1.0	80	8.0	60	5.0u	5.0	2.0	20	60	40MΔ				T039	A0		
40	SDT85507	50m	9.0	0.0		1.0	1.0	80	8.0	60	5.0u	5.0	2.0	20	60	40MΔ				T039	A0		
41	SDT85508	50m	9.0	0.0		1.0	1.0	100	8.0	80	5.0u	5.0	2.0	20	60	40MΔ				T039	A0		
42	SDT85509	50m	9.0	0.0		1.0	1.0	140	8.0	120	5.0u	5.0	2.0	20	60	40MΔ				T039	A0		
43	SDT85510	50m	9.0	0.0		1.0	1.0	170	8.0	150	5.0u	5.0	2.0	20	60	40MΔ				T039	A0		
44	STA402	50m	9.0	0.0		5.0	2.0	150	5.0	100	100u	1.0	600m	40						F18a			
45	STA1000t	50m	9.0	0.0		5.0	2.0	300	5.0	350	1.0m	5.0	2.0	15	#	60MΔ				T05	C		
46	STA1001t	50m	9.0	0.0		5.0	2.0	350	5.0	400	1.0m	5.0	2.0	15	#	60MΔ				T05	C		
47	UPT811t	50m	9.0	0.0		2.0	2.0	80	5.0	40	1.0u	5.0	1.0	30	#	40MΔ				T05	A		
48	UPT812t	50m	9.0	0.0		2.0	2.0	60	5.0	40	1.0u	5.0	1.0	30	#	40MΔ				T05	A		
49	UPT813t	50m	9.0	0.0		2.0	2.0	100	5.0	80	1.0u	5.0	1.0	30	#	40MΔ				T05	A		
50	UPT814t	50m	9.0	0.0		2.0	2.0	120	5.0	100	1.0u	5.0	1.0	30	#	40MΔ				T05	A		
51	UPT815t	50m	9.0	0.0		2.0	2.0	150	5.0	100	1.0u	5.0	1.0	30	#	40MΔ				T05	A		
52	2SC1985	1m	1.0	0.0		800m		35	3.5	17	1.0m	5.0	500m	10	#	200	#		PE	T039			
53	2SC2117	1m	1.0	0.0		800m		35	3.5	17	1.0m	5.0	500m	10	#	150	#		PE	F17			
54	2SD24Y	5m	2.5	0.0		150m		300	6.0		1.5	1.0	50m			8.0MΔ		62m	ME	T066	C0		
55	TRS100HC	5m	1.0	0.0		2.0	200m	100	5.0	100	3.0u	1.0	15	25	#	40MΔ	5.0		DM	T05	A0		
56	TRS125HC	5m	1.0	0.0		2.0	200m	125	5.0	125	3.0u	1.0	15	25	#	40MΔ	5.0		DM	T05	A0		
57	TRS150HC	5m	1.0	0.0		2.0	200m	150	5.0	150	3.0u	1.0	15	25	#	40MΔ	5.0		DM	T05	A0		
58	TRS175HC	5m	1.0	0.0		2.0	200m	175	5.0	175	3.0u	1.0	15	25	#	40MΔ	5.0		DM	T05	A0		
59	TRS200HC	5m	1.0	0.0		2.0	200m	200	5.0	200	3.0u	1.0	15	25	#	40MΔ	5.0		DM	T05	A0		
60	HEPS3019-RT	5.4m	8.0	0.0		1.0		180	5.0	180	100u	1.0	10m	40		100MΔ				B18	A		
61	MPSU02	5.4m	1.0	0.0		800m		60	5.0	40	100u	5.0	150m	50	300	150MΔ	2.6		ANT	B18	A		
62	2N3925	5m	1.0	0.0		500m		36	4.0	18	100u	5.0	100u			250MΔ				TO102	A0		
63	2N6888	5m	1.0	0.0		500m		40	4.0	20	1.0m	1.0	50m	15	#					TO117	R		
64	2SC1013t	5m	7.0	0.0		1.5		35	5.0	20	1.0u	4.0	500m	35	#	300	#	70MΔ	1.0	200n	PET	B15f	A
65	2SC1014t	5m	7.0	0.0		1.5		50	5.0	20	1.0u	4.0	500m	35	#	300	#	70MΔ	1.0	200n	PET	B15f	A
66	SDT8110t	5m	1.0	0.0		1.0	4.0	85	4.0	40	5.0	5.0	10	#		350MΔ				T05			
67	SDT8111t	5m	1.0	0.0		1.0	4.0	85	4.0	40	5.0	5.0	10	#		350MΔ				T05			
68	SDT8112t	5m	1.0	0.0		1.0	4.0	85	4.0	50	5.0	5.0	10	#		350MΔ				T05			
69	ST110	5m	1.0	0.0		1.0	500m	100	6.0	100	3.0u	1.0	75m	30	200	30m			D	T05			
70	ST120	5m	1.0	0.0		1.0	500m	200	6.0	200	3.0u	1.0	60m	30	200	30m			D	T05			
71	ST130	5m	1.0	0.0		1.0	500m	300	6.0	300	3.0u	1.0	55m	30	200	30m			D	T05			
72	ST140	5m	1.0	0.0		1.0	500m	400	6.0	400	3.0u	1.0	45m	30	200	30m			D	T05			
73	ST150	5m	1.0	0.0																			



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	MAX. P <sub>C</sub> (W)	I <sub>C</sub> (A)	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	L C O D E		
						V <sub>CE</sub>	V <sub>BE</sub>	V <sub>CB</sub>	V <sub>CE</sub>	V <sub>BE</sub>	V <sub>CE</sub>	I <sub>CBO</sub> @ MAX V <sub>CB</sub> @ 25°C (A)									V <sub>CB</sub> (V)	I <sub>C</sub> (A)
1	B2-8Z	57m	10	10	1.0				3.0	14					175m#				W54	R		
2	B3-12	57m	10	10	1.0				4.0	18					175m#				T91	R		
3	B3-28	57m	10	10	1.0				4.0	35					175m#				T91	R		
4#	BF257	57m	5.0	10	1.0			160	5.0	160	50n∅	10∅	30m	25	30m#	33m		D	T039	A∅		
5#	BF258	57m	5.0	10	1.0			250	5.0	250	50n∅	10∅	30m	25	30m#	33m		D	T039	A∅		
6#	BF259	57m	5.0	10	1.0			300	5.0	300	50n∅	10∅	30m	25	30m#	33m		D	T039	A∅		
7#	BSS151	57m	10	10	2.0	1.0	100	7.0	7.5	500∅	4.0∅	500m	30	250 #	50MΔ	80n∅	PE	T039	A∅			
8#	BSS161	57m	10	10	2.0	1.0	75	5.0	50	500∅	4.0∅	500m	40	250 #	50MΔ	80n∅	PE	T039	A∅			
9#	BUX491	57m	10	10	3.5	700m	150	7.0	90	500∅	4.0∅	1.7	20 #	60 #	8.0MΔ	285m#	800n∅	DM	T039	A∅		
10#	BUX501	57m	10	10	3.5	700m	200	7.0	125	500∅	4.0∅	1.5	20 #	60 #	8.0MΔ	333m#	800n∅	DM	T039	A∅		
11#	BUX511	57m	10	10	3.5	700m	300	7.0	200	500∅	4.0∅	1.0	20 #	60 #	8.0MΔ	500m#	800n∅	DM	T039	A∅		
12#	BUX521	57m	10	10	3.5	700m	350	7.0	250	500∅	4.0∅	850m	20 #	60 #	8.0MΔ	588m#	1.0u∅	DM	T039	A∅		
13#	BUX531	57m	10	10	3.0	600m	425	7.0	325	500∅	4.0∅	750m	20 #	60 #	8.0MΔ	666m#	1.0u∅	DM	T039	A∅		
14#	BUX541	57m	10	10	3.0	400m	450	7.0	400	500∅	4.0∅	600m	20 #	60 #	8.0MΔ	1.0 #	1.0u∅	DM	T039	A∅		
15#	BUX551	57m	10	10	1.5	300m	500	7.0	500	500∅	4.0∅	400m	20 #	60 #	8.0MΔ	1.6 #	350n∅	DM	T039	A∅		
16	C2-8Z	57m	10	10	1.0				3.0	14					470m#				W54	R		
17	C3-12	57m	10	10	1.0				4.0	17					470m#				T91	R		
18	C3-28	57m	10	10	1.0	500m			4.0	33					470m#				T91	R		
19	HEPS3010-RTT																					
20	MRF231	57m	10	10	4.0	1.0	70	5.0	60	100u∅	2.0∅	4.0	20 #	100 #	30M#	250m	100n∅		T039	A		
21	MRF476	57m	10	10	1.0				36	4.0	18	500∅	5.0∅	250m	5.0	90M#			T93b	A		
22	PT3502	57m	10	10	750m				60	3.0	40	100u∅	20	50	15	100 #		PL	Y220b	X∅		
23	PT3503	57m	10	10	750m				40	3.0	25	100u∅	12∅	50	15	100 #		PL	T59	R		
24	RCA1A15	57m	10	10	1.0		500m		5.0	100	10uΔ	10∅	10m	20	100	15MΔ	100	E	T039	A∅		
25	SD1007	57m	10	10	1.0		800m		3.5	30	200uΔ	20	100m	30	300	1.2GΔ		EPL	TO117	A∅		
26	SDT1A09	57m	10	10	1.0	0.5			6.0	175	10uΔ	10	10m	20 #	100	15M			T039	A∅		
27	SDT1A11	57m	10	10	1.0	0.5			6.0	175	10uΔ	10∅	10m	40 #	250	15M			T039	A∅		
28	SDT1A15	57m	10	10	1.0	0.5			5.0	100	10uΔ	10∅	10m	20 #	100	15M			T039	A∅		
29	ST1105	57m#	2.0	10	1.0	500m	100		6.0	100	3.0	10∅	75m	30	200	30m		D	F8	A		
30	ST1205	57m#	2.0	10	1.0	500m	200	6.0	200	3.0	3.0	10∅	60m	30	200	30m		D	F8	A		
31	ST1305	57m#	2.0	10	1.0	500m	300	6.0	300	3.0	3.0	10∅	55m	30	200	30m		D	F8	A		
32	ST1405	57m#	2.0	10	1.0	500m	400	6.0	400	3.0	3.0	10∅	45m	30	200	30m		D	F8	A		
33	ST1505	57m#	2.0	10	1.0	500m	500	6.0	500	3.0	3.0	10∅	35m	30	200	30m		D	F8	A		
34	ST1605	57m#	2.0	10	1.0	500m	600	6.0	600	4.0	4.0	10∅	25m	30	200	30m		D	F8	A		
35	ST1705	57m#	2.0	10	1.0	500m	700	6.0	700	4.0	4.0	10∅	20m	30	200	30m		D	F8	A		
36	ST1805	57m	2.0	10	1.0	500m	800	5.0	800	4.0	4.0	10	20m	30	200	30M#		D	F8	A		
37	ST1905	57m	2.0	10	1.0	500m	900	5.0	900	4.0	4.0	10	20m	30	200	30M#		D	F8	A		
38	ST11005	57m	2.0	10	1.0	500m	1.0k	5.0	1.0k	4.0	4.0	10	20m	30	200	30M#		D	F8	A		
39	TR12005	57m	2.0	10	3.0	1.0	200	4.0	200	1.0	10∅	500m	15	35	20MΔ				F8	A		
40	TRS25X	57m	10	10	1.0	500m	300	12	250	100u	10∅	20m	1.6k	30k	50M∅				TO5	A		
41	TRS30X	57m	10	10	1.0	500m	400	12	300	100u	10∅	20m	2.5k	32k	50M∅				TO5	A		
42	TRS35X	57m	10	10	1.0	500m	450	12	350	100u	10∅	20m	1.6k	30k	50M∅				TO5	A		
43	TRS3742	57m	2.0	10	1.0	500m	300	7.0	300	200n	10	30m	20	200	50M				F8	A		
44	TRS4926	57m	2.0	10	1.0	500m	200	7.0	200	100n	10	30m	20	200	50M				F8	A		
45	TRS4927	57m	2.0	10	1.0	500m	250	7.0	250	100n	10	30m	20	200	50M				F8	A		
46#	ZTB3-28ST	57m	10	10	1.0				4.0	35	2.0m				500M#			A	T162	S		
47	2N5152	60m	1.0	10	1.0	100	100	6.0	80	1.0m#	5.0∅	2.5	30	90 #	60MΔ				T039	A∅		
48	2N5154	60m	1.0	10	1.0	100	100	6.0	80	1.0m#	5.0∅	2.5	70	200 #	70MΔ				T039	A∅		
49	K561051	60m	1.0	10	1.5	300m	60	4.5	60	500u	5.0	1.0	20		400M†	15n∅	PE	T039	A∅			
50	K561061	60m	1.0	10	1.5	300m	40	4.5	40	500u	5.0	1.0	20		400M†	15n∅	PE	T039	A∅			
51	K561071	60m	1.0	10	2.0	500m	60	4.5	60	500u	5.0	1.0	15		200M†	15n∅	PE	T037	A∅			
52	K561081	60m	1.0	10	2.0	500m	40	4.5	40	500u	5.0	1.0	15		200M†	15n∅	PE	T037	A∅			
53	40666	62m	11	10	500m				65	4.0	40	100uΔ			500M#	4.0		E	TO60	A∅		
54#	25C1368	64m	8.0	10	1.5				25	5.0	25	20∅	2.0∅	500m	35 *	320 *	180M#	500m	D	B7a	B	
55#	BD827-6	64m	8.0	10	2.0				60	5.0	60	10u			50M#			PE	Y202	B		
56#	BD827-10	64m	8.0	10	2.0				60	5.0	60	10u			50M#			PE	Y202	B		
57#	BD829-6	64m	8.0	10	2.0				200m	5.0	80	10u			50M#			PE	Y202	B		
58#	BD829-10	64m	8.0	10	2.0				200m	5.0	80	10u			50M#			PE	Y202	B		
59	D40E1	64m	8.0	10	2.0				500m	5.0	30	100n#	2.0∅	100m	50	230M#	1.0	130n∅	†	Y202c	X∅	
60	D40E5	64m	8.0	10	2.0				500m	5.0	60	100n#	2.0∅	100m	50	230M#	1.0	130n∅	†	Y202c	X∅	
61	D40E7	64m	8.0	10	2.0				500m	5.0	80	100n#	2.0∅	100m	50	230M#	1.0	130n∅	†	Y202c	X∅	
62	2N4440	65m	11	10	1.5				65	4.0	40	100uΔ	5.0∅	125m	10	200	400MΔ	4.0		TO60	A	
63	2N1068†	66m	10	10	1.0				60	12	30	500u	4.0∅	750m	15	75	1.5M†	2.6	1.6u	D	TO8	A
64	2N2201	66m	2.0	10	1.0				120	10	100	50u	6.8∅	200m	25	90 #	10MΔ			F8	A∅	
65	2N2202	66m	1.0	10	1.0				120	10	100	50u	6.8∅	200m	25	90 #	10MΔ			R45	A	
66	2N2203	66m	1.0	10	1.0				120	10	100	50u	6.8∅	200m	25	90 #	10MΔ			R46	A	
67	2N2204	66m	1.0	10	1.0				120	10	100	50u	6.8∅	200m	25	90 #	10MΔ			T19	A	
68	2N2472	66m	1.0	10	1.0				120	10	100	10uΔ	10∅	200m	30	90 #	10MΔ			F8	A	
69	2N2611	66m	2.0	10	1.0				120	10	100	50u	6.8	200m	7.0	36	4.0MΔ			F8	A∅	
70	2N2655	66m	1.5	10	1.0				100	8.0	100	100u+	8.0∅	200m	30	90 #	250kΔ	10 #		TO5	A∅	
71	2N3016	66m#	3.3	10	2.5				100	4.0	50	100n∅	5.0∅	1.0	60					R179	A	
72	2N3017	66m#	3.3	10	1.0				100	4.0	50	100n∅	5.0∅	1.0	60					T27	A	
73	JAN2N3375	66m#	2.6	10	1.5				65	4.0	40	100u	5.0∅	150m	15	150 #	350MΔ	1.4 #		T31	F	
74	2N3589	66m	2.0	10	1.0				200	10	200	1.0u	8.0∅	200m	30	90 #	15MΔ			F8	A∅	
75	2N3590	66m	2.0	10	1.0				200	10	200	1.0u	8									

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J TO C (W/C)	MAX. FREE AIR @ 25°C (W)	MAX. P <sub>C</sub> (W)	TEMP. RISE (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C						MAX. I <sub>CBO</sub> @ 25°C (A)	BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	CODE
						I <sub>C</sub> (A)	I <sub>B</sub> (A)	V <sub>CE</sub> (V)	V <sub>BE</sub> (V)	V <sub>CE</sub> (V)	V <sub>CB</sub> (V)		V <sub>CB</sub> (V)	I <sub>C</sub> (A)								
1#	Z5C1988	86m	10	10	1.0	1.0		35	3.5	17	100u	100	10	10	180	1.0G	400m	30n	PE	R179e	AØ	
2#	Z5C2214	86m	10	10	4.0	800m		100	6.0	80	500n	2.0	100	54	284	140M			PE	T163		
3#	Z5C2797	86m	10	10	1.0			45	4.0	35	40m	25	10	180	1.8G				PE			
4#	Z5C2931	86m	10	10	1.0			35	3.0	17	1.0m	10	10	180				PE				
5#	Z5C3018	86m	10	10	1.0			20	3.5	9.0	300u	5.0	0.1	20	180				PE	W96		
6#	Z5C3020	86m	10	10	1.0			35	4.0	17	300u	10	0.1	20	180				PE	W96		
7	40255	86m#	10	10	1.0	500m		450	7.0	350	500u#	10	20m	40	160	20M	10	10	DA	F43	AØ	
8	40256	86m#	10	10	1.0	500m		300	7.0	250	500u#	10	20m	40	160	20M	10	10	DA	F43	AØ	
9	402791	86m	12	10	1.5			85	4.0	40	100u	5.0	150m	10	10				DA	T060	AØ	
10	402811	86m	12	10	1.0			36	4.0	18	100u	5.0	150m	10	10	400M			PE	T060	AØ	
11	40291	86m	11	10	1.0	500m			4.0	50	100u	5.0	150m	10	10	500M			PE	T060	AØ	
12	40306	86m	11	10	1.5			65	4.0	40	100u	5.0	150m	10	10				PE	T060	AØ	
13	40346	86m	1.0	10	1.0	500m			175	5.0	5.0u	10	10m	25	10	10M	50	50	PL	T05	AØ	
14	40346L	86m	1.0	10	1.0	500m			175	5.0	5.0u	10	10m	25	10	10M	50	50	PL	T05	AØ	
15	40346S	86m	1.0	10	1.0	500m			175	5.0	5.0u	10	10m	25	10	10M	50	50	PL	T039	AØ	
16	40348V2	86m	10	10	1.0	500m			175	5.0	5.0u	10	10m	25	10	10M	50	50	PL	F20	AØ	
17	40347V1	86m	4.4	10	1.5	500m	60	7.0	40	40	1.0u*	4.0	450m	25	100	2.2	2.2	D	F31	AØ		
18	40347V2	86m	11	10	1.5	500m	60	7.0	40	40	1.0u*	4.0	450m	25	100	2.2	2.2	D	F20a	AØ		
19	40348V1	86m	4.4	10	1.5	500m	90	7.0	65	1.0u*	4.0	300m	30	125	2.5	2.5	D	F31	AØ			
20	40348V2	86m	11	10	1.5	500m	90	7.0	65	1.0u*	4.0	300m	30	125	2.5	2.5	D	F20a	AØ			
21	40349V1	86m	4.4	10	1.5	500m	180	7.0	140	1.0u*	4.0	150m	30	125	3.3	3.3	D	F31	AØ			
22	40349V2	86m	11	10	1.5	500m	180	7.0	140	1.0u*	4.0	150m	30	125	3.3	3.3	D	F20a	AØ			
23	40412	86m	1.0	10	1.0	500m			250	1.0m*	20	30m	40			10M	50	50	PL	T05	AØ	
24	40412L	86m	1.0	10	1.0	500m			250	1.0m*	20	30m	40			10M	50	50	PL	T05	AØ	
25	40412S	86m	1.0	10	1.0	500m			250	1.0m*	20	30m	40			10M	50	50	PL	T039	AØ	
26	40412V2	86m	10	10	1.0	500m			250	1.0m*	20	30m	40			10M	50	50	PL	F20	AØ	
27#	BD825	86m	2.0	2.0	1.5	200m	45	5.0	45	100n	2.0	150m	63	250	50M			PE	Y202a	AØ		
28#	BD825	86m	2.0	2.0	1.5	100m	45	5.0	45	100u	2.0	150m	40	250	50M			PE	T0202	BØ		
29#	BD827	86m	2.0	2.0	1.5	100m	60	5.0	60	100n	2.0	150m	63	250	50M			PE	Y202a	BØ		
30#	BD827	86m	2.0	2.0	1.5	100m	60	5.0	60	100u	2.0	150m	40	160	50M			PE	T0202	BØ		
31#	BD829	86m	2.0	2.0	1.5	200m	80	5.0	80	100n	2.0	150m	63	250	50M			PE	Y202a	BØ		
32#	BD829	86m	2.0	2.0	1.5	100m	80	5.0	80	100u	2.0	150m	40	160	50M			PE	T0202	BØ		
33#	BRF65	86m	5.0	5.0	1.0	400m	40	3.5	25	100u	2.0	200m	30		1.2G	3.7		PE	T89	BØ		
34	BR100A	86m	5.0	5.0	1.0	1.0	60	3.0	40	100u	5.0	3.0	40	200	300M	333m		#	T05	AØ		
35	BR100B	86m	7.5	7.5	1.0	1.0	60	3.0	40	100u	5.0	3.0	40	200	300M	333m		#	T27	AØ		
36	BR101A	86m	5.0	5.0	1.0	1.0	90	3.0	75	100u	5.0	3.0	30	150	300M	333m		#	T05	AØ		
37	BR101B	86m	7.5	7.5	1.0	1.0	90	3.0	75	100u	5.0	3.0	30	150	300M	333m		#	T27	AØ		
38#	BU125S1	86m	1.0	1.0	3.0	500m	250	6.0	150	10u	3.0	250m	40	150	15M	3.0		PE	T039	AØ		
39#	BUY47	86m	1.0	1.0	7.0	500m	150	6.0	120	10u	5.0	500m	40	150	90M	225m	500n	PE	T039	AØ		
40#	BUY48	86m	1.0	1.0	7.0	500m	200	6.0	170	10u	5.0	500m	40	150	90M	225m	500n	PE	T039	AØ		
41#	BUY49S1	86m	1.0	1.0	3.0	500m	250	6.0	200	100n	5.0	500m	40	#	80	50M	400m	300n	PE	T039	AØ	
42	D7B1	86m	2.0	2.0	1.0		80	10	60	50u	10	200m	12	36	20M	8.5		DM	F8			
43	D7B2	86m	2.0	2.0	1.0		80	10	60	50u	10	200m	12	36	20M	8.5		DM	F8			
44	D7D1	86m	2.0	2.0	1.0		80	10	60	50u	10	200m	12	36	20M	8.5		DM	R46			
45	D7D2	86m	2.0	2.0	1.0		80	10	60	50u	10	200m	12	36	20M	8.5		DM	R46			
46	D7D3	86m	1.0	1.0	1.0		120	10	100	50u	10	200m	12	36	20M	8.5		DM	R46			
47	D7G1	86m	1.5	1.5	1.0		80	10	60	50u	10	200m	12	36	20M	8.5		ME	T20a			
48	D7G2	86m	1.5	1.5	1.0		80	10	60	50u	10	200m	12	36	20M	8.5		ME	T20a			
49	D7G3	86m	1.5	1.5	1.0		120	10	100	50u	10	200m	12	36	20M	8.5		ME	T20a			
50#	KT922A	86m	8.0	8.0	1.0	800m			65						300M			PE	T72s	RØ		
51	MJ400	86m	2.5	2.5	1.5	250m	200m	350	5.0	325	1.0m	10	50m	30	300	15M			EA	T066	AØ	
52	MM2264	86m	1.1	1.1	1.5	400m	200m	650	5.0	540	10u	10	100m	20		50M	60		EA	F8		
53	MSP5405	86m	2.0	2.0	1.5	400m	200m	800	5.0	660	10u	10	100m	20		50M	60		DM	F8		
54	MSP6605	86m	2.0	2.0	1.5	400m	200m	800	5.0	660	10u	10	100m	20		50M	60		DM	F8		
55	PPR1008	86m	7.5	7.5	1.0		60	4.0	40		5.0	3.0	40							T27	AØ	
56	PPR1008S	86m	7.5	7.5	1.0		90	4.0	75		5.0	3.0	30							T27	AØ	
57	SD1012	86m	12	12	1.0		36	4.0	18	1.0m	5.0	250m	5.0			200M			PE	T72g	AØ	
58	SDT81041	86m	11	11	1.0		2.0	65	4.0	30		2.0	10	#		450M				T060		
59	SDT81051	86m	11	11	1.0		2.0	65	4.0	40		2.0	10	#		450M				T060		
60	SDT81081	86m	11	11	1.0		2.0	65	4.0	50		2.0	10	#		450M				T060		
61	SDT9901	86m	115	115	1.5		3.0	60	12	40	1.0u	5.0	20	60	5.0M			ME	T061			
62	SDT9902	86m	115	115	1.5		3.0	80	12	60	1.0u	5.0	20	60	5.0M			ME	T061			
63	SDT9903	86m	115	115	1.5		3.0	100	12	80	1.0u	5.0	20	60	5.0M			ME	T061			
64	SDT9904	86m	115	115	1.5		3.0	120	12	100	1.0u	5.0	20	60	5.0M			ME	T061			
65	TRS25X5	86m	2.0	2.0	1.0	500m	300	12	250	100u	10	20m	1.8k	30k	50k				F8			
66	TRS30X5	86m	2.0	2.0	1.0	500m	400	12	300	100u	10	20m	2.5k	32k	50k				F8			
67	TRS35X5	86m	2.0	2.0	1.0	500m	450	12	350	100u	10	20m	1.8k	30k	50k				F8			
68	TRS100S	86m	2.0	2.0	1.0	400m	50m	100	6.0	100	3.0u	4.0	50m	30	Ø	50k			F8			
69	TRS100SLP	86m	2.0	2.0	1.0	400m	50m	100	6.0	100	10u	4.0	25m	30	Ø	50k	80		F8			
70	TRS120S	86m	2.0	2.0	1.0	400m	50m	120	6.0	120	3.0u	4.0	50m	30	Ø	50k	80		F8			
71	TRS120SLP	86m	2.0	2.0	1.0	400m	50m	120	6.0	120	10u	4.0	25m	30	Ø	50k	80		F8			
72	TRS140S	86m	2.0	2.0	1.0	400m	50m	140	6.0	140	3.0u	4.0	50m	30	Ø	50k	80		F8			
73	TRS140SLP	86m	2.0	2.0	1.0	400m	50m	140	6.0	140	10u	4.0	25m	30	Ø	50k	80		F8			
74	TRS160S	86m	2.0	2.0	1.0	400m	50m	160	6.0	160	3.0u	4.0	50m	30	Ø	50k	80		F8			
75	TRS160SLP	86m																				

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	PC AEM P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		BIAS Vcb Vcb Ic	MIN MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y2000 s/a TO200 Ser.	DWG #	L C O D E	
					Ic (A)	Ib (A)	Vcbo (V)	Vbebo (V)	VVceo (V)	Icbo (A)	Vcb Vcb Ic (A)										
1	TR55405S	66m	2.0	SA	400m		650	5.0	540	10uφ	100	20	30	50MΔ	80		DM	F8			
2	TR55505S	66m	2.0	SA	400m		550	6.0	550	10uφ	5.0φ	25	30	50MΔ	72		DM	F8			
3	TR55755	66m	2.0	SA	400m	50m	575	6.0	575	2.0uφ	5.0φ	25	30	50MΔ	80		DM	F8			
4	TR55805S	66m	2.0	SA	400m		700	5.0	580	10uφ	100	20	30	50MΔ	80		DM	F8			
5	TR56015	66m	2.0	SA	400m		600	6.0	600	10uφ	5.0φ	25	30	50MΔ	80		DM	F8			
6	TR56205S	66m	2.0	SA	400m		750	5.0	620	10uφ	100	20	30	50MΔ	80		DM	F8			
7	TR56505S	66m	2.0	SA	400m		650	6.0	650	10uφ	5.0φ	25	30	50MΔ	80		DM	F8			
8	TR56605S	66m	2.0	SA	400m		800	5.0	660	10uφ	100	20	30	50MΔ	80		DM	F8			
9	TR57015	66m	2.0	SA	400m		700	6.0	700	10uφ	5.0φ	25	30	50MΔ	80		DM	F8			
10	TR57015S	66m	2.0	SA	400m		850	5.0	700	10uφ	100	20	30	50MΔ	80		DM	F8			
11	TR57505	66m	2.0	SA	400m		750	6.0	750	10uφ	5.0φ	25	30	50MΔ	80		DM	F8			
12	TR58015	66m	2.0	SA	400m		800	6.0	800	10uφ	5.0φ	25	30	50MΔ	80		DM	F8			
13	2N1085	67m		SA	2.0	20	60	5.0	50	5.0φ	5.0	40	120	50MΔ	6.0			T05			
14	2N6390	67m#	8.3	SA	1.0		40	3.5†	50	2.0m#	100	20	120	50MΔ				F17	AC		
15#	2SC1189*	67m	10	SA	1.0	200m	40	4.0	20	1.0uφ	5.0φ	20	20	600MΔ	2.5		PE	W24			
16#	2SC1405	67m	10	SA	750m		36	4.0	18	5.0uφ	100	40	200	40MΔ	250m	50n	PE	T0131	R		
17#	2SC1620	67m	10	SA	600m		36	3.0	18	100uφ	130	100	10	40MΔ	400m	50n	PE	T0131	R		
18	2850-11	67m	1.2	SA	5.0		100	5.0	80	100nΔ	1.0φ	50	25	40MΔ	400m	50n	PL	T05	Aφ		
19	2851-11	67m	1.2	SA	5.0		100	5.0	80	100nΔ	1.0φ	50	25	40MΔ	400m	50n	PL	T05	Aφ		
20	2852-11	67m	1.2	SA	5.0		100	5.0	80	100nΔ	1.0φ	50	15	40MΔ	400m	50n	PL	T05	Aφ		
21	2853-11	67m	1.2	SA	5.0		60	5.0	40	100nΔ	1.0φ	1.0	40	40MΔ	400m	50n	PL	T05	Aφ		
22	2854-11	67m	1.2	SA	5.0		60	5.0	40	100nΔ	1.0φ	50	50	40MΔ	400m	50n	PL	T05	Aφ		
23	2855-11	67m	1.2	SA	5.0		60	5.0	40	100nΔ	1.0φ	50	25	40MΔ	400m	50n	PL	T05	Aφ		
24	2856-11	67m	1.2	SA	5.0		60	5.0	40	100nΔ	1.0φ	50	15	40MΔ	400m	50n	PL	T05	Aφ		
25	2N5423	68m	12	SA	2.0	1.0	36	4.0	18	1.0uφ	5.0φ	1.0	20	300MΔ	500m			T72h			
26	2N5645	68m	12	SA	1.0		36	4.0	18	500uφ	5.0φ	500	15	400MΔ	500m			T72h			
27	2N6080	68m	12	SA	1.0		36	4.0	18	250uφ	5.0φ	250	5.0	400MΔ	500m			T72h			
28#	2SC2118	68m	10	SA	1.4		35	3.5	17	1.0m#	5.0φ	1.0	200	150MΔ			PE	F17			
29	MRF260	68m	12	SA	1.0		36	4.0	18	.25m	5.0φ	250	5.0	150MΔ			PE	B61	Y		
30#	2SD439	69m	8.0	SA	1.2		20	5.0	18	1.0uφ	2.0φ	500	60	320	130MΔ			PE	T0128	B	
31#	2SD600	69m	8.0	SA	1.0		100	5.0	100	1.0uφ	5.0φ	50	60	320	130MΔ			PE	T0128	B	
32#	2SD600K	69m	8.0	SA	1.0		120	5.0	120	1.0uφ	5.0φ	50	60	320	130MΔ			PE	T0128	B	
33	MRF5175	69m	12	SA	1.0		60	4.0†	33	500u#	5.0φ	250	10	100	400M#				T90	R	
34#	2SC1089	70m	7.0	SA	1.0		300	4.0	300	100u	1.0φ	50	35	180	70MΔ			PE†	B15a	P	
35#	2SD204	71mφ	9.0	SA	1.0		60	5.0	45	3.0uφ	2.0φ	300	40	200	120MΔ			PE	T05	Aφ	
36#	2SD626	71m	10	SA	5.0		60	6.0	20	1.0uφ	2.0φ	500	120	560	120MΔ			PE	T0128	B	
37	BC365	72m	1.0	TJ	2.0		50	4.0	45	100nφ	1.0φ	50	80	125	150MΔ	1.6	AN	B18b	Aφ		
38	BC366	72m	1.0	TJ	2.0		60	4.0	60	100nφ	1.0φ	50	80	125	150MΔ	1.6	AN	B18b	Aφ		
39	BC367	72m	1.0	TJ	2.0		80	4.0	80	100nφ	1.0φ	50	80	125	150MΔ	1.6	AN	B18b	Aφ		
40	HEP53024-RT	72m	8.0	TJ	2.0		50	5.0	40	100nφ	1.0φ	100	150	50MΔ			AN	B18	A		
41	MPSU01	72m	1.0	TJ	2.0		40	5.0	40	100nφ	1.0φ	10	55	50MΔ			AN	B18	Aφ		
42	MPSU01A	72m	1.0	TJ	2.0		40	5.0	40	100nφ	1.0φ	10	55	50MΔ			AN	B18	Aφ		
43	SD1013-3	74m	13	TJ	2.0		50	4.0	35	1.0m	5.0φ	20	5.0	250	Δ		AN	B18	Aφ		
44	JAN2N2034†	75m#	1.0	SA	3.0		80	10	60	20u#	4.0φ	1.0	20	60	1.0MΔ			EPL	W52		
45	JAN2N2858†	75m#	1.0	SA	3.0		100	10	80	20u#	4.0φ	1.0	20	60	1.0MΔ				T05	Aφ	
46	JAN2N2859†	75m#	1.0	SA	3.0		120	10	100	20u#	4.0φ	1.0	20	60	1.0MΔ				T05	Aφ	
47	JAN2N2911†	75m#	1.0	SA	3.0		150	10	125	20u#	4.0φ	1.0	20	60	1.0MΔ				T05	Aφ	
48	BLX10	75m	13	SA	2.0		10	10	80	1.0φ	1.0φ	1.0	20	120	10MΔ	125m			T05	A	
49	BLX12	75m	13	SA	2.0		10	10	80	1.0φ	1.0φ	1.0	20	120	10MΔ	125m			T05	A	
50#	2SC515	76m	6.0	SA	100m		300	3.0	300	100uφ	5.0φ	50	30	150	20MΔ			ME	T086	R	
51#	2N5918	80m#	10	SA	150m		60	4.0†	30	5.0m#	5.0m#	100	30	150	20MΔ				T79		
52#	2SC893	80m	12	SA	300m		100	6.0	60	1.0uφ	4.0φ	50	50	370	20MΔ			ME	F17		
53#	2SC973A	80m	10	SA	300m		40	4.0	40	1.0uφ	1.0φ	100	20	180	1.2G			PE†	T83	Vφ	
54#	2SC1046	80m	10	SA	2.0		40	5.0	30	100u	5.0φ	1.0	40	250	60MΔ			PE	Y202a	Dφ	
55#	2SC1098	80m	10	SA	2.0		70	5.0	45	100u	5.0φ	500	40	250	50MΔ			PE	Y202a	Dφ	
56#	2SC1098A	80m	10	SA	5.0	600m	70	5.0	65	1.0uφ	5.0φ	500	40	250	40MΔ	1.3	PE	Y202a	Dφ		
57#	2SC1162	80m	10	SA	1.5		35	5.0	35	20u	2.0φ	500	35	320	180MΔ	500m			Y202a	Dφ	
58#	2SC1175	80m	10	SA	3.0		30	5.0	25	10uφ	1.0φ	500	40	400	150MΔ				B7	A	
59#	2SC1448	80m	10	SA	50#		300	5.0	300	100u	1.0φ	50	30	150	50MΔ	50			B17	B	
60#	2SC1520	80m	10	SA	200m#		250	7.0	250	100nφ	1.0φ	10	40	200	50MΔ				B9	Xφ	
61#	2SC1521	80m	10	SA	200m		250	7.0	250	100nφ	1.0φ	10	40	200	50MΔ				B10	Tφ	
62#	2SC1550	80m	10	SA	100m		250	5.0	250	100u	5.0φ	50	250	100MΔ	40			PL	T0128	B	
63#	2SC1626	80m	10	SA	750m		80	5.0	85	500nφ	2.0φ	15	740	100MΔ	1.0			PE	B26	D	
64#	2SC1678	80m	10	SA	3.0	400m	85	4.0	85	10uφ	5.0φ	500	15	100MΔ				PE	Y220b	Dφ	
65#	2SC1749	80m	10	SA	100m		300	5.0	220	1.0uφ	1.0φ	25	35	230	80MΔ				B15a	PL	
66#	2SC1758	80m	10	SA	100m		300	5.0	300	1.0uφ	1.0φ	25	160	300	80MΔ	25			B36	Aφ	
67#	2SC1848	80m	10	SA	3.0		70	5.0	50	1.0uφ	5.0φ	100	30	150MΔ	600m			PE	B15b	B	
68#	2SC2029	80m	10	SA	3.0		80	5.0	70	1.0uφ	5.0φ	100	100	150MΔ				PE	Y220b	B	
69#	2SC2034	80m	10	SA	2.0		120	5.0	90	1.0uφ	5.0φ	1.0	50	200	150MΔ				T039	Aφ	
70#	2SC2209	80m	10	SA	5.0		50	5.0	40	1.0uφ	5.0φ	1.0	30	220	150MΔ				T0128	B	
71#	2SC2270	80m	10	SA	5.0	5.0	50	5.0	40	1.0uφ	5.0φ	500	140	450	100MΔ	250m			PE	T0128	B
72#	2SC2279	80m	10	SA	100m		300	5.0	300	100n	1.0φ	100	30	150	35MΔ				B70	A	
73#	2SC2594	80m	10	SA	5.0		40	7.0	20	0.1u	2.0φ	0.5	140	450	150MΔ				PE	T0128	B
74#	2SC2704	80m	10	SA	50m	5.0m	150	5.0	150	100n	5.0φ	1.0	80	240	200MΔ				B7	B	
75#	2SC2870	80m	10	SA	0.1		300	5.0	300	20φ	2.0φ	20	30	200	200MΔ				B63	Xφ	
76#	2SC2870L	80m	10	SA	100m		300	5.0	300	1uΔ	2.0φ	20	30	200	80MΔ				B82a	Xφ	
77#	2SD324	80m	10	SA	150m#		300	3.0	300</												

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O A D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN							MAX
1	BD517-1	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	150m	80	350 #	180m∅	1.0 #	AN	B18d	A∅	
2	BD517-5	80m	1.0	1.0	§J	2.0		60	4.0	60	100n∅	2.0∅	150m	60	350 #	180m∅	1.0 #	AN	B18c	A∅	
3	BD519	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	150m	60	350 #	180m∅	1.0 #	AN	B18b	A∅	
4	BD519-1	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	150m	60	350 #	180m∅	1.0 #	AN	B18d	A∅	
5	BD519-5	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	150m	60	350 #	180m∅	1.0 #	AN	B18c	A∅	
6	BD525	80m	1.0	1.0	§J	2.0		60	4.0	60	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18b	A∅	
7	BD525-1	80m	1.0	1.0	§J	2.0		60	4.0	60	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18d	A∅	
8	BD525-5	80m	1.0	1.0	§J	2.0		60	4.0	60	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18c	A∅	
9	BD527	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18b	A∅	
10	BD527-1	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18d	A∅	
11	BD527-5	80m	1.0	1.0	§J	2.0		80	4.0	80	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18c	A∅	
12	BD529	80m	1.0	1.0	§J	2.0		100	4.0	100	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18b	A∅	
13	BD529-1	80m	1.0	1.0	§J	2.0		100	4.0	100	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18d	A∅	
14	BD529-5	80m	1.0	1.0	§J	2.0		100	4.0	100	100n∅	2.0∅	50m	60	115 #	150m∅	2.0 #	AN	B18c	A∅	
15	BF380	80m	1.0	1.0	§J	500m		180	5.0	180	50n∅	10∅	30m	25		90m∅	25	AN	B18b	A∅	
16	BF380-1	80m	1.0	1.0	§J	500m		180	5.0	180	50n∅	10∅	30m	25		90m∅	25	AN	B18d	A∅	
17	BF380-5	80m	1.0	1.0	§J	500m		180	5.0	180	50n∅	10∅	30m	25		90m∅	25	AN	B18c	A∅	
18	BF381	80m	1.0	1.0	§J	500m		250	5.0	250	50n∅	10∅	30m	25		90m∅	25	AN	B18b	A∅	
19	BF381-1	80m	1.0	1.0	§J	500m		250	5.0	250	50n∅	10∅	30m	25		90m∅	25	AN	B18d	A∅	
20	BF381-5	80m	1.0	1.0	§J	500m		250	5.0	250	50n∅	10∅	30m	25		90m∅	25	AN	B18c	A∅	
21	BF382	80m	1.0	1.0	§J	500m		300	5.0	300	50n∅	10∅	30m	25		90m∅	25	AN	B18b	A∅	
22	BF382-1	80m	1.0	1.0	§J	500m		300	5.0	300	50n∅	10∅	30m	25		90m∅	25	AN	B18d	A∅	
23	BF382-5	80m	1.0	1.0	§J	500m		300	5.0	300	50n∅	10∅	30m	25		90m∅	25	AN	B18c	A∅	
24 #	BF615	80m	2.0	2.0	§J	300m#		250	5.0	250	50n∅	15∅	25m	30		70m∅		PE	Y202b	B	
25 #	BF617	80m	2.0	2.0	§J	300m#		300	5.0	300	50n∅	15∅	25m	30		70m∅		PE	Y202b	B	
26 #	BF757	.08	10	10	§J	.50		250	6.0	250	.20u	10∅	30m	40	180	45m∅Δ		D	B68	B	
27 #	BF758	.08	10	10	§J	.50		300	6.0	300	.20u	10∅	30m	40	180	45m∅Δ		D	B68	B	
28 #	BF759	.08	10	10	§J	.50		350	6.0	350	.20u	10∅	30m	40	180	45m∅Δ		D	B68	B	
29 #	BLY85	80m	10	10	§J	1.0		4.0	4.0	20	5.0m	5.0∅	200m	10		250m∅Δ		PL	T89	B	
30 #	BLY97	80m	10	10	§J	1.0		4.0	4.0	33	5.0m	5.0∅	200m	10		250m∅Δ		PL	T89	B	
31	HEPS3020-RT	80m	10	10	§J	2.0		60	4.0	60	100n∅	10∅	250m	100	∅	150m∅			B18	A	
32	HEPS3021-RT	80m	10	10	§J	500m		300	8.0	300	200n∅	10∅	100	100	∅	60m∅			B18	A	
33	HEPS3047-RT	80m	10	10	§J	1.0		60	5.0	60	100n∅	10∅	180	180	∅	180m∅			B42	A	
34	HEPS3048-RT	80m	10	10	§J	500m		300	6.0	300	200n∅	10∅	30m	110	∅	120m∅			B42	A	
35	HEPS3049-RT	80m	10	10	§J	500m		250	6.0	250	200n∅	10∅	30m	110	∅	120m∅			B42	A	
36	HEPS3051-RT	80m	10	10	§J	500m		200	5.0	200	200n∅	10∅	150	150	∅	100m∅			B42	A	
37	HEPS5011-RT	80m	10	10	§J	500m		300	6.0	300	100u	5.0	50m	115	∅	10m∅			T066	C∅	
38	KS6109†	80m	10	10	§J	2.0	500m	80	4.5	80	500u	5.0	1.0	15		400m†	20n∅	PE	T060	P	
39	KS6110†	80m	10	10	§J	2.0	500m	40	4.5	40	500u	5.0	1.0	15		350m†	25n∅	PE	T060	P	
40	KS6111†	80m	10	10	§J	2.0	500m	80	4.5	80	500u	5.0	1.0	15		400m†	20n∅	PE	T060	P	
41	KS6112†	80m	10	10	§J	2.0	500m	40	4.5	40	500u	5.0	1.0	15		350m†	20n∅	PE	T060	P	
42	MDS20	80m	10	10	§J	500m	250m	250	8.0	250	100n∅	10∅	30m	40	250	60m∅	20	AN	Y202c	P	
43	MDS21	80m	10	10	§J	500m	250m	300	8.0	300	100n∅	10∅	30m	40	250	60m∅	20	AN	Y202c	P	
44	MDS26	80m	10	10	§J	3.0	1.0	60	7.0	40	100n	1.0∅	200m	40	200	50m∅	1.5	AN†	Y202c	X∅	
45	MDS27	80m	10	10	§J	3.0	1.0	80	7.0	60	100n	1.0∅	200m	40	200	50m∅	1.5	AN†	Y202c	X∅	
46	MDS60	80m	10	10	§J	500m		300	5.0	300	200n∅	10∅	1.0m	25		45m∅	25	AN	Y202c	X∅	
47	MDS1678	80m	10	10	§J	3.0		65	4.0	65	10u	5.0∅	1.5	10		100m∅	1.5	AN†	Y202c	X∅	
48	MPSU03	80m	10	10	§J	1.0		120	5.0	120	100n∅	10∅	10m	40		35m∅	2.5	AN†	B18	A	
49	MPSU04	80m	10	10	§J	1.0		180	5.0	180	100n∅	10∅	10m	40	#	35m∅	2.5	AN†	B18	A	
50	MPSU06	80m	10	10	§J	2.0		80	4.0	80	100n∅	1.0∅	50m	80	#	150m∅		AN	B18	A∅	
51	MPSU07	80m	1.0	1.0	§J	2.0		100	4.0	100	100n∅	1.0∅	50m	60	#	150m∅		AN	B18	A∅	
52	MPSU10	80m	1.0	1.0	§J	500m		300	8.0	300	200n∅	10∅	1.0m	25		30m∅	25	AN	B18	A∅	
53	MSP60A	80m	12	12	§J	1.0 #	400m	600	5.0	600	10u	10∅	100m	30	200	30m∅	2.0	DM	F8	A∅	
54	MSP70A	80m	12	12	§J	1.0 #	400m	700	5.0	700	10u	10∅	100m	30	200	30m∅	2.0	DM	F8	A∅	
55	NPC233	80m	10	10	§J	100m		300	7.0	300	10u	10∅	20m	150	∅	50m∅		PL	Y202a	A∅	
56	NPC1096	80m	10	10	§	2.0		40	5.0	30	100u	5.0∅	1.0	40	250 #	60		E	Y202a	D∅	
57	NPC1098	80m	10	10	§	1.0		70	5.0	45	100u	5.0∅	500m	40	250 #	50		E	Y202a	D∅	
58	NSD36	80m	10	10	§J	2.0		175	6.0	150	1.0u	10	100m	30	300	10m		PL	Y202a	A	
59	NSD36A	80m	10	10	§J	2.0		225	6.0	200	1.0u	10	100m	30	300	10m		PL	Y202a	A	
60	NSD36B	80m	10	10	§J	2.0		275	6.0	250	1.0u	10	100m	30	300	10m		PL	Y202a	A	
61	NSD36C	80m	10	10	§J	2.0		325	6.0	300	1.0u	10	100m	30	300	10m		PL	Y202a	A	
62	NSD102	80m	10	10	§J	1.5		60	5	45	100n	5.0	100m	50	150	60m∅		PL†	Y202a	A	
63	NSD103	80m	10	10	§J	1.5		60	5	45	100n	5.0	100m	120	360	60m∅		PL†	Y202a	A	
64	NSD104	80m	10	10	§J	1.0		100	7	80	100n	5.0	100m	50	150	60m∅		PL†	Y202a	A	
65	NSD105	80m	10	10	§J	1.0		100	7	80	100n	5.0	100m	120	360	60m∅		PL†	Y202a	A	
66	NSD106	80m	10	10	§J	1.0		140	7	100	100n	5.0	100m	50	150	60m∅		PL†	Y202a	A	
67	NSD457	80m	10	10	§J	2.0		160	5.0	160	50n	10	30m	25		10m		PL	Y202a	A	
68	NSD458	80m	10	10	§J	2.0		250	5.0	250	50n	10	30m	25		10m		PL	Y202a	A	
69	NSD459	80m	10	10	§J	2.0		300	5.0	300	50n	10	30m	25		10m		PL	Y202a	A	
70	NSE457	80m	10	10	§J	2.0		160	5.0	160	50n	10	30m	25		10m		PL	Y202a	A	
71	NSE458	80m	10	10	§J	2.0		250	5.0	250	50n	10	30m	25		10m		PL	Y202a	A	
72	NSE459	80m	10	10	§J	2.0		300	5.0	300	50n	10	30m	25							



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L E O A D E	
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo @ 25°C (A)	Vcb (V)	MIN	MAX							
1	MRF823	85m	15	∅	∅	1.5	500m	38	4.0	18	1.0m∅	5.0	200m	20	150			EPL	W30	S	
2	SD1220-1	85m	15	∅	∅	1.0		65	4.0	35	1.0m	5.0	100m	5.0				∆	W52v		
3	2N2306	86m	13	∅	∅	2.0		75	5.0	50	1.0m	2.5	1.0	10	75			∆	TO8		
4	2N4262	86m	1.5	∅	∅	200m		25	4.5	10	100n#	1.0	30m	75		900m∆	15	∆	TO102	A∅	
5	2N4263	86m	1.5	∅	∅	200m		25	4.5	10	100n#	1.0	30m	75		900m∆	15	∆	TO102	A∅	
6	2N5589	86m	1.5	∅	∅	600m		38	4.0	18	1.0m∅	5.0	100m	5.0		200m∆			T71c	A∅	
7	2N5641	86m	1.5	∅	∅	3.0		65	4.0	35	1.0m∅	5.0	100m	5.0		300m∆			T71b	A∅	
8#	2SC2078	86m	10	∅	∅	3.0		80	5.0	75	1.0m∅	5.0	500m	25	200	150m∆		PE	Y220b	B	
9#	2SD612	86m	10	∅	∅	2.0		25	5.0	25	1.0m∅	2.0	500m	60	320	100m∆		PE	TO128	B	
10#	2SD612K	86m	10	∅	∅	2.0		35	5.0	35	1.0m∅	2.0	500m	60	320	100m∆		PE	TO128	B	
11	PT600Z	86m	13	∅	∅	2.0		60	4.0	45	1.0m∅	1.2	1.0	15	45	210m∆	2.0	PE	TO8	A	
12	SD1145	86m	15	∅	∅	800m		38	4.0	16	1.0m	5.0	200m	20			PE	TO8	A		
13	SD1478	86m	15	∅	∅	1.7		38	4.0	18	1.0m	5.0	0.2	20			EPL	T72n			
14	2N1709	87m	2.0	∅	∅	2.0		75	4.0	30	1.0m∅	2.8	350m	7.5	75	150m∆	5.0		TO8	A∅	
15	2N1710	87m	2.0	∅	∅	2.0		60	3.0	30	50m∅	2.8	350m	4.0	100	150m∆	5.0		TO8	A∅	
16	2N5947	91m	16	∅	∅	400m		40	3.5	30	1.0m∅	2.0	75m	25	250	1.1G∆	1.7m		T81	R	
17#	2SC1168	96m	12	∅	∅	150m		300	5.0	300	100n∅	1.0	50m	100	∅	100m∆		∅	TO66		
18#	2SC1306	96m	12	∅	∅	3.0		65	4.0	65	1.0m∅	1.0	500m	40	150	300m∆	600m#	ET	Y220b	D∅	
19#	2SC2020	96m	12	∅	∅	3.0		45	4.0	20	2.0m∅	2.0	100m	30	150	270m∆	500m	E	Y220b	D∅	
20#	2SC2231	96m	12	∅	∅	200m	200m∅	200	5.0	180	100n∅	1.0	50m	100	#	320	50m∆	D	Y202a	B∅	
21#	2SC2231A	96m	12	∅	∅	200m	200m∅	200	5.0	160	100n∅	1.0	50m	100	#	320	50m∆	D	Y202a	B∅	
22	GT200	96m	12	∅	∅	2.0		80	4.0	80	1.0m∅	5.0	1.0	30	150	150m∆	500m	PE	Y220b	D	
23	2N1072†	100m	2.0	∅	∅	2.0	2.0	4.0	6.0	30	1.0m	5.0	750m∆	2.0	20	70m∆	2.6	100n∅	TO38	A∅	
24	JAN2N1072†	100m	2.0	∅	∅	2.0	2.0	75	6.0	75	1.0m∅	5.0	750m∆	2.0	20	70m∆	2.7	100n∅	TO38	A	
25	2N2036†	100m#	10	∅	∅	3.0	1.0	80	10	60	150m∅	4.0	2.0	20	60	1.0M∆	500m	1.0m∅	TO37	A∅	
26	2N2234†	100m#	10	∅	∅	500m	150m	40	6.0	20	10m#	2.0	100m	15	60	50m∆	2.5	30n∅	TO3	C∅	
27	2N2235†	100m#	10	∅	∅	500m	150m	40	6.0	20	10m#	2.0	100m	40	125	100m∆	2.5	25n∅	TO3	C∅	
28	2N2631	100m	8.8	∅	∅	1.5		80	4.0	60	100n∅	2.0	1.0	40	120	200m∆		80n∅	TO39	A∅	
29	2N2697†	100m#	10	∅	∅	5.0		80	8.0	60	100n∅	2.0	1.0	40	120	20m∆		80n∅	T9	B∅	
30	2N2698†	100m#	10	∅	∅	5.0		100	8.0	80	100n∅	2.0	1.0	40	120	20m∆		80n∅	T9	B∅	
31	2N2781	100m	15	∅	∅	2.0		75	5.0	75	500m∅	2.8	350m	7.5	75	140m∆	5.0		TO8	A	
32	2N2782	100m	15	∅	∅	2.0		100	5.0	100	500m∅	2.8	350m	7.5	75	140m∆	5.0		TO8	A	
33	2N2783	100m	15	∅	∅	2.0		100	5.0	100	500m∅	2.8	350m	7.5	75	140m∆	5.0		TO8	A	
34	2N2874	100m	15	∅	∅	2.0		75	4.0	75	1.0m∅	2.8	350m	7.5	75	140m∆	5.0		TO8	A	
35	JAN2N2878	100m	18	∅	∅	2.5		80	4.0	60	100n∅	1.0	300m	30	150	150m∆	400m		T31	A	
36	2N3229	100m	17	∅	∅	2.5		105	4.0	60	100n∅	1.0	2.5	5.0		150m∆	400m		T31	A	
37	2N4040	100m	18	∅	∅	1.0	300m	60	4.0	40	200m∅	5.0	100m	10	80	400m∆	2.0		TO117	R	
38	2N4041	100m	18	∅	∅	1.0	300m	60	4.0	40	200m∅	5.0	100m	10	80	400m∆	2.0		TO117	R	
39	2N6408	100m	12	∅	∅	2.0		80	6.0	60	500m∅	2.0	100m	50	250	50m∆	1.0	#	B16	D∅	
40	2N6409	100m	12	∅	∅	2.0		100	6.0	80	500m∅	2.0	100m	50	250	50m∆	1.0	#	B16	D∅	
41#	2SC106†	100m	1.5	∅	∅	1.5	∅	60	5.0	60	3.0m	1.2	200m	7.5	20	100m∆	3.0		TO8	D∅	
42#	2SC680	100m	1.5	∅	∅	2.0		200	6.0	120	1.0m#	1.0	200m	60	240	100m∆	3.0		TO66	C∅	
43#	2SC680A	100m	1.5	∅	∅	2.0		200	6.0	140	1.0m#	1.0	200m	45	180	100m∆	3.0		TO66	C∅	
44#	2SC1059	100m	8.0	∅	∅	1.5m		300	4.0	300	1.0m∅	1.0	50m	30	160	20m∆			TO66	C∅	
45#	2SC1176	100m	15	∅	∅	1.0		40	4.5	18	100m∅	1.0	100m	10	#	450m∆			TO117	D∅	
46#	2SC1409	100m	12	∅	∅	2.0	1.0	200	6.0	120	1.0m#	4.0	50m	35	200	3.0		D	B17a	D	
47#	2SC1410	100m	12	∅	∅	2.0	1.0	200	6.0	120	1.0m#	4.0	50m	35	200	3.0		D	B17	D	
48#	2SC1569	100m	12	∅	∅	1.5m	150m∅	300	5.0	300	1.0m∅	1.0	50m	40	170	100m∆	10		B26a	D	
49#	2SC1909	100m#	10	∅	#	3.0	#	75	4.0	75	1.0m∅	1.0	500m	20	150	160m∆	800m#	ET	Y220b	D∅	
50#	2SC1964	100m	1.5	∅	∅	3.5		80	4.0	40	100m∅	1.0	100m	10	180	100m∆		PE	B26	D∅	
51#	2SC1965	100m	1.5	∅	∅	1.0		35	4.0	17	500m∅	1.0	100m	10	#	180	500m∆		PE	F19	A∅
52#	2SC1971	100m	12	∅	∅	2.0		35	4.0	17	500m∅	1.0	100m	10	180	100m∆		PE	B26	C	
53#	2SC2101	100m	15	∅	∅	2.0		35	3.5	18	100m∅	5.0	1.0	10		400m∆		PE	T90	D∅	
54#	2SC2166	100m	1.5	∅	∅	4.0		75	5.0	75	1.0m∅	1.0	100m	35	180	100m∆		PE	B26	D∅	
55#	2SD79	100m#	15	∅	∅	2.0	1.0	100	12	60	1.0m∅	2.0	500m∅	40	180			PE	F19		
56#	2SD141	100m	15	∅	∅	3.0	500m	20	5.0	12	100m∅	2.0	1.0	30	240	#	300m	PE	F8		
57	40422	100m	8.0	∅	∅	1.5m	150m	300	2.0	300	1.0m∅	1.0	50m	50	250	25m∆		PE	TO66	A∅	
58	40424	100m	8.0	∅	∅	1.5m	150m	300	2.0	300	1.0m∅	1.0	50m	30	150	25m∆		PL	TO66	A∅	
59	40426	100m	8.0	∅	∅	1.5m	150m	300	2.0	300	1.0m∅	1.0	50m	20	100	25m∆		PL	TO66	A∅	
60	40491	100m#	3.8	∅	∅	1.5m	150m∅	300	2.0	300	1.0m∅	1.0	50m	30	250	25m∆		PE	TO66		
61	40546	100m	8.0	∅	∅	1.5m	150m	300	2.0	250	1.0m∅	1.0	50m	50	150	25m∆		D	TO66	C∅	
62	40547	100m	8.0	∅	∅	1.5m	150m	300	2.0	250	1.0m∅	1.0	50m	20	250	25m∆		D	TO66	C∅	
63	40909	100m	10	∅	∅	700m		50	3.5	50	2.0m#							PE	Y201a	C	
64#	BD135	100m	8.0	∅	∅	1.0		45	5.0	45	100n∅	2.0	150m	40	250	50m∆	1.0		B16p	B	
65	BD135Z	100m	1.2	∅	∅	1.5		45	5.0	45	100n∅	2.0	5.0m	40	250	50m∆	1.0	#	B16f	B	
66#	BD137	100m	8.0	∅	∅	1.0		60	5.0	60	100n∅	2.0	150m	40	250	50m∆	1.0		B16p	B	
67	BD137Z	100m	1.2	∅	∅	1.5		60	5.0	60	100n∅	2.0	5.0m	40	180	50m∆	1.0	#	B16f	B	
68#	BD139	100m	8.0	∅	∅	1.0		100	5.0	80	100n∅	2.0	150m	40	250	50m∆	1.0		B16p	B	
69	BD139Z	100m	1.2	∅	∅	1.5		80	5.0	80	100n∅	2.0	5.0m	40	180	50m∆	1.0	#	B16f	B	
70#	BD813	100m	2.0	∅	∅	2.0	1.0	45	5.0	45	100m	2.0	150m	40		3.0M∆		E	TO202	B	
71#	BD815	100m	2.0	∅	∅	2.0	1.0	60	5.0	60	100m	2.0	150m	40		3.0M∆		E	TO202	B	
72#	BD817	100m	2.0	∅	∅	2.0	1.0	80	5.0												



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	I <sub>C</sub> (A)	I <sub>B</sub> (A)	ABSOLUTE MAX. RATINGS @ 25°C			MAX. V <sub>CE</sub> @ 25°C (V)		BIAS (V)		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	L C O A D E
							V <sub>CB0</sub> (V)	V <sub>BE0</sub> (V)	V <sub>CE0</sub> (V)	lcbo (V)	V <sub>cb</sub> (V)	lc (V)									
1	MRF475*	100m	4.0	10	1.0	4.0	48	4.0	18	1.0m	5.0	500m	30	60	30M			DM	F8	D	
2	MSP10A	100m	4.0	10	1.0	500m	100	5.0	100	10u	100	25			30M	15		DM	F8		
3	MSP15A	100m	4.0	10	1.0	500m	150	5.0	150	10u	100	25			30M	15		DM	F8		
4	MSP20A	100m	4.0	10	1.0	500m	200	5.0	200	10u	100	25			30M	15		DM	F8		
5	MSP25A	100m	4.0	10	1.0	500m	250	5.0	250	10u	100	25			30M	15		DM	F8		
6	MSP30A	100m	4.0	10	1.0	500m	300	5.0	300	10u	100	25			30M	15		DM	F8		
7	MSP35A	100m	4.0	10	1.0	500m	350	5.0	350	10u	100	25			30M	15		DM	F8		
8	MSP40A	100m	4.0	10	1.0	500m	400	5.0	400	10u	100	25			30M	15		DM	F8		
9	MSP45A	100m	4.0	10	1.0	500m	450	5.0	450	10u	100	25			30M	15		DM	F8		
10	MSP50A	100m	4.0	10	1.0	500m	500	5.0	500	10u	100	25			30M	15		DM	F8		
11	MSP55A	100m	4.0	10	1.0	500m	550	5.0	550	10u	100	25			30M	15		DM	F8		
12	MSP65A	100m	4.0	10	1.0	500m	650	5.0	650	15u	100	25			30M	15		DM	F8		
13	MSP75A	100m	4.0	10	1.0	500m	750	5.0	750	15u	100	25			30M	15		DM	F8		
14	SE7006	100m	12	10	1.0	500m	150	5.0	150	10u	100	30	80	80	60M			DPL	TO66	C	
15	UPT311t	100m	10	10	1.0	1.0	200	5.0	150	10u*	5.0	500	30		40M	500m	200n	PL	TO5	A	
16	UPT312t	100m	10	10	1.0	1.0	250	5.0	200	10u*	5.0	500	30		40M	500m	200n	PL	TO5	A	
17	UPT313t	100m	10	10	1.0	1.0	300	5.0	250	10u*	5.0	500	30		40M	500m	200n	PL	TO5	A	
18	UPT314t	100m	10	10	1.0	1.0	350	5.0	300	10u*	5.0	500	30		40M	500m	200n	PL	TO5	A	
19	UPT315t	100m	10	10	1.0	1.0	400	5.0	300	10u*	5.0	500	30		40M	500m	200n	PL	TO5	A	
20#	2N4431	103m	18	10	1.0	1.0	55	3.5	40	4.0m	5.0	100	20	200	40M	500m	200n	PL	TO129	R	
21#	2N5765	103m	19	10	1.0	500m	55	3.5	40	7.5m	5.0	100	20		40M	500m	200n	PL	T77	R	
22#	2N5774	103m	18	10	1.0	500m	65	3.5	35	4.0m	5.0	100	20	200	50M	1.2	PE	TO129	B		
23#	BD135-6	106m	8.0	10	1.0	1.0	45	5.0	45	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
24#	BD135-10	106m	8.0	10	1.0	1.0	45	5.0	45	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
25#	BD135-16	106m	8.0	10	1.0	1.0	45	5.0	45	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
26#	BD137-6	106m	8.0	10	1.0	1.0	60	5.0	60	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
27#	BD137-10	106m	8.0	10	1.0	1.0	60	5.0	60	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
28#	BD139-6	106m	8.0	10	1.0	1.0	100	5.0	80	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
29#	BD139-10	106m	8.0	10	1.0	1.0	100	5.0	80	100n	2.0	150	40	100	50M	1.2	PE	TO126	B		
30#	BLY91A*	106m	17	10	1.0	750m	65	4.0	36	5.0m	5.0	500	5.0		500M		PE	T72m	R		
31#	BLY35	109m	12	10	1.0	1.0	66	4.0	33	5.0	5.0	1.0	10	220	450M		PE	TO60	A		
32#	2N2525	110m	16	10	1.0	400m	100	5.0	80	5.0m	2.0	350	10		800m	700n	PL	T39a	A		
33#	2SD200A	111m	10	10	1.0	1.0	15k	5.0	1.5k	1.0m	5.0	2.0	2.5				PL	TO3	C		
34	HEPS7005-RT	111m	10	10	1.0	1.0	750	5.0	750	1.0m	100	100	10	180	7.5M		PEt	TO3	C		
35#	2SC737	113m	17	10	1.0	1.0	60	4.0	18	500u	100	100	10		300M			T59b	R		
36	A3-12	113m	20	10	1.0	1.0	60	4.0	18						50M			T91	R		
37	C12-28	113m	20	10	1.0	1.0	60	4.0	33						400M			T91	R		
38	D10-28	113m	20	10	1.0	1.0	60	4.0	30						960M			T93	R		
39	JAN2N3739t	114m	20	10	1.0	1.0	325	6.0	300	100u	100	100	40	200	10M	7.5m	1.5u	PL	TO66	C	
40	2N5424	114m	20	10	1.0	1.0	36	4.0	18	1.0u	5.0	2.0	20	100	250M	250m		TO60	A		
41	2N5598	114m	20	10	1.0	1.0	80	6.0	60	1.0m	5.0	1.0	70	200	80M			TO66	C		
42	2N5600	114m	20	10	1.0	1.0	100	6.0	80	1.0m	5.0	1.0	30	90	80M			TO66	C		
43	2N5602	114m	20	10	1.0	1.0	100	6.0	80	1.0m	5.0	1.0	70	200	80M			TO66	C		
44	2N5604	114m	20	10	1.0	1.0	120	6.0	100	1.0m	5.0	1.0	30	90	80M			TO66	C		
45	2N5847	114m	20	10	1.0	1.0	36	4.0	18	1.0m	5.0	500m	5.0		50M			T72h	R		
46	2N6203	114m	20	10	1.0	1.0	60	4.0	33	5.0m	5.0	500	20	100	2.0M	2.4		T91	R		
47	2N6207	114m	20	10	1.0	1.0	50	4.0	30	5.0m	5.0	500	20	100	2.0M	2.4		T93	R		
48	2N6263	114m	20	10	1.0	1.0	140	7.0	120	5.0m	5.0	500	20	100	2.0M	2.4		TO66	C		
49	2N6387	114m	20	10	1.0	1.0	38	4.0	18	10m	5.0	50	5.0	50	50M			W52	R		
50	2N6370	114m	20	10	1.0	1.0	65	4.0	35	10m	5.0	500	5.0	50	50M			W52	R		
51#	BLV10*	114m	20	10	1.0	1.0	65	4.0	18	2.0m	5.0	750	10	100	950M	245m		PE	W52t	R	
52#	BLV20*	114m	20	10	1.0	1.0	90	4.0	38	1.0m	5.0	400	10	100	600M	640m		PE	W52t	R	
53#	BLW95*	114m	20	10	1.0	1.0	80	4.0	53	10m	5.0	4.0	15	50	270M	176m		PE	W52u	R	
54	MRF232	114m	20	10	1.0	1.0	36	4.0	18	1.0m	5.0	500	10		90M			T93b	R		
55	MRF433	114m	20	10	1.0	1.0	38	4.0	18	500u	5.0	500	15					W52k	R		
56	2N5483	115m	20	10	1.0	1.0	45	3.0	30	6.0m	5.0	100	20	250				T74	R		
57	40899	117m	14	10	1.0	1.0	45	3.5	45	2.0m	5.0	100	20			10	PE	Y201a	A		
58	2N5768	118m	20	10	1.0	1.0	55	3.5	25	10m	5.0	100	20					T77	Z		
59	2N6266	118m	14	10	1.0	1.0	50	3.5	5	2.0m	5.0	100	20					B25	AC		
60	2N5595	120m	20	10	1.0	1.0	55	3.5	30	4.0m	5.0	50	20		1.5G			T73a	R		
61	2N6410	120m	15	10	1.0	1.0	40	6.0	25	100u	2.0	2.0	45	180	50M	375m		B16	D		
62	2N6412	120m	15	10	1.0	1.0	60	6.0	40	100u	3.0	200	40	250	50M	625m		B16	D		
63	2N6413	120m	15	10	1.0	1.0	80	6.0	60	100u	3.0	200	40	250	50M	625m		B16	D		
64	2N6416	120m	15	10	1.0	1.0	80	6.0	80	100u	3.0	200	40	250	40M	1.0		B16	D		
65	2N6417	120m	15	10	1.0	1.0	100	6.0	100	100u	3.0	200	40	250	40M	1.0		B16	D		
66#	2SC491	120m	15	10	1.0	1.0	50	5.0	35	10u	2.0	500	30	250	30M			TO66	C		
67#	2SC791	120m	15	10	1.0	1.0	90	5.0	90	120u	2.0	200	40	250	20M	1.4	DM	TO66	C		
68#	2SC1161	120m	15	10	1.0	1.0	200	6.0	120	5.0	5.0	200	30	200	5.0M		PE	TO66	C		
69#	2SC1398	120m	15	10	1.0	1.0	70	5.0	50	1.0u	5.0	100	30	220	150M	500m		B26	D		
70#	2SC1505	120m	15	10	1.0	1.0	300	7.0	300	100n	100	10	40	200	50M		PL	Y220b	X		
71#	2SC1506	120m	15	10	1.0	1.0	300	7.0	300	100n	100	10	40	200	50M		PL	Y220a	X		
72#	2SC1507	120m	15	10	1.0	1.0	300	7.0	300	100n	100	10	40	200	50M		PL	B8	X		
73#	2SC1624	120m	15	10	1.0	1.0	120	5.0	120	1.0u	5.0	150	70	240	30M		EM	Y220b	D		
74#	2SC1819	120m	15	10	1.0	1.0	300	7.0	300	100u	50	5.0	50	250	100M			B17	D		
75#	2SC1905	120m	15	10	1.0	1.0	360	7.0	300	10u	10	10	30		4.5M	200		B26	D		
76#	2SC1913	120m	15	10	1.0	1.0	150	5.0	150	1.0u	100	150	65	330	120M		PE	B26	D		
77#	2SC1975	120m	15																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	# C O D E					
						Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo (A)	MAX. Vcb (V)							Vcb (V)	Ic (A)	MIN	MAX	
1	D42T4	120m	2.1		SJ	2.0	500m	5.0	5.0	400	100	500m	75	175	45M	800n#	PE	B15c	A				
2	D42T5	120m	2.1		SJ	2.0	500m	5.0	5.0	300	100	500m	30		45M	800n#	PE	B15c	A				
3	D42T6	120m	2.1		SJ	2.0	500m	5.0	5.0	400	100	500m	30		45M	800n#	PE	B15c	A				
4	D42T7	120m	2.1		SJ	2.0	500m	5.0	5.0	300	100	500m	150	300	45M	800n#	PE	B15c	A				
5	D42T8	120m	2.1		SJ	2.0	500m	5.0	5.0	400	100	500m	150	300	45M	800n#	PE	B15c	A				
6	HSE901-RT	120m	1.5		SJ			200	5.0	140	100uφ	100	40		500kΔ		PE	T066	C				
7	HSE902-RT	120m	1.5		SJ			170	5.0	150	500uφ	4.0	500m	30		500kΔ		PE	T066	C			
8	HSE910-RT	120m	1.5		SJ			90	5.0	80	100uφ	4.0	100m	50		3.0MΔ		PE	T066	C			
9	HSE911-RT	120m	1.5		SJ			90	5.0	80	100uφ	4.0	100m	50		2.0MΔ		PE	T066	C			
10	HSE912-RT	120m	1.5		SJ			80	5.0	40	100uφ	4.0	100m	50		3.0MΔ		PE	T066	C			
11	MJE200	120m	1.5		SJ	5.0	1.0	40	8.0	25	100n	1.0	2.0	45	180 #	65MΔ		PE	B6	B			
12	MJE220	120m	1.5		SJ	4.0	1.0	60	7.0	40	100n	1.0	200m	40	200	50MΔ	600m	Δ	PE	B6	B		
13	MJE221	120m	1.5		SJ	4.0	1.0	60	7.0	40	100n	1.0	200m	40	150	50MΔ	600m	Δ	PE	B6	B		
14	MJE222	120m	1.5		SJ	4.0	1.0	60	7.0	40	100n	1.0	200m	25	200	50MΔ	600m	Δ	PE	B6	B		
15	MJE223	120m	1.5		SJ	4.0	1.0	80	7.0	60	100n	1.0	200m	40	200	50MΔ	600m	Δ	PE	B6	B		
16	MJE224	120m	1.5		SJ	4.0	1.0	80	7.0	60	100n	1.0	200m	40	150	50MΔ	600m	Δ	PE	B6	B		
17	MJE225	120m	1.5		SJ	4.0	1.0	80	7.0	60	100n	1.0	200m	25	120	50MΔ	600m	Δ	PE	B6	B		
18	MJE240	120m	1.5		SJ	4.0	1.0	80	7.0	80	100n	1.0	200m	40	200	40MΔ	600m	Δ	PE	B6	B		
19	MJE241	120m	1.5		SJ	4.0	1.0	80	7.0	80	100n	1.0	200m	40	120	40MΔ	600m	Δ	PE	B6	B		
20	MJE242	120m	1.5		SJ	4.0	1.0	80	7.0	80	100n	1.0	200m	25	40MΔ	600m	Δ	PE	B6	B			
21	MJE243	120m	1.5		SJ	4.0	1.0	100	7.0	100	100n	1.0	200m	40	120	40MΔ	600m	Δ	PE	B6	B		
22	MJE244	120m	1.5		SJ	4.0	1.0	100	7.0	100	100n	1.0	200m	25	40MΔ	600m	Δ	PE	B6	B			
23	MJE2050	120m	1.5		SJ	5.0		4.0	4.5	45	1.0	1.0	50		1.0				PE	B6	B		
24	MJE3439	120m	1.5		SJ	300m	150m	450	5.0	350	20uφ	1.0	20m	30		15MΔ	10		PE	B16	B		
25	MJE3440	120m	1.5		SJ	300m	150m	350	5.0	250	20uφ	1.0	20m	40	160	15MΔ	10		PE	B16	B		
26	TIP611	120m	1.5		SJ	500m†	400m	80 †	5.0†	40	300uΔ	4.0	500m	15	100 #	3.0MΔ	1.4 #	20uφ	DM	B1	B		
27	TIP61A1	120m	1.5		SJ	500m†	400m	80 †	5.0†	60	300uΔ	4.0	500m	15	100 #	3.0MΔ	1.4 #	20uφ	DM	B1	B		
28	TIP61B1	120m	1.5		SJ	500m†	400m	80 †	5.0†	80	300uΔ	4.0	500m	15	100 #	3.0MΔ	1.4 #	20uφ	DM	B1	B		
29	TIP61C1	120m	1.5		SJ	500m†	400m	100 †	5.0†	100	300uΔ	4.0	500m	15	100 #	3.0MΔ	1.4 #	20uφ	DM	B1	B		
30	2N3138	125m	2.0		SS	2.0	200m	85	1.0	65	100uφ	4.0	1.0	10		10MΔ					T24	B	
31	2N3139	125m	2.0		SS	2.0	200m	140	1.0	140	100uφ	1.0	1.0	10		10MΔ					T24	B	
32	2N3140	125m	2.0		SS	2.0	200m	85	1.0	65	100uφ	1.0	1.0	10		10MΔ					T24	B	
33	2N3141	125m	2.0		SS	2.0	200m	140	1.0	140	100uφ	1.0	1.0	10		10MΔ					T24	B	
34 #	2SC1501	125m	1.0		SJ	100m		300	5.0	300	100u	1.0	10m	30		55MΔ		†			T0126	B	
35 #	2SC2085	125m	1.0		SJ	150m		300	5.0	300	100u	1.0	10m	30		55MΔ					B26	D	
36	MJ2251	125m	1.0		SJ	500m		6.0	225	100uφ	1.0	50m	25	200	10MΔ						T066	C	
37	MJ2252	125m	1.0		SJ	500m		6.0	300	100uφ	1.0	50m	25	200	10MΔ						T066	C	
38	2N3927	128m	2.3		SS	3.0		36	4.0	18	250uφ	5.0	500mΔ	80 †		10MΔ					T060	A	
39 #	2SC488	128m	1.6		SS	3.0		140	5.0	110	3.0mφ	5.0	500mΔ	80 †		10MΔ					T066	A	
40 #	2SC489	128m	1.6		SS	3.0	3.0 φ	100	5.0	80	120uφ	5.0	500m	20	200 *	10MΔ	500m		DM		T066	C	
41	2N3632	131m	2.3		SC	3.0 †	400m	85 †	4.0†	40	500uΔ	5.0	250m	10	150	1.0					T080	A	
42	2N3733	131m	2.3		SC	1.0	400m	65	4.0	40	500u	5.0	250m	10	150	1.0					T080	A	
43	2N5215	131m	2.3		SC	1.0	500m	70	4.0	70	500uΔ	5.0	500m	10	80	400MΔ	500m		PE		T080	A	
44	40307	131m	2.3		SJ	3.0		65	4.0	40	250nΔ	5.0	300m	10							T080	A	
45	40665	131m	2.3		SJ	1.0		65	4.0	40	250uΔ	5.0	300m	10		400MΔ	2.0		PE		T080	A	
46	SDT6113†	131m	2.3		SJ	1.0	4.0	65	4.0	30		5.0	5.0	10 #		350MΔ					T080	A	
47	SDT6114†	131m	2.3		SJ	1.0	4.0	65	4.0	40		5.0	5.0	10 #		350MΔ					T080	A	
48	SDT6115†	131m	2.3		SJ	1.0	4.0	65	4.0	50		5.0	5.0	10 #		350MΔ					T080	A	
49	2N1718	133m	2.0		SJ	750m	750mφ	90	6.0	60	1.0uφ	5.0	200mφ	20	60 #	16MΔ						T13	A
50	2N1719	133m	2.0		SJ	750m	750mφ	150	6.0	100	1.0uφ	5.0	200mφ	20	60 #	16MΔ						T13	A
51	2N1720	133m	2.0		SJ	750m	750mφ	90	6.0	60	1.0uφ	5.0	200mφ	40	120 #	16MΔ						T13	A
52	2N1721	133m	2.0		SJ	750m	750mφ	150	6.0	100	1.0uφ	5.0	200mφ	40	120 #	16MΔ						T13	A
53	2N2196	133m	2.0		SC	1.0	500m	80	8.0	60	75u	1.0	200m	30	90 #		10 #					F8	A
54	2N2197	133m	2.0		SC	1.0	500m	80	8.0	60	75u	1.0	200m	75	200 #		10 #					F8	A
55	2N2995	133m	1.5		SC	1.0	500m	120	1.0	100	50u	3.0	30m	30 †	100	10MΔ						T20a	A
56	2N3738	133m	2.0		SJ	250m	500m	250	6.0	225	100u	1.0	100mφ	40	200	10MΔ	10					T066	C
57	2N3739	133m	2.0		SJ	250m	500m	325	6.0	300	100u	1.0	100mφ	40	200	10MΔ	10					T066	C
58	2N3766	133m	2.0		SJ	1.0	2.5	80 †	6.0†	60	100uΔ	1.0	500m	40	160	10MΔ	2.5					T066	C
59	2N3767	133m	2.0		SJ	1.0	2.5	100 †	6.0†	80	100uΔ	1.0	500m	40	160	10MΔ	2.5					T066	C
60	2N5101	133m	2.0		SA	1.0	500m	500	6.0	400	5.0mφ	1.0	100m	15	250	50MΔ	20					F8	A
61	2N6391	133m	1.8		SS	2.5		50 †	3.5†	50	3.0mΔ	1.0	200m	20	120							W24	AC
62 #	2SC92	133m	2.0		SJ	2.0		100	5.0	50	100uφ	1.0	350m	10	100	190MΔ	2.0		PE			T08	A
63 #	2SC93	133m	2.0		SJ	2.0		80	5.0	45	100uφ	1.0	350m	10	35	190MΔ	2.0		PE			T08	A
64 #	2SC94	133m	2.0		SJ	2.0		100	5.0	50	100uφ	1.0	350m	10	35	190MΔ	2.0		PE			T08	A
65 #	2SC1515A	133m	2.0		SJ	150m	150mφ	300	5.0	300	1.0u	1.0	50m	40	170	100MΔ	4.0		PE	DPL		T066	C
66 #	2SC551	133m	2.0		SJ	3.0		65	4.0	40	250uφ	3.0	300m	10		350MΔ	2.0		PE			T080	A
67 #	2SC553	133m	2.0		SJ	3.0		65	4.0	40	250uφ	3.0	300m	10		400MΔ	2.0		PE			T080	A
68 #	2SC585	133m	2.0		SJ	3.0		65	4.0	40	12uφ	28	200mΔ	30	∅	400MΔ	2.0		PE			T88	A
69 #	2SC636	133m	2.0		SJ	3.0		65	4.0	40	5.0uφ	1.0	500m	20	200	400MΔ			PE			T060	A
70 #	2SC975A	133m	2.0		SJ	5.0		40	5.0	40	100uφ	1.0	100m	20	180 #	1.2G			PE			T83	V
71 #	2SC1075	133m	2.0		SJ	5.0	#	36	4.0	18	1.0u	13	400m	15	60	800MΔ			PE			T98	V
72 #	2SC1337	133m	2.0		SJ																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	# C O D E		
					Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)	Ic (A)	MIN							MAX	
1	XGSO1535†	133m	10	3	2.0	1.0	400	7.0	350	100	1.0	1.0	10	30m	300m	250n	PE	T086	CØ		
2	XGSO1540†	133m	10	3	2.0	1.0	450	7.0	400	100	1.0	1.0	10	30m	300m	250n	PE	T066	CØ		
3	2N3327	134m	20	3	2.0	200m	65	3.0	65	500	1.0	500	10	100m	100m	250n	PE	T31	AØ		
4	2N122	140m	9.0	3	1.0	120	1.0	120	1.0	100	3.5	100m	3.0	100k	200		GE	F34	BØ		
5	2SC2441	140m	1.0	3	3.0	160	5.0	160	15	1.0u	5.0	10m	60	150m	700m		PE	T0126	BØ		
6	2N1483	142m	25	3	3.0	60	1.5	60	12	40	4.0	750m	20	60	2.6		D	T08	AØ		
7	JAN2N1483	142m	1.7	3	3.0	60	12	40	40	15	4.0	750m	20	60	600k		Δ	T08	AØ		
8	2N1484	142m	25	3	3.0	100	1.5	100	12	55	4.0	750m	20	60	1.2M	2.6		D	T08	AØ	
9	JAN2N1484	142m	1.7	3	3.0	100	12	55	40	15	4.0	750m	20	60	600k		Δ	T08	AØ		
10	2N1485	142m	25	3	3.0	60	1.5	60	12	40	4.0	750m	35	100	1.2M	1.0		D	T08	AØ	
11	JAN2N1485	142m	1.7	3	3.0	60	12	40	40	15	4.0	750m	35	100	600k		Δ	T08	AØ		
12	2N1486	142m	25	3	3.0	100	1.5	100	12	55	4.0	750m	35	100	1.2M	1.0		D	T08	AØ	
13	JAN2N1486	142m	1.7	3	3.0	100	12	55	40	15	4.0	750m	35	100	600k		Δ	T08	AØ		
14	2N2304	142m	25	3	3.0	60	1.5	60	6.0	40	100	4.0	300m	20	80	3.0		T08	AØ		
15	2N2308	142m	25	3	3.0	100	1.5	100	12	80	50	4.0	1.0	20	60	1.0M	1.0		D	T08	AØ
16	2N2887	142m	25	3	1.2	400m	100	4.0	80	28	350m	15	80	1.2			PL	T39	AØ		
17	2N3054	142m	25	3	4.0	2.0	90	7.0	60	1.0m	4.0	500m	25	150	30k	2.0		F4e	AØ		
18	2N3142	142m	25	3	2.0	200m	65	1.0	65	100	1.0	1.0	10		10m			T46	AØ		
19	2N3143	142m	25	3	2.0	200m	140	1.0	140	100	1.0	1.0	10		10m			T46	AØ		
20	2N3144	142m	25	3	2.0	200m	65	1.0	65	100	1.0	1.0	10		10m			T46	AØ		
21	2N3145	142m	25	3	2.0	200m	140	1.0	140	100	1.0	1.0	10		10m			T46	AØ		
22	2N3226	142m	75	3	5.0	2.8	35	6.0	35	200	3.0	2.0	20	50	30k	500m		T03	CØ		
23	2N3441	142m	25	3	3.0	2.0	160	7.0	140	100m	4.0	500m	25	100	100m	2.2		T066	CØ		
24	JAN2N3441	142m	2.5	3	3.0	2.0	160	7.0	140	1.0m	4.0	500m	20	80	80	2.0		T066	CØ		
25	2N4910	142m	25	3	1.0	1.0	40	5.0	40	100	1.0	500m	20	100	3.0M			T066	CØ		
26	2N4911	142m	25	3	1.0	1.0	60	5.0	60	100	1.0	500m	20	100	3.0M			T066	CØ		
27	2N4912	142m	25	3	1.0	1.0	80	5.0	80	100	1.0	500m	20	100	3.0M			T066	CØ		
28	2N5216	142m	25	3	1.5	400m	80	4.0	80	100	4.0	500m	10	80	350m	800m		PL	T62b	FØ	
29	2SD761	142m	20	3	1.5	180	6.0	180	10	10	5.0	300m	40	200	10			Y220a	AØ		
30	40368	142m	25	3	3.0	1.5	100	12	55	9.0	4.0	750m	35	100		1.0		T08	AØ		
31	B5-82	142m	25	3	2.5		3.0	14							175M			W54	R		
32	B12-28	142m	25	3	2.5		4.0	35							175M			T91	R		
33	BD226	142m	12	3	1.5		45	5.0	45	100	2.0	150m	40	250	125M	800m	PE	T0126	BØ		
34	BD228	142m	12	3	1.5		60	5.0	60	100	2.0	150m	40	160	125M	800m	PE	T0126	BØ		
35	BD230	142m	12	3	1.5		100	5.0	80	100	2.0	150m	40	160	125M	800m	PE	T0126	BØ		
36	BDY72	142m	25	3	3.0	2.0	150	7.0	120	1.0m	4.0	500m	60	180	800k	2.0	HA	T066	CØ		
37	BDY78	142m	25	3	4.0	2.0	90	7.0	55	1.0m	4.0	500m	25	100	8.0M		DM	T066	CØ		
38	BDY79	142m	25	3	4.0	2.0	150	7.0	120	1.0m	4.0	500m	25	100	8.0M		DM	T066	CØ		
39	C5-82	142m	25	3	2.5		3.0	14							470M			W54	R		
40	MJ4101	142m	25	3	3.0		50	5.0	40		1.5	25	100	4.0M	670m			T066	AØ		
41	2N1701	143m	25	3	2.5	1.0	60	6.0	40	100	4.0	300m	20	80	350k	5.0	Δ	T08	AØ		
42	2N2035†	143m	14	3	3.0	1.0	80	10	60	150	4.0	1.5	20	60	1.0M	300m		T08	AØ		
43	JAN2N3766†	143m	25	3	4.0	2.0	80	6.0	60	10	5.0	500m	40	160	1.0M	2.0		T066	CØ		
44	JAN2N3767†	143m	25	3	4.0	2.0	100	6.0	80	10	5.0	500m	40	160	1.0M	2.0		T066	CØ		
45	2N4127	143m	25	3	2.0	500m	60	4.0	40	500	4.0	200m	10	80	300M	1.0		T0117	R		
46	2N5606	143m	25	3	5.0	2.0	80	6.0	60	1.0m	5.0	2.5	70	200	70M			T066	CØ		
47	2N5608	143m	25	3	5.0	2.0	100	6.0	80	1.0m	5.0	2.5	30	90	60M			T066	CØ		
48	2N5610	143m	25	3	5.0	2.0	100	6.0	80	1.0m	5.0	2.5	70	200	70M			T066	CØ		
49	2N5612	143m	25	3	5.0	2.0	120	6.0	100	1.0m	5.0	2.5	30	90	60M			T066	CØ		
50	2N5689	143m	25	3	3.0		60	3.0	40	1.0m	1.0	100m	15					T0117	R		
51	2N5704	143m	25	3	2.0		36	3.0	18	1.0m	5.0	50m	15					T0117	R		
52	2N5712	143m	25	3	2.0		60	4.0	40	300	1.0	100m	10					T0117	R		
53	2N6198	143m	25	3	2.5		60	4.0	35	5.0m	1.0							T91	R		
54	2SC703	143m	21	3	200m		40	5.0	20	1.0m	1.0	100m	10	180	150M		PE	T59b	R		
55	BD329	143m	15	3	3.0	1.0		5.0	20	10	1.0	500m	85	375	130M	250m	PE	T0126	BØ		
56	ZTB12-28ST	143m	25	3	2.5		4.0	35	30	5.0m					510M		A	T162	S		
57	2N4300	149m	15	3	2.0	1.0	100	8.0	80	10	2.0	1.0	30	120	30M			T05	AØ		
58	2N5487†	149m	15	3	5.0	1.0	120	8.0	80	10	2.0	1.0	100	300	40M	125n		R179k	AØ		
59	2N5488†	149m	15	3	5.0	1.0	150	8.0	100	10	2.0	1.0	40	120	40M	125n		R179k	AØ		
60	GSDB10008†	149m	15	3	10	2.0	100	7.0	80	1.0	5.0	5.0	40	160	5.0M	120m	D	T05	AØ		
61	2N4000†	150m	1.0	3	1.0	500m	100	8.0	80	2.0	2.0	500m	30	120	40M	300		T05	AØ		
62	2N4001†	150m	1.0	3	1.0	500m	120	8.0	100	2.0	2.0	500m	40	120	40M	300		T05	AØ		
63	2N5552	150m	1.5	3	10	2.0	120	7.0	80	200	2.0	500m	40	250	30M	100n		R179k	AØ		
64	2N5662†	150m	15	3	1.0	200m	250	6.0	200	1.0	5.0	500m	40	120	20M	250n		T05	AØ		
65	2N5663†	150m	15	3	1.0	200m	400	6.0	300	1.0	5.0	500m	25	75	20M	250n		T05	AØ		
66	2N5666†	150m	15	3	3.0	600m	250	6.0	200	1.0	5.0	1.0	40	120	20M	250n		T05	AØ		
67	2N5667†	150m	15	3	3.0	600m	400	6.0	300	1.0	5.0	1.0	25	75	20M	250n		T05	AØ		
68	2N6232†	150m	15	3	10	2.0	140	7	100	200	2.0	500m	40	250	30M	250n		T05	AØ		
69	BDY65	150m	1.0	3	1.0	200m	150	7.0	100	500	4.0	200m	50	300	30M	250n	PL	T05	AØ		
70	BUY41	150m	1.0	3	3.0	1.0	125	8.0	80	2.0	1.0	40	300	40M	300n		PE	T05	AØ		
71	KS6113†	150m	3	3	4.0	800m	30	4.5	30	500	5.0	2.0	15	250	25M	30n	PE	T060	Ø		
72	KS6114†	150m	3	3	4.0	800m	20	4.5	20	500	5.0	2.0	15	250	25M	30n	PE	T060	Ø		
73	T1486†	150m	1.0	3	1.0		80	6.0	60	3.0	5.0	200m	20	80	50M		DPL	T05	AØ		
74	T1487†	150m	2.0	3	1.0		80	6.0	60	3.0	5.0	200m	20	80	50M		DPL	T13	AØ		
75	UPT321†	150m	16	3	2.0	1.0	200	5.0	150	10	5.0	500m	30	100	40M	500m		PL	T066	CØ	
76	UPT322†	150m	16	3	2.0	1.0	250	5.0	200	10	5.0	500m	30	100	40M	500m		PL	T066	CØ	
77	UPT323†	150m	16	3	2.0	1.0	300	5.0	250	10	5.0	500m	30	100	40M	500m		PL	T066	CØ	
78	UPT324†	150m	16																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG s/a TO200 Ser.	# L C O A D E	
						Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)	Icbo @ 25°C (A)	V <sub>cb</sub> (V)							Ic (A)
1#	2SD289	180m	20	0	0	2.0	0	80	5.0	55	50u	5.0	500m	40	250	#	DM	B17	D0
2#	2SD381	180m	20	0	0	1.5	0	140	5.0	120	1.0u	5.0	300m	40	250	#	ME	Y220b	D0
3#	2SD382	180m	20	0	0	1.0	0	140	5.0	120	1.0u	5.0	300m	40	250	#	ME	Y220a	D0
4#	2SD401	180m	20	0	0	2.0	0	200	5.0	150	50u	1.0	400m	40	200	#	ME	Y220b	D0
5#	2SD608	180m	20	0	0	1.5	0	180	5.0	180	1.0u	5.0	300m	40	200	#	ME	Y220b	X0
6#	2SD669AB	180m	20	0	0	1.5	0	180	5.0	180	1.0u	5.0	150m	80	120	#	ME	B7a	B
7#	2SD669AC	180m	20	0	0	1.5	0	180	5.0	180	1.0u	5.0	150m	100	200	#	ME	B7a	B
8#	2SD669B	180m	20	0	0	1.5	0	180	5.0	120	1.0u	5.0	150m	100	120	#	ME	B7a	B
9#	2SD669C	180m	20	0	0	1.5	0	180	5.0	120	1.0u	5.0	150m	100	200	#	ME	B7a	B
10#	2SD669D	180m	20	0	0	1.5	0	180	5.0	120	1.0u	5.0	150m	100	320	#	ME	B7a	B
11#	2SD795	180m	20	0	0	3.0	0	50	5.0	40	1.0u	1.0	50	60	400	#	ME	Y220a	X0
12#	2SD1076	180m	20	0	0	2.5	0	25	5.0	25	20u	2.0	1.5	20	20	#	ME	B82	D0
13#	2SD1076L	180m	20	0	0	2.5	0	25	5.0	25	20u	2.0	1.5	20	20	#	ME	B82a	D0
14#	2SD1079C	180m	20	0	0	1	1	80	4	80	10u	4.0	50m	100	200	#	ME	B82	X0
15#	2SD1079LB	180m	20	0	0	1	1	80	4	80	10u	4.0	50m	100	200	#	ME	B82a	X0
16#	2SD1079LC	180m	20	0	0	1	1	80	4	80	10u	4.0	50m	100	200	#	ME	B82a	X0
17#	2SD1080B	180m	20	0	0	1.5	0	180	5	120	10u	5.0	150m	80	120	#	ME	B82	X0
18#	2SD1080C	180m	20	0	0	1.5	0	180	5	120	10u	5.0	150m	100	200	#	ME	B82	X0
19#	2SD1080LB	180m	20	0	0	1.5	0	180	5	120	10u	5.0	150m	80	120	#	ME	B82a	X0
20#	2SD1080LC	180m	20	0	0	1.5	0	180	5	120	10u	5.0	150m	100	200	#	ME	B82a	X0
21#	2SD1081B	180m	20	0	0	1.5	0	180	5	180	10u	5.0	150m	80	120	#	ME	B82	X0
22#	2SD1081C	180m	20	0	0	1.5	0	180	5	180	10u	5.0	150m	100	200	#	ME	B82	X0
23#	2SD1081LB	180m	20	0	0	1.5	0	180	5	180	10u	5.0	150m	80	120	#	ME	B82a	X0
24#	2SD1081LC	180m	20	0	0	1.5	0	180	5	180	10u	5.0	150m	100	200	#	ME	B82a	X0
25#	2SD1083	180m	20	0	0	2	2	150	5	80	1u	5.0	1.5	150	#	PL	B82	D0	
26#	2SD1083L	180m	20	0	0	2	2	150	5	80	1u	5.0	1.5	150	#	PL	B82a	D0	
27	BD157	180m	20	0	0	500m	250m	275	5.0	250	100u	10	50m	30	240	#	EPL	TO126	B
28	BD157	180m	20	0	0	500m	250m	275	5.0	250	100u	10	50m	30	240	#	↑	B16	B
29	BD158	180m	20	0	0	500m	250m	325	5.0	300	100u	10	50m	30	240	#	↑	TO126	B
30	BD158	180m	20	0	0	500m	250m	325	5.0	300	100u	10	50m	30	240	#	↑	B16	B
31	BD159	180m	20	0	0	500m	250m	375	5.0	350	100u	10	50m	30	240	#	↑	TO126	B
32	BD159	180m	20	0	0	500m	250m	375	5.0	350	100u	10	50m	30	240	#	↑	B16	B
33#	BD161	180m	20	0	0	500m	250m	45	5.0	45	100u	2.0	150m	40		#	↑	TO126	B0
34	BD165	180m	1.2	0	0	500m	250m	45	5.0	45	100u	2.0	150m	40		#	↑	B16f	B
35#	BD167	180m	20	0	0	500m	250m	80	5.0	80	100u	2.0	150m	40		#	↑	TO126	B0
36	BD167	180m	1.2	0	0	500m	250m	80	5.0	80	100u	2.0	150m	40		#	↑	B16f	B
37#	BD169	180m	20	0	0	500m	250m	80	5.0	80	100u	2.0	150m	40		#	↑	TO126	B0
38	BD169	180m	1.2	0	0	500m	250m	80	5.0	80	100u	2.0	150m	40		#	↑	B16f	B
39	BD171	180m	20	0	0	500m	250m	100	5.0	90	100u	1.0	50m	40		#	↑	B16	B
40	BD172	180m	20	0	0	500m	250m	130	5.0	120	100u	1.0	50m	40		#	↑	B16	B
41	BD173	180m	20	0	0	500m	250m	170	5.0	180	100u	1.0	50m	40		#	↑	B16	B
42	BD232	180m	20	0	0	500m	250m	100	5.0	300	100u	5.0	50m	25	150	#	↑	B16f	B
43#	BUY811	180m	24	0	0	7.5	500m	150	7.0	80	10u	5.0	1.0	40		#	PL	TO39	A0
44	HEP55015-RT	180m	20	0	0	500m	300m	300	3.0	300	100u	1.0	50m	80		#	PL	B16b	B
45	MJE720	180m	1.2	0	0	500m	300m	40	5.0	40	500u	1.0	150m	40		#	↑	B16c	B
46	MJE721	180m	1.2	0	0	500m	300m	80	5.0	80	500u	1.0	150m	40		#	↑	B16c	B
47	MJE722	180m	1.2	0	0	500m	300m	80	5.0	80	500u	1.0	150m	40		#	↑	B16c	B
48	ST11506	180m	20	0	0	100m	100m	150	5.0	150	100u	5.0	50m	30		#	PL	TO66	B
49	ST12006	180m	20	0	0	100m	100m	200	5.0	200	100u	5.0	50m	30		#	PL	TO66	B
50	ST12506	180m	20	0	0	100m	100m	250	5.0	250	100u	5.0	50m	30		#	PL	TO66	B
51	ST13006	180m	20	0	0	100m	100m	300	5.0	300	100u	5.0	50m	30		#	PL	TO66	B
52	ST13007	180m	20	0	0	100m	100m	300	5.0	300	50u	5.0	50m	30		#	PL	TO66	B
53	ST14006	180m	20	0	0	100m	100m	400	5.0	400	100u	5.0	50m	30		#	PL	TO66	B
54	ST14007	180m	20	0	0	100m	100m	400	5.0	400	50u	5.0	50m	30		#	PL	TO66	B
55	ST15006	180m	20	0	0	100m	100m	500	5.0	500	100u	5.0	50m	30		#	PL	TO66	B
56	ST15007	180m	20	0	0	100m	100m	500	5.0	500	50u	5.0	50m	30		#	PL	TO66	B
57	ST16006	180m	20	0	0	100m	100m	800	5.0	800	100u	5.0	50m	30		#	PL	TO66	B
58	ST16007	180m	20	0	0	100m	100m	800	5.0	800	50u	5.0	50m	30		#	PL	TO66	B
59	ST17006	180m	20	0	0	100m	100m	700	5.0	700	100u	5.0	50m	25		#	PL	TO66	B
60	ST17007	180m	20	0	0	100m	100m	700	5.0	700	50u	5.0	50m	30		#	PL	TO66	B
61	ST18006	180m	20	0	0	100m	100m	800	5.0	800	100u	5.0	50m	25		#	PL	TO66	B
62	TIP63	180m	20	0	0	500m	300m	350	5.0	300	100u	1.0	50m	30	240	#	PL	B1	B
63	TIP64	180m	20	0	0	500m	300m	300	5.0	350	100u	1.0	50m	30	240	#	PL	B1	B
64#	2SC1565	185m	10	0	0	250m	150	5.0	150	30u	10	100m	60	240	#	PL	TO126	B	
65	2N2948	168m	25	0	0	500m	40	2.0	4.0	40	2.0	400m	2.5	100	#	100M	TO3	C0	
66	2N3818	168m	25	0	0	1.0	60	4.0	4.0	80	1.0	400m	5.0	50	#	150M	TO60	A	
67	2N4273	168m	25	0	0	1.5	175	9.0	140	100n	1.0	10	20	140	#	10M	TO68	A0	
68	2N6260	168m	25	0	0	2.0	50	5.0	18	1.0M	4.0	1.5	20	100	#	30k	TO66	C0	
69#	2SC1177	168m	25	0	0	2.5	40	4.5	14	1.0M	1.0	100m	10	180	#	450M	TO117	C0	
70#	2SD1801	168m	25	0	0	1.5	100	8.0	55	10u	10	750m	50		#	10M	TO8	A0	
71#	2SD1851	168m	25	0	0	1.5	100	12	55	10u	4.0	750m	20	100	#	1.5M	TO8	A0	
72#	2SD877	168m	25	0	0	3.0	110	7.0	80	100u	5.0	500m	60	300	#	3.0M	TO66	C0	
73	1571-0420	166m	29	0	0	4.0	2.0	4.0	7.0	40	1.0	500m	20		#	800k	TO68	C0	
74	1571-0425	166m	29	0	0	4.0	2.0	4.0	7.0	40	1.0	500m	25		#	800k	TO66	C0	
75	1571-0620	166m	29	0	0	4.0	2.0	6.0	7.0	60	1.0	500m	20		#	800k	TO66	C0	
76	1571-0820	166m	29	0	0	4.0	2.0	8.0	7.0	80	1.0	500m	20		#	800k	TO68	C0	
77	1571-0825	166m	29	0	0	4.0	2.0	8.0	7.0	80	1.0	500m	25		#	800k	TO66	C0	
78	1571-1020	166m	29	0	0	4.0	2.0	100	7.0	100	1.0	500m	20		#	800k	TO66	C0	
79	1571-1025	166m	29	0	0														



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	# L O A D E
					Ic (A)	Ib (A)	Vcbo (V)	Vvebo (V)	Vvceo (V)	Icbo (A)	Vcb (V)	Ic (A)								
1	MJE344	187m	20	0	500m	250m	200	5.0	200	100	10	30	300	15MSΔ					B16d	B
2	STA1100†	187m	30	0	7.0	2.0		5.0	300	1.0	5.0	3.0	15	60MS					T066	C
3	STA1101†	187m	30	0	7.0	2.0		5.0	350	1.0	5.0	3.0	15	60MS					T066	C
4 #	2SC1816	188m	18	0	800m		100	8.0	60	1.0	2.0	100m	27	264 *	140MS	400m	50u	ME	Y220b	D
5 #	2SC1972	170m	25	0	3.5		35	4.0	17	1.0	1.0	100m	10	180					B26	C
6	40310	170m	28	0	4.0	2.0		2.5	35	1.0	2.0	1.0	20	120	750kΔ				T066	C
7	40312	170m	28	0	4.0	2.0		2.5	60	1.0	2.0	1.0	20	120	750kΔ				T066	C
8	40316	170m	28	0	4.0	2.0		2.5	40	1.0	2.0	1.0	20	120	750kΔ				T066	C
9	40324	170m	28	0	4.0	2.0		2.5	35	1.0	2.0	1.0	20	120	750kΔ				T066	C
10	KSD2101	170m	30	0	4.0	1.0	80	7.0	45	1.0	4.0	500m	25	100	800k				T066	C
11	KSD2102	170m	30	0	4.0	1.0	70	7.0	35	1.0	4.0	500m	25	100	800k				T066	C
12	KSD2103	170m	30	0	4.0	1.0	60	7.0	25	1.0	4.0	500m	25	100	800k				T066	C
13	MRF479	170m	30	0	2.0		36	4.0	18	5.0	5.0	500m	30	60	400M#				B61	Y
14	MRF5176	170m	30	0	2.0		60	4.0	33	1.0	5.0	500m	10	100					T90	R
15	2N4075	171m	30	0	3.0	2.0	100	5.0	80	100	2.0	1.0	30	90			300n		T43	A
16	2N4076	171m	30	0	3.0	2.0	100	5.0	80	100	2.0	1.0	50	150			300n		T43	A
17	2N5590	171m	30	0	2.0		36	4.0	18	1.0	5.0	250m	5.0		200MSΔ				T72h	A
18	2N5642	171m	30	0	3.0		65	4.0	35	1.0	5.0	200m	5.0		250MSΔ				T72h	A
19	2N5646	171m	30	0	2.0		36	4.0	18	1.0	5.0	1.0	15		400MSΔ				T72h	R
20	MRF261	171m	30	0	2.0		36	4.0	18	1.0	5.0	250m	10	65					B61	Y
21	MRF603	171m	30	0	2.0		36	4.0	18	5.0	5.0	500m	5.0		175MΔ				T93b	R
22	RCS29	171m	30	0	3.0	1.0	40	5.0	40	300	4.0	1.0	15	150	3.0MSΔ	400n			T066	C
23	RCS28A	171m	30	0	3.0	1.0	60	5.0	60	300	4.0	1.0	15	150	3.0MSΔ	400n			T066	C
24	RCS28B	171m	30	0	3.0	1.0	80	5.0	80	300	4.0	1.0	15	150	3.0MSΔ	400n			T066	C
25	RCS28C	171m	30	0	3.0	1.0	100	5.0	100	300	4.0	1.0	15	150	3.0MSΔ	400n			T066	C
26	SD1222-5	171m	30	0	3.0	1.0	65	4.0	35	1.0	5.0	200m	5.0		250MSΔ			EPL	W52v	C
27	2N2892†	172m	30	0	5.0	2.0	100	5.0	80	100	2.0	1.0	30	90	30MSΔ	300n			T059	A
28	2N2893†	172m	30	0	5.0	2.0	100	5.0	80	100	2.0	1.0	50	150	30MSΔ	300n			T059	A
29	2N4306†	172m	4.0	0	5.0	2.5	120	6.0	80	10	2.0	1.0	50	150		200m			90n	T65
30	2N4308†	172m	4.0	0	5.0	2.5	100	6.0	60	10	2.0	1.0	50	150		200m			90n	T65
31	2N4310†	172m	4.0	0	5.0	2.5	120	6.0	80	10	2.0	1.0	40	120		200m			90n	T65
32	2N4312†	172m	4.0	0	5.0	2.5	100	6.0	60	10	2.0	1.0	40	120		200m			90n	T65
33	N149	172m	30	0	5.0	2.5	100	6.0	45	5.0	5.0	750m	30						T03	C
34	PT6940†	172m	30	0	5.0	3.0	160	5.5	130	100	3.0	3.0	30		75MΔ	240m	150n		T05	A
35	2N6081	177m	31	0	2.5		36	4.0	18	500	5.0	5.0	5.0	15					T72h	R
36	2SD246	177m	16	0	4.5		15	5.0	15	1.0	5.0	4.0	2.0		2.2	1.3u#	ME		T03	C
37 #	2SD289	177m	16	0	7.0		35	5.0	15	1.0	5.0	4.0	2.0		2.2	1.0u#	MEΔ		T03	C
38 #	2SD300	177m	16	0	7.0		35	5.0	15	1.0	5.0	2.5	3.0		4.0	1.0u#	MEΔ		T03	C
39	MRF215	177m	31	0	2.5		36	4.0	18	500	5.0	5.0	5.0		8.0				W65	C
40	MRF221	177m	31	0	2.5		36	4.0	18	500	5.0	5.0	5.0		8.0				W52b	R
41 #	2SC2344	178m	25	0	5.0		180	6.0	160	10	5.0	300m	60	320	175M#				Y220b	D
42	SD1014-1	178m	31	0	2.5		36	4.0	18	8.0	5.0	0.5	5.0						W52	R
43	41505	180m	20	0	1.0	500m		7.0	200	50	5.0	1.0	20		20MS				B24	A
44	KS6115†	180m	20	0	7.0	1.0	30	4.5	30	500	5.0	5.0	15		250M†				T060	C
45	KS6116†	180m	20	0	7.0	1.0	20	4.5	20	500	5.0	5.0	15		250M†				T060	C
46	BLY88A*	181m	32	0	2.5		36	4.0	18	10	5.0	500m	5.0		700MS				T72m	R
47	2N6175	182m	20	0	1.0	500m	300	6.0	250	50	1.0	20m	30		21MSΔ				B24	A
48	2N6176	182m	20	0	1.0	500m	350	6.0	300	50	1.0	20m	30		21MSΔ				B24	A
49	2N6177	182m	20	0	1.0	500m	450	6.0	350	20	1.0	50m	30		21MSΔ				B24	A
50 #	2SC867	184m	23	0	3.0		400	5.0	150	100	3.0	100m	21	*	8.0MS	4.0			F6g	C
51 #	2SC1431-1	184m	23	0	2.0		110	5.0	110	10	2.0	400m	50	*	8.0MS	1.2			T066	C
52 #	2SC1431-2	184m	23	0	2.0		140	5.0	140	10	2.0	400m	50	*	8.0MS	1.2			T066	C
53	2N4070†	185m	65	0	1.0	5.0	120	8.0	100	10	5.0	5.0	40	120	20MSΔ	150m	500n		T03	A
54	2N4071†	185m	65	0	1.0	5.0	200	8.0	150	10	5.0	5.0	40	120	20MSΔ	150m	500n		T03	A
55 #	2SC895-2	190m	23	0	2.5		80	8.0	90	50	3.0	100m	21	322	20MS	1.8			T03	C
56 #	2SC895-3	190m	23	0	2.5		80	8.0	140	50	3.0	100m	21	322	20MS	1.8			T03	C
57 #	2SC895-4	190m	23	0	2.5		380	8.0	140	1.0	3.0	2.0	7.5	115	20MS	900m			T03	C
58 #	2SC895-5	190m	23	0	2.5		380	8.0	140	1.0	3.0	2.0	7.5	115	20MS	900m			T03	C
59	2N3583	200m	35	0	1.0	1.0	250	6.0	175	1.0	1.0	500m	40	200	10MSΔ				T066	C
60	2N3584†	200m	35	0	1.0	1.0	375	6.0	250	1.0	1.0	500m	40	80	10MSΔ				T066	C
61	JAN2N3584†	200m	2.5	0	2.0	1.0	375	6.0	250	1.0	1.0	1.0	25	100	15MSΔ			3.0u	T066	C
62	2N3585†	200m	35	0	1.0	1.0	500	6.0	300	1.0	1.0	1.0	8.0	80	10MSΔ				T066	C
63	JAN2N3585†	200m	2.5	0	2.0	1.0	500	6.0	300	1.0	1.0	1.0	25	100	15MSΔ			3.0u	T066	C
64	2N3621	200m	30	0	5.0	1.0	75	4.0	40	25	5.0	1.0	40	#	200MSΔ				T061	A
65	2N3622	200m	30	0	5.0	1.0	75	4.0	40	25	5.0	1.0	40	#	200MSΔ				T061	A
66	2N3625	200m	30	0	5.0	1.0	75	4.0	40	1.0	5.0	1.0	40	#	200MSΔ				T061	A
67	2N3626	200m	30	0	5.0	1.0	75	4.0	40	1.0	5.0	1.0	40	#	200MSΔ				T061	A



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #/s/a TO200 Ser.	L C O A D E		
						Ic (A)	Ib (A)	VCbo (V)	VEbo (V)	VCeo (V)	Icbo (A)	Vcb (V)	MIN	MAX								
1#	2SC1190	200m	30	∅	∅	5.0	∅	38	4.0	18	100u	130	400m	10	50 ∅	800M	250m#	PE	Y200	198	D	
2#	2SC1307	200m	25	∅	∅	8.0	∅	70	4.0	70	20u∅	100	20	150 #	180M		PE	Y220b		D		
3#	2SC1307-1	200m	25	∅	∅	8.0	∅	45	4.0	45	75	100	20 #	150 #	140M		PE	Y220a		X		
4#	2SC1669	200m	15	∅	∅	1.5	1.5 ∅	150	5.0	150	20u∅	100	500m	40	240	6.0M	3.0	DM	B26	B17	D	
5#	2SC1929	200m	25	∅	∅	1.0	∅	300	6.0	270	10u	5.0	100m	35	330	80M	4.0	PE	B17		VZ	
6#	2SC2094	200m	30	∅	∅	3.5	∅	40	4.5	17	2.0m∅	100	100m	10	180 #	500M		PE	W96		VZ	
7#	2SC2176	200m	30	∅	∅	3.0	∅	50	4	25	100u∅	5.0	1.0	10	200M		PE	190		R		
8#	2SC2238	200m	25	∅	∅	1.5	1.5 ∅	160	5.0	160	1.0u	5.0	100m	70 #	240 #	100M		PE	Y220b		D	
9#	2SC2242	200m	25	∅	∅	150m	∅	300	5.0	300	1.0u∅	100	50m	40 #	170 #	40M		PE	Y220b		D	
10#	2SC2275	200m	25	∅	∅	1.5	30	120	5.0	120	1.0u	5.0	30	60 #	320 #	200M		PE	B64		X	
11#	2SC2275A	200m	25	∅	∅	1.5	30	150	5.0	150	1.0u	5.0	30	60 #	320 #	200M		PE	B64		X	
12#	2SC2336	200m	25	∅	∅	1.5	30	180	5.0	180	1.0u	5.0	150m	60 #	320 #	95M		PE	B64		X	
13#	2SC2336A	200m	25	∅	∅	1.5	30	200	5.0	200	1.0u	5.0	150m	60 #	320 #	95M		PE	B64		X	
14#	2SC2336B	200m	25	∅	∅	1.5	30	250	5.0	250	1.0u	5.0	150m	60 #	320 #	95M		PE	B64		X	
15#	2SC2528	200m	25	∅	∅	2.0	∅	120	7.0	120	50u	5.0	300m	60	350	120M		PE	B64		D	
16#	2SC2562	200m	25	∅	∅	5.0	∅	60	5.0	50	1.0u∅	1.0	1.0	70	240	120M		PE	Y220b		D	
17#	2SC2798	200m	30	∅	∅	2.0	∅	45	4.0	35	1.0m∅	25	1.0	10	180	15G		PE	T163		C	
18#	2SD102	200m	25	∅	∅	3.0	∅	100	10	80	100u∅	5.0	500m	30	300	1.5M		PE	T066		C	
19#	2SD129	200m	25	∅	∅	3.0	∅	90	10	80	1.0m∅	5.0	1.0	30	200	100M		D	T066		A	
20#	2SD130	200m	25	∅	∅	3.0	∅	60	10	50	1.0m∅	5.0	500m	30	200 *	1.0M	500m	D	T066		C	
21#	2SD158	200m	30	∅	∅	1.0	∅	200	3.0	200	20u∅	100	500m	20	250 *	15M		D	T066		A	
22#	2SD159	200m	30	∅	∅	1.0	∅	300	3.0	300	20u∅	100	500m	20	250 *	15M		D	T066		A	
23#	2SD226	200m	25	∅	∅	2.0	∅	40	10	40	30u∅	3.0	1.0	20	90 ∅	25k	700m	D	T066		C	
24#	2SD226A	200m	25	∅	∅	2.0	∅	60	10	60	30u∅	3.0	1.0	20	90 ∅	25k	700m	D	T066		C	
25#	2SD226B	200m	25	∅	∅	2.0	∅	80	10	80	30u∅	3.0	1.0	20	90 ∅	25k	700m	D	T066		C	
26#	2SD234	200m	15	∅	∅	3.0	3.0 ∅	60	10	50	100u∅	5.0	500m	40	240	1.0M	400m	D	B26A		D	
27#	2SD234G	200m	25	∅	∅	3.0	3.0 ∅	60	10	50	100u∅	5.0	500m	40	240	1.0M	400m	D	Y220b		C	
28#	2SD235	200m	15	∅	∅	3.0	3.0 ∅	50	10	40	100u∅	5.0	500m	40	240	1.0M	1.0	D	B26A		D	
29#	2SD235G	200m	25	∅	∅	3.0	3.0 ∅	80	10	40	100u∅	5.0	500m	40	240	1.0	1.0	D	Y220b		C	
30#	2SD251T	200m	30	∅	∅	2.0	∅	200	5.0	200	5.0u∅	100	500m	100 ∅		2.0	2.5u	DM	T066		C	
31#	2SD297	200m	25	∅	∅	3.0	∅	150	7.0	80	500u∅	2.0	2.0	30	200 #		ME	T066		C		
32#	2SD312	200m	25	∅	∅	1.0	∅	800	6.0	600	1.0m	100	800m	25	200 #		D	T03		C		
33#	2SD317	200m	25	∅	∅	1.0	∅	60	8.0	60	30u∅	3.0	1.0	30	180 *	25k	500m	ME	B17		B	
34#	2SD317A	200m	25	∅	∅	1.0	∅	80	8.0	80	30u∅	3.0	1.0	30	180 *	25k	500m	ME	B17		B	
35#	2SD318	200m	25	∅	∅	1.0	∅	60	8.0	60	30u∅	3.0	1.0	30	180 *	25k	500m	ME	B17A		B	
36#	2SD318A	200m	25	∅	∅	1.0	∅	80	8.0	80	30u∅	3.0	1.0	30	180 *	25k	500m	ME	B17A		B	
37#	2SD365	200m	25	∅	∅	3.0	∅	60	5.0	60	30u∅	3.0	1.0	30	180	70k	500m	ME	B17		D	
38#	2SD365A	200m	25	∅	∅	3.0	∅	80	5.0	80	30u∅	3.0	1.0	30	180	70k	500m	ME	B17		D	
39#	2SD366	200m	25	∅	∅	3.0	∅	60	5.0	60	30u∅	3.0	1.0	30	180	70k	500m	ME	B17A		D	
40#	2SD366A	200m	25	∅	∅	3.0	∅	80	5.0	80	30u∅	3.0	1.0	30	180	70k	500m	ME	B17A		D	
41#	2SD389	200m	25	∅	∅	3.0	∅	60	8.0	60	30u∅	3.0	1.0	30	160	25k	500m	D	B17		D	
42#	2SD389A	200m	25	∅	∅	3.0	∅	80	8.0	80	30u∅	3.0	1.0	30	160	25k	500m	D	B17		D	
43#	2SD390	200m	25	∅	∅	3.0	∅	60	8.0	60	30u∅	3.0	1.0	30	180	25k	500m	D	B17A		D	
44#	2SD390A	200m	25	∅	∅	3.0	∅	80	8.0	80	30u∅	3.0	1.0	30	180	25k	500m	D	B17A		D	
45#	2SD401A	200m	25	∅	∅	2.0	∅	200	5.0	150	50u∅	100	400m	40 *	200 #	5.0M	2.0	D	Y220b		X	
46#	2SD402A	200m	25	∅	∅	2.0	∅	200	5.0	150	50u∅	100	400m	40 *	200 #	5.0M	2.0	D	Y220a		AJ	
47#	2SD422T	200m	30	∅	∅	4.0	∅	250	6.0	200	100u∅	5.0	3.0	20	∅	30M	400m	ME	T066		C	
48#	2SD423T	200m	30	∅	∅	4.0	∅	250	6.0	200	100u∅	5.0	3.0	20	∅	30M	400m	DPL	T066		C	
49#	2SD804	200m	25	∅	∅	3.0	∅	60	5.0	60	30u∅	3.0	1.0	30	180	70k		D	Y220b		C	
50#	2SD850	200m	25	∅	∅	3.0	∅	1.5k	5.0	1.5k	50u	100	2.5	4.0	15		1.3u	DM	T03		C	
51	40313	200m	35	∅	∅	2.0	∅	1.0	2.5	300	5.0M	100	100m	40	250		D	T066		C		
52	40318	200m	35	∅	∅	2.0	∅	1.0	2.5	300	5.0M	100	20m	40			D	T066		C		
53	40322	200m	35	∅	∅	2.0	∅	1.0	2.5	300	5.0M	100	20m	40			D	T066		C		
54	40328	200m	35	∅	∅	2.0	∅	1.0	2.5	300	5.0M	100	1.0	20			D	T066		C		
55	40364	200m	35	∅	∅	7.0	∅	5.0	4.0	60	50u	5.0	500m	35	175	15M		DE	T066		C	
56	40374	200m	35	∅	∅	1.0	∅	250	6.0	175	10m	100	500m	40	200	10M	5.0		T066		C	
57	BD144	200m	8.0	∅	∅	250m	250m∅	400	5.0	400	3.0m	200	200m	20	∅				T03		C	
58#	BD233	200m	25	∅	∅	2.0	∅	300m	45	50	45	100u	2.0	150m	40	250 *	3.0M	600m	ET	T0126		B
59#	BD235	200m	25	∅	∅	2.0	∅	300m	60	50	60	100u	2.0	150m	40	250 *	3.0M	600m	ET	T0126		B
60#	BD237	200m	25	∅	∅	2.0	∅	300m	100	50	60	100u	2.0	150m	40	180	3.0M	600m	ET	T0126		B
61#	BD375T	200m	25	∅	∅	2.0	∅	1.0	50	50	45	2.0u	4.0	1.0	20		50M	1.0	PE	T0126		B
62#	BD377T	200m	25	∅	∅	2.0	∅	1.0	75	50	60	2.0u	4.0	1.0	20		50M	1.0	PE	T0126		B
63#	BD379T	200m	25	∅	∅	2.0	∅	1.0	100	50	80	2.0u	4.0	500m	30		50M	1.0	PE	T0126		B
64#	BD410	200m	1.2	∅	∅	1.0	∅	500	5.0	325	100u	100	50m	30	240		5.0	D	B21A		D	
65#	BDX35	200m	1.0	∅	∅	5.0	∅	1.0	60	50	60	10u	100	500m	45	450	100M	180m	PE	T0126		B
66#	BDX36	200m	1.0	∅	∅	5.0	∅	1.0	60	50	60	10u	100	500m	45	450	100M	140m	PE	T0126		B
67#	BDX37	200m	1.0	∅	∅	5.0	∅	1.0	80	50	80	10u	100	500m	45	450	100M	180m	PE	T0126		B
68#	BDY12-6	200m	28	∅	∅	3.0	∅	300m	5.0	40	100n	1.0	1.0	40	100	70M		PE	F9c		T	
69#	BDY12-10	200m	28	∅	∅	3.0	∅	300m	5.0	40	100n	1.0	1.0	63	160	70M		PE	F9c		T	
70#	BDY12-16	200m	28	∅	∅	3.0	∅	300m	5.0	40	100n	1.0	1.0	100	250	70M		PE	F9c			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb0</sub> @ 25°C (A)	hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E		
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)		MIN	MAX	MIN							MAX	
1	SDT59051	200m	35	3	2.0	1.0	80	8.0	120	100n	5.0	500m	50	150	50MΔ	700m	150n	PL	T066	A0	
2	SDT59061	200m	35	3	2.0	1.0	80	8.0	40	100n	5.0	500m	30	30	50MΔ	700m	250n	PL	T066	A0	
3	SDT59071	200m	35	3	2.0	1.0	80	8.0	60	100n	5.0	500m	30	30	50MΔ	700m	250n	PL	T066	A0	
4	SDT59081	200m	35	3	2.0	1.0	100	8.0	80	100n	5.0	500m	30	30	50MΔ	700m	250n	PL	T066	A0	
5	SDT59091	200m	35	3	2.0	1.0	140	8.0	100	100n	5.0	500m	30	150	50MΔ	700m	150n	PL	T066	A0	
6	SDT59101	200m	35	3	2.0	1.0	180	8.0	120	100n	5.0	500m	30	150	50MΔ	700m	150n	PL	T066	A0	
7	SDT59111	200m	35	3	2.0	1.0	80	8.0	40	100n	5.0	500m	120	30	50MΔ	700m	150n	PL	T066	A0	
8	SDT59121	200m	35	3	2.0	1.0	80	8.0	60	100n	5.0	500m	120	30	50MΔ	700m	150n	PL	T066	A0	
9	SDT59131	200m	35	3	2.0	1.0	100	8.0	80	100n	5.0	500m	120	30	50MΔ	700m	150n	PL	T066	A0	
10	SDT59141	200m	35	3	2.0	1.0	140	8.0	100	100n	5.0	500m	120	30	50MΔ	700m	150n	PL	T066	A0	
11	SDT59151	200m	35	3	2.0	1.0	180	8.0	120	100n	5.0	500m	120	30	50MΔ	700m	150n	PL	T066	A0	
12	SDT59511	200m	35	3	2.0	1.0	175	8.0	150	100n	5.0	500m	50	150	50MΔ	700m	200n	PL	T066	A0	
13	SDT59521	200m	35	3	2.0	1.0	200	8.0	175	100n	5.0	500m	50	150	50MΔ	700m	200n	PL	T066	A0	
14	SDT59531	200m	35	3	2.0	1.0	225	8.0	200	100n	5.0	500m	50	150	50MΔ	700m	200n	PL	T066	A0	
15	SDT59541	200m	35	3	2.0	1.0	175	8.0	150	100n	5.0	500m	30	30	50MΔ	700m	200n	PL	T066	A0	
16	SDT59551	200m	35	3	2.0	1.0	200	8.0	175	100n	5.0	500m	30	30	50MΔ	700m	200n	PL	T066	A0	
17	SDT59561	200m	35	3	2.0	1.0	225	8.0	200	100n	5.0	500m	30	30	50MΔ	700m	200n	PL	T066	A0	
18	SDT8901	200m	35	3	5.0	500m	145	8.0	200	1.0	2.0	1.0	20	60	20MΔ			PL	T066	A0	
19	SDT8902	200m	35	3	5.0	500m	170	8.0	200	1.0	2.0	1.0	20	60	20MΔ			PL	T066	A0	
20	SDT8903	200m	35	3	5.0	500m	195	8.0	200	1.0	2.0	1.0	20	60	20MΔ			PL	T066	A0	
21	SDT8904	200m	35	3	5.0	500m	220	8.0	200	1.0	2.0	1.0	20	60	20MΔ			PL	T066	A0	
22	SDT8905	200m	35	3	5.0	500m	145	8.0	200	1.0	2.0	1.0	40	120	20MΔ			PL	T066	A0	
23	SDT8906	200m	35	3	5.0	500m	170	8.0	200	1.0	2.0	1.0	40	120	20MΔ			PL	T066	A0	
24	SDT8907	200m	35	3	5.0	500m	195	8.0	200	1.0	2.0	1.0	40	120	20MΔ			PL	T066	A0	
25	SDT8908	200m	35	3	5.0	500m	220	8.0	200	1.0	2.0	1.0	40	120	20MΔ			PL	T066	A0	
26	TIP503	200m	2.0	3	2.0	1.0	130	6.0	120	400u	4.0	1.0	40	200	70MΔ			PEΔ	T066	C0	
27	TIP503#	200m	35	3	2.0	1.0	130	6.0	120	400u	4.0	1.0	40	200	70MΔ			PEΔ	T066	C0	
28	TIP504	200m	2.0	3	2.0	1.0	180	6.0	150	400u	4.0	1.0	40	200	70MΔ			PEΔ	T066	C0	
29	TIP504#	200m	35	3	2.0	1.0	180	6.0	150	400u	4.0	1.0	40	200	70MΔ			PEΔ	T066	C0	
30	TIP505	200m	2.0	3	2.0	1.0	130	6.0	120	400u	4.0	1.0	40	200	70MΔ			PEΔ	T059	A	
31	TIP506	200m	2.0	3	2.0	1.0	180	6.0	150	400u	4.0	1.0	40	200	70MΔ			PEΔ	T059	A	
32	TIP506#	200m	35	3	2.0	1.0	180	6.0	150	400u	4.0	1.0	40	200	70MΔ			PEΔ	T0111	B	
33	TIP530	200m	2.0	3	3.0	1.5	400	6.0	300	100u	4.0	1.5	25	125	20MΔ			PEΔ	T066	C0	
34	XGS030301	200m	15	15	5.0	1.0	350	7.0	300	250u	5.0	3.0	10	#	25MΔ	266m	400n	PE	T066	C0	
35	XGS030351	200m	15	15	5.0	1.0	400	7.0	350	250u	5.0	3.0	10	#	25MΔ	266m	400n	PE	T066	C0	
36	XGS030401	200m	15	15	5.0	1.0	450	7.0	400	250u	5.0	3.0	10	#	25MΔ	266m	400n	PE	T066	C0	
37	XGS050301	200m	15	15	7.0	2.0	350	7.0	300	250u	5.0	5.0	10	#	25MΔ	180m	500n	PE	T066	C0	
38	XGS050351	200m	15	15	7.0	2.0	400	7.0	350	250u	5.0	5.0	10	#	25MΔ	180m	500n	PE	T066	C0	
39	XGS050401	200m	15	15	7.0	2.0	450	7.0	400	250u	5.0	5.0	10	#	25MΔ	180m	500n	PE	T066	C0	
40	XGS075301	200m	25	25	10	5.0	350	7.0	300	200u	5.0	7.5	10	#	30MΔ	93m	350n	PE	T066	C0	
41	XGS075351	200m	25	25	10	5.0	400	7.0	350	200u	5.0	7.5	10	#	30MΔ	93m	350n	PE	T066	C0	
42	XGS075401	200m	25	25	10	5.0	450	7.0	400	200u	5.0	7.5	10	#	30MΔ	93m	350n	PE	T066	C0	
43#	BLV11*	205m	36	3	3.0			4.0	18	4.0m	5.0	1.5	10	100	850M	222m	#	PE	W52t	R	
44#	BLV21*	205m	36	3	1.7			4.0	36	2.0m	5.0	700m	10	100	650M	325m	#	PE	W52t	R	
45	MRF208	214m	37	3	2.0			36	4.0	18	250u	5.0	250m	5.0	150	175M	#		T93e	R	
46	MRF212	214m	37	3	2.0			36	4.0	18	2.0m	5.0	250m	5.0	150	175M	#		T93e	R	
47	MRF824	214m	37	3	2.5			36	4.0	16	2.0m	5.0	500m	20	150				W30	S	
48	SD1133	214m	37	3	2.0			36	4.0	18	2.0m	5.0	250m	5.0	150				T72h	R	
49	SD1143	214m	37	3	2.0			36	4.0	18	2.0m	5.0	250m	5.0	150				T72h	R	
50#	ZSC2098	217m	25	3	6.0			70	4.0	70	100u	5.0	4.0	20	#	100	#	PE	Y220b	R	
51	SD1146	217m	37	3	2.0			36	4.0	16	2.0m	5.0	500m	20	100			PE	T90	R	
52#	ZSC937	220m	22	3	2.5			1.2k	6.0	500	2.0m	5.0	200m	5.0	250M	4.0	1.2u	#	D	T03	C0
53	SD1015	220m	40	3	5.0			65	4.0	35	100u	5.0	50m	25	150	20M	#		T126	B0	
54#	BD232	222m	15	3	250m	250m			300	100u	5.0	50m	25	150	20M	6.6	#		T0126	B0	
55#	BUX881	222m	20	3	500m	200m			400	100u	5.0	50m	50	50	20M	6.0	400n	#		T0126	B0
56#	BUX87	222m	20	3	500m	200m			450	100u	5.0	50m	50	50	20M	6.0	400n	#		T0126	B0
57#	MH8111	222m	5.0	3	1.2			60	5.0	60	5.0u	5.0	200m	30	60	100MΔ				Y220b	R
58#	MH8112	222m	5.0	3	1.2			60	5.0	60	5.0u	5.0	200m	50	120	100MΔ				Y220b	R
59#	MH8113	222m	5.0	3	1.2			60	5.0	60	5.0u	5.0	200m	100	240	100MΔ				Y220b	R
60	2N5596	225m	40	3	2.5	1.0		55	3.5	30	4.0m	5.0	50m	20	240	1.5GΔ				T73a	R
61	MRF262	225m	40	3	2.5			38	4.0	18	500m	5.0	500m	5.0	180				F56	Y	
62#	ZSC704	227m	34	3	4.0			40	5.0	20	2.0m	10	100m	10	#	100M	1.0GΔ		PET	T59b	R
63#	BUX771	227m	40	3	5.0	800m		100	60	80	500n	5.0	2.0	50	#	120	200m	200n	PE	T066	R
64	C26-28	227m	40	3	2.0			40	4.0	33	350u	10	500m	12	36	400M	#			T91	R
65	2N1047	228m	10	3	500m			80	6.0	80	15u	10	500m	12	36	#				T057	A0
66	2N1047A	228m	10	3	500m	500m		80	10	80	350u	10	500m	12	36	75kΔ				T057	A0
67	JAN2N1047A	228m	10	3	500m			80	10	80	15u	10	50m	12	36	4.0MΔ				T057	A0
68	2N1047B	228m	10	3	750m	500m		80	10	80	10u	10	500m	12	36	125kΔ				T057	A0
69	2N1048	228m	10	3	500m			120	6.0	80	15u	10	500m	12	36	#				T057	A0
70	2N1048A	228m	10	3	500m	500m		120	10	120	350u	10	500m	12	36	75kΔ				T057	A0
71	JAN2N1048A	228m	10	3	500m			120	10	120	15u	10	50m	12	36	4.0MΔ				T057	A0
72	2N1048B	228m	10	3	750m	500m		120	10	120	10u	10	500m	12	36	125kΔ				T057	A0
73	2N1049	228m	10	3	500m			80	6.0	80											

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS		MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG s/a TO200 Ser.	# L C O A D E		
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)		Vcb (V)	Ic (A)						MIN	MAX
1	2N4922	238m	30 ∅	∅	∅	1.0	1.0	80	5.0	60	100u	1.0∅	500m	30	150	3.0MSΔ	B16	B∅		
2	2N4923	238m	30 ∅	∅	∅	1.0	1.0	80	5.0	80	100u	1.0∅	500m	30	150	3.0MSΔ	B16	B∅		
3#	BD239T	238m	2.0	∅	∅	1.0	400m	400m	5.0	45	200u∅	4.0∅	200m	40 #	#	3.0MSΔ	B1	D∅		
4#	BD239A†	238m	2.0	∅	∅	1.0	400m	400m	5.0	60	200u∅	4.0∅	200m	40 #	#	3.0MSΔ	B1	D∅		
5#	BD239B†	238m	2.0	∅	∅	1.0	400m	400m	5.0	80	200u∅	4.0∅	200m	40 #	#	3.0MSΔ	B1	D∅		
6#	BD239C†	238m	2.0	∅	∅	1.0	400m	400m	5.0	100	200u∅	4.0∅	200m	40 #	#	3.0MSΔ	B1	D∅		
7	D44C1†	238m	30 ∅	∅	∅	4.0			5.0	30	10u∅	1.0∅	200m	25		5.0MS	100n∅†	B22	B∅	
8	D44C2†	238m	30 ∅	∅	∅	4.0			5.0	30	10u∅	1.0∅	200m	100	220	5.0MS	100n∅†	B22	B∅	
9	D44C3†	238m	30 ∅	∅	∅	4.0			5.0	30	10u∅	1.0∅	200m	40	120	5.0MS	100n∅†	B22	B∅	
10	D44C4†	238m	30 ∅	∅	∅	4.0			5.0	45	10u∅	1.0∅	200m	25		5.0MS	100n∅†	B22	B∅	
11	D44C5†	238m	30 ∅	∅	∅	4.0			5.0	45	10u∅	1.0∅	200m	100	220	5.0MS	100n∅†	B22	B∅	
12	D44C6†	238m	30 ∅	∅	∅	4.0			5.0	45	10u∅	1.0∅	200m	40	120	5.0MS	100n∅†	B22	B∅	
13	D44C7†	238m	30 ∅	∅	∅	4.0			5.0	60	10u∅	1.0∅	200m	25		5.0MS	100n∅†	B22	B∅	
14	D44C8†	238m	30 ∅	∅	∅	4.0			5.0	60	10u∅	1.0∅	200m	100	220	5.0MS	100n∅†	B22	B∅	
15	D44C9†	238m	30 ∅	∅	∅	4.0			5.0	60	10u∅	1.0∅	200m	40	120	5.0MS	100n∅†	B22	B∅	
16	D44C10†	238m	30 ∅	∅	∅	4.0			5.0	80	10u∅	1.0∅	200m	25		5.0MS	100n∅†	B22	B∅	
17	D44C11†	238m	30 ∅	∅	∅	4.0			5.0	80	10u∅	1.0∅	200m	100	220	5.0MS	100n∅†	B22	B∅	
18	D44C12†	238m	30 ∅	∅	∅	4.0			5.0	80	10u∅	1.0∅	200m	40	120	5.0MS	100n∅†	B22	B∅	
19	TIP29†	238m	2.0	∅	∅	1.0	400m	40	5.0	40	300uΔ	4.0∅	1.0	15	75 #	3.0MSΔ	500n∅	DM B1	B∅	
20	TIP29A†	238m	2.0	∅	∅	1.0	400m	60	5.0	60	300uΔ	4.0∅	1.0	15	75 #	3.0MSΔ	500n∅	DM B1	B∅	
21	TIP29B†	238m	2.0	∅	∅	1.0	400m	80	5.0	80	300uΔ	4.0∅	1.0	15	75 #	3.0MSΔ	500n∅	DM B1	B∅	
22	TIP29C†	238m	2.0	∅	∅	1.0	400m	100	5.0	100	300uΔ	4.0∅	1.0	15	75 #	3.0MSΔ	500n∅	DM B1	B∅	
23	RCA29†	239m	2.0	∅	∅	1.0	1.0	40	5.0	40	300uΔ	4.0∅	1.0	15	150 #	3.0MSΔ	400n∅	Et Y220b	X∅	
24	RCA29A†	239m	2.0	∅	∅	1.0	1.0	60	5.0	60	300uΔ	4.0∅	1.0	15	150 #	3.0MSΔ	400n∅	Et Y220b	X∅	
25	RCA29B†	239m	2.0	∅	∅	1.0	1.0	80	5.0	80	300uΔ	4.0∅	1.0	15	150 #	3.0MSΔ	400n∅	Et Y220b	X∅	
26	RCA29C†	239m	2.0	∅	∅	1.0	1.0	100	5.0	100	300uΔ	4.0∅	1.0	15	150 #	3.0MSΔ	400n∅	Et Y220b	X∅	
27	2SC789	240m	30 ∅	∅	∅	4.0	4.0 ∅	70	5.0	60	30u∅	5.0∅	500m	40	240	3.0MSΔ	500m	DM B26	D∅	
28#	2SC1466	240m	30 ∅	∅	∅	3.0	1.0	450	4.0	360	1.0m	5.0	1.5	4.0	16	10MS	660m	2.0 ∅	DM F6h	C∅
29#	2SC1467	240m	30 ∅	∅	∅	3.0	1.0	500	4.0	400	1.0m	5.0	1.5	4.0	12	10MS	660m	2.0 ∅	DM F6h	C∅
30#	2SC1826	240m	30 ∅	∅	∅	4.0	1.0	80	6.0	60	1.0m	4.0∅	1.0	40	400	10MS	500m	1.2u	B26	D∅
31#	2SC1827	240m	30 ∅	∅	∅	4.0	1.0	100	6.0	80	1.0m	4.0∅	1.0	40	400	10MS	500m	1.2u	B26	D∅
32#	2SC1983	240m	30 ∅	∅	∅	3.0	1.0	80	6.0	60	100u	4.0∅	500m	500	3.0k	15MS	500m	1.6u	B26C	D∅
33#	2SC1984	240m	30 ∅	∅	∅	3.0	1.0	100	6.0	80	100u	4.0∅	500m	500	2.0k	15MS	500m	1.6u	B26C	D∅
34#	2SC2022	240m	30 ∅	∅	∅	1.0	100m	300	6.0	300	1.0m	4.0∅	200m	30 #	300 #	10MSΔ	2.0	DM B54	D∅	
35#	2SC2167	240m	30 ∅	∅	∅	2.0	1.0	150	6.0	150	100u	10∅	700m	40 #	320 #	10MSΔ	2.1	DM B54	D∅	
36#	2SC2168	240m	30 ∅	∅	∅	2.0	1.0	200	6.0	200	100u	10∅	700m	40 #	320 #	10MSΔ	2.1	DM B54	D∅	
37#	2SD2354	240m	30 ∅	∅	∅	1.0	500m	300	6.0	250	1.0m	4.0∅	200m	30 #	300 #	10MSΔ	2.0	DM TO66	C∅	
38#	2SD2660	240m	30 ∅	∅	∅	2.0	200	6.0	150	80	50u	10∅	150m	60	240	10MS	300m	PL B26	D∅	
39#	2SD526	240m	30 ∅	∅	∅	4.0	3.0	80	5.0	80	30u	5.0∅	500m	40	240	10MS	300m	DM Y220b	D∅	
40#	2SD546	240m	30 ∅	∅	∅	1.0	800	6.0	500	300u	10∅	20m	40	200	7.0MS	6.0	DM TO66	B∅		
41#	2SD570	240m	30 ∅	∅	∅	4.0	70	5.0	70	30u∅	5.0∅	500m	40	240	10MS	300m	DM B17	B∅		
42#	2SD656	240m	30 ∅	∅	∅	1.5	1.5 ∅	200	5.0	180	10u∅	10∅	500m	40 #	180 #	10MS	300m	DM TO66	C∅	
43#	2SD855	240m	30 ∅	∅	∅	1.0	60	5.0	60	300uΔ	4.0∅	0.2	40	450			1.2u*	PL B26	D∅	
44#	2SD855A	240m	30 ∅	∅	∅	1.0	80	5.0	80	300uΔ	4.0∅	0.2	40	450			1.2u*	PL B26	D∅	
45#	2SD855B	240m	30 ∅	∅	∅	1.0	100	5.0	100	300uΔ	4.0∅	0.2	40	450			1.2u*	PL B26	D∅	
46#	2SD880	240m	30 ∅	∅	∅	3.0	3.0 ∅	60	7.0	60	100u	5.0∅	500m	60	300	3.0MS		0.1u#	PE Y220b	D∅
47#	2SD959	240m	30 ∅	∅	∅	3.0	130	7.0	80	10u	2.0∅	0.5	60	260			2u#	D B26	D∅	
48#	2SD990K†	240m	30 ∅	∅	∅	3	100	6	80	10u	4∅	500m	500			8.0MS		2u#	D Y220b	D∅
49#	2SD1052	240m	30 ∅	∅	∅	3.0	500n	50	7.0	50	100u	5.0∅	500m	250	750	5.0MS			PL Y220b	D∅
50#	2SD1052A	240m	30 ∅	∅	∅	3.0	500n	50	7.0	50	100u	5.0∅	500m	400	1.2k	5.0MS			PL Y220b	D∅
51#	2SD1136	240m	30 ∅	∅	∅	4	200	5	80	5∅	4∅	4	20				1.0u∅#	D TO220	D∅	
52#	2SD1138B	240m	30 ∅	∅	∅	2	200	6	150	1u	4∅	50m	60	120				D Y220b	D∅	
53#	2SD1138C	240m	30 ∅	∅	∅	2	200	6	150	1u	4∅	50m	100	200				D Y220b	D∅	
54#	2SD1138D	240m	30 ∅	∅	∅	2	200	6	150	1u	4∅	50m	160	320				D Y220b	D∅	
55#	BD175	240m	30 ∅	∅	∅	3.0	1.0	45	5.0	45	100u	2.0∅	1.0	15	#	3.0MSΔ	800m#	#	B16	B∅
56#	BD177	240m	30 ∅	∅	∅	3.0	1.0	60	5.0	60	100u	2.0∅	1.0	15	#	3.0MSΔ	800m#	#	B16	B∅
57#	BD179	240m	30 ∅	∅	∅	3.0	1.0	80	5.0	80	100u	2.0∅	1.0	15	#	3.0MSΔ	800m#	#	B16	B∅
58#	BD633	240m	2.0	∅	∅	2.0	300m	45	5.0	45	200u∅	2.0∅	1.0	25			600m	300n∅	Δ B1	D∅
59#	BD635	240m	2.0	∅	∅	2.0	300m	60	5.0	60	200u∅	2.0∅	1.0	25			600m	300n∅	Δ B1	D∅
60#	BD637	240m	2.0	∅	∅	2.0	300m	100	5.0	80	200u∅	2.0∅	1.0	25			600m	300n∅	Δ B1	D∅
61#	BD933	240m	30 ∅	∅	∅	3.0	45	5.0	45	100u	2.0∅	150m	40	250	3.0MSΔ	600m	300n∅	Et Y220b	D∅	
62#	BD935	240m	30 ∅	∅	∅	3.0	60	5.0	60	100u	2.0∅	150m	40	250	3.0MSΔ	600m	300n∅	Et Y220b	D∅	
63#	BD937	240m	30 ∅	∅	∅	3.0	100	5.0	80	100u	2.0∅	150m	40	250	3.0MSΔ	600m	300n∅	Et Y220b	D∅	
64#	BD939	240m	30 ∅	∅	∅	3.0	120	5.0	100	100u	2.0∅	150m	40	250	3.0MSΔ	600m	300n∅	Et Y220b	D∅	
65#	BD941	240m	30 ∅	∅	∅	3.0	140	5.0	120	100u	2.0∅	150m	40	250	3.0MSΔ	600m	300n∅	Et Y220b	D∅	
66	MJE340K	240m	30 ∅	∅	∅	500m	3.0	300	3.0	300	100u∅	10∅	50m	30	240				B23	D∅
67	MJE341K	240m	30 ∅	∅	∅	500m	250m	175	3.0	150	300u∅	10∅	50m	25	200	15MSΔ			B23	D∅
68	MJE344K	240m	30 ∅	∅	∅	500m	250m	200	5.0	200	100u∅	10∅	50m	30	300	15MSΔ			B23	D∅
69	MJE2360	240m	30 ∅	∅	∅	500m	250m	375	6.0	350	100u∅	10∅	50m	25	200 #	10MS			B23	D∅
70	MJE2360T	240m	30 ∅	∅	∅	500m	250m	375	6.0	350	100u	10∅	50m	25	200	10MSΔ	15		Y220b	X∅
71	MJE2361	240m	30 ∅	∅	∅	500m	250m	375	6.0	350	100u	10∅	50m	50	250 #	10				

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	T MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcbo @ 25°C (A)		BIAS hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	DWG #	L C O A D E
						Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo (A)	Vcbo (V)	Ic (A)	MIN									
1	1814-2205†	250m	44	∅	∅	10	†	3.0	250	7.0†	225	5.0	5.0	20	#	30MΔ	150m#	500n#	†	T088	C08		
2	1814-2501†	250m	44	∅	∅	10	†	3.0	275	7.0†	250	4.0	1.0	20	#	30MΔ	600m#	300n#	†	T088	C08		
3	1814-2502†	250m	44	∅	∅	10	†	3.0	275	7.0†	250	4.0	2.0	20	#	30MΔ	300m#	400n#	†	T088	C08		
4	1814-2505†	250m	44	∅	∅	10	†	3.0	275	7.0†	250	4.0	5.0	20	#	30MΔ	150m#	500n#	†	T088	C08		
5	1814-2701†	250m	44	∅	∅	10	†	3.0	300	7.0†	275	4.0	1.0	20	#	30MΔ	600m#	300n#	†	T088	C08		
6	1814-2702†	250m	44	∅	∅	10	†	3.0	300	7.0†	275	4.0	2.0	20	#	30MΔ	300m#	400n#	†	T088	C08		
7	1814-2705†	250m	44	∅	∅	10	†	3.0	300	7.0†	275	4.0	5.0	20	#	30MΔ	150m#	500n#	†	T088	C08		
8	1814-3001†	250m	44	∅	∅	10	†	3.0	325	7.0†	300	4.0	1.0	20	#	30MΔ	600m#	300n#	†	T088	C08		
9	1814-3002†	250m	44	∅	∅	10	†	3.0	325	7.0†	300	4.0	2.0	20	#	30MΔ	300m#	400n#	†	T088	C08		
10	1814-3005†	250m	44	∅	∅	10	†	3.0	325	7.0†	300	4.0	5.0	20	#	30MΔ	150m#	500n#	†	T088	C08		
11	1814-3201†	250m	44	∅	∅	10	†	3.0	350	7.0†	325	4.0	1.0	20	#	30MΔ	600m#	300n#	†	T088	C08		
12	1814-3202†	250m	44	∅	∅	10	†	3.0	350	7.0†	325	4.0	2.0	20	#	30MΔ	300m#	400n#	†	T088	C08		
13	1814-3205†	250m	44	∅	∅	10	†	3.0	350	7.0†	325	4.0	5.0	20	#	30MΔ	150m#	500n#	†	T088	C08		
14	1814-3501†	250m	44	∅	∅	10	†	3.0	375	7.0†	350	4.0	1.0	20	#	30MΔ	600m#	300n#	†	T088	C08		
15	1814-3502†	250m	44	∅	∅	10	†	3.0	375	7.0†	350	4.0	2.0	20	#	30MΔ	300m#	400n#	†	T088	C08		
16	1814-3701†	250m	44	∅	∅	10	†	3.0	400	7.0†	375	4.0	5.0	20	#	30MΔ	600m#	300n#	†	T088	C08		
17	BR100D5	250m	35	∅	∅	10	†	2.0	60	3.0	40	100u∅	5.0	3.0	40	#	300MΔ	333m#	120n	†	T080	A	
18	BR101D5	250m	35	∅	∅	10	†	2.0	90	3.0	75	100u∅	5.0	3.0	40	#	300MΔ	333m#	120n	†	T080	A	
19	D44Q1†	250m	31	∅	∅	4.0	†		125	7.0	100	100	2.0	20	#	50MΔ	500m#	120n	†	B22	B0		
20	D44Q3†	250m	31	∅	∅	4.0	†		175	7.0	100	100	2.0	20	#	50MΔ	500m#	120n	†	B22	B0		
21	D44Q5†	250m	31	∅	∅	4.0	†		225	7.0	100	100	2.0	20	#	50MΔ	500m#	120n	†	B22	B0		
22	D44R1	250m	1.8	∅	∅	1.0	†		5.0	250	1.0m	100	500m	30	90			1.8u#	†	B22	B		
23	D44R2	250m	1.8	∅	∅	1.0	†		5.0	250	1.0m	100	500m	75	175			1.8u#	†	B22	B		
24	D44R3	250m	1.8	∅	∅	1.0	†		5.0	300	1.0m	100	500m	30	90			1.8u#	†	B22	B		
25	D44R4	250m	1.8	∅	∅	1.0	†		5.0	300	1.0m	100	500m	75	175			1.8u#	†	B22	B		
26	D44R5	250m	1.8	∅	∅	1.0	†		5.0	250	1.0m	100	500m	30		40MΔ	3.3	3.7u∅	†	B22	D		
27	D44R6	250m	1.8	∅	∅	1.0	†		5.0	300	1.0m	100	500m	30		40MΔ	3.3	3.7u∅	†	B22	D		
28	D44R7	250m	1.8	∅	∅	1.0	†		5.0	250	1.0m	100	500m	150	300	40MΔ	3.3	3.7u∅	†	B22	D		
29	D44R8	250m	1.8	∅	∅	1.0	†		5.0	300	1.0m	100	500m	150	300	40MΔ	3.3	3.7u∅	†	B22	D		
30	D44T1	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	30	90	45M	800n#	PE†	B22a	A0			
31	D44T2	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	75	175	45M	800n#	PE†	B22a	A0			
32	D44T3	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	30	90	45M	800n#	PE†	B22a	A0			
33	D44T4	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	75	175	45M	800n#	PE†	B22a	A0			
34	D44T5	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	30		45M	800n#	PE†	B22a	A0			
35	D44T6	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	30		45M	800n#	PE†	B22a	A0			
36	D44T7	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	150	300	45M	800n#	PE†	B22a	A0			
37	D44T8	250m	2.1	∅	∅	2.0	†	500	500	500	∅	100	500m	150	300	45M	800n#	PE†	B22a	A0			
38	KSP1121	250m		∅	∅	10	†	2.0	225	8.0	200	10u	5.0	5.0	20	60	50M		PE	T066	∅		
39	KSP1122	250m		∅	∅	10	†	2.0	250	8.0	225	10u	5.0	5.0	20	60	50M		PE	T066	∅		
40	KSP1123	250m		∅	∅	10	†	2.0	275	8.0	250	10u	5.0	5.0	20	60	50M		PE	T066	∅		
41	KSP1124	250m		∅	∅	10	†	2.0	300	8.0	275	10u	5.0	5.0	20	60	50M		PE	T066	∅		
42	KSP1125	250m		∅	∅	10	†	2.0	325	8.0	300	10u	5.0	5.0	20	60	50M		PE	T066	∅		
43	PPR10075	250m	35	∅	∅	10	†		80	8.0	40	5.0	3.0	40					PE	T060	A0		
44	PPR10095	250m	35	∅	∅	10	†		90	8.0	75	5.0	3.0	30					PE	T060	A0		
45	SDT7A01	250m	70	∅	∅	10	†		80	8.0	40	500m	5.0	5.0	40	120	60M	100m	DPL	T066	C0		
46	SDT7A02	250m	70	∅	∅	10	†		80	8.0	60	500m	5.0	5.0	40	120	60M	100m	DPL	T066	C0		
47	SDT7A03	250m	70	∅	∅	10	†		100	8.0	80	500m	5.0	5.0	40	120	60M	100m	DPL	T066	C0		
48	SDT7A04	250m	70	∅	∅	10	†		140	8.0	120	500m	5.0	5.0	40	120	60M	100m	DPL	T066	C0		
49	SDT7A05	250m	70	∅	∅	10	†		170	8.0	150	500m	5.0	5.0	40	120	60M	100m	DPL	T066	C0		
50	SDT7A07	250m	70	∅	∅	10	†		80	8.0	40	500m	5.0	5.0	20	60	60M	100m	DPL	T066	C0		
51	SDT7A08	250m	70	∅	∅	10	†		80	8.0	60	500m	5.0	5.0	20	60	60M	100m	DPL	T066	C0		
52	SDT7A09	250m	70	∅	∅	10	†		100	8.0	80	500m	5.0	5.0	20	60	60M	100m	DPL	T066	C0		
53	SDT7A10	250m	70	∅	∅	10	†		140	8.0	120	500m	5.0	5.0	20	60	60M	100m	DPL	T066	C0		
54	SDT7A11	250m	70	∅	∅	10	†		170	8.0	150	500m	5.0	5.0	20	60	60M	100m	DPL	T066	C0		
55	SDT7A12	250m	70	∅	∅	10	†		220	8.0	200	500m	5.0	5.0	20	60	60M	100m	DPL	T066	C0		
56	SDT7901	250m	25	∅	∅	10	†		225	8.0	200	1.0u∅	5.0	5.0	20	60	50MΔ		PL	T066	C0		
57	SDT7902	250m	25	∅	∅	10	†		250	8.0	225	1.0u∅	5.0	5.0	20	60	50MΔ		PL	T066	C0		
58	SDT7903	250m	25	∅	∅	10	†		275	8.0	250	1.0u∅	5.0	5.0	20	60	50MΔ		PL	T066	C0		
59	SDT7904	250m	25	∅	∅	10	†		325	8.0	300	1.0u∅	5.0	5.0	20	60	50MΔ		PL	T066	C0		
60	SDT7905	250m	25	∅	∅	10	†		350	8.0	325	1.0u∅	5.0	5.0	20	60	50MΔ		PL	T066	C0		
61	SDT7907	250m	43	∅	∅	10	†	2.0	200	8.0	200	10u	5.0	5.0	15	#	30M		PL	T066	∅		
62	SDT7907#	250m	25	∅	∅	10	†		200	5.0	200	10u	5.0	5.0	15	#			PL	T066	∅		
63	SDT7908	250m	43	∅	∅	10	†	2.0	250	8.0	250	10u	5.0	5.0	15	#	30M		PL	T066	∅		
64	SDT7908#	250m	25	∅	∅	10	†		250	5.0	250	10u	5.0	5.0	15	#			PL	T066	∅		
65	SDT7909	250m	43	∅	∅	10	†	2.0	300	8.0	300	10u	5.0	5.0	15	#	30M		PL	T066	∅		
66	SDT7909#	250m	25	∅	∅	10	†		300	5.0	300	10u	5.0	5.0	15	#			PL	T066	∅		
67	SDT7910	250m	43	∅	∅	10	†	2.0	150	8.0	150	10u	5.0	5.0	10	#	30M		PL	T066	∅		
68	SDT7910#	250m	25	∅	∅	10	†		150	5.0	150	10u	5.0	5.0	10	#			PL	T066	∅		
69	ST402	250m	25	∅	∅	10	†		60	5.0	60	20m	120	2.0	15	#	40	∅	D	F32			
70	ST403	250m	25	∅	∅	10	†		45	5.0	45	20m	120	2.0	15	#							



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcbo @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 S/a TO200 Ser.	DWG #	L C O A D E	
					Ic	Ib	BVcbo	BVcbo	BVcbo	Icbo @ 25°C	Vcbo	Ic	MIN								MAX
					(A)	(A)	(V)	(V)	(V)	(A)	(V)	(A)	(A)								(A)
1	SDT6015	266m	40	SS	5.0	8.0	80	8.0	40	1.0u	5.00	1.0	100	#	30M	500m	PL	T24			
2	SDT6016	266m	40	SS	5.0	100	8.0	80	1.0u	5.00	1.0	100	#	30M	500m	PL	T24				
3	SDT6031	266m	40	SS	5.0	60	8.0	40	1.0u	5.00	1.0	200	#	30M	500m	PL	T24				
4	2N1647	267m	40	SS	3.0	80	6.0	80	#	100u	5.00	1.0	500m	15	45	3.0MΔ	3.0	Δ	T11	A0	
5	2N1648	267m	40	SS	3.0	120	6.0	120		100u	5.00	1.0	500m	15	45	2.0MΔ	3.0		T11	A0	
6	2N1650	267m	40	SS	3.0	120	6.0	120		100u	5.00	1.0	500m	30		2.0MΔ	3.0		T11	A0	
7	2N2020	267m	40	SS	2.0	150	6.0	125		100u	5.00	1.0	500m	40	90	3.0MΔ	6.0	Δ	T11	C0	
8	2N2021	267m	40	SS	2.0	200	6.0	140		100u	5.00	1.0	500m	40	90	3.0MΔ	6.0	Δ	T11	C0	
9	2N2632†	267m	20	SS	5.0	90	8.0	60		100u	2.00	1.0	40	120	#	20MΔ	80nZ		T25c	A0	
10	2N2633†	267m	20	SS	5.0	120	8.0	80		100u	2.00	1.0	40	120	#	20MΔ	80nZ		T25c	A0	
11	2N2634†	267m	20	SS	5.0	150	8.0	100		100u	2.00	1.0	40	120	#	20MΔ	80nZ		T25c	A0	
12	2SC1338A	267m	40	SS	4.0	35	4.5	17		500u	100	100m	10	180	#	1.0G	PE	TO129			
13	2SC1968A	267m	40	SS	5.0	35	4.0	17		500u	100	100m	10	#	800M	PE	TO66				
14	2SC2359†	267m	40	SS	4.0	450	5.0	400		100u	5.00	2.0	20	∅		PE	DMΔ	TO66	C0		
15	2SC2501†	267m	40	SS	3.0	500	7.0	400		100u	2.00	1.5	15	20	∅	PE	DMΔ	TO66	C0		
16	2SC2628	267m	40	SS	4.0	35	4.0	17		2.0u	100	100m	10	180	#		EM	TO66	C0		
17	2SD362	270m	40	SS	8.0	150	8.0	100		20u	5.00	5.0	30	120	#		EM	TO66	C0		
18	2SD470B	272m	15	TJ	1.5	1.6k	5.0	700		30u	5.00	1.0	2.0	6.0	#		EM	TO66	C0		
19	MRF835	276m	50	SS	4.0	36	4.0	16		5.0u	5.00	1.0	10					W30	AD		
20	40613	277m	1.8	SA	4.0	5.0	25	30		2.0u	4.00	1.0	30	120		H	B17a	T			
21	40618	277m	1.8	SA	4.0	5.0	30	40		2.0u	4.00	1.0	30	120		H	B17a	T			
22	40621	277m	1.8	SA	4.0	5.0	32	40		500u	4.00	1.5	25	100		H	B17a	T			
23	40622	277m	1.8	SA	4.0	5.0	40	40		500u*	4.00	1.5	25	100		H	B17a	T			
24	40629	277m	1.8	SA	4.0	5.0	40	40		500u*	4.00	1.0	20	70		H	B17a	T			
25	40630	277m	1.8	SA	4.0	5.0	5.0			500u*	4.00	1.5	20	70		H	B17a	T			
26	2SD856	280m	35	SS	3.0	60	6.0	60		300uΔ	4.00	1.0	40	250		PL	B26	D			
27	2SD856A	280m	35	SS	3.0	60	6.0	80		300uΔ	4.00	1.0	40	250		PL	B26	D			
28	2SD856B	280m	35	SS	3.0	100	6.0	100		300uΔ	4.00	1.0	40	250		PL	B26	D			
29	2SD859	280m	35	SS	0.7	350	5.0	250		1.0mΔ	100	0.3	40	250		PL	B26	D			
30	2SD859A	280m	35	SS	0.7	400	5.0	300		1.0mΔ	100	0.3	40	250		PL	B26	D			
31	2SD859B	280m	35	SS	0.7	450	5.0	350		1.0mΔ	100	0.3	40	250		PL	B26	D			
32	2SD960	280m	35	SS	4.0	130	7.0	80		10u	2.00	1.0	60	260		PE	B26	D			
33	SPT3439	280m	50	SS	5.0	500	7.0	400		20u	100	200	20		20MΔ	PE	TO3				
34	UMT3584	280m	35	SS	2.0	250		300		300	1.0	8.0		750m	3.0u#	ME	Y220b	D0			
35	UMT3585	280m	35	SS	2.0	300		300		300	1.0	8.0		750m	3.0u#	ME	Y220b	D0			
36	2N5773	285m	5.0	SS	500m	150m	65	3.5	35	2.0m	5.00	50m	20	200				TO117	R		
37	2N5848	285m	5.0	SS	3.5	48	4.0	24		1.0m	5.00	1.2	3.0					T72h	R		
38	2N5992	285m	35	SS	5.0	65	3.5	30		10m	5.00	1.0	40					T78	R		
39	2N5993	285m	35	SS	5.0	36	3.5	18		5.0mΔ	5.00	1.0	40					T78	R		
40	2N5994	285m	35	SS	5.0	65	3.5	30		5.0m	5.00	1.0	40					T78	R		
41	2N5996	285m	35	SS	5.0	36	3.5	18		5.0mΔ	5.00	1.0	40					T78	R		
42	2SD613	285m	40	SS	6.0	100	6.0	85		100u	5.00	1.0	40	320		PE	Y220b	D			
43	2SD823	285m	40	SS	6.0	200	7.0	90		100u	5.00	3.0	20		15M	PE	Y220b	D			
44	40631	285m	1.8	SA	4.0	5.0	20	20		500u*	4.00	2.0	70	800k	5.0	H	B17a	T			
45	41504	285m	36	SS	4.0	4.0	35			5.0m*	4.00	1.0	25			H	Y220b	X0			
46	B25-28	285m	50	SS	5.0	4.0	35			175M	5.00	1.0	40		250m#	EA	T91	B			
47	BD433	285m	36	SS	4.0	22	5.0	22		100u	5.00	10m	40	#	3.0MΔ	EA	TO126	B			
48	BD435	285m	36	SS	4.0	32	5.0	32		100u	5.00	10m	40	#	3.0MΔ	EA	TO126	B			
49	BD437	285m	36	SS	4.0	45	5.0	45		100u	5.00	10m	30	#	3.0MΔ	EA	TO126	B			
50	BD439	285m	36	SS	4.0	60	5.0	60		100u	5.00	10m	20	#	3.0MΔ	EA	TO126	B			
51	BD441	285m	36	SS	4.0	80	5.0	80		100u	5.00	10m	15	#	3.0MΔ	EA	TO126	B			
52	MM1619	285m	50	SS	3.5	48	4.0	24		1.0m	1.00	1.0	3.0		90M			T75	R		
53	MRF233	285m	50	SS	3.5	36	4.0	18		1.0m	1.00	1.0	5.0		30M			T93b	R		
54	MRF401	285m	50	SS	3.3	4.0	30			5.00	1.0	20			30M			T93b	R		
55	PBD160	285m	50	SS	15	250	7.0	80		2.0	5.0	5.0	15	70	#			TO3	C0		
56	RCA1A01	285m	5.0	SS	1.0	4.0	70			1.0uΔ	4.00	10m	40	200		120MΔ	9.3	DPL	TO39	A0	
57	RCA1A06	285m	5.0	SS	1.0	75	4.0	75		10u*	4.00	150m	50	250		120MΔ	5.3	DPL	TO39	A0	
58	RCA1A07	285m	5.0	SS	1.0	50	3.0	40		10u*	4.00	3.0m	50	250		120MΔ	5.0	DPL	TO39	A0	
59	RCA1A17	285m	5.0	SS	1.0	4.0	90			10uΔ†	4.00	10m	40	200		120MΔ	9.3	DPL	TO39	A0	
60	RCA3054	285m	36	SS	4.0	90	7.0	55		500uΔ†	4.00	500m	25	100	#	800kΔ		HA	Y220b	X	
61	S10-12*	285m	50	SS	4.0	4.0	18			5.00	500m	10			100MΔ			W52c	R		
62	2N5690	286m	50	SS	5.0	50	4.0	30		1.0mΔ	100	100m	10					TO128	R		
63	2N6199	286m	50	SS	5.0	50	4.0	35		10m	100	100m	10					T91	R		
64	2N6233†	286m	50	SS	5.0	250	6.0	225		100u	5.00	1.0	25	125		20MΔ	5.0	500nZ	TO66	C0	
65	2N6234†	286m	50	SS	5.0	300	6.0	275		100u	5.00	1.0	25	125		20MΔ	5.0	500nZ	TO66	C0	
66	2N6235†	286m	50	SS	5.0	350	6.0	325		100u	5.00	1.0	25	125		20MΔ	5.0	500nZ	TO66	C0	
67	2N6261	286m	50	SS	4.0	90	7.0	80		500uΔ†	2.00	1.5	25	100	#	30kΔ			TO66	C0	
68	2N6264	286m	50	SS	3.0	170	7.0	150		1.0mΔ†	2.00	1.0	20	60	#	2.0MΔ	500m#		TO66	C0	
69	MRF209	286m	50	SS	4.0	36	4.0	18		500u	5.00	500m	5.0					T93e	R		
70	ZTB25																				



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/s/a TO200 Ser.	L O A D E
						Ic (A)	Ib (A)	VCbo (V)	VEbo (V)	VCeo (V)		Vcbo (V)	Vcbo (V)	Ic (A)								
1	2853-2T	300m	2.0	5.0	SA	5.0	80	5.0	40	100ns	1.0	1.0	40	#	85	40M\$		50n	PL	T059	A0	
2	2854-2T	300m	2.0	5.0	SA	5.0	60	5.0	40	100ns	1.0	50m	50	#	90	50M\$		40n	PL	T059	A0	
3	2855-2T	300m	2.0	5.0	SA	5.0	60	5.0	40	100ns	1.0	50m	25	#	50	40M\$		50n	PL	T059	A0	
4	2856-2T	300m	2.0	5.0	SA	5.0	60	5.0	40	100ns	1.0	50m	15	#	25	30M\$		60n	PE	T059	A0	
5#	BD117	300m	30	5.0	SA	5.0	100	5.0	60	5.0	2.0	0	30	#	110	20M\$			PE	T03	A0	
6#	BUY39	300m	2.0	5.0	SJ	5.0	100	8.0	80	50uΔ	2.0	1.0	40	#	240	40M\$			PE	T53	G0	
7#	BUY40	300m	2.0	5.0	SJ	5.0	100	8.0	80	50uΔ	2.0	1.0	40	#	240	40M\$			PE	T42	A0	
8	KSP1091	300m		5.0	SJ	5.0	225	8.0	200	1.0u	5.0	1.0	20	#	60	40M			PE	T03	A0	
9	KSP1092	300m		5.0	SJ	5.0	250	8.0	225	1.0u	5.0	1.0	20	#	60	40M			PE	T03	A0	
10	KSP1093	300m		5.0	SJ	5.0	275	8.0	250	1.0u	5.0	1.0	20	#	60	40M			PE	T03	A0	
11	KSP1094	300m		5.0	SJ	5.0	300	8.0	275	1.0u	5.0	1.0	20	#	60	40M			PE	T03	A0	
12	KSP1095	300m		5.0	SJ	5.0	325	8.0	300	1.0u	5.0	1.0	20	#	60	40M			PE	T03	A0	
13	SDT1641	300m	52	5.0	SJ	5.0	60	20	40	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
14	SDT1642	300m	52	5.0	SJ	5.0	80	20	60	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
15	SDT1643	300m	52	5.0	SJ	5.0	100	20	80	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
16	SDT1644	300m	52	5.0	SJ	5.0	125	20	100	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
17	SDT1645	300m	52	5.0	SJ	5.0	150	20	125	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
18	SDT1646	300m	52	5.0	SJ	5.0	175	20	150	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
19	SDT1647	300m	52	5.0	SJ	5.0	200	20	175	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
20	SDT1648	300m	52	5.0	SJ	5.0	225	20	200	10u	5.0	1.0	20	#	60	2.5M\$Δ	500m	400n	PL	T066	C0	
21	SDT1651	300m	52	5.0	SJ	5.0	60	20	40	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
22	SDT1652	300m	52	5.0	SJ	5.0	80	20	60	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
23	SDT1653	300m	52	5.0	SJ	5.0	100	20	80	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
24	SDT1654	300m	52	5.0	SJ	5.0	125	20	100	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
25	SDT1655	300m	52	5.0	SJ	5.0	150	20	125	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
26	SDT1656	300m	52	5.0	SJ	5.0	175	20	150	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
27	SDT1657	300m	52	5.0	SJ	5.0	200	20	175	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
28	SDT1658	300m	52	5.0	SJ	5.0	225	20	200	10u	5.0	1.0	40	#	120	2.5M\$Δ	500m	400n	PL	T066	C0	
29	SDT1661	300m	52	5.0	SJ	5.0	60	20	40	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
30	SDT1662	300m	52	5.0	SJ	5.0	80	20	60	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
31	SDT1663	300m	52	5.0	SJ	5.0	100	20	80	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
32	SDT1664	300m	52	5.0	SJ	5.0	1.25	20	100	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
33	SDT1665	300m	52	5.0	SJ	5.0	150	20	125	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
34	SDT1666	300m	52	5.0	SJ	5.0	175	20	150	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
35	SDT1667	300m	52	5.0	SJ	5.0	200	20	175	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
36	SDT1668	300m	52	5.0	SJ	5.0	225	20	200	10u	5.0	1.0	80	#	80	2.5M\$Δ	500m	400n	PL	T066	C0	
37	TIP509	300m	4.0	5.0	SJ	4.0	130	6.0	120	1.0m\$Δ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T03	C0	
38	TIP509#	300m	53	5.0	SJ	4.0	130	6.0	120	500uΔ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T03	C0	
39	TIP510	300m	4.0	5.0	SJ	4.0	160	6.0	150	1.0m\$Δ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T03	C0	
40	TIP510#	300m	53	5.0	SJ	4.0	160	6.0	150	500uΔ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T03	C0	
41	TIP511	300m	4.0	5.0	SJ	4.0	130	6.0	120	1.0m\$Δ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T061	A1	
42	TIP511#	300m	53	5.0	SJ	4.0	130	6.0	120	500uΔ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T061	A1	
43	TIP512	300m	4.0	5.0	SJ	4.0	160	6.0	150	1.0m\$Δ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T061	A1	
44	TIP512#	300m	53	5.0	SJ	4.0	160	6.0	150	500uΔ	4.0	2.0	40	#	200	70M\$Δ			PEΔ	T061	A1	
45	BD121	303m	45	5.0	SJ	5.0	60	6.0	35	100u	10	100m	15	#	15	60M\$Δ	650m	200n	D	T03	C0	
46	BD123	303m	45	5.0	SJ	5.0	90	6.0	60	100u	10	100m	15	#	15	60M\$Δ	650m	200n	D	T03	C0	
47	2N5190	320m	40	5.0	SJ	4.0	40	5.0	40	100u	2.0	1.5	25	#	100	2.0M\$Δ	350m		D	B16	B0	
48	2N5191	320m	40	5.0	SJ	4.0	60	5.0	60	100u	2.0	1.5	25	#	100	2.0M\$Δ	350m		D	B16	B0	
49	2N5192	320m	40	5.0	SJ	4.0	80	5.0	80	100u	2.0	1.5	25	#	80	2.0M\$Δ	350m		D	B16	B0	
50	2N6121	320m	40	5.0	SJ	4.0	45	5.0	45	100u	2.0	1.5	25	#	100	2.5M\$Δ			D	Y220b	D0	
51	2N6122	320m	40	5.0	SJ	4.0	60	5.0	60	100u	2.0	1.5	25	#	100	2.5M\$Δ			D	Y220b	D0	
52	2N6123	320m	40	5.0	SJ	4.0	80	5.0	80	100u	2.0	1.5	25	#	80	2.5M\$Δ			D	Y220b	D0	
53	2N6288	320m	16	7.0	SJ	7.0	40	5.0	40	1.0mΔ	4.0	3.0	30	#	150	50kΔ	50m		D	Y220b	D0	
54	2N6289	320m	16	7.0	SJ	7.0	40	5.0	40	1.0mΔ	4.0	3.0	30	#	150	50kΔ	50m		D	Y220a	D0	
55	2N6290	320m	16	7.0	SJ	7.0	60	5.0	60	1.0mΔ	4.0	2.5	30	#	150	50kΔ	50m		D	Y220b	D0	
56	2N6291	320m	16	7.0	SJ	7.0	60	5.0	60	1.0mΔ	4.0	2.5	30	#	150	50kΔ	50m		D	Y220a	D0	
57	2N6292	320m	16	7.0	SJ	7.0	80	5.0	80	1.0mΔ	4.0	2.0	30	#	150	50kΔ	50m		D	Y220b	D0	
58	2N6293	320m	16	7.0	SJ	7.0	80	5.0	80	1.0mΔ	4.0	2.0	30	#	150	50kΔ	50m		D	Y220a	D0	
59	2N6473	320m	16	5.0	SJ	4.0	110	5.0	110	1.0mΔ	4.0	1.5	15	#	150	4.0M\$Δ			D	Y220b	D0	
60	2N6474	320m	16	5.0	SJ	4.0	130	5.0	130	1.0mΔ	4.0	1.5	15	#	150	4.0M\$Δ			D	Y220b	D0	
61	2N6689†	320m	40	5.0	SJ	10	40	5.0	30	100u	2.0	5.0	20	#	100	10M\$Δ	200m	300n	DM	Y220b	D0	
62#	25C1664	320m	40	5.0	SJ	6.0	30	7.0	60	10u	4.0	1.0	500	#	1.5k	10M\$	330m	1.2u	DM	T066	C0	
63#	25C1664A	320m	40	5.0	SJ	6.0	30	7.0	60	10u	4.0	1.0	500	#	1.5k	10M\$	333m		DM	T066	C0	
64#	25C1828	320m	40	5.0	SJ	3.0	500m	800	6.0	400	100u	5.0	200m	30	#	200	7.0M\$	10	700n	DM	T066	C0
65#	25C1864†	320m	40	5.0	SJ	7.0	20	300	7.0	250	100u	5.0	15	#	15	200m	1.0u	EM	F12b	D0		
66#	25C1865†	320m	40	5.0	SJ	7.0	20	450	7.0	400	100u	5.0	10	#	10	200m	1.0u	DM	F12b	D0		
67#	25C1985	320m	40	5.0	SJ	6.0	3.0	80	6.0	60	1.0m	4.0	1.0	40	#	400	10M\$	333m	1.2u	DM	B26	D0
68#	25C1986	320m	40	5.0	SJ	6.0	3.0	100	6.0	80	1.0m	4.0	1.0	40	#	400	10M\$	333m	1.2u	DM	B26	D0
69#	25C2023	320m	40	5.0	SJ	2.0	200m	300	6.0	300	1.0m	4.0	500m	30	#	300	10M\$	1.0	DM	B54	D0	
70#	25C2198																					

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG s/s TO200 Ser.	# L O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)	Ic (A)	MIN						
1▼	2SD1131D	320m	40	∅	∅	4	4	50	4	50	100u	4.0	1	180 #	320 #	8M $\Delta$		D	Y220b	D
2▼	2SD1132B	320m	40	∅	∅	4	4	60	4	60	100u	4.0	1	60 #	120 #	8M $\Delta$		D	Y220b	D
3▼	2SD1132C	320m	40	∅	∅	4	4	60	4	60	100u	4.0	1	100 #	200 #	8M $\Delta$		D	Y220b	D
4▼	2SD1132D	320m	40	∅	∅	4	4	60	4	60	100u	4.0	1	160 #	320 #	8M $\Delta$		D	Y220b	D
5▼	2SD1133B	320m	40	∅	∅	4	4	70	4	50	1u	4.0	1	60 #	120 #	7M $\Delta$		D	Y220b	D
6▼	2SD1133C	320m	40	∅	∅	4	4	70	4	50	1u	4.0	1	100 #	200 #	7M $\Delta$		D	Y220b	D
7▼	2SD1133D	320m	40	∅	∅	4	4	70	4	50	1u	4.0	1	160 #	320 #	7M $\Delta$		D	Y220b	D
8▼	2SD1134B	320m	40	∅	∅	4	4	70	4	60	1u	4.0	1	60 #	120 #	7M $\Delta$		D	Y220b	D
9▼	2SD1134C	320m	40	∅	∅	4	4	70	4	60	1u	4.0	1	100 #	200 #	7M $\Delta$		D	Y220b	D
10▼	2SD1134D	320m	40	∅	∅	4	4	70	4	60	1u	4.0	1	160 #	320 #	7M $\Delta$		D	Y220b	D
11▼	2SD1135B	320m	40	∅	∅	4	4	100	4	80	100u	5.0	1	60 #	120 #	10M $\Delta$		D	Y220b	D
12▼	2SD1135C	320m	40	∅	∅	4	4	100	4	80	100u	5.0	1	60 #	100 #	200 #		D	Y220b	D
13▼	2SD1137	320m	40	∅	∅	4	4	100	4	100	100u	4.0	0.5	50	250			D	TO220	D
14▼	2SD1141Kt	320m	40	∅	∅	5	6	400	7	300	100u	2.0	4	500				D	Y220b	D
15▼	2SD1162Kt	320m	40	∅	∅	5	5	500	10	300	10u	2.0	2	1k	3k #			D	B64	D
16▼	2SD1162Lt	320m	40	∅	∅	5	5	500	10	300	10u	2.0	2	600	1.2k #			D	B64	D
17▼	2SD1162Mt	320m	40	∅	∅	5	5	500	10	300	10u	2.0	2	400	800 #			D	B64	D
18▼	2SD1163	320m	40	∅	∅	7	7	300	6	120	5m	5.0	5	25				D	Y220b	D
19▼	2SD1163A	320m	40	∅	∅	7	7	350	6	150	5m	5.0	5	25				D	Y220b	D
20	40871	320m	40	∅	∅	7.0	3.0	5.0	100	10	1.0m*	4.0	1.0	50	250	4.0M $\Delta$	1.0	D	Y220b	D
21	40875	320m	40	∅	∅	7.0	3.0	5.0	100	50	1.0m*	4.0	3.0	20	120	4.0M $\Delta$	333m	D	Y220b	D
22#	40979	320m	40	∅	∅	7.0	3.0	40	5.0	40	10u*	4.0	1.5	50	250	4.0M $\Delta$		E	Y220a	B
23	41500	320m	1.8	∅	∅	7.0	3.0	35	3.0	25	250u*	4.0	1.0	25	#	4.0M $\Delta$	1.0 #	E	Y220a	X
24	BD185	320m	40	∅	∅	4.0	2.0	40	5.0	30	100u*	2.0	2.0	500m	40 #	2.0M $\Delta$	500m #	E	B16	B
25	BD187	320m	40	∅	∅	4.0	2.0	55	5.0	45	100u*	2.0	500m	40 #	2.0M $\Delta$	500m #	E	B16	B	
26	BD189	320m	40	∅	∅	4.0	2.0	70	5.0	60	100u*	2.0	500m	40 #	2.0M $\Delta$	500m #	E	B16	B	
27	BD220#	320m	40	∅	∅	5.0	2.0	70	5.0	70	10m $\Delta$	4.0	500m	30	120			ME	Y220b	D
28	BD221#	320m	40	∅	∅	5.0	2.0	40	5.0	40	10m $\Delta$	4.0	1.0	30	120			ME	Y220b	D
29	BD222#	320m	40	∅	∅	5.0	2.0	60	5.0	60	10m $\Delta$	4.0	1.5	20	80			ME	Y220b	D
30#	BD241t	320m	2.0	∅	∅	3.0	1.0	5.0	45	300u	4.0	1.0	20 #		3.0M $\Delta$	400m		D	B1	D
31#	BD241At	320m	2.0	∅	∅	3.0	1.0	5.0	60	300u	4.0	1.0	20 #		3.0M $\Delta$	400m	300n $\Delta$	D	B1	D
32#	BD241Bt	320m	2.0	∅	∅	3.0	1.0	5.0	80	300u	4.0	1.0	20 #		3.0M $\Delta$	400m	300n $\Delta$	D	B1	D
33#	BD241Ct	320m	2.0	∅	∅	3.0	1.0	5.0	100	300u	4.0	1.0	20 #		3.0M $\Delta$	400m	300n $\Delta$	D	B1	D
34	BD561	320m	40	∅	∅	4.0	2.0	45	5.0	40	100u*	1.0	2.0	60 #		500m #		E	B16h	B
35	BD575	320m	40	∅	∅	3.0	1.0	45	5.0	45	100u*	2.0	150m	40 #		3.0M $\Delta$	600m #	E	B16h	B
36	BD577	320m	40	∅	∅	3.0	1.0	60	5.0	60	100u*	2.0	150m	40 #		3.0M $\Delta$	600m #	E	B16h	B
37	BD579	320m	40	∅	∅	3.0	1.0	80	5.0	80	100u*	2.0	150m	30 #		3.0M $\Delta$	800m #	E	B16h	B
38	BD581	320m	40	∅	∅	3.0	1.0	100	5.0	100	100u*	2.0	150m	30 #		3.0M $\Delta$	800m #	E	B16h	B
39	BD585	320m	40	∅	∅	4.0	1.5	45	5.0	45	100u*	2.0	500m	40 #		3.0M $\Delta$	400m #	E	B16h	B
40	BD587	320m	40	∅	∅	4.0	1.5	60	5.0	60	100u*	2.0	500m	40 #		3.0M $\Delta$	400m #	E	B16h	B
41	BD589	320m	40	∅	∅	4.0	1.5	80	5.0	80	100u*	2.0	500m	30 #		3.0M $\Delta$	400m #	E	B16h	B
42	BD591	320m	40	∅	∅	4.0	1.5	100	5.0	100	100u*	2.0	500m	30 #		3.0M $\Delta$	400m #	E	B16h	B
43#	BD733	320m	2.0	∅	∅	4.0	1.0	22	5.0	22	200u	1.0	2.0	50		400m #	300n $\Delta$	D	B1	D
44#	BD735	320m	2.0	∅	∅	4.0	1.0	32	5.0	32	200u	1.0	2.0	50		400m #	300n $\Delta$	D	B1	D
45#	BD737	320m	2.0	∅	∅	4.0	1.0	45	5.0	45	200u	1.0	2.0	40		400m #	300n $\Delta$	D	B1	D
46#	BD943	320m	40	∅	∅	5.0	1.0	22	5.0	22	100u	1.0	500m	85	475	3.0M $\Delta$	250m	E	Y220b	D
47#	BD945	320m	40	∅	∅	5.0	1.0	32	5.0	32	100u	1.0	500m	85	475	3.0M $\Delta$	250m	E	Y220b	D
48#	BD947	320m	40	∅	∅	5.0	1.0	45	5.0	45	100u	1.0	500m	85	475	3.0M $\Delta$	233m	E	Y220b	D
49#	BD949	320m	40	∅	∅	5.0	1.0	60	5.0	60	100u	1.0	2.0	20		3.0M $\Delta$	500m	E	Y220b	D
50#	BD951	320m	40	∅	∅	5.0	1.0	80	5.0	80	100u	1.0	2.0	20		3.0M $\Delta$	500m	E	Y220b	D
51#	BD953	320m	40	∅	∅	5.0	1.0	100	5.0	100	100u	1.0	2.0	20		3.0M $\Delta$	500m	E	Y220b	D
52#	BD955	320m	40	∅	∅	5.0	1.0	120	5.0	120	100u	1.0	2.0	20		3.0M $\Delta$	500m	E	Y220b	D
53#	BU106	320m	50	∅	∅	10	3.0	325	8.0	325	5.0	7.0	8.0 #	15	∅		400n #	E	TO3	C
54#	BU107	320m	50	∅	∅	10	3.0	300	8.0	300	1.5	7.0	5.0 #	10	∅		400n #	E	TO3	C
55	FT47	320m		∅	∅	2.0 #	600m #	350	5.0	250	1.0m	10	300	30	150	5.0 $\Delta$		E	Y220b	D
56	FT48	320m		∅	∅	2.0 #	600m #	400	5.0	300	1.0m	10	300	30	150	5.0 $\Delta$		E	Y220b	D
57	FT49	320m		∅	∅	2.0 #	600m #	450	5.0	350	1.0m	10	300	30	150	5.0 $\Delta$		E	Y220b	D
58	FT50	320m		∅	∅	2.0 #	600m #	500	5.0	400	1.0m	10	300	30	150	5.0 $\Delta$		E	Y220b	D
59	FT317	320m		∅	∅	8.0 #	2.0 #	100	5.0	100	10u	2.0	1.0	35	20 \$			E	Y220b	D
60	FT317A	320m		∅	∅	8.0 #	2.0 #	120	5.0	120	10u	2.0	1.0	35	20 \$			E	Y220b	D
61	FT317B	320m		∅	∅	8.0 #	2.0 #	140	5.0	140	10u	2.0	1.0	35	20 \$			E	Y220b	D
62	HEP5000-RT	320m	40	∅	∅	4.0	2.0	80	5.0	80	100u	1.5	60	∅		2.0M $\Delta$		B	B5a	B
63	HSE2000-RT	320m	40	∅	∅	4.0	2.0	80	5.0	80	50u	4.0	1.0	25		500k $\Delta$		B	B1	B
64	HSE2001-RT	320m	40	∅	∅	4.0	2.0	80	5.0	80	50u	4.0	1.0	25		500k $\Delta$		B	B1	B
65	HSE2002-RT	320m	40	∅	∅	4.0	2.0	80	5.0	80	50u	4.0	1.0	25		500k $\Delta$		B	B1	B
66	MJ4360t	320m	1.4	∅	∅	1.5	750m	9.0	300	1.0m $\Delta$	2.0	500m	8.0	40		10M $\Delta$	500n	E	TO66	C
67	MJ4361t	320m	1.4	∅	∅	1.5	750m	9.0	400	1.0m $\Delta$	2.0	500m	8.0	40		10M $\Delta$	500n	E	TO66	C
68	MJE31t	320m	40	∅	∅	3.0	1.0	40	5.0	40	300u $\Delta$	4.0	1.0	25		3.0M $\Delta$	400m	E	B16f	B
69	MJE31At	320m	40	∅	∅	3.0	1.0	60	5.0	60	300u $\Delta$	4.0	1.0	25		3.0M $\Delta$	400m	E	B16f	B
70	MJE31Bt	320m	40	∅	∅	3.0	1.0	80	5.0	80	300u $\Delta$	4.0	1.0	25		3.0M $\Delta$	400m	E	B16f	B
71	MJE31Ct	320m	40	∅	∅	3.0	1.0	100	5.0	100	300u $\Delta$	4.0	1.0	25		3.0M $\Delta$	400m	E	B16f	B
72	MJE521	320m	40	∅	∅	4.0	2.0	40	4.0	40										

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>c</sub> @ 25°C (A)		BIAS V <sub>cb</sub> (V)		hFE MIN MAX		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>c</sub> (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)	MIN	MAX							
1	TIP49T	320m	2.0	J	1.0	800m	450	5.0	350	1.0m	10	300m	30	150	10M	1.0	200n	B1	B0		
2	TIP49Z	320m	1.8	J	1.0	800m	450	5.0	350	1.0m	10	300m	30	150	5.0M	1.0	200n	Y220b	B0		
3	TIP50T	320m	2.0	J	1.0	600m	500	5.0	400	1.0m	10	300m	30	150	10M	1.0	200n	B1	B0		
4	TIP50Z	320m	1.8	J	1.0	600m	500	5.0	400	1.0m	10	300m	30	150	5.0M	1.0	200n	Y220b	B0		
5	UMT1203	320m	4.0	J	3.0				400			7.0						ME	Y220b	X0	
6	UMT1204	320m	4.0	J	3.0				400			7.0						ME	Y220b	X0	
7	2N5614	330m	5.0	S	5.0	2.0	80	8.0	80	1.0m	5.0	2.5	70	200	70M				TO3	C0	
8	2N5616	330m	5.0	S	5.0	2.0	100	8.0	80	1.0m	5.0	2.5	30	90	60M				TO3	C0	
9	2N5618	330m	5.0	S	5.0	2.0	100	8.0	80	1.0m	5.0	2.5	70	200	70M				TO3	C0	
10	2N5620	330m	5.0	S	5.0	2.0	120	8.0	100	1.0m	5.0	2.5	30	90	60M				TO3	C0	
11	2SC2097	330m	125	S	15		50	5.0	20	5.0m	10	100m	10	180	10G			PE	W96	V	
12	2SC2132	330m	5.0	S	9.0		35	4.0	17	1.0m	10	1.0	20	180	1.0G			PE			
13	2SC2694	330m	150	S	20		35	4.0	17	5.0m	10	1.0	10	180	5.0G			PE			
14	2SC2799	330m	5.0	S	4.0		45	4.0	35	1.5m	25	2.0	10	180	1.5G			PE			
15	40464	330m	4.0	S	5.0	1.0	35	4.0	35	250u	1.0	2.0	30	170	2.0M			PE			
16	40465	330m	4.0	S	5.0	1.0	40	4.0	40	100u	1.0	2.0	50	170	2.0M			PE			
17	40466	330m	4.0	S	5.0	1.0	50	4.0	50	100u	1.0	2.0	50	170	2.0M			PE			
18	40873	330m	4.0	S	7.0	3.0	5.0	5.0	70	1.0m	4.0	2.0	30	150	4.0M	500m		PE	W91	C	
19	MRF5177	330m	5.0	S	4.0	1.0	80	4.0	35	2.0m	5.0	100m	10	100	1.0M			CF	T93e	R	
20	MRF5177A	330m	5.0	S	4.0	1.0	80	4.0	35	2.0m	5.0	100m	10	100	1.0M			CF	T93e	R	
21	SDT7801	330m	5.0	S	10		80	5.0	80	1.0u	5.0	5.0	40	120	60M	120m		DPL	TO111	G	
22	SDT7802	330m	5.0	S	10		100	5.0	80	1.0u	5.0	5.0	40	120	60M	120m		DPL	TO111	G	
23	SDT7803	330m	5.0	S	10		120	5.0	100	1.0u	5.0	5.0	40	120	60M	120m		DPL	TO111	G	
24	SDT7804	330m	5.0	S	10		140	5.0	120	1.0u	5.0	5.0	40	120	60M	120m		DPL	TO111	G	
25	SDT7805	330m	5.0	S	10		80	5.0	80	1.0u	5.0	5.0	20	60	60M	120m		DPL	TO111	G	
26	SDT7806	330m	5.0	S	10		100	5.0	80	1.0u	5.0	5.0	20	60	60M	120m		DPL	TO111	G	
27	SDT7807	330m	5.0	S	10		120	5.0	100	1.0u	5.0	5.0	20	60	60M	120m		DPL	TO111	G	
28	SDT7808	330m	5.0	S	10		140	5.0	120	1.0u	5.0	5.0	20	60	60M	120m		DPL	TO111	G	
29	SDT4941	330m	5.0	S	5.0		225	8.0	200	5.0	1.0	20	80	60M	400m			DPL	TO111	G	
30	SDT4942	330m	5.0	S	5.0		250	8.0	225	5.0	1.0	20	80	60M	400m			DPL	TO111	G	
31	SDT4943	330m	5.0	S	5.0		275	8.0	250	5.0	1.0	20	80	60M	400m			DPL	TO111	G	
32	SDT4944	330m	5.0	S	5.0		300	8.0	275	5.0	1.0	20	80	60M	400m			DPL	TO111	G	
33	SDT4945	330m	5.0	S	5.0		325	8.0	300	5.0	1.0	20	80	60M	400m			DPL	TO111	G	
34	2N10691	333m	5.0	S	4.0		80	9.0	45	1.0m	4.0	1.5	10	50	1.2M	2.0	1.8u	D	TO3	C0	
35	2N10701	333m	5.0	S	4.0	1.3	80	9.0	45	1.0m	4.0	1.5	10	50	1.2M	2.0	1.8u	D	TO3	C0	
36	2N1470	333m	5.0	S	3.0		80	3.0	60	5.0m	5.0	1.0	15	50	1.0M	3.0		D	TO3	C0	
37	2N37441	333m	3.0	S	5.0		500m	8.0	7.0	100n	5.0	1.0	20	60	30M	120n		D	T53	C0	
38	2N37451	333m	3.0	S	5.0		500m	8.0	8.0	100n	5.0	1.0	20	60	30M	120n		D	T53	C0	
39	2N37461	333m	3.0	S	5.0		500m	100	8.0	100n	5.0	1.0	20	60	30M	120n		D	T53	C0	
40	2N37471	333m	3.0	S	5.0		500m	8.0	7.0	100n	5.0	1.0	40	120	40M	80n		D	T53	C0	
41	2N37481	333m	3.0	S	5.0		500m	8.0	8.0	100n	5.0	1.0	40	120	40M	80n		D	T53	C0	
42	2N37491	333m	3.0	S	5.0		500m	100	8.0	100n	5.0	1.0	40	120	40M	80n		D	T53	C0	
43	2N37501	333m	3.0	S	5.0		500m	8.0	7.0	100n	5.0	1.0	100	300	50M	80n		D	T53	C0	
44	2N37511	333m	3.0	S	5.0		500m	8.0	8.0	100n	5.0	1.0	100	300	50M	80n		D	T53	C0	
45	2N37521	333m	3.0	S	5.0		500m	100	8.0	100n	5.0	1.0	100	300	50M	80n		D	T53	C0	
46	JAN2N3996T	333m	2.0	S	5.0		100	8.0	80	5.0u	2.0	1.0	40	120	40M	300n		M	T53f	A	
47	JAN2N3997T	333m	2.0	S	5.0		100	8.0	80	5.0u	2.0	1.0	80	240	40M	300n		M	T53f	A	
48	JAN2N3998T	333m	2.0	S	5.0		100	8.0	80	5.0u	2.0	1.0	40	120	40M	300n		M	T42d	A	
49	JAN2N3999T	333m	2.0	S	5.0		100	8.0	80	5.0u	2.0	1.0	80	240	40M	300n		M	T42d	A	
50	2N4111	333m	3.0	S	5.0	2.0	100	8.0	80	2.0m	5.0	2.0	40	120	50M	300		A	TO3	A0	
51	2N4112	333m	3.0	S	5.0	2.0	100	8.0	80	2.0m	5.0	2.0	100	300	60M	300		A	TO3	A0	
52	2N4113	333m	3.0	S	5.0	2.0	120	8.0	80	2.0m	5.0	2.0	40	120	50M	300		A	TO3	A0	
53	2N4114	333m	3.0	S	5.0	2.0	120	8.0	80	2.0m	5.0	2.0	100	300	60M	300		A	TO3	A0	
54	2N5002	333m	5.0	S	5.0		100	6.0	80	1.0m	5.0	2.5	30	90	60M	300		A	TO59	A	
55	2N5004	333m	5.0	S	5.0	2.0	100	6.0	80	1.0m	5.0	2.5	70	200	70M	300		A	TO59	A	
56	2N5284	333m	5.0	S	5.0	2.0	120	6.0	80	1.0m	5.0	2.5	30	90	60M	300		A	TO59	A	
57	2N5285	333m	5.0	S	5.0	2.0	120	6.0	80	1.0m	5.0	2.5	70	200	70M	300		A	TO59	A	
58	2N5304s	333m	2.5	S	10		50	5.0	40	10u	2.0	2.0	30	120	100M	120m		D	TO81	A	
59	2N5328T	333m	2.5	S	10		100	5.0	80	2.0	2.0	1.0	100	300	100M	120m		D	TO81	A	
60	2S012	333m	2.5	S	2.0	500m	80	10	80	10u	1.0	1.0	20	200	50M	380m		DM	T03	C0	
61	2SC646	333m	2.5	S	4.0		80	5.0	80	10u	4.0	2.5	20	200	50M	380m		DM	T03	C0	
62	2SC1511*	333m	5.0	S	3.0		50	4.0	25	2.0m	10	700m	15	200	200		PE	W55b	R		
63	2SC1946	333m	5.0	S	7.0		35	4.0	17	2.0m	10	200m	10	180	400M		PE				
64	2SC1948A	333m	5.0	S	7.0		35	4.0	17	2.0m	10	200m	10	180	400M		PE				
65	2SC2103A	333m	5.0	S	6.0		40	4.0	18	1.0m	5.0	1.0	10	10	300M	230m		PE	T90	R	
66	2SC2502*	333m	5.0	S	6.0		500	7.0	400	100u	2.0	3.0	15	20		700n		PE	B56	R	
67	2SC2508*	333m	5.0	S	6.0	6.0	40	4.0	18	1.0m	5.0	3.0	10	10				PE	W52s	R	
68	2SC2695	333m	5.0	S	10		35	4.0	17	2.0m	10	1.0	20	180			PE				
69	2SC3022	333m	5.0	S	7.0		35	4.0	17	2.0	10	1.0	20	180			PE				
70	2SD50	333m	5.0	S	6.0		3.0	100	70	15u	4.0	1.5	15	60	1.5M			D	TO3	C0	
71	2SD174	333m	5.0	S	5.0		3.0	60	6.0	20u	4.0	5.0	10	80	1.2M	3.0		D	TO3	C0	
72	2SD175	333m	5.0	S	5.0		3.0	100	6.0	20u	4.0	5.0	10	80	1.2M	3.0		D	TO3	C0	
73	2SD198	333m	5.0	S	1.0	500m	300	8.0	300	5.0m	5.0	100m	35	330	7.0M	5.0		DM	TO3	C0	
74	2SD199	333m	5.0	S	1.0	250m	800	6.0	700	1.0m	2.0	200m	25	250	7.0M	5.0		DM	TO3	C0	
75	1718-0402T	333m	3.0	S	10		2.0	40	7.0	200u	2.0	2.0	20	20	40M	250m		EM	TO111	G	
76	1718-0405T	333m	3.0</																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W/C)	Pc	Ic	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS hFE			MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG Ser.	# L E O D E	
						Vcbo (V)	Vbebo (V)	Vcbo (V)	Vbebo (V)	Vcbo (V)		MIN (A)	MAX (A)	fae (Hz)						
1	BR200B	333m	50	0	20	8.0	80	3.0	50	100u	5.0	5.0	50	200M	200m	#	T061	A		
2	BR201B	333m	50	0	20	8.0	90	3.0	75	100u	5.0	5.0	40	200M	200m	#	T061	A		
3#	BU111	333m	25	0	4.0	1.5	6.0	300	100u	15m	10	1.0m	8.0	10M	1.0u	#	F9d	C		
4#	KT922D	333m	40	0	3.9	#	2.0	40	6.0	40	10u	5.0	2.0	40	120	#	40M	R		
5#	KT922G	333m	40	0	3.9	#	2.0	40	6.0	40	10u	5.0	2.0	40	120	#	40M	R		
6	SDT3401T	333m	52	0	5.0	2.0	60	6.0	60	10u	5.0	2.0	40	120	#	40M	PE			
7	SDT3402T	333m	52	0	5.0	2.0	60	6.0	60	10u	5.0	2.0	40	120	#	40M	PE			
8	SDT3403T	333m	52	0	5.0	2.0	60	6.0	60	10u	5.0	2.0	40	120	#	40M	PE			
9	SDT3404T	333m	52	0	5.0	2.0	100	6.0	100	10u	5.0	2.0	40	120	#	40M	PE			
10	SDT3405T	333m	52	0	5.0	2.0	40	6.0	40	10u	5.0	2.0	20	60	#	40M	PE			
11	SDT3406T	333m	52	0	5.0	2.0	60	6.0	60	10u	5.0	2.0	20	60	#	40M	PE			
12	SDT3407T	333m	52	0	5.0	2.0	80	6.0	80	10u	5.0	2.0	20	60	#	40M	PE			
13	SDT3408T	333m	53	0	5.0	2.0	100	6.0	100	10u	5.0	2.0	20	60	#	40M	PE			
14	SDT3409T	333m	53	0	5.0	2.0	120	6.0	120	10u	5.0	2.0	20	60	#	40M	PE			
15	SDT6308	333m	52	0	5.0	500m	60	8.0	40	1.0u	2.0	1.0	20	60	#	30M	PLD			
16	SDT6309	333m	52	0	5.0	500m	80	8.0	60	1.0u	2.0	1.0	20	60	#	30M	PLD			
17	SDT6310	333m	52	0	5.0	500m	100	8.0	80	1.0u	2.0	1.0	20	60	#	30M	PLD			
18	SDT6311	333m	52	0	5.0	500m	60	8.0	40	1.0u	2.0	1.0	40	120	#	30M	PLD			
19	SDT6312	333m	52	0	5.0	500m	80	8.0	60	1.0u	2.0	1.0	40	120	#	30M	PLD			
20	SDT6313	333m	52	0	5.0	500m	100	8.0	80	1.0u	2.0	1.0	40	120	#	30M	PLD			
21	SDT6314	333m	52	0	5.0	500m	60	8.0	40	1.0u	2.0	1.0	100	#	30M	PLD				
22	SDT6315	333m	52	0	5.0	500m	80	8.0	60	1.0u	2.0	1.0	100	#	30M	PLD				
23	SDT6316	333m	52	0	5.0	500m	100	8.0	80	1.0u	2.0	1.0	100	#	30M	PLD				
24	SDT6408	333m	52	0	5.0	500m	60	8.0	40	1.0u	2.0	1.0	20	60	#	30M	PLD			
25	SDT6409	333m	52	0	5.0	500m	80	8.0	60	1.0u	2.0	1.0	20	60	#	30M	PLD			
26	SDT6410	333m	52	0	5.0	500m	100	8.0	80	1.0u	2.0	1.0	20	60	#	30M	PLD			
27	SDT6411	333m	52	0	5.0	500m	60	8.0	40	1.0u	2.0	1.0	40	120	#	30M	PLD			
28	SDT6412	333m	52	0	5.0	500m	80	8.0	60	1.0u	2.0	1.0	40	120	#	30M	PLD			
29	SDT6413	333m	52	0	5.0	500m	100	8.0	80	1.0u	2.0	1.0	40	120	#	30M	PLD			
30	SDT6414	333m	52	0	5.0	500m	60	8.0	40	1.0u	2.0	1.0	100	#	30M	PLD				
31	SDT6415	333m	52	0	5.0	500m	80	8.0	60	1.0u	2.0	1.0	100	#	30M	PLD				
32	SDT6416	333m	52	0	5.0	500m	100	8.0	80	1.0u	2.0	1.0	100	#	30M	PLD				
33#	2SD950	336m	42	0	3.0	1.5k	5.0	35	5.0	10	2.0	8.0	20	80	11u	DM	T03	C		
34	2N5643	342m	60	0	5.0	65	4.0	35	1.0m	5.0	500m	5.0	200M	Δ			T72h	R		
35	2N6136	343m	60	0	6.0	36	4.0	18	20m	5.0	1.0	20	75M	Δ			T93a	R		
36	2N6455	343m	60	0	7.0	45	3.0	25	5.0m	5.0	2.0	10	80	75M	Δ		T111	R		
37	A25-28	343m	60	0	5.0	4.0	4.0	35	5.0	1.0	10	10	80M	#			T91	R		
38	MRF449	343m	60	0	5.0	4.0	4.0	20	5.0	1.0	10	10	75M	#			W52h	R		
39	MRF449A	343m	60	0	5.0	4.0	4.0	20	5.0	1.0	10	10	80M	#			T93a	R		
40	2N1079	344m	60	0	3.0	500m	60	10	60	10m	10	20	80	150M	#	D		T053	A	
41	2N1080	344m	60	0	3.0	500m	60	10	60	10m	10	20	80	150M	#	D		T053	A	
42	2N5214	344m	60	0	5.0	2.0	95	4.0	95	1.0m	5.0	1.0	10	75	150M	#		T62a	F	
43	2N5346†	344m	60	0	7.0	1.0	80	6.0	80	10u	2.0	2.0	30	120	30M	Δ		T059	A	
44	2N5347†	344m	60	0	7.0	1.0	80	6.0	80	10u	2.0	2.0	60	240	30M	Δ		T059	A	
45	2N5348†	344m	60	0	7.0	1.0	100	6.0	100	10u	2.0	2.0	30	120	30M	Δ		T059	A	
46	2N5349†	344m	60	0	7.0	1.0	100	6.0	100	10u	2.0	2.0	60	240	30M	Δ		T059	A	
47	2N5477	344m	60	0	7.0	1.0	80	6.0	80	10u	2.0	2.0	30	120	30M	Δ		T059	A	
48	2N5478	344m	60	0	7.0	1.0	80	6.0	80	10u	2.0	2.0	60	240	30M	Δ		T059	C	
49	2N5479	344m	60	0	7.0	1.0	100	6.0	100	10u	2.0	2.0	30	120	30M	Δ		T059	C	
50	2N5480	344m	60	0	7.0	1.0	100	6.0	100	10u	2.0	2.0	60	240	30M	Δ		T059	C	
51#	2SC2125	344m	50	0	5.0	2.2k	5.0	800	500u	10	1.0	8	35	5.0M	#	DM		T03	C	
52	S10-28*	344m	60	0	6.0	4.0	4.0	35	5.0	1.0	10	10	100M	Δ			W52c	R		
53	SD1224-2	344m	60	0	5.0	65	4.0	35	5.0m	5.0	5	5.0	200M	Δ		EPL		W52v	R	
54#	2SD633	347m	40	0	7.0	200m	100	5.0	100	100u	3.0	3.0	2.0k	15k	800n	D		Y220b	C	
55#	2SD634	347m	40	0	7.0	200m	80	5.0	80	100u	3.0	3.0	2.0k	15k	800n	D		Y220b	C	
56#	2SD635	347m	40	0	7.0	200m	60	5.0	60	100u	3.0	3.0	2.0k	15k	800n	D		Y220b	C	
57#	BDY54	347m	60	0	12	5.0	180	7.0	120	15m	1.5	2.0	20	60	20M	Δ	DM	T03	C	
58#	BU112	347m	60	0	10	4.0	550	10	550	#	500u	2.0	6.0	7.0	300n	DM		T03	C	
59	2N6736	357m	35	0	5.0	500m	110	8.0	80	200n	5.0	5.0m	4.0	120	6.0M	PL		Y228a	A	
60#	2SC1113	357m	40	0	6.0	3.0	120	10	100	10u	4.0	5.0	30	10M	300m	ME		T066	C	
61#	2SC1444	357m	40	0	6.0	3.0	80	6.0	60	1.0m	4.0	1.0	30	15M	500m	D		T066	C	
62#	2SC1445	357m	40	0	6.0	3.0	100	6.0	80	1.0m	4.0	1.0	30	15M	500m	D		T066	C	
63#	2SC1504	357m	40	0	2.0	1.0	400	6.0	300	1.0m	4.0	1.0	20	10M	1.0	D		T066	C	
64#	2SD217	357m	60	0	7.0	2.0	120	7.0	80	2.0m	5.0	4.0	25	#	60	#	EM		T03	C
65#	2SD218	357m	60	0	7.0	2.0	150	7.0	100	2.0m	5.0	4.0	30	#	60	#	EM		T03	C
66#	2SD613P	357m	50	0	6.0	100	60	85	100u	5.0	1.0	40	15M	2.0	PE			T72q	R	
67	SD1228	357m	65	0	4.0	36	4.0	18	1.0m	5.0	250m	5.0	200M	Δ				T066	A	
68	SDT7741†	357m	62	0	10	2.0	60	20	40	1.0u	5.0	5.0	20	80	5.0M	Δ		T066	A	
69	SDT7742†	357m	62	0	10	2.0	80	20	60	1.0u	5.0	5.0	20	80	5.0M	Δ		T066	A	
70	SDT7743†	357m	62	0	10	2.0	100	20	80	1.0u	5.0	5.0	20	80	5.0M	Δ		T066	A	
71	SDT7744†	357m	62	0	10	2.0	120	20	100	1.0u	5.0	5.0	20	80	5.0M	Δ		T066	A	
72	SDT7745†	357m	62	0	10	2.0	140	20	125	1.0u	5.0	5.0	20	80	5.0M	Δ		T066	A	
73	SDT7746†	357m	62	0	10	2.0	165	20	150	1.0u	5.0	5.0	20	80	5.0M	Δ		T066	A	
74#	BD539	360m	45	0	5.0	1.0	40	5.0	40	200u	4.0	1.0	30	3.0M	400m	E		B1	B	
75#	BD539A	360m	45	0	5.0	1.0	60	5.0	60	200u	4.0	1.0	30	3.0M	400m	E		B1	B	
76#	BD539B	360m	45	0	5.0	1.0	80	5.0	80	200u	4.0	1.0	30	3.0M	400m	E		B1	B	
77#	BD539C	360m	45	0	5.0	1.0	100	5.0	100	200u	4.0	1.0	30	3.0M	400m	E		B1	B	
78#	BD539D	360m	45	0	5.0	1.0	120	5.0	120	200u	4.0	1.0	30	3.0M	400m	E		B1	B	
79	2N4115	361m	37	0	5.0	2.0	120	8.0	80	2.0m	5.0	2.0	40	120	5.0M	Δ		T43a	A	
80	2N4116	361m	37	0	5.0	2.0	120	8.0	80	2.0m	5.0	2.0	100	300	7.0M	Δ		T43a	A	
81	MRF238	370m	65	0	4.0	36	4.0	18												



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O D E		
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcb @ 25°C (A)	Vcb (V)									Ic (A)	
1	2N4932	400m	70	∅	∅	3.3	1.0	50	4.0	25	5.0	1.0	10	100	100MΔ			T060	A∅		
2	2N4933	400m	70	∅	∅	3.3	1.0	70	4.0	35	5.0	1.0	10	100	100MΔ			T060	A∅		
3	2N5070	400m	70	∅	∅	3.3	1.0	65 †	4.0	30	10m∅*	5.0	3.0	10	100	100MΔ		T060	A∅		
4	2N5071	400m	70	∅	∅	3.3	1.0	65 †	4.0	30	10m∅*	5.0	3.0	10	100	100MΔ		T060	A∅		
5	JAN2N5071	400m	2.6	∅	10	∅	∅	∅	∅	∅	5.0m	5.0	3.0	15	100 #			T060	A∅		
6	2N5074	400m	70	∅	∅	3.0	300m	200	6.0	200	1.0m†	5.0	500m	30	110 #	40MΔ	670m	T059	A		
7	2N5075	400m	70	∅	∅	3.0	300m	200	6.0	200	1.0m†	5.0	500m	90	250 #	40MΔ	670m	T059	A		
8	2N5076	400m	70	∅	∅	3.0	300m	250	6.0	250	1.0m†	5.0	500m	30	110 #	40MΔ	670m	T059	A		
9	2N5077	400m	70	∅	∅	3.0	300m	250	6.0	250	1.0m†	5.0	500m	90	250 #	40MΔ	670m	T059	A		
10	2N5468	400m	40	∅	∅	3.0	1.0	500	8.0	400	1.0mΔ	5.0	3.0	15	60 #	2.5MΔ		T066	A∅		
11	2N5469	400m	40	∅	∅	3.0	1.0	700	8.0	400	1.0mΔ	5.0	3.0	15	60 #	2.5MΔ		T066	A∅		
12	2N5490	400m	50	∅	∅	7.0	3.0	60 †	5.0†	50 †	5.0mΔ*	4.0	2.0	20	100		455m	Y220b	A∅		
13	2N5491	400m	50	∅	∅	7.0	3.0	80 †	5.0†	80 †	5.0mΔ*	4.0	2.0	20	100		455m	Y220a	T∅		
14	2N5492	400m	50	∅	∅	7.0	3.0	75 †	5.0†	65 †	5.0mΔ*	4.0	2.5	20	100		455m	Y220b	D∅		
15	2N5493	400m	50	∅	∅	7.0	3.0	75 †	5.0†	65 †	5.0mΔ*	4.0	2.5	20	100		455m	Y220a	T∅		
16	2N5494	400m	50	∅	∅	7.0	3.0	60 †	5.0†	50 †	5.0mΔ*	4.0	3.0	20	100		455m	Y220b	D∅		
17	2N5495	400m	50	∅	∅	7.0	3.0	60 †	5.0†	50 †	5.0mΔ*	4.0	3.0	20	100		455m	Y220a	T∅		
18	2N5496	400m	50	∅	∅	7.0	3.0	90 †	5.0†	80 †	5.0mΔ*	4.0	3.5	20	100		285m	Y220b	D∅		
19	2N5497	400m	50	∅	∅	7.0	3.0	90 †	5.0†	80 †	5.0mΔ*	4.0	3.5	20	100		285m	Y220a	T∅		
20	2N5591	400m	70	∅	∅	4.0	∅	36 †	4.0†	18	1.0m∅*	5.0	500m	5.0		200MΔ		F27h	R		
21	2N5714	400m	70	∅	∅	8.0	∅	60 †	4.0†	40	1.0m∅*	10	10m				F21	R			
22	2N5939s	400m	2.0	∅	∅	10	4.0	80	5.0	80	500s	4.0	5.0	40	200 #	120MΔ		T0111	A		
23	2N5940s	400m	2.0	∅	∅	10	4.0	70	5.0	70	500s	4.0	5.0	40	200 #	120MΔ		T0111	A		
24	2N6129	400m	50	∅	∅	7.0	3.0	40 †	5.0†	40	100u†	4.0	2.5	20	100 #	2.5MΔ		Y220b	D∅		
25	2N6130	400m	50	∅	∅	7.0	3.0	60 †	5.0†	60	100u†	4.0	2.5	20	100 #	2.5MΔ		Y220b	D∅		
26	2N6131	400m	50	∅	∅	7.0	3.0	80 †	5.0†	80	100u†	4.0	2.5	20	100 #	2.5MΔ		Y220b	D∅		
27	2N6477	400m	20	∅	∅	2.5 †	1.0	140 †	5.0†	140	2.0mΔ*	4.0	1.0	25	150 #		800m#	Y220b	D∅		
28	2N6478	400m	20	∅	∅	2.5 †	1.0	180 †	5.0†	180	2.0mΔ*	4.0	1.0	25	150 #		800m#	Y220b	D∅		
29	2N6495†	400m	70	∅	∅	10	5.0	150 †	6.0†	100	100u†	5.0	10	10	60 #	25MΔ	150m#	350n∅	T066	C∅	
30	2N6702†	400m	50	∅	∅	7.0	5.0	140 †	7.0†	90	100u†	2.0	5.0	20		50MΔ	160m	250n∅	Y220a	C∅	
31	2N6703†	400m	50	∅	∅	7.0	5.0	180 †	7.0†	110	100u†	2.0	5.0	20		50MΔ	160m	250n∅	Y220a	C∅	
32	2N6704†	400m	50	∅	∅	7.0	5.0	180 †	7.0†	130	100u†	2.0	4.0	20		50MΔ	175m	250n∅	Y220a	C∅	
33#	2SC41	400m	50	∅	∅	5.0	1.5	150	6.0	100	60m	10	1.0	12	92	20M†	2.0		ME	T03	C∅
34#	2SC519A†	400m	50	∅	∅	7.0	7.0	130	5.0	110	1.0m∅	5.0	1.0	20		20M†	400m	200n	DM	T03	C∅
35#	2SC520A†	400m	50	∅	∅	7.0	7.0	100	5.0	80	1.0m∅	5.0	1.0	30		20M†	400m	200n	DM	T03	C∅
36#	2SC521A†	400m	50	∅	∅	7.0	7.0	70	5.0	50	1.0m∅	5.0	1.0	30		20M†	400m	200n	DM	T03	C∅
37#	2SC558	400m	50	∅	∅	5.0	5.0	250	5.0	250	1.0m∅	5.0	5.0	20	40 ∅	20M†	400m	200n	DM	T03	C∅
38#	2SC642	400m	50	∅	∅	1.0	1.0	1.1k	5.0	700	10u∅	15	150m	30	160	2.0M†	13		DME	T03	C∅
39#	2SC642A	400m	50	∅	∅	1.0	1.0	1.5k	5.0	800	10u∅	15	150m	30	160	2.0M†	13		DME	T03	C∅
40#	2SC643	400m	50	∅	∅	2.5	2.5	1.1k	5.0	1.1k	10u∅	15	2.0	7.0		2.0M†	5.5		DME	T03	C∅
41#	2SC643A	400m	50	∅	∅	2.5	2.5	1.5k	5.0	1.5k	10u∅	15	2.0	7.0		2.0M†	750m		DME	T03	C∅
42#	2SC681	400m	50	∅	∅	6.0	∅	200	5.0	70	15m#						400m	1.0u#	D	F6h	C∅
43#	2SC681A	400m	50	∅	∅	6.0	∅	250	5.0	80	15m#						300m	1.0u#	D	F6h	C∅
44#	2SC935	400m	50	∅	∅	2.5	∅	300	5.0	300	10u∅	300m	8.0	14 ∅				1.0u#	MEΔ	T03	C∅
45#	2SC940	400m	50	∅	∅	5.0	∅	200	7.0	90	2.0m∅	5.0	5.0	15	120			1.0u#	MEΔ	T03	C∅
46#	2SC1004	400m	50	∅	∅	500m	500m∅	1.1k	5.0	700	10u∅	15	150m	30	160	2.0M†	21		DME	T03	C∅
47#	2SC1004A	400m	50	∅	∅	500m	500m∅	1.5k	5.0	800	10u∅	15	150m	30	160	2.0M†	21		DME	T03	C∅
48#	2SC1030	400m	50	∅	∅	6.0	∅	150	6.0	80	1.0m∅	5.0	1.0	35 *	200 #	10M†	300m		D	T03	C∅
49#	2SC1030A	400m	50	∅	∅	6.0	∅	80	6.0	80	1.0m∅	5.0	1.0	35 *	70	10M†		D	T03	C∅	
50#	2SC1030B	400m	50	∅	∅	6.0	∅	80	6.0	80	1.0m∅	5.0	1.0	60	120	10M†		D	T03	C∅	
51#	2SC1030C	400m	50	∅	∅	6.0	∅	80	6.0	80	1.0m∅	5.0	1.0	100	200	10M†		D	T03	C∅	
52#	2SC1101	400m	50	∅	∅	1.0	∅	1.1k	5.0	500	1.0m∅	15	500m	30	120			ME	T03	C∅	
53#	2SC1167	400m	50	∅	∅	1.5	∅	1.2k	5.0	500	1.0m∅	10	500m	10	50	4.0M†		1.0u#	ME	T03	C∅
54#	2SC1170B	400m	50	∅	∅	3.5	∅	1.5k	5.0	500	10u∅	10	10	10	20 ∅	3.0M†		1.0u#	DM	T03	C∅
55#	2SC1172	400m	50	∅	∅	6.0	6.0	1.5k	5.0	600	10u∅	10	2.0	10	20 ∅	3.0M†	1.2	500n#	DME	T03	C∅
56#	2SC1172A	400m	50	∅	∅	6.0	6.0	1.5k	5.0	600	10u∅	10	2.0	10	20 ∅	2.0M†		1.0u#	DME	T03	C∅
57#	2SC1172B	400m	50	∅	∅	7.0	7.0	1.5k	5.0	600	10u∅	10	2.0	10	20 ∅	3.0M†		1.0u#	DME	T03	C∅
58#	2SC1185	400m	50	∅	∅	700m	∅	300	5.0	250	10u∅	10	400m	40 *	200 #		4.0 #	DM	T03	C∅	
59#	2SC1192	400m	60	∅	∅	10 #	∅	36	4.0	18	1.0m	13	1.0	10	60 ∅			PE	F21	C	F
60#	2SC1354	400m	60	∅	∅	10 #	∅	55	4.0	35	1.0m	13	1.0	10	50 ∅			PE	F21	C	F
61#	2SC1358	400m	50	∅	∅	4.5	∅	1.4k	6.0	500	20u∅	15	150m	5.0	60 #			1.0u#	ME	T03	C∅
62#	2SC1358A	400m	50	∅	∅	5.5	∅	1.5k	6.0	500	20u∅	15	4.0	5.0	35			1.0u#	ME	T03	C∅
63#	2SC1367	400m	50	∅	∅	1.0	∅	1.0k	5.0	600	1.0m	10	200m	30	120				D	T03	C∅
64#	2SC1413	400m	50	∅	∅	5.0	∅	1.2k	6.0	500	1.0m					2.0	2.3u#	D	T03	C∅	
65#	2SC1413A	400m	50	∅	∅	5.0	∅	1.5k	6.0	500	1.0m					2.0	2.3u#	D	T03	C∅	
66#	2SC1413AH	400m	50	∅	∅	5.0	∅	1.5k	6.0	500	1.0m					2.0	2.3u#	D	T03	C∅	
67#	2SC1817	400m	50	∅	∅	7.0	7.0	300	5.0	100	1.0m∅	5.0	1.0	30	150	10M†	240m		DME	T03	C∅
68#	2SC1829	400m	50	∅	∅	8.0	3.0	90	6.0	70	1.0m	4.0	1.0	500	1.5k∅	10M†	330m	1.2u	DM	T03	C∅
69#	2SC1768	400m	50	∅	∅	5.0	1.0	200	6.0	150	1.0m	4.0	1.0	400	3.0k	15M†		DM	T03	C∅	
70#	2SC1875	400m	50	∅	∅	3.5	∅	1.5k	6.0	500	20u∅	10	2.0	5.0	25	16k #	4.0		D	T03	C∅
71#	2SC1922	400m	50	∅	∅	2.5	∅	1.5k	6.0												



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icbo @ 25°C (A)		BIAS Vcb (V)		MIN (Ω)	MAX (Ω)	fae (Hz)	MAX. SAT. RES. (s)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C O D E	
					Ic (A)	Ib (A)	Vcbo (V)	Vcbo (V)	Vcbo (V)	Icbo (A)	Icbo (A)	Vcb (V)	Vcb (V)									
1#	2SD764	400m	50	∅	1.5		1.5k	8.0	800	100∅	5.0∅	100m	17	∅		5.0	1.5u#	D	T03	C∅		
2#	2SD783	400m	50	∅	4		1.5k	6	600								2u#	D	T03	C∅		
3#	2SD784	400m	50	∅	5		1.7k	6	700								2u#	D	T03	C∅		
4#	2SD785	400m	50	∅	5		1.9k	6	700								2u#	D	T03	C∅		
5#	2SD801	400m	50	∅	6.0	2.0	800	∅	375	∅	5.0∅	4.0	3.5	12		500n#	D	T03	C∅			
6#	2SD802	400m	50	∅	6.0	2.0	900	∅	400	∅	5.0∅	4.0	3.5	12		500n#	D	T03	C∅			
7#	2SD811	400m	50	∅	8.0	6.0	900	7.0	400	1.0m	5.0∅	800m	10	40	5.0M		1.0u#	DM	T03	C∅		
8#	2SD818	400m	50	∅	2.5	2.5	1.5k	5.0	600	100∅	5.0∅	500m	8	20	3.0M		1.0u#	DM	T03	C∅		
9#	2SD819	400m	50	∅	3.5	3.5	1.5k	5.0	600	100∅	5.0∅	500m	8	20	3.0M		1.0u#	DM	T03	C∅		
10#	2SD820	400m	50	∅	5.0	5.0	1.5k	5.0	600	100∅	5.0∅	1.0	8	20	3.0M		1.0u#	DM	T03	C∅		
11#	2SD821	400m	50	∅	6.0	6.0	1.5k	5.0	600	100∅	5.0∅	1.0	8	20	3.0M		1.0u#	DM	T03	C∅		
12#	2SD822	400m	50	∅	7.0	7.0	1.5k	5.0	600	100∅	5.0∅	1.0	8	20	3.0M		1.0u#	DM	T03	C∅		
13#	2SD868	400m	50	∅	2.5	2.5	1.5k	5.0	600	100∅	5.0∅	500m	8	12	3.0M		1.0u#	DM	T03	C∅		
14#	2SD869	400m	50	∅	3.5	3.5	1.5k	5.0	600	100∅	5.0∅	500m	8	12	3.0M		1.0u#	DM	T03	C∅		
15#	2SD870	400m	50	∅	5.0	5.0	1.5k	5.0	600	100∅	5.0∅	1.0	8.0	120	3.0M		1.0u#	DM	T03	C∅		
16#	2SD871	400m	50	∅	8.0	6.0	1.5k	5.0	600	100∅	5.0∅	1.0	8	12	3.0M		1.0u#	DM	T03	C∅		
17#	2SD898B	400m	50	∅	3			6	1.5k							1.0u#	D	T03	C∅			
18#	2SD900B	400m	50	∅	3			6	1.5k							1.5u#	D	T03	C∅			
19#	2SD956	400m	50	∅	2.5			6	1.5k	500u						1u#	D	T03	C∅			
20#	2SD957A	400m	50	∅	6			6	1.5k	500u						1.2u#	D	T03	C∅			
21#	2SD991K1	400m	50	∅	6		300	7	300	100u		2	4	500		2u#	D	Y220b	D			
22#	2SD1093	400m	50	∅	7			6	400	500u		2.5	10			1u#	D	T03	C∅			
23#	2SD1094	400m	50	∅	10			6	400	500u		2.5	15			1u#	D	T03	C∅			
24#	2SD1114K1	400m	50	∅	6		400	7	300	100u		2	4	500		2u#	D	Y220b	D			
25#	2SD1126K1	400m	50	∅	10			7	120	100u		3	5	1k		800n#	D	Y220b	D			
26#	2SD1142	400m	50	∅	3.5		1.5k	6	1.5k	20u		10	0.5	5	25		25	D	Y204a	C∅		
27#	184T2C	400m	85	∅	6.0	3.0	400	10	200	1.0m	4.0∅	2.0	75	180	10M	∅		∅	T03	C∅		
28	40340	400m	70	∅	3.3		60	4.0	25	10m								PE	T060	AZ		
29	40341	400m	70	∅	3.3		70	4.0	35	10m								PE	T060	AZ		
30	40624	400m	1.8	∅	6.0	3.0	5.0	45	∅	500u*	4.0∅	2.5	20	100				A	B17a	T		
31	40627	400m	1.8	∅	6.0	3.0	5.0	55	∅	500u*	4.0∅	2.5	20	100				H	B17a	T		
32	40632	400m	1.8	∅	6.0	3.0	5.0	50	∅	500u*	4.0∅	3.0	20	70				H	B17a	T		
33	40936	400m	50	∅	3.3		4.0	40	∅	10m								E	T060	A		
34	BD801#	400m	50	∅	9.0		100	5.0	100	100u	2.0∅	1.0	30		3.0M			ME	Y220b	D		
35	BDY901	400m	40	∅	10	2.0	120	6.0	100	3.0m	5.0∅	5.0	30	120	70M	150m	350n#		T03	C∅		
36#	BDY911	400m	40	∅	10	2.0	100	6.0	80	3.0m	5.0∅	5.0	30	120	70M	150m	350n#		T03	C∅		
37	BDY921	400m	30	∅	10	2.0	80	6.0	60	3.0m	5.0∅	5.0	30	120	70M	100m	350n#		T03	C∅		
38#	BDY931	400m	30	∅	3.0	2.0	6.0	350	∅	500u	5.0∅	1.0	15	60	8.0M	1.0	250n#		T03	C∅		
39#	BDY941	400m	30	∅	3.0	2.0	6.0	300	∅	500u	5.0∅	1.0	25	80	8.0M	1.0	250n#		T03	C∅		
40#	BDY951	400m	30	∅	3.0	2.0	6.0	250	∅	500u	5.0∅	1.0	25	80	8.0M	1.0	250n#		T03	C∅		
41	BLX13*	400m	62	∅	3.0		65	4.0	36		5.0∅	1.0	10	100	500M			PE	T72k	R		
42	BLY89A*	400m	70	∅	5.0		36	4.0	18		5.0∅	1.0	10	120	650M			PE	T72k	R		
43	BLY93A*	400m	70	∅	3.0		65	4.0	36		5.0∅	1.0	10	120	500M			PE	T72k	R		
44	BR100E	400m	35	∅	10	2.0	60	3.0	40	100u	5.0∅	3.0	40	200	300M	333m		#	T061	A		
45	BR101E	400m	35	∅	10	2.0	90	3.0	75	100u	5.0∅	3.0	30	150	300M	333m		#	T061	A		
46	BR200A	400m	50	∅	20	8.0	60	3.0	50	100u	5.0∅	5.0	50		200M	200m		#	T061	A		
47	BR201A	400m	50	∅	20	8.0	90	3.0	75	100u	5.0∅	5.0	40		200M	200m		#	T061	A		
48	BU105	400m	10	∅	2.5	2.5	750	5.0	750	1.0m	5.0∅	2.0			7.5M	2.0	500n#		T03	C∅		
49#	BU105-02	400m	10	∅	2.5	2.5	850	5.0	850	1.0m	5.0∅	2.0			7.5M	2.0	510n#		Δ	T03	C∅	
50	BU1241	400m	50	∅	10	3.0	350	8.0	150	500u	10∅	4.0	12	#	6.0M	125m#	800n#		B3	B		
51	BU124A1	400m	50	∅	10	3.0	400	8.0	150	500u	10∅	4.0	12	#	6.0M	125m#	800n#		B3	B		
52#	BU126	400m	30	∅	3.0		300	300	∅	500u	5.0∅	1.0	15	60	8.0M	4.0	1.2u		DM	T03	C∅	
53#	BU126Z	400m	50	∅	4.0	2.0	300	300	∅	500u	5.0∅	1.0	15	60	8.0M	4.0	1.2u		DM	T03	C∅	
54#	BU132	400m	15	∅	1.0	250m		5.0	600	250u	10∅	250m	25	125	8.0M	20				T03	C∅	
55#	BU133	400m	30	∅	3.0	2.0	250	500u	5.0∅	1.0	15	80			7.5M	4.0	2.0n#		DM	T03	C∅	
56#	BU204	400m	10	∅	2.5	2.5	5.0	600	1.0m	5.0∅	2.0	2.0	2.0		7.5M	2.5	10u#		D	T03	C∅	
57#	BU204Δ	400m	36	∅	2.5	2.5	5.0	1.3k	∅	1.0m	5.0∅	2.0	2.0		7.5M	2.5	0.8u#		DM	T03	C∅	
58#	BU205	400m	10	∅	2.5	2.5	5.0	700	1.0m	5.0∅	2.0	2.0	2.0		7.5M	2.5	10u#		D	T03	C∅	
59#	BU205Δ	400m	36	∅	2.5	2.5	5.0	1.5k	∅	1.0m	5.0∅	2.0	2.0		7.5M	2.5	0.8u#		DM	T03	C∅	
60#	BU206	400m	10	∅	2.5	2.5	5.0	800	1.0m	5.0∅	2.0	1.8			7.5M	2.5	10u#		D	T03	C∅	
61#	BU226	400m	32	∅	2.0	1.5		800	1.0m	∅	2.0	200m	30			700n#				T03	C∅	
62#	BUW64A1	400m	50	∅	3.0		7.0	90	100u#	2.0	200m	30			350n#					Y220a	D	
63#	BUW64B1	400m	50	∅	3.0		7.0	110	100u#	2.0	200m	30			350n#					Y220a	D	
64#	BUW64CT	400m	50	∅	3.0		7.0	130	100u#	2.0	200m	30			350n#					Y220a	D	
65#	BUX591	400m	70	∅	8.0	1.6	120	7.0	90	700u	4.0∅	5.0	20	#	60	8.0M	140m#	800n#		T066	C∅	
66#	BUX601	400m	70	∅	8.0	1.6	160	7.0	125	700u	4.0∅	4.0	20	#	60	8.0M	175m#	1.0u		DM	T066	C∅
67#	BUX611	400m	70	∅	8.0	1.6	250	7.0	200	700u	4.0∅	3.0	20	#	60	8.0M	233m#	1.0u		DM	T066	C∅
68#	BUX621	400m	70	∅	7.0	1.4	300	7.0	250	700u	4.0∅	2.5	20	#	60	8.0M	280m#	1.0u		DM	T066	C∅
69#	BUX841	400m	40	∅	2.0	1.0		400	200u	5.0∅	100m	50	∅		20M	1.3	400n#				Y220b	D
70#	BUX85	400m	40	∅	2.0	1.0		450	200u	5.0∅	100m	50	∅		20M	1.3	400n#				Y220b	D
71	D44H11	400m	50	∅	10		5.0	30	10u	1.0∅	2.0	35			50M	125m#	300n#		†	B22	B	
72	D44H21	400m	50	∅	10		5.0	30	10u	1.0∅	2.0	60			50M	125m#	300n#		†	B22	B	
73	D44H41	400m	50	∅	10		5.0	45	10u	1.0∅	2.0	35			50M	125m#	300n#		†	B22	B	
74	D44H51	400m	50	∅	10		5.0	45	10u	1.0∅	2.0	60			50M	125m#	300n#		†	B22	B	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	L C O A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>ce</sub> (V)	V <sub>be</sub> (V)	V <sub>ceo</sub> (V)	I <sub>co</sub> @ 25°C (mA)	V <sub>cb</sub> (V)								
1	SDT1164	400m	50	5	10	3.0	8.0	8.0	400	1.0	5.0	3.0	10	5.0M			D	T088	C0
2	SDT85601	400m	70	5	10	1.0	60	8.0	40	5.0	5.0	5.0	40	40M	120		D	T066	A0
3	SDT85602	400m	70	5	10	1.0	80	8.0	60	5.0	5.0	5.0	40	40M	120		D	T066	A0
4	SDT85603	400m	70	5	10	1.0	100	8.0	80	5.0	5.0	5.0	40	40M	120		D	T066	A0
5	SDT85604	400m	70	5	10	1.0	140	8.0	120	5.0	5.0	5.0	40	40M	120		D	T066	A0
6	SDT85605	400m	70	5	10	1.0	170	8.0	150	5.0	5.0	5.0	40	40M	120		D	T066	A0
7	SDT85606	400m	70	5	10	1.0	80	8.0	40	5.0	5.0	5.0	20	40M			D	T066	A0
8	SDT85607	400m	70	5	10	1.0	80	8.0	60	5.0	5.0	5.0	20	40M			D	T066	A0
9	SDT85608	400m	70	5	10	1.0	100	8.0	80	5.0	5.0	5.0	20	40M			D	T066	A0
10	SDT85609	400m	70	5	10	1.0	140	8.0	120	5.0	5.0	5.0	20	40M			D	T066	A0
11	SDT85610	400m	70	5	10	1.0	170	8.0	150	5.0	5.0	5.0	20	40M			D	T066	A0
12	SP1C14	400m	50	5	7.0	3.0	60	5.0	40	500u*	4.0	3.0	20	70				Y220	
13	ST7530	400m	50	5	3.0		40	5.0	40	10m	1.0	5.0	20	80	2.0M	8.0	D	T111	
14	ST1701	400m	50	5	1.0	250m	800	5.0	600	50m	5.0	150m	20		2.0M		PL	T03	
15	ST1801	400m	50	5	2.0		900	5.0	900	100m	5.0	150m	20		2.0M		PL	T03	
16	TIP542	400m	2.0	5	10	5.0	5.0	5.0	45	2.0M	4.0	5.0	40	200	150M		PE	T059	A
17	TIP543	400m	2.0	5	10	5.0	75	5.0	65	1.0M	4.0	5.0	40	200	120M		PE	T059	A
18	2N5178	401m	70	5	8.0	2.0	55	3.5	35	20m	5.0	200m	10	150	200M			F21	FZ
19	2SC1435	410m	300	5	40		600	5.0	400	1.0M	5.0	1.0	30	300			DM	F27	C0
20	2N3018	416m	25	5	10	2.0	100	4.0	50	100m	5.0	1.0	60				DM	T061	A
21	2SD643*	416m	300	5	30	2.0	300	5.0	200	600u	5.0	30	150				DM	F44	C0
22	2SD644*	416m	300	5	30	2.0	600	5.0	450	600u	5.0	30	150				DM	F44	C0
23	BUW86	42	62	5	10	2.0	150	6.0	120	1.0M	2.0	1.0	35		35M	1.5u	PE	T03	C
24	JAN2N1487	424m	75	5	6.0	3.0	60	10	40	25u	4.0	1.5	15	45	500k		Δ	T03	C0
25	JAN2N1488	424m	75	5	6.0	3.0	100	10	55	25u	4.0	1.5	15	45	500k		Δ	T03	C0
26	JAN2N1489	424m	75	5	6.0	3.0	60	10	40	25u	4.0	1.5	25	75	500k		Δ	T03	C0
27	JAN2N1490	424m	75	5	6.0	3.0	100	10	55	25u	4.0	1.5	25	75	500k		Δ	T03	C0
28	2N2305	424m	75	5	6.0	3.0	60	10	40	200u	4.0	800m	15	60		2.0	D	T03	C0
29	40369	424m	75	5	6.0	3.0	100	10	55	10u	4.0	1.5	25	75		800m	D	T03	C0
30	2N1616A	425m	85	5	7.5	3.0	60	10	60	1.0t	4.0	2.0	20	60		500m	D	T061	A0
31	2N1617A	425m	85	5	7.5	3.0	80	10	70	1.0t	4.0	2.0	20	60		500m	D	T061	A0
32	2N1618A	425m	85	5	7.5	3.0	100	10	80	1.0t	4.0	2.0	20	60		500m	D	T061	A0
33	2N1702	425m	75	5	5.0	2.5	60	6.0	40	200u	4.0	800m	15	60		300k	Δ	F4	C0
34	2N1703	425m	75	5	5.0	2.5	60	6.0	40	200u	4.0	800m	15	60		300k	Δ	T036	C0
35	2N1511	428m	75	5	6.0	3.0	60	10	40	500u	4.0	1.5	15	45	300k			T036	C0
36	2N1512	428m	75	5	6.0	3.0	100	10	55	500u	4.0	1.5	15	45	300k			T036	C0
37	2N1513	428m	75	5	6.0	3.0	60	10	40	500u	4.0	1.5	25	75	300k			T036	C0
38	2N1514	428m	75	5	6.0	3.0	100	10	55	500u	4.0	1.5	25	75	300k			T036	C0
39	BUY70A	428m	75	5	10	3.0	1.0k	8.0	400	1.0M	1.0	1.0	15		6.0M	1.0u		T03	C0
40	BUY70B	428m	75	5	10	3.0	800	8.0	325	1.0M	1.0	1.0	15		6.0M	1.2		T03	C0
41	BUY70C	428m	75	5	10	3.0	500	8.0	200	1.0M	1.0	1.0	15		6.0M	1.2		T03	C0
42	MRF216	428m	75	5	6.0		36	4.0	18	2.5m	5.0	1.0	5.0		175M			W65	S
43	2N1487	429m	75	5	6.0	3.0	60	10	60	25u	4.0	1.5	15	45	1.0M	2.0	D	F4	C0
44	2N1488	429m	75	5	6.0	3.0	100	10	100	25u	4.0	1.5	15	45	1.0M	2.0	D	F4	C0
45	2N1489	429m	75	5	6.0	3.0	60	10	60	25u	4.0	1.5	25	75	1.0M	670m	D	F4	C0
46	2N1490	429m	75	5	6.0	3.0	100	10	100	25u	4.0	1.5	25	75	1.0M	670m	D	F4	C0
47	2N6456	429m	75	5	12		45	3.0	25	5.0u	5.0	4.0	10	80	60M			T111	R
48	2N6458	429m	75	5	7.0		45	3.0	25	5.0u	5.0	2.0	10	80	75M			W52	R
49	2N3054A	430m	75	5	6.0	2.0	90	7.0	60	1.0M	5.0	500m	25	150	30k	2.0		F4e	C0
50	2N4231A	430m	75	5	3.0	1.0	40	5.0	40	50u	2.0	1.5	25	100	4.0M			T066	C0
51	2N4232A	430m	75	5	3.0	1.0	60	5.0	60	50u	2.0	1.5	25	100	4.0M			T066	C0
52	2N4233A	430m	75	5	3.0	1.0	80	5.0	80	50u	2.0	1.5	25	100	4.0M			T066	C0
53	MJ3248	430m	75	5	8.0	2.0				10u	150						NA	T066	C0
54	MJ4248	430m	75	5	8.0	2.0				10u	150						NA	T03	C0
55	MRF239	430m	75	5	6.0		36	4.0	16	5.0	5.0	4.0	20	150				T93f	R
56	2SC1512*	434m	65	5	5.0		50	4.0	25	3.0M	10	700m	15	200			E	W55b	R
57	2SD621	434m	50	5	3.0		2.5k	6.0	900	50u	10	1.5	5.0	25			E	T03	C0
58	BD301	440m	55	5	8.0		60	5.0	45	1.0M	2.0	3.0	30		3.0M	333m	E	Y220b	D0
59	BD303	440m	55	5	8.0		60	5.0	60	1.0M	2.0	2.0	30	120	3.0M	333m	E	Y220b	D0
60	2N2101	450m	75	5	3.0	3.0	60	10	40	30u	1.5	1.0	15	60				T10	A0
61	SVT7520†	450m	100	5	8.0	2.0	750		350	500u	3.0	3.0	10	#	13M	500n		Y204a	C0
62	SVT7521†	450m	100	5	8.0	2.0	800		400	500u	3.0	3.0	10	#	13M	500n		Y204a	C0
63	SVT7522†	450m	100	5	8.0	2.0	850		450	500u	3.0	3.0	10	#	13M	500n		Y204a	C0
64	SVT7523†	450m	100	5	8.0	2.0	450		350	500u	3.0	3.0	10	#	13M	500n		Y204a	C0
65	SVT7524†	450m	100	5	8.0	2.0	500		400	500u	3.0	3.0	10	#	13M	500n		Y204a	C0
66	SVT7525†	450m	100	5	8.0	2.0	550		450	500u	3.0	3.0	10	#	13M	500n		Y204a	C0
67	2N2908	454m	45	5	5.0	2.0	80	10	80	1.0	1.0	1.0	12	20	1.0M	10		T053	
68	2SC1111†	454m	50	5	6.0	3.0	140	12	80	1.0	4.0	3.0	30	150	10M	500m	D	T03	C0
69	2SC1112†	454m	50	5	6.0	3.0	160	12	100	1.0	4.0	3.0	30	150	10M	500m	D	T03	C0
70	2SC1454	454m	50	5	6.0	1.0	300	6.0	250	1.0M	5.0	1.0	20		10M	2.5	D	T03	C0
71	2SC1618	454m	50	5	6.0	3.0	80	6.0	60	1.0M	4.0	3.0	20	180	10M		DM	T03	C0
72	2SC1619	454m	50	5	6.0	3.0	100	6.0	80	1.0M	4.0	3.0	20	180	10M		DM	T03	C0
73	2SC1619A	454m	50	5	6.0	3.0	120	6.0	100	1.0M	4.0	3.0	20		10M	500m	ME	T03	C0
74	C40-28	454m	80	5	4.0		40	33							400M			T91	R
75	PT6944†	454m	80	5	4.0		120	8.0	70		5.0	3.0	40	200	100M	133m		T03	C0
76	PT6945†	454m	80	5	4.0		160	8.0	100		5.0	3.0	40	200	100M	166m		T03	C0
77	PT6946†	454m	80	5	4.0		200	8.0	140		5.0	3.0	30	150	100M	200m		T03	C0
78	SD1224-10	454m	80	5	4.5		65	4.0	36	5.0M	5.0	1.0	10				EPL	T72n	
79	SD1285	454m	80	5	4.5		36	4.0	18	5.0M									

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo Vcbo @ 25°C (A)	BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C E O A D E
						Ic (A)	Ib (A)	Vcbo (V)	Vcbo (V)	Vcbo (V)		Icbo Vcbo (A)	Ic (V)								
1#	2SD858	480m	60	5.0	5.0	5.0	5.0	5.0	5.0	700uΔ	4.0	1.0	40	250		1.6	PL	B38	D		
2#	2SD858A	480m	60	5.0	5.0	5.0	5.0	5.0	5.0	700uΔ	4.0	1.0	40	250		1.6	PL	B38	D		
3#	2SD858B	480m	60	5.0	5.0	5.0	5.0	5.0	5.0	700uΔ	4.0	1.0	40	250		1.6	PL	B38	D		
4#	2SD1032	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	700uΔ	4.0	1.0	40	250		1.4uT	PL	B38	D		
5#	2SD1032A	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	700uΔ	4.0	1.0	40	250		1.4uT	PL	B38	D		
6#	BD201	480m	60	8.0	8.0	8.0	8.0	8.0	8.0	1.0m	2.0	2.0	30	#	25kΔ	333m#	Et	Y220b	D		
7#	BD201#	480m	60	8.0	8.0	8.0	8.0	8.0	8.0	1.0m	2.0	2.0	30	#	3.0MΔ	333m#	Et	Y220b	D		
8#	BD203	480m	60	8.0	8.0	8.0	8.0	8.0	8.0	1.0m	2.0	2.0	30	#	25kΔ	333m#	Et	Y220b	D		
9#	BD203#	480m	60	8.0	8.0	8.0	8.0	8.0	8.0	1.0m	2.0	2.0	30	#	25kΔ	333m#	Et	Y220b	D		
10#	BD291	480m	60	6.0	6.0	6.0	6.0	6.0	6.0	1.0m	2.0	2.0	30	#	3.0MΔ	330m	Et	B13	D		
11#	BD293	480m	60	6.0	6.0	6.0	6.0	6.0	6.0	1.0m	2.0	2.0	30	#	3.0MΔ	330m	Et	B13	D		
12#	BD295	480m	60	6.0	6.0	6.0	6.0	6.0	6.0	1.0m	2.0	2.0	30	#	3.0MΔ	330m	Et	B13	KE		
13#	BD347	480m	60	8.0	8.0	8.0	8.0	8.0	8.0	1.0u	2.5	2.0	40	140	4.0MΔ	25kΔ	ME	Y220b	D		
14#	BDX77	480m	60	8.0	8.0	8.0	8.0	8.0	8.0	1.0m	2.0	2.0	40	30	25kΔ	333m#	Et	Y220b	D		
15#	BU406	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	5.0	10	10	10MΔ	200m	750nT	PEΔ	Y220b	D	
16#	BU406D	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.2	5.0	10	10	10MΔ	200m	750nT	PEΔ	Y220b	D	
17#	BU406H	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	5.0	10	10	10MΔ	200m	400nT	PEΔ	Y220b	D	
18#	BU407	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	5.0	10	10	10MΔ	200m	750nT	PEΔ	Y220b	D	
19#	BU407D	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.2	5.0	10	10	10MΔ	200m	750nT	PEΔ	Y220b	D	
20#	BU407H	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	5.0	10	10	10MΔ	200m	400nT	PEΔ	Y220b	D	
21#	BU408	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	6.0	5.0	5.0	10MΔ	200m	400nT	PEΔ	Y220b	D	
22#	BU408D	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	6.0	5.0	5.0	10MΔ	200m	750nT	PEΔ	Y220b	D	
23#	BU409	480m	60	7.0	7.0	7.0	7.0	7.0	7.0	5.0m	1.0	3.0	7.5	7.5	10MΔ	333m	750nT	PE	Y220b	D	
24#	IR660	480m	60	3.5	3.5	3.5	3.5	3.5	3.5	2.0	2.0	5.0	30	90	2.5M	800m	250n	D	T066	D	
25#	IR663	480m	60	3.5	3.5	3.5	3.5	3.5	3.5	2.0	4.0	5.0	30	90	2.5M	800m	250n	D	T066	D	
26#	IR665	480m	60	3.5	3.5	3.5	3.5	3.5	3.5	2.0	7.0	5.0	30	90	2.5M	800m	250n	D	T066	D	
27#	MJE521K	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	100u	1.0	1.0	40	#	2.0M	800m	250n	D	B23	D	
28#	MJE2480	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	100u	4.0	1.5	20	100	#	2.0MΔ	5.0	Δ	B23	D	
29#	MJE2481	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	100u	4.0	1.5	20	100	#	2.0MΔ	5.0	Δ	B23	D	
30#	MJE2482	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	100u	4.0	2.5	20	100	#	2.0MΔ	5.0	Δ	B23	D	
31#	MJE2483	480m	60	4.0	4.0	4.0	4.0	4.0	4.0	100u	4.0	2.5	20	100	#	2.0MΔ	5.0	Δ	B23	D	
32#	2N389	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.5	12	60	#	8.5M	5.0	D	T053	A	
33#	2N389A	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.5	12	60	#	1.0MΔ	750m	D	T053	A	
34#	2N424	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	8.0	1.5	12	60	#	6.0M	10	D	T053	A	
35#	2N424A	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	8.0	1.5	12	60	#	1.0MΔ	750m	D	T053	A	
36#	2N1208	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	2.5	2.5	D	T061	A	
37#	2N1209	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	2.5	2.5	D	T061	A	
38#	2N1212	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	3.0MΔ	5.0	D	T061	A	
39#	2N1235	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	50k	50k	D	T053	A	
40#	2N1250	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	3.0MΔ	2.5	D	F32	A	
41#	2N2032	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	3.0MΔ	2.5	D	F32	A	
42#	2N6200	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	6.0	4.0	3.5	20	20	#	2.0mst	2.0	D	T91	R	
43#	2S721	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	6.0	1.0	15	15	#	1.5	1.0	D	F33	D	
44#	2S722	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	100	10	100	20	60	#	3.0M	5.0	D	F33	D	
45#	2S723	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	60	10	60	40	120	#	3.0M	3.0	D	F33	D	
46#	2S724	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	100	10	100	40	120	#	3.0M	3.0	D	F33	D	
47#	BU134	485m	85	5.0	5.0	5.0	5.0	5.0	5.0	1.0	500	1.0	30	120	#	10MΔ	333m#	DMΔ	T03	C	
48#	MRF825	485m	85	6.0	6.0	6.0	6.0	6.0	6.0	36	4.0	16	150	150	#	2.0m	1.0u	DMΔ	W30	S	
49#	JAN2N389	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	8.0	10	6.0	15	60	#	5.0	10	D	T053	A	
50#	JAN2N424	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	8.0	10	6.0	15	60	#	10	10	D	T053	A	
51#	2N20331	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	8.0	10	6.0	15	60	#	1.0MΔ	800m	D	T05	A	
52#	2N20341	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	8.0	10	6.0	15	60	#	1.0MΔ	300m	D	T05	A	
53#	2N2383	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	8.0	8.0	6.0	20	60	#	3.0M	670m	D	F33	A	
54#	2N2384	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	8.0	8.0	6.0	20	60	#	3.0M	900m	D	T10	A	
55#	JAN2N28121	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	10	6.0	40	120	#	15MΔ	350n	D	T061	A	
56#	JAN2N28141	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	10	6.0	40	120	#	15MΔ	350n	D	T061	A	
57#	2N4301	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	10	10	6.0	40	120	#	4.0MΔ	350n	D	T061	A	
58#	2N43951	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	900m	6.0	4.0	40	100	#	4.0MΔ	180m	D	T03	C	
59#	2N43961	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	900m	6.0	4.0	40	100	#	4.0MΔ	180m	D	T03	C	
60#	2N4913	500m	88	5.0	5.0	5.0	5.0	5.0	5.0	1.0	4.0	5.0	25	100	#	4.0MΔ	100	D	T03	C	
61#	2N4914	500m	88	5.0	5.0	5.0	5.0	5.0	5.0	1.0	6.0	5.0	25	100	#	4.0MΔ	100	D	T03	C	
62#	2N4915	500m	88	5.0	5.0	5.0	5.0	5.0	5.0	1.0	8.0	5.0	25	100	#	4.0MΔ	100	D	T03	C	
63#	2N5067	500m	88	5.0	5.0	5.0	5.0	5.0	5.0	1.0	4.0	5.0	20	80	#	4.0MΔ	100	D	T03	C	
64#	2N5068	500m	88	5.0	5.0	5.0	5.0	5.0	5.0	1.0	6.0	5.0	20	80	#	4.0MΔ	100	D	T03	C	
65#	2N5069	500m	88	5.0	5.0	5.0	5.0	5.0	5.0	1.0	8.0	5.0	20	80	#	4.0MΔ	100	D	T03	C	
66#	2N52181	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	1.0	220	8.0	20	120	#	4.0MΔ	600n	D	T061	A	
67#	2N52641	500m	87	5.0	5.0	5.0	5.0	5.0	5.0	1.0	400	5.0	30	300	#	5.0MΔ	178m	D	T03	C	
68#	2N53131	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	2.5	8.0	6.0	80	90	#	3.0MΔ	500	D	T061	A	
69#	2N53151	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	2.5	100	6.0	100	90	#	3.0MΔ	500	D	T061	A	
70#	2N53171	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	2.0	8.0	6.0	80	90	#	3.0MΔ	400	D	T061	A	
71#	2N53191	500m	85	5.0	5.0	5.0	5.0	5.0	5.0	2.0	100	6.0	100	90	#	3.0MΔ	400	D	T061	A	
72#	2N55401	500m	85	5.0																	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L O D E	
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)		Vcb (V)	Ic (A)									
1	1718-0805	500m	50	80	10	10	2.0	80	7.0	80	200u	2.0	5.0	20		40MΔ	120m	400n	EM	T081	A	
2	1718-10021	500m	50	100	10	10	2.0	100	7.0	100	200u	2.0	5.0	20		40MΔ	250m	300n	EM	T061	A	
3	1718-10051	500m	50	100	10	10	2.0	100	7.0	100	200u	2.0	5.0	20		40MΔ	120m	400n	EM	T061	A	
4	1718-12021	500m	50	120	10	10	2.0	120	7.0	120	200u	2.0	5.0	20		40MΔ	250m	300n	EM	T081	A	
5	1718-12051	500m	50	120	10	10	2.0	120	7.0	120	200u	2.0	5.0	20		40MΔ	120m	400n	EM	T061	A	
6	1718-14021	500m	50	140	10	10	2.0	140	7.0	140	200u	2.0	5.0	20		40MΔ	250m	300n	EM	T061	A	
7	1718-14051	500m	50	140	10	10	2.0	140	7.0	140	200u	2.0	5.0	20		40MΔ	120m	400n	EM	T081	A	
8	1718-16021	500m	50	160	10	10	2.0	160	7.0	160	200u	2.0	5.0	20		40MΔ	250m	300n	EM	T061	A	
9	1718-16051	500m	50	160	10	10	2.0	160	7.0	160	200u	2.0	5.0	20		40MΔ	120m	400n	EM	T061	A	
10	1718-18021	500m	50	180	10	10	2.0	180	7.0	180	200u	2.0	5.0	20		40MΔ	250m	300n	EM	T081	A	
11	1718-18051	500m	50	180	10	10	2.0	180	7.0	180	200u	2.0	5.0	20		40MΔ	120m	400n	EM	T061	A	
12	B40-28	500m	85	4.0	8.5			4.0	35							175m				T91	A	
13	BLX14*	500m	88	4.0	8.5			4.0	38			8.0	1.4	15	100	250m				T081	V	
14	BR300A	500m	50	8.0	20			8.0	60	3.0	50	5.0	1.0	50		100m			#	T061	A	
15	BR300B	500m	50	8.0	20			8.0	60	3.0	50	5.0	1.0	50		100m			#	T061	A	
16	BR301A	500m	50	8.0	20			8.0	90	3.0	70	5.0	1.0	30		100m			#	T081	A	
17	BR301B	500m	50	8.0	20			8.0	90	3.0	70	5.0	1.0	30		100m			#	T061	A	
18	BR400A	500m	50	25	25			8.0	60	5.0	50	5.0	5.0	60					#	T061	A	
19	BR400B	500m	50	25	25			8.0	80	5.0	50	5.0	5.0	60					#	T081	A	
20	BR401A	500m	50	25	25			9.0	75	5.0	50	5.0	5.0	60					#	T061	A	
21	BR401B	500m	50	25	25			9.0	75	5.0	50	5.0	5.0	60					#	T061	A	
22	BU104	500m	85	7.0	7.0	1.0	3.0	400	10	150	500u	3.5	5.0	10	50	10M	1.0u	DM	T03	CC		
23	BU104Z	500m	85	7.0	7.0	1.0	3.0	400	10	150	500u	1.8	5.0	10	50	10M	1.0u	DM	T03	CC		
24	BU109DZ	500m	85	7.0	7.0	1.0	3.0	400	10	150	500u	2.5	7.0	7.0		10M	0.8u	DM	T03	CC		
25	BU113	500m	85	7.0	7.0	1.0	4.0	700	10	700	2.0m	2.0	8.0	7.0	#	6.0M	1.0u	DM	T03	CC		
26	BU114	500m	85	7.0	7.0	1.0	4.0	700	10	700	2.0m	2.0	8.0	7.0	#	6.0M	1.0u	DM	T03	CC		
27	BU129	500m	25	5.0	1.0	4.0	1.0	400	10	400	500u	1.5	3.0	20	#	20M	10M	DM	T03	CC		
28	BU205Z	50	10	2.5	-1	5.0	7.0	400	5.0	700	1.0m	5.0	2.0	2.0	#	5.0M	200m	DM	T03	CC		
29	BUY1851	500m	50	7.0	4.0	2.0	1.0	400	6.0	200	10u	5.0	1.0	20	40	5.0M	1.0u	PE	T03	CC		
30	KS61171	500m	50	10	2.0	2.0	2.0	100	4.5	100	500u	5.0	5.0	15		150M	35n	PE	T03	CC		
31	KS61181	500m	50	10	2.0	2.0	2.0	80	4.5	80	500u	5.0	5.0	15		150M	35n	PE	T03	CC		
32	KS61191	500m	50	10	2.0	2.0	2.0	40	4.5	40	500u	5.0	5.0	15		150M	35n	PE	T03	CC		
33	KSP1101	500m	50	10	2.0	2.0	2.0	225	8.0	200	10u	5.0	5.0	20	60	50M	40n	PE	T061	CC		
34	KSP1102	500m	50	10	2.0	2.0	2.0	250	8.0	225	10u	5.0	5.0	20	60	50M	40n	PE	T081	CC		
35	KSP1103	500m	50	10	2.0	2.0	2.0	275	8.0	250	10u	5.0	5.0	20	60	50M	40n	PE	T061	CC		
36	KSP1104	500m	50	10	2.0	2.0	2.0	300	8.0	275	10u	5.0	5.0	20	60	50M	40n	PE	T061	CC		
37	KSP1105	500m	50	10	2.0	2.0	2.0	325	8.0	300	10u	5.0	5.0	20	60	50M	40n	PE	T081	CC		
38	KSP1151	500m	50	10	2.0	2.0	2.0	60	8.0	40	1.0u	5.0	5.0	20	60	60M	40n	PE	T061	CC		
39	KSP1152	500m	50	10	2.0	2.0	2.0	100	8.0	80	1.0u	5.0	5.0	20	60	60M	40n	PE	T061	CC		
40	KSP1153	500m	50	10	2.0	2.0	2.0	140	8.0	120	1.0u	5.0	5.0	20	60	60M	40n	PE	T061	CC		
41	KSP1154	500m	50	10	2.0	2.0	2.0	60	8.0	40	1.0u	5.0	5.0	20	60	60M	40n	PE	T061	CC		
42	KSP1155	500m	50	10	2.0	2.0	2.0	100	8.0	80	1.0u	5.0	5.0	20	60	60M	40n	PE	T061	CC		
43	KSP1156	500m	50	10	2.0	2.0	2.0	140	8.0	120	1.0u	5.0	5.0	20	60	60M	40n	PE	T081	CC		
44	MJ480	500m	5.0	4.0	1.0	4.0	1.0	40	5.0	40	1.0m	2.0	1.0	30	200	4.0MΔ	400m			T03	CC	
45	MJ481	500m	5.0	4.0	1.0	4.0	1.0	80	5.0	60	1.0m	2.0	1.0	30	200	4.0MΔ	400m			T03	CC	
46	MRF344	500m	87	6.0	#	5.0	#	65	4.0	35	5.0m	5.0	2.0	10	80					B61	Y	
47	MRF477	500m	87	5.0	#	5.0	#	36	4.0	18	10u	5.0	2.0	20	70					B61	Y	
48	MRF486	500m	87	3.0	#	3.0	#	65	4.0	35	10m	5.0	2.0	10	40					B61	Y	
49	MRF497	500m	87	3.0	#	3.0	#	36	4.0	18	10u	5.0	2.0	20	70					B61	Y	
50	PPR1010s	500m	50	25	25	2.0	1.0	60	5.0	50	5.0	5.0	10	60						T061	A	
51	PPR1011s	500m	50	25	25	2.0	1.0	80	5.0	50	5.0	5.0	10	60						T061	A	
52	PPR1012s	500m	50	25	25	2.0	1.0	90	5.0	75	5.0	5.0	10	60						T081	A	
53	PPR1013s	500m	50	25	25	2.0	1.0	90	5.0	75	5.0	5.0	10	60						T081	A	
54	RCA1E02	500m	35	2.0	2.0	2.0	2.0	200	5.0	175	100u*	2.0	300m	30	150			E	T066	CC		
55	SDT32011	500m	87	2.0	5.0	5.0	5.0	40	6.0	40	10u	5.0	5.0	30	90	30MΔ	500n	PE	T081	A		
56	SDT32021	500m	87	2.0	5.0	5.0	5.0	60	6.0	60	10u	5.0	5.0	30	90	30MΔ	500n	PE	T081	A		
57	SDT32031	500m	87	2.0	5.0	5.0	5.0	80	6.0	80	10u	5.0	5.0	30	90	30MΔ	500n	PE	T081	A		
58	SDT32041	500m	87	2.0	5.0	5.0	5.0	100	6.0	100	10u	5.0	5.0	30	90	30MΔ	500n	PE	T081	A		
59	SDT32051	500m	87	2.0	5.0	5.0	5.0	40	6.0	40	10u	5.0	5.0	30	90	30MΔ	300n	PE	T081	A		
60	SDT32061	500m	87	2.0	5.0	5.0	5.0	60	6.0	60	10u	5.0	5.0	30	90	30MΔ	300n	PE	T081	A		
61	SDT32071	500m	87	2.0	5.0	5.0	5.0	80	6.0	80	10u	5.0	5.0	30	90	30MΔ	300n	PE	T081	A		
62	SDT32081	500m	87	2.0	5.0	5.0	5.0	100	6.0	100	10u	5.0	5.0	30	90	30MΔ	300n	PE	T081	A		
63	SDT32091	500m	87	2.0	5.0	5.0	5.0	120	6.0	120	10u	5.0	5.0	30	90	30MΔ	300n	PE	T081	A		
64	SDT7011	500m	87	2.0	5.0	5.0	5.0	60	5.0	40	1.0u	5.0	5.0	20	60	15MΔ		PL	T081	A		
65	SDT7012	500m	87	2.0	5.0	5.0	5.0	80	5.0	60	1.0u	5.0	5.0	20	60	15MΔ		PL	T081	A		
66	SDT7013	500m	87	2.0	5.0	5.0	5.0	100	5.0	80	1.0u	5.0	5.0	20	60	15MΔ		PL	T081	A		
67	SDT7014	500m	87	2.0	5.0	5.0	5.0	80	5.0	40	1.0u	5.0	5.0	40	120	15MΔ		PL	T081	A		
68	SDT7015	500m	87	2.0	5.0	5.0	5.0	80	5.0	60	1.0u	5.0	5.0	40	120	15MΔ		PL	T081	A		
69	SDT7016	500m	87	2.0	5.0	5.0	5.0	100	5.0	80	1.0u	5.0	5.0	40	120	15MΔ		PL	T081	A		
70	SDT7017	500m	87	2.0	5.0	5.0	5.0	80	5.0	40	1.0u	5.0	5.0	100	#	15MΔ		PL	T081	A		
71	SDT7018	500m	87	2.0	5.0	5.0	5.0	80	5.0	60	1.0u	5.0	5.0	100	#	15MΔ		PL	T081	A		
72	SDT7019	500m	87	2.0	5.0	5.0	5															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. ICB @ MAX Vcb @ 25°C		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (t)	tr (s)	STRUCTURE	Y200 s/a TO200 Ser.	L E O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vbeo (V)	Vceo (V)	Icbo (A)	Icbo (V)	MIN (A)	MAX						
1	ZSC2858KT	520m	85	85	SJ	6.0	3.0	500	4.0	400	100u	5.0	4	15				F53	D	
2	BD2431	520m	85	85	SJ	6.0	3.0	5.0	4.0	45	400u	4.0	300m	30	3.0M	250m	300n	D	B1	
3	BD243A1	520m	85	85	SJ	6.0	3.0	5.0	4.0	60	400u	4.0	300m	30	3.0M	250m	300n	D	B1	
4	BD243B1	520m	85	85	SJ	6.0	3.0	5.0	4.0	80	400u	4.0	300m	30	3.0M	250m	300n	D	B1	
5	BD243C1	520m	85	85	SJ	6.0	3.0	5.0	4.0	100	400u	4.0	300m	30	3.0M	250m	300n	D	B1	
6	HEP53060-RT	520m	85	85	SJ	6.0		100	5.0	100	500u	3.0	40	∅	3.0M			D	Y220b	
7	HEP53061-RT	520m	85	85	SJ	6.0		60	5.0	60	500u	3.0	40	∅	3.0M			D	Y220b	
8	MRF222	520m	85	85	SS	4.0		36	4.0	18	1.0m	5.0	1.0	5.0				D	W52h	
9	MRF223	520m	85	85	SS	4.0		36	4.0	18	1.0m	5.0	1.0	5.0				D	W52h	
10	RCA411	520m	2.0	2.0	SJ	7.0	3.0	40	5.0	40	700u	4.0	3.0	15	75 #	3.0M	600n	E	Y220b	
11	RCA41A1	520m	2.0	2.0	SJ	7.0	3.0	60	5.0	60	700u	4.0	3.0	15	75 #	3.0M	600n	E	Y220b	
12	RCA41B1	520m	2.0	2.0	SJ	7.0	3.0	80	5.0	80	700u	4.0	3.0	15	75 #	3.0M	600n	E	Y220b	
13	RCA41C1	520m	2.0	2.0	SJ	7.0	3.0	100	5.0	100	700u	4.0	3.0	15	75 #	3.0M	600n	E	Y220b	
14	SP41	520m	65	65	SJ	7.0	3.0	40	5.0	40	400u	4.0	3.0	15	#	150	1.4u			
15	TIP411	520m	2.0	2.0	SJ	6.0	3.0	40	5.0	40	700u	4.0	3.0	15	75 #	3.0M		DM	B1	
16	TIP41Z1	520m	2.0	2.0	SJ	7.0	3.0	40	5.0	40	400u	4.0	3.0	15	150 #	3.0M	333m	E	Y220b	
17	TIP41A1	520m	2.0	2.0	SJ	6.0	3.0	60	5.0	60	700u	4.0	3.0	15	75 #	3.0M	600n	DM	B1	
18	TIP41AZ1	520m	2.0	2.0	SJ	7.0	3.0	60	5.0	60	400u	4.0	3.0	15	150 #	3.0M	333m	E	Y220b	
19	TIP41B1	520m	2.0	2.0	SJ	6.0	3.0	80	5.0	80	700u	4.0	3.0	15	75 #	3.0M	600n	DM	B1	
20	TIP41BZ1	520m	2.0	2.0	SJ	7.0	3.0	80	5.0	80	400u	4.0	3.0	15	150 #	3.0M	333m	E	Y220b	
21	TIP41C1	520m	2.0	2.0	SJ	6.0	3.0	100	5.0	100	700u	4.0	3.0	15	75 #	3.0M	600n	DM	B1	
22	TIP41CZ1	520m	2.0	2.0	SJ	7.0	3.0	100	5.0	100	400u	4.0	3.0	15	150 #	3.0M	333m	E	Y220b	
23	TIP751	520m	65	65	SJ	3.0	1.5	350	8.0	200	150u	5.0	500m	30 #	250 #	10M	1.0 #	DM	Y220b	
24	TIP75A1	520m	65	65	SJ	3.0	1.5	400	8.0	250	150u	5.0	500m	30 #	250 #	10M	1.0 #	DM	Y220b	
25	TIP75B1	520m	65	65	SJ	3.0	1.5	450	8.0	300	150u	5.0	500m	30 #	250 #	10M	1.0 #	DM	Y220b	
26	TIP75C1	520m	65	65	SJ	3.0	1.5	500	8.0	400	150u	5.0	500m	30 #	250 #	10M	1.0 #	DM	Y220b	
27	ZSC1051L	521m	80	80	SJ	3.0		100	6.0	80	1.0m	5.0	1.0	40	320	8.0M		D	TO3	
28	TIP41D1	521m	85	85	SJ	6.0	3.0	180	5.0	120	0.7m	4.0	0.3	30 #		3.0M	0.6u	DM	B1	
29	TIP41E1	521m	85	85	SJ	6.0	3.0	180	5.0	140	0.7m	4.0	0.3	30 #		3.0M	0.6u	DM	B1	
30	TIP41F1	521m	85	85	SJ	6.0	3.0	200	5.0	180	0.7m	4.0	0.3	30 #		3.0M	0.6u	DM	B1	
31	BD195	522m	85	85	SJ	6.0	2.5	40	5.0	30	100u	2.0	1.0	30 #		2.0M	333m	E	B16g	
32	BD197	522m	85	85	SJ	6.0	2.5	55	5.0	45	100u	2.0	1.0	30 #		2.0M	333m	E	B16g	
33	BD199	522m	85	85	SJ	6.0	2.5	70	5.0	60	100u	2.0	1.0	30 #		2.0M	333m	E	B16g	
34	BD595	522m	85	85	SJ	8.0	3.0	45	5.0	45	100u	2.0	1.0	40 #		3.0M	333m	E	B16h	
35	BD597	522m	85	85	SJ	8.0	3.0	60	5.0	60	100u	2.0	1.0	40 #		3.0M	333m	E	B16h	
36	BD599	522m	85	85	SJ	8.0	3.0	80	5.0	80	100u	2.0	1.0	30 #		3.0M	333m	E	B16h	
37	BD601	522m	85	85	SJ	8.0	3.0	100	5.0	100	100u	2.0	1.0	30 #		3.0M	333m	E	B16h	
38	MJE205	522m	85	85	SJ	5.0	2.5	50	4.0	50	100u	2.0	2.0	25	100			D	B16d	
39	MJE205K	522m	85	85	SJ	5.0	2.5	50	4.0	50	100u	2.0	2.0	25	100			D	B23	
40	BDW21	526m	90	90	SJ	10	5.0	45	5.0	45	100u	4.0	4.0	15	150	3.0M	250m	E	TO3	
41	BDW21A	526m	90	90	SJ	10	5.0	60	5.0	60	100u	4.0	4.0	15	150	3.0M	250m	E	TO3	
42	BDW21B	526m	90	90	SJ	10	5.0	80	5.0	80	100u	4.0	4.0	15	150	3.0M	250m	E	TO3	
43	BDW21C	526m	90	90	SJ	10	5.0	100	5.0	100	100u	4.0	4.0	15	150	3.0M	250m	E	TO3	
44	BU606	526m	90	90	SJ	7.0	4.0	400	6.0	200	5.0m	1.0	5.0	7.7		10M	200m	PE	TO3	
45	BU606D	526m	90	90	SJ	7.0	4.0	400	6.0	200	5.0m	1.5	5.0	7.7		10M	300m	PE	TO3	
46	BU607	526m	90	90	SJ	7.0	4.0	330	6.0	200	5.0m	1.0	4.0	8.0		10M	250m	PE	TO3	
47	BU607D	526m	90	90	SJ	7.0	4.0	330	6.0	200	5.0m	1.0	4.0	8.0		10M	375m	PE	TO3	
48	BU608	526m	90	90	SJ	7.0	4.0	400	6.0	200	5.0m	1.5	7.0	4.3		10M	214m	PE	TO3	
49	BU608D	526m	90	90	SJ	7.0	4.0	400	6.0	200	5.0m	2.0	7.0	4.3		10M	285m	PE	TO3	
50	2N3551D	530m	1.2	1.2	SJ	12	5.0	115	7.0	60	2.0	10	20	90 #	40M		300n	E	W39a	
51	2N3552	530m	1.2	1.2	SJ	12	5.0	140	7.0	80	2.0	10	20	90 #	40M		300n	E	W39a	
52	2N5862	533m	80	80	SS	8.0		65	4.0	35	2.0m	5.0	3.0	5.0		50M	750m	PE	W52r	
53	ZSC1763	533m	80	80	SJ	8.0		65	4.0	35	3.0m	5.0	3.0	20 #	180 #	200M		PE		
54	ZSC2039	533m	80	80	SJ	8.0		70	4.0	38	1.0m	28	1.0	20 #	180 #	200M		PE		
55	ZSC2292	533m	80	80	SJ	8.0	4.0	500	7.0	400	100u	2.0	4.0	15	20	175m	700n	E	F4u	
56	ZSC25031	533m	80	80	SJ	8.0	4.0	500	7.0	400	100u	2.0	4.0	15	20	175m	700n	E	B57	
57	ZSC25061	533m	80	80	SJ	6.0	2.0	500	7.0	400	100u	2.0	3.0	15	20	230m	700n	E	F5d	
58	MM1553	533m	80	80	SJ	8.0		100	4.0	70	2.0m	5.0	2.0	15		5.0	700n	E	T80	
59	TIP65	533m	40	40	SJ	15	1.0	10	10	600	10	1.0	1.0	35	∅		0.8u	EM	B3	
60	BUW44	55	175	175	SJ	15		10	10	10	500u	5.0	1.0	35	∅		0.8u	EM	TO3	
61	BUW45	55	175	175	SJ	15		10	10	10	500u	5.0	1.0	35	∅		0.8u	EM	TO3	
62	BUW46	55	175	175	SJ	15		10	10	10	500u	5.0	1.0	35	∅		0.8u	EM	TO3	
63	ZSC2485	560m	70	70	SJ	6.0		100	5.0	80	50u	5.0	1.0	200		15M		DM	B38	
64	ZSC2825	560m	70	70	SJ	6.0	3.0	80	6.0	80	100u	4.0	1.0	500	3.0k	35M		DM	B62	
65	2SD587	560m	70	70	SJ	6.0		120	5.0	100	50u	5.0	1.0	40 #	*	10M		DM	B33	
66	2SD587A	560m	70	70	SJ	6.0		120	5.0	120	50u	5.0	1.0	40 #	*	17M		DM	B66	
67	2SD849	560m	70	70	TJ	3.0		1.5k	5.0	600	100u									



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)		MIN	MAX	MIN						
1	SCC321	571m	100	5A	10	4.0	1.5	275	6.0	275	1.0m	4.0	3.0	20	100	333m	1.5u	DME	T03	CC
2	2N5838†	572m	57	5J	3.0	1.5	300	6.0	300	1.0m	2.0	2.0	8.0	40	5.0MΔ	1.5u		T03	CC	
3	2N5839†	572m	57	5J	3.0	1.5	300	6.0	300	1.0m	2.0	2.0	10	50	5.0MΔ	1.5u		T03	CC	
4	2N5840†	572m	57	5J	3.0	1.5	375	6.0	375	1.0m	3.0	2.0	10	50	5.0MΔ	1.7u		T03	CC	
5	2N6542†	572m	100	5J	5.0 †	5.0	650 †	8.0†	300 †	3.0m	2.0	3.0	7.0	35	6.0MΔ	700n		T03	CC	
6	2N6543†	572m	100	5J	5.0 †	5.0	850 †	8.0†	400 †	2.0m	2.0	3.0	7.0	35	6.0MΔ	333m		T03	CC	
7	2N6589†	572m	100	5J	12	5.0	45	5.0	40	3.0m	3.0	4.0	15	200	1.5MΔ	1.5u		T03	CC	
8	ET6542†	572m	100	5J	5.0	5.0	500	8.0	.00	3.0m*	2.0	3.0	7	35	28MΩ	700n	DM	T03	CC	
9	ET6543†	572m	100	5J	5.0	5.0	650	8.0	400	3.0m*	2.0	3.0	7	35	28MΩ	700n	DM	T03	CC	
10	IR6542†	572m	100	5J	5.0	5.0	500	9.0	350	500n	2.0	1.5	12	60	24MΩ	800n	D	T03	CC	
11	IR6543†	572m	100	5J	5.0	5.0	600	9.0	400	500n	2.0	3.0	7.0	35	24MΩ	800n	D	T03	CC	
12	2N4347	577m	100	5J	5.0	3.0	140 †	7.0†	120	200mΔ	4.0	2.0	15	60	3.0	200		T03	CC	
13	BLW80*	588m	88	5J	8.0	5.0	36	4.0	18	5.0	1.0	1.0	20	50	550M	750m	PE	T03	CC	
14#	BD663	598m	75	5J	10	5.0	45	5.0	45	1.0mΔ	2.0	2.0	20	250	3.5M	250m	E	Y220b	DB	
15#	BD705	598m	75	5J	12	5.0	45	5.0	45	1.0m*	4.0	4.0	20	150	3.0MΔ	250m	E	Y220b	DB	
16#	BD707	598m	75	5J	12	5.0	60	5.0	60	1.0m*	4.0	4.0	15	150	3.0MΔ	250m	E	Y220b	DB	
17#	BD709	598m	75	5J	12	5.0	80	5.0	80	1.0m*	4.0	4.0	15	150	3.0MΔ	250m	E	Y220b	DB	
18#	BD711	598m	75	5J	12	5.0	100	5.0	100	1.0m*	4.0	4.0	15	150	2.0MΔ	250m	E	Y220b	DB	
19#	BU328S	598m	60	5J	6.0	3.0	7.0	7.0	800	1.0m	5.0	4.0	3.5	70	2.0M	600n	PE	T03	CC	
20#	BUX971	598m	60	5J	6.0	3.0	7.0	7.0	350	1.0m	5.0	1.0	10	70	2.0M	600n	PE	T03	CC	
21#	BUX97A†	598m	60	5J	6.0	3.0	7.0	7.0	400	1.0m	5.0	1.0	10	70	2.0M	600n	PE	T03	CC	
22#	BUX97B†	598m	60	5J	6.0	3.0	7.0	7.0	450	1.0m	5.0	1.0	10	70	2.0M	600n	PE	T03	CC	
23	RCA3055	598m	75	5J	15	4.0	100	7.0	60	700uΔ	4.0	4.0	20	70	800kΔ	800n	PE	Y220b	CC	
24	2N5977	600m	75	5J	5.0	2.0	60 †	5.0†	40	1.0mΔ	2.0	2.5	20	120	2.0MΔ	250m	H	B16a	DB	
25	2N5978	600m	75	5J	5.0	2.0	80 †	5.0†	60	1.0mΔ	2.0	2.5	20	120	2.0MΔ	250m	H	B16a	DB	
26	2N5979	600m	75	5J	5.0	2.0	100 †	5.0†	80	1.0mΔ	2.0	2.5	20	120	2.0MΔ	250m	H	B16a	DB	
27	2N6098	600m	75	5J	10	4.0	70 †	8.0†	60	2.0mΔ	4.0	4.0	20	80	2.0MΔ	250m	H	Y220a	DB	
28	2N6099	600m	75	5J	10	4.0	70 †	8.0†	60	2.0mΔ	4.0	4.0	20	80	2.0MΔ	250m	H	Y220b	DB	
29	2N6100	600m	75	5J	10	4.0	80 †	8.0†	70	2.0mΔ	4.0	5.0	20	80	2.0MΔ	250m	H	Y220a	DB	
30	2N6101	600m	75	5J	10	4.0	80 †	8.0†	70	2.0mΔ	4.0	5.0	20	80	2.0MΔ	250m	H	Y220b	DB	
31	2N6102	600m	75	5J	16	4.0	45 †	5.0†	40	2.0mΔ	4.0	8.0	15	60	1.0m	156m	H	Y220a	DB	
32	2N6103	600m	75	5J	16	4.0	45 †	5.0†	40	2.0mΔ	4.0	8.0	15	60	1.0m	156m	H	Y220b	DB	
33	2N6486	600m	30	5J	15 †	5.0	50 †	5.0†	50	1.0mΔ	4.0	5.0	20	150	5.0MΔ	233m	H	Y220b	DB	
34	2N6487	600m	30	5J	15 †	5.0	70 †	5.0†	70	1.0mΔ	4.0	5.0	20	150	5.0MΔ	233m	H	Y220b	DB	
35	2N6488	600m	30	5J	15 †	5.0	90 †	5.0†	90	1.0mΔ	4.0	5.0	20	150	5.0MΔ	233m	H	Y220b	DB	
36#	2SC1437	600m	200	5J	50	10	230	6.0	230	1.0m	4.0	10	12	10	10M	75m	DA	F10	CC	
37#	2SC1442	600m	200	5J	50	10	150	6.0	150	1.0m	4.0	10	12	10	10M	75m	DA	F10	CC	
38#	2SC1443	600m	200	5J	50	10	200	6.0	200	1.0m	4.0	10	12	10	10M	75m	DA	F10	CC	
39#	2SC2903	600m	200	5J	25	5	800	8	400	50u	50	10	10	35	100m	4.5u	DA	T03	CC	
40#	2SC2973	600m	200	5J	40	10	300	8	200	30u	50	15	10	35	70m	4.5u	DA	T03	CC	
41#	2SC2977	600m	200	5J	30	10	800	8	400	50u	50	10	10	35	100m	4.5u	DA	T03	CC	
42#	2SC2978	600m	200	5J	50	10	800	8	400	50u	50	29	10	35	30m	4.5u	DA	F62	CC	
43#	2SC3216	600m	200	5J	20	10	1.2k	8	800	50u	50	2	10	15	100m	5u	DA	T03	CC	
44#	2SD334	600m	75	5J	6.0	4.0	110	7.0	80	1.0m	4.0	1.0	40	260	25k	5u	D#	T03	CC	
45#	2SD334A	600m	75	5J	6.0	4.0	130	7.0	100	1.0m	4.0	1.0	40	260	25k	5u	D#	T03	CC	
46#	BD278	600m	1.8	5J	10	4.0	55	5.0	45	2.0m*	4.0	4.0	15	75	3.0MΔ	50m	H	Y220b	DB	
47#	BD278A	600m	1.8	5J	10	4.0	55	5.0	45	2.0m*	4.0	4.0	15	75	3.0MΔ	50m	H	Y220b	DB	
48#	BD278AE	600m	75	5J	10	4.0	55	5.0	45	2.0m*	3.0	2.0	30	30	3.0MΔ	50m	H	Y220a	DB	
49#	BD278E	600m	75	5J	10	4.0	55	5.0	45	2.0m*	4.0	4.0	15	75	3.0MΔ	50m	H	Y220a	DB	
50#	BD501	600m	75	5J	10	4.0	60	5.0	50	1.0m*	4.0	5.0	15	90	5.0MΔ	233m	E	Y220b	DB	
51#	BD501A	600m	75	5J	10	4.0	70	5.0	60	1.0m*	4.0	5.0	15	90	5.0MΔ	233m	E	Y220b	DB	
52#	BD501B	600m	75	5J	10	4.0	90	5.0	80	1.0m*	4.0	3.5	20	120	5.0MΔ	233m	E	Y220b	DB	
53#	BDX71	600m	1.8	5J	10	4.0	70	8.0	60	2.0MΔ	4.0	4.0	20	80	15k	250m	H†	Y220b	DB	
54#	BDX73	600m	1.8	5J	10	4.0	80	8.0	70	2.0MΔ	4.0	4.0	20	80	15k	250m	H†	Y220b	DB	
55#	BDX75	600m	1.8	5J	16	4.0	45	5.0	40	2.0MΔ	4.0	8.0	15	60	15k	156m	H†	Y220b	DB	
56#	BU328Δ	600m	90	5J	6.0	2.0	375	2.0	2.0	2.0m	5.0	0.6	30	∅	6.0M	0.3u	DPL	T03	CC	
57#	BU328Δ†	600m	60	5J	6.0	2.0	800	2.0	2.0	2.0m	5.0	0.6	40	∅	6.0M	0.3u	DPL	T03	CC	
58#	BU328AΔ	600m	90	5J	6.0	2.0	400	2.0	2.0	2.0m	5.0	0.6	30	∅	6.0M	0.3u	DPL	T03	CC	
59#	BU328AΔ†	600m	60	5J	6.0	2.0	900	2.0	2.0	2.0m	5.0	0.6	40	∅	6.0M	0.3u	DPL	T03	CC	
60#	BU328R†	600m	60	5J	6.0	3.0	900	10	400	1.0m	5.0	4.0	4.0	1.7M	700n	300n	†	Y204a	CC	
61#	BUX82†	600m	60	5J	6.0	2.0	10	400	1.0m	5.0	600m	30	∅	6.0M	500m	300n	†	T03	CC	
62#	BUX83	600m	60	5J	6.0	2.0	10	450	1.0m	5.0	600m	30	∅	6.0M	500m	300n	†	T03	CC	
63	D44TE4	600m	75	5J	4.0	2.0	7.0	350	∅	0.1m	3.0	4.0	8	1.0	50MΩ	0.7	†	Y220b	A	
64#	FGT3055	60	75	5C	15	4.0	100	7.0	60	7.0mΔ	4.0	10	∅	5.0	150M†	20n	H	Y220b	DB	
65	KS6120†	600m	5J	15	3.0	100	4.5	100	500u	5.0	10	10	15	15	150M†	20n	PE	T03	CC	
66	KS6121†	600m	5J	15	3.0	60	4.5	60	500u	5.0	10	10	15	15	150M†	20n	PE	T03	CC	
67	KS6122†	600m	5J	15	3.0	40	4.5	40	500u	5.0	10	10	15	15	150M†	30n	PE	T03	CC	
68	MJ4380†	600m	2.0	5J	4.0	2.0	9.0	300	400	1.0m	5.0	1.0	10	60	4.0MΔ	700n	PE	T066	CC	
69	MJ4381†	600m	2.0	5J	4.0	2.0	9.0	400	400	1.0m	5.0	1.0	10	60	4.0MΔ	700n	PE	T066	CC	
70	MJ12002	600m	75	5J	2.5	2.0	5.0	1.5k	∅	1.0m	2.0	3.0	25	100	4.0M	2.5	1.0u	T03	CC	
71	MJE2801†	600m	75	5J	10	5.0	60	4.0	60	100u	4.0	4.0	20	70	2.0MΔ	800m	PE	Y220b	CC	
72	MJE3055†	600m	75	5J	10	6.0	70	5.0	60	1.0m	4.0	4.0	20	70	2.0MΔ	800m	PE	Y220b	CC	
73	MJE13004	600m	75	5J	4.0	2.0	9.0	300	300	1.0m	5.0	2.0	8.0	40	4.0MΔ	250m	700n	PE	Y220b	CC
74	MJE13005	600m	75	5J</																

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. hFE		BIAS Ic	MIN	MAX	fae	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 Ser.	L E O A D E
						Ic (A)	Ib (A)	BVcbo (V)	BVbeo (V)	hFE (V)	hFE (A)	hFE (V)	hFE (A)									
1	TIP526	800m	3.5	5.0	†	2.0	250	†	6.0	200	1.0M	4.0	2.5	30	150	40M	4.0	300n	PEΔ	T081	A	
2	BU326	60m	60	8.0	†	2.0	375	†	4.0	375	1.0M	5.0	600m	30	30	6.0M	4.0	300n		T03	C	
3	BDY45T	60m	60	8.0	†	2.0	400	†	4.0	400	1.0M	5.0	600m	30	30	6.0M	4.0	300n		T03	C	
4	BDY45T	613m	95	15	†	5.0	400	†	7.0	250	200u	2.0	2.0	20	20	13M	100m	3.0u	FL	T03	C	
5	BDY46T	613m	95	15	†	5.0	600	†	7.0	300	200u	2.0	2.0	20	20	13M	100m	3.0u	FL	T03	C	
6	BDY47T	613m	95	15	†	5.0	750	†	7.0	350	200u	2.0	2.0	20	20	13M	100m	3.0u	FL	T03	C	
7	2N5804	620m	200	20	†	5.0	130	†	12	110	1.0M	5.0	1.0	12	48	1.0M	400m	500n		T03	C	
8	2N5805	625m	62	5.0	†	2.0	300	†	6.0	300	1.0M	5.0	5.0	10	100	15M	400m	500n		T03	C	
9	2N5805	625m	62	5.0	†	2.0	375	†	6.0	375	1.0M	5.0	5.0	10	100	15M	400m	500n		T03	C	
10	BD245T	625m	3.0	10	†	3.0	5.0	†	4.5	45	400u	4.0	1.0	25	25	3.0M	333m	300n	D	B19	D	
11	BD245A	625m	3.0	10	†	3.0	5.0	†	4.5	45	400u	4.0	1.0	25	25	3.0M	333m	300n	D	B19	D	
12	BD245B	625m	3.0	10	†	3.0	5.0	†	4.5	45	400u	4.0	1.0	25	25	3.0M	333m	300n	D	B19	D	
13	BD245C	625m	3.0	10	†	3.0	5.0	†	4.5	45	400u	4.0	1.0	25	25	3.0M	333m	300n	D	B19	D	
14	BU108	625m	12	4.0	†	5.0	100m	†	5.0	750	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	700n	Δ	T03	C	
15	BU207	625m	12	4.0	†	5.0	100m	†	5.0	750	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	700n	Δ	T03	C	
16	BU207A	625m	12	4.0	†	5.0	100m	†	5.0	750	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	700n	Δ	T03	C	
17	BU207A	625m	12	4.0	†	5.0	100m	†	5.0	750	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	700n	Δ	T03	C	
18	BU208	625m	12	4.0	†	5.0	100m	†	5.0	700	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	900n	D	T03	C	
19	BU208	625m	12	4.0	†	5.0	100m	†	5.0	700	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	900n	D	T03	C	
20	BU208	625m	12	4.0	†	5.0	100m	†	5.0	700	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	900n	D	T03	C	
21	BU208	625m	12	4.0	†	5.0	100m	†	5.0	700	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	900n	D	T03	C	
22	BU208	625m	12	4.0	†	5.0	100m	†	5.0	700	1.0M	5.0	4.5	2.2	2.2	7.0M	1.1	900n	D	T03	C	
23	BU209	625m	12	4.0	†	5.0	100m	†	5.0	800	1.0M	5.0	4.5	2.2	2.2	7.0M	1.6	700n	D	T03	C	
24	BU209	625m	12	4.0	†	5.0	100m	†	5.0	800	1.0M	5.0	4.5	2.2	2.2	7.0M	1.6	700n	D	T03	C	
25	BU209	625m	12	4.0	†	5.0	100m	†	5.0	800	1.0M	5.0	4.5	2.2	2.2	7.0M	1.6	700n	D	T03	C	
26	BU200	625m	75	8.0	†	4.0	1.5k	†	5.0	1.5k	1.0M	5.0	3.0	2.2	3.0	7.0M	1.6	700n	D	T03	C	
27	CJ523	625m	110	8.0	†	4.0	1.5k	†	5.0	1.5k	1.0M	5.0	3.0	2.2	3.0	7.0M	1.6	700n	D	T03	C	
28	MJ3480	625m	56	5.0	†	4.0	1.3k	†	7.0	700	1.0M	5.0	4.5	2.2	2.2	7.5M	1.1	1.0u	D	T03	C	
29	2SC1106	630m	80	2.0	†	4.0	350	†	5.0	250	1.0M	5.0	150	40	200	150M	3.0	1.0u	ME	T03	C	
30	MRF315	630m	110	4.0	†	4.0	65	†	4.0	35	4.0M	5.0	2.0	20	80	150M	3.0	1.0u		W52k	R	
31	MRF315A	630m	110	4.0	†	4.0	65	†	4.0	35	4.0M	5.0	2.0	20	80	150M	3.0	1.0u		T93e	R	
32	MJ370	638m	80	4.0	†	4.0	750	†	7.0	300	1.0M	5.0	3.0	2.2	2.2	7.5M	833m	700m	Δ	F11b	C	
33	MJ371	638m	80	4.0	†	4.0	750	†	7.0	300	1.0M	5.0	3.0	2.2	2.2	7.5M	833m	700m	Δ	F11b	C	
34	2N8084	640m	80	6.0	†	2.0	36	†	4.0	18	2.5M	5.0	1.0	5.0	5.0	5.0M	700m	900m	Δ	T72h	R	
35	2N8497	640m	80	6.0	†	2.0	350	†	6.0	250	1.0M	5.0	2.5	10	75	5.0M	1.0	1.0u		Y220b	D	
36	2N8498	640m	80	6.0	†	2.0	400	†	6.0	300	1.0M	5.0	2.5	10	75	5.0M	1.0	1.0u		Y220b	D	
37	2N8499	640m	80	6.0	†	2.0	450	†	6.0	350	1.0M	5.0	2.5	10	75	5.0M	1.0	1.0u		Y220b	D	
38	2SC898	640m	80	7.0	†	2.0	150	†	5.0	110	1.0M	5.0	1.0	25	200	15M	360m	1.0u	D	F6h	R	
39	2SC1325	640m	80	6.0	†	2.0	1.5k	†	6.0	600	200	5.0	1.0	5.0	60	35	800n	1.0u	ME	T03	C	
40	2SC1325A	640m	80	6.0	†	2.0	1.5k	†	6.0	600	200	5.0	1.0	5.0	60	35	800n	1.0u	ME	T03	C	
41	2SC1866T	640m	80	7.0	†	2.0	150	†	5.0	100	100	5.0	1.0	15	15	200m	1.0u	EM	T03	C		
42	2SC1867T	640m	80	7.0	†	2.0	300	†	7.0	250	100	5.0	1.0	15	15	200m	1.0u	EM	T03	C		
43	2SC1868T	640m	80	7.0	†	2.0	450	†	7.0	250	100	5.0	1.0	15	15	200m	1.0u	EM	T03	C		
44	2SC2280	640m	80	8.0	†	3.0	160	†	6.0	100	100	4.0	3.0	30	180	15M	500m	850n	D	T03	C	
45	2SC2280	640m	80	8.0	†	3.0	180	†	6.0	120	100	4.0	3.0	30	180	15M	500m	850n	D	T03	C	
46	2SC2282	640m	80	8.0	†	3.0	200	†	6.0	140	100	4.0	3.0	30	180	15M	500m	850n	D	T03	C	
47	2SC2486	640m	80	7.0	†	3.0	120	†	5.0	120	50	5.0	1.0	40	200	15M	500m	850n	D	T03	C	
48	2SC2563	640m	80	8.0	†	0.8	120	†	5.0	120	50	5.0	1.0	55	240	90M	3.0	1.2u	EM	B38	D	
49	2SC2615K	640m	80	8.0	†	0.8	500	†	7.0	400	100	5.0	4.0	15	15	400m	1.2u	D	F53	D		
50	2SC2980T	640m	80	5.0	†	2.5	900	†	7.0	800	100	5.0	5.0	30	150	12M	280m	1.0u	D	F57	D	
51	2SD316-1	640m	80	7.0	†	2.0	80	†	5.0	100	1.0M	5.0	3.0	150	12M	280m	1.0u	DM	T03	C		
52	2SD316-2	640m	80	7.0	†	2.0	100	†	5.0	100	1.0M	5.0	3.0	150	12M	280m	1.0u	DM	T03	C		
53	2SD335	640m	80	7.0	†	2.0	150	†	7.0	100	300	5.0	3.0	120	30	120	30	DM	T03	C		
54	2SD335	640m	80	7.0	†	2.0	650	†	7.0	270	5.0	5.0	5.0	6.5	30	30	30	DM	T03	C		
55	2SD388	640m	80	1.2	†	1.2	150	†	7.0	100	100	5.0	5.0	40	200	9.0M	400n	ME	T03	C		
56	2SD418	640m	80	1.2	†	1.2	10k	†	5.0	500	1.0M	5.0	5.0	6.5	30	30	30	DM	T03	C		
57	2SD427	640m	80	1.2	†	1.2	120	†	5.0	200	100	5.0	5.0	40	140	7.0M	1.5u	DM	T03	C		
58	2SD458	640m	80	5.0	†	2.0	600	†	5.0	400	1.0M	5.0	5.0	6.5	50	300m	400m	300n	DM	T03	C	
59	2SD588	640m	80	5.0	†	2.0	150	†	5.0	50	50	5.0	1.0	70	240	6.0M	400m	83m	DM	B33	C	
60	2SD717	640m	80	7.0	†	1.0	2.0	†	5.0	50	100	1.0	1.0	200	200	10M	300n	DM	B41	D		
61	2SD719	640m	80	8.0	†	800m	120	†	6.0	120	100	5.0	1.0	55	160	10M	300n	DM	B41	D		
62	2SD732	640m	80	8.0	†	800m	150	†	6.0	120	100	5.0	1.0	40	320	15M	300n	EM	T03	C		
63	2SD732K	640m	80	8.0	†	800m	150	†	6.0	140	100	5.0	1.0	40	320	15M	300n	EM	T03	C		
64	2SD827K	640m	80	4.0	†	1.0	500	†	6.0	500	1.0M	5.0	2.0	4	500	3.0M	400m	300n	D	F53	D	
65	2SD851T	640m	80	10	†	1.0	300	†	7.0	100	100	2.0	10	1.0k	1.0k	1.0u	1.0u	D	B60	C		
66	2SD933H	640m	80	7.0	†	1.0	300	†	7.0	100	100	2.0	10	500	1.5k	1.5k	1.5k	D	T03	C		
67	2SD934K	640m	80	7.0	†	1.0	300	†	7.0	100	100	2.0	10	500	1.5k	1.5k	1.5k	D	F53	D		
68	2SD1018	640m	80	4.0	†	1.0	250	†	5.0	250	100	5.0	1.0	160	200	250	250	D	B65	C		
69	2SD1110	640m	80	7.0	†	1.0	250	†	5.0	250	100	5.0	1.0	160	200	250	250	D	B65	C		
70	2SD1110A	640m	80	7.0	†	1.0	130	†	5.0	130	50	5.0										

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. V <sub>cb</sub> @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	L C O D E	
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb</sub> (A)	V <sub>cb</sub> (V)	MIN	MAX							
1	KSD1055	650m	115	J	15	3.0	55	7.0	45	5.0m	4.0	4.0	15	70	800k		D	T03	0	
2	KSD1056	650m	115	J	15	3.0	80	7.0	60	5.0m	4.0	4.0	15	70	800k		D	T03	0	
3	KSD1057	650m	115	J	15	3.0	100	7.0	80	5.0m	4.0	4.0	15	70	800k		D	T03	0	
4	KSD1058	650m	115	J	15	3.0	120	7.0	100	5.0m	4.0	4.0	15	70	800k		D	T03	0	
5	KSD2201	650m	115	J	10	2.0	140	7.0	120	1.0m	4.0	3.0	20	70	800k		D	T03	0	
6	KSD2202	650m	115	J	10	2.0	120	7.0	100	1.0m	4.0	3.0	20	70	800k		D	T03	0	
7	KSD2203	650m	115	J	10	2.0	100	7.0	80	1.0m	4.0	3.0	20	70	800k		D	T03	0	
8	KSD3055	650m	115	J	15	3.0	100	7.0	60	5.0m	4.0	4.0	20		800k		D	T03	0	
9	MJE8500†	65	65	†J	2.5	2.0		8.0	700	2.5m	5.0	500m	7.5			2.0u	Y220	X		
10	MJE8501†	65	65	†J	2.5	2.0		8.0	800	2.5m	5.0	500m	7.5			2.0u	Y220	X		
11	MJE12007	650m	65	†J	2.5	2.0		5.0	750	1.0m						650n	B61	X0		
12	2N3055A†	657m	115	†J	15	7.0	100	7.0	60	5.0m	2.0	4.0	10	70	800k	333m	H	T03	C0	
13	2N3055H	657m	115	†J	15	7.0	100	7.0	60	7.0m	4.0	4.0	20	#	70	800k		T03	C0	
14	2N6253	657m	115	†J	15	7.0	55	5.0†	45	1.5m	4.0	3.0	20	150	#			T03	C0	
15	2SD341H	657m	115	†J	15	7.0	100	7.0	60	7.0m	4.0	4.0	20	70	800k	275m	D	F6h	C0	
16#	BD450	657m	115	†J	15	7.0	80	7.0	80	500u*	4.0	6.0	20	70	800k	800m	H	T03	C0	
17#	BD451	657m	115	†J	15	7.0	95	7.0	95	500u*	4.0	4.0	20	70	800k	800m	H	T03	C0	
18	HEPS7004-RT	657m	115	†J	15	7.0	100	7.0	60	500u*	4.0	4.0	35	∅	1.0M			T03	C0	
19	MJ2801	657m	115	†J	15	7.0	50	7.0	40	5.0m	4.0	8.0	15	60	#			T03	C0	
20	RCA1B01	657m	115	†J	15	7.0	95	7.0	95	500u*†	4.0	4.0	20	70	800k	250m	H	T03	C0	
21	SD1288	657m	115	†J	10		36	4.0	18	1.0m	5.0	250m	5.0	50	100M		PE	T72r	R	
22	SD1290	657m	115	†J	10		36	4.0	18	1.0m	5.0	250m	5.0	50	100M		PE	T72r	R	
23	2N5873†	658m	115	†J	7.0	2.0	60	†	5.0†	250u*	4.0	2.5	20	100	4.0M	250m		T03	C0	
24	2N5874†	658m	115	†J	7.0	2.0	80	†	5.0†	250u*	4.0	2.5	20	100	4.0M	250m		T03	C0	
25	SDT1B01	658m	115	†J	15	7.0	95	7.0	95	500u*†	4.0	4.0	20	#	70	800k		T03	C0	
26	D44VH1	660m	83	†J	15	5.0	8.0	3.0	3.0	1.0u	2.0	1.0	35		50M	200n	PE	B22	B0	
27	D44VH4	660m	83	†J	15	5.0	8.0	3.0	3.0	1.0u	2.0	1.0	35		50M	200n	PE	B22	B0	
28	D44VH7	660m	83	†J	15	5.0	8.0	3.0	3.0	1.0u	2.0	1.0	35		50M	200n	PE	B22	B0	
29	D44VH10	660m	83	†J	15	5.0	8.0	3.0	3.0	1.0u	2.0	1.0	35		50M	200n	PE	B22	B0	
30	KSP1141	660m			10	2.0	225	8.0	200	10u	5.0	5.0	20	60	50M		PE	T03	C0	
31	KSP1142	660m			10	2.0	250	8.0	225	10u	5.0	5.0	20	60	50M		PE	T03	C0	
32	KSP1143	660m			10	2.0	275	8.0	250	10u	5.0	5.0	20	60	50M		PE	T03	C0	
33	KSP1144	660m			10	2.0	300	8.0	275	10u	5.0	5.0	20	60	50M		PE	T03	C0	
34	KSP1145	660m			10	2.0	325	8.0	300	10u	5.0	5.0	20	60	50M		PE	T03	C0	
35	KSP1171	660m			10	2.0	60	8.0	40	1.0u	5.0	5.0	20	60	60M		PE	T03	C0	
36	KSP1172	660m			10	2.0	100	8.0	80	1.0u	5.0	5.0	20	60	60M		PE	T03	C0	
37	KSP1173	660m			10	2.0	140	8.0	120	1.0u	5.0	5.0	20	60	60M		PE	T03	C0	
38	KSP1174	660m			10	2.0	60	8.0	40	1.0u	5.0	5.0	40	120	60M		PE	T03	C0	
39	KSP1175	660m			10	2.0	100	8.0	80	1.0u	5.0	5.0	40	120	60M		PE	T03	C0	
40	KSP1176	660m			10	2.0	140	8.0	120	1.0u	5.0	5.0	40	120	60M		PE	T03	C0	
41	MRF450	660m	115	†J	7.5		40	4.0	20	5.0	1.0m		10					W52h	R	
42	MRF450A	660m	115	†J	7.5		40	4.0	20	5.0	1.0m		10					W52h	R	
43#	RC5617	660m	115	†J	15	7.0	100	7.0	80	1.0m	5.0	5.0	20	70	2.5M	2.2	E	Y204a	C0	
44	2N451	666m	85	†J	5.0	500m	65	10	65	2.0m	1.0	1.0	10			4.0	D	T4	C0	
45	2N1722	666m	3.0	†J	5.0	5.0	120	10	80	500u	15	2.0	20	90	#	10M		T053	A0	
46	JAN2N1722	666m	3.0	†J	5.0	5.0	175	10	80	5.0m	15	2.0	30	90	#	10M		T053	A0	
47	2N1722A	666m	5.0	†J	7.5	1.0	180	10	120	1.0m	15	5.0	20	#	10M	300m	ME	T053	A0	
48	2N1723	666m	5.0	†J	7.5	1.0	120	10	80	1.0m	15	2.0	50	150	#	10M	500m	ME	T053	A0
49	2N1724	666m	3.0	†J	5.0	5.0	120	10	80	500u	15	2.0	20	90	#	10M		T061	A0	
50	JAN2N1724	666m	3.0	†J	5.0	5.0	175	10	80	5.0m	15	2.0	30	90	#	10M		T061	A0	
51	2N1724A	666m	3.0	†J	5.0	1.0	180	10	120	100u	15	2.0	30	90	#	10M		T061	A0	
52	2N1725	666m	3.0	†J	5.0	5.0	120	10	80	100u	15	2.0	50	150	#	10M		T061	A0	
53#	2N3055S	666m	117	†J	15	7.0	7.0	60	60	700u	4.0	4.0	20	70	#	800k		D	T03	C0
54	2N3263†	666m	83	†J			150	7.0	90	2.0m	2.0	15	20	55	#	20M	50m	D	W41	D0
55	2N3264†	666m	83	†J			120	7.0	60	2.0m	3.0	15	20	80	#	20M	80m	D	W41	D0
56	2N3445†	666m	115	†J	7.5	4.0	80	6.0	60	100u	5.0	3.0	20	60		500m	EA	T03	C0	
57	2N3446†	666m	115	†J	7.5	4.0	100	6.0	80	100u	5.0	3.0	20	60		500m	EA	T03	C0	
58	2N3447†	666m	115	†J	7.5	4.0	80	6.0	60	100u	5.0	3.0	20	60		300m	EA	T03	C0	
59	2N3448†	666m	115	†J	7.5	4.0	100	6.0	80	100u	5.0	3.0	20	60		300m	EA	T03	C0	
60	2N3487†	666m	115	†J	7.5	4.0	80	6.0	60	100u	5.0	3.0	20	60		300m	EA	T061	A0	
61	2N3488†	666m	115	†J	7.5	4.0	100	6.0	80	100u	5.0	3.0	20	60		300m	EA	T061	A0	
62	2N3489†	666m	115	†J	7.5	4.0	120	6.0	100	100u	5.0	3.0	15	45		300m	EA	T061	A0	
63	2N3490†	666m	115	†J	7.5	4.0	80	6.0	60	100u	5.0	3.0	40	120		300m	EA	T061	A0	
64	2N3491†	666m	115	†J	7.5	4.0	100	6.0	80	100u	5.0	3.0	40	120		300m	EA	T061	A0	
65	2N3492†	666m	115	†J	7.5	4.0	120	6.0	100	100u	5.0	3.0	30	90		300m	EA	T061	A0	
66	2N3788	666m	100	†J	2.0	1.0	400	5.0	325	5.0m	5.0	500m	20	180		50k		T03	C0	
67	2N3864†	666m	117	†J	7.5	3.0	110	7.0	90	1.0m	2.0	3.0	30	90		500k	330m	8.0u	T03	C0
68	2N3865†	666m	117	†J	7.5	3.0	160	7.0	150	1.0m	2.0	3.0	30	90		500k	330m	8.0u	T03	C0
69	2N5006	666m	100	†J	10	3.0	100	6.0	80	1.0m	5.0	5.0	30	90	#	30M		T16a	A	
70	2N5008	666m	100	†J	10	3.0	100	6.0	80	1.0m	5.0	5.0	70	200	#	40M		T16a	A	
71	2N5034	666m	83	†J	6.0	12	55	5.0†	45	2.0m	4.0	4.0	20	80		4.0		Y219a	C0	
72	2N5035	666m	83	†J	6.0	12	55	5.0†	45	2.0m	4.0	4.0	20	80		4.0		Y219a	C0	
73	2N5036	666m	83	†J	6.0	12	70	5.0†	60	2.0m	4.0	4.0	20	80		5.0		Y219b	C0	
74	2N5037	666m	83	†J	6.0	12	70	5.0†	60	2.0m	4.0	4.0	20	80		5.0		Y219b	C0	
75	2N5048†	666m	100	†J	10	2.0	120	14	100	1.0m	4.0	10	15	60		10M	200m	600n	T061	A0
76	2N5049†	666m	100	†J	10	2.0	80	14	50	1.0m	4.0	10	15	60		10M	250m	1.0u	T061	A0
77	2N5288	666m	100	†J	10	3.0	120	6.0	100	1.0m	5.0	5.0	30	90	#	30M		T16a	A	





# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc MAX	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200	# C O A D E	
						Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>be0</sub> (V)	V <sub>ceo</sub> (V)	Icbo @ 25°C (A)	V <sub>cb</sub> (V)									V <sub>ce</sub> (A)
1	SDT7208	666m	115	10	10	10	2.0	300	8.0	300	10	5.0	15		30M			PL	TO3	C	
2	SDT7601	666m	117	10	10	10	2.0	60	8.0	40	500n	5.0	40	120	60M5	100m	PE	TO3	C		
3	SDT7802	666m	117	10	10	10	5.0	80	8.0	60	500n	5.0	40	120	60M5	100m	PE	TO3	C		
4	SDT7803	666m	117	10	10	10	5.0	100	8.0	80	500n	5.0	40	120	60M5	100m	PE	TO3	C		
5	SDT7804	666m	117	10	10	10	5.0	140	8.0	120	500n	5.0	40	120	60M5	100m	PE	TO3	C		
6	SDT7805	666m	117	10	10	10	5.0	170	8.0	150	500n	5.0	40	120	60M5	120m	PE	TO3	C		
7	SDT7806	666m	80	10	10	10	5.0	220	8.0	200	500n	5.0	40	120	60M5	120m	PE	TO3	C		
8	SDT7607	666m	117	10	10	10	5.0	80	8.0	40	500n	5.0	20	60	60M5	100m	PL	TO3	C		
9	SDT7608	666m	117	10	10	10	5.0	80	8.0	60	500n	5.0	20	60	60M5	100m	PL	TO3	C		
10	SDT7809	666m	117	10	10	10	5.0	100	8.0	80	500n	5.0	20	60	60M5	100m	PL	TO3	C		
11	SDT7610	666m	117	10	10	10	5.0	140	8.0	120	500n	5.0	20	60	60M5	100m	PL	TO3	C		
12	SDT7611	666m	117	10	10	10	5.0	170	8.0	150	500n	5.0	20	60	60M5	120m	PL	TO3	C		
13	SDT7812	666m	117	10	10	10	5.0	220	8.0	200	500n	5.0	20	60	60M5	120m	PL	TO3	C		
14	SDT9201	666m	117	15	15	15	7.0	12	45	2.0mΔ	4.0	20	70	800kΔ			D	TO3	C		
15	SDT9202	666m	117	15	15	15	7.0	12	80	700uΔ	4.0	20	70	800kΔ			D	TO3	C		
16	SDT9203	666m	117	15	15	15	7.0	12	100	700uΔ	4.0	20	70	800kΔ			D	TO3	C		
17	SDT9204	666m	117	15	15	15	7.0	12	120	700uΔ	4.0	20	70	800kΔ			D	TO3	C		
18	SDT9205	666m	117	15	15	15	7.0	12	45	2.0mΔ	4.0	15	70	800kΔ			D	TO3	C		
19	SDT9206	666m	117	15	15	15	7.0	12	80	700uΔ	4.0	15	70	800kΔ			D	TO3	C		
20	SDT9207	666m	117	15	15	15	7.0	12	80	700uΔ	4.0	15	70	800kΔ			D	TO3	C		
21	SDT9208	666m	117	15	15	15	7.0	12	100	700uΔ	4.0	15	70	800kΔ			D	TO3	C		
22	SDT9209	666m	117	15	15	15	7.0	12	120	700uΔ	4.0	15	70	800kΔ			D	TO3	C		
23	SDT9210	666m	117	15	15	15	7.0	5.0	30	5.0mΔ	2.0	15	70	800kΔ			D	TO3	C		
24	SDT85301	666m	117	10	10	10	1.0	80	8.0	40	5.0u	5.0	40	120	40M5				TO3	C	
25	SDT85302	666m	117	10	10	10	1.0	80	8.0	60	5.0u	5.0	40	120	40M5				TO3	C	
26	SDT85303	666m	117	10	10	10	1.0	100	8.0	80	5.0u	5.0	40	120	40M5				TO3	C	
27	SDT85304	666m	117	10	10	10	1.0	140	8.0	120	5.0u	5.0	40	120	40M5				TO3	C	
28	SDT85305	666m	117	10	10	10	1.0	170	8.0	150	5.0u	5.0	40	120	40M5				TO3	C	
29	SDT85306	666m	117	10	10	10	1.0	80	8.0	40	5.0u	5.0	20		40M5				TO3	C	
30	SDT85307	666m	117	10	10	10	1.0	80	8.0	60	5.0u	5.0	20		40M5				TO3	C	
31	SDT85308	666m	117	10	10	10	1.0	100	8.0	80	5.0u	5.0	20		40M5				TO3	C	
32	SDT85309	666m	117	10	10	10	1.0	140	8.0	120	5.0u	5.0	20		40M5				TO3	C	
33	SDT85310	666m	117	10	10	10	1.0	170	8.0	150	5.0u	5.0	20		40M5				TO3	C	
34	SPT3713	666m	115	15	15	15	7.0	40	5.0	30	5.0m	2.0	15		550m				TO3	C	
35	ST1660	666m	60	J	3.5	3.5	2.0	200	5.0	200	5.0	1.0	30	90	2.5M5	80	D	TO66	C		
36	ST1663	666m	60	J	3.5	3.5	2.0	400	5.0	400	5.0	1.0	30	90	2.5M5	80	D	TO66	C		
37	ST1665	666m	60	J	3.5	3.5	2.0	700	5.0	700	5.0	1.0	30	90	2.5M5	80	D	TO66	C		
38	ST1702	666m	50	J	3.0	3.0	1.0	1.0k	5.0	1.0k	500u	5.0	2.5		1.5M5		1.0u		TO3	C	
39	ST1704	666m	50	J	3.0	3.0	1.0	1.0k	5.0	1.0k	500u	5.0	2.5		1.5M5		1.0u		TO3	C	
40	ST1708	666m	50	J	3.0	3.0	2.0	900	5.0	900	250u	5.0			1.5M5	2.0			TO3	C	
41	ST1709	666m	50	J	3.0	3.0	2.0	900	5.0	900	250u	5.0			1.5M5	.50			TO3	C	
42	ST1710	666m	50	J	3.0	3.0	2.0	900	5.0	900	250u	5.0	150m		1.5M5				TO3	C	
43	ST1712	666m	50	J	3.0	3.0	1.0	900	5.0	900	500u	5.0	2.5		1.5M5		1.0u		TO3	C	
44	ST1714	666m	50	J	3.0	3.0	1.0	900	5.0	900	500u	5.0	2.5		1.5M5		1.0u		TO3	C	
45	ST1720	666m	50	J	3.0	3.0	1.0	1.0k	5.0	1.0k	500u	5.0	150m	18	1.5M5				TO3	C	
46	ST1723	666m	50	J	3.0	3.0	1.0	1.0k	5.0	1.0k	250u	5.0	500m	10	1.5M5				TO3	C	
47	STS660	666m	60	J	3.5	3.5	2.0	200	5.0	200	250u	5.0	1.0	30	90	2.5M5Δ	800m	EM	TO66	C	
48	STS663	666m	60	J	3.5	3.5	2.0	400	5.0	400	250u	5.0	1.0	30	90	2.5M5Δ	800m	EM	TO66	C	
49	STS665	666m	60	J	3.5	3.5	2.0	700	5.0	500	250u	5.0	1.0	30	90	2.5M5Δ	800m	EM	TO66	C	
50	SVT350-31	666m	75	J	6.0	6.0	1.0	350	7.0	350	200u	5.0	3.0	15		30m		100n	DM	TO3	C
51	SVT400-31	666m	75	J	6.0	6.0	1.0	400	7.0	400	200u	5.0	3.0	15		30m		100n	DM	TO3	C
52	SVT450-31	666m	75	J	6.0	6.0	1.0	450	7.0	450	200u	5.0	3.0	15		30m		100n	DM	TO3	C
53	XGSR75301	666m	50	J	10	10	5.0	350	7.0	300	200u	5.0	7.5	10		30M5Δ	80m		350n	TO3	C
54	XGSR75351	666m	50	J	10	10	5.0	400	7.0	350	200u	5.0	7.5	10		30M5Δ	80m		350n	TO3	C
55	XGSR75401	666m	50	J	10	10	5.0	450	7.0	400	200u	5.0	7.5	10		30M5Δ	80m		350n	TO3	C
56#	ZT3442	666m	117	10	10	10	7.0	160	7.0	140	3.0m	4.0	3.0	20	70	80kΔ	500m			TO3	C
57#	2N3232	667m	117	10	10	10	3.0	80	6.0	60	1.0m	1.0	30	18	150	20kΔ	833m			F11c	C
58	2N3233	667m	117	10	10	10	3.0	110	6.0	100	1.0m	1.0	30	18	150	20kΔ	833m			F11c	C
59	2N3234	667m	117	10	10	10	3.0	160	6.0	160	1.0m	1.0	30	18	150	20kΔ	833m			F11c	C
60	2N3235	667m	117	10	10	10	3.0	65	7.0	55	5.0m	4.0	20	70	20kΔ	275m			F11c	C	
61	2N38631	667m	117	10	10	10	3.0	70	7.0	50	1.0m	2.0	30	90	500kΔ	33	8.0u		TO3	C	
62	2N5622	667m	100	10	10	10	3.0	70	6.0	60	1.0m	5.0	70	200	40M5Δ				TO3	C	
63	2N5624	667m	100	10	10	10	3.0	100	6.0	80	1.0m	5.0	70	90	30M5Δ				TO3	C	
64	2N5626	667m	100	10	10	10	3.0	100	6.0	80	1.0m	5.0	70	200	40M5Δ				TO3	C	
65	2N5628	667m	100	10	10	10	3.0	120	6.0	100	1.0m	5.0	70	90	30M5Δ				TO3	C	
66	2N6093	667m	83	10	10	10	3.0	70	3.5	35	30m	5.0	20		100M5Δ				T67b	AB	
67	2N6166	667m	117	10	10	10	5.0	85	4.0	35	3.0m	6.0	500m	5.0					W52f	AR	
68	2N6371	667m	86	10	10	10	7.0	50	5.0	50	15m	4.0	8.0	15	60				TO3	C	
69	2N64811	667m	87	12	12	12	5.0	100	6.0	60	1.0m	12	20	300	100M5Δ	62m		400n		W41	D
70	2N64821	667m	87	12	12	12	5.0	100	6.0	80	1.0m	12	20	300	100M5Δ	62m		400n		W41	D
71#	2SC520	667m	50	J	5.0	5.0	1.0	70	5.0	80	10m	5.0	1.0	20		20k				TO3	C
72#	2SC23561	667m	100	10	10	10	3.0	500	7.0	400	100u	5.0	5.0	20		140m		1.0u		TO3	C
73#	2SC24301	667m	100	10	10	10	3.0	120	5.0	120	50u	5.0	1.0	35	200	80M5	240m	200n	PE	TO3	C
74#	2SC24311	667m	100	10	10	10	3.0	120	5.0	120	50u	5.0	1.5	35	200	80M5	214m	200n	PE	TO3	C
75#	2SC24321	667m	100	10	10	1															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> @ 25°C		BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>cb</sub> (A)	I <sub>cb</sub> (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)								
1#	BUX391	880m	120	#J	30	6.0	120	7.0	90	1.0mΔ	4.0	12	15	45	8.0MΔ	100m	1.5u	E	DM	TO3	C
2#	BUX391	882m	120	#J	30	6.0	120	7.0	90	5.0mΔ	4.0	10	20	60	8.0MΔ	120m	1.5u	E	DM	TO3	C
3#	BUX401	882m	120	#J	20	4.0	180	7.0	125	5.0mΔ	4.0	10	15	45	8.0MΔ	100m	1.5u	E	DM	TO3	C
4#	BUX411	882m	120	#J	15	3.0	300	7.0	200	5.0mΔ	4.0	4.0	15	45	8.0MΔ	250m	1.5u	E	DM	TO3	C
5#	BUX421	882m	120	#J	12	2.4	350	7.0	250	5.0mΔ	4.0	4.0	15	45	8.0MΔ	300m	1.5u	E	DM	TO3	C
6#	BUX431	882m	120	#J	10	2.0	400	7.0	325	5.0mΔ	4.0	3.0	15	45	8.0MΔ	333m	1.5u	E	DM	TO3	C
7#	BUX441	882m	120	#J	8.0	1.6	500	7.0	400	5.0mΔ	4.0	2.0	15	45	8.0MΔ	500m	2.0u	E	DM	TO3	C
8#	BUX451	882m	120	#J	5.0	1.0	600	7.0	500	5.0mΔ	4.0	1.5	15	45	8.0MΔ	666m	2.0u	E	DM	TO3	C
9#	BUX341	884m	120	#J	10	5.0	7.0	7.0	500	500uΔ	5.0	5.0	8.0	8.0	8.0MΔ	300m	400n	E	EA	TO3	C
10#	BUX351	884m	120	#J	10	5.0	7.0	7.0	800	500uΔ	5.0	5.0	8.0	8.0	8.0MΔ	300m	400n	E	EA	TO3	C
11#	BUX361	884m	120	#J	10	5.0	7.0	7.0	900	500uΔ	5.0	5.0	8.0	8.0	8.0MΔ	300m	400n	E	EA	TO3	C
12#	BUX18	884m	120	#J	8.0	2.0	6.0	6.0	200	3.0m*	5.0	1.0	15	100	100M#	250m#	600n#	E	EA	TO3	C
13#	BUX18A	884m	120	#J	8.0	2.0	6.0	6.0	275	3.0m*	5.0	1.0	15	100	100M#	300m#	600n#	E	EA	TO3	C
14#	BUX18B	884m	120	#J	8.0	2.0	6.0	6.0	325	3.0m*	5.0	1.0	15	100	100M#	375m#	600n#	E	EA	TO3	C
15#	BUX18C	884m	120	#J	8.0	2.0	6.0	6.0	375	3.0m*	5.0	1.0	15	100	100M#	375m#	600n#	E	EA	TO3	C
16	2N4348	885m	120	#J	10	4.0	140	4.5	7.0	200mΔ	4.0	5.0	15	60	60MΔ	200m		D		TO3	R
17	2N6459	885m	120	#J	12	4.0	45	3.0	25	5.0uΔ	5.0	4.0	10	80						W52	
18#	BUX51	885m	120	#J	10	4.0	140	7.0	120	5.0uΔ	4.0	5.0	15	60						TO3	
19	2N6510†	886m	120	#J	7.0	3.0	250	6.0	200	3.0	3.0	10	50	30MΔ	500m	1.5u	F		TO3		
20	2N6511†	886m	120	#J	7.0	3.0	300	6.0	250	3.0	4.0	10	50	30MΔ	375m	1.5u	F		TO3		
21	2N6512†	886m	120	#J	7.0	3.0	350	6.0	300	3.0	4.0	10	50	30MΔ	375m	1.5u	F		TO3		
22	2N6513†	886m	120	#J	7.0	3.0	400	6.0	350	3.0	4.0	10	50	30MΔ	375m	1.5u	F		TO3		
23	2N6514†	886m	120	#J	7.0	3.0	350	6.0	300	3.0	4.0	10	50	30MΔ	300m	1.5u	F		TO3		
24#	BUX41†	890m	120	#J	15	3.0	250	7.0	200	1.0mΔ	4.0	5.0	15	45	8.0MΔ	300m	1.3u	E	EA	TO3	C
25#	BUX42†	890m	120	#J	12	2.4	300	7.0	290	1.0mΔ	4.0	4.0	15	45	8.0MΔ	300m	1.0u	E	EA	TO3	C
26#	BUX43†	890m	120	#J	10	2.0	400	7.0	325	1.0mΔ	4.0	3.0	15	60	8.0MΔ	300m	1.0u	E	EA	TO3	C
27#	BUX44†	890m	120	#J	8.0	1.6	450	7.0	400	1.0mΔ	4.0	2.0	15	45	8.0MΔ	300m	1.0u	E	EA	TO3	C
28#	BUX45†	890m	120	#J	5.0	1.0	500	7.0	500	1.0mΔ	4.0	1.0	15	45	8.0MΔ	300m	1.0u	E	EA	TO3	C
29#	2SC2137	895m	80	#J	7.0	3.0	500	6.0	400	100uΔ	5.0	3.0	10	40	6.0MΔ			E	DM	TO3	
30#	2SC2138	895m	80	#J	7.0	3.0	400	6.0	300	100uΔ	5.0	3.0	10	40	6.0MΔ			E	DM	TO3	
31	151-30SPCT	700m	100	#J	6.0	3.0	325	25	300	10m#	4.0	1.5	22	30		870m	7.0u	F		T1a	
32	152-30SPCT	700m	100	#J	6.0	3.0	325	25	300	10m#	4.0	1.5	37	30		830m	7.0u	F		T1a	
33#	BU426A†	700m	70	#J	6.0	3.0	900	8.0	800	5.0	6.0	30	60			30u	D	PL	Y218a	D	
34#	BU426A†	700m	70	#J	6.0	3.0	900	8.0	800	5.0	6.0	30	60			20n	D	PL	Y218a	D	
35	KS6127†	700m	70	#J	18	4.0	80	4.5	80	1.0m	5.0	15	15	15	120M†	20n	D	PE	TO3		
36	KS6128†	700m	70	#J	18	4.0	40	4.5	80	1.0m	5.0	15	15	15	120M†	30n	D	PE	TO3		
37	MJ8500	710m	125	#J	2.5	2.0	700	8.0	700	5.0	5.0	0.5	7.5			2.0u	PL		F59		
38	MJ8501	710m	125	#J	2.5	2.0	800	8.0	800	5.0	5.0	0.5	7.5			2.0u	PL		F59		
39	SCA14032	710m	125	#J	50	20	300	8.0	250	10uΔ	5.0	30	10	40	30MΔ	50m	500n	PL		T16a	A
40	SCA14035	710m	125	#J	50	20	250	8.0	200	10uΔ	5.0	30	15	40	30MΔ	50m	500n	PL		TO3	C
41	2N6306†	714m	125	#J	8.0	4.0	500	8.0	250	500uΔ	5.0	3.0	15	75	5.0MΔ	600n	1.0u	F		TO3	
42	2N6307†	714m	125	#J	8.0	4.0	600	8.0	300	500uΔ	5.0	3.0	15	75	5.0MΔ	600n	1.0u	F		TO3	
43	2N6308†	714m	125	#J	8.0	4.0	700	8.0	350	500uΔ	5.0	3.0	12	60	5.0MΔ	300m	1.0u	F		TO3	
44	2N6544†	714m	125	#J	8.0	4.0	650	8.0	300	3.0	5.0	7.0	35	35	6.0MΔ	300m	1.0u	F		TO3	
45	2N6545†	714m	125	#J	8.0	4.0	850	8.0	400	3.0	5.0	7.0	35	35	6.0MΔ	300m	1.0u	F		TO3	
46	2N6573†	714m	125	#J	10	4.0	500	5.0	250	3.0	7.0	7.0	21	21	5.0MΔ	214m	900n	F		TO3	
47	2N6574†	714m	125	#J	10	4.0	600	5.0	275	3.0	7.0	7.0	21	21	5.0MΔ	214m	900n	F		TO3	
48	2N6575†	714m	125	#J	10	4.0	700	5.0	300	3.0	7.0	7.0	21	21	5.0MΔ	214m	900n	F		TO3	
49	2N6579†	714m	125	#J	10	5.0	450	9.0	350	500uΔ	3.0	5.0	7.0	35	25MΔ	300m	500n	F		TO3	
50	2N6580†	714m	125	#J	10	5.0	500	9.0	400	500uΔ	3.0	5.0	7.0	35	25MΔ	300m	500n	F		TO3	
51	2N6581†	714m	125	#J	10	5.0	550	9.0	450	500uΔ	3.0	5.0	7.0	35	25MΔ	300m	500n	F		TO3	
52	2N6582†	714m	125	#J	10	5.0	450	9.0	350	500uΔ	3.0	7.0	7.0	35	25MΔ	214m	500n	F		TO3	
53	2N6583†	714m	125	#J	10	5.0	500	9.0	400	500uΔ	3.0	7.0	7.0	35	25MΔ	214m	500n	F		TO3	
54	2N6584†	714m	125	#J	10	5.0	550	9.0	450	500uΔ	3.0	7.0	7.0	35	25MΔ	214m	500n	F		TO3	
55	2N6585†	714m	125	#J	10	5.0	450	9.0	350	500uΔ	3.0	5.0	7.0	35	25MΔ	300m	500n	F		TO61	A
56	2N6586†	714m	125	#J	10	5.0	500	9.0	400	500uΔ	3.0	5.0	7.0	35	25MΔ	300m	500n	F		TO61	A
57	2N6587†	714m	125	#J	10	5.0	550	9.0	450	500uΔ	3.0	5.0	7.0	35	25MΔ	300m	500n	F		TO61	A
58	2N6588†	714m	125	#J	10	5.0	450	9.0	350	500uΔ	3.0	7.0	7.0	35	25MΔ	214m	500n	F		TO61	A
59	2N6589†	714m	125	#J	10	5.0	500	9.0	400	500uΔ	3.0	7.0	7.0	35	25MΔ	214m	500n	F		TO61	A
60	2N6590†	714m	125	#J	10	5.0	550	9.0	450	500uΔ	3.0	7.0	7.0	35	25MΔ	214m	500n	F		TO61	A
61#	2N6834†	714m	125	#J	5	4	850	6	450	1.5mΔ	5.0	3	8	30	10MΔ	300m	350n	F		Y204c	C
62	410†	714m	125	#J	7.0	2.0	200	5.0	200	250uΔ	5.0	1.0	30	90	4.0MΔ	350n	350n	F		TO3	C
63	411†	714m	125	#J	7.0	2.0	300	5.0	300	250uΔ	5.0	1.0	30	90	2.5MΔ	350n	350n	F		TO3	C
64	413†	714m	125	#J	7.0	2.0	400	5.0	325	250uΔ	5.0	500m	20	80	4.0MΔ	350n	350n	F		TO3	C
65#	BD905	714m	90	#J	15	5.0	45	5.0	45	500u	4.0	5.0	15	150	3.0MΔ	300m		F		Y220b	D
66#	BD907	714m	90	#J	15	5.0	60	5.0	60	500u	4.0	5.0	15	150	3.0MΔ	300m		F		Y220b	D
67#	BD909	714m	90	#J	15	5.0	80	5.0	80	500u	4.0	5.0	15	150	3.0MΔ	300m		F		Y220b	D
68#	BD911	714m	90	#J	15	5.0	100	5.0	100	500u	4.0	5.0	15	150	3.0MΔ	300m		F		Y220b	D
69#	BDW51	714m	125	#J	15	7.0	45	5.0	45	500u	4.0	5.0	20	150	3.0MΔ	300m		F		TO3	C
70#	BDW51A	714m	125	#J	15	7.0															

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcbo @ 25°C (A)		BIAS (V)		hFE MIN MAX		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 S/a TO200 Ser.	DWG #	L C O A D E
					Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo (A)	Vcbo (V)	Ic (A)	MIN	MAX								
1	RCA423	714m	125 ∅	∅	7.0	2.0	400	5.0	400	250uΔ	5.0	1.0	30	#	90	#	4.0M	800m	350n	E	T03	C ∅
2	RCA431	714m	125 ∅	∅	7.0	2.0	400	5.0	400	250uΔ	5.0	2.5	15	35	4.0M	280m	350n	E	T03	C ∅		
3#	RCS579t	714m	125 ∅	∅	8.0	4.0	500	6.0	250	500uΔ	5.0	3.0	12		5.0M	625m	600n	E	T03	C ∅		
4	SCD321	714m	125 ∅	∅	10	4.0		5.0	80	1.0m#	4.0	4.0	20	100	250m			DME	T03	C ∅		
5	SDT7731t	714m	125 ∅	∅	10	2.0	60	20	40	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T03	C ∅		
6	SDT7732t	714m	125 ∅	∅	10	2.0	80	20	60	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T03	C ∅		
7	SDT7733t	714m	125 ∅	∅	10	2.0	100	20	80	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T03	C ∅		
8	SDT7734t	714m	125 ∅	∅	10	2.0	120	20	100	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T03	C ∅		
9	SDT7735t	714m	125 ∅	∅	10	2.0	140	20	125	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T03	C ∅		
10	SDT7736t	714m	125 ∅	∅	10	2.0	165	20	150	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T03	C ∅		
11	SDT7761t	714m	71 ∅	∅	10	2.0	60	20	40	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T061	A ∅		
12	SDT7762t	714m	71 ∅	∅	10	2.0	80	20	60	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T061	A ∅		
13	SDT7763t	714m	71 ∅	∅	10	2.0	100	20	80	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T061	A ∅		
14	SDT7764t	714m	71 ∅	∅	10	2.0	120	20	100	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T061	A ∅		
15	SDT7765t	714m	71 ∅	∅	10	2.0	140	20	125	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T061	A ∅		
16	SDT7766t	714m	71 ∅	∅	10	2.0	165	20	150	1.0u∅	5.0	5.0	20	80	5.0MΔ	100m	400n∅	E	T061	A ∅		
17	STA8309	714m	125	∅	5.0	2.0	200	5.0	200	1.0m#	5.0	3.0	20	200	15MΔ	333m	400n∅	EMΔ	T03	C ∅		
18	STA9370	714m	125	∅	20	10	225	5.0	225	500u#	4.0	20	10	200	10MΔ	100m	600n	EMΔ	T03	C ∅		
19	STA9371	714m	125	∅	20	10	300	5.0	300	1.0m#	4.0	15	10	200	10MΔ	133m	600n	EMΔ	T03	C ∅		
20	STA9372	714m	125	∅	20	10	350	5.0	350	1.0m#	4.0	12	10	200	10MΔ	167m	600n	EMΔ	T03	C ∅		
21	UMT1008	714m	125 ∅	∅	8.0		300	5.0	300	300	5.0	7.0			300m	400n#	ME	T03	C ∅			
22	UMT1009	714m	125 ∅	∅	8.0		400	5.0	400	400	5.0	7.0			300m	400n#	ME	T03	C ∅			
23	2N6470	715m	71 ∅	∅	15	5.0	50	5.0	50	1.0mΔ	4.0	5.0	20	150	5.0MΔ	233m#			T03	C ∅		
24	2N6471	715m	71 ∅	∅	15	5.0	70	5.0	70	1.0mΔ	4.0	5.0	20	150	5.0MΔ	233m#			T03	C ∅		
25	2N6472	715m	71 ∅	∅	15	5.0	90	5.0	90	1.0mΔ	4.0	5.0	20	150	5.0MΔ	233m#			T03	C ∅		
26	MJE3055K	718m	90 ∅	∅	10	6.0	70	5.0	60	1.0m#	4.0	4.0	20	70	2.0MΔ			Δ	B23	D ∅		
27	2N5983	720m	90 ∅	∅	8.0	3.0	60	5.0	40	1.0mΔ	2.0	4.0	20	120	2.0MΔ				B16a	B ∅		
28	2N5984	720m	90 ∅	∅	8.0	3.0	80	5.0	60	1.0mΔ	2.0	4.0	20	120	2.0MΔ				B16a	B ∅		
29	2N5985	720m	90 ∅	∅	8.0	3.0	100	5.0	80	1.0mΔ	2.0	4.0	20	120	2.0MΔ				B16a	B ∅		
30	BD205	720m	90 ∅	∅	10	6.0	55	5.0	45	1.0m#	2.0	2.0	15	#	1.5MΔ	275m#			B16g	B ∅		
31	BD207	720m	90 ∅	∅	10	6.0	70	5.0	60	1.0m#	2.0	2.0	15	#	1.5MΔ	275m#			B16g	B ∅		
32	BD605	720m	90 ∅	∅	10	6.0	55	5.0	45	1.0m#	2.0	2.0	30	#	1.5MΔ	275m#			B16h	D ∅		
33	BD607	720m	90 ∅	∅	10	6.0	70	5.0	60	1.0m#	2.0	2.0	30	#	1.5MΔ	275m#			B16h	D ∅		
34	BD609	720m	90 ∅	∅	10	6.0	80	5.0	80	1.0m#	2.0	2.0	30	#	1.5MΔ	275m#			B16h	D ∅		
35#	BDT91	720m	90 ∅	∅	10		60	5.0	60	100u	4.0	10	5.0		4.0MΔ	300m	300n∅		Y220b	D ∅		
36#	BDT93	720m	90 ∅	∅	10		80	5.0	80	100u	4.0	10	5.0		4.0MΔ	300m	300n∅		Y220b	D ∅		
37#	BDT95	720m	90 ∅	∅	10		100	5.0	100	100u	4.0	10	5.0		4.0MΔ	300m	300n∅		Y220b	D ∅		
38#	BDV91t	720m	90 ∅	∅	10	7.0	60	7.0	60	100u	4.0	10	5.0		4.0MΔ	300m	1.5u	E	B46	D ∅		
39#	BDV93t	720m	90 ∅	∅	10	7.0	80	7.0	80	100u	4.0	10	5.0		4.0MΔ	300m	1.5u	E	B46	D ∅		
40#	BDV95t	720m	90 ∅	∅	10	7.0	100	7.0	100	100u	4.0	10	5.0		4.0MΔ	300m	1.5u	E	B46	D ∅		
41	HEPS5004-RT	720m	90 %	∅	10	\$	90	4.0	90	100u#	4.0	4.0	50	∅	2.0MΔ				B5b	B ∅		
42	HSE3002-RT	720m	90 ∅	∅			80	4.0	80	100u	4.0	1.0	40		500kΔ				B3	B ∅		
43	HSE3003-RT	720m	90 ∅	∅			100	5.0	100	100u	4.0	1.0	40		500kΔ				B3	B ∅		
44	MJE1660	720m	90 ∅	∅	15	5.0	40	5.0	40	700u	4.0	5.0	20	100	#	3.0MΔ			Δ	B16a	B ∅	
45	MJE1661	720m	90 ∅	∅	15	5.0	60	5.0	60	700u	4.0	5.0	20	100	#	3.0MΔ			Δ	B16a	B ∅	
46	MJE2801	720m	90 ∅	∅	10	5.0	60	4.0	60	100u	2.0	3.0	25	100		2.0MΔ			Δ	B16d	B ∅	
47	MJE2801K	720m	90 ∅	∅	10	5.0	60	4.0	60	100u	2.0	3.0	25	100		2.0MΔ			Δ	B16d	B ∅	
48	MJE3055	720m	90 ∅	∅	10	6.0	70	5.0	60	1.0m#	4.0	4.0	20	70	#	3.0MΔ	800m			B16d	B ∅	
49	BLY90*	740m	130 ∅	∅	8.0		36	4.0	18	20mΔ	5.0	1.0	10	50	∅	550MΔ			PE	T94	V ∅	
50	BLY94*	740m	130 ∅	∅	6.0		65	4.0	36	5.0	1.0	10	10	120		500MΔ			PE	T94	V ∅	
51#	2SD953	760m	95	∅	5.0		1.5k	5.0		100u	10	4.0	3.0	8.0			13u	DM	T03	C ∅		
52	SML2159	.76	200	∅	20		400	5.0	200	100u	5.0	50m	20	200		10MΔ			Δ	T03	A ∅	
53#	2SD878	766m	115 ∅	∅	15	7.0	100	7.0	60	100u	4.0	4.0	40	20	70	3.0MΔ			DM	T03	C ∅	
54#	2SD532	770m	70	∅	7.0		200	10	70	10u∅	2.0	1.0	45	200		9.0MΔ			DM	T03	K ∅	
55	STA7604	797m	140	∅	20	5.0	120	5.0	120	5.0m#	5.0	5.0	40	120		40MΔ	100m		EM	T03	C ∅	
56	2N4130	800m	120 ∅	∅	10	2.0	80	4.0	65	20u	5.0	2.0	10	60	#	1.2MΔ				T03	D ∅	
57	2N5038t	800m	140 ∅	∅	20	5.0	150	7.0	90	50m#	5.0	12	20	100		60MΔ	125m	500n		T03	C ∅	
58	JAN2N5038t	800m	6.0	∅	20	5.0	150	7.0	90	25m	5.0	2.0	50	200	#	60MΔ	125m	500n∅		T03	C ∅	
59	2N5039t	800m	140 ∅	∅	20	5.0	120	7.0	75	50m#	5.0	10	20	100		60MΔ	125m	500n∅		T03	C ∅	
60	JAN2N5039t	800m	6.0	∅	20	5.0	125	7.0	75	25m	5.0	2.0	30	150	#	60MΔ	125m	500n∅		T03	C ∅	
61	2N5330t	800m	80 ∅	∅	30	10	150	8.0	90	2.0	10	40	120	100	#	80MΔ	60m	350n∅		T061	A ∅	
62	2N5671t	800m	80 ∅	∅	30	10	120	7.0	120	2.0	15	20	100	100	#	50MΔ	50m#	500n∅		T03	C ∅	
63	JAN2N5671t	800m	140 ∅	∅	30	10	120	7.0	90	25m	2.0	15	20	100	#	50MΔ	50m#	500n∅		T03	C ∅	
64	2N5672t	800m	80 ∅	∅	30	10	150	7.0	150	2.0	15	20	100	100	#	50MΔ	50m#	500n∅		T03	C ∅	
65	JAN2N5672t	800m	140 ∅	∅	30	10	150	7.0	120	25m	2.0	15	20	100	#	50MΔ	50m#	500n∅		T03	C ∅	
66	2N5709	800m	140 ∅	∅	12		70	4.0	50	10m#	10	200m	5.0	50		50MΔ				W51	R ∅	
67	2N5942	800m	140 ∅	∅	12		65	4.0	35	10m#	5.0	1.0	10		50MΔ				W52f	R ∅		
68	2N5989	800m	100 ∅	∅	12	4.0	60	5.0	40	2.0mΔ	2.0	6.0	20	120	#	2.0MΔ				B16a	B ∅	
69	2N5990	800m	100 ∅	∅	12	4.0	80	5.0	60	2.0mΔ	2.0	6.0	20	120	#	2.0MΔ				B16a	B ∅	
70	2N5991	800m	100 ∅	∅	12	4.0	100	5.0	80	2.0mΔ	2.0	6.0	20	120	#	2.0MΔ				B16a	B ∅	
71	2N6032t	800m	80 ∅																			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. V <sub>CE</sub> (V)		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	C O D E	
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CB0</sub> (V)	V <sub>EB0</sub> (V)	V <sub>CE0</sub> (V)	I <sub>CB0</sub> (A)	V <sub>CB</sub> (V)	I <sub>C</sub> (A)	MIN							MAX
1	ZSC2902	800m	150	100		15	4	800	8	400	50	7.5	10	35	20M	130m	4.5u#	PE	T03	D	
2	ZSC2905	800m	120	100	\$J	15		35	4.0	17	2.0M	10	10	180							
3	ZSC2939*	800m	100	100	\$J	10	4.0	500	7.0	450	0.1M	2.0	5.0	10	20M		0.5u#	PE	T03	D	
4	ZSC2972	800m	150	100	\$J	15	5	300	8	200	30u	5.0	7.5	10	35	130m	4.5u#	D	T03	D	
5	ZSC2981†	800m	100	100	\$J	8	4	900	7	800	100u	5.0	800m	15			1u#	D	T03	D	
6	ZSD1118	800m	100	100	\$J	7.0	3.0	130	10	110	50u	5.0	1.0	30	200	2.0M		D	T03	D	
7	ZSD287	800m	100	100	\$J	10		200	7.0	120	300u	5.0	2.0	40	180	#		DM	T03	D	
8	ZSD287A	800m	100	100	\$J	15	2.0	200	7.0	120	100u	5.0	2.0	40	200	#	8.0M	DM	T03	D	
9	ZSD287B	800m	100	100	\$J	15	2.0	200	7.0	140	100u	5.0	2.0	40	200	#	8.0M	DM	T03	D	
10	ZSD287C	800m	100	100	\$J	15	2.0	200	7.0	160	100u	5.0	2.0	40	200	#	8.0M	DM	T03	D	
11	ZSD316	800m	63	100	\$J	7.0		90	5.0	90	2.0M	2.0	3.0	45	120	10M		DM	T03	D	
12	ZSD319	800m	100	100	\$J	30	#	110	7.0	80	30u	4.0	1.0	40	200	1.0M		DM	T03	D	
13	ZSD389	800m	100	100	\$J	10		80	10	60	1.0M	5.0	1.0	30	300	2.0M		3.0u	DM	T03	D
14	ZSD394	800m	100	100	\$J	8.0		700	5.0	400								DM	T03	D	
15	ZSD425	800m	100	100	\$J	12		140	5.0	140	100u	5.0	2.0	40	140	6.0M		DM	T03	D	
16	ZSD426	800m	100	100	\$J	12	12	120	5.0	120	100u	5.0	2.0	40	140	6.0M		DM	T03	D	
17	ZSD469	800m	100	100	\$J	10	3.0	150	10	110	100u	5.0	1.0	40	200	#		DM	T03	D	
18	ZSD556	800m	120	100	\$J	15	6.0	110	6.0	80	1.0M	4.0	5.0	15	100	8.0M		DM	T03	D	
19	ZSD557	800m	120	100	\$J	15	6.0	140	6.0	100	1.0M	4.0	5.0	15	100	8.0M		DM	T03	D	
20	ZSD640	800m	100	100	\$J	7.0	2.0	600	5.0	400	100u	5.0	1.0	25	140	3.0M		DM	T03	D	
21	ZSD733	800m	100	100	\$J	12		160	6.0	140	100u	5.0	1.0	40	320	15M		EM	T03	D	
22	ZSD733K	800m	100	100	\$J	12		180	6.0	160	100u	5.0	1.0	40	320	15M		EM	T03	D	
23	ZSD751	800m	100	100	\$J	9.0		200	5.0	140	50u	5.0	1.0	40	200	7.0M		EM	T03	D	
24	ZSD776	800m	100	100	\$J	5.0	5.0	200	5.0	180	100u	5.0	1.0	500	2.0k			EM	T03	D	
25	ZSD829K†	800m	100	100	\$J	15		150	7	120	2.0	15	1k#				2u	DM	F53	D	
26	ZSD852†	800m	100	100	\$J	15	1.5	150	8.0	100	10u	2.0	15	1.0k#			1.0u	DM	B60	D	
27	ZSD1129K†	800m	100	100	\$J	15	3	100	7	100	1u	3	8	1k#			2u	DM	F53	D	
28	ZSD1148	800m	100	100	\$J	10	1.0	140	5.0	140	5.0	1.0	55	160	20M		3u#	DM	B41	D	
29	ZSD1201†	800m	100	100	\$J	10	2	500	7	400	50u	3	5	200			3u#	DM	T03	D	
30	ZSD1203†	800m	100	100	\$J	15	3	500	7	400	50u	3	8	200			3u#	DM	T03	D	
31	A70-28	800m	140	100	\$J	10			4.0	35								DM	T03	D	
32	BUW57	800m	120	100	\$J	20			7.0	125		1.5	18	10			80M#	DM	T03	D	
33	BUW58	800m	120	100	\$J	20			7.0	160		1.5	15	10			15M#	DM	T03	D	
34	BUW73	800m	120	100	\$J	20			7.0	200		1.5	12	10			15M#	DM	T03	D	
35	BUW74	800m	120	100	\$J	12			7.0	250		1.5	5.0	10			10M#	DM	T03	D	
36	BUW75	800m	120	100	\$J	12			7.0	300		1.5	5.0	10			10M#	DM	T03	D	
37	BUW76	800m	120	100	\$J	12			7.0	350		1.5	5.0	8.0			10M#	DM	T03	D	
38	BUW77	800m	120	100	\$J	12			7.0	400		1.5	5.0	6.0			800n#	DM	T03	D	
39	BUW84	800m	50	100	\$J	2.0	.75		800	7.0	400	1.5	5.0	50			800n#	DM	T03	D	
40	ET6000†	800m	125	100	\$J	15	5.0	400	20	400	1.0M	5.0	10	60			500n	DM	T03	D	
41	ET6001†	800m	125	100	\$J	15	5.0	450	20	450	1.0M	5.0	10	60			500n	DM	T03	D	
42	ET6002†	800m	125	100	\$J	15	5.0	500	20	500	1.0M	5.0	10	60			500n	DM	T03	D	
43	ET6251†	800m	125	100	\$J	10	3.0	400	20	400	1.0M	5.0	10	40			500n	DM	T03	D	
44	ET6252†	800m	125	100	\$J	10	3.0	450	20	450	1.0M	5.0	10	40			500n	DM	T03	D	
45	ET6253†	800m	125	100	\$J	10	3.0	500	20	500	1.0M	5.0	10	40			500n	DM	T03	D	
46	IR401†	800m	100	100	\$J	5.0	2.0	400	7.0	400	250u	5.0	500m	20	100	2.5M#	1.6	350n	DM	T03	D
47	IR410†	800m	100	100	\$J	7.0	3.0	300	5.0	200	250u	5.0	1.0	30	90	2.5M#	800m	350n	DM	T03	D
48	IR411†	800m	100	100	\$J	7.0	3.0	300	7.0	300	250u	5.0	1.0	30	90	2.5M#	800m	350n	DM	T03	D
49	IR413†	800m	100	100	\$J	5.0	2.0	400	5.0	400	250u	5.0	500m	20	80	4.0M#	1.6	400n	DM	T03	D
50	KS6129†	800m	100	100	\$J	24	6.0	80	4.5	80	2.0M	5.0	20	15			120M†	DM	T03	D	
51	KS6130†	800m	100	100	\$J	24	6.0	40	4.5	40	2.0M	5.0	20	15			20n	DM	T03	D	
52	MJ1800	800m	100	100	\$J	5.0	1.0	50	5.0	250	200u*	5.0	400m	40	120	#			DM	T03	D
53	MJ3028	800m	100	100	\$J	3.5	3.0	50	5.0	300	200u*	5.0	300m	25	#				DM	T03	D
54	MJ12003	800m	100	100	\$J	4.0	3.0	50	5.0	1.5k#	1.0M	5.0	1.0	10			4.0M	DM	T03	D	
55	MJ12004	800m	100	100	\$J	5.0	4.0	50	5.0	1.5k#	1.0M	5.0	1.0	10			4.0M	DM	T03	D	
56	MJ12005	800m	100	100	\$J	8.0	4.0	50	5.0	1.5k#	250u*	5.0	1.5	15			1.0	DM	T03	D	
57	MJ12010	800m	100	100	\$J	10	5.0	50	5.0	1.5k#	250u*	5.0	1.0	30			1.0	DM	T03	D	
58	MJE8502†	800m	80	100	\$J	5.0	4.0	80	8.0	700	5.0M*	5.0	1.0	7.5			2.0u	DM	T03	D	
59	MJE8503†	800m	80	100	\$J	5.0	4.0	80	8.0	800	5.0M*	5.0	1.0	7.5			2.0u	DM	T03	D	
60	MJE13008†	800m	2.0	100	\$S	12	6.0	90	9.0	300	1.0M	5.0	5.0	8.0	#		40	DM	T03	D	
61	MJE13009†	800m	2.0	100	\$S	12	6.0	90	9.0	400	1.0M	5.0	5.0	8.0	#		40	DM	T03	D	
62	PTC189	800m	100	100	\$J	12		80	5.0	80	2.0M	2.0	6.0	20	120			DM	T03	D	
63	SDT1050	800m	100	100	\$J	10	3.0	80	8.0	200	5.0M	5.0	1.0	15	#			DM	T03	D	
64	SDT1051	800m	100	100	\$J	10	3.0	80	8.0	325	5.0M	5.0	1.0	15	#			DM	T03	D	
65	SDT1052	800m	100	100	\$J	10	3.0	80	8.0	400	5.0M	5.0	1.0	15	#			DM	T03	D	
66	SDT1053	800m	100	100	\$J	10	3.0	80	8.0	400	5.0M	5.0	1.0	15	#			DM	T03	D	
67	SDT1054	800m	100	100	\$J	10	3.0	80	8.0	400	5.0M	5.0	1.0	15	#			DM	T03	D	
68	SDT1055	800m	100	100	\$J	10	3.0	80	8.0	200	1.0M	5.0	2.0	10	#			DM	T03	D	
69	SDT1056	800m	100	100	\$J	10	3.0	80	8.0	325	1.0M	5.0	2.0	10	#			DM	T03	D	
70	SDT1057	800m	100	100	\$J	10	3.0	80	8.0	400	1.0M	5.0	2.0	10	#			DM	T03	D	
71	SDT1058	800m	100	100	\$J	10	3.0	80	8.0	400	1.0M	5.0	2.0	10	#			DM	T03	D	
72	SDT1059	800m	100	100	\$J	10	3.0	80	8.0	400	1.0M	5.0	2.0	10	#			DM	T03	D	
73	SDT1060	800m	100	100	\$J	10	3.0	80	8.0	200	1.0M	5.0	3.0	10	#			DM	T03	D	
74	SDT1061	800m	100	100	\$J	10	3.0	80	8.0	325	1.0M	5.0	3.0	10	#			DM	T03	D	
75	SDT1062	800m	100	100	\$J	10	3.0	80	8.0	400	1.0M	5.0	3.0	10	#			DM	T03	D	
76	SDT1063	800m	100	100	\$J	10	3.0	80	8.0	400	1.0M										

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	CODE
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)		Vcb (V)	Vc (V)								
1	TIP517	800m	3.5	12	12	6.0	130	6.0	120	5.0M $\Delta$	4.0	6.0	40	200 #	70M $\Delta$		PE $\Delta$	T061	A	
2	TIP517 #	800m	140	12	12	6.0	130	6.0	120	1.0m $\Delta$	4.0	6.0	40	200 #	70M $\Delta$		PE $\Delta$	T061	A	
3	TIP518	800m	3.5	12	12	6.0	160	6.0	150	5.0M $\Delta$	4.0	6.0	40	200 #	70M $\Delta$		PE $\Delta$	T061	A	
4	TIP518 #	800m	140	12	12	6.0	160	6.0	150	1.0m $\Delta$	4.0	6.0	40	200 #	70M $\Delta$		PE $\Delta$	T061	A	
5	FT430	830m	100	10	10	5.0	400	5.0	400	2.5m #	5.0	2.5	15	45 #			D	T03		
6	FT431	830m	100	10	10	5.0	400	5.0	400	2.5m #	5.0	2.5	15	35 #			D	T03		
7	JAN2N6308†	833m	125	10	8.0	4.0	500	8.0	250	500u $\Delta$	5.0	3.0	15	75 #	5.0M $\Delta$	625m #	600n $\Delta$	PE	T03	
8	JAN2N6308†	833m	125	10	8.0	4.0	700	8.0	350	500u $\Delta$	5.0	3.0	12	60 #	5.0M $\Delta$	625m #	600n $\Delta$	PE	T03	
9 #	25C2510*	833m	250	20	20	4.0	55	4.0	35	5.0	10	10	10				PE	W52r		
10 #	25D231†	833m	125	30	30	5.0	50	5.0	40	100u $\Delta$	4.0	10	25	20		100m	3.5u	D $\Delta$	T03	
11 #	25D232†	833m	125	30	30	5.0	100	7.0	100	1.0m $\Delta$	4.0	10	25	20		150m	6.0u	D $\Delta$	T03	
12 #	25D249	833m	125	30	30	5.0	50	5.0	40	100u $\Delta$	4.0	10	25	20		150m		D	T03	
13 #	25D250	833m	125	30	30	5.0	100	7.0	100	100u $\Delta$	4.0	10	25	20	800k $\Delta$			D	T03	
14 #	BUX48A†	833m	175	12	4.0	7.0	7.0	1.0k $\Delta$	4.0m*	8.0	5.0	5.0		5.5M $\Delta$	200m #	1.0u $\Delta$	DM	T03		
15 #	CH3226	833m	117	15	7.0	3.0	35	4.0	35	5.0m*	4.0	4.0	20		800k $\Delta$		DM	R151		
16	CH3232	833m	117	15	7.0	3.0	80	4.0	60	5.0m*	4.0	4.0	12		800k $\Delta$		DM	R151		
17	GSTU4030†	833m	125	6.0	3.0	3.0	350	7.0	300	1.0n $\Delta$	5.0	4.0	10	#	25M $\Delta$	200m #	300n $\Delta$	D	T03	
18	GSTU4035†	833m	125	6.0	3.0	3.0	400	7.0	350	1.0n $\Delta$	5.0	4.0	10	#	25M $\Delta$	200m #	300n $\Delta$	D	T03	
19	GSTU4040†	833m	125	6.0	3.0	3.0	450	7.0	400	1.0n $\Delta$	5.0	4.0	10	#	25M $\Delta$	200m #	300n $\Delta$	D	T03	
20	GSTU6030†	833m	125	10	5.0	5.0	350	7.0	300	500u $\Delta$	5.0	6.0	10	#	25M $\Delta$	133m #	200n $\Delta$	D	T03	
21	GSTU6035†	833m	125	10	5.0	5.0	400	7.0	350	500u $\Delta$	5.0	6.0	10	#	25M $\Delta$	133m #	200n $\Delta$	D	T03	
22	GSTU6040†	833m	125	10	5.0	5.0	450	7.0	400	500u $\Delta$	5.0	6.0	10	#	25M $\Delta$	133m #	200n $\Delta$	D	T03	
23	SD1428	833m	145	6.0	3.0	3.0	36	4.0	18	5.0m $\Delta$	5.0	5.0	20				EPL	W65d		
24	SDT9801	833m	90	15	3.0	3.0	60	12	40	1.0u	5.0	5.0	20		5.0M		ME	T03		
25	SDT9802	833m	90	15	3.0	3.0	80	12	60	1.0u	5.0	5.0	20		5.0M		ME	T03		
26	SDT9803	833m	90	15	3.0	3.0	100	12	80	1.0u	5.0	5.0	20		5.0M		ME	T03		
27	SDT9804	833m	90	15	3.0	3.0	120	12	100	1.0u	5.0	5.0	20		5.0M		ME	T03		
28	SVT350-5†	833m	100	10	2.0	2.0	350	7.0	350	200u	5.0	5.0	15		30m	100n	DM	T03		
29	SVT400-5†	833m	100	10	2.0	2.0	400	7.0	400	200u	5.0	5.0	15		30m	100n	DM	T03		
30	SVT450-5†	833m	100	10	2.0	2.0	450	7.0	450	200u	5.0	5.0	15		30m	100n	DM	T03		
31	MRF621	834m	146	11	3.0	3.0	36	4.0	16	20m $\Delta$	5.0	5.0	10		470M #		EM	W65		
32 #	25D339-1	842m	80	10	10	10	90	8.0	90	100u $\Delta$	2.0	1.0	45	*	5.0M $\Delta$	600m		EM	T03	
33 #	25D339-2	842m	80	10	10	10	110	8.0	110	100u $\Delta$	2.0	1.0	45	*	5.0M $\Delta$	600m		EM	T03	
34 #	BD550	850m	150	7.0	2.0	2.0	130	5.0	110	1.0m*	4.0	4.0	15	75	5.0M				T03	
35 #	BD550A	850m	150	7.0	2.0	2.0	200	5.0	175	1.0m*	4.0	2.0	15	75	5.0M				T03	
36 #	BD550B	850m	150	7.0	2.0	2.0	275	5.0	250	1.0m*	4.0	2.0	10	50	5.0M				T03	
37	KSD3771	850m	145	30	10	10	50	5.0	40	2.0m	4.0	15	10	30	800k		D	T03		
38	KSD3772	850m	145	20	5.0	10	100	5.0	60	5.0m	4.0	10	10	30	800k		D	T03		
39	KSD3773	850m	145	20	5.0	10	160	7.0	140	2.0m	4.0	8.0	10	30	800k		D	T03		
40	KSD9701	850m	145	16	4.0	4.0	100	7.0	80	2.0m	4.0	8.0	15	60	800k		D	T03		
41	KSD9701A	850m	145	16	4.0	4.0	100	7.0	80	2.0m	4.0	8.0	10	30	800k		D	T03		
42	KSD9702	850m	145	16	4.0	4.0	120	7.0	100	2.0m	4.0	8.0	15	60	800k		D	T03		
43	KSD9702A	850m	145	16	4.0	4.0	120	7.0	100	2.0m	4.0	8.0	10	30	800k		D	T03		
44	KSD9703	850m	145	16	4.0	4.0	140	7.0	120	2.0m	4.0	8.0	15	60	800k		D	T03		
45	KSD9703A	850m	145	16	4.0	4.0	140	7.0	120	2.0m	4.0	8.0	10	30	800k		D	T03		
46	KSD9704	850m	145	16	4.0	4.0	100	7.0	80	10m	4.0	5.0	20	80	800k		D	T03		
47	KSD9705	850m	145	16	4.0	4.0	120	7.0	100	10m	4.0	5.0	20	80	800k		D	T03		
48	KSD9706	850m	145	16	4.0	4.0	140	7.0	120	10m	4.0	5.0	20	80	800k		D	T03		
49	KSD9707	850m	145	16	4.0	4.0	80	7.0	60	10m	4.0	5.0	15		800k		D	T03		
50	MJ8502	850m	150	5.0	4.0	4.0	700	8.0	800	5.0	1.0	7.5			2.0u $\Delta$			F59		
51	MJ8503	850m	150	5.0	4.0	4.0	800	8.0	800	5.0	1.0	7.5			2.0u $\Delta$			F59		
52	SCA14031	850m	150	40	20	20	400	8.0	300	10u $\Delta$	5.0	20	10	40	30M $\Delta$	50m	500n $\Delta$	PL	T03	
53	SCA14063	850m	150	20	10	10	300	8.0	250	10u $\Delta$	5.0	10	10	50	30M $\Delta$	50m	500n $\Delta$	PL	T03	
54	SCA14065	850m	150	20	10	10	250	8.0	200	10u $\Delta$	5.0	15	15	50	30M $\Delta$	50m	600n $\Delta$	PL	T03	
55	SCA14067	850m	150	20	10	10	200	8.0	150	10u $\Delta$	5.0	20	10	50	30M $\Delta$	50m	600n $\Delta$	PL	T03	
56	JAN2N2015	854m	150	10	6.0	10	100	10	100	50u $\Delta$	4.0	5.0	15	50	250m				T036	
57	JAN2N2016	854m	150	10	6.0	10	130	10	130	50u $\Delta$	4.0	5.0	15	50	250m				T036	
58	2N3055C	854m	150	30	15	15	140	10	130	1.0m #	4.0	4.0	25	70	187m #				T03	
59	2N3713	854m	150	10	4.0	4.0	80	7.0	60	1.0m #	2.0	1.0	25	75	30k $\Delta$				T03	
60	2N3714	854m	150	10	4.0	4.0	100	7.0	80	1.0m #	2.0	1.0	25	75	30k $\Delta$				T03	
61	2N3715	854m	150	10	4.0	4.0	80	7.0	60	1.0m #	2.0	1.0	50	150	30k $\Delta$				T03	
62	2N3716	854m	150	10	4.0	4.0	100	7.0	80	1.0m #	2.0	1.0	50	150	30k $\Delta$				T03	
63	2N3716HS	854m	150	10	4.0	4.0	100	7.0	80	1.0m #	2.0	1.0	50	150	30k $\Delta$				T03	
64	2N3771	854m	150	30	7.5	5.0	50	5.0	40	2.0m	4.0	15	15	60	#	130m			T03	
65	2N3772	854m	150	30	5.0	100	7.0	60	5.0m	4.0	10	15	60	#	140m				T03	
66	2N3772C	854m	150	30	15	140	10	135	1.0m #	4.0										







# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcbo @ 25°C		BIAS hFE		MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG #	L E O A D E
					Ic (A)	Ib (A)	Vcbo (V)	VVebo (V)	VVceo (V)	Icbo (A)	Vcbo (V)	Ic (A)	MIN					
1	RCA1805	857m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
2	RCA1806	857m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
3	RCA1809	857m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
4	RCA3773	857m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
5	SCE321	857m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
6	2N2338	858m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
7	2N6671†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
8	2N6672†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
9	2N6673†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
10#	BUX112†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
11#	BUX122†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
12#	BUX132†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
13#	BUX142†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
14	MJ13014†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
15	MJ13015†	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
16	MJ13080†	.86	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
17	MJ13081†	.86	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
18	MJ16006	.86	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
19	MJ16008	.86	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
20	MR452A	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
21	SD1013	860m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
22#	BUY51	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
23#	BUY51A	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
24#	BUY52	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
25#	BUY52A	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
26#	BUY53	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
27#	BUY53A	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
28#	BUY54	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
29#	BUY54A	862m	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
30#	BU426†	900m	70	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
31	TRW8259	.90	200	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
32#	2SC1114	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
33#	2SC1116†	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
34#	2SC1116A	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
35#	2SD380A	909m	50	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
36#	BU426A†	909m	70	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
37#	BU433†	909m	70	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
38#	BUX80†	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
39#	BUX81	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
40#	SU426(A)†	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
41#	SU426V(A)†	909m	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
42	2N5881†	915m	160	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
43	2N5882†	915m	160	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
44	HSE820-RT	920m	115	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
45	HSE823-RT	920m	115	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
46	HSE825-RT	920m	115	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
47	HSE828-RT	920m	115	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
48	HSE838-RT	920m	115	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
49	HSE839-RT	920m	115	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
50#	2SC1764	933m	140	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
51#	BUV82	933m	70	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
52#	BUV83	933m	70	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
53#	SGS13006(A)†	952m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
54#	SGS13007(A)†	952m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
55#	SGS13007A(A)†	952m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
56#	2SC2489	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
57#	2SC2522	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
58#	2SC2522A	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
59#	2SC2523	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
60#	2SC2525	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
61#	2SC2526	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
62#	2SC2564	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
63#	2SC2838	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
64#	2SC2914†	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
65#	2SD745	.96	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
66#	2SD745A	.96	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
67#	2SD745B	.96	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
68#	2SD845	960m	120	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
69	2N1899	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
70	2N1900	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
71	2N1901	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
72	2N1902	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
73	2N1903	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
74	2N1904	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
75	2N3076	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
76	2N3237	1.0	200	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
77	2N3260†	1.0	200	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
78	2N3265†	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
79	2N3268†	1.0	125	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
80	2N3597†	1.0	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
81	2N3598†	1.0	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
82	2N3599†	1.0	100	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
83	2N3876	1.0	125	∅														

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Ser.	# Y200 s/a TO200	L E A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ce0</sub> (V)		I <sub>cb0</sub> (A)	I <sub>c</sub> (A)									
1	JAN2N5957†	1.0 #	150	SJ	20	2.0	100	10	100	100u#	10	10	30	120 #	10MΔ	90m#	1.1u#		T50a	A	
2	2N5959†	1.0 #	100	SJ	20	2.0	100	10	100	500u#	10	10	30	120 #	10MΔ	90m#	1.1u#		T061	A	
3	JAN2N5959†	1.0 #	150	SJ	20	2.0	100	10	100	100u#	10	10	30	120 #	10MΔ	90m#	1.1u#		T50a	A	
4	2N6249†	1.0 #	100	SJ	10	5.0	300	8.0	225 #	3.0	10	10	50	2.5MΔ	100m	2.0u#		T03	C		
5	JAN2N6249†	1.0 #	175	SJ	10	5.0	300	8.0	200	3.0	10	10	50	2.5MΔ	150m	2.0u#		T03	C		
6	2N6250†	1.0 #	100	SJ	10	5.0	375	8.0	300 #	3.0	10	8.0	50	2.5MΔ	150m	2.0u#		T03	C		
7	JAN2N6250†	1.0 #	175	SJ	10	5.0	375	8.0	275 #	3.0	10	8.0	50	2.5MΔ	150m	2.0u#		T03	C		
8	2N6251†	1.0 #	100	SJ	10	5.0	450	8.0	375 #	3.0	10	8.0	50	2.5MΔ	150m	2.0u#		T03	C		
9	JAN2N6251†	1.0 #	175	SJ	10	5.0	450	8.0	350	3.0	10	8.0	50	2.5MΔ	150m	2.0u#		T03	C		
10	2N6546†	1.0	175	SJ	15	10	650	8.0	300	2.0	10	6.0	30	6.0MΔ	150m	1.0u#		T03	C		
11	JAN2N6546†	1.0	175	SJ	15	10	650	8.0	300	2.0	10	12	30	6.0MΔ	150m	1.0u#		T03	C		
12	2N6547†	1.0	175	SJ	15	10	850	8.0	400	2.0	10	6.0	30	6.0MΔ	150m	1.0u#		T03	C		
13	JAN2N6547†	1.0	175	SJ	15	10	850	8.0	400	2.0	10	12	30	6.0MΔ	150m	1.0u#		T03	C		
14	2N6562†	1.0 #	175	SJ	10	2.0	450	5.0	450	2.0	10	10	40	10MΔ	150m	500n#		T061	A		
15	2N6563†	1.0 #	175	SJ	10	2.0	300	5.0	300	2.0	10	10	40	15MΔ	150m	500n#		T061	A		
16	2N6853†	1.0	150	SJ	20	10	350	7.0	300	2.0	15	10	40	75MΔ	40m	200n#		T03	C		
17	2N6854†	1.0	150	SJ	20	10	400	7.0	350	2.0	15	10	40	75MΔ	40m	200n#		T03	C		
18	2N6855†	1.0	150	SJ	20	10	450	7.0	400	2.0	15	10	40	75MΔ	53m	200n#		T03	C		
19	2N6874†	1.0	175	SJ	15	5.0	450	7.0	300	2.0	10	8.0	20	15MΔ	333m	600n#		Y204a	C		
20	2N6875†	1.0	175	SJ	15	5.0	650	7.0	400	2.0	10	8.0	20	15MΔ	333m	600n#		Y204a	C		
21	2N6876†	1.0	175	SJ	15	5.0	450	8.0	300	2.0	10	8.0	20	15MΔ	100m	600n#		Y204a	C		
22	2N6877†	1.0	175	SJ	15	5.0	550	8.0	350	2.0	15	8.0	20	15MΔ	100m	600n#		Y204a	C		
23	2N6878†	1.0	175	SJ	15	5.0	550	8.0	350	2.0	15	8.0	20	15MΔ	100m	600n#		Y204a	C		
24	2N6889†	1.0	175	SJ	15	5.0	450	7.0	300	2.0	10	8.0	20	15MΔ	150m	600n#		Y204a	C		
25	2N6890†	1.0	175	SJ	15	5.0	650	7.0	400	2.0	10	8.0	20	15MΔ	150m	600n#		Y204a	C		
26	2N6891†	1.0	175	SJ	15	5.0	450	8.0	300	2.0	10	8.0	20	15MΔ	100m	600n#		Y204a	C		
27	2N6892†	1.0	175	SJ	15	5.0	550	8.0	350	2.0	15	8.0	20	15MΔ	100m	600n#		Y204a	C		
28	2N6893†	1.0	175	SJ	15	5.0	650	8.0	400	2.0	15	8.0	20	15MΔ	100m	600n#		Y204a	C		
29	2N6751	1.0	150	SJ	10	5.0	800	8.0	400	2.0	15	8.0	40	60M#		0.4u	ED	Y204a	C		
30	2N6752	1.0	150	SJ	10	5.0	850	8.0	450 #	2.0	15	8.0	40	60M#		0.4u	ED	Y204a	C		
31	2N6753	1.0	150	SJ	10	5.0	900	8.0	500 #	2.0	15	8.0	40	60M#		0.4u	ED	Y204a	C		
32	2N6754	1.0	150	SJ	10	5.0	1.0k	8.0	500 #	2.0	15	8.0	40	60M#		0.4u	ED	Y204a	C		
33	2N6836†	1	175	SJ	15	10	850	8.0	450 #	1.5m#	5	10	30	10MΔ		500n#		Y204c	C		
34	2SC806A	1.0	125	SJ	10	1.0	700	10	10	5.0	3.0	2.0	92	5.5MΔ	800m		DM	T03	C		
35	2SC807A	1.0	125	SJ	10	1.0	580	8.0	200	5.0	3.0	100m	30	173	5.5MΔ	600m		DM	T03	C	
36	2SC1142†	1.0	125	SJ	10	3.0	800	8.0	400	3.0	3.0	10	25	4.0MΔ	400m	1.5u#		DM	T03	C	
37	2SC1143†	1.0	125	SJ	10	3.0	600	8.0	300	3.0	3.0	10	25	4.0MΔ	400m	1.5u#		DM	T03	C	
38	2SC2398	1.0	95	SJ	10	2.0	100	5.0	100	1.0	2.0	100m	50	80MΔ	333m			D	T03	C	
39	2SC2402†	1.0	150	SJ	15	5.0	300	7.0	200	100	5.0	20	20	80MΔ	140m	1.0u		DMΔ	T03	C	
40	2SC2429A†	1.0	150	SJ	15	5.0	600	7.0	450	100	5.0	10	40	30MΔ	100m	130n		PEA	T03	C	
41	2SC2433†	1.0	150	SJ	30	5.0	120	5.0	120	50	3.0	35	200	80MΔ	100m	150n		PEA	F6e	C	
42	2SC2434†	1.0	150	SJ	30	5.0	70	5.0	70	50	3.0	35	200	80MΔ	100m	150n		PEA	F6e	C	
43	2SC3060†	1.0	150	SJ	5.0	3.0	1.2k	7.0	850	100	5.0	2.0	10	30	750MΔ	500n#		FLA	T03	C	
44	2SC3215	1	125	SJ	10	5	1.2k	8	800	50	5.0	3	10	15	200m	5u#		FLA	T03	C	
45	2SD132	1.0	150	SJ	20	4.0	100	6.0	65	5.0	5.0	20	100	30MΔ	50m		EM	F10a	C		
46	2SD211†	1.0	100	SS	10	4.0	80	7.0	40	5.0	4.0	10	15	30	8.0M†	500m	1.2u#		D	T03	C
47	2SD212†	1.0	100	SS	10	4.0	90	7.0	60	30	4.0	10	15	30	8.0M†	500m	1.2u#		D	T03	C
48	2SD213†	1.0	100	SS	10	4.0	110	7.0	80	30	4.0	10	15	30	8.0M†	500m	1.2u#		D	T03	C
49	2SD214†	1.0	100	SS	10	4.0	130	7.0	100	30	4.0	10	15	30	8.0M†	500m	1.2u#		D	T03	C
50	2SD293	1.0	125	SJ	10	3.0	800	10	400	3.0	5.0	10	14	27	8.0M†	400m			D	T03	C
51	2SD294	1.0	125	SJ	10	3.0	800	10	400	3.0	5.0	10	28	27	8.0M†	400m			D	T03	C
52	2SD340.1	1.0	100	SJ	12	2.5	110	8.0	110	110	2.0	50	50	3.0MΔ	143m		EM	T03	C		
53	2SD340.2	1.0	100	SJ	12	2.5	140	8.0	140	100	2.0	50	50	3.0MΔ	143m		EM	T03	C		
54	2SD533	1.0	100	SJ	10	2.5	270	15	90	50	2.0	1.0	45	220	8.0MΔ	200m		DM	T03	C	
55	2SD538A	1.0	150	SJ	10	3.0	500	7.0	400	100	5.0	20	70	15MΔ	200m	1.0u		ME	T03	C	
56	2SD539A	1.0	150	SJ	10	3.0	400	7.0	350	500	5.0	20	70	15	15	200m		DM	T03	C	
57	2SD873	1.0	150	SJ	16	4.0	160	7.0	140	100	4.0	8.0	15	60	3.0MΔ			DM	T03	C	
58	108T21	1.0	175	SJ	30	15	120	7.0	80	1.0	4.0	10	20	60	30MΔ	140m	200n#		DM	T03	C
59	109T21	1.0	175	SJ	30	15	160	7.0	125	1.0	4.0	10	20	60	30MΔ	140m	200n#		DM	T03	C
60	1743-0610†	1.0	175	SJ	30	10	70	7.0	60	1.0	4.0	10	20	100	30MΔ	100m	500n#		DM	T03	C
61	1743-0630†	1.0	175	SJ	30	10	70	7.0	60	1.0	4.0	10	20	100	30MΔ	33m	700n#		DM	T03	C
62	1743-0820†	1.0	175	SJ	30	10	90	7.0	80	1.0	4.0	10	20	100	30MΔ	50m	600n#		DM	T03	C
63	1743-1010†	1.0	175	SJ	30	10	110	7.0	100	1.0	4.0	10	20	100	30MΔ	100m	500n#		DM	T03	C
64	1743-1030†	1.0	175	SJ	30	10	110	7.0	100	1.0	4.0	10	20	100	30MΔ	33m	700n#		DM	T03	C
65	1743-1220†	1.0	175	SJ	30	10	130	7.0	120	1.0	4.0	10	20	100	30MΔ	50m	600n#		DM	T03	C
66	1743-1410†	1.0	175	SJ	30	10	150	7.0	140	1.0	4.0	10	20	100	30MΔ	100m	500n#		DM	T03	C
67	1743-1430†	1.0	175	SJ	30	10	150	7.0	140	1.0	4.0	10	20	100	30MΔ	33m	700n#		DM	T03	C
68	1743-1620†	1.0	175	SJ	30	10	170	7.0	160	1.0	4.0	10	20	100	30MΔ	50m	600n#		DM	T03	C
69	1743-1810†	1.0	175	SJ	30	10	190	7.0	180	1.0	4.0	10	20	100	30MΔ	100m	500n#		DM	T03	C
70	1743-1820†	1.0	175	SJ	30	10	190	7.0	180	1.0	4.0	10	20	100	30MΔ	50m	600n#		DM	T03	C
71	1743-1830†	1.0	175	SJ	30	10	190	7.0	180	1.0	4.0	10	20	100	30MΔ	33m	700n#		DM	T03	C
72	1748-0610†	1.0 #	100	SJ	40	10	60	7.0	60	5.0	2.0	10	20	100	30MΔ	300n#			DM	T03	C
73	1748-0630†	1.0 #	100	SJ	40	1															

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	BIAS		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	DWC #	L E O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ceo</sub> (V)		V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	I <sub>c</sub> (A)	MIN							
1#	41012	1.0	175	∅	SJ	20	5.0	120	7.0	80	10m	4.0	10	20	80	40MΔ	75m	500n∅	E	T03	C∅
2#	41013	1.0	175	∅	SJ	20	5.0	160	7.0	125	10m	4.0	10	20	80	40MΔ	75m	500n∅	E	T03	C∅
3#	BD249	1.0	3.0	∅	SJ	25	5.0		5.0	45	700uΔ	4.0	5.0	20		3.0MΔ	120m	300n∅	Δ	B19	D
4#	BD249A	1.0	3.0	∅	SJ	25	5.0		5.0	80	700uΔ	4.0	5.0	20		3.0MΔ	120m	300n∅	Δ	B19	D
5#	BD249B	1.0	3.0	∅	SJ	25	5.0		5.0	80	700uΔ	4.0	5.0	20		3.0MΔ	120m	300n∅	Δ	B19	D
6#	BD249C	1.0	3.0	∅	SJ	25	5.0		5.0	100	700uΔ	4.0	5.0	20		3.0MΔ	120m	300n∅	Δ	B19	D
7	BDY57A†	1.0	175	∅	SJ	25	6.0	120	7.0	100	1.0m	4.0	10	20	80	30MΔ	25u∅	E	Y204a	C∅	
8	BLX85	1.0	175	∅	SJ	20			10	60		5.0	5.0	30	150	10MΔ	100m			T03	C∅
9	BLX87	1.0	175	∅	SJ	20			10	100		5.0	5.0	30	150	10MΔ	100m			T03	C∅
10#	BUW13	1.0	150	∅	SJ	15				400	1.0mΔ									B46	D
11#	BUW13A	1.0	150	∅	SJ	15				450	1.0mΔ									B46	D
12#	BUX31	1.0	150	∅	SJ	8.0	4.0	800	8.0	400	100uΔ	3.0	4.0	8	40	15MΔ		400f#	Δ	T03	C∅
13#	BUX31A	1.0	150	∅	SJ	8.0	4.0	900	8.0	450	100uΔ	3.0	4.0	8	40	15MΔ		400f#	Δ	T03	C∅
14#	BUX31B	1.0	150	∅	SJ	8.0	4.0	1.0k	8.0	500	100uΔ	3.0	4.0	8	40	15MΔ		400f#	Δ	T03	C∅
15#	BUX32	1.0	150	∅	SJ	8.0	4.0	800	8.0	400	100uΔ	3.0	4.0	8	40	15MΔ		400f#	Δ	T03	C∅
16#	BUX32A	1.0	150	∅	SJ	8.0	4.0	900	8.0	450	100uΔ	3.0	4.0	8	40	15MΔ		400f#	Δ	T03	C∅
17#	BUX32B	1.0	150	∅	SJ	8.0	4.0	100	8.0	500	100uΔ	3.0	4.0	8	40	15MΔ		400f#	Δ	T03	C∅
18	DTS401	1.0	75	∅	SJ	2.0	1.0	5.0	4.0	400	500uΔ	5.0	5.0	20	100		1.6		D	Y204a	C∅
19	DTS401#	1.0	75	∅	SJ	2.0	1.0	5.0	4.0	400	500uΔ	5.0	5.0	20	100		1.6		D	Y204a	C∅
20	DTS409#	1.0	125	∅	J	7.0	3.0	400	7.0	400	250uΔ	5.0	1.0	15		2.5MΔ	1.2	400n	D	T03	C∅
21	DTS413	1.0	75	∅	J	2.0	1.0	5.0	4.0	400	250uΔ	5.0	5.0	20	80	4.0MΔ	1.6		Δ	Y204a	C∅
22	DTS413#	1.0	75	∅	J	2.0	1.0	5.0	4.0	400	250uΔ	5.0	5.0	20	80	7.0MΔ	1.6		D	Y204a	C∅
23	DTS430#	1.0	125	∅	J	7.0	3.0	400	7.0	400	2.5MΔ	5.0	2.5	15	45	2.5MΔ	360m	350n	D	T03	C∅
24	DTS431#	1.0	125	∅	J	7.0	3.0	400	7.0	400	2.5MΔ	5.0	2.5	15	35	2.5MΔ	280m	350n	D	T03	C∅
25	DTS801	1.0	100	∅	SJ	2.0	500m	1.0k	5.0	800	500uΔ	5.0	200m	20		1.5MΔ			D	T03	C∅
26	DTS801#	1.0	100	∅	SJ	2.0	500m	1.0k	5.0	800	500uΔ	5.0	200m	20		1.5MΔ			D	Y204a	C∅
27	DTS802	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	1.0k	500uΔ	5.0	3.5	2.2		1.5MΔ		1.0u#	Δ	T03	C∅
28	DTS802#	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	1.0k	500u	5.0	3.5	2.2		1.5MΔ		1.0u#	Δ	Y204a	C∅
29	DTS804	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	1.0k	500uΔ	5.0	3.5	2.2		1.5MΔ		1.0u#	Δ	T03	C∅
30	DTS804#	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	1.0k	500uΔ	5.0	3.5	2.2		1.5MΔ		1.0u#	Δ	Y204a	C∅
31	DTS812	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	900	500uΔ	5.0	3.5	2.2		1.5MΔ		1.0u#	Δ	T03	C∅
32	DTS812MX	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	900	500uΔ	5.0	1.0	6.0	24		1.2	1.0 #	D	T03	C∅
33	DTS814	1.0	100	∅	SJ	5.0	2.0	5.0	5.0	900	500uΔ	5.0	3.5	2.2		1.5MΔ		1.0u#	Δ	T03	C∅
34	ET401†	1.0	100	∅	SJ	5.0	2.0	400	7.0	400	250uΔ	5.0	500m	20		2.5MΔ		400n	DM	T03	C1∅
35	ET402†	1.0	125	∅	J	7.0	3.0	700	7.0	400	250uΔ	5.0	500m	20		2.5MΔ		400n	DM	T03	C∅
36	ET403†	1.0	125	∅	J	7.0	3.0	400	7.0	400	2.5MΔ	5.0	3.5	10		2.5MΔ		400n	DM	T03	C∅
37	ET409†	1.0	125	∅	J	7.0	3.0	400	7.0	400	250uΔ	5.0	1.0	15		2.5MΔ		400n	DM	T03	C∅
38	ET410†	1.0	100	∅	J	7.0	3.0	300	7.0	200	250uΔ	5.0	1.0	30		2.5MΔ		400n	DM	T03	C∅
39	ET411†	1.0	100	∅	J	7.0	3.0	300	7.0	300	250uΔ	5.0	1.0	30		2.5MΔ		400n	DM	T03	C∅
40	ET413†	1.0	100	∅	SJ	7.0	2.0	400	7.0	400	250uΔ	5.0	500m	15		4.0 Δ		400n	DM	T03	C∅
41	ET423†	1.0	125	∅	J	7.0	3.0	400	7.0	400	250uΔ	5.0	1.0	30		2.5MΔ		400n	DM	T03	C∅
42	ET424†	1.0	125	∅	J	7.0	3.0	700	7.0	500	250uΔ	5.0	1.0	30		2.5MΔ		400n	DM	T03	C∅
43	ET425†	1.0	125	∅	J	7.0	3.0	700	7.0	500	250uΔ	5.0	1.0	30		2.5MΔ		400n	DM	T03	C∅
44	ET431†	1.0	125	∅	J	7.0	3.0	400	7.0	400	2.5MΔ	5.0	3.5	10		2.5MΔ		400n	DM	T03	C∅
45	ET6546†	1.0	175	∅	SJ	15	10	500	8.0	300	5.0M*	2.0	10	6	30	28MΔ		1.0u#	DM	T03	C∅
46	ET6547†	1.0	175	∅	SJ	15	10	650	8.0	400	5.0M*	2.0	10	6	30	28MΔ		1.0u#	DM	T03	C∅
47	GSD550020†	1.0	100	∅	SJ	50	20	200	7.0	200	5.0u*	4.0	10	8.0 #		30MΔ	20m #			T03	C∅
48	HEPS5020-RT	1.0	125	∅	SJ	10		400	5.0	325	100u	4.0	1.0	40		2.5MΔ		200n		T03	C∅
49	HEPS5021-RT	1.0	125	∅	SJ	5.0		5.0	5.0	700	250uΔ	5.0	2.5	10		2.5MΔ		500kΔ		T03	C∅
50	HSE3021-RT	1.0	125	∅	SJ			60	5.0	60	100u	4.0	1.5	25		5.0MΔ				B3	C∅
51	IR402†	1.0	125	∅	SJ	7.0	3.0	700	7.0	400	250uΔ	5.0	1.0	30		2.5MΔ	666m	350n	D	T03	C∅
52	IR403†	1.0	125	∅	SJ	7.0	3.0	400	7.0	400	500uΔ	5.0	1.0	15		2.5MΔ	314m	350n	D	T03	C∅
53	IR409†	1.0	125	∅	SJ	7.0	3.0	400	7.0	400	250uΔ	5.0	1.0	30	90	2.5MΔ	800m	400n	D	T03	C∅
54	IR423†	1.0	125	∅	SJ	7.0	3.0	400	7.0	400	250uΔ	5.0	1.0	30	90	2.5MΔ	800m	350n	D	T03	C∅
55	IR424†	1.0	125	∅	SJ	7.0	3.0	700	7.0	500	250uΔ	5.0	1.0	30	90	2.5MΔ	800m	350n	D	T03	C∅
56	IR425†	1.0	125	∅	SJ	7.0	3.0	700	7.0	500	250uΔ	5.0	1.0	30	90	2.5MΔ	800m	350n	D	T03	C∅
57	IR430†	1.0	125	∅	SJ	7.0	3.0	400	7.0	400	2.5MΔ	5.0	2.5	15	45	2.5MΔ	380m	350n	D	T03	C∅
58	IR431†	1.0	125	∅	SJ	7.0	3.0	400	7.0	400	2.5MΔ	5.0	2.5	15	35	2.5MΔ	280m	350n	D	T03	C∅
59	IR6546†	1.0	175	∅	SJ	15	10	500	9.0	350	1.0MΔ	2.0	5.0	12	60	24MΔ		600n	D	T03	C∅
60	IR6547†	1.0	175	∅	SJ	15	10	600	9.0	400	1.0MΔ	2.0	5.0	12	60	24MΔ		600n	D	T03	C∅
61	KSP1201	1.0	20	∅		5.0		225	8.0	200	1.0u	5.0	10	15	60	30M			PE	T063	C∅
62	KSP1202	1.0	20	∅		5.0		250	8.0	225	1.0u	5.0	10	15	60	30M			PE	T063	C∅
63	KSP1203	1.0	20	∅		5.0		275	8.0	250	1.0u	5.0	10	15	60	30M			PE	T063	C∅
64	KSP1204	1.0	20	∅		5.0		300	8.0	275	1.0u	5.0	10	15	60	30M			PE	T063	C∅
65	KSP1205	1.0	20	∅		5.0		325	8.0	300	1.0u	5.0	10	15	60	30M			PE	T063	C∅
66	KSP1251	1.0	20	∅		5.0		60	8.0	40	1.0u	5.0	10	20	60	35M			PE	T063	C∅
67	KSP1252	1.0	20	∅		5.0		100	8.0	80	1.0u	5.0	10	20	60	35M			PE	T063	C∅
68	KSP1253	1.0	20	∅		5.0		140	8.0	120	1.0u	5.0	10	20	60	35M			PE	T063	C∅
69	KSP1254	1.0	20	∅		5.0		60	8.0	40	1.0u	5.0	10	40	120	35M			PE	T063	C∅
70	KSP1255	1.0	20	∅		5.0		100	8.0	80	1.0u	5.0	10	40	120	35M			PE	T063	C∅
71	KSP1256	1.0	20																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #200 Ser.	C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)		Vcb (V)	Ic (A)								
1	MRF458A	1.0	175	0.0	8S	10		38	4.0	18	5.0	5.0	10	150	30M#				T72t	R R R	
2	MRF460	1.0	175	0.0	8S	15		40	4.0	20	5.0	1.0	20	40	∅				W52p	R R R	
3	MRF466	1.0	175	0.0	8J	6.0		65	4.0	35	5.0	500m	10	80	30M#				XXXXX		
4	PMS5K425T	1.0	150	0.0	8J	3.0	1.0	470	7.0	425	3.0	3.0	5.0	25	#		.75uZ	PSE	T03	C C C	
5	PMS5K425T	1.0	150	0.0	8J	5.0	2.0	470	7.0	425	3.0	3.0	5.0	25	#		.75uZ	PSE	T03	C C C	
6	PP3006	1.0	115	0.0	8J	15		80		60	4.0	5.0	20					DM	T03	C C C	
7	PP3007	1.0	115	0.0	8J	15		100		80	4.0	5.0	20					DM	T03	C C C	
8	PP3008	1.0	115	0.0	8J	15		120		100	4.0	5.0	20					DM	T03	C C C	
9	PT2909	1.0	175	0.0	8J	30	10	150	8.0	90	5.0	1.0	10	50		40M	65m	DM	T03	C C C	
10	PT2944	1.0	6.0	0.0	8J	30	5.0	150	8.0	90	4.0	2.0	10	40	160	40M	70m	PL	T063	H	
11	PT3993T	1.0	200	0.0	8J	30	5.0	150	8.0	145	2.0	2.0	10	15	40	40M	55mV	PL	T063	H	
12	PT5902	1.0	6.0	0.0	8J	30	5.0	125	6.0	120	10m#	3.0	10	7.0	100	40M	50m	PL	T063	H	
13	PT5955T	1.0	175	0.0	8J	30		160	7.0	95	5.0	15	25	120	100M#	50mV			T063		
14	PT5961T	1.0	175	0.0	8J	30		220	8.0	200	5.0	5.0	40	120	125M#	100mV			T063		
15	PT5963	1.0	100	0.0	8J	30	10	120	7.0	70	5.0	4.0	3.0	10	30M	60m			T063	A	
16	PT5994	1.0	6.0	0.0	8J	50	10	120	8.0	100	10m	5.0	30	50	100M	33m	300n∅	PL	T063	H	
17	PT6909T	1.0	175	0.0	8J	30		150	8.0	140	2.0	2.0	10	20	100M#	100mV			T063		
18	PT6910T	1.0	175	0.0	8J	30		150	8.0	140	2.0	2.0	10	20	100M#	100mV			T063		
19	PT6950T	1.0	175	0.0	8J	30	10	120	8.0	70	5.0	10	40	200	60mV				T03	C C C	
20	PT6951	1.0	175	0.0	8J	30	10	160	8.0	100	10m	5.0	10	40	100M	80m	350n∅	PL	T03	K K K	
21	PT6952	1.0	175	0.0	8J	30	10	200	8.0	140	10m	5.0	10	30	100M	100m	350n∅	PL	T03	K K K	
22	PT7930T	1.0	175	0.0	8J	30		90	6.0	70	5.0	10	30	150	70mV				T03	C C C	
23	PT7931T	1.0	175	0.0	8J	30		90	6.0	70	5.0	10	30	200	60mV				T03	C C C	
24	PT7932T	1.0	175	0.0	8J	30		120	8.0	70	5.0	10	30	150	70mV				T03	C C C	
25	PT7933T	1.0	175	0.0	8J	30		120	6.0	100	5.0	10	30	150	90mV				T03	C C C	
26	PT7934T	1.0	175	0.0	8J	30		120	6.0	100	5.0	10	40	200	80mV				T03	C C C	
27	PT7935T	1.0	175	0.0	8J	30		160	8.0	100	5.0	10	30	150	90mV				T03	C C C	
28	PT7936T	1.0	175	0.0	8J	30		170	6.0	140	5.0	10	20	100	120				T03	C C C	
29	PT7937T	1.0	175	0.0	8J	30		170	6.0	140	5.0	10	20	150	100mV				T03	C C C	
30	PT7938T	1.0	175	0.0	8J	30		200	8.0	140	5.0	10	20	100	120mV				T03	C C C	
31	PT7948T	1.0	125	0.0	8J	30		225	6.0	200	5.0	5.0	20		100M#	200mV			T063		
32	PT7950T	1.0	125	0.0	8J	30		325	6.0	300	5.0	5.0	20		100M#	200mV			T063		
33	SCA14033	1.0	175	0.0	8J	50	20	300	8.0	250	5.0	30	10	40	30M#	50m	500n#	PL	T063	C C C	
34	SD1451	1.0	175	0.0	8J	10		38	4.0	18	10u∅	5.0	20					EP	XXXXX		
35	SD1451-1	1.0	175	0.0	8J	10		38	4.0	18	10m#	5.0	20					EP	XXXXX		
36	SDT4131	1.0	100	0.0	8J	2.0	1.0	400	5.0	400	25mΔ	5.0	20	#	80	2.0M#	.80u∅	EP	XXXXX	A G	
37	SDT8002	1.0	175	0.0	8J	20		80	8.0	80	100u∅	5.0	10	40	120	20M#Δ			D	T063	A G
38	SDT8003	1.0	175	0.0	8J	20		100	8.0	80	100u∅	5.0	10	40	120	20M#Δ			D	T063	A G
39	SDT8012	1.0	175	0.0	8J	20		80	8.0	80	100u∅	5.0	10	20	60	25M#Δ			PL	T063	A G
40	SDT8013	1.0	175	0.0	8J	20		100	8.0	80	100u∅	5.0	10	20	60	25M#Δ			PL	T063	A G
41	SDT8015	1.0	175	0.0	8J	20		80	8.0	80	100u∅	5.0	10	40	120	25M#Δ			PL	T063	A G
42	SDT8016	1.0	175	0.0	8J	20		100	8.0	80	100u∅	5.0	10	40	120	25M#Δ			PL	T063	A G
43	SDT8045	1.0	175	0.0	8J	20		40	5.0	25	10u∅	5.0	10	100	#	25M#Δ			PL	T063	A G
44	SDT8070	1.0	175	0.0	8J	20		80	8.0	80	10u∅	5.0	10	100	#	25M#Δ			PL	T063	A G
45	SDT8071	1.0	175	0.0	8J	20		80	8.0	80	10u∅	5.0	10	100	#	25M#Δ			PL	T063	A G
46	SDT8151	1.0	175	0.0	8J	20		150	8.0	120	100u∅	5.0	10	40	120	30M			PL	T061	A A A
47	SDT8152	1.0	175	0.0	8J	20	4.0	150	8.0	80	100u∅	5.0	10	40	120	30M			PL	T061	A A A
48	SDT8153	1.0	175	0.0	8J	20	4.0	80	8.0	60	100u∅	5.0	10	40	120	30M			PL	T061	A A A
49	SDT8154	1.0	175	0.0	8J	20	4.0	100	8.0	80	100u∅	5.0	10	100	30M			PL	T061	A A A	
50	SDT8155	1.0	175	0.0	8J	20	4.0	80	8.0	80	100u∅	5.0	10	100	30M			PL	T061	A A A	
51	SDT8156	1.0	175	0.0	8J	20	4.0	150	8.0	120	100u∅	5.0	10	80	30M			PL	T061	A A A	
52	SDT8157	1.0	175	0.0	8J	20	4.0	100	8.0	80	100u∅	5.0	10	20	60	30M			PL	T061	A A A
53	SDT8158	1.0	175	0.0	8J	20	4.0	80	8.0	80	100u∅	5.0	10	20	60	30M			PL	T061	A A A
54	SDT8159	1.0	175	0.0	8J	20	4.0	80	8.0	80	100u∅	5.0	10	20	60	30M			PL	T061	A A A
55	SDT8301	1.0	175	0.0	8J	30		80	8.0	80	100u∅	5.0	10	40	120	25M#Δ			PL	T063	A G
56	SDT8302	1.0	175	0.0	8J	30		100	8.0	80	100u∅	5.0	10	40	120	25M#Δ			PL	T063	A G
57	SDT8304	1.0	175	0.0	8J	30		80	8.0	80	100u∅	5.0	10	100	#	25M#Δ			PL	T063	A G
58	SDT8751	1.0	175	0.0	8J	30		100	8.0	100	100u∅	5.0	10	100	#	25M#Δ			PL	T063	A G
59	SDT8752	1.0	175	0.0	8J	30	4.0	120	8.0	100	100u∅	5.0	15	80	25M			PL	T063	A G	
60	SDT8753	1.0	175	0.0	8J	20	4.0	120	8.0	120	100u∅	5.0	15	80	25M			PL	T063	A G	
61	SDT8754	1.0	175	0.0	8J	20	4.0	170	8.0	150	100u∅	5.0	15	80	25M			PL	T063	A G	
62	SDT8755	1.0	175	0.0	8J	20	4.0	200	8.0	180	100u∅	5.0	15	80	25M			PL	T063	A G	
63	SDT8756	1.0	175	0.0	8J	20	4.0	140	8.0	120	100u∅	5.0	30	90	25M			PL	T063	A G	
64	SDT8757	1.0	175	0.0	8J	20	4.0	170	8.0	150	100u∅	5.0	30	90	25M			PL	T063	A G	
65	SDT8758	1.0	175	0.0	8J	20	4.0	200	8.0	180	100u∅	5.0	30	90	25M			PL	T063	A G	
66	SDT8758	1.0	175	0.0	8J	20	4.0	170	8.0	150	100u∅	5.0	30	90	25M			PL	T063	A G	
67	SDT8801	1.0	175	0.0	8J	20		200	8.0	200	1.0u∅	5.0	15	60	#	30M#Δ			PL	T063	A G
68	SDT8802	1.0	175	0.0	8J	20		225	8.0	225	1.0u∅	5.0	15	60	#	30M#Δ			PL	T063	A G
69	SDT8803	1.0	175	0.0	8J	20		250	8.0	250	1.0u∅	5.0	15	60	#	30M#Δ			PL	T063	A G
70	SDT8804	1.0	175	0.0	8J	20		275	8.0	275	1.0u∅	5.0	15	60	#	30M#Δ			PL	T063	A G
71	SDT8905	1.0	175	0.0	8J	20		300	8.0	300	1.0u∅	5.0	15	60	#	30M#Δ			PL	T063	A G
72	SDT9113	1.0	175	0.0	8J	15	15	350	8.0	300	2.0mZ	5.0	15	#			1.0u	PL	T03		
73	SDT9640	1.0	175	0.0	8J	50	15	225	10	200	1.0u∅	100	40	10	40	10M	45m	DPL	T03	C C C	
74	SDT9641	1.0	175	0.0	8J	50	15	250	10	225	1.0u∅	100	40	10	40	10M	45m	DPL	T03	C C C	
75	SDT9642																				



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	M A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub>		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	Y200 s/a TO200 Ser.	DWC # L O D E	
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>cb</sub> (A)	I <sub>cb</sub> (V)	MIN	MAX							
1	STC1738	1.0	200	∅	J	30	4.5	1.0	150	2.0m	3.0	20	10	40			ME	T18		
2	ST1802	1.0	100	∅	J	5.0	2.0	1.0k	5.0	1.0k	5.0	3.5	2.2	1.5m	80m	1.0u	D	TO3	C	
3	ST1804	1.0	100	∅	J	5.0	2.0	1.0k	5.0	1.0k	5.0	3.5	2.2	1.5m	80m	1.0u	D	TO3	C	
4	ST1812	1.0	100	∅	J	5.0	2.0	900	5.0	900	5.0	3.5	2.2	1.5m	80m	1.0u	D	TO3	C	
5	ST1814	1.0	100	∅	J	5.0	2.0	900	5.0	900	5.0	3.5	2.2	1.5m	80m	1.0u	D	TO3	C	
6	STS401	1.0	75	∅	J	2.0	1.0	5.0	5.0	400	500u	5.0	500m	20	100	4.0m	EM	TO3	C	
7	STS413	1.0	75	∅	J	2.0	1.0	400	5.0	400	500u	5.0	500m	20	80	6.0m	EM	TO3	C	
8	SVT200-05†	1.0	∅	∅	J	10	2.0	225	8.0	200	100u	5.0	5.0	15	100m	200m	PL	TO3	C	
9	SVT200-10†	1.0	∅	∅	J	20	4.0	225	8.0	200	100u	5.0	10	15	75m	100m	PL	TO3	C	
10	SVT200-20†	1.0	∅	∅	J	30	6.0	225	8.0	200	100u	5.0	20	15	60m	50m	PL	TO3	C	
11	SVT250-05†	1.0	∅	∅	J	10	2.0	275	8.0	250	100u	5.0	5.0	15	100m	200m	PL	TO3	C	
12	SVT250-10†	1.0	∅	∅	J	20	4.0	275	8.0	250	100u	5.0	10	15	75m	100m	PL	TO3	C	
13	SVT250-20†	1.0	∅	∅	J	30	6.0	275	8.0	250	100u	5.0	20	15	60m	50m	PL	TO3	C	
14	SVT300-05†	1.0	∅	∅	J	10	2.0	325	8.0	300	100u	5.0	5.0	15	100m	200m	PL	TO3	C	
15	SVT300-10†	1.0	∅	∅	J	20	4.0	325	8.0	300	100u	5.0	10	15	75m	100m	PL	TO3	C	
16	SVT300-20†	1.0	∅	∅	J	30	6.0	325	8.0	300	100u	5.0	20	15	60m	50m	PL	TO3	C	
17	TIP35†	1.0	3.5	∅	J	25	5.0	40	5.0	40	1.0m	4.0	15	10	50	3.0m	DM	B19	B	
18	TIP35A†	1.0	3.5	∅	J	25	5.0	60	5.0	60	1.0m	4.0	15	10	50	3.0m	DM	B19	B	
19	TIP35B†	1.0	3.5	∅	J	25	5.0	80	5.0	80	1.0m	4.0	15	10	50	3.0m	DM	B19	B	
20	TIP35C†	1.0	3.5	∅	J	25	5.0	100	5.0	100	1.0m	4.0	15	10	50	3.0m	DM	B19	B	
21	TIP35D†	1.0	125	∅	J	25	5.0	160	5.0	120	1.0m	4.0	15	10	50	3.0m	DM	B19	B	
22	TIP35E†	1.0	125	∅	J	25	5.0	180	5.0	140	1.0m	4.0	15	10	50	3.0m	DM	B19	B	
23	TIP35F†	1.0	125	∅	J	25	5.0	200	5.0	160	1.0m	4.0	1.5	25	#	3.0m	DM	B19	B	
24	TIP55A†	1.0	3.0	∅	J	7.5	4.0	350	8.0	250	100u	2.0	1.0	100	#	250m	130n	B3	B	
25	TIP56A†	1.0	3.0	∅	J	7.5	4.0	400	8.0	300	100u	2.0	1.0	100	#	250m	130n	B3	B	
26	TIP57A†	1.0	3.0	∅	J	7.5	4.0	450	8.0	350	100u	2.0	1.0	100	#	250m	130n	B3	B	
27	TIP58A†	1.0	3.0	∅	J	7.5	4.0	500	8.0	400	100u	2.0	1.0	100	#	250m	130n	B3	B	
28	TIP535	1.0	5.0	∅	J	7.5	3.0	300	5.0	200	1.0m	4.0	5.0	20	100	#	DM	TO3	C	
29	TIP536	1.0	5.0	∅	J	7.5	3.0	400	5.0	300	1.0m	4.0	5.0	20	100	#	DM	TO3	C	
30	TIP537	1.0	5.0	∅	J	7.5	3.0	500	5.0	400	1.0m	4.0	5.0	20	100	#	DM	TO3	C	
31	TIP551	1.0	60	∅	J	3.0	1.5	1.4k	5.0	600	100u	2.0	1.0	10	100	#	DM	TO3	C	
32	TIP554	1.0	100	∅	J	3.0	600m	400	5.0	300	100u	2.0	1.0	100	#	250m	130n	B3	B	
33	TIP554#	1.0	175	∅	J	3.0	600m	400	5.0	300	1.0m	100	300m	30	150	2.5m	500m	250n	TO3	C
34	TIP555	1.0	100	∅	J	3.0	600m	450	5.0	350	100u	2.0	1.0	100	#	250m	130n	B3	B	
35	TIP555#	1.0	175	∅	J	3.0	600m	450	5.0	350	1.0m	100	300m	30	150	2.5m	500m	250n	TO3	C
36	TIP556	1.0	100	∅	J	3.0	600m	500	5.0	400	100u	2.0	1.0	100	#	250m	130n	B3	B	
37	TIP556#	1.0	175	∅	J	3.0	600m	500	5.0	400	1.0m	100	300m	30	150	2.5m	500m	250n	TO3	C
38	TIP558	1.0	5.5	∅	J	7.5	4.0	350	8.0	250	100u	2.0	1.0	100	#	250m	130n	B3	B	
39	TIP558#	1.0	175	∅	J	7.5	4.0	350	8.0	250	100u	2.0	1.0	100	#	250m	130n	B3	B	
40	TIP559	1.0	5.5	∅	J	7.5	4.0	400	8.0	300	100u	2.0	1.0	100	#	250m	130n	B3	B	
41	TIP559#	1.0	175	∅	J	7.5	4.0	400	8.0	300	100u	2.0	1.0	100	#	250m	130n	B3	B	
42	TIP560	1.0	5.5	∅	J	7.5	4.0	450	8.0	350	100u	2.0	1.0	100	#	250m	130n	B3	B	
43	TIP560#	1.0	175	∅	J	7.5	4.0	450	8.0	350	100u	2.0	1.0	100	#	250m	130n	B3	B	
44	TIP561	1.0	5.5	∅	J	7.5	4.0	500	8.0	400	100u	2.0	1.0	100	#	250m	130n	B3	B	
45	TIP561#	1.0	175	∅	J	7.5	4.0	500	8.0	400	100u	2.0	1.0	100	#	250m	130n	B3	B	
46	TIP562	1.0	5.5	∅	J	10	2.0	300	8.0	300	100u	4.0	1.0	20	#	120m	500n	TO3	C	
47	TIP562#	1.0	175	∅	J	10	2.0	300	8.0	300	100u	4.0	1.0	20	#	120m	500n	TO3	C	
48	TIP563	1.0	5.5	∅	J	10	2.0	400	8.0	400	100u	4.0	1.0	20	#	120m	500n	TO3	C	
49	TIP563#	1.0	175	∅	J	10	2.0	400	8.0	400	100u	4.0	1.0	20	#	120m	500n	TO3	C	
50	TIP575†	1.0	100	∅	J	3.0	1.5	350	8.0	200	150u	5.0	500m	30	250	#	DM	TO3	C	
51	TIP575A†	1.0	100	∅	J	3.0	1.5	400	8.0	250	150u	5.0	500m	30	250	#	DM	TO3	C	
52	TIP575B†	1.0	100	∅	J	3.0	1.5	450	8.0	300	150u	5.0	500m	30	250	#	DM	TO3	C	
53	TIP575C†	1.0	100	∅	J	3.0	1.5	500	8.0	400	150u	5.0	500m	30	250	#	DM	TO3	C	
54	TIP575D†	1.0	125	∅	J	10		800	10	375	1.0u	5.0	500m	15	60	#	DM	TO3	C	
55	TIP765A†	1.0	125	∅	J	10		1.0k	10	420	1.0u	5.0	500m	15	60	#	DM	TO3	C	
56	UMT1011†	1.0	175	∅	J	15	10	9.0	300	3.0m	2.0	5.0	12	60	24M	PSA	TO3	C		
57	UMT1012†	1.0	175	∅	J	15	10	9.0	400	3.0m	2.0	5.0	12	60	24M	PSA	TO3	C		
58	XGSR3030†	1.0	75	∅	J	5.0	1.0	350	7.0	300	250u	5.0	3.0	10	#	25M	266m	400n	TO3	C
59	XGSR3035†	1.0	75	∅	J	5.0	1.0	400	7.0	350	250u	5.0	3.0	10	#	25M	266m	400n	TO3	C
60	XGSR3040†	1.0	75	∅	J	5.0	1.0	450	7.0	400	250u	5.0	3.0	10	#	25M	266m	400n	TO3	C
61	XGSR5030†	1.0	75	∅	J	7.0	2.0	350	8.0	300	250u	5.0	5.0	10	#	25M	160m	500n	TO3	C
62	XGSR5035†	1.0	75	∅	J	7.0	2.0	400	8.0	350	250u	5.0	5.0	10	#	25M	160m	500n	TO3	C
63	XGSR5040†	1.0	75	∅	J	7.0	2.0	450	8.0	400	250u	5.0	5.0	10	#	25M	160m	500n	TO3	C
64	XGSR10030†	1.0	100	∅	J	10	5	350	7	300	500u	5.0	10	15	#	25M	80m	500n	TO3	C
65	XGSR10035†	1.0	100	∅	J	10	5	400	7	350	500u	5.0	10	15	#	25M	80m	500n	TO3	C
66	XGSR10040†	1.0	100	∅	J	20	5	450	8	400	500u	5.0	10	15	#	25M	80m	400n	TO3	C
67	2N2815	1.1	200	∅	J	20		80		80	3.0	10	10	50		ME	T18			
68	2N2816	1.1	200	∅	J	20		100		100	3.0	10	10	50		ME	T18			
69	2N2817	1.1	200	∅	J	20		150		150	3.0	10	10	50		ME	T18			
70	2N2818	1.1	200	∅	J	20		200		200	3.0	10	10	50		ME	T18			
71	2N2819	1.1	200	∅	J	25		80		80	3.0	15	10	50		ME	T18			
72	2N2820	1.1	200	∅	J	25		100		100	3.0	15	10	50		ME	T18			
73	2N2821	1.1	200	∅	J	25		150		150	3.0	15	10	50		ME	T18			
74	2N2822	1.1	200	∅	J	25		200		200	3.0	15	10	50		ME	T18			
75	2N2823	1.1	200	∅	J	30		80		80	3.0	20	10	40		ME	T18			
76	2N2824	1.1	200	∅	J	30		100		100	3.0	20	10	40		ME	T18			
77	2N2825	1.1	200	∅	J	30		150		150	3.0	20	10	40		ME	T18			
78	2N5301	1.1	200	∅	J	30	7.5													



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> @ 25°C		BIAS		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC. TURE	DWG #	L C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>cb</sub> (A)	I <sub>cb</sub> (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)								
1#	BDY57	1.1	150	SJ	30	15	120	10	80	5.0m	4.0m	10	20	60	10MΔ	140m	200n	ME	T03	C0	
2#	BDY58	1.1	150	SJ	30	15	160	10	125	5.0m	4.0m	10	20	60	10MΔ	140m	200n	DM	T03	C0	
3#	BUX20A	1.1	140	SJ	40	5.0	160	7.0	125	3.0mΔ	2.0m	20	20	60	50MΔ	50m	500n		T03	C0	
4	HEP57000-RT	1.1	200	SJ	25		80	5.0	80	1.0m		10	40	∅	4.0MΔ				T03	C0	
5	HEP57008-RT	1.1	200	SJ	30		100	4.0	90	5.0m		7.5	40	∅	2.0MΔ				T03	C0	
6	IR802	1.1	200	SJ	30	7.5	100	4.0	90	1.0m	2.0m	7.5	25	100	2.0MΔ	106m	1.2u	EΔ	T03	C0	
7	IR37711	1.1	200	SJ	30	7.5	50	5.0	40	1.0m	4.0m	15	15	60	2.0MΔ	133m	700n		T03	C0	
8	IR37721	1.1	200	SJ	20	5.0	100	7.0	60	1.0m	4.0m	10	15	60	2.0MΔ	150m	700n		T03	C0	
9	IR37731	1.1	200	SJ	16	4.0	160	7.0	140	1.0m	4.0m	8.0	15	60	1.0MΔ	100m	1.5u	D	T03	C0	
10	MJ802	1.1	200	SJ	30	7.5	100	4.0	90	1.0m	2.0m	7.5	25	100	2.0MΔ				T03	C0	
11	MJ37711	1.1	200	SJ	30	7.5	50	5.0	40	1.0m	4.0m	15	15	60	2.0MΔ	66m	700n		T03	C0	
12	MJ37721	1.1	200	SJ	20	5.0	100	7.0	60	1.0m	4.0m	10	15	60	2.0MΔ	80m	700n		T03	C0	
13	MJ37731	1.1	200	SJ	16	4.0	160	7.0	140	1.0m	4.0m	8.0	15	60	1.0MΔ	100m	1.5u	D	T03	C0	
14	MJ15001	1.1	200	SJ	15	5.0	140	5.0	140	100u#	2.0m	4.0	25	150	2.0MΔ	250m			F49a	C0	
15	MJ15011	1.1	200	SJ	10	2.0		5.0	250	1.0mΔ	2.0m	2.0	20	100	2.0MΔ	625m			F49	C0	
16	MRF421	1.1	200	SS	20		45	3.0	20	10ms#	5.0	5.0	10	30	∅				W52j	R	
17	PP3647	1.1	200	SJ	20	7.5	100	7.0	80	10m	4.0	10	15	60	800k	100		DM	T03	C0	
18	PTC173	1.1	200	SJ	16		100	7.0	100	2.0m	2.0m	8.0	25	100	1.0MΔ				T03	C0	
19	RCA83401	1.1	200	SJ	25	10	180	6.0	140	100u	2.0m	10	30	120	40MΔ		0.3	PA	Y204a	C0	
20	RCA83411	1.1	200	SJ	25	10	180	6.0	150	100u	2.0m	10	30	120	40MΔ		0.3		Y204a	C0	
21	RCA8638C	1.1	200	SJ	20	5.0	140	5.0	140	1.0m	2.0m	5.0	25	100	2.0MΔ	500m#		E	Y204a	C0	
22	RCA8638D	1.1	200	SJ	20	5.0	120	5.0	120	1.0m	2.0m	5.0	25	100	2.0MΔ	500m#		E	Y204a	C0	
23	RCA8638E	1.1	200	SJ	20	5.0	100	5.0	100	1.0m	2.0m	7.5	10	100	2.0MΔ	200m#		E	Y204a	C0	
24	SCA140241	1.1	200	SJ	70	25	180	8.0	120	10u	5.0m	50	10		30MΔ	50m	500ns	PL	T063	C0	
25	SCA140251	1.1	200	SJ	70	25	180	8.0	120	10u	5.0m	50	10		30MΔ	50m	500ns	PL	T03	C0	
26	SCA140261	1.1	200	SJ	70	25	160	8.0	100	10u	5.0m	50	10		30MΔ	50m	500ns	PL	T063	C0	
27	SCA14027	1.1	200	SJ	70	25	160	8.0	100	10u	5.0m	50	10		30MΔ	50m	500ns	PL	T03	C0	
28	SCA140281	1.1	200	SJ	70	25	140	8.0	80	10u	5.0m	50	10		30MΔ	50m	500ns	PL	T063	C0	
29	SCA140291	1.1	200	SJ	70	25	140	8.0	80	10u	5.0m	50	10	40	30MΔ	50m	500ns	PL	T03	C0	
30	SPT53031	1.1	200	SJ	20	7.5	100	5.0	100	1.0m	2.0m	10	15	60	2.0MΔ	100m#	1.0u		T03	C0	
31	ST28138	1.1	150	S	20	6.0	70	10	40	500u	10	10	30	150	10M	130m		PE	T03	C0	
32	ST28139	1.1	150	S	20	6.0	90	10	60	500u	10	10	30	150	10M	130m		PE	T03	C0	
33	ST28140	1.1	150	S	20	6.0	110	10	80	500u	10	10	30	150	10M	130m		PE	T03	C0	
34	2N5966†	1.2	125	SJ	30	5.0	100	10	100	500u	10	10	25	120	10MΔ	80m	1.1u		T063	A0	
35	JAN2N5966†	1.2	187	SJ	30	5.0	100	10	100	100u	10	15	25	100	10MΔ	80m	1.1u		T063	A0	
36	2N5968†	1.2	125	SJ	30	5.0	100	10	100	500u	10	10	25	120	10MΔ	80m	1.1u		T063	A0	
37	JAN2N5968†	1.2	187	SJ	30	5.0	100	10	100	100u	10	15	25	100	10MΔ	80m	1.1u		T063	A0	
38	2N6215†	1.2	125	SJ	50	10	100	10	80	100u	2.0m	25	25	150	20MΔ	150m	1.0u		T063	A0	
39	2N6560†	1.2	220	SJ	10	2.0	450	5.0	450	200u	2.0m	5.0	10	40	10MΔ	150m	500n		T03	C0	
40	2N6561†	1.2	220	SJ	10	2.0	300	5.0	300	200u	2.0m	10	10	50	15MΔ	75m	500n		T03	C0	
41#	2SC1115†	1.2	100	SJ	10	4.0	140	12	80	1.0	4.0m	3.0	30	150	10MΔ	500m	1.2u	D	T03	C0	
42#	2SC1140†	1.2	150	SJ	15	4.0	800	6.0	400	3.0m	5.0m	7.5	10	25	10MΔ	266m	1.5u	D	T03	C0	
43#	2SC1141†	1.2	150	SJ	15	4.0	800	6.0	400	3.0m	5.0m	7.5	10	25	10MΔ	266m	1.5u	D	T03	C0	
44#	2SC1195	1.2	100	SJ	2.5		200	5.0	200	10u	5.0m	1.0	30	150	10MΔ	150m		DM	T03	C0	
45#	2SC1438	1.2	100	SJ	15	5.0	230	6.0	230	1.0m	4.0m	5.0	12		10MΔ	150m		DM	T03	C0	
46#	2SC1440	1.2	100	SJ	15	5.0	150	6.0	150	1.0m	4.0m	5.0	12		10MΔ	150m		DM	T03	C0	
47#	2SC1441	1.2	100	SJ	15	5.0	200	6.0	200	1.0m	4.0m	5.0	12		10MΔ	150m		DM	T03	C0	
48#	2SC1576	1.2	100	SJ	8.0		450	6.0	330	100u	5.0m	1.0	30	150	10MΔ	150m		DM	T03	C0	
49#	2SC1579	1.2	150	SJ	15	5.0	500	6.0	400	1.0m	4.0m	5.0	10	25	7.0MΔ	200m		DM	T03	C0	
50#	2SC1580	1.2	150	SJ	15	5.0	600	6.0	500	1.0m	4.0m	5.0	10	25	7.0MΔ	200m		DM	T03	C0	
51#	2SC1584	1.2	150	SJ	15	5.0	150	6.0	100	1.0m	4.0m	5.0	30	50	10MΔ	150m		DM	T03	C0	
52#	2SC1585	1.2	150	SJ	15	5.0	200	6.0	150	1.0m	4.0m	5.0	30	50	10MΔ	150m		DM	T03	C0	
53#	2SC1586	1.2	150	SJ	15	5.0	250	6.0	200	1.0m	4.0m	5.0	30	50	10MΔ	150m		DM	T03	C0	
54#	2SC2258	1.2	150	SJ	15		200	6.0	150	100u	4.0m	5.0	30	180	10MΔ			DM	T03	C0	
55#	2SC2585	1.2	150	SJ	15	15	180	5.0	180	50u	5.0m	1.0	55	240	80MΔ			E	B60	D0	
56#	2SC2773	1.2	150	SJ	15	5.0	200	6.0	200	100u	4.0m	5.0	30	200	20MΔ	300m		DM	T03	C0	
57#	2SC2921	1.2	150	SJ	15	4.0	160	5.0	180	100u	4.0m	5.0	30	200	60MΔ			PE	B45	D0	
58#	2SC2971	1.2	100	SJ	10		300	8	200	50u	5.0m	5	10	35		200m	4.5u		T03	C0	
59#	2SC2976	1.2	100	SJ	10	5	800	8	400	30u	5.0m	5	10	35		200m	4.5u		T03	C0	
60#	2SD424	1.2	150	SJ	12		160	5.0	160	100u	5.0m	2.0	40	140				DM	T03	C0	
61#	2SD535	1.2	150	SJ	12	4.0	250	10	120	100u	5.0m	2.0	40	200		1.5u		ME	T03	C0	
62#	2SD552	1.2	150	SJ	15	3.0	220	5.0	180	500u	5.0m	5.0	25	80	4.0MΔ	1.0u		DM	T03	C0	
63#	2SD841	1.2	150	SJ	15	5.0	600	5.0	400	500u	5.0m	5.0	20	140	4.0MΔ	500n		DM	T03	C0	
64#	2SD885	1.2	150	SJ	15	15	200	5.0	200	100u	5.0m	1.0	40	140	15MΔ			DM	T03	C0	
65#	BDY29	1.2	220	SJ	30	7.5	100	7.0		1.0m	2.0m	15		60		80m		H	T03	C0	
66#	BUW12	1.2	125	SJ	8.0		400			1.0m								Δ	B46	D0	
67#	BUW12A	1.2	125	SJ	8.0		450			1.0m								Δ	B46	D0	
68	GSTU8035†	1.2	188	SJ	12	6.0	400	7.0	350	500u	5.0m	8.0	10	#	25MΔ	100m#	100n	D	T03	C0	
69	GSTU8040†	1.2	180	SJ	12	6.0	450	7.0	400	500u	5.0m	8.0	10	#	25MΔ	100m#	100n	D	T03	C0	
70	HSE833-RT	1.2	150	SJ			170	5.0	150	5.0m	2.0m	4.0	20		500kΔ				T03	C0	
71	MRF316	1.2	220	S	9.0		65	4.0	35	5.0m	5.0m	4.0	10	80	150MΔ			PE	W65c	S0	
72	PP7676	1.2	150	SJ	25		200	7.0	150	1.0m	5.0	10	40	150	40MΔ				T063	C0	
73	PT8953	1.2	220	S	50	10	120	8.0	70	10m	5.0m	20	40	200	100M	30m	350n	PL	T		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y2200 s/a TO200 Ser.	# L O A D E		
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo @ 25°C (A)	Vcb (V)							MIN	MAX
1	SDT79822	1.2	8.0	0.5	5J	25	5.0	80	8.0	80	10	5.0	10	40	#	120		Y220b		
2	SDT79824	1.2	8.0	0.5	5J	25	5.0	120	8.0	100	10	5.0	10	40	#	120		Y220b		
3	SDT96401	1.2	220	0.5	5J	100	15	80	10	60	1.0	5.0	90	5.0			PL	T063	A0	
4	SDT96402	1.2	220	0.5	5J	120	15	120	10	100	1.0	5.0	90	5.0			PL	T063	A0	
5	SDT96403	1.2	220	0.5	5J	120	15	160	10	140	1.0	5.0	90	5.0			PL	T063	A0	
6	SDT96404	1.2	220	0.5	5J	50	10	225	10	200	1.0	10	40	8.0			PL	T063	A0	
7	SDT96405	1.2	220	0.5	5J	50	10	275	10	250	1.0	10	40	8.0			PL	T063	A0	
8	SDT96406	1.2	220	0.5	5J	50	10	325	10	300	1.0	10	40	8.0			PL	T063	A0	
9	TIP532#	1.2	2.18	0.5	5J	15	4.0	450	6.0	400	2.0	4.0	7.5	20	#	100		T03		
10	TIP534#	1.2	2.18	0.5	5J	15	4.0	450	6.0	400	2.0	4.0	7.5	20	#	100		T03		
11	TIP538	1.2	5.0	0.5	5J	15	5.0	300	5.0	200	1.0	5.0	7.5	20	#	100	DMΔ	T03	C0	
12	TIP538#	1.2	2.18	0.5	5J	15	5.0	300	5.0	200	2.0	4.0	7.5	20	#	100		T03		
13	TIP539	1.2	5.0	0.5	5J	15	5.0	400	5.0	300	1.0	5.0	7.5	20	#	100	DMΔ	T03	C0	
14	TIP539#	1.2	2.18	0.5	5J	15	5.0	400	5.0	300	2.0	4.0	7.5	20	#	100		T03		
15	TIP540	1.2	5.0	0.5	5J	15	5.0	500	5.0	400	1.0	5.0	7.5	20	#	100	DMΔ	T03	C0	
16	TIP540#	1.2	2.18	0.5	5J	15	5.0	500	5.0	400	2.0	4.0	7.5	20	#	100		T03		
17	2N3429T	1.3	150	0.5	5C	5.0	3.0	50	5.0	25	2.0	2.0	5.0	10			20kΔ	200m	5.0u0	
18	2N3430T	1.3	150	0.5	5C	5.0	3.0	100	25	100	2.0	2.0	5.0	10			20kΔ	200m	5.0u0	
19	2N3431T	1.3	150	0.5	5C	5.0	3.0	150	25	150	2.0	2.0	5.0	10			20kΔ	200m	5.0u0	
20	2N3432T	1.3	150	0.5	5C	5.0	3.0	200	25	200	2.0	2.0	5.0	10			20kΔ	200m	5.0u0	
21	2N3433T	1.3	150	0.5	5C	5.0	3.0	250	25	250	2.0	2.0	5.0	10			20kΔ	200m	5.0u0	
22	2N3902T	1.3	100	0.5	5J	2.5	1.0	400	5.0	400	250u#	5.0	1.0	30			40kΔ	1.0	800n0	
23	JAN2N3902T	1.3	4.0	0.5	5S	3.5	2.0	700	5.0	400	250uΔ	5.0	1.0	30			2.5M\$Δ	800m	800n0	
24	2N5157T	1.3	100	0.5	5J	3.5	2.0	700	6.0	500	500u#	5.0	1.0	30			2.8M\$Δ	710m	800n0	
25	JAN2N5157T	1.3	4.0	0.5	5S	3.5	2.0	700	6.0	500	250uΔ	5.0	1.0	30			2.5M\$Δ	800m	800n0	
26#	2SC4311	1.3	200	0.5	5J	30	5.0	150	4.0	100	50m	5.0	10	10			400k	100m	1.0u	
27#	2SC4331	1.3	200	0.5	5J	30	5.0	200	4.0	140	20m	5.0	10	10			400k	100m	1.0u	
28#	2SC434A†	1.3	200	0.5	5J	30	5.0	300	4.0	200	50u0	5.0	10	20			400k	100m	1.0u	
29#	2SC435†	1.3	200	0.5	5J	30	5.0	200	4.0	200	50m	5.0	10	10			400k	100m	1.0u	
30#	2SC1299†	1.3	200	0.5	5J	30	5.0	300	5.0	200	50u0	5.0	10	40			400k	100m	1.5u0	
31#	2SC1300†	1.3	200	0.5	5J	30	5.0	500	5.0	400	50u0	5.0	15	25			100m	2.7u0	0	
32#	2SC1301†	1.3	200	0.5	5J	30	5.0	250	5.0	200	200u0	5.0	10	40			25M\$	100m	1.5u0	
33#	2SC1302†	1.3	200	0.5	5J	30	10	400	5.0	400	200u0	5.0	15	10			20M\$	100m	2.7u0	
34#	2SC1348-1	1.3	125	0.5	5J	4.0	1.0k	14	1.4	14	2.0	3.0	2.0	4.5	*	19		5.0M\$		
35#	2SC1348-2	1.3	125	0.5	5J	4.0	1.1k	14	1.4	14	2.0	3.0	2.0	4.5	*	19		5.0M\$		
36#	2SC1348-3	1.3	125	0.5	5J	4.0	1.2k	14	1.4	14	2.0	3.0	2.0	4.5	*	19		5.0M\$		
37#	2SC1401†	1.3	200	0.5	5J	30	10	400	5.0	350	200u0	5.0	15	10			20M\$	100m	2.7u0	
38#	2SC2507†	1.3	200	0.5	5J	20	7.0	500	7.0	400	100u	2.0	10	15			70m	700n	#	
39#	2SC2904	1.3	200	0.5	5J	22	5.0	50	5.0	20	5.0	1.0	1.0	180						
40#	2SC3058†	1.3	200	0.5	5J	30	10	600	7.0	400	100u0	5.0	20	10			30M\$	50m	170n	
41#	2SC3058A†	1.3	200	0.5	5J	30	10	600	7.0	450	100u0	5.0	20	10			30M\$	50m	200n	
42#	2SC3081†	1.3	200	0.5	5J	10	5.0	1.2k	7.0	850	100u0	5.0	4.0	10			30M\$	380m	500n	
43#	2SD372	1.3	200	0.5	5J	60	#	10	150	6.0	100	5.0	15	20			100	2.0u0	0	
44#	2SD373	1.3	200	0.5	5J	60	#	10	250	6.0	200	5.0	15	20			100	2.0u0	0	
45#	2SD373A	1.3	200	0.5	5J	60	#	10	350	6.0	300	5.0	15	15			100	2.0u0	0	
46#	2SD374	1.3	200	0.5	5J	60	#	10	450	6.0	400	5.0	15	10			100	2.0u0	0	
47#	2SD457	1.3	200	0.5	5J	55	15	250	6.0	200	100u0	5.0	5.0	20			100	2.0u0	0	
48#	2SD540†	1.3	200	0.5	5J	30	10	200	5.0	200	3.0	5.0	10	10			70	133m	700n	
49#	2SD541†	1.3	200	0.5	5J	30	10	200	5.0	150	3.0	5.0	10	8.0			25M\$	133m	700n	
50#	2SD542†	1.3	200	0.5	5J	30	10	400	5.0	400	3.0	5.0	10	8.0			20M\$	133m	1.0u	
51#	2SD543†	1.3	200	0.5	5J	30	10	400	5.0	350	3.0	5.0	10	8.0			20M\$	133m	1.0u	
52#	2SD630	1.3	200	0.5	5J	30	5.0	50	5.0	40	100u0	5.0	15	25			800k	100m		
53#	2SD631	1.3	200	0.5	5J	40	5.0	60	5.0	50	100u0	5.0	15	40			D	F6k	C0	
54#	2SD797	1.3	200	0.5	5J	30	8.0	100	7.0	80	100u0	5.0	1.0	60			D	T03	C0	
55	153-04†	1.3	200	0.5	5J	7.5	3.0	65	25	40	10m#	4.0	1.5	15			500k	866m	3.0u0	
56	153-04SPC†	1.3	200	0.5	5J	7.5	3.0	65	25	40	10m#	4.0	1.5	15			500k	866m	3.0u0	
57	153-05	1.3	200	0.5	5J	7.5	3.0	75	25	50	10m#	4.0	1.5	15			500k	866m	3.0u0	
58	153-06†	1.3	200	0.5	5J	7.5	3.0	85	25	60	10m#	4.0	1.5	15			500k	866m	3.0u0	
59	153-06SPC†	1.3	200	0.5	5J	7.5	3.0	85	25	60	10m#	4.0	1.5	15			500k	866m	3.0u0	
60	153-07	1.3	200	0.5	5J	7.5	3.0	95	25	70	10m#	4.0	1.5	15			500k	866m	3.0u0	
61	153-08†	1.3	200	0.5	5J	7.5	3.0	105	25	80	10m#	4.0	1.5	15			500k	866m	3.0u0	
62	153-08SPC†	1.3	200	0.5	5J	7.5	3.0	105	25	80	10m#	4.0	1.5	15			500k	866m	3.0u0	
63	153-09	1.3	200	0.5	5J	7.5	3.0	115	25	90	10m#	4.0	1.5	15			500k	866m	3.0u0	
64	153-10†	1.3	200	0.5	5J	7.5	3.0	125	25	100	10m#	4.0	1.5	15			500k	866m	3.0u0	
65	153-10SPC†	1.3	200	0.5	5J	7.5	3.0	125	25	100	10m#	4.0	1.5	15			500k	866m	3.0u0	
66	153-12†	1.3	200	0.5	5J	7.5	3.0	145	25	120	10m#	4.0	1.5	15			500k	866m	3.0u0	
67	153-12SPC†	1.3	200	0.5	5J	7.5	3.0	145	25	120	10m#	4.0	1.5	15			500k	866m	3.0u0	
68	153-14†	1.3	200	0.5	5J	7.5	3.0	165	25	140	10m#	4.0	1.5	15			500k	866m	3.0u0	
69	153-14SPC†	1.3	200	0.5	5J	7.5	3.0	165	25	140	10m#	4.0	1.5	15			500k	866m	3.0u0	
70	153-16†	1.3	200	0.5	5J	7.5	3.0	185	25	160	10m#	4.0	1.5	15			500k	866m	3.0u0	
71	153-16SPC†	1.3	200	0.5	5J	7.5	3.0	185	25	160	10m#	4.0	1.5	15			500k	866m	3.0u0	
72	153-18†	1.3	200	0.5	5J	7.5	3.0	205	25	180	10m#	4.0	1.5	15			500k	866m	3.0u0	
73	153-18SPC†	1.3	200	0.5	5J	7.5	3.0	205	25	180	10m#	4.0	1.5	15			500k	866m	3.0u0	
74	153-20†	1.3	200	0.5	5J	7.5	3.0	225	25	200	10m#	4.0	1.5	15			500k	866m	3.0u0	
75	153-20SPC†	1.3	200	0.5	5J	7.5	3.0	225	25	200	10m#	4.0	1.5	15			500k	866m	3.0u0	
76	153-22†	1.3	200	0.5	5J	7.5														

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	2) TYPE No.	1) MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @25°C						MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C E O A D E		
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb	Ic									MIN	MAX
1	BLX15*	1.3	195		SJ	6.5		110	4.0	53	6.0	1.4	15	50	275MΔ	1.4		DM	194	V			
2	DTS1031	1.3	125		SJ	15	5.0	80	5.0	60	250uΔ	1.5	20	55	4.0MΔ	180m	550n	DM	T03	C			
3	DTS1041	1.3	125		SJ	15	5.0	80	5.0	60	250uΔ	1.5	20	55	4.0MΔ	180m	550n	DM	T03	C			
4	DTS1051	1.3	125		SJ	15	5.0	100	5.0	80	250uΔ	1.5	20	55	4.0MΔ	180m	550n	DM	T03	C			
5	DTS1061	1.3	125		SJ	15	5.0	110	5.0	90	250uΔ	1.5	20	55	4.0MΔ	180m	550n	DM	T03	C			
6	DTS1071	1.3	125		SJ	15	5.0	120	5.0	100	250uΔ	1.5	20	55	4.0MΔ	180m	550n	DM	T03	C			
7	DTS108	1.3	125		SJ	15	5.0		5.0	100	250uΔ	1.5	50	120	4.0MΔ	150m	550n	DMΔ	T03	C			
8	DTS310	1.3	100		SJ	10	4.0		4.0	225	250uΔ	5.0	20				D	Y204a		C			
9	DTS311	1.3	100		SJ	10	4.0		4.0	250	250uΔ	5.0	40				D	Y204a		C			
10	DTS402	1.3	100		J	3.5	2.0		5.0	400	250uΔ						Δ	Y204a		C			
11	DTS402#	1.3	100		J	3.5	2.0		5.0	400	250uΔ						Δ	Y204a		C			
12	DTS403	1.3	100		J	3.5	2.0		5.0	400	250uΔ						Δ	Y204a		C			
13	DTS403#	1.3	400		J	3.5	2.0	400	5.0	400	250uΔ						Δ	Y204a		C			
14	DTS409	1.3	100		SJ	3.5	2.0	400	5.0	400	250uΔ						Δ	Y204a		C			
15	DTS410	1.3	100		SJ	3.5	2.0	200	5.0	200	250uΔ	5.0	30	90	2.0MΔ	800m	250n	Δ	Y204a		C		
16	DTS410#	1.3	100		J	3.5	2.0	200	5.0	200	250uΔ	5.0	30	90	2.0MΔ	800m	250n	Δ	Y204a		C		
17	DTS411	1.3	100		SJ	3.5	2.0	300	5.0	300	250uΔ	5.0	30	90	2.0MΔ	800m	250n	Δ	Y204a		C		
18	DTS411#	1.3	100		J	3.5	2.0	300	5.0	300	250uΔ	5.0	30	90	2.0MΔ	800m	250n	Δ	Y204a		C		
19	DTS423	1.3	100		SJ	3.5	2.0	400	5.0	400	250uΔ	5.0	30	90	2.5MΔ	800m		Δ	Y204a		C		
20	DTS423#	1.3	100		J	3.5	2.0	400	5.0	400	250uΔ	5.0	30	90	2.5MΔ	800m		Δ	Y204a		C		
21	DTS423M1	1.3	100		SJ	3.5	2.0	400	5.0	400	250uΔ	5.0	30	90	3.0MΔ	800m	800n	D	T03		C		
22	DTS424	1.3	100		SJ	3.5	2.0	6.0	5.0	500	250uΔ	5.0	30	90	2.5MΔ	800m		Δ	Y204a		C		
23	DTS424#	1.3	100		J	3.5	2.0	6.0	5.0	500	250uΔ	5.0	30	90	2.5MΔ	800m		Δ	Y204a		C		
24	DTS425	1.3	100		SJ	3.5	2.0	6.0	5.0	500	250uΔ	5.0	30	90	2.5MΔ	800m		Δ	Y204a		C		
25	DTS425#	1.3	100		J	3.5	2.0	6.0	5.0	500	250uΔ	5.0	30	90	2.5MΔ	800m		Δ	Y204a		C		
26	DTS431M1	1.3	125		SJ	5.0	2.0	400	5.0	400	2.5mΔ	5.0	15	35	2.5MΔ	280m	800n	Δ	Y204a		C		
27	DTS3704	1.3			SJ	2.0	.50	200	5.0	200		5.0	20	80	115k	1.6			TO41		C		
28	DTS3704A	1.3			SJ	2.0	.50	300	5.0	300		5.0	20	80	115k	1.6			TO41		C		
29	DTS3704B	1.3			SJ	2.0	.50	400	5.0	335		5.0	20	80	115k	1.6			TO41		C		
30	DTS3705	1.3			SJ	3.5		200	5.0	200		1.0	25	75	110k	.80			T03		C		
31	DTS3705A	1.3			SJ	3.5		300	5.0	300	50m	1.0	25	75	110k	.80			T03		C		
32	DTS3705B	1.3			SJ	3.5		400	5.0	400	50m	1.0	25	75	110k	.80			T03		C		
33	DTS4065	1.3	100		SJ	15	4.0		20	600	250uΔ	5.0	30	500	8.0MΔ			Δ	Y204a		C		
34	HEPS7006-RT	1.3	125		J	5.0		1.5k	5.0	750	1.0m				7.5MΔ				T03		C		
35	MJ410	1.3	100		SJ	5.0	2.0	200	5.0	200	250uΔ	5.0	30	90	2.5MΔ	800m			T03		C		
36	MJ411	1.3	100		SJ	5.0	2.0	300	5.0	300	250uΔ	5.0	30	90	2.5MΔ	800m			T03		C		
37	MJ424	1.3	100		SJ	5.0	2.0	700	6.0	350	250uΔ	5.0	30	90	2.5MΔ	800m			T03		C		
38	MJ425	1.3	100		SJ	5.0	2.0	700	6.0	400	250uΔ	5.0	30	90	2.5MΔ	800m			T03		C		
39	MRF429	1.3	320		SS	16		100	4	50	20m	5.0	10	80					W52p		R		
40	SD1078	1.3	220		J	15		65	4.0	36	20m	5.0	5.0	10					XXXXX				
41	SDT402	1.3	100		SJ	3.5	2.0		5.0	400	0.5m				2.0MΔ	250n		EPL	TO3	A			
42	SDT4101	1.3	125		SJ	3.5	2.0	200	5.0	200	500u#	5.0	30	90	4.0MΔ			PL	TO3	C			
43	SDT4111	1.3	100		SJ	3.5	2.0	300	5.0	300	0.5m				2.0MΔ			ME	TO3	A			
44	SDT4231	1.3	100		SJ	3.5	2.0	400	5.0	400	0.5				2.5MΔ			PL	TO3	A			
45	SDT4241	1.3	100		SJ	3.5	2.0	700	6.0	500	0.5				2.5MΔ			PL	TO3	A			
46	SDT4251	1.3	100		SJ	3.5	2.0	700	6.0	500	0.5				2.5MΔ			PL	TO3	A			
47	SDT4301	1.3	125		SJ	5.0	2.0	400	5.0	400	2.5m				2.5MΔ			PL	TO3	A			
48	SDT4311	1.3	125		SJ	5.0	2.0	400	5.0	400	2.5m				2.5MΔ			PL	TO3	A			
49	SENT-1731	1.3	250		SJ	30	15	180	7.0	40	2.0m	4.0	15	15		100m	1.5u		TO3		C		
50	SPC153-04	1.3	200		SJ	7.5		65	25	40	10m	4.0	15	15		866m		D	TO61		C		
51	SPC153-06	1.3	200		SJ	7.5		85	25	60	10m	4.0	15	15		866m		D	TO61		C		
52	SPC153-08	1.3	200		SJ	7.5		105	25	80	10m	4.0	15	15		866m		D	TO61		C		
53	SPC153-10	1.3	200		SJ	7.5	3.0	125	25	100	10m	4.0	15	15		866m		D	TO61		C		
54	SPC153-12	1.3	200		SJ	7.5	3.0	145	25	120	10m	4.0	15	15		866m		D	TO61		C		
55	SPC153-14	1.3	200		SJ	7.5	3.0	165	25	140	10m	4.0	15	15		866m		D	TO61		C		
56	SPC153-16	1.3	200		SJ	7.5	3.0	185	25	160	10m	4.0	15	15		866m		D	TO61		C		
57	SPC153-18	1.3	200		SJ	7.5	3.0	205	25	180	10m	4.0	15	15		866m		D	TO61		C		
58	SPC153-20	1.3	200		SJ	7.5	3.0	225	25	200	10m	4.0	15	15		866m		D	TO61		C		
59	SPC153-22	1.3	200		SJ	7.5	3.0	245	25	220	10m	4.0	15	15		866m		D	TO61		C		
60	SPC153-24	1.3	200		SJ	7.5	3.0	265	25	240	10m	4.0	15	15		866m		D	TO61		C		
61	SPC153-26	1.3	200		SJ	7.5	3.0	285	25	260	10m	4.0	15	15		866m		D	TO61		C		
62	SPC153-28	1.3	200		SJ	7.5	3.0	305	25	280	10m	4.0	15	15		866m		D	TO61		C		
63	SPC153-30	1.3	200		SJ	7.5	3.0	325	25	300	10m	4.0	15	15		866m		D	TO61		C		
64	SPC154-04	1.3	200		SJ	7.5	3.0	65	25	40	10m	4.0	15	25		833m		D	TO61		C		
65	SPC154-06	1.3	200		SJ	7.5	3.0	85	25	60	10m	4.0	15	25		833m		D	TO61		C		
66	SPC154-08	1.3	200		SJ	7.5	3.0	105	25	80	10m	4.0	15	25		833m		D	TO61		C		
67	SPC154-10	1.3	200		SJ	7.5	3.0	125	25	100	10m	4.0	15	25		833m		D	TO61		C		
68	SPC154-12	1.3	200		SJ	7.5	3.0	145	25	120	10m	4.0	15	25		833m		D	TO61		C		
69	SPC154-14	1.3	200		SJ	7.5	3.0	165	25	140	10m	4.0	15	25		833m		D	TO61		C		
70	SPC154-16	1.3	200		SJ	7.5	3.0	185	25	160	10m	4.0	15	25		833m		D	TO61		C		
71	SPC154-18	1.3	200		SJ	7.5	3.0	205	25	180	10m	4.0	15	25		833m		D	TO61		C		
72	SPC154-20	1.3	200		SJ	7.5	3.0	225	25	200	10m	4.0	15	25		833m		D	TO61		C		
73	SPC154-22	1.3	200		SJ	7.5	3.0	245	25	220	10m	4.0	15	25		833m		D	TO61		C		
74	SPC154-24	1.3	200		SJ	7.5	3.0	265	25	240	10m	4.0	15	25		833m		D	TO61		C		
75	SPC154-26	1.3	200		SJ	7.5	3.0	285	25	260	10m	4.0	15	25		833m		D	TO61		C		
76	SPC154-28	1.3	200		SJ	7.5	3.0	305	25														

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C						MAX hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC TURE	DWG #	L C O D E		
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo @ 25°C (A)	Vcb (V)	Ic (A)							MIN	MAX
1	JAN2N1016C	1.4 *	150	8J	7.5		150	25	150	1.0m	4.0	2.0	20	80	20kΔ	500m	10uφ	Δ	T1a	Bφ	
2	2N1016D	1.4 *	150	8J	7.5	5.0	200	25	200	2.0m	4.0	5.0	10	80	20k	500m	6.0u	Δ	T1a	Bφ	
3	JAN2N1016D	1.4 *	150	8J	7.5		200	25	200	1.0m	4.0	2.0	20	80	20kΔ	500m	10uφ	Δ	T1a	Bφ	
4	2N1016E	1.4 *	150	8J	7.5	5.0	25	250	2.0m	4.0	5.0	10	20	20k	500m	6.0u		T1a	Bφ		
5	2N1016F	1.4 *	150	8J	7.5	5.0	25	300	2.0m	4.0	5.0	10	20	20k	500m	6.0u		T1a	R		
6	2N2580T	1.4 *	150	8C	10	3.0	400	5.0	400	250u	5.0	10	5.0	20	30kΔ	500m	2.5uZ		T036	Cφ	
7	2N2580MT	1.4 *	150	8J	10	3.0	400	5.0	400	5.0m	5.0	5.0	10	40	2.0MΔ	140m	1.5uZ	D	T036	Cφ	
8	2N2581T	1.4 *	150	8C	10	3.0	400	5.0	400	250u	5.0	10	10	25	30kΔ	100m	2.5uZ		T036	Cφ	
9	2N2582T	1.4 *	150	8C	10	3.0	500	5.0	500	250u	5.0	10	5.0	20	30kΔ	500m	2.5uZ		T036	Cφ	
10	2N2583T	1.4 *	150	8C	10	3.0	500	5.0	500	250u	5.0	10	10	25	30kΔ	100m	2.5uZ		T036	Cφ	
11	2N2584T	1.4 *	150	8A	5.0	1.0	600	5.0	600	5.0m	5.0	5.0	10	40	30kΔ	140m	6.0uZ		T036	Cφ	
12	2N2585T	1.4 *	150	8A	10	2.0	600	5.0	600	5.0m	5.0	5.0	25	65	30kΔ	1.0	6.0uZ		T036	Cφ	
13	2N3079T	1.4 *	150	8C	5.0	1.0	200	5.0	200	5.0m	2.0	5.0	7.0	40	30kΔ	140m	1.0uZ		T036	Cφ	
14	2N3080T	1.4 *	150	8C	5.0	1.0	300	5.0	300	5.0m	2.0	5.0	7.0	40	30kΔ	140m	1.0uZ		T036	Cφ	
15	2N5241T	1.4	125	8J	5.0	2.0	400	5.0	400	500u	5.0	2.5	15	35	2.5MΔ	500m	800nZ		T03	Cφ	
16	2N5560T	1.4 s	150	8J	30	10	175	8.0	120	2.0m	2.0	15	30	90	40MΔ	50m	1.0uφ		T063	Aφ	
17	2N6258	1.4	250	8J	30	7.5	100	7.0	80	2.0m	2.0	15	20	60	#	#		T03	Cφ		
18	2N6259	1.4	250	8J	16	4.0	170	7.0	150	2.0m	2.0	8.0	15	60	#	#		T03	Cφ		
19	2N6274T	1.4	250	8J	50	20	120	6.0	100	10u	4.0	2.0	30	120	#	30MΔ	350nZ		F11b	Cφ	
20	JAN2N6274T	1.4	250	8J	50	20	120	6.0	100	10u	4.0	2.0	30	120	#	30MΔ	500nZ		T03	Cφ	
21	2N6275T	1.4	250	8J	50	20	140	6.0	120	10u	4.0	2.0	30	120	#	350nZ		F11b	Cφ		
22	2N6276T	1.4	250	8J	50	20	160	6.0	140	10u	4.0	2.0	30	120	#	30MΔ	350nZ		F11b	Cφ	
23	2N6277T	1.4	250	8J	50	20	180	6.0	150	10u	4.0	2.0	30	120	#	30MΔ	350nZ		F11b	Cφ	
24	JAN2N6277T	1.4	250	8J	50	20	180	6.0	150	10u	4.0	2.0	30	120	#	30MΔ	500nZ		T03	Cφ	
25	2N6278T	1.4	250	8J	50	20	120	6.0	100	10u	4.0	2.0	30	120	#	30MΔ	350nZ		T063	Aφ	
26	2N6279T	1.4	250	8J	50	20	140	6.0	120	10u	4.0	2.0	30	120	#	30MΔ	350nZ		T063	Aφ	
27	2N6280T	1.4	250	8J	50	20	160	6.0	140	10u	4.0	2.0	30	120	#	30MΔ	350nZ		T063	Aφ	
28	2N6281T	1.4	250	8J	50	20	180	6.0	150	10u	4.0	2.0	30	120	#	30MΔ	350nZ		T063	Aφ	
29	2N6570	1.4	250	8C	40	8.0	100	7.0	90	10u	4.0	15	20	60	#	1.0MΔ	100m		T03	Cφ	
30	2N6571	1.4	250	8C	40	8.0	115	7.0	105	10u	4.0	15	20	60	#	1.0MΔ	100m		T03	Cφ	
31	2N6572	1.4	250	8S	12	6.0	60	4.0	30	30m	4.0	1.5	11					W55	R		
32	151-04T	1.4	100	8J	6.0	3.0	65	25	40	10m	4.0	1.5	22	∅		500k\$	866m	7.0uZ	A	T1a	B
33	151-04SPC1	1.4	100	8J	6.0	3.0	65	25	40	10m	4.0	1.5	22	∅		500k\$	870m	7.0uZ	A	T1a	B
34	151-05	1.4	100	8J	6.0	3.0	75	25	50	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
35	151-06T	1.4	100	8J	6.0	3.0	85	25	60	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
36	151-06SPC1	1.4	100	8J	6.0	3.0	85	25	60	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
37	151-07	1.4	100	8J	6.0	3.0	95	25	70	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
38	151-08T	1.4	100	8J	6.0	3.0	105	25	80	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
39	151-08SPC1	1.4	100	8J	6.0	3.0	105	25	80	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
40	151-09	1.4	100	8J	6.0	3.0	115	25	90	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
41	151-10T	1.4	100	8J	6.0	3.0	125	25	100	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
42	151-10SPC1	1.4	100	8J	6.0	3.0	125	25	100	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
43	151-12T	1.4	100	8J	6.0	3.0	145	25	120	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
44	151-12SPC1	1.4	100	8J	6.0	3.0	145	25	120	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
45	151-14T	1.4	100	8J	6.0	3.0	165	25	140	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
46	151-14SPC1	1.4	100	8J	6.0	3.0	165	25	140	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
47	151-16T	1.4	100	8J	6.0	3.0	185	25	160	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
48	151-16SPC1	1.4	100	8J	6.0	3.0	185	25	160	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
49	151-18T	1.4	100	8J	6.0	3.0	205	25	180	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
50	151-18SPC1	1.4	100	8J	6.0	3.0	205	25	180	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
51	151-20T	1.4	100	8J	6.0	3.0	225	25	200	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
52	151-20SPC1	1.4	100	8J	6.0	3.0	225	25	200	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
53	151-22T	1.4	100	8J	6.0	3.0	245	25	220	10m	4.0	1.5	11			500k\$	866m	7.0uZ	A	T1a	B
54	151-22SPC1	1.4	100	8J	6.0	3.0	245	25	220	10m	4.0	1.5	22	∅		870m	7.0uZ	A	T1a	B	
55	151-24T	1.4	100	8J	6.0	3.0	265	25	240	10m	4.0	1.5	22	∅		870m	7.0uZ	F	XXXX		
56	151-26SPC1	1.4	100	8J	6.0	3.0	285	25	260	10m	4.0	1.5	22	∅		870m	7.0uZ	F	T1a		
57	151-28SPC1	1.4	100	8J	6.0	3.0	305	25	280	10m	4.0	1.5	22	∅		870m	7.0uZ	F	T1a		
58	152-04T	1.4	100	8J	6.0	3.0	65	25	40	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
59	152-04SPC1	1.4	100	8J	6.0	3.0	65	25	40	10m	4.0	1.5	37	∅		830m	7.0uZ	A	T1a	B	
60	152-05	1.4	100	8J	6.0	3.0	75	25	50	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
61	152-06T	1.4	100	8J	6.0	3.0	85	25	60	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
62	152-06SPC1	1.4	100	8J	6.0	3.0	85	25	60	10m	4.0	1.5	37	∅		830m	7.0uZ	A	T1a	B	
63	152-07	1.4	100	8J	6.0	3.0	95	25	70	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
64	152-08T	1.4	100	8J	6.0	3.0	105	25	80	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
65	152-08SPC1	1.4	100	8J	6.0	3.0	105	25	80	10m	4.0	1.5	37	∅		830m	7.0uZ	A	T1a	B	
66	152-09	1.4	100	8J	6.0	3.0	115	25	90	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
67	152-10T	1.4	100	8J	6.0	3.0	125	25	100	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
68	152-10SPC1	1.4	100	8J	6.0	3.0	125	25	100	10m	4.0	1.5	37	∅		830m	7.0uZ	A	T1a	B	
69	152-12T	1.4	100	8J	6.0	3.0	145	25	120	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
70	152-12SPC1	1.4	100	8J	6.0	3.0	145	25	120	10m	4.0	1.5	37	∅		830m	7.0uZ	A	T1a	B	
71	152-14T	1.4	100	8J	6.0	3.0	165	25	140	10m	4.0	1.5	18			500k\$	833m	7.0uZ	A	T1a	B
72	152-14SPC1	1.4	100	8J	6.0	3.0	165	25													



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX P <sub>c</sub> FREE AIR @ 25°C (W)	M T A E M P X	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>c</sub> bo @ 25°C (A)	hFE			MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #/a TO200 Ser.	L O A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CE</sub> (V)	V <sub>BE</sub> (V)	V <sub>CE</sub> (V)		V <sub>CB</sub> (V)	I <sub>c</sub> (A)	I <sub>b</sub> (A)								
1#	BUX231	1.4	250	1.4	30	6.0	400	7.0	325	5.0mΔ	4.0	10	15	60	8.0MΔ	100m	2.0uΔ	DM	T03	C0	
2#	BUX241	1.4	250	1.4	20	4.0	500	7.0	400	5.0mΔ	4.0	7.0	15	60	8.0MΔ	85m	2.0uΔ	DM	T03	C0	
3#	BUX251	1.4	250	1.4	20	4.0	600	7.0	500	5.0mΔ	4.0	5.0	15	60	8.0MΔ	120m	2.0uΔ	DM	T03	C0	
4	DTS430	1.4	125	1.4	5.0	2.0	400	5.0	400	2.5mΔ	5.0	2.5	15	45	2.5MΔ	360m	2.0uΔ	Δ	Y204a	C0	
5	DTS431	1.4	125	1.4	5.0	2.0	400	5.0	400	2.5mΔ	5.0	2.5	15	35	2.5MΔ	280m	2.0uΔ	Δ	Y204a	C0	
6	GT600	1.4	250	1.4	60	85	7.0	80	1.0mΔ	4.0	20	30	60	1.0MΔ	50m		Δ	T03	C0		
7	MJ15003	1.4	250	1.4	20	5.0	140	5.0	140	100u#	2.0	5.0	25	150	2.0MΔ	200m		Δ	F49a	C0	
8	MJ15022	1.4	250	1.4	16	5.0	350	7.0	200	250u#	4.0	8.0	15	60	4.0MΔ	250m		Δ	T03	C0	
9	MJ15024	1.4	250	1.4	16	5.0	400	7.0	250	250u#	4.0	8.0	15	60	4.0MΔ	250m		Δ	T03	C0	
10	MRF244	1.4	250	1.4	20	36	4.0	18		5.0	5.0	10	150		175M#			W85a	S		
11	MRF245	1.4	250	1.4	20	36	4.0	18		5.0	5.0	10	150					W85a	S		
12	MRF247	1.4	250	1.4	20	36	4.0	18		5.0	5.0	10	150					F55	S		
13	MRF412	1.4	250	1.4	20	38	4.0	18	20mΔ	5.0	5.0	10	150		30M#			W52p	R		
14	MRF412A	1.4	250	1.4	20	38	4.0	18	20mΔ	5.0	5.0	10	150		30M#			T166	R		
15	MRF454	1.4	250	1.4	20	45	4.0	25		5.0	5.0	10	150					W52n	R		
16	MRF454A	1.4	250	1.4	20	45	4.0	25		5.0	5.0	10	150					T93d	R		
17	MRF463*	1.4	250	1.4	20	65	4.0	35	10mΔ	5.0	500m	10	10		30M#			W52m	R		
18	MRF464*	1.4	250	1.4	20	65	4.0	35	10mΔ	5.0	500m	10	10		30M#			W52p	R		
19	MRF464A*	1.4	250	1.4	20	65	4.0	35	10mΔ	5.0	500m	10	10		30M#			T93d	R		
20	MRF492	1.4	250	1.4	20	36	4.0	18	20mΔ	5.0	5.0	10	150		50M#			W52p	R		
21	MRF492A	1.4	250	1.4	20	36	4.0	18	20mΔ	5.0	5.0	10	150		50M#			T166	R		
22	MRF4070	1.4	250	1.4	20	36	4.0	18	10mΔ	5.0	10m	5	10		175M#			W85c	S		
23	Q1-500	1.4	85	1.4	3.0	500	4.0	500	300uΔ	10	10m	10	10					T03	C0		
24	Q2-500	1.4	85	1.4	3.0	500	4.0	500	300uΔ	10	10m	10	10					T03	C0		
25#	RCS258	1.4	250	1.4	20	5.0	100	7.0	80	5.0m	4.0	10	15	60	200k	140m			T03	C0	
26	SDT313031	1.4	250	1.4	7.0	2.0	220	7.0	200	5.0m	4.0	2.0	10	50	1.5M	250m	6.0uΔ	DMΔ	T03	C0	
27	SDT313051	1.4	250	1.4	7.0	2.0	270	7.0	250	5.0m	4.0	2.0	10	50	1.5M	250m	6.0uΔ	DMΔ	T03	C0	
28	SDT313071	1.4	250	1.4	7.0	2.0	320	7.0	300	5.0m	4.0	2.0	10	50	1.5M	250m	6.0uΔ	DMΔ	T03	C0	
29	SPC151-04	1.4	100	1.4	6.0	3.0	65	25	40	10m#	4.0	1.5	11		866m			D	T082	C0	
30	SPC151-06	1.4	100	1.4	6.0	3.0	85	25	60	10m#	4.0	1.5	11		866m			D	T082	C0	
31	SPC151-08	1.4	100	1.4	6.0	3.0	105	25	80	10m#	4.0	1.5	11		866m			D	T082	C0	
32	SPC151-10	1.4	100	1.4	6.0	3.0	125	25	100	10m#	4.0	1.5	11		866m			D	T082	C0	
33	SPC151-12	1.4	100	1.4	6.0	3.0	145	25	120	10m#	4.0	1.5	11		866m			D	T082	C0	
34	SPC151-14	1.4	100	1.4	6.0	3.0	165	25	140	10m#	4.0	1.5	11		866m			D	T082	C0	
35	SPC151-16	1.4	100	1.4	6.0	3.0	185	25	160	10m#	4.0	1.5	11		866m			D	T082	C0	
36	SPC151-18	1.4	100	1.4	6.0	3.0	205	25	180	10m#	4.0	1.5	11		866m			D	T082	C0	
37	SPC151-20	1.4	100	1.4	6.0	3.0	225	25	200	10m#	4.0	1.5	11		866m			D	T082	C0	
38	SPC151-22	1.4	100	1.4	6.0	3.0	245	25	220	10m#	4.0	1.5	11		866m			D	T082	C0	
39	SPC151-24	1.4	100	1.4	6.0	3.0	265	25	240	10m#	4.0	1.5	11		866m			D	T082	C0	
40	SPC151-26	1.4	100	1.4	6.0	3.0	285	25	260	10m#	4.0	1.5	11		866m			D	T082	C0	
41	SPC151-28	1.4	100	1.4	6.0	3.0	305	25	280	10m#	4.0	1.5	11		866m			D	T082	C0	
42	SPC151-30	1.4	100	1.4	6.0	3.0	325	25	300	10m#	4.0	1.5	11		866m			D	T082	C0	
43	SPC152-04	1.4	100	1.4	6.0	3.0	65	25	40	10m#	4.0	1.5	18		833m			D	T082	C0	
44	SPC152-06	1.4	100	1.4	6.0	3.0	85	25	60	10m#	4.0	1.5	18		833m			D	T082	C0	
45	SPC152-08	1.4	100	1.4	6.0	3.0	105	25	80	10m#	4.0	1.5	18		833m			D	T082	C0	
46	SPC152-10	1.4	100	1.4	6.0	3.0	125	25	100	10m#	4.0	1.5	18		833m			D	T082	C0	
47	SPC152-12	1.4	100	1.4	6.0	3.0	145	25	120	10m#	4.0	1.5	18		833m			D	T082	C0	
48	SPC152-14	1.4	100	1.4	6.0	3.0	165	25	140	10m#	4.0	1.5	18		833m			D	T082	C0	
49	SPC152-16	1.4	100	1.4	6.0	3.0	185	25	160	10m#	4.0	1.5	18		833m			D	T082	C0	
50	SPC152-18	1.4	100	1.4	6.0	3.0	205	25	180	10m#	4.0	1.5	18		833m			D	T082	C0	
51	SPC152-20	1.4	100	1.4	6.0	3.0	225	25	200	10m#	4.0	1.5	18		833m			D	T082	C0	
52	SPC152-22	1.4	100	1.4	6.0	3.0	245	25	220	10m#	4.0	1.5	18		833m			D	T082	C0	
53	SPC152-24	1.4	100	1.4	6.0	3.0	265	25	240	10m#	4.0	1.5	18		833m			D	T082	C0	
54	SPC152-26	1.4	100	1.4	6.0	3.0	285	25	260	10m#	4.0	1.5	18		833m			D	T082	C0	
55	SPC152-28	1.4	100	1.4	6.0	3.0	305	25	280	10m#	4.0	1.5	18		833m			D	T082	C0	
56	SPC152-30	1.4	100	1.4	6.0	3.0	320	25	300	10m#	4.0	1.5	18		833m			D	T082	C0	
57	SPC430	1.4	125	1.4	5.0	2.0	400	5.0	300	500m#	5.0	2.5	15	45	4.0M	360m		D	T03	C0	
58	SPC431	1.4	125	1.4	5.0	2.0	400	5.0	325	500m#	5.0	2.5	15	45	4.0M	280m		D	T03	C0	
59	STA9364	1.4	125	1.4	5.0	2.0	400	5.0	400	5.0m#	5.0	2.0	15	35	4.0MΔ	500m		EM	T03	C0	
60	STS430	1.4	125	1.4	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15	45	4.0M	360m	400n	EMΔ	T03	C0	
61	STS431	1.4	125	1.4	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15	45	4.0M	280m	400n	EMΔ	T03	C0	
62	2N60601	1.5	150	1.5	50	10	100	10	100	500u#	10	20	25	120	10MΔ	50m#		EM	T03	C0	
63	JAN2N60601	1.5	150	1.5	50	10	100	10	100	200u#	10	30	20	100	10MΔ	50m#		EM	T03	C0	
64	2N60621	1.5	150	1.5	50	10	100	10	100	500u#	10	20	25	120	10MΔ	50m#		EM	T03	C0	
65	JAN2N60621	1.5	150	1.5	50	10	100	10	100	200u#	10	30	20	100	10MΔ	50m#		EM	T03	C0	
66	2N6270	1.5	150	1.5	30	10	100	8.0	80	1.0mΔ	4.0	15	20	100	75MΔ			EM	T03	C0	
67	2N6271	1.5	150	1.5	30	10	120	8.0	100	1.0mΔ	4.0	15	20	100	75MΔ			EM	T03	C0	
68	2N6272	1.5	150	1.5	30	10	100	8.0	80	1.0mΔ	4.0	15	20	100	75MΔ			EM	T03	C0	
69	2N6273	1.5	150	1.5	30	10	120	8.0	100	1.0mΔ	4.0	15	20	100	75MΔ			EM	T03	C0	
70	25C3214	1.5	80	1.5	5	2.5	1.2k	8	800	50u	5.0	1.5	10	15		400m	4.5u#		T03	C0	
71	1561-0804	1.5	120	1.5	15	7.0	100	7.0	100	2.0	4.0	4.0	20	70	800 Δ	250m			T03	C0	
72	1561-1004	1.5	120	1.5	15	7.0	100	7.0	100	2.0	4.0	4.0	20	70	800 Δ	250m			T03	C0	
73	1561-1804	1.5	120	1.5	15	7.0	180	7.0	180	2.0	4.0	4.0	20	70	800 Δ	250m			T03	C0	
74	1758-06401	1.5	150	1.5	75	15	80	7.0	80	5.0m#	3.0	40	15	#	20MΔ		500nΔ	EM	T063	C0</	



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @25°C						MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O A D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcb @25°C (A)	Vcb (V)	Ic (A)							MIN
1#	2SD55	1.6	200	0.8	0.5	20	20	100	10	55	10mΩ	5.0	10	12	48	1.0M	D	T03	A	
2#	2SD113	1.6	200	0.8	0.5	30	5.0	100	10	80	1.0mΩ	5.0	15	10	60	500k	D	T03	A	
3#	2SD114	1.6	200	0.8	0.5	30	5.0	70	10	50	1.0mΩ	5.0	15	10	60	500k	D	T03	A	
4#	2SD295	1.6	200	0.8	0.5	30	10	800	10	400	5.0m	5.0	10	15	30	#	D	F29	C	
5#	2SD296	1.6	200	0.8	0.5	30	10	800	10	400	5.0m	5.0	10	30	70	#	D	F29	C	
6#	2SD555	1.6	200	0.8	0.5	15	2.0	400	5.0	200	100uΩ	5.0	2.0	40	200	#	DM	T03	A	
7#	2SD746	1.6	200	0.8	0.5	10		180	5.0	180	50u	5.0	2.0	40	#	200	D	B67	AH	
8#	2SD746A	1.6	200	0.8	0.5	10		220	5.0	220	50u	5.0	2.0	40	#	200	D	B67	AH	
9#	2SD997	1.6	200	0.8	0.5	10		250	5.0	200	50u	5.0	2.0	40	#	200	D	Y204a	A	
10	DTS1010	1.6	100	0.5	0.5	10	1.0	7.0	120	100uΔ	1.5	3.0	500			D	Y204a	C		
11	DTS1020	1.6	100	0.5	0.5	10	1.0	7.0	120	100uΔ	1.5	3.0	1.0k			D	Y204a	C		
12#	JE9113A	1.6	2.0	0.5	0.5	1.5	500m	35	6.0	25	100n	1.0	100m	60	120	140M	D	T092	A	
13#	JE9113B	1.6	2.0	0.5	0.5	1.5	500m	35	6.0	25	100n	1.0	100m	85	160	140M	D	T092	A	
14#	JE9113C	1.6	2.0	0.5	0.5	1.5	500m	35	6.0	25	100n	1.0	100m	120	200	140M	D	T092	A	
15#	JE9113D	1.6	2.0	0.5	0.5	1.5	500m	35	6.0	25	100n	1.0	100m	160	300	140M	D	T092	A	
16	MRF422	1.6	290	0.8	0.5	20		85	3.0	40	10mΩ	5.0	5.0	10	30	∅	A	W52	R	
17	SDT1908	1.6	140	0.8	0.5	60	10	80	30	60	5.0m	2.0	50	15		A	T23	A		
18	SDT1909	1.6	140	0.8	0.5	60	10	60	30	45	5.0m	2.0	50	15		A	T23	A		
19	SDT1910	1.6	140	0.8	0.5	60	10	40	20	30	5.0m	2.0	50	15		A	T23	A		
20	SDT2008	1.6	140	0.8	0.5	60	10	80	30	60	5.0m	2.0	50	15		A	T22	A		
21	SDT2009	1.6	140	0.8	0.5	60	10	60	30	45	5.0m	2.0	50	15		A	T22	A		
22	SDT2010	1.6	140	0.8	0.5	60	10	40	20	30	5.0m	2.0	50	15		A	T22	A		
23	SDT3620	1.6	280	0.8	0.5	90		80	8.0	60	10k	5.0	75	10		DPL	T068	AE		
24	SDT3621	1.6	280	0.8	0.5	90		100	8.0	80	10k	5.0	75	10		DPL	T068	AE		
25	SDT3622	1.6	280	0.8	0.5	90		120	8.0	100	10k	5.0	75	10		DPL	T068	AE		
26	SDT3623	1.6	280	0.8	0.5	90		140	8.0	12	10k	5.0	75	10		DPL	T068	AE		
27	SDT8601	1.6	280	0.8	0.5	90	20	80	8.0		10uΩ	5.0	75	10	#	PL	T068	AE		
28	SDT8602	1.6	280	0.8	0.5	90	20	100	8.0		10uΩ	5.0	75	10	#	PL	T068	AE		
29	SDT8603	1.6	280	0.8	0.5	90	20	120	8.0		10uΩ	5.0	75	10	#	PL	T068	AE		
30	SDT8604	1.6	280	0.8	0.5	90	20	140	8.0		10uΩ	5.0	75	10	#	PL	T068	AE		
31	SDT8651	1.6	290	0.8	0.5	60	6.0	200	8.0	200	10u	10	40	10	40	15M	PL	T068	AE	
32	SDT8652	1.6	290	0.8	0.5	60	6.0	225	8.0	225	10u	10	40	10	40	15M	PL	T068	AE	
33	SDT8653	1.6	290	0.8	0.5	60	6.0	250	8.0	250	10u	10	40	10	40	15M	PL	T068	AE	
34	SDT8654	1.6	290	0.8	0.5	60	6.0	275	8.0	275	10u	10	40	10	40	15M	PL	T068	AE	
35	SDT8655	1.6	290	0.8	0.5	60	6.0	300	8.0	300	10u	10	40	10	40	15M	PL	T068	AE	
36	SDT9620	1.6	290	0.8	0.5	50		225	10	200	1.0u	10	40	10	40	10M	DPL	T068	C	
37	SDT9621	1.6	290	0.8	0.5	50		250	10	225	1.0u	10	40	10	40	10M	DPL	T068	C	
38	SDT9622	1.6	290	0.8	0.5	50		275	10	250	1.0u	10	40	10	40	10M	DPL	T068	C	
39	SDT9623	1.6	290	0.8	0.5	50		300	10	275	1.0u	10	40	10	40	10M	DPL	T068	C	
40	SDT9624	1.6	290	0.8	0.5	50		325	10	300	1.0u	10	40	10	40	10M	DPL	T068	C	
41	SDT9660	1.6	290	0.8	0.5	100		80	10	60	1.0u	5.0	70	15		DPL	T068	C		
42	SDT9661	1.6	290	0.8	0.5	100		100	10	80	1.0u	5.0	70	15		DPL	T068	C		
43	SDT9662	1.6	290	0.8	0.5	100		120	10	100	1.0u	5.0	70	15		DPL	T068	C		
44	SDT9663	1.6	290	0.8	0.5	100		140	10	120	1.0u	5.0	70	15		DPL	T068	C		
45	SDT9664	1.6	290	0.8	0.5	100		160	10	140	1.0u	5.0	70	15		DPL	T068	C		
46	SDT96501	1.6	290	0.8	0.5	100	15	80	10	60	1.0u	5.0	90	5.0		PL	T068	AE		
47	SDT96502	1.6	290	0.8	0.5	100	15	120	10	100	1.0u	5.0	90	5.0		PL	T068	AE		
48	SDT96503	1.6	290	0.8	0.5	100	15	160	10	140	1.0u	5.0	90	5.0		PL	T068	AE		
49	SDT96504	1.6	290	0.8	0.5	50	10	225	10	200	1.0u	10	40	8.0	40		PL	T068	AE	
50	SDT96505	1.6	290	0.8	0.5	50	10	275	10	250	1.0u	10	40	8.0	40		PL	T068	AE	
51	SDT96506	1.6	290	0.8	0.5	50	10	325	10	300	1.0u	10	40	8.0	40		PL	T068	AE	
52#	T25M40	1.6	200	0.8	0.5	25	7.0	800	7.0	400	0.1M	5.0	25	6.0		1.0u	Δ	T03	C	
53	2N5685	1.7	300	0.8	0.5	50	15	60	5.0	60	2.0m	2.0	25	15	60	#	2.0M	F4d	C	
54	JAN2N5685†	1.7	300	0.8	0.5	50	15	60	5.0	60	2.0m	2.0	25	15	60	#	2.0M	F6r	C	
55	2N5686	1.7	300	0.8	0.5	50	15	80	5.0	80	2.0m	2.0	25	15	60	#	2.0M	F4d	C	
56	JAN2N5686†	1.7	300	0.8	0.5	50	15	80	5.0	80	2.0m	2.0	25	15	60	#	2.0M	F6r	C	
57#	BUY23†	1.7	100	0.8	0.5	3.0	600	8.0	250	2.0m	5.0	2.5	20	200	#	25M	DM	T03	C	
58	MJ7200	1.7	300	0.8	0.5	60	20	100	6.0	80	100u	5.0	20	20	100	#	20M	Δ	T69a	C
59	MJ7201	1.7	300	0.8	0.5	60	20	120	6.0	100	100u	5.0	20	20	100	#	20M	Δ	T69a	C
60	MJ14000	1.7	300	0.8	0.5	70	15	60	5.0	60	1.0m	3.0	50	15	100	#	20M	Δ	F49b	C
61	MJ14002	1.7	300	0.8	0.5	70	15	80	5.0	80	1.0m	3.0	50	15	100	#	20M	Δ	F49b	C
62#	WT5301	1.7	215	0.8	0.5	50	#	15	10		5m	2	25	8			D	T063	A	
63#	WT5303	1.7	215	0.8	0.5	50	#	15	10		5m	2	15	12			D	T063	A	
64#	WT5304	1.7	215	0.8	0.5	50	#	15	10		5m	2	15	8			D	T063	A	
65#	WT5305	1.7	215	0.8	0.5	50	#	15	10		5m	2	15	10			D	T063	A	
66#	WT5306	1.7	215	0.8	0.5	50	#	15	10		5m	2	15	10			D	T063	A	
67#	WT5308†	1.7	215	0.8	0.5	25	15	10	10	700	5.0m	2.0	20	6.0		5.0u	Δ	T063	A	
68#	WT5310	1.7	215	0.8	0.5	50	#	15			5m	2	10	5		100m	D	T063	A	
69	MRF428A	1.8	320	0.8	0.5	20		110	4.0	55	5.0	5.0	10		30	∅	A	T124	R	
70	2N1936	2.0	150	0.8	0.5	20	10	125	6.0	60	10m	10	10	#	50	#	4.0M	ME	T063	AE
71	2N1937	2.0	150	0.8	0.5	20	10	125	6.0	80	10m	10	10	#	50	#	4.0M	ME	T063	AE
72	2N2226	2.0	150	0.8	0.5	10	1.0	50	15	50	20m	6.0	9.0	100	500		7.0k	T1a	AE	
73	2N2227	2.0	150	0.8	0.5	10	1.0	100	15	100	20m	6.0	9.0	100	500		7.0k	T1c	AE	
74	2N2228	2.0	150	0.8	0.5	10	1.0	150	15	150	20m	6.0	9.0	100	500		7.0k	T1c	AE	
75	2N2229	2.0	150	0.8	0.5	10	1.0	200	15	200	20m	6.0	9.0	100	500		7.0k	T1c	AE	
76	2N2230	2.0	150	0.8	0.5	10	1.0	50	15	50	20m	6.0	9.0	350			4.0k	T1c	AE	
77	2N2231	2.0	150	0.8	0.5	10	1.0	100	15	100	20m	6.0	9.0	350			4.0k	T1c	AE	
78	2N2232	2.0	150	0.8	0.5	10	1.0	150	15	150	20m	6.0	9.0	350			4.0k	T1c	AE	
79	2N2233	2.0	150	0.8	0.5	10	1.0	200	15	200	20m	6.0	9.							

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc M A X	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vce @ 25°C		BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O D E	
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vce (A)	Vcb (V)	Ic (A)										
1	2N2770†	2.0	200	3C	30	7.5	100	15	100	15m#	4.0	20	10								T33	A
2	2N2771†	2.0	200	3C	30	7.5	150	15	150	15m#	4.0	20	10								T33	A
3	2N2772†	2.0	200	3C	30	7.5	200	15	200	15m#	4.0	20	10								T33	A
4	2N2773†	2.0	200	3C	30	7.5	250	15	250	15m#	4.0	20	10								T33	A
5	2N2774†	2.0	200	3C	30	7.5	300	15	300	15m#	4.0	20	10								T33	A
6	2N2775†	2.0	200	3C	30	7.5	50	15	50	15m#	4.0	25	10				60m				T33	A
7	2N2776†	2.0	200	3C	30	7.5	100	15	100	15m#	4.0	25	10				60m				T33	A
8	2N2777†	2.0	200	3C	30	7.5	150	15	150	15m#	4.0	25	10				60m				T33	A
9	2N2778†	2.0	200	3C	30	7.5	200	15	200	15m#	4.0	25	10				60m				T33	A
10	2N2779†	2.0	200	3C	30	7.5	250	15	250	15m#	4.0	25	10				60m				T33	A
11	2N2780†	2.0	200	3C	30	7.5	300	15	300	15m#	4.0	25	10				60m				T33	A
12	2N3149	2.0	300	3C	70	15	80	10	80	2.0m#	3.0	50	10	#		100kΔ	30m	1.0u			T49	Ø
13	2N3150	2.0	300	3C	70	15	100	10	100	2.0m#	3.0	50	10	#		100kΔ	30m	1.0u			T49	Ø
14	2N3151	2.0	300	3C	70	15	150	10	150	2.0m#	3.0	50	10	#		100kΔ	30m	1.0u			T49	Ø
15	2N3470	2.0	150	3C	10	1.0	50	15	50	2.0m#	6.0	9.0	100	500	7.0kΔ	390m					T33	Ø
16	2N3471	2.0	150	3C	10	1.0	100	15	100	2.0m#	6.0	9.0	100	500	7.0kΔ	390m					T33	Ø
17	2N3472	2.0	150	3C	10	1.0	150	15	150	2.0m#	6.0	9.0	100	500	7.0kΔ	390m					T33	Ø
18	2N3473	2.0	150	3C	10	1.0	200	15	200	2.0m#	6.0	9.0	100	500	7.0kΔ	390m					T33	Ø
19	2N3474	2.0	150	3C	10	1.0	50	15	50	2.0m#	6.0	9.0	350		4.0kΔ	390m					T33	Ø
20	2N3475	2.0	150	3C	10	1.0	100	15	100	2.0m#	6.0	9.0	350		4.0kΔ	390m					T33	Ø
21	2N3476	2.0	150	3C	10	1.0	150	15	150	2.0m#	6.0	9.0	350		4.0kΔ	390m					T33	Ø
22	2N3477	2.0	150	3C	10	1.0	200	15	200	2.0m#	6.0	9.0	350		4.0kΔ	390m					T33	Ø
23	2N3846†	2.0	4.0	3C	20	10	300	10	200	1.0m#	3.0	5.0	40	200	#	10MΔ	80m	4.0u			T063	AØ
24	JAN2N3846†	2.0	4.0	3C	20	10	300	10	200	1.0m#	3.0	5.0	40	200	#	10MΔ	80m	4.0u			T063	AØ
25	2N3847†	2.0	4.0	3C	20	10	400	10	300	1.0m#	3.0	5.0	40	200	#	10MΔ	80m	4.0u			T063	AØ
26	JAN2N3847†	2.0	4.0	3C	20	10	400	10	300	1.0m#	3.0	5.0	40	200	#	10MΔ	80m	4.0u			T063	AØ
27	2N3848†	2.0	4.0	3C	20	10	300	10	200	1.0m#	3.0	5.0	40	200	#	10MΔ	670m	4.0u			T063	AØ
28	2N3849†	2.0	4.0	3C	20	10	400	10	300	1.0m#	3.0	5.0	40	200	#	10MΔ	670m	4.0u			T063	AØ
29	2N4865†	2.0	350	3C	90	15	100	8.0	80	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u			PL	T69	AØ
30	JAN2N4865†	2.0	350	3C	90	15	100	8.0	80	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u			PL	T49a	AØ
31	2N4866†	2.0	350	3C	90	15	140	8.0	120	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u			PL	T69	AØ
32	2N4950†	2.0	300	3C	70	15	80	10	60	2.0m#	3.0	5.0	10	40	#	10MΔ	9.5u				T69	AØ
33	2N5250†	2.0	350	3C	90	15	125	10	100	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u				T69	AØ
34	JAN2N5250†	2.0	350	3C	90	15	125	10	100	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u				T49a	AØ
35	2N5251†	2.0	350	3C	90	15	180	10	150	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u				T69	AØ
36	JAN2N5251†	2.0	350	3C	90	15	180	10	150	1.0u#	5.0	7.0	10	40	#	10MΔ	2.0u				T49a	AØ
37	2N5489	2.0	300	3C	40	15	100	10	100	2.0m#	6.0	40	15	50	#	500kΔ	38m				T0114	AØ
38	2N5575†	2.0	150	3C	80	20	70	8.0	70	#	4.0	60	10	40	#	33m#	15u				F23	AØ
39	2N5576†	2.0	150	3C	80	20	70	8.0	70	#	4.0	60	10	40	#	33m#	15u				F45	AØ
40	2N5577†	2.0	150	3C	80	20	70	8.0	70	#	4.0	60	10	40	#	33m#	15u				F46	AØ
41	2N5578†	2.0	150	3C	80	20	90	8.0	90	#	3.0	60	10	40	#	37m#	10u				F23	AØ
42	2N5587	2.0	300	3C	80	15	120	6.0	120	2.0m#	2.0	80	10	30	#	25m					T0114	AØ
43	2N5588	2.0	300	3C	80	15	180	6.0	80	2.0m#	2.0	80	10	30	#	25m					T0114	AØ
44	2N5926†	2.0	200	3C	50	15	150	10	120	#	2.0	50	10	40	#						T063	AØ
45	JAN2N5926†	2.0	350	3C	50	15	150	10	120	2.0m#	2.0	50	10	40	#		7.0u				T69d	A
46	2N5927†	2.0	200	3C	100	25	150	10	120	#	2.0	70	10	40	#						T0114	AØ
47	JAN2N5927†	2.0	350	3C	100	25	150	10	120	2.0m#	2.0	70	10	40	#		7.0u				T69c	B
48	2N5928†	2.0	200	3C	100	25	120	10	120	#	2.0	100	10	40	#						T0114	AØ
49	2N6322	2.0	200	3C	30	10	300	5.0	200	5.0mΔ	5.0	5.0	40	150	#	10MΔ					T03	AØ
50	2N6323	2.0	200	3C	30	10	400	5.0	300	5.0mΔ	5.0	5.0	30	150	#	10MΔ					T03	AØ
51	2N6324	2.0	200	3C	30	10	300	5.0	200	5.0mΔ	5.0	5.0	40	150	#	10MΔ					T063	AØ
52	2N6325	2.0	200	3C	30	10	400	5.0	300	5.0mΔ	5.0	5.0	30	150	#	10MΔ					T063	AØ
53#	25C2366†	2.0	300	3C	40	5.0	500	7.0	400	100u	5.0	20	20	Ø		35m	1.0u			DMΔ	F1b	AØ
54#	25C2403†	2.0	300	3C	40	5.0	300	7.0	200	100u	5.0	20	20	Ø		35m	1.0u			DMΔ	F1b	AØ
55	163-04†	2.0	200	3C	20	7.5	55	25	40	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
56	163-04A†	2.0	200	3C	20	7.5	55	15	40	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
57	163-04SPC†	2.0	200	3C	20	7.5	55	15	40	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
58	163-05	2.0	200	3C	20	7.5	65	25	50	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
59	163-06†	2.0	200	3C	20	7.5	75	25	60	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
60	163-06A†	2.0	200	3C	20	7.5	75	15	60	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
61	163-06SPC†	2.0	200	3C	20	7.5	75	15	60	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
62	163-07	2.0	200	3C	20	7.5	85	25	70	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
63	163-08†	2.0	200	3C	20	7.5	95	25	80	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
64	163-08A†	2.0	200	3C	20	7.5	95	15	80	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
65	163-08SPC†	2.0	200	3C	20	7.5	95	15	80	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
66	163-09	2.0	200	3C	20	7.5	105	25	90	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
67	163-10†	2.0	200	3C	20	7.5	115	25	100	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
68	163-10A†	2.0	200	3C	20	7.5	115	15	100	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
69	163-10SPC†	2.0	200	3C	20	7.5	115	15	100	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
70	163-12†	2.0	200	3C	20	7.5	135	25	120	30m#	4.0	5.0	15	500k		220m	6.0u			DM	T33	AØ
71	163-12A†	2.0	200	3C	20	7.																

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. @ 25°C		BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a 20200 Ser.	# C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Vcb (V)	Vcb (V)								
1	184-14SPCt	2.0	200	0	5J	20	7.5	155	15	140	30m#	4.0	5.0	25						A	T33	A0
2	184-16t	2.0	200	0	5J	20	7.5	175	15	160	30m#	4.0	5.0	25			500k	200m	6.0u	A	T33	A0
3	184-16At	2.0	200	0	5J	20	7.5	175	15	160	30m#	4.0	5.0	25				200m	6.0u	DM	T33	A0
4	184-18t	2.0	200	0	5J	20	7.5	195	25	180	30m#	4.0	5.0	25				200m	6.0u	A	T33	A0
5	184-18At	2.0	200	0	5J	20	7.5	195	25	180	30m#	4.0	5.0	25				200m	6.0u	DM	T33	A0
6	184-20t	2.0	200	0	5J	20	7.5	215	25	200	30m#	4.0	5.0	25			500k	200m	6.0u	A	T33	A0
7	184-20At	2.0	200	0	5J	20	7.5	215	25	200	30m#	4.0	5.0	25				200m	6.0u	DM	T33	A0
8	184-20SPCt	2.0	200	0	5J	20	7.5	215	15	220	30m#	4.0	5.0	25				200m	6.0u	A	T33	A0
9	184-22t	2.0	200	0	5J	20	7.5	235	25	220	30m#	4.0	5.0	25			500k	200m	6.0u	A	T33	A0
10	184-22At	2.0	200	0	5J	20	7.5	235	15	220	30m#	4.0	5.0	25				200m	6.0u	DM	T33	A0
11	184-22SPCt	2.0	200	0	5J	20	7.5	235	15	220	30m#	4.0	5.0	25				200m	6.0u	A	T33	A0
12	184-24t	2.0	200	0	5J	20	7.5	255	15	240	30m#	4.0	5.0	25				200m	6.0u	A	T33	A0
13	184-24SPCt	2.0	200	0	5J	20	7.5	255	15	240	30m#	4.0	5.0	25				200m	6.0u	A	T33	A0
14	184-26SPCt	2.0	200	0	5J	20	7.5	275	15	260	30m#	4.0	5.0	42				200m	6.0u	A	T33	A0
15	184-28SPCt	2.0	200	0	5J	20	7.5	295	15	280	30m#	4.0	5.0	42				200m	6.0u	A	T33	A0
16	184-30SPCt	2.0	200	0	5J	20	7.5	315	15	300	30m#	4.0	5.0	42				200m	6.0u	A	T33	A0
17#	BDV23	2.0	85	0	5J	6.0	3.0	80	10	60	1.0m	4.0	2.0	15		180	10M	500m	500n	ME	T03	C0
18#	BDV24	2.0	85	0	5J	6.0	3.0	120	10	60	1.0m	4.0	2.0	15		180	10M	300m	500n	ME	T03	C0
19#	BDV25	2.0	85	0	5J	6.0	3.0	200	10	140	1.0m	4.0	2.0	15		180	10M	300m	500n	ME	T03	C0
20#	BDV26	2.0	85	0	5J	6.0	3.0	300	10	180	1.0m	4.0	2.0	15		180	10M	300m	500n	ME	T03	C0
21#	BDV27	2.0	85	0	5J	6.0	3.0	400	10	200	1.0m	4.0	2.0	15		180	10M	300m	500n	ME	T03	C0
22#	BDV28	2.0	85	0	5J	6.0	3.0	500	10	250	1.0m	4.0	2.0	15		180	10M	300m	500n	ME	T03	C0
23#	BLX34	2.0	350	0	5J	80	3.0	100	10	80	1.0	1.0	30	30	120	10M	43m	500n			T03	A0
24#	BLX35	2.0	350	0	5J	80	3.0	100	10	100	1.0	1.0	30	30	120	10M	43m	500n			T03	A0
25#	BLX36	2.0	350	0	5J	80	3.0	120	10	120	1.0	1.0	30	30	120	10M	43m	500n			T03	A0
26#	BU102	2.0	350	0	5J	7.0	7.0	400	5.0	150	50u	5.0	1.0	30	110			1.0u		DPE	T03	C0
27#	BU109	2.0	350	0	5J	7.0	3.0	330	1.0	330	50u	1.5	5.0	15				1.0u		DM	T03	C0
28#	BU8521	2.0	350	0	5J	60	16	350	10	250	2.0m	4.0	5.0	20	100	10M		1.0u		DPE	T03	C0
29#	KSP1001	2.0	100	0	5J	100	15	80	8.0	60	1.0u	5.0	7.0	10	40	15M				PE	T0114	A0
30	KSP1002	2.0	100	0	5J	100	15	100	8.0	60	1.0u	5.0	7.0	10	40	15M				PE	T0114	A0
31	KSP1003	2.0	100	0	5J	100	15	120	8.0	100	1.0u	5.0	7.0	10	40	15M				PE	T0114	A0
32	KSP1601	2.0	80	0	5J	80	10	225	8.0	200	1.0u	10	40	10	40	15M				PE	T0114	A0
33	KSP1602	2.0	80	0	5J	80	10	250	8.0	250	1.0u	10	40	10	40	15M				PE	T0114	A0
34	KSP1603	2.0	80	0	5J	80	10	275	8.0	250	1.0u	10	40	10	40	15M				PE	T0114	A0
35	KSP1604	2.0	80	0	5J	80	10	300	8.0	275	1.0u	10	40	10	40	15M				PE	T0114	A0
36	KSP1605	2.0	80	0	5J	80	10	325	8.0	300	1.0u	10	40	10	40	15M				PE	T0114	A0
37	PT500	2.0	300	0	5A	70	20	75	10	150	2.0m	2.0	50	20	80	10M		2.0u		D	T0114	A0
38	PT501	2.0	300	0	5A	70	20	150	10	120	2.0m	2.0	50	10	#	40	1.0M	100m	2.0	D	T0114	A0
39	PT502t	2.0	350	0	5A	100	20	150	10	100	2.0m	2.0	50	10	#	40	1.0M	100m	2.0	DM	T0114	A0
40	PT800	2.0	300	0	5A	70	20	175	10	150	2.0m	2.0	60	10	#	40	1.0M	100m	2.0	D	T0114	A0
41	PT801	2.0	300	0	5A	70	20	150	10	150	2.0m	2.0	60	10	#	40	1.0M	100m	2.0	D	T0114	A0
42	PT802t	2.0	350	0	5A	100	20	150	10	100	2.0m	2.0	60	10	#	40	1.0M	100m	2.0	DM	T0114	A0
43	PT7001	2.0	350	0	5A	100	20	175	10	150	2.0m	2.0	70	10	40	1.0M	100m	2.0	D	T0114	A0	
44	PT7021	2.0	350	0	5A	100	20	120	10	100	2.0m	2.0	70	10	40	1.0M	100m	2.5u		D	T0114	A0
45	PT3512t	2.0	350	0	5A	70	15	400	10	325	2.0m	5.0	30	10	15	10M	10m	500n	DM	T063	A0	
46	PT3513t	2.0	350	0	5A	70	15	450	10	400	1.0m	5.0	30	10	15	10M	10m	500n	DM	T063	A0	
47	PT3518t	2.0	325	0	5S	20	10	850	10	600	5.0m	4.0	10	10	50	1.0M	40	1.2u	DM	T063	A0	
48	PT3520t	2.0	325	0	5S	50	300	300	10	200	2.0m	4.0	50	20	#	10M	8.0m	500n	DM	T063	A0	
49	PT3522t	2.0	350	0	5S	20	20	400	10	325	2.0m	5.0	50	10	50	10M	12m	500n	DM	T063	A0	
50	PT3523t	2.0	350	0	5S	80	20	450	10	400	2.0m	5.0	50	10	50	10M	12m	500n	DM	T063	A0	
51	PT3528t	2.0	325	0	5S	40	10	850	10	600	5.0m	4.0	20	10	50	1.0M	40	1.2u	DM	T063	A0	
52	PT4500t	2.0	350	0	5J	150	40	350	10	200	2.0m	3.0	50	20	80	10M	8.0m	500n	D	T0114	A0	
53	PT4502t	2.0	350	0	5J	110	40	400	10	325	2.0m	5.0	60	10	80	10M	12m	500n	D	T0114	A0	
54	PT4503t	2.0	350	0	5J	110	40	450	10	400	2.0m	5.0	60	10	80	10M	12m	500n	D	T0114	A0	
55	PT5501	2.0	350	0	5S	50	5.0	80	10	80	2.0m	2.0	50	20	80	10M	2.0u	2.0u	Δ	T063	A0	
56	PT5502	2.0	350	0	5S	50	5.0	100	10	80	2.0m	2.0	50	20	80	10M	2.0u	2.0u	Δ	T063	A0	
57	PT8501	2.0	350	0	5S	200	40	80	10	80	2.0m	2.0	100	15	80	10M	2.0u	2.0u	Δ	T0114	A0	
58	PT8502	2.0	350	0	5S	200	40	100	10	80	2.0m	2.0	100	15	80	10M	2.0u	2.0u	Δ	T0114	A0	
59	PT7501	2.0	350	0	5S	70	14	120	10	100	2.0m	2.0	30	10	40	10M	2.0u	2.0u	Δ	T063	A0	
60	PT7502	2.0	350	0	5S	70	14	150	10	120	2.0m	2.0	30	10	40	10M	2.0u	2.0u	Δ	T063	A0	
61	PT7503t	2.0	350	0	5J	70	15	175	10	150	2.0m	2.0	30	10	40	10M	2.0u	2.0u	Δ	T063	A0	
62	PT7504	2.0	350	0	5S	80	18	120	10	100	2.0m	2.0	40	10	40	10M	2.0u	2.0u	Δ	T063	A0	
63	PT7505	2.0	350	0	5S	80	16	150	10	120	2.0m	2.0	40	10	40	10M	2.0u	2.0u	Δ	T063	A0	
64	PT7506t	2.0	350	0	5J	80	20	175	10	150	2.0m	2.0	40	10	40	10M	2.0u	2.0u	Δ	T063	A0	
65	PT7507	2.0	350	0	5S	80	18	120	10	120	2.0m	2.0	50	10	40	10M	2.5u	2.5u	Δ	T063	A0	
66	PT7508t	2.0	350	0	5J	90	20	175	10	150	2.0m	2.0	50	10	40	10M	2.0u	2.0u	Δ	T063	A0	
67	PT7509t	2.0	350	0	5J	70	15	200	10	200	2.0m	2.0	30	10	40	10M	100m	2.0	DM	T063	A0	
68	PT7510t	2.0	350	0	5J	80	20	200	10	200	2.0m	2.0	40	10	40	10M	100m	2.0	DM	T063	A0	
69	PT7511t	2.0	350	0	5J	80	20	200	10	200	2.0m	2.0	50	10	40	10M	100m	2.0	DM			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb @ 25°C		hFE		fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L E O A D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)	MIN	MAX						
1	SDT9652	2.0	350	∅		100		120	10	100	1.0u	5.0u	70	15	10M	14m		DPL	TO114	
2	SDT9653	2.0	350	∅		100		140	10	120	1.0u	5.0u	70	15	10M	14m		DPL	TO114	
3	SDT9654	2.0	350	∅		100		160	10	140	1.0u	5.0u	70	15	10M	14m		DPL	TO114	
4	SDT96901	2.0	350	∅	∅	100	20	80	10	60	1.0u∅	5.0u	90	5.0				PL	TO114	AF∅
5	SDT96902	2.0	350	∅	∅	100	20	120	10	100	1.0u∅	5.0u	90	5.0				PL	TO114	AF∅
6	SDT96903	2.0	350	∅	∅	100	20	160	10	140	1.0u∅	5.0u	90	5.0				PL	TO114	AF∅
7	SDT96904	2.0	350	∅	∅	50	15	225	10	200	1.0u∅	10u	40	8.0			40	PL	TO114	AF∅
8	SDT96905	2.0	350	∅	∅	50	15	275	10	250	1.0u∅	10u	40	8.0			40	PL	TO114	AF∅
9	SDT96906	2.0	350	∅	∅	50	15	325	10	300	1.0u∅	10u	40	8.0			40	PL	TO114	AF∅
10	SPC163-04	2.0	200	∅	∅	20	7.5	55	15	40	30m#	4.0u	5.0	15		220m		D	TO63	
11	SPC163-06	2.0	200	∅	∅	20	7.5	75	15	60	30m#	4.0u	5.0	15		220m		D	TO63	
12	SPC163-08	2.0	200	∅	∅	20	7.5	95	15	80	30m#	4.0u	5.0	15		220m		D	TO63	
13	SPC163-10	2.0	200	∅	∅	20	7.5	115	15	100	30m#	4.0u	5.0	15		220m		D	TO63	
14	SPC163-12	2.0	200	∅	∅	20	7.5	135	15	120	30m#	4.0u	5.0	15		220m		D	TO63	
15	SPC163-14	2.0	200	∅	∅	20	7.5	155	15	140	30m#	4.0u	5.0	15		220m		D	TO63	
16	SPC163-16	2.0	200	∅	∅	20	7.5	175	15	160	30m#	4.0u	5.0	15		220m		D	TO63	
17	SPC163-18	2.0	200	∅	∅	20	7.5	195	15	180	30m#	4.0u	5.0	15		220m		D	TO63	
18	SPC163-20	2.0	200	∅	∅	20	7.5	215	15	200	30m#	4.0u	5.0	15		220m		D	TO63	
19	SPC163-22	2.0	200	∅	∅	20	7.5	235	15	220	30m#	4.0u	5.0	15		220m		D	TO63	
20	SPC163-24	2.0	200	∅	∅	20	7.5	255	15	240	30m#	4.0u	5.0	15		220m		D	TO63	
21	SPC163-26	2.0	200	∅	∅	20	7.5	275	15	260	30m#	4.0u	5.0	15		220m		D	TO63	
22	SPC163-28	2.0	200	∅	∅	20	7.5	295	15	280	30m#	4.0u	5.0	15		220m		D	TO63	
23	SPC163-30	2.0	200	∅	∅	20	7.5	315	15	300	30m#	4.0u	5.0	15		220m		D	TO63	
24	SPC164-04	2.0	200	∅	∅	20	7.5	55	15	40	30m#	4.0u	5.0	25		50m		D	TO63	
25	SPC164-06	2.0	200	∅	∅	20	7.5	75	15	60	30m#	4.0u	5.0	25		50m		D	TO63	
26	SPC164-08	2.0	200	∅	∅	20	7.5	95	15	80	30m#	4.0u	5.0	25		50m		D	TO63	
27	SPC164-10	2.0	200	∅	∅	20	7.5	115	15	100	30m#	4.0u	5.0	25		50m		D	TO63	
28	SPC164-12	2.0	200	∅	∅	20	7.5	135	15	120	30m#	4.0u	5.0	25		50m		D	TO63	
29	SPC164-14	2.0	200	∅	∅	20	7.5	155	15	140	30m#	4.0u	5.0	25		50m		D	TO63	
30	SPC164-16	2.0	200	∅	∅	20	7.5	175	15	160	30m#	4.0u	5.0	25		50m		D	TO63	
31	SPC164-18	2.0	200	∅	∅	20	7.5	195	15	180	30m#	4.0u	5.0	25		50m		D	TO63	
32	SPC164-20	2.0	200	∅	∅	20	7.5	215	15	200	30m#	4.0u	5.0	25		50m		D	TO63	
33	SPC164-22	2.0	200	∅	∅	20	7.5	235	15	220	30m#	4.0u	5.0	25		50m		D	TO63	
34	SPC164-24	2.0	200	∅	∅	20	7.5	255	15	240	30m#	4.0u	5.0	25		50m		D	TO63	
35	SPC164-26	2.0	200	∅	∅	20	7.5	275	15	260	30m#	4.0u	5.0	25		50m		D	TO63	
36	SPC164-28	2.0	200	∅	∅	20	7.5	295	15	280	30m#	4.0u	5.0	25		50m		D	TO63	
37	SPC164-30	2.0	200	∅	∅	20	7.5	315	15	300	30m#	4.0u	5.0	25		50m		D	TO63	
38	STC2103	2.0	300	∅	∅	65	15	80	10	80	6.0u	45	10		50m		D	T49		
39	STC2104	2.0	300	∅	∅	65	15	100	10	100	6.0u	45	10		50m		D	T49		
40	STC2105	2.0	300	∅	∅	65	15	150	10	150	6.0u	45	10		50m		D	T49		
41	STC2106	2.0	300	∅	∅	60	10	80	10	80	6.0u	40	10		50m		D	T49		
42	STC2107	2.0	300	∅	∅	60	10	100	10	100	6.0u	40	10		50m		D	T49		
43	STC2108	2.0	300	∅	∅	60	10	150	10	150	6.0u	40	10		50m		D	T49		
44	STC2180	2.0	300	∅	∅	75	15	60	10	40	5.0m#	5.0	10		20MΔ	30m	600n	EMΔ	TO114	
45	STC2181	2.0	300	∅	∅	75	15	100	10	60	5.0m#	5.0	10		20MΔ	30m	600n	EMΔ	TO114	
46	STC2182	2.0	300	∅	∅	75	15	160	10	140	5.0m#	5.0	10		20MΔ	30m	600n	EMΔ	TO114	
47	STC2183	2.0	300	∅	∅	100	15	250	10	200	5.0m#	5.0	10		20MΔ	30m	600n	EMΔ	TO114	
48	STC2184	2.0	300	∅	∅	100	15	60	10	40	5.0m#	5.0	10		20MΔ	20m	600n	EMΔ	TO114	
49	STC2185	2.0	300	∅	∅	100	15	100	10	60	5.0m#	5.0	10		20MΔ	20m	600n	EMΔ	TO114	
50	STC2186	2.0	300	∅	∅	100	15	160	10	140	5.0m#	5.0	10		20MΔ	20m	600n	EMΔ	TO114	
51	STC2187	2.0	300	∅	∅	100	15	250	10	200	5.0m#	5.0	10		20MΔ	20m	600n	EMΔ	TO114	
52	STC2188	2.0	300	∅	∅	100	15	60	10	40	5.0m#	5.0	10		20MΔ	15m	600n	EMΔ	TO114	
53	STC2189	2.0	300	∅	∅	100	15	100	10	60	5.0m#	5.0	10		20MΔ	15m	600n	EMΔ	TO114	
54	TIP531	2.0	4.0	∅	∅	15	4.0	340	6.0	300	1.0m#	4.0	7.5	20	120	#	50MΔ	PEΔ	TO3	C∅
55	TIP532	2.0	4.0	∅	∅	15	4.0	450	6.0	400	1.0m#	4.0	7.5	20	120	#	50MΔ	PEΔ	TO3	C∅
56	TIP533	2.0	4.0	∅	∅	15	4.0	340	6.0	300	1.0m#	4.0	7.5	20	120	#	50MΔ	PEΔ	TO3	C∅
57	TIP534	2.0	4.0	∅	∅	15	4.0	450	6.0	400	1.0m#	4.0	7.5	20	120	#	50MΔ	PEΔ	TO3	C∅
58	TIP548	2.0	8.5	∅	∅	100	25	100	5.0	80	5.0m#	4.0	50	15	100	#	3.0MΔ	DMΔ	TO114	A
59	TIP549	2.0	8.5	∅	∅	100	25	120	5.0	100	5.0m#	4.0	50	15	100	#	3.0MΔ	DMΔ	TO114	A
60	2N1809†	2.1	250	∅	∅	10	10	50	15	50	30m#†	4.0	10	10		150m	20u∅	T13	A	C∅
61	2N1810†	2.1	250	∅	∅	10	10	100	15	100	30m#†	4.0	10	10		150m	20u∅	T14	A	C∅
62	2N1811†	2.1	250	∅	∅	10	10	150	15	150	30m#†	4.0	10	10		150m	20u∅	T14	A	C∅
63	2N1812†	2.1	250	∅	∅	10	10	200	15	200	30m#†	4.0	10	10		150m	20u∅	T14	A	C∅
64	2N1813†	2.1	250	∅	∅	10	10	250	15	250	30m#†	4.0	10	10		150m	20u∅	T14	A	C∅
65	2N1814†	2.1	250	∅	∅	10	10	300	15	300	30m#†	4.0	10	10		150m	20u∅	T14	A	C∅
66	2N1816†	2.1	250	∅	∅	15	10	50	15	50	30m#†	4.0	15	10		100m	20u∅	T14	A	C∅
67	2N1817†	2.1	250	∅	∅	15	10	100	15	100	30m#†	4.0	15	10		100m	20u∅	T14	A	C∅
68	2N1818†	2.1	250	∅	∅	15	10	150	15	150	30m#†	4.0	15	10		100m	20u∅	T14	A	C∅
69	2N1819†	2.1	250	∅	∅	15	10	200	15	200	30m#†	4.0	15	10		100m	20u∅	T14	A	C∅
70	2N1823†	2.1	250	∅	∅	20	10	50	15	50	30m#†	4.0	20	10		75m	20u∅	T14	A	C∅
71	2N1824†	2.1	250	∅	∅	20	10	100	15	100	30m#†	4.0	20	10		75m	20u∅	T14	A	C∅
72	2N1825†	2.1	250	∅	∅	20	10	150	15	150	30m#†	4.0	20	10		75m	20u∅	T14	A	C∅
73	2N1826†	2.1	250	∅	∅	20	10	200	15	200	30m#†	4.0	20	10		75m	20u∅	T14	A	C∅
74	2N1830†	2.1	250	∅	∅	25	10	50	15	50	30m#†	4.0	25	10		60m	20u∅	T14	A	C∅
75	2N1831†	2.1	250	∅																



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>CE</sub> (A)	ABSOLUTE MAX. RATINGS @ 25°C					MAX. V <sub>CE</sub> @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # s/a TO200 Ser.	# C O A D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CE</sub> (V)	V <sub>BE</sub> (V)	V <sub>CEO</sub> (V)	I <sub>CO</sub> (A)	V <sub>CB</sub> (V)	MIN	MAX						
1	25C2970	3	40	5	2	300	8	200	30u	5.0	20	10	35	500m	4.5u#		T088		
2	25C2975	3	40	5	2	800	8	400	30u	5.0	20	10	35	500m	4.5u#		T066		
3	SDT5840	3.0	530	200	2	80	10	40	1.0u	5.0	50	50	10M	24m		DPL	T0114		
4	SDT5841	3.0	530	200	2	80	10	40	1.0u	5.0	50	50	10M	24m		DPL	T0114		
5	SDT5842	3.0	530	200	2	100	10	80	1.0u	5.0	50	50	10M	24m		DPL	T0114		
6	SDT5843	3.0	530	200	2	120	10	80	1.0u	5.0	50	50	10M	24m		DPL	T0114		
7	SDT5845	3.0	530	60	2	325	10	325	10k	10	15	30	10M	28m		DPL	T0114		
8	SDT5846	3.0	530	60	2	350	10	350	10k	10	15	30	10M	28m		DPL	T0114		
9	SDT5847	3.0	530	60	2	375	10	375	10k	10	15	30	10M	28m		DPL	T0114		
10	SDT5848	3.0	530	60	2	400	10	400	10k	10	15	30	10M	28m		DPL	T0114		
11	SDT5850	3.0	530	150	2	140	10	120	1.0u	5.0	37	40	10M	18m		DPL	T0114		
12	SDT5851	3.0	530	150	2	170	10	150	1.0u	5.0	37	40	10M	18m		DPL	T0114		
13	SDT5852	3.0	530	150	2	200	10	180	1.0u	5.0	37	40	10M	18m		DPL	T0114		
14	SDT5853	3.0	530	150	2	220	10	200	1.0u	5.0	37	40	10M	18m		DPL	T0114		
15	SDT5855	3.0	530	40	2	425	10	425	10k	10	10	30	10M	30m		DPL	T0114		
16	SDT5856	3.0	530	40	2	450	10	450	10k	10	10	30	10M	30m		DPL	T0114		
17	SDT5857	3.0	530	40	2	475	10	475	10k	10	10	30	10M	30m		DPL	T0114		
18	SDT5858	3.0	530	40	2	500	10	500	10k	10	10	30	10M	30m		DPL	T0114		
19	SDT5860	3.0	530	100	2	250	10	225	10k	5.0	25	30	10M	24m		DPL	T0114		
20	SDT5861	3.0	530	100	2	275	10	250	10k	5.0	25	30	10M	24m		DPL	T0114		
21	SDT5862	3.0	530	100	2	300	10	275	10k	5.0	25	30	10M	24m		DPL	T0114		
22	SDT5863	3.0	530	100	2	325	10	300	10k	5.0	25	30	10M	24m		DPL	T0114		
23	SDT5865	3.0	530	20	2	525	10	525	10u	10	10	15	10M	40m		DPL	T0114		
24	SDT5866	3.0	530	20	2	550	10	550	10u	10	10	15	10M	40m		DPL	T0114		
25	SDT5867	3.0	530	20	2	575	10	575	10u	10	10	15	10M	40m		DPL	T0114		
26	SDT5868	3.0	530	20	2	600	10	600	10u	10	10	15	10M	40m		DPL	T0114		
27	SDT5903	3.0	525	100	2	175	10	100	100u	5.0	100	15	75	10M	8.0m#		PL	T0114	AF
28	SDT5904	3.0	525	100	2	200	10	125	100u	5.0	100	15	75	10M	8.0m#		PL	T0114	AF
29	SDT5905	3.0	525	75	2	225	10	100	100u	5.0	75	10	10M	8.0m#		PL	T0114	AF	
30	SDT5907	3.0	525	75	2	275	10	200	100u	5.0	75	10	10M	8.0m#		PL	T0114	AF	
31	25D6461	3.2	400	150	3.0	600	5.0	450	1.0m	4.0	50	150	700	40m	1.5u	DM	F51	AF	
32	1441-04051	3.3	350	150	2.5	50	10	40	1.0m#	4.0	10	10	500kΔ			D	T0114		
33	1441-04071	3.3	350	150	2.5	50	10	40	1.0m#	4.0	10	10	500kΔ			D	T0114		
34	1441-04101	3.3	350	150	2.5	50	10	40	1.0m#	4.0	10	10	500kΔ			D	T0114		
35	1441-08051	3.3	350	150	2.5	70	10	60	1.0m#	4.0	50	10	500kΔ			D	T0114		
36	1441-08071	3.3	350	150	2.5	70	10	60	1.0m#	4.0	50	10	500kΔ			D	T0114		
37	1441-08101	3.3	350	150	2.5	70	10	60	1.0m#	4.0	50	10	500kΔ			D	T0114		
38	1441-08051	3.3	350	150	2.5	90	10	80	1.0m#	4.0	50	10	500kΔ			D	T0114		
39	1441-08071	3.3	350	150	2.5	90	10	80	1.0m#	4.0	50	10	500kΔ			D	T0114		
40	1441-08101	3.3	350	150	2.5	90	10	80	1.0m#	4.0	50	10	500kΔ			D	T0114		
41	1441-10051	3.3	350	150	2.5	110	10	100	1.0m#	4.0	50	10	500kΔ			D	T0114		
42	1441-10071	3.3	350	150	2.5	110	10	100	1.0m#	4.0	50	10	500kΔ			D	T0114		
43	1441-10101	3.3	350	150	2.5	110	10	100	1.0m#	4.0	50	10	500kΔ			D	T0114		
44	1441-12051	3.3	350	150	2.5	130	10	120	1.0m#	4.0	75	10	500kΔ			D	T0114		
45	1441-12071	3.3	350	150	2.5	130	10	120	1.0m#	4.0	75	10	500kΔ			D	T0114		
46	1441-12101	3.3	350	150	2.5	130	10	120	1.0m#	4.0	75	10	500kΔ			D	T0114		
47	PT2920	3.3	4.0	10	2.0	100	5.0	80	100u	2.0	100	100	300	250m	75n	PL	T059	H	
48	PT2972	3.3	4.0	5.0	2.0	100	5.0	80	100u	2.0	100	100	120	300m	80n	PL	T059	G	
49	PT2986	3.3	4.0	10	2.0	100	5.0	100	100u	2.0	100	100	200	500m	80n	PL	T059	H	
50	SDT554561	3.8	625	40	10	325	10	250	1.0m	5.0	20	10	50	20MΔ	40m	1.3u#	PL	T063	A
51	SDT554601	3.8	625	40	10	375	10	300	1.0m	5.0	40	10	50	20MΔ	40m	1.3u#	PL	T063	A
52	SDT554621	3.8	625	30	10	425	10	350	1.0m	5.0	30	8.0	40	20MΔ	50m	1.3u#	PL	T063	A
53	SDT554641	3.8	625	30	10	475	10	400	1.0m	5.0	30	8.0	40	20MΔ	50m	1.3u#	PL	T063	A
54	SDT554701	3.8	625	30	10	450	15	450	1.0m	5.0	20	10	40	15MΔ	50m	1.6u#	PL	T063	A
55	SDT554721	3.8	620	20	10	500	15	500	1.0m	5.0	20	10	40	15MΔ	50m	1.6u#	PL	T063	A
56	SDT554741	3.8	620	10	5.0	550	15	550	1.0m	5.0	10	10	40	15MΔ	100m	1.6u#	PL	T063	A
57	SDT554761	3.8	620	10	5.0	600	15	600	1.0m	5.0	10	10	40	15MΔ	100m	1.6u#	PL	T063	A
58	SDT555561	3.8	700	40	10	325	10	250	1.0m	5.0	40	10	50	2.0MΔ	37m	1.3u#	PL	T0114	AF
59	SDT555601	3.8	700	40	10	375	10	300	1.0m	5.0	40	10	50	2.0MΔ	37m	1.3u#	PL	T0114	AF
60	PT95011	4.0	625	500	100	100	10	80	5.0m	4.0	300	10	50	1.0M	16m	700n#	M		
61	PT95021	4.0	625	500	100	100	10	80	5.0m	4.0	300	10	50	1.0M	16m	700n#	M		
62	PT95031	4.0	625	400	100	120	10	100	5.0m	4.0	200	10	50	1.0M	2.5u	M			
63	SDT55954	4.0	700	75	2.5	275	10	200	1.0m	5.0	50	10	50	2.0M	1.3u	M			
64	SDT559561	4.0	700	40	10	325	10	250	1.0m	5.0	40	10	50	2.0MΔ	37m	1.3u#	PL	T063	A
65	SDT559601	4.0	700	40	10	375	10	300	1.0m	5.0	40	10	50	2.0MΔ	37m	1.3u#	PL	T063	A
66	25C790	5.0	25	3.0	1.0	50	5.0	40	20u	2.0	500m	40	240	5.0M		DM	B17	D	
67	25D2561	5.0	25	4.0	1.0	60	7.0	40	10u	4.0	1.0	40	80	8.0M	500m	1.2u	D	T066	C
68	25D2571	5.0	25	4.0	1.0	90	7.0	80	10u	4.0	1.0	40	80	8.0M	500m	1.2u	D	T066	C
69	25D2581	5.0	25	4.0	1.0	110	7.0	80	10u	4.0	1.0	40	80	8.0M	500m	1.2u	D	T066	C
70	25D2591	5.0	25	4.0	1.0	130	7.0	100	10u	4.0	1.0	40	80	8.0M	500m	1.2u	D	T066	C
71	25D507	5.0	625	250	35	90	5.0	80	2.0m	4.0	150	10	50	500kΔ	5.0u		D	T14b	C
72	25D508	5.0	625	250	35	110	5.0	100	2.0m	4.0	150	10	50	500kΔ	5.0u		D	T14b	C
73	25D509	5.0	625	250	35	130	5.0	120	2.0m	4.0	150	10	50	500kΔ	5.0u		D	T14b	C
74	25D510	5.0	625	250	35	150	5.0	140	2.0m	4.0	150	10	50	500kΔ	5.0u		D	T14b	C
75	25D511	5.0	625	250	35	90	5.0	80	2.0m	4.0	200	10	50	500kΔ	5.0u		D	T14b	C
76	25D512	5.0	625	250	35	110	5.0	100	2.0m	4.0	200	10	50	500kΔ	5.0u		D	T14b	C
77	25D513	5.0	625	250	35	130	5.0	120	2.0m	4.0	200	10	50	500kΔ	5.0u		D	T14b	C
78	25D515	5.0	625	250	35	110	5.0	100	2.0m	4.0	250	10	50	500kΔ	5.0u		D	T14b	C
79	1401-04151	5.0	625	250															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE			MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	L C O A D E
						Ic	Ib	BVcbo	BVebo	BVceo	Icbo @ MAX Vcb @ 25°C (A)	Vcb (V)	Ic (A)								
1	D60T309010†	5.9	590 \$	SS	200	20	350	7.0	300	1.0m	2.50	90	10		7.0M	.01	500m#	D	T159		
2	D60T357510†	5.9	590 \$	SS	200	20	400	7.0	350	1.0m	2.50	75	10		7.0M	.02	500m#	D	T159		
3	D60T404010†	5.9	590 \$	SS	200	20	450	7.0	400	1.0m	2.50	40	10	15 ∅	7.0MΔ	.01	500m#	D	T159		
4	D60T405010†	5.9	590 \$	SS	200	20	450	7.0	400	1.0m	2.50	50	10	15 ∅	7.0MΔ	.02	500m#	D	T159		
5	D60T406010†	5.9	590 \$	SS	200	20	450	7.0	400	1.0m	2.50	60	10	15 ∅	7.0MΔ	.01	500m#	D	T159		
6	D60T454010†	5.9	590 \$	SS	200	20	500	7.0	450	1.0m	2.50	40	10	15 ∅	7.0MΔ	.01	500m#	D	T159		
7	D60T455010†	5.9	590 \$	SS	200	20	500	7.0	450	1.0m	2.50	50	10	15 ∅	7.0MΔ	.02	500m#	D	T159		
8	D60T504010†	5.9	590 \$	SS	200	20	550	7.0	500	1.0m	2.50	40	10	15 ∅	7.0MΔ	.01	500m#	D	T159		
9	PT2523†	6.2	625 \$	SS	150	30	500	10	450	2.0m	4.00	100	10	50	10m	8.0m	0.5u		X197		
10	PT2524†	6.2	625 \$	SS	150	30	500	10	450	2.0m	4.00	100	10	50	10m	8.0m	0.5u		X197		
11#	WT5511†	6.6	.85k	\$J	100	50			450 \$	10mZ	200	100	7.0			5.0u\$		Δ	T169		
12#	WT4411	6.7	.830	\$J	275 #	50	60	7	40	5m*	40	150	10			6m	3u0		T171	A	
13#	WT4412	6.7	.830	\$J	275 #	50	80	7	80	5m*	40	150	10			6m	3u0		T171	A	
14#	WT4413	6.7	.830	\$J	275 #	50	100	7	80	5m*	40	150	10			6m	3u0		T171	A	
15#	WT4414	6.7	.830	\$J	275 #	50	120	7	100	5m*	40	150	10			6m	3u0		T171	A	
16#	WT4415	6.7	.830	\$J	275 #	50	140	7	120	5m*	40	150	10			6m	3u0		T171	A	
17#	WT4416	6.7	.830	\$J	275 #	50	160	7	140	5m*	40	150	10			6m	3u0		T171	A	
18#	WT4421	6.7	.830	\$J	325 #	50	60	7	40	5m*	40	200	10			5m	3u0		T171	A	
19#	WT4422	6.7	.830	\$J	325 #	50	80	7	60	5m*	40	200	10			5m	3u0		T171	A	
20#	WT4423	6.7	.830	\$J	325 #	50	100	7	80	5m*	40	200	10			5m	3u0		T171	A	
21#	WT4424	6.7	.830	\$J	325 #	50	120	7	100	5m*	40	200	10			5m	3u0		T171	A	
22#	WT4425	6.7	.830	\$J	325 #	50	140	7	120	5m*	40	200	10			5m	3u0		T171	A	
23#	WT4431	6.7	.830	\$J	375 #	50	60	7	40	5m*	40	250	10			4.2m	3u0		T171	A	
24#	WT4432	6.7	.830	\$J	375 #	50	80	7	60	5m*	40	250	10			4.2m	3u0		T171	A	
25#	WT4433	6.7	.830	\$J	375 #	50	100	7	80	5m*	40	250	10			4.2m	3u0		T171	A	
26#	WT4434	6.7	.830	\$J	375 #	50	120	7	100	5m*	40	250	10			4.2m	3u0		T171	A	
27#	WT5503	6.7	.850	\$J	150 #	50			10	10mZ†	20	50	12			20m	2u0Z		T171	A	
28#	WT5504	6.7	.850	\$J	150 #	50			10	10mZ†	20	50	10			20m	2u0Z		T171	A	
29#	WT5505	6.7	.850	\$J	150 #	50			10	10mZ†	20	50	8			20m	2u0Z		T171	A	
30#	WT5506	6.7	.850	\$J	150 #	50			10	10mZ†	20	50	10			20m	2u0Z		T171	A	
31#	WT5510	6.7	.850	\$J	150 #	50			10	10mZ†	20	100	7			10m	4u0Z		T171	A	
32#	WT4311	8.3	1.0k	\$J	275 #	50	60	7.0	40	5.0m*	4.00	150	10			500k\$	6m	3u0		W176	C
33#	WT4312	8.3	1.0k	\$J	275 #	50	80	7.0	60	5.0m*	4.00	150	10			500k\$	6m	3u0		W176	C
34#	WT4313	8.3	1.0k	\$J	275 #	50	100	7.0	80	5.0m*	4.00	150	10			500k\$	6m	3u0		W176	C
35#	WT4314	8.3	1.0k	\$J	275 #	50	120	7.0	100	5.0m*	4.00	150	10			500k\$	6m	3u0		W176	C
36#	WT4315	8.3	1.0k	\$J	275 #	50	140	7.0	120	5.0m*	4.00	150	10			500k\$	6m	3u0		W176	C
37#	WT4316	8.3	1.0k	\$J	275 #	50	180	7.0	140	5.0m*	4.00	150	10			500k\$	6m	3u0		W176	C
38#	WT4321	8.3	1.0k	\$J	325 #	50	60	7.0	40	5.0m*	4.00	200	10			500k\$	5m	3u0		W176	C
39#	WT4322	8.3	1.0k	\$J	325 #	50	80	7.0	60	5.0m*	4.00	200	10			500k\$	5m	3u0		W176	C
40#	WT4324	8.3	1.0k	\$J	325 #	50	120	7.0	100	5.0m*	4.00	200	10			500k\$	5m	3u0		W176	C
41#	WT4325	8.3	1.0k	\$J	325 #	50	140	7.0	120	5.0m*	4.00	200	10			500k\$	5m	3u0		W176	C
42#	WT4331	8.3	1.0k	\$J	375 #	50	60	7.0	40	5.0m*	4.00	250	10			500k\$	4.2m	3u0		W176	C
43#	WT4332	8.3	1.0k	\$J	375 #	50	80	7.0	60	5.0m*	4.00	250	10			500k\$	4.2m	3u0		W176	C
44#	WT4333	8.3	1.0k	\$J	375 #	50	100	7.0	80	5.0m*	4.00	250	10			500k\$	4.2m	3u0		W176	C
45#	WT4334	8.3	1.0k	\$J	375 #	50	120	7.0	100	5.0m*	4.00	250	10			500k\$	4.2m	3u0		W176	C
46#	WT5611	8.3	1.2k	\$J	250	100			7	10mZ†	20	200	6.5			5m	3u0Z		T170	♦	
47#	WT5650	8.3	1.2k	\$J	150	100			7	10mZ†	20	100	6			10m	3u0Z		T170	♦	
48#	WT5651	8.3	1.2k	\$J	150	100			7	10mZ†	20	100	5.5			10m	3u0Z		T170	♦	
49#	WT5652	8.3	1.2k	\$J	150	100			7	10mZ†	20	100	5			10m	3u0Z		T170	♦	
50#	WT5603†	10	1.2k	\$J	200	100			10	10mZ†	200	100	12			5.0u\$		Δ	T170		
51#	WT5604†	10	1.2k	\$J	200	100			10	10mZ†	200	100	10			5.0u\$		Δ	T170		
52#	WT5605†	10	1.2k	\$J	200	100			10	10mZ†	200	100	10			5.0u\$		Δ	T170		
53#	WT5606†	10	1.2k	\$J	200	100			10	10mZ†	200	100	10			5.0u\$		Δ	T170		
54	D62T257510†	11	1.1k\$	SS	200	20	300	7.0	250	1.0m	2.50	75	10		7.0M	.02	500m#	D	X187		
55	D62T259010†	11	1.1k\$	SS	200	20	300	7.0	250	1.0m	2.50	90	10		7.0M	.01	500m#	D	X187		
56	D62T307510†	11	1.1k\$	SS	200	20	350	7.0	300	1.0m	2.50	75	10		7.0M	.02	500m#	D	X187		
57	D62T309010†	11	1.1k\$	SS	200	20	350	7.0	300	1.0m	2.50	90	10		7.0M	.01	500m#	D	X187		
58	D62T357510†	11	1.1k\$	SS	200	20	400	7.0	350	1.0m	2.50	75	10		7.0M	.02	500m#	D	X187		
59	D62T404010†	11	1.1k\$	SS	200	20	450	7.0	400	1.0m	2.50	40	10	15 ∅	7.0MΔ	.01	500m#	D	X187		
60	D62T405010†	11	1.1k\$	SS	200	20	450	7.0	400	1.0m	2.50	50	10	15 ∅	7.0MΔ	.02	500m#	D	X187		
61	D62T406010†	11	1.1k\$	SS	200	20	450	7.0	400	1.0m	2.50	60	10	15 ∅	7.0MΔ	.01	500m#	D	X187		
62	D62T454010†	11	1.1k\$	SS	200	20	500	7.0	450	1.0m	2.50	40	10	15 ∅	7.0MΔ	.01	500m#	D	X187		
63	D62T455010†	11	1.1k\$	SS	200	20	500	7.0	450	1.0m	2.50	50	10	15 ∅	7.0MΔ	.02	500m#	D	X187		
64	D62T504010†	11	1.1k\$	SS	200	20	550	7.0	500	1.0m	2.50	40	10	15 ∅	7.0MΔ	.01	500m#	D	X187		
65#	WT5750(A)	11	1.5k	\$J	200	100			7	10mZ†	20	100	8			7m	4u0Z		T170	♦	
66#	WT5751(A)	11	1.5k	\$J	200	100			7	10mZ†	20	100	7			7m	4u0Z		T170	♦	
67#	WT5752(A)	11	1.5k	\$J	200	100			7	10mZ†	20	100	6			7m	4u0Z		T170	♦	
68#	2SD223†	12	1.0 ∅	\$J	1.5	500m	80	7.0	50	10u∅	4.00	500m	20	180	8.0M†	1.0	300n	D	F43	A∅	
69	MPS6601	12	1.5	\$J	1.0	500m	25 \$	5.0\$	25 \$	100n∅	1.00	500m	75	100 ∅	100MΔ\$		30nZ	AN	T092	A	
70	MPS6602	12	1.5	\$J	1.0	500m	40 \$	5.0\$	40 \$	100n∅	1.00	500m	75	100 ∅	100MΔ\$		30nZ	AN	T092	A	
71#	WT5703†	12	1.5k	\$J	300	100			10	10mZ†	200	200	12			5.0u\$		Δ	T170		
72#	WT5704†	12	1.5k	\$J	300	100			10	10mZ†	200	200	10			5.0u\$		Δ	T170		
73#	WT5705†	12	1.5k	\$J	300	100			10	10mZ†	200	200	8.0			5.0u\$		Δ	T170		
74#	WT5706†	12	1.5k	\$J	300	100			10	10mZ†	200	200	10			5.0u\$		Δ	T170		
75																					

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	1 MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								Vcb (V)	Ic (A)	hFE								
1#	2SC1375H			45nφ		80nφ	300m	0.4 φ	50mφ	54 Δ			N		175J	TO18	A	
2#	2SC2612			1.0uφ	2.5u	1.0u	300	1.5 φ	15 φ	15 Δ			N		150J	TO220	D	
3#	2SC2613			1.0uφ	2.5u	1.0u	400	2.5 φ	15 φ	15 Δ			N		150J	TO220	D	
4#	2SC2615			1.0uφ	2.5u	1.0u	400	2.5 φ	15 φ	15 Δ			N		150J	TO220	D	
5#	2SC2616			1.0uφ	2.5u	1.0u	100	4 φ	15 φ	15 Δ			N		150J	TO3	C	
6#	2SC2617			1.0uφ	2.5u	1.0u	125	4 φ	15 φ	15 Δ			N		150J	TO3	C	
7#	2SC2810			700nφ	2.5u	700n	50	40 φ	30 φ	10 Δ			N		150J	B54	D	
8#	2SC2815			0.5uφ	1.5u	0.5u	40	25 φ	120 φ	120 Δ			N		150J	TO220	D	
9#	2SC2816			0.5uφ	1.5u	0.5u	40	25 φ	120 φ	120 Δ			N		150J	TO220	D	
10#	2SC2817			0.5uφ	1.5u	0.5u	80	25 φ	120 φ	120 Δ			N		150J	F55	D	
11#	2SC2818			0.5uφ	1.5u	0.5u	100	25 φ	120 φ	120 Δ			N		150J	TO3	C	
12#	2SC2819			0.5uφ	1.5u	0.5u	100	25 φ	120 φ	120 Δ			N		150J	TO3	C	
13#	2SC2820			1.0uφ	2.5u	1.0u	125	4 φ	15 φ	15 Δ			N		150J	TO3	C	
14#	2SC2898			1.0uφ	2.5u	0.8u	50	4 φ	10 φ	15 Δ			N		150J	TO220	D	
15#	2SC2899			1.0uφ	2.5u	1.0u	10	250mφ	15 φ	15 Δ			N		150J	TO220	D	
16#	2SC2928			3.0uφ	3.0u	1.0u	80	500mφ	15 φ	15 Δ			N		150J	TO220	C	
17#	2SC2936			3.0uφ	3.0u	1.0u	150	15 φ	15 φ	15 Δ			N		150J	TO3	C	
18#	BF183						300m	10 φ	10mφ	40			N			TO18		
19#	BF419Δ				.50u		6.0	10 φ	20mφ	45		3.5p	N		150J	TO126	Bφ	
20	BU142					1.0u	70						ND			XXXXX		
21	BU143					1.0u	70						ND			XXXXX		
22	BU181				1.5ut	500n	65 φ	1.5 φ	1.0 φ	100 Δ #	500m		N		150J	B3	KB	
23	BU181A				1.5ut	500n	65 φ	1.5 φ	1.0 φ	100 Δ #	500m		N		150J	B3	KB	
24	BU800					0.6ut	12 φ		4.5 φ	2.2 Δ #			ND		175J	TO3	!	
25	BUV46			1.0uφ	3.0u	0.8u	85	2.5 φ	5.0 φ	5.0 Δ			NDT			Y220b		
26	BUV47			1.0uφ	3.0u	0.8u	120	5.0 φ	5.0 φ	5.0 Δ			NDT			TO3		
27	BUV47A			1.0uφ	3.0u	0.8u	120	5.0 φ	5.0 φ	5.0 Δ			NDT		175J	TO3		
28	BUV48			1.0uφ	3.0u	0.8u	150	10 φ	5.0 φ	5.0 Δ			NDT			TO3		
29	BUV48A			1.0uφ	3.0u	0.8u	150	8.0 φ	5.0 φ	5.0 Δ			NDT		175J	TO3		
30	BUW81				5.5ut	500n	80	15 φ	1.0 φ	100 Δ #	500m		N		150J	TO3	KFφ	
31	BUW81A				1.5ut	500n	80	15 φ	1.0 φ	100 Δ #	500m		N		150J	TO3	KFφ	
32#	BUX30				6.0u	2.0u	80 φ	3.0 φ	5.0 φ	150			N		175J	TO3	Cφ	
33#	BUX37						35 φ		15 φ	20 Δ			ND			TO3		
34	ESM738			2.0uφ	3.0u	1.2u	350	30	10	8 Δ			ND			TO83		
35	ESM837			1.2utφ	20u	7.0u	100	10	6	8 Δ			ND			TO3		
36	GT811					1.0uφ	60	5.0 φ	5.0 φ	300			N-PE		150	Y220	D	
37	GT812					1.0uφ	60	5.0 φ	5.0 φ	300			N-PE		150	Y220	D	
38	MP3730A						56 φ	30 φ	40 φ	15 Δ	200m		P-E		110J	F4s	Cφ	
39	MP3730B						56 φ	30 φ	60 φ	15 Δ	133m		P-E		110J	F4t	Cφ	
40	NTA1008			500nφ	1.0u	300n	40	5 φ	2 φ	20 Δ			P-E		150J	Y220		
41	NTA1010			800nφ	1.0u	300n	65	5 φ	5 φ	20 Δ			P-E		150J	Y220		
42	NTC2331			500nφ	1.0u	300n	40	5 φ	2 φ	20 Δ			N-E		150J	Y220		
43	NTC2333			1.0uφ	2.5u	700n	40	5 φ	500mφ	10			N-D		150J	Y220		
44	NTC2334			800nφ	1.0u	300n	65	5 φ	5 φ	20			N-E		150J	Y220		
45	NTC2335			1.0uφ	2.5u	700n	65	5 φ	30 φ	10			N-D		150J	Y220		
46	NTD405			400nφ	2.0u	1.0u	15	20	1.0 φ	4k			P-E		200J	TO39		
47	NTD406			400nφ	1.0u	1.0u	15	20	1.0 φ	4k			P-E		200J	TO39		
48	NTD407			1.7uφ	2.0u	2.0u	30	20	5.0 φ	4k			P-E		200J	TO8	Aφ	
49	NTD408			1.7uφ	2.0u	2.0u	30	20	5.0 φ	4k			P-E		200J	TO8	Aφ	
50	NTD409			1.7uφ	2.0u	2.0u	40	20	5.0 φ	4k			P-E		200J	TO3	Aφ	
51	NTD410			1.7uφ	2.0u	2.0u	40	20	5.0 φ	4k			P-E		200J	TO3	Aφ	
52	NTD411			1.0uφ	2.5u	2.0u	100	20	10 φ	4k			P-E		200J	TO3	Cφ	
53	NTD558			400nφ	1.0u	1.0u	10	20	1.0 φ	2kΔ			P-E		150J	Y221	X	
54	PTC7000				3.5u	1.0u	250	50 φ	20 φ	80 Δ #	.04		N-DM		200J	TO3	Cφ	
55	PTC7001				3.5u	1.0u	250	50 φ	20 φ	80 Δ #	.04		N-DM		200J	TO3	Cφ	
56	PTC7002				3.5u	1.0u	250	50 φ	20 φ	80 Δ #	.04		N-DM		200J	TO3	Cφ	
57	PTC7003				3.5u	1.0u	250	50 φ	20 φ	80 Δ #	.04		N-DM		200J	TO3	Cφ	
58	PTC8080				5.5u	500n	250	50 φ	50 φ	80 Δ #	.02		N-DM		150J	X188		
59	PTC8081				5.5u	500n	250	50 φ	50 φ	80 Δ #	.02		N-DM		150J	X188		
60	PTC8082				5.5u	500n	250	50 φ	50 φ	80 Δ #	.02		N-DM		150J	X188		
61	PTC8083				5.5u	500n	250	50 φ	50 φ	80 Δ #	.02		N-DM		150J	X188		
62	2N869A	400ms		50nφ		80nφ	380m	500mφ	30mφ	120 φ #			P		200J	TO18	Aφ	
63	0491	500msΔ		25nφ	35nφ		250m	10 φ	30mφ	30 Δ		6.0pφ	P			TO106		
64	0492	500msΔ		25nφ	35nφ		250m	10 φ	30mφ	30 Δ		4.0pφ	P			TO106		
65	0493	500msΔ		60nφ	90nφ		250m	10 φ	30mφ	30 Δ		6.0pφ	P			TO106		
66#	BD240	3.0MSΔ					2.0	10 φ	200n				P		150J	Y220		
67#	BD240A	3.0MSΔ					2.0	10 φ	200n				P		150J	Y220		
68#	BD240B	3.0MSΔ					2.0	10 φ	200n				P		150J	Y220		
69#	BD240C	3.0MSΔ					2.0	10 φ	200n				P		150J	Y220		
70#	BD244	3.0MSΔ					2.0	10 φ	500n				P		150J	Y220b		
71#	BD244A	3.0MSΔ					2.0	10 φ	500n				P		150J	Y220b		
72#	BD244B	3.0MSΔ					2.0	10 φ	500n				P		150J	Y220b		
73#	BD244C	3.0MSΔ					2.0	10 φ	500n				P		150J	Y220b		
74	BU204	3.0MS			10u	.75ut	10	2 φ	2 φ	2 Δ			ND			XXXXX		
75	BU205	3.0MS				.75ut	10	2 φ	2 φ	2 Δ			ND			XXXXX		
76#	BU206	3.0MS			10 t	.75ut	10 φ	2.0 φ	1.8 Δ				ND			TO3		
77#	BU207	3.0MS				.9ut	13 φ	4.5 φ	2.3				ND			TO3		
78#	BU208	3.0MS				.7ut	13 φ	4.5 φ	2.3				ND			TO3		
79#	TIP28A	3.0MS		40uφ	1.2uφ		30	10 φ	20 φ	20 Δ			N		150C	Y220b	Dφ	
80#	TIP28B	3.0MS		40uφ	1.2uφ		30	10 φ	20 φ	20 Δ			N		150C	Y220b	Dφ	
81#	TIP28C	3.0MS		40uφ	1.2uφ		30	10 φ	20 φ	20 Δ			N		150C	Y220b	Dφ	
82#	TIP28D	3.0MSΔ					30 φ	40 φ	200mφ	40 # Δ			N-D		150J	B1	Bφ	
83#	TIP28E	3.0MSΔ					30 φ	40 φ	200mφ	40 # Δ			N-D		150J	B1	Bφ	
84#	TIP28F	3.0MSΔ					30 φ	40 φ	200mφ	40 # Δ			N-D		150J	B1	Bφ	
85#	TIP30	3.0MS		20uφ	1.0uφ		30	10 φ	20 φ	20 Δ			P		150C	Y220b	Dφ	
86#	TIP30A	3.0MS		20uφ	1.0uφ		30	10 φ	20 φ	20 Δ			P		150C	Y220b	Dφ	
87#	TIP30B	3.0MS		20uφ	1.0uφ		30	10 φ	20 φ	20 Δ			P		150C	Y220b	Dφ	
88#	TIP30C	3.0MS		20uφ	1.0uφ		30	10 φ	20 φ	20 Δ			P		150C	Y220b	Dφ	
89#	TIP31	3.0MS		40uφ	1.2uφ		40	10 φ	50 φ	20 Δ			N		150C	Y220b	Dφ	
90#	TIP31A	3.0MS		40uφ	1.2uφ		40	10 φ	50 φ	20 Δ			N		150C	Y220b	Dφ	
91#	TIP31B	3.0MS		40uφ	1.2uφ		40	10 φ	50 φ	20 Δ			N		150C	Y220b	Dφ	
92#	TIP31C	3.0MS		40uφ	1.2uφ		40	10 φ	50 φ	20 Δ			N		150C	Y220b	Dφ	
93#	TIP31D	3.0MSΔ					40 φ	40 φ	10 φ	25 # Δ			N-D		150J	B1	Bφ	
94#	TIP32	3.0MS		20uφ	1.0uφ		40	10 φ	50 φ	20 t			P		150C	Y220b	Dφ	
95#	TIP32A	3.0MS		20uφ	1.0uφ		40	10 φ	50 φ	20 t			P		150C	Y220b	D	

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser	L O A D E
								Vcb (V)	Ic (A)	hFE								
1#	TIP41#	3.0MS		60u∅	1.4u∅		40	10	∅	20			N	S	150C	Y220b	D∅	
2#	TIP41A#	3.0MS		60u∅	1.4u∅		40	10	∅	20			N	S	150C	Y220b	D∅	
3#	TIP41B#	3.0MS		60u∅	1.4u∅		40	10	∅	20			N	S	150C	Y220b	D∅	
4#	TIP41C#	3.0MS		60u∅	1.4u∅		40	10	∅	20			N	S	150C	Y220b	D∅	
5∇	TIP41D	3.0MSΔ					65	4.0	∅	30			N-D	S	150J	B1	B∅	
6∇	TIP41E	3.0MSΔ					65	4.0	∅	30			N-D	S	150J	B1	B∅	
7∇	TIP41F	3.0MSΔ					65	4.0	∅	30			N-D	S	150J	B1	B∅	
8#	TIP42#	3.0MS		.30u∅	.70u∅		65	10	∅	20			P	S	150C	Y220b	D∅	
9#	TIP42A#	3.0MSΔ		.30u∅	.70u∅		65	10	∅	20			P	S	150C	Y220b	D∅	
10#	TIP42B#	3.0MS		.30u∅	.70u∅		65	10	∅	20			P	S	150C	Y220b	D∅	
11#	TIP42C#	3.0MSΔ		.30u∅	.70u∅		65	10	∅	20			P	S	150C	Y220b	D∅	
12∇	TIP42D	3.0MSΔ					65	4.0	∅	15			P-DM	S	150J	B1	B∅	
13∇	TIP42E	3.0MSΔ					65	4.0	∅	15			P-DM	S	150J	B1	B∅	
14∇	TIP42F	3.0MSΔ					65	4.0	∅	15			P-DM	S	150J	B1	B∅	
15	MJ15023	4.0MSΔ					250	4.0	∅	16			P	S	200S	TO3	C∅	
16	MJ15025	4.0MSΔ					250	4.0	∅	16			P	S	200S	TO3	C∅	
17	BU124	6.0MS			2.7ut	800n	50	∅	∅	10			N	S	150J	B3	KB	
18	BU124A	6.0MS			2.7ut	800n	50	∅	∅	10			N	S	150J	B3	KB	
19	BU326	6.0MS		0.5u∅	3.5u	0.5u	60			2.5			ND	S	150J	XXXXX	D	
20	BU326A	6.0MS		0.5u∅	3.5u	0.5u	60			2.5			ND	S	150J	XXXXX	D	
21#	BU406∇	6.0MS			2.7ut	1.0u	60			4.0			N	S	150J	Y220	D	
22#	BUY697∇	6.0MS			2.7ut	1.0u	60			4.0			ND	S	150J	TO3		
23	BUY699A	6.0MS				1.0u	100			2.5			ND	S	150J	TO3		
24	BUY699B	6.0MS				1.0u	100			2.5			ND	S	150J	TO3		
25	BUY699C	6.0MS				1.0u	100			2.5			ND	S	150J	TO3		
26	BU207A	7.0MS			10u	.70u	12			5.0			ND	S	115	TO3	A∅	
27	BU208A	7.0MS			10u	.70u	12			5.0			ND	S	115	TO3	A∅	
28#	BU208D	7.0MS			6.5ut	.70ut	80			4.5			N	S	115J	TO3	C∅	
29#	BU209	7.0MS			10ut	.70ut	12			2.2			N	S	115J	TO3	C∅	
30	BU209A	7.0MS			10u	.70u	12			2.2			N	S	115J	TO3	C∅	
31∇	TIPL762	7.0MS			2.5u	450n	12			5.0			N	S	150J	Y218	D∅	
32∇	TIPL762A	7.0MS			2.5u	450n	12			5.0			N	S	150J	Y218	D∅	
33	BUY23	8.0MSΔ		1.3 ∅	2.5u	1.2u	250			1.6			ND	S	200J	TO3		
34#	BUY23A	8.0MSΔ		1.6u∅	3u	1.4u	250			4.0			N	S	200J	TO3	A	
35#	BUY25	8.0MSΔ		1.8	5.0u	1.6u	250			8			ND	S	200J	TO3		
36#	BUY11∇	8.0MSΔ		1.5u∅	1.8u	1.4u	250			6.0			N-E	S	200J	TO3	C∅	
37#	BUY11N∇	8.0MSΔ		1.5u∅	1.8u	1.4u	250			6.0			N-E	S	200J	TO3	C∅	
38#	BUY12∇	8.0MSΔ		1.0u∅	2.0u	1.5u	150			5.0			N-E	S	200J	TO3	C∅	
39#	BUY13∇	8.0MSΔ		1.2u∅	2.5u	1.0u	150			4.0			N-E	S	200J	TO3	C∅	
40#	BUY14∇	8.0MSΔ		1.4u∅	3.0u	1.2u	150			3.0			N-E	S	200J	TO3	C∅	
41#	BUY15∇	8.0MSΔ		1.5u∅	1.0u	1.2u	120			4.0			N-E	S	200J	TO3	C∅	
42#	BUY39∇	8.0MSΔ		1.3u∅	1.0u	300n	120			5.0			N-E	S	200J	TO3	C∅	
43#	BUY41N∇	8.0MSΔ		1.3u∅	1.5u	800n	120			4.0			N-E	S	200J	TO3	C∅	
44#	BUY42∇	8.0MSΔ		1.0u∅	1.5u	1.2u	120			4.0			N-E	S	200J	TO3	C∅	
45#	BUY43∇	8.0MSΔ		1.0u∅	2.2u	1.2u	120			4.0			N-E	S	200J	TO3	C∅	
46#	BUY44∇	8.0MSΔ		1.0u∅	2.5u	1.2u	120			4.0			N-E	S	200J	TO3	C∅	
47#	BUY45∇	8.0MSΔ		1.0u∅	2.5u	1.2u	120			4.0			N-E	S	200J	TO3	C∅	
48∇	TIPL753	8.0MS			5.0u	450n	150			5.0			N	S	200J	TO3		
49∇	TIPL753A	8.0MS			2.5u	450n	150			5.0			N	S	200J	TO3		
50∇	TIPL763	8.0MS			2.5u	450n	120			5.0			N	S	105p	Y218	D∅	
51∇	TIPL763A	8.0MS			2.5u	450n	120			5.0			N	S	105p	Y218	D∅	
52	BU104∇	10MS			0.8u	85	70			7			D	S	150J	TO3		
53	BU109D	10MS			0.8u	85	70			7			D	S	150J	TO3		
54∇	TIPL765	10MS			2.0u	500n	125			5.0			N-D	S	150J	Y218	D∅	
55∇	TIPL765A	10MS			2.0u	500n	125			5.0			N-D	S	150J	Y218	D∅	
56∇	TIPL75	12MS			2.5u	120	120			5.0			N-D	S	200J	TO3		
57∇	TIPL751A	12MS			2.5u	120	120			5.0			N-D	S	200J	TO3		
58∇	TIPL760	12MS			2.5u	500n	80			5.0			N	S	110p	Y220	D∅	
59∇	TIPL760A	12MS			2.5u	500n	80			5.0			N	S	110p	Y220	D∅	
60∇	TIPL761	12MS			2.5u	500n	100			5.0			N	S	110p	Y218	D∅	
61∇	TIPL761A	12MS			2.5u	500n	100			5.0			N	S	110p	Y218	D∅	
62#	2SA1024H	15MS				400m	20			200			P	S	150J	TO18	A	
63#	2SA1126H	15MS				750m	20			200			P	S	150J	TO39	A	
64#	2SC2635H	15MS				750m	20			200			P	S	150J	TO39	A	
65#	AU103	15.0MS			3.0u	1.7u	10m∅	10		15			PDA	S	90J	TO3	C∅	
66#	2SC2939	20MS		1.0u∅	2.0u	0.5u	100			5.0			N	S	150J	TO3	D	
67#	BUY85	20MS			40u	40u	40			10			N	S	150J	Y220	B∅	
68	BDY57A	30MS		1.0u∅	2.0u∅	175	40			10			N	S	200J	Y204a	C	
69	BDY58R	48MS		1.0u∅	2.0u∅	175	40			10			N	S	200J	Y204a	C	
70#	BFP22	60MSΔ				1.0m	30			30			P-PE	S	150J	TO92	D	
71#	BFP23	60MSΔ				830m	25			25			P-PE	S	150J	TO92	D	
72	TSQ-3467D/C	125MSΔ		40n∅	90n∅	2.7	2.7			500m∅			P	S	200J	TO116		
73	TSQ-3467F/C	125MSΔ		40n∅	90n∅	2.7	2.7			500m∅			P	S	200J	TO116		
74#	BC190A	150MSΔ				300m	5.0			2.0			N	S	6.0p∇	TO18		
75#	BC190B	150MSΔ				300m	5.0			2.0			N	S	6.0p∇	TO18		
76	TSQ-3762D/C	150MSΔ		40n∅	110n∅	5.0	5.0			1.0			P	S	20p∇	TO116		
77	TSQ-3762F/C	150MSΔ		40n∅	110n∅	5.0	5.0			1.0			P	S	20p∇	TO116		
78	BSR15	200MSΔ				200m	2.0			100			P	S	150J	TO236	A	
79	BSR16	200MSΔ				200m	2.0			100			P	S	150J	TO236	A	
80	SO2906	200MSΔ			175n∅	250m	150m			40			P	S	8.0p∇	TO236	A	
81	SO2908A	200MSΔ			175n∅	250m	150m			40			P	S	8.0p∇	TO236	A	
82	SO2908R	200MSΔ			175n∅	250m	150m			40			P	S	8.0p∇	TO236	A	
83	SO2907	200MSΔ			200n∅	250m	150m			100			P	S	8.0p∇	TO236	C	
84	SO2907A	200MSΔ			200n∅	250m	150m			100			P	S	8.0p∇	TO236	A	
85	SO2907R	200MSΔ			200n∅	250m	150m			100			P	S	8.0p∇	TO236	C	
86	TS-1134	200MSΔ			25n∅	250m∅	1.9			10			N	S	8.0p∇	TO116		
87	TSQ-2222F/C	200MSΔ		25n∅	250m∅	1.9	1.9			10			N	S	8.0p∇	TO116		
88	TSQ-2907D/C	200MSΔ		30n∅	100n∅	1.9	1.9			10			P	S	8.0p∇	TO116		
89	TSQ-2907F/C	200MSΔ		30n∅	100n∅	1.9	1.9			10			P	S	8.0p∇	TO116		
90#	ZTX310	200MSΔ			60n	300m	1.0			10m			N-PL	S	175S	B58	A	
91#	ZTX310K	200MSΔ			60n	300m	1.0			10m			N-PL	S	6.0p	B58	A	
92#	ZTX310L	200MSΔ			60n	300m	1.0			10m			N-PL	S	6.0p	B58	A	
93#	ZTX310M	200MSΔ			60n	300m	1.0			10m			N-PL	S	6.0p	B58	A	
94#	ZTX311	200MSΔ			25n	300m	.35			10m			N-PL	S	6.0p∇	B58	A	
95#	ZTX311K	200MSΔ			25n	300m	.35			10m			N-PL	S	6.0p	B58	A	
96#	ZTX311L	200MSΔ			25n	300m	.35											

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>								
1	TSQ-3725F/C	250MΔ	45n∅	75n∅	75n∅	5.0	2.0	500m∅	30 Δ	10p∅	9.0	5.0p∅	N	SI	200J	TO88	A	
2	BSV85A	280MΔ	20n∅	20n∅	40n∅	150m*	35 ∅	10m∅	40 Δ			6.0p∅	N	SI	150J	Y236	C	
3	BSV85B	280MΔ	20n∅	20n∅	40n∅	150m*	35 ∅	10m∅	40 Δ			6.0p∅	N	SI	150J	Y236	C	
4	BSV85R	280MΔ	20n∅	20n∅	40n∅	150m*	35 ∅	10m∅	40 Δ			6.0p∅	N	SI	150J	Y236	C	
5	BSV85RA	280MΔ	20n∅	20n∅	40n∅	150m*	35 ∅	10m∅	40 Δ			6.0p∅	N	SI	150J	Y236	C	
6	2N1992	300MΔ	20n∅	20n∅	40n∅	350m	500m∅	1.0m	45 ↑			6.0p∅	N-E	SI	200J	TO18	∅	
7	2S95A	300MΔ	20n∅	25n∅	25n∅	300m	350m∅	10m∅	200 Δ			6.0p∅	N-A	SI	200S	TO18	∅	
8	9021	300MΔ	30n∅	25n∅	25n∅	250m	1.0 ∅	10m∅	30 Δ			6.0p∅	N	SI	150J	TO106	∅	
9	9022	300MΔ	50n∅	70n∅	70n∅	250m	1.0 ∅	10m∅	30 Δ			6.0p∅	N	SI	200J	TO106	∅	
10	BSR14	300MΔ				200m		150m∅	100 Δ			8.0p∅	N	SI	150J	TO236	A	
11	SO2222A	300MΔ				250m		150m∅	100 Δ			8.0p∅	N	SI	150J	TO236	A	
12	V763	300MΔ	140u∅		300u∅	400m	1.0 ∅	50m∅	100			6.0p∅	N	SI	200	TO18	A	
13	ZT708	300MΔ		25n	380m%	50n	1.0 ∅	10m∅	30 Δ			6.0p∅	N-PL	SI	200J	TO18	A∅	
14	9001	400MΔ	12n∅	18n∅	20n∅	250m	1.0 ∅	10m∅	40 Δ			4.0p∅	N	SI	150J	TO106	A	
15	9002	400MΔ	15n∅	20n∅	20n∅	250m	1.0 ∅	10m∅	30 Δ			4.0p∅	N	SI	150J	TO106	A	
16	9003	400MΔ	15n∅	20n∅	20n∅	250m	5.0 ∅	10m∅	25 Δ			4.0p∅	N	SI	150J	TO106	A	
17	SO2894	400MΔ		90n∅	90n∅	200m		30m∅	40			6.0p∅	P	SI	150J	TO236	A	
18	SO2894R	400MΔ		90n∅	90n∅	200m		30m∅	40			6.0p∅	P	SI	150J	TO236	A	
19	ZTX312K	400MΔ	15n∅	13n	7.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
20	ZTX312L	400MΔ	15n∅	13n	7.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
21	ZTX312M	400MΔ	15n∅	13n	7.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
22	SO2369	500MΔ		18n∅	18n∅	200m		10m∅	40			4.0p∅	N	SI	150J	TO236	A	
23	SO2369R	500MΔ		18n∅	18n∅	200m		10m∅	40			4.0p∅	N	SI	150J	TO236	A	
24	ST6110	500M		10n	300m	500m∅		10m∅	20	117		4.0p∅	N-PE	SI	200J	TO18	A	
25	ZTX313K	500MΔ	12n∅	13n	5.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
26	ZTX313L	500MΔ	12n∅	13n	5.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
27	ZTX313M	500MΔ	12n∅	13n	5.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
28	ZTX314K	500MΔ	12n∅	13n	5.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
29	ZTX314L	500MΔ	12n∅	13n	5.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
30	ZTX314M	500MΔ	12n∅	13n	5.0n	300m	1.0 ∅	10m∅	40 Δ			4.0p	N-PL	SI	175S	B58	A	
31	PE6020	600M∅	150n∅		1.0u∅	625m	10 ∅	100u∅	80			15 ∅	N-DPE	SI	150J	TO92	A	
32	PE6021	600M∅	150n∅		1.0u∅	625m	10 ∅	100u∅	70			15 ∅	N-DPE	SI	150J	TO92	A	
33	ST6120	1000M∅		10n	300m	500m∅		10m∅	20 ↑	117		15 ∅	N-PE	SI	200J	TO18	A	
34	ACY17	1.00M∅	12p	900n	10u	35u	280m	0.0	50m	100	1.0	50n∅	P-A∅	Ge	90J	TO5	A	
35	ACY22	1.00M∅	12p	900n	10u	35u	280m	0.0	50m	85	1.0	50n∅	P-A∅	Ge	90J	TO5	A	
36	MMT3960	2.25G∅	650p∅	1.0n	750p∅	225m	1.0 ∅	30m	80 ∅	1.3p	50n∅	15p	N-AN	SI	125J	W6	A	
37	MMT3960A	2.2G∅	750p∅	1.0n	850p∅	225m	1.0 ∅	30m	200 ∅	1.3p	50n∅	15p	N-AN	SI	135J	W6	C	
38	2N5271	1.0n	5.0n		30n	600m		10m∅	15			6p∅	N	SI	200S	TO39	A∅	
39	2N5432	1.0n	4.0n∅	6.0n∅	30n	300m		10m∅	25 ∅			30p∅	N∅	SI	150S	TO52	DJ∅	
40	2N5433	1.0n	4.0n∅	6.0n∅	30n	300m		10m∅	25 ∅			30p∅	N∅	SI	150S	TO52	DJ	
41	2N5434	1.0n	4.0n∅	6.0n∅	30n	300m		10m∅	25 ∅			30p∅	N∅	SI	150S	TO52	DJ	
42	DMP4025DB	1.0n∅			3.0n∅	4.0 ∅						11p∅	N∅	SI	125A	TO39	FC	
43	E108	1.0n∅			30n∅	350m						8.5p∅	N∅	SI	125A	R187	DB	
44	E109	1.0n∅			30n∅	350m						8.5p∅	N∅	SI	125A	R187	DB	
45	E110	1.0n∅			30n∅	350m						8.5p∅	N∅	SI	125A	R187	DB	
46	NS1110	1.0n	5.0n		4.0n	500m							N	SI	175J	TO18	A∅	
47	NS1111	1.0n	5.0n		4.0n	500m							N	SI	175J	TO18	A∅	
48	SDF1001	1.0n	4.0n∅	6.0n∅	30n	300m				7.0 ∅			N∅	SI	200S	TO52	DB	
49	SDF1002	1.0n	4.0n∅	6.0n∅	30n	300m				10 ∅			N∅	SI	200S	TO52	DB	
50	SDF1004	1.0n	4.0n∅	6.0n∅	30n	300m				7		30p∅	N	SI	200S	TO52	DB	
51	SDF1005	1.0n	4.0n∅	6.0n∅	30n	300m				10		30p∅	N	SI	200S	TO52	DB	
52	2N4004	30MΔ	1.0n∅		4.0u∅	40 ∅	4.0 ∅	20 ∅	15 Δ	500m#			N	SI	200J	W63	D∅	
53	2N4005	30MΔ	1.0n∅		4.0u∅	40 ∅	4.0 ∅	20 ∅	15 Δ	500m#			N	SI	200J	W63	D∅	
54	J108	200M	1.0n	4.0n∅	6.0n∅	30n	500m	15	10m	25 ∅			N-MOS#	SI	125A	TO92	DE	
55	J109	200M	1.0n	4.0n∅	6.0n∅	30n	500m	15	10m	25 ∅			N-MOS#	SI	125A	TO92	DE	
56	J110	200M	1.0n	4.0n∅	6.0n∅	30n	500m	15	10m	25 ∅			N-MOS#	SI	125A	TO92	DE	
57	MMBT4260	1.2GΔ	1n∅		1n∅	350m	1 ∅	1m∅	25 Δ			2.5p∅	P	SI	150J	X156d	DD	
58	MMBT4261	1.5GΔ	1n∅		1n∅	350m	1 ∅	1m∅	25 Δ			2.5p∅	P	SI	150J	X156d	DD	
59	MMBT2369	1.2GΔ	1.2n∅		18n∅	350m	1 ∅	10m∅	40 Δ			4p∅	N	SI	150J	X156d	CC	
60	2G106	120M∅	1.35n∅	16n∅	70n	150m	250m∅	10m∅	30 Δ			5.0p	P-ME	Ge	100A	TO18	DB	
61	SDF1003	2.0n	5.0n∅	8.0n∅	30n	300m				15 ∅			N∅	SI	200S	TO52	DB	
62	SDF1006	2.0n	5.0n∅	8.0n∅	30n	300m				15		30p∅	N	SI	200S	TO52	DB	
63	BSW41A	150MΔ	2.0n		2.0n	1.0 ∅	1.0 ∅	150m∅	40	3.3		8.0p∅	N-PE	SI	200J	TO18	A	
64	JAN2N4261	200MΔ	2.5n∅		3.5n∅	200m	1.0 ∅	10m∅	150 Δ	150		2.5p∅	P	SI	200J	TO72	G	
65	MM2550	1000MΔ	2.5n∅		2.5n∅	150m	5.0 ∅	10m∅	20 Δ			3.0p∅	P	SI	100J	TO18	A	
66	2N4856	3.0n	6.0n∅	25n∅	20n∅	380m				25 ∅		18p∅	N∅	SI	200S	TO18	DB∅	
67	2N4856A	3.0n	5.0n∅	20n∅	20n∅	1.8 ∅				25 ∅		10p∅	N∅	SI	200S	TO18	DB∅	
68	2N4859	3.0n	6.0n∅	25n∅	20n∅	380m				25 ∅		18p∅	N∅	SI	200S	TO18	DB∅	
69	2N4859A	3.0n	5.0n∅	20n∅	20n∅	1.8 ∅				25 ∅		10p∅	N∅	SI	200S	TO18	DB∅	
70	BSV78	3.0n	5.0n		50n∅	350m				25 ∅			N∅	SI	200J	TO18	DB∅	
71	E114	3.0n∅			8.0n∅	350m				150 ∅		8.0p∅	N∅	SI	125A	R187	DB	
72	J4856	3.0n	6.0n	25n∅	8.0n∅	350m				25 ∅		18p∅	N∅	SI	150S	TO92	DE	
73	J4859	3.0n	6.0n	25n∅	8.0n∅	350m				25 ∅								

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	Y200 s/a TO200 Ser.	DWG #	L E A D E
								Vcb (V)	Ic (A)	hFE									
1#	BSV79		5.0n	7.0n		50n	350m				40		N	Si	200J	TO18	DB		
2	E174		5.0n			10n	350m				85		N	Si	125A	R187	DA		
3	ITE4391		5.0n	15n	20		300m				30		N-PE	Si	125J	TO92	DB		
4	ITE4392		5.0n	15n	35		300m				60		N-PE	Si	125J	TO92	DB		
5	ITE4393		5.0n	15n	50		300m				100		N-PE	Si	125J	TO92	DB		
6	IVN5000AND		5.0n	5.0n	5.0n	5.0n	2.0				50		N	Si	150J	Y237	DA		
7	IVN5000ANE		5.0n	5.0n	5.0n	5.0n	2.0				50		N	Si	150J	Y237	DA		
8	IVN5000ANF		5.0n	5.0n	5.0n	5.0n	2.0				50		N	Si	150J	Y237	DA		
9	IVN5000BND		5.0n	5.0n	5.0n	5.0n	12				50		N	Si	150J	Y202	DA		
10	IVN5000BNE		5.0n	5.0n	5.0n	5.0n	12				50		N	Si	150J	Y202	DA		
11	IVN5000BNF		5.0n	5.0n	5.0n	5.0n	12				50		N	Si	150J	Y202	DA		
12	IVN5000SND		5.0n	5.0n	5.0n	5.0n	3.1				50		N	Si	150J	TO52	DG		
13	IVN5000SNE		5.0n	5.0n	5.0n	5.0n	3.1				50		N	Si	150J	TO52	DG		
14	IVN5000SNF		5.0n	5.0n	5.0n	5.0n	3.1				50		N	Si	150J	TO52	DG		
15	IVN5000TND		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
16	IVN5000TNE		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
17	IVN5000TNF		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
18	IVN5000TNG		5.0n	5.0n	5.0n	5.0	6.2				50		N	Si	150J	TO39	DA		
19	IVN5001AND		5.0n	5.0n	5.0n	5.0n	2.0				50		N	Si	150J	Y237	DA		
20	IVN5001ANE		5.0n	5.0n	5.0n	5.0n	2.0				50		N	Si	150J	Y237	DA		
21	IVN5001ANF		5.0n	5.0n	5.0n	5.0n	2.0				50		N	Si	150J	Y237	DA		
22	IVN5001BND		5.0n	5.0n	5.0n	5.0n	12				50		N	Si	150J	Y202	DA		
23	IVN5001BNE		5.0n	5.0n	5.0n	5.0n	12				50		N	Si	150J	Y202	DA		
24	IVN5001BNF		5.0n	5.0n	5.0n	5.0n	12				50		N	Si	150J	Y202	DA		
25	IVN5001SND		5.0n	5.0n	5.0n	5.0n	3.1				50		N	Si	150J	TO52	DG		
26	IVN5001SNE		5.0n	5.0n	5.0n	5.0n	3.1				50		N	Si	150J	TO52	DG		
27	IVN5001SNF		5.0n	5.0n	5.0n	5.0n	3.1				50		N	Si	150J	TO52	DG		
28	IVN5001TND		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
29	IVN5001TNE		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
30	IVN5001TNF		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
31	IVN5001TNG		5.0n	5.0n	5.0n	5.0n	6.2				50		N	Si	150J	TO39	DA		
32	J174		5.0n	2.0n	5.0	10n	350m				85		N	Si	125J	TO92	DC		
33	J4391		5.0n	15n	20n	15n	350m				30		N	Si	150S	TO92	DE		
34	J4392		5.0n	15n	35n	20n	350m				60		N	Si	150S	TO92	DE		
35	J4393		5.0n	15n	50n	30n	350m				100		N	Si	150S	TO92	DE		
36	MMBF4391		5n	15n	20n	15n	350m				100		N	Si	150J	X156d	DD		
37	MMBF4392		5n	15n	35n	20n	350m				100		N	Si	150J	X156d	DD		
38	MMBF4393		5n	15n	50n	35n	350m				100		N	Si	150J	X156d	DD		
39	MPF970		5.0n	8.0n	25n	15n	350m				100		N	Si	150A	TO92	DD		
40	MPF971		5.0n	10n	120n	80n	350m				250		N	Si	150A	TO92	DD		
41	MPF4391		5.0n	15n	20n	15n	625m	15	60m	20	30		N	Si	150J	TO92	DD		
42	MPF4392		5.0n	15n	35n	20n	625m	15	25m	17	60		N	Si	150J	TO92	DD		
43	MPF4393		5.0n	15n	55n	35n	625m	15	5.0m	12	100		N	Si	150J	TO92	DD		
44	SD224H		5.0n	1.0n		5.0n	5.0				3.0		N	Si	125A	TO12	FB		
45	SDF9503		5.0n			5.0n	25				4.5		N	Si	150A	TO3	DES		
46	SDF9603		5.0n			5.0n	25				4.5		N	Si	150A	TO3	DF		
47	2S101	150M	5.0n	8.0n	50n	12n	310m	5.0	10m	60	50		N	Si	175A	TO18	A		
48	A5T4123	250M	5.0n	16n	50n	12n	310m	1.0	2.0m	50	4.0		N-PE	Si	135S	R203	A		
49	A5T4124	300M	5.0n	16n	50n	12n	310m	1.0	2.0m	50	4.0		N-PE	Si	135S	R203	A		
50	E111		6.0n			15n	350m				30		N	Si	125A	R187	DB		
51	E112		6.0n			15n	350m				50		N	Si	125A	R187	DB		
52	E113		6.0n			15n	350m				100		N	Si	125A	R187	DB		
53	J111		6.0n	7.0n	20n	15n	625m				30		N	Si	135J	TO92	DD		
54	J112		6.0n	7.0n	20n	15n	625m				50		N	Si	135J	TO92	DD		
55	J113		6.0n	7.0n	20n	15n	625m				100		N	Si	135J	TO92	DD		
56	MFE2007		6.0n	10n		65n	1.8				30		N	Si	175J	TO18	DB		
57	MFE2008		6.0n	10n		40n	1.8				30		N	Si	175J	TO18	DB		
58	MFE2009		6.0n	10n		25n	1.8				30		N	Si	175J	TO18	DB		
59	MFE2010		6.0n	10n		75n	1.8				50		N	Si	175J	TO18	DB		
60	MFE2011		6.0n	10n		45n	1.8				50		N	Si	175J	TO18	DB		
61	MFE2012		6.0n	10n		25n	1.8				50		N	Si	175J	TO18	DB		
62	2N645	75.0M	6.0n	40n	2.0n	40n	120m	7.0	5.0m	45	2.0		N	Ge	71A	TO9	A		
63	MPS2713	250M	6.0n	7.0n	12n	9.0n	310m	4.4	2.0m	30	2.5		N-EA	Si	135J	TO92	A		
64	MPS2713K	250M	6.0n	7.0n	12n	9.0n	1.2	4.4	2.0m	60	2.5		NPL	Si	175A	X167	A		
65	MPS2713L	250M	6.0n	7.0n	12n	9.0n	1.2	4.4	2.0m	60	2.5		NPL	Si	175A	X168	A		
66	MPS2713M	250M	6.0n	7.0n	12n	9.0n	1.2	4.4	2.0m	60	2.5		NPL	Si	175A	X169	A		
67	MPS2714	250M	6.0n	7.0n	12n	9.0n	310m	4.4	2.0m	75	2.5		N-EA	Si	135J	TO92	A		
68	MPS2714K	250M	6.0n	7.0n	12n	9.0n	1.2	4.4	2.0m	150	2.5		NPL	Si	175A	X167	A		
69	MPS2714L	250M	6.0n	7.0n	12n	9.0n	1.2	4.4	2.0m	150	2.5		NPL	Si	175A	X168	A		
70	MPS2714M	250M	6.0n	7.0n	12n	9.0n	1.2	4.4	2.0m	150	2.5		NPL	Si	175A	X169	A		
71	2N4137	500M	6.0n	9.0n	12n	8.0n	360m	1.0	10m	120	4.0		N-DPE	Si	200S	TO18	A		
72	2SC689H	600M	6.5n	10n	8.0n	8.0n	300m	1.0	10m	85	1.8		N-PE	Si	175J	TO18	A		
73	UMT13004	4.0M	7.0n	1.0n	3.5u	9.0n	75	5.5	1.0	30	65		N-PS	Si	150S	Y220b	X		
74	UMT13005	4.0M	7.0n	1.0n	3.5u	9.0n	75	5.5	1.0	30	65		N-PS	Si	150S	Y220b	X		
75	2N2256	250M	7.0n			7.0n	300m	1.0	10m	60	5.0		N-ME	Si	175J	TO1	A		
76	2N2257	250M	7.0n			7.0n	300m	1.0	10m	50	5.0		N-ME	Si	175J	TO1	A		
77	2N3261	300M	7.0n	6.0n	10n	8.0n	300m	1.0	200m	20	3.5		N	Si	200S	TO52	A		
78	2SC99	350M	7.0n			25n	300m	3.5	10m	45	3.5		N-PE	Si	175J	TO18	A		
79	2SC99	350M	7.0n			25n	300m	3.5	10m	80	3.5		N-PE	Si	175J	TO18	A		
80	BSY28	380M	7.0n	7.0n	8.0n	14n	300m	2.0	10m	34	3.5		N-PE	Si	175J	TO18	A		
81	2N4274	400M	7.0n	9.0n	13n	8.0n	700m	1.0	10m	120	4.0		N	Si	125J	R110	A		
82	2N4275	400M	7.0n	9.0n	13n	8.0n	700m	1.0	10m	120	4.0		N	Si	125J	R110	A		
83	2SC1374H	600M	7.0n	6.0n	10n	8.0n	300m	1.0	70m	30	3.5		N-PE	Si	175J	TO18	A		
84	2N4858A		8.0n	8.0n		8.0n	1.8				11		N	Si	200S	TO18	DB		
85	2N4861A		8.0n	8.0n		8.0n	1.8				80		N	Si	200S	TO18	DB		
86	2N5639		8.0n	10n		20n	310m				10		N	Si	150S	TO92	DD		
87	2N5654		8.0n	10n		20n	310m				10		N	Si	150S	TO92	DD		
88	VN35AJ#		8.0n			8.0	25				50		N	Si	150J	TO3	DES		
89	VN68AJ#		8.0n			8.0n	25				50		N	Si	150J	TO3	DES		
90	VN67AJ#		8.0n			8.0n	25				50		N	Si	150J	TO3	DES		
91	VN98AJ#		8.0n			8.0n	25				50		N	Si	150J	TO3	DES		
92	VN89AJ#		8.0n			8.0n	25				50								



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O A D E
								Vcb (V)	Ie (A)	hFE								
1	2N4978		10n	50n	40n	1.8	1.8				20	35p	N	Si	200S	T018	DB	
2	2N5114		10n			15n	500m				75	25p	P	Si	200S	T018	DA	
3	JAN2N5114		10n			15n	500m					25p	P	Si	200J	T018	DA	
4	2N5640		10n	15n		30n	310m					10p	N	Si	150S	T092	DD	
5#	2SA558		10n		90n	25n	350m	1.0	10m	50	12		P-PE	Si	175J	T018	A	
6#	2SA559		10n		90n	25n	350m	1.0	10m	50	12		P-PE	Si	175J	T018	A	
7#	2SA559A		10n		90n	25n	350m	1.0	10m	50	12		P-PE	Si	175J	T018	A	
8#	2SC565		10n		100n	25n	350m	1.0	10m	45	20		N-PE	Si	175J	T018	A	
9	3N169		10n			15n	800m					5.0p	N	Si	200S	T072	DR	
10	3N170		10n			15n	800m					5.0p	N	Si	200S	T072	DR	
11	3N171		10n		15n	800m						5.0p	N	Si	200S	T072	DR	
12#	BSV80		10n	10n		50n	350m					60	N	Si	200J	T018	DB	
13	E175		10n			20n	350m				125	40p	P	Si	125J	R187	DA	
14	J175		10n	5.0n	10	20n	350m				125	30	P	Si	125J	T092	DC	
15	J4091		10n	15n	40n	20n	350m				30	16p	N	Si	150S	T092	DE	
16	J4858		10n	10n	100n		350m				60	18p	N	Si	150S	T092	DE	
17	J4861		10n	10n	100n		350m				60	18p	N	Si	150S	T092	DE	
18	MFE2006		10n	10n		40n	1.8					16p	N	Si	175J	T018	DB	
19	TIS75		10n	10n		100n	360m				60		N-PE	Si	120S	R203	DE	
20	U1897E		10n	15n		40n	350m				30	16p	N	Si	125J	R97B	DB	
21	VN89AB#		10n			10n	6.2					50p	N	Si	150J	T039	DA	
22	2N843	30.0M	10n	80n	6.0n	80n	120m	2.0	5.0m	45	4.0	2.0p	P-A	Ge	71A	T09	A	
23#	BSY24	90.0M	10n	9.0n	350n	25n	600m	2.0	500m	20		35p	N-PE	Ge	150A	T05	A	
24#	BSY25	140M	10n	9.0n	350n	15n	600m	2.0	500m	40		35p	N-PE	Ge	150A	T05	A	
25#	2SC108A	150M	10n	7.0n	150n	20n	800m	2.0	200m	240	2.0	9.0p	N-E	Si	175J	T039	A	
26#	2SC109A	150M	10n	7.0n	150n	20n	800m	2.0	200m	240	2.0	9.0p	N-E	Si	175J	T039	A	
27#	2SA555	200M	10n		170n	25n	200m	1.0	10m	80	25	5.5p	P-PE	Si	125J	R195d	A	
28#	MMBT2907A	200M	10n	40n	80n	30n	350m	1.0	100m	75		8p	P	Ge	150J	X156d	C	
29	2N976	250M	10n			100m	100	5.0	40m	25	8.5	30p	N	Si	100S	T018	A	
30	2N6375	300M	10n	6.0n	35n	10n	2.9	1.0	500m	30	2.5	10p	N	Si	200S	T018	A	
31	2N6376	300M	10n	6.0n	35n	10n	7.0	1.0	10m	60	2.5	10p	N	Si	200S	R169	A	
32	2N4420	350M	10n	8.0n	15n	10n	360m	1.0	100m	25	4.0	5.0p	N	Si	150S	R203	A	
33#	2SC134	350M	10n		100n	25n	350m	1.0	10m	60	3.0	4.0p	N-PE	Si	175J	T018	A	
34#	2SC135	350M	10n		100n	25n	350m	1.0	10m	60	5.0	4.0p	N-PE	Si	175J	T018	A	
35#	2SC136	350M	10n		100n	25n	350m	1.0	10m	60	5.0	4.0p	N-PE	Si	175J	T018	A	
36	2N977	400M	10n		20n		150m	3.0	40m	50	2.5	8.0p	P	Ge	100S	T018	A	
37	2N5187	400M	10n	8.0n	13n	8.0n	1.0	4.0	30m	25	25	3.5p	N	Si	200S	T052	A	
38	2N3648	450M	10n	8.0n	12n	8.0n	2.0	1.0	1.0m	15	25	4.0p	N	Si	200S	T046	A	
39	2N3320	600M	10n	10n	20n	15n	60m	5.0	40m	40		3.0p	P	Si	100S	T018	A	
40	2N3321	600M	10n	10n	25n	15n	60m	5.0	40m	80		3.5p	P	Ge	100S	T018	A	
41	2N3322	600M	10n	10n	30n	15n	60m	5.0	40m	25		3.5p	P	Ge	100S	T018	A	
42	2N4873	700M	10n	10n	15n	15n	1.2	1.0	10m	110		4.0p	N	Si	200J	T018	A	
43	2N955A	1000M	10n	4.5n	5.0n	8.0n	150m	5.0m	30m	50			N-ME	Ge	100J	T018	A	
44	MP2000B	430k	11n			21n	106	2.0	8.0	25	24m		P-ADE	Ge	110S	F49c	C	
45	MP2100B	430k	11n			21n	106	2.0	8.0	25	24m		P-ADE	Ge	110S	F49c	C	
46	MP2200B	430k	11n			21n	106	2.0	8.0	25	24m		P-ADE	Ge	110S	F49c	C	
47	MP2300B	430k	11n			21n	106	2.0	8.0	25	24m		P-ADE	Ge	110S	F49c	C	
48	MP2400B	430k	11n			21n	106	2.0	8.0	25	24m		P-ADE	Ge	110S	F49c	C	
49	2N955	1000M	11n	20n	45n	50n	150m	5.0m	30m	30	18		N-ME	Ge	100	T018	A	
50#	FMNT2369		12n		13n	18n	200m	1.0	10m	40	25	4.0p	N-PL	Si	175A	X156d	A	
51#	MPS2369K		12n		13n	18n	1.2	1.0	10m	120	25	4.0p	N-PL	Si	175A	X167	A	
52#	MPS2369L		12n		13n	18n	1.2	1.0	10m	120	25	4.0p	N-PL	Si	175A	X168	A	
53#	MPS2369M		12n		13n	18n	1.2	1.0	10m	120	25	4.0p	N-PL	Si	175A	X169	A	
54	2N5134	250M	12n	14n	13n	13n	200m	1.0	10m	20		4p	N	Si	125J	T0106	A	
55	GES8000	250M	12n	7.0n	170n	35n	800m	1.0	1.0m	60	2.0	3.9p	N-PE	Si	150S	T092	A	
56	GES8004	250M	12n	7.0n	150n	30n	800m	1.0	1.0m	300	2.0	4.2p	N-PE	Si	150S	T092	A	
57	GES8002	260M	12n	7.0n	200n	30n	800m	1.0	1.0m	130	2.0	3.9p	N-PE	Si	150S	T092	A	
58	GES8006	260M	12n	7.0n	190n	50n	800m	1.0	1.0m	500	2.0	4.2p	N-PE	Si	150S	T092	A	
59	2N4421	300M	12n	10n	18n	12n	360m	400m	30m	25		5.0p	N	Si	150S	R203	A	
60#	2SC400	300M	12n	10n	200n	30n	250m	1.0	10m	350	50	6.0p	N-PE	Si	175J	T018	A	
61#	2SC1216	300M	12n		7.0n	19n	300m	1.0	10m	140	25	6.0p	N-PE	Si	150J	T018	A	
62#	BSX90	300M	12n			40n	300m	35	10m	20	10	5.0p	NPE	Si	175J	T018	A	
63#	BSX91	300M	12n			45n	300m	35	10m	40	10	5.0p	NPE	Si	175J	T018	A	
64	MPS708	300M	12n		13n	18n	625m	1.0	10m	30	40m	6.0p	N	Si	150J	T092	A	
65	2N3647	350M	12n	10n	16n	12n	2.0	1.0	1.0m	12	25	4.0p	N	Si	200S	T046	A	
66	2N4294	400M	12n	9.0n	15n	15n	200m	2.0	100m	20	25	5.0p	N	Si	150S	X149	B	
67#	BFV42	400M	12n			20n	150m	2.0	100m	15	30	4.0p	NPE	Si	200J	S5a	P	
68#	BFV87	400M	12n		10n	18n	300m	2.0	100m	10	25	4.0p	NPE	Si	200J	W5a	B	
69	MPS4274	400M	12n		13n	12n	200m	1.0	10m	35	18	4.0p	N	Si	125S	T092	A	
70	MPS4275	400M	12n		13n	12n	200m	1.0	10m	35	25	4.0p	N	Si	125S	T092	A	
71#	PL4021	400M	12n		10n	15n	150m	1.0	10m	60	25	6.0p	NPE	Si	175S	S6	A	
72#	SSX19	400M	12n		13n	18n	250m	1.0	10m	20	25	4.0p	N	Si	150J	X149	A	
73#	SSX20	400M	12n		13n	18n	250m	1.0	10m	40			N	Si	150J	X149	A	
74	2N2795	450M	12n	12n	60n	25n	75m	3.0	10m	100	12	2.5p	N-P	Ge	100S	T018	A	
75	2N743A	500M	12n		10n	30n	360m	350m	10m	60	35	3.0p	N-PE	Si	200J	T018	A	
76	2N744A	500M	12n		13n	30n	360m	350m	10m	120	35	3.0p	N-PE	Si	200J	T018	A	
77	2N2389	500M	12n	13n		18n	1.2	2.0	100m	20	25m	4.0p	N	Si	200J	T018	A	
78	2N2389A	500M	12n	13n		18n	1.2	2.0	10m	120	20	4.0p	N-PE	Si	120J	T018	A	
79	JAN2N2389A	500M	12n		13n	18n	1.2	1.0	10m	120	20	4.0p	N	Si	200J	T018	A	
80	2N4295	500M	12n	12n	15n	15n	200m	2.0	100m	20	25	4.0p	N	Si	150S	X149	A	
81	2N4418	500M	12n	10n	12n	14n	500m	1.0	10m	120	25	4p	N	Si	150S	R203	A	
82	JAN2N4449	500M	12n		13n	18n	1.5	1.0	10m	120	20	4.0p	N	Si	200J	T046	A	
83	2N5029	500M	12n	10n	12n	14n	320m	2.0	100m	20	2.5m	4.0p	N	Si	120J	T098	A	
84	2N5789	500M	12n			18n	625m	350m	10m	40	20	4.0p	N	Si	150S	T092	A	
85#	2SC764	500M	12n		13n	18n	380m	1.0	10m	40		4.0p	N-PE	Si	200J	T018	A	
86#	BFV28	500M	12n		6.0n	12n	150m	4.0	30m	15	25	3.0p	NPE	Si	200J	S5a	P	
87#	BFV87A	500M	12n		13n	18n	3											

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ie (A)	hFE								
1	2N1500	175MΔ	13n				80m	500mΩ	10m	70 f		1.5p	P-MD	Ge	100S		A	
2	BFY26	200MΔ	13n	9.0n	400n	300n	360m	9.0Ω	10m	28 Δ	150	5.5p	N-PL	Si	200J	TO18	A	
3	BFY18	245MΔ	13n	9.0n	600n	300n	300m	9.0Ω	10m	35 Δ		5.5p	N-PL	Si	175J	TO18	A	
4	MMT3904	300MΔ	13n	24n	125n	11n	225m	1.0Ω	1.0m	70 Δ	20	4.0p	NPL	Si	135J	W3b	F	
5	MPS3641	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X59a	A	
6	MPS3641K	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X167	A	
7	MPS3641L	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X168	A	
8	MPS3641M	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X169	A	
9	MPS3642K	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X167	A	
10	MPS3642L	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X168	A	
11	MPS3642M	14n					80n	1.2Ω	150m	75 #	1.4 #		NPL	Si	175A	X169	A	
12	2N934	35MΔ	14n	400p			150m	300mΩ	40m	40 Δ	7.5	12p	NPL	Si	85S	TO18	A	
13	2N4419	400MΔ	14n	10n	14n	16n	500m	1.0Ω	10m	30 Δ	25	4p	N	Si	150S	R203	A	
14	2N5030	400MΔ	14n	10n	14n	16n	320m	2.0Ω	100m	30 Δ	2.5m	4.0p	N	Si	120J	TO98	A	
15	2N2967	15n					6.0n	1.0Ω	30m	15 Δ	2.0	3.0p	N	Si	200J	TO18	A	
16	2N3971		15n	15n	60n		1.8				80 \$		N	Si	200S	TO18	DB	
17	U304		15n	20n		25n	350m				85 \$	27p	PS#	Si	150S	TO18	DA	
18	2N4258	700mΔ	15n		20n	10n	500m	.50Ω	1.0m	15 Δ	15	3p	P	Si	125J	R110	A	
19	BSV15	50MΔ	15n		500n	15n	5.0 Δ	1.0Ω	100m	40 Δ	2.0	30p	P-PE	Si	200J	TO39	A	
20	BSV16	50MΔ	15n		500n	15n	5.0 Δ	1.0Ω	100m	40 Δ	2.0	30p	P-PE	Si	200J	TO39	A	
21	BSV17	50MΔ	15n		500n	15n	5.0 Δ	1.0Ω	100m	40 Δ	2.0	25 \$	P-PE	Si	200J	TO39	A	
22	BSX45-6	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	15	1.0	25p	N-PE	Si	200J	TO39	A	
23	BSX45-10	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	20	1.0	25p	N-PE	Si	200J	TO39	A	
24	BSX45-16	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	30	1.0	25p	N-PE	Si	200J	TO39	A	
25	BSX46-6	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	15	1.0	20p	N-PE	Si	200J	TO39	A	
26	BSX46-10	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	20	1.0	20p	N-PE	Si	200J	TO39	A	
27	BSX46-16	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	30	1.0	20p	N-PE	Si	200J	TO39	A	
28	BSX47-6	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	15	1.8	15p	N-PE	Si	200J	TO39	A	
29	BSX47-10	50MΔ	15n	200n	850n	15n	5.0Ω	1.0Ω	1.0Ω	20	1.8	15p	N-PE	Si	200J	TO39	A	
30	MPS3638	100MΔ	15n	20n	225n	30n	625m	2.0Ω	300m	20 Δ		20p	NDPE	Si	150J	TO92	A	
31	MPS3638A	150MΔ	15n	20n	225n	30n	625m	2.0Ω	300m	20 Δ		10p	NDPE	Si	150J	TO92	A	
32	2N3426	200MΔ	15n	5.0n	20n	15n	3.0Ω	.50Ω	300m	120 #	25	25p	N	Si	200J	R179	A	
33	A5T4125	200MΔ	15n	27n	120n	27n	310m	1.0Ω	2.0m	50 Δ		4.5p	P-PE	Si	135S	R203	A	
34	KS6107	200M	15n	15n	100n	30n		5.0Ω	1.0Ω	15 Δ		20p	N-PE	Si	200J	TO37	A	
35	LDS210	200MΔ	15n	20n	225n	30n	625m	1.0Ω	300m	30 Δ		6.0p	N-PL	Si	150J	TO122	P	
36	PN2906	200MΔ	15n	20n	225n	30n	625m	1.0Ω	150m	120		8.0p	NDPE	Si	150J	TO92	A	
37	PN2907	200MΔ	15n	20n	225n	30n	625m	1.0Ω	150m	300		8.0p	NDPE	Si	150J	TO92	A	
38	2N3248	250MΔ	15n	5.0n	60n	20n	1.2Ω	1.0Ω	10m	50 Δ		8.0p	N	Si	200J	TO18	A	
39	2N3982	250MΔ	15n	15n	25n	15n	3.0Ω	1.0Ω	150m	140		8.0p	N	Si	200J	TO5	A	
40	A5T2222	250MΔ	15n	5.0n	190n	23n	380m	1.0Ω	1.0m	50 Δ		8.5p	N	Si	150S	R203	A	
41	A5T4126	250MΔ	15n	27n	120n	27n	310m	1.0Ω	2.0m	120 Δ		4.5p	P-PE	Si	135S	R203	A	
42	BSX77	250MΔ	15n	15n	50n	75n	300m	500mΩ	1.0m	64	25		PL	Si	175J	TO18	A	
43	PN2221A	250MΔ	15n	20n	225n	30n	625m	1.0Ω	150m	120		8.0p	NDPE	Si	150J	TO92	A	
44	PN2222A	250MΔ	15n	20n	225n	30n	625m	1.0Ω	150m	300		8.0p	NDPE	Si	150J	TO92	A	
45	BSX78	285MΔ	15n	15n	50n	75n	300m	500mΩ	1.0m	90	25		PL	Si	175J	TO18	A	
46	2N3249	300MΔ	15n	5.0n	60n	20n	1.2Ω	1.0Ω	10m	100 Δ		8.0p	N	Si	200J	TO18	A	
47	2N4264	300MΔ	15n	8.0n	20n	15n	310m	1.0Ω	30m	40 Δ	22	4.0p	N	Si	135S	TO92	A	
48	2N4265	300MΔ	15n	8.0n	20n	15n	310m	1.0Ω	30m	90 Δ	22	4.0p	N	Si	135S	TO92	A	
49	2N2501	350MΔ	15n	10n	20n	15n	380m	1.0Ω	10m	150 #	20 #	4.0p	N	Si	125J	TO18	A	
50	2N3646	350MΔ	15n	10n	20n	15n	500m	1.0Ω	300m	15 Δ		5.0p	N	Si	200S	R110	A	
51	2N3829	350MΔ	15n	10n	50n	15n	360m	.40Ω	300m	30 Δ		6.0p	N	Si	200S	TO52	A	
52	2N4422	350MΔ	15n	10n	20n	15n	380m	1.0Ω	300m	15 Δ		5.0p	N	Si	150S	R203	A	
53	2N5772	350MΔ	15n	10n	20n	15n	1.0Ω	400mΩ	30m	120	6.6 #	5.0p	N	Si	150J	TO92	A	
54	2N6000	350MΔ	15n	10n	250n	70n	800m	1.0Ω	10m	100 Δ	8.0	6.0p	N	Si	125J	R203a	A	
55	2N8004	350MΔ	15n	10n	250n	70n	800m	1.0Ω	10m	100 Δ	8.0	6.0p	N	Si	125J	R203a	A	
56	BFV83B	350MΔ	15n	18n	18n	25n	300m	1.0Ω	300m	25 #		5.0p	NPE	Si	200J	W5a	B	
57	BSX26	350MΔ	15n	18n	25n	25n	1.2Ω	1.0Ω	300m	15 #		5.0p	N-DPE	Si	200J	TO18	A	
58	BSX39	350MΔ	15n	18n	25n	25n	1.2Ω	1.0Ω	100m	55 #		5.0p	N-DPE	Si	200J	TO18	A	
59	EN3009	350MΔ	15n		25n	200m	200m	.40Ω	30m	120 #	6.0	5.0p	N	Si	125J	TO106	A	
60	EN3013	350MΔ	15n		25n	200m	200m	.40Ω	30m	120 #	6.0	5.0p	N	Si	125J	TO106	A	
61	MPS3013	350MΔ	15n		25n	25n	1.0Ω	1.0Ω	300m	15 Δ	1.6	5.0p	N	Si	150J	R210a	A	
62	MPS3646	350MΔ	15n	10n	18n	15n	1.0Ω	400mΩ	30m	120 #	6.7 #	5.0p	N-ANI	Si	150J	R210a	A	
63	2N418	400M	15n				2.0Ω	4.0Ω	4.0m	40 Δ	.50		P	Ge	100J	TO3	C	
64	2N420	400M	15n				1.5Ω	.50Ω	60m	40 Δ	.50		P	Ge	100J	TO3	C	
65	2N420A	400M	15n				1.5Ω	.50Ω	25m	40 Δ	.50		P	Ge	100J	TO3	C	
66	2N3011	400MΔ	15n	13n	20n		1.2Ω	.35Ω	10m	120 #		4.0p	N	Si	200J	TO18	A	
67	2N4389	400MΔ	15n	10n	75n	30n	500m	1.0Ω	10m	30 #		6.0p	N	Si	125J	R124	A	
68	EN3011	400MΔ	15n	13n	20n		500m	350mΩ	10m	120 #		4.0p	N-DPE	Si	125J	TO106	A	
69	KS6105	400M	15n	8.0n	140n	40n		5.0Ω	1.0Ω	15 Δ		20p	N-PE	Si	200J	TO39	A	
70	2TX312	400MΔ	15n	13n	7.0n	300m	1.0Ω	.30Ω	30m	35 Δ	24	4.0p	N-PL	Si	175S	B58	A	
71	2N2796	450MΔ	15n	15n	75n	25n	75m	.30Ω	10m	60 #	15	2.5p	P-D	Ge	100S	TO18	A	
72	2N3303	450MΔ	15n	15n	25n	600m	600m	.50Ω	300m	60 #	2.3	15p	N	Si	200J	R179h	A	
73	2N5455	450MΔ	15n	15n	25n	340m	1.0Ω	1.0Ω	300m	25 Δ		6p	N	Si	200J	TO52	A	
74	2N5456	450MΔ	15n	15n	25n	340m	1.0Ω	1.0Ω	300m	25 Δ		6p	N	Si	200J	TO52	A	
75	2N6002	450MΔ	15n	10n	300n	110n	800m	1.0Ω	10m	250	8.0	6.0p	N	Si	125J	R203a	A	
76	2N6006	450MΔ	15n	10n	300n	110n	800m	1.0Ω	10m	250	8.0	6.0p	N	Si	125J	R203a	A	
77	2N4257A	500MΔ	15n	10n	12n	10n	500m	1.0Ω	1.0m	15 Δ	15	3.0p	N	Si	125J	R124	A	
78	BFV27	500MΔ	15n	8.0n	20n	150m	150m	.50Ω	10m	20 Δ	133	3.0p	NPE	Si	200J	S5a	A	
79	MM4257	500MΔ	15n	10n	15n	10n	1.2Ω	1.0Ω	50m	30 Δ	13	3.0p	P-AN	Si	200J	TO18	A	
80	2N5055	550MΔ	15n	10n	20n	15n	500m	.50Ω	30m	100 #	13	4.5p	N	Si	125J	R124	A	
81	2N709	600MΔ	15n	6.0n	15n	15n	500	1.0Ω	30m	15 Δ	100	3.0p	P	Si	200J	TO18	A	
82	2N5056	600MΔ	15n	10n	30n	15n	1.2Ω	.50Ω	30m	100 #	13	4.5p	P	Si	200J	TO18	A	
83	2N4207	650MΔ	15n	10n	10n	10n	300m	.30Ω	10m	120	130	3.0p						

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-N-P N-P-N	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>								
1	MPS834	350MΔ	18n		25n	30n	310m	1.0	10m	25 #		4.0p	N-AN	Si	135J	T092	A	
2	2N6001	700MΔ	17n	6.0n	170n	60n	800m	1.0	10m	100 Δ	10	8.0p	P	Si	125J	R203a	A	
3	2N6005	700MΔ	17n		170n	60n	800m	1.0	10m	100 Δ	10	8.0p	P	Si	125J	R203a	A	
4	2N6003	800MΔ	17n	6.0n	200n	100n	800m	1.0	10m	250 Δ	10	8.0p	P	Si	125J	R203a	A	
5	2N6007	800MΔ	17n	6.0n	200n	100n	800m	1.0	10m	250 Δ	10	8.0p	P	Si	125J	R203a	A	
6	JAN2N501A	800MΔ	18n		12n	10n	60m	500m	50m	30 Δ	5.0	3.0p	P	Ge	100S	R139	A	
7	2N982		18n			18n	60m	.50	10m	50 Δ	3.6	2.5p	PΔ	Ge	100S	T018	A	
8	2N983		18n			18n	60m	.50	10m	40 Δ	4.0	2.5p	PΔ	Ge	100S	T018	A	
9	2N2168		18n			18n	60m	.50	10m	50 Δ	3.6	2.5p	PΔ	Ge	100S	T09	A	
10	2N2169		18n			18n	60m	.50	10m	40 Δ	4.0	2.5p	PΔ	Ge	100S	T09	A	
11	2N4256		18n	600 ▽		3.5n	200m	200m	50m	20 Δ	2.0m		N	Si	125S	T098	A	
12	MMT75		18n	25n	140n	15n	225m	1.0	10m	400		5.0p	N-AN	Si	135J	W6	C	
13	2N501	90MΔ	18n		12n	10n	60m	500m	10m	20 Δ		5.0p	P-DA	Ge	100J	T01	A	
14	2N501A	90MΔ	18n		12n	10n	60m	500m	10m	30 Δ		3.0p	P-DA	Ge	100J	T01	A	
15	JAN2N1500	100MΔ	18n		12n	10n	60m	500m	10m	14 Δ	4.0	3.0p	P	Ge	100J	T09	A	
16	2N783	200MΔ	18n		10n	30n	1.0	1.0	10m	80	25	3.5p	N	Si	175J	T018	A	
17	2N1962	200MΔ	18n		10n	30n	400m	1.0	10m	80	25	3.5p	N	Si	175J	T046	A	
18	2N5861	200MΔ	18n	8.0n	35n	35n	5.0	1.0	500m	25	1.0	7.0p	N	Si	200J	T039	A	
19	2N5860	250MΔ	18n	8.0n	35n	35n	5.0	1.0	1.0	15 Δ	700m	7.0p	N	Si	200J	T039	A	
20	MPS5134	250MΔ	18n		18n	18n	625m	1.0	10m	20 #	25 #	4.0p	N	Si	150S	T092	A	
21	2N779	320MΔ	18n			18n	60m	500m	10m	200		2.5p	P	Ge	100S	T018	A	
22	2N3576	400MΔ	18n	12n	30n	20n	360m	.50	10m	120		4.5p	PPE	Si	200S	T072	B	
23	BFV81B	400MΔ	18n	12n	30n	20n	300m	.50	10m	20 Δ		4.5p	PPE	Si	200S	W5a	A	
24	2N779A	450MΔ	18n	50n		18n	60m	500m	50m	85	1.4p		P-MD	Ge	100S	T018	A	
25	2N846A	450MΔ	18n	50n		18n	60m	500m	50m	35	1.9p		P-MD	Ge	100S	T018	A	
26	2N3227	500MΔ	18n	5.0n	13n	15n	1.2	1.0	10m	300	#	4.0p	N	Si	200J	T018	A	
27	2N3508	500MΔ	18n	5.0n	13n	15n	400m	1.0	10m	120	#	14	4.0p	N	Si	200S	T046	A
28	2N3509	500MΔ	18n	5.0n	13n	15n	400m	1.0	10m	300	#	25	4.0p	N	Si	200S	T046	A
29	2N5272	500MΔ	18n	5.0n	13n	15n	380m	1.0	100m	30 Δ	#	4p	N	Si	200S	T018	A	
30	2N984	500MΔ	20n			20n	60m	.50	10m	20	5.0	3.0p	PΔ	Ge	100S	T018	A	
31	2N2097		20n		50n	40n	750m	1.0	200m	30 Δ	2.5	20p	PΔ	Ge	100S	T031	A	
32	2N2100		20n		50n	40n	750m	1.0	200m	30 Δ	2.5	20p	PΔ	Ge	100S	T09	A	
33	2N2100A		20n		50n	40n	300m	1.0	200m	30 Δ		20p	P	Ge	100S	T09	A	
34	2N2170		20n			20n	60m	.50	10m	20	5.0	3.0p	PΔ	Ge	100S	T09	A	
35	JAN2N4092		20n			60n	360m					16p	N-Δ	Si	175A	T018	DB	
36	2N4092A		20n	15n		60n	1.8				50	16p	N	Si	200S	T018	DB	
37	2N4095		20n	15n		60n	1.8				40	32p	N	Si	200S	T018	DB	
38	2N4445		20n	15n	20n	15n	400m					70p	N	Si	200S	T046	DB	
39	2N4446		20n	15n	20n	15n	400m					70p	N	Si	200S	T046	DB	
40	2N4447		20n	15n	20n	15n	400m					70p	N	Si	200S	T046	DB	
41	2N4448		20n	15n	20n	15n	400m					70p	N	Si	200S	T046	DB	
42	2N5018		20n	15n	50n		1.8					45p	N	Si	200J	T018	DA	
43	2N5115		20n			30n	500m				100	25p	P	Si	200S	T018	DA	
44	JAN2N5115		20n			30n	500m					25p	P	Si	200J	T018	DA	
45	2N5158		20n	15n	20n	15n	400m				10	50p	N	Si	200S	T046	DB	
46	2N5159		20n	15n	20n	15n	400m				7.0	50p	N	Si	200S	T046	DB	
47	2SC321HA		20n	20n	30n	25n	360m	1.0	10m	35	4.0p		NE	Si	715J	T018	A	
48	2SC321HB		20n	20n	30n	25n	360m	1.0	10m	60	4.0p		NE	Si	715J	T018	A	
49	2SC321HC		20n	20n	30n	25n	360m	1.0	10m	100	4.0p		NE	Si	715J	T018	A	
50	E176		20n			20n	350m				250	40p	P	Si	125A	R187	DA	
51	IRF710		20n	10n	10n	15n	20				3.6	150p	N	Si	150J	Y220b	DF	
52	IRF711		20n	10n	10n	15n	20				3.6	150p	N	Si	150J	Y220b	DF	
53	IRF712		20n	10n	10n	15n	20				5.0	150p	N	Si	150J	Y220b	DF	
54	IRF713		20n	10n	10n	15n	20				5.0	150p	N	Si	150J	Y220b	DF	
55	IVN5200HND		20n	20n	20n	20n	30					250p	N	Si	150J	T066	DE	
56	IVN5200HNE		20n	20n	20n	20n	30					250p	N	Si	150J	T066	DE	
57	IVN5200HNF		20n	20n	20n	20n	30					250p	N	Si	150J	T066	DE	
58	IVN5200KND		20n	20n	20n	20n	50					250p	N	Si	150J	T03	DE	
59	IVN5200KNE		20n	20n	20n	20n	50					250p	N	Si	150J	T03	DE	
60	IVN5200KNF		20n	20n	20n	20n	50					250p	N	Si	150J	T03	DE	
61	IVN5200TND		20n	20n	20n	20n	12					250p	N	Si	150J	T039	DA	
62	IVN5200TNE		20n	20n	20n	20n	12					250p	N	Si	150J	T039	DA	
63	IVN5200TNF		20n	20n	20n	20n	12					250p	N	Si	150J	T039	DA	
64	IVN5201CND		20n	20n	20n	20n	30					250p	N	Si	150J	Y220	DB	
65	IVN5201CNE		20n	20n	20n	20n	30					250p	N	Si	150J	Y220	DB	
66	IVN5201CNF		20n	20n	20n	20n	30					250p	N	Si	150J	Y220	DB	
67	IVN5201HND		20n	20n	20n	20n	30					250p	N	Si	150J	T066	DE	
68	IVN5201HNE		20n	20n	20n	20n	30					250p	N	Si	150J	T066	DE	
69	IVN5201HNF		20n	20n	20n	20n	30					250p	N	Si	150J	T066	DE	
70	IVN5201KND		20n	20n	20n	20n	50					250p	N	Si	150J	T03	DE	
71	IVN5201KNE		20n	20n	20n	20n	50					250p	N	Si	150J	T03	DE	
72	IVN5201KNF		20n	20n	20n	20n	50					250p	N	Si	150J	T03	DE	
73	IVN5201TND		20n	20n	20n	20n	12					250p	N	Si	150J	T039	DA	
74	IVN5201TNE		20n	20n	20n	20n	12					250p	N	Si	150J	T039	DA	
75	IVN5201TNF		20n	20n	20n	20n	12					250p	N	Si	150J	T039	DA	
76	J176		20n	15n	15	20n	350m				250	50	16p	P	Si	125J	T092	DC
77	J4092		20n	15n	60n		350m						16p	N	Si	150S	T092	DB
78	MFE2005		20n	15n		60n	1.8						16p	N	Si	175J	T018	DB
79	PT088E		20n	15n		50n	350m					45p	P	Si	150S	R97b	DB	
80	P1086RR		20n	15n		35n	300m				75	45p	S	Si	150S	T092	DF	
81	U290		20n			20n	300m				2.5	180p	N	Si	150A	T052	DB	
82	U291		20n			20n	300m				7.0	180p	N	Si	150A	T052	DB	
83	U1898E		20n			60n	350m				50	16p	N	Si	125J	R97b	DB	
84	2N3051	60MΔ	20n	15n	120n	30n	350m	5.0	10u	20	2.0	8.0p	N	Si	200S	T089	DB	
85	BCX45	100MΔ	20n	10n	330n	50n	1.5	2.0	100m	140	#	1.0	12p	NAN	Si	150J	R210a	F
86	BCX47	100MΔ	20n	10n	330n	50n	1.5	2.0	100m	140	#	1.0	12p	NAN	Si	150J	R210a	F
87	BCX49	100MΔ	20n	10n	330n	50n	1.5	2.0	100m	140	#	1.0	12p	NAN	Si	150J	R210a	F
88	KS8127	120M	20n	30n	100n	40n		5.0	15	15		200p	N-PE	Si	200J	T03	Δ	
89	KS8129	120M	20n	25n	90n	30n		5.0	20	15		200p	N-PE	Si	200J	T03		

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a T0200 Ser.	L E A D E
								Vcb (V)	le (A)	hFE								
1	MMT2222	200MΔ	20nφ			180nφ	225m	10φ	10mφ	75 Δ#	2.6 #	3.5p	N-AN	S	150J	W8a	C	
2	MMT2907	200MΔ	20nφ			120nφ	225m	10φ	10mφ	75 Δ#	2.6 #	8.0pφ	P-AN	S	150J	W6a	C	
3	TP5110	200MΔ	20n	15n	230n	60n	360m	1.0φ	1.0mφ	20 Δ		6.5pφ	N-PET	S	150S	R203	A	
4	TP5140	200M	20n	15n	230n	60n	625m	1.0φ	150m	40 Δ		6.0p	N	S		T092	A	
5	BSY40	210MΔ	20n	10n	90n	20n	1.2φ	500mφ	10mφ	60 φ	20		P-PE	S	175J	T018	Aφ	
6	BSY41	210MΔ	20n	10n	90n	20n	1.2φ	500mφ	10mφ	60 φ	20		P-PE	S	175J	T018	Aφ	
7	2N3981	250MΔ	20n	15n	30n	10n	3.0φ	1.0φ	150mφ	200 φ	2.7	8.0pφ	N	S	200J	T05	Aφ	
8	2N4401	250MΔ	20n	15n	225n	30n	1.0φ	1.0φ	1.0mφ	40 Δ	2.6 #	8.5pφ	N	S	150J	T092	A	
9	2N5027	250MΔ	20n	15n	35n	25n	320m	1.0φ	10mφ	30 Δ#	67m#	8.0pφ	N	S	120J	T098	A	
10	2N5224	250MΔ	20n	25n	35n	25n	350m	1.0φ	100mφ	15 Δ	35	4.0pφ	N	S	150S	T092	A	
11	2SC204	250MΔ	20n		250n	50n	350m	1.0φ	10mφ	60	5.0	4.0p	N-PE	S	175J	T018	Aφ	
12	2SC724	250MΔ	20n		250n	50n	200m	1.0φ	10mφ	60	5.0	4.0p	N-PE	S	125J	R195d	B	
13	2SC725	250MΔ	20n		250n	50n	200m	1.0φ	10mφ	60	5.0	4.0p	N-PE	S	125J	R195d	B	
14	TIS111	250MΔ	20n	15n	230n	60n	360m	1.0φ	1.0mφ	40 Δ		6.5pφ	N-PET	S	150S	R203	B	
15	TP5111	250M	20n	15n	230n	60n	625m	1.0φ	150mφ	40 Δ		6.0p	N	S		T092	A	
16	MMCM2907	250MΔ	20nφ			150nφ	200m	1.0φ	10mφ	75 Δ		4.8p	N-AN	S	200J	W10	C	
17	2N784A	300MΔ	20nφ		15n	25n	360m	1.0φ	10m	88 t	19	3.5pφ	P-E	S	200J	T018	Aφ	
18	2N2630	300MΔ	20nφ				300m	1.0φ	100mφ	25 Δ	4.5	4.0pφ	N	S	200S	T018	Aφ	
19	BFV43	300MΔ	20nφ			30nφ	150m	1.0φ	100mφ	25 Δ	8.3	5.0pφ	NPE	S	200J	S5a	P	
20	BFV44	300MΔ	20nφ			30nφ	150m	1.0φ	100mφ	25 Δ	8.3	5.0pφ	NPE	S	200J	S5a	P	
21	KS6103	300M	20n	18n	100n	15n	5.0φ	500m	15 Δ	25	25p	4.0pφ	N-PE	S	200J	T039	A	
22	MFS835	300MΔ	20nφ		35n	35nφ	350m	1.0φ	10mφ	20 Δ#	30 #	4.0pφ	NPE	S	150S	T092	A	
23	SFX37A	350MΔ	20nφ			30nφ	360m	1.0φ	10mφ	34 Δ#	2.5	2.5p	NPE	S	200J	T018	Aφ	
24	MD1228	350MΔ	20nφ	30nφ	35nφ		300m	1.0φ	10mφ	25 Δ		4.0pφ	P-PE	S	200J	T078	A	
25	2N4453	400MΔ	20n	35n	65n	20n	300m	1.0φ	30mφ	20 Δ#	8.3 #	6.0pφ	P	S	200S	T046	A	
26	2N5140	400MΔ	20n	15n	20n	15n	500mφ	1.0φ	10mφ	20 Δ#		5pφ	P	S	175J	T018	A	
27	2SC67	400MΔ	20nφ		20n	40nφ	360m	1.0φ	10mφ	80 Δ		4.5pφ	N-PE	S	175J	T018	A	
28	2SC68	400MΔ	20nφ		20n	40nφ	360m	1.0φ	10mφ	100 t		3.5p	N-PE	S	175J	T018	A	
29	2SC269	400MΔ	20nφ		20n	40nφ	150m	1.0φ	10mφ	200 φ	25	6.0pφ	N-PE	S	150J	W3a	A	
30	2SC356	400MΔ	20nφ		20n	40nφ	300m	1.0φ	10mφ	60 φ		4.5p	NPE	S	175J	T046	Aφ	
31	BFV28	400MΔ	20n	15n	30n	20n	150m	1.0φ	100mφ	10 Δ		4.5p	PPE	S	200S	S5a	P	
32	KS6106	400M	20n	10n	150n	50n	5.0φ	1.0φ	15 Δ	15	20p	2.0p	N-PE	S	200J	T039	A	
33	KS6109	400M	20n	10n	100n	40n	5.0φ	1.0φ	15 Δ	15	20p	2.0p	N-PE	S	200J	T060	A	
34	KS6111	400M	20n	25n	90n	20n	5.0φ	1.0φ	15 Δ	15	20p	2.0p	N-PE	S	200J	T080	A	
35	MMT72	400MΔ	20nφ		20nφ	225m	200m	2.0φ	10mφ	30 Δ	30	6.0pφ	N-AN	S	135J	W6	C	
36	TP5140	400M	20n	15n	20n	15n	200m	1.0φ	10mφ	40		5p	N	S		T092	A	
37	2SC321H	450MΔ	20nφ		30n	25nφ	360m	1.0φ	10mφ	35 Δ	3.5m	6.0pφ	N-PE	S	175J	T018	A	
38	2N2710	500MΔ	20nφ		35nφ	25nφ	360m	1.0φ	10mφ	30 Δ	8.0	4.0pφ	N	S	200	T018	Aφ	
39	2N3639	500MΔ	20nφ	10n	20n	12n	500mφ	1.0φ	10mφ	30 Δ#		3.5pφ	N	S	R110	A	A	
40	2N3640	500MΔ	20nφ	10n	20n	12n	500mφ	1.0φ	10mφ	30 Δ#		3.5pφ	N	S	125J	R110	A	
41	2N2475	600MΔ	20nφ	6.0n	15nφ	15nφ	400mφ	1.0φ	20mφ	30 Δ#	2.0	2.0p	N	S	200S	R179a	Aφ	
42	BSV36	600MΔ	20nφ	6.0n	15nφ	15nφ	550mφ	1.0φ	20mφ	150 φ	25	3.0pφ	N-PL	S	200S	X156f	C	
43	2N3832	800MΔ	20n	15n	10n	20n	500m	5.0φ	2.0mφ	25 Δ	40	4.5pφ	N	S	200S	T018	G	
44	BSW25	800MΔ	20n	25nφ	25nφ	1.2φ	500m	5.0φ	3.0mφ	35 Δ	15	1.9p	P-DPE	S	135J	T092	A	
45	MPSL07	1.0GΔ	20nφ	15nφ	40nφ	3.0m	310m	1.0φ	50mφ	35	15	1.9p	P-AN	S	135J	T092	A	
46	MPSL08	1.2G	20nφ	20nφ	40nφ	3.0m	200m	1.0φ	50mφ	35	15	1.9p	P-AN	S	135J	T092	A	
47	BSR12	1.5GΔ	20nφ		30nφ	200m	200m	1.0φ	120 φ	150 #	150 #	4.5pφ	P	S	150J	X156e	A	
48	BSR12R	1.5GΔ	20nφ		30nφ	200m	200m	1.0φ	120 φ	150 #	150 #	4.5pφ	P	S	150J	X156e	A	
49	2N2381	300MΔ	22nφ		45nφ	750mφ	750mφ	1.0φ	400mφ	25 Δ	2.0	8.0pφ	P	S	100S	T039	Aφ	
50	2N2382	300MΔ	22nφ		45nφ	750mφ	750mφ	1.0φ	400mφ	25 Δ	2.0	8.0pφ	P	S	100S	T039	Aφ	
51	3N163	300MΔ	24nφ		50nφ	375m	15	10m	2.0 Δ	4.0	300	2.5pφ	P-MOS	S	200S	T072	DM	
52	3N164	300MΔ	24nφ		50nφ	375m	15	10m	2.0 Δ	4.0	300	2.5pφ	P-MOS	S	200S	T072	DM	
53	3N172	300MΔ	24nφ		50nφ	375m	15	10m	4.0	4.0	3.5pφ	3.5pφ	P	S	200S	T072	DM	
54	3N173	300MΔ	24nφ		50nφ	375m	15	10m	4.0	4.0	3.5pφ	3.5pφ	P	S	200S	T072	DM	
55	2N3612	250MΔ	24n	8.0n	30n	15n	4.0φ	1.0φ	500mφ	10 Δ	2.6	10pφ	N	S	200S	T05	Aφ	
56	40283	250MΔ	24n	6.0n	30n	15n	2.0φ	1.0φ	500mφ	10 Δ#	2.6	10pφ	N-DPE	S	200S	T046	Aφ	
57	2N5188	250MΔ	25n	10n	35n	15n	800m	5.0φ	150mφ	25 Δ	3.3	10pφ	N	S	200S	T039	Aφ	
58	E177	25nφ	20nφ		25nφ	20n	350m					40pφ	P	S	125A	T0108	DA	
59	IRF510	25nφ	20nφ		25nφ	20n	20				0.6 *	150 φ	N	S	150J	Y220b	DF	
60	IRF511	25nφ	20nφ		25nφ	20n	20				0.6 *	150 φ	N	S	150J	Y220b	DF	
61	IRF513	25nφ	20nφ		25nφ	20n	20				0.8 *	150 φ	N	S	150J	Y220b	DF	
62	IRF610	25nφ	15nφ		15nφ	15n	20				0.4 *	3.0φ	N	S	150J	Y220b	DF	
63	IRF611	25nφ	15nφ		15nφ	15n	20				0.4 *	3.0φ	N	S	150J	Y220b	DF	
64	IRF612	25nφ	15nφ		15nφ	15n	20				0.5 *	3.0φ	N	S	150J	Y220b	DF	
65	IRF613	25nφ	15nφ		15nφ	15n	20				0.5 *	3.0φ	N	S	150J	Y220b	DF	
66	IRFD110	25nφ	25nφ		25nφ	20n	1.0				0.6 *	150pφ	N	S	150J			
67	IRFD111	25nφ	25nφ		25nφ	20n	1.0				0.8 *	150pφ	N	S	150J			
68	IRFD112	25nφ	25nφ		25nφ	20n	1.0				0.8 *	150pφ	N	S	150J			
69	IRFD113	25nφ	25nφ		25nφ	20n	1.0				0.8 *	150pφ	N	S	150J			
70	J177	25nφ	25nφ		25nφ	20n	350m				300 φ		P	S	150J	X195	DC	
71	U305	25nφ	25nφ		25nφ	20n	350m				110 φ		P	S	150J	T092	DA	
72	2H1256	25.0MΔ	25nφ		40nφ	40nφ	300m	10	2.0m	25 Δ	30	27pφ	P-#	S	150S	T018	DF	
73	2H1258	25.0MΔ	25nφ		40nφ	40nφ	300m	10	2.0m	25 Δ	30	10pφ	P-#	S	150S	T018	DF	
74	2N1254	30MΔ	25nφ		40nφ	40nφ	275m	1.0φ	10mφ	25 Δ	30	10pφ	P-ME	S	175A	T018	A	
75	2N1256	30MΔ	25nφ		40nφ	40nφ	275m	1.0φ	10mφ	25 Δ	30	10pφ	P	S	200S	T05	A	
76	2H1255	40.0MΔ	25nφ		60nφ	60nφ	300m	10	2.0m	40 Δ	30	10pφ	P-ME	S	175A	T018	A	
77	2H1257	40.0MΔ	25nφ		60nφ	60nφ	300m	10	2.0m	40 Δ	30	10pφ	P-ME	S	175A	T018	A	
78	2H1259	40.0MΔ	25nφ		60nφ	60nφ	300m	10	2.0m	25 Δ	30	10pφ	P-ME	S	175A	T018	A	
79	2N1259	40.0MΔ	25nφ		60nφ	60nφ	275m	1.0φ	10mφ	25 Δ	30	10pφ	P	S	200S	T05	A	
80	2N1255	50MΔ	25nφ		60nφ	60nφ	275m	1.0φ	10mφ	40 Δ	30	10pφ	P	S	200S	T05	A	
81	2N1257	50MΔ	25nφ		60nφ	60nφ	275m	1.0φ	10mφ	40 Δ	30	10pφ	P	S	200S	T05	A	
82	2N1258	50MΔ	25nφ		60nφ	60nφ	275m	1.0φ	10mφ	75 Δ	60	10pφ	P	S	200S	T05	A	
83	2SA503	50.0MΔ	25nφ		500nφ	80nφ	6.0mφ	2.0φ	150mφ	300 φ</								

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb Cob (s)	STRUCTURE P-NPN N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	2N2847	250MΔ	25n∅			40n∅	380m	10	10	150m∅	140	1#Δ	N	Si	200J	T018	A∅	
2	2N2848	250MΔ	25n∅			40n∅	800m	10	10	150m∅	140	1#Δ	N	Si	200J	T05	A∅	
3	2N3678	250MΔ	25n∅	15n	190n	60n	800m	10	10	150m∅	40	#Δ	N	Si	200J	T05	A∅	
4	2N5581	250MΔ	25n	10n	225n	60n	2.0	1.0	1.0	10m	35	Δ	N	Si	200S	T046	A	
5	2N5845A	250MΔ	25n	15n	38n	27n	1.5	1.0	1.0	500m∅	35	#Δ	N	Si	150J	T092	A	
6#	25C980AG	250MΔ	25n∅		400n	30n	200m	1.0	1.0	10m	140	1#Δ	N	Si	125J	R67a	A	
7#	25C980G	250MΔ	25n∅		400n	30n	200m	1.0	1.0	10m	240	1#Δ	N	Si	125J	R67a	A	
8#	BFV85	250MΔ	25n∅			200n∅	380m	10	10	10m	75	Δ	NPE	Si	175J	W5a	B	
9#	BFV85A	250MΔ	25n	10n	225n	60n	380m	10	10	10m	75	Δ	NPE	Si	175J	W5a	B	
10#	BFV85B	250MΔ	25n∅			175n∅	380m	10	10	10m	35	Δ	NPE	Si	175J	W5a	B	
11#	BSR13R	250MΔ	25n	10n	225n	60n	310m	10	10	500m∅	30	#Δ	NPE	Si	150J	X156e	C	
12#	BSS79	250MΔ	25n	10n	225n	60n	350n	10	10	150m∅	40	Δ	N	Si	150S	X156a	A	
13#	FMMT2222	250MΔ	25n	10n	225n	60n	200m	10	10	10m	75	#Δ	N-PLΔ	Si	175A	X156d	A	
14	KS6113	250M	25n	30n	100n	50n	50n	5.0	5.0	2.0	15	Δ	N-PE	Si	200J	T060	A	
15	MPS2222	250MΔ	25n	10n	225n	60n	1.5	1.0	1.0	100u∅	35	Δ	NAN∅	Si	150J	R211	A	
16#	MPS2222K	250MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	75	#Δ	NPL	Si	175A	X167	A	
17#	MPS2222L	250MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	75	#Δ	NPL	Si	175A	X168	A	
18#	MPS2222M	250MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	75	#Δ	NPL	Si	175A	X169	A	
19	NP2218AP	250MΔ	25n	10n	225n	60n	1.0	1.0	1.0	10m	35	Δ	N∅	Si	150J	B32	A∅	
20	NP2218P	250MΔ	25n	10n	225n	60n	1.0	1.0	1.0	10m	35	Δ	N∅	Si	150J	B32	A∅	
21	NP2221AP	250MΔ	25n	10n	225n	60n	1.0	1.0	1.0	10m	25	Δ	N	Si	150J	B32	A∅	
22	NP2221P	250MΔ	25n	10n	225n	60n	1.0	1.0	1.0	10m	25	Δ	N	Si	150J	B32	A∅	
23#	NT2222	250MΔ	25n	10n	225n	60n	825m	10	10	150m∅	300	#Δ	N-E	Si	150J	T092	A	
24#	PL4051	250MΔ	25n∅			150n∅	220m	10	10	10m	17	Δ	NPE	Si	175S	S6		
25#	PL4052	250MΔ	25n	10n	225n	60n	220m	10	10	10m	35	Δ	N-PE∅	Si	175S	S6		
26#	PL4053	250MΔ	25n∅			175n∅	220m	10	10	10m	35	Δ	NPE	Si	175S	S6		
27#	PL4055	250MΔ	25n∅			200n∅	220m	10	10	10m	75	Δ	NPE	Si	175S	S6		
28	TP2221A	250M	25n	10n	225n	60n	500m	5.0	5.0	150m	50		N	Si		T092	A	
29	TP3115	250M	25n	10n	225n	60n	400m	10	10	150m	40		N	Si		T092	A	
30	TP3116	250M	25n	10n	225n	60n	400m	10	10	150m	100		N	Si		T092	A	
31	MM3220	270M	25n	10n	30n	20n	5.0	1.0	1.0	150m∅	40	#Δ	N-AN	Si	200J	T039	A	
32	2N2219A	300MΔ	25n	10n	225n	60n	3.0	1.0	1.0	1.0m	75	Δ	N	Si	200J	T05	A∅	
33	2N2222A	300MΔ	25n	10n	225n	60n	1.2	1.0	1.0	1.0m	50	Δ	N	Si	200J	T018	A∅	
34	2N2857	300MΔ	25n	15n	60n	35n	150m	1.0	1.0	50m	130		P	Ge	100J	T018	A	
35	2N3451	300MΔ	25n	10n	20n	12n	300m	300m∅	1.0	10m	120	Δ	N	Si	200J	T018	A∅	
36	2N5582	300MΔ	25n	10n	225n	60n	2.0	1.0	1.0	10m	75	Δ	N	Si	200S	T046	A∅	
37	40219	300MΔ	25n	25n			360m	1.0	1.0	10m	30	Δ	N	Si	200	T052	A∅	
38	AS7222A	300MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	50	Δ	N	Si	150S	R203	A	
39#	BFV86C	300MΔ	25n	10n	225n	60n	360m	10	10	10m	50	Δ	NPE	Si	175J	W5a	B	
40#	BSR14R	300MΔ	25n	10n	225n	60n	310m	10	10	500m∅	40	#Δ	N-PE	Si	150J	X156e	C	
41	D2T2219A	300MΔ	25n	10n	225n	60n	400m	10	10	150m∅	100	Δ	N	Si	200S	T077		
42#	FMMT2222A	300MΔ	25n	10n	225n	60n	200m	10	10	10m	75	#Δ	N-PLΔ∅	Si	175A	X156d	A	
43	KS6104	300M	25n	20n	120n	20n	350m	5.0	5.0	500m	15	Δ	N-PE	Si	200J	T039	A	
44	MMBT2222A	300M	25n	10n	225n	60n	60n	1.5	1.0	100u∅	35	Δ	N	Si	150J	X156d	C	
45	MPS2222A	300MΔ	25n	10n	225n	60n	1.5	1.0	1.0	100u∅	35	Δ	NAN∅	Si	150J	R211	A	
46#	MPS2222AK	300MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	75	#Δ	NPL	Si	175A	X167	A	
47#	MPS2222AL	300MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	75	#Δ	NPL	Si	175A	X168	A	
48#	MPS2222AM	300MΔ	25n	10n	225n	60n	1.2	1.0	1.0	10m	75	#Δ	NPL	Si	175A	X169	A	
49	NP2219AP	300MΔ	25n	10n	225n	60n	1.0	1.0	1.0	1.0m	75	Δ	N	Si	150J	B32	A∅	
50	NP2219P	300MΔ	25n	10n	225n	60n	1.0	1.0	1.0	1.0m	75	Δ	N	Si	150J	B32	A∅	
51	NP2222AP	300MΔ	25n	10n	225n	60n	1.0	1.0	1.0	1.0m	50	Δ	N	Si	150J	B32	A∅	
52	NP2222P	300MΔ	25n	10n	225n	60n	1.0	1.0	1.0	1.0m	50	Δ	N	Si	150J	B32	A∅	
53#	NT2222A	300MΔ	25n	10n	225n	60n	825m	10	10	150m∅	300	#Δ	N-E	Si	150J	T092	A	
54#	NTM2222A	300MΔ	25n	10n	225n	60n	200m	10	10	150m∅	300	#Δ	N-E	Si	150J	X156h	C	
55#	NTM2222AR	300MΔ	25n	10n	225n	60n	200m	10	10	150m∅	300	#Δ	N-E	Si	150J	X156h	C	
56#	PL4054	300MΔ	25n	10n	225n	60n	220m	10	10	10m	75	Δ	N-PE∅	Si	175S	S6		
57#	TP2222A	300M	25n	10n	225n	60n	500m	5.0	5.0	150m	50		N	Si		T092	A	
58	2N8010	330MΔ	25n	12n	30n	100n	1.0	1.0	1.0	10m	100	Δ	N	Si	150J	R203a	A	
59	2N8014	330MΔ	25n	12n	30n	100n	1.0	1.0	1.0	10m	100	Δ	N	Si	150J	R203a	A	
60	GES8010	335MΔ	25n	12n	30n	100n	1.0	1.0	1.0	10m	85	Δ	N-PE∅	Si	150S	T092	A	
61	GES8014	335MΔ	25n	12n	30n	100n	1.0	1.0	1.0	10m	85	Δ	N-PE∅	Si	150S	T092	A	
62	KS6110	350M	25n	25n	120n	50n	50n	5.0	5.0	1.0	15	Δ	N-PE	Si	200J	T060		
63	KS6112	350M	25n	30n	100n	40n	40n	5.0	5.0	1.0	15	Δ	N-PE	Si	200J	T060		
64	2N5188	400MΔ	25n∅			25n∅	500m∅	1.0	1.0	10m	25	Δ	N	Si	200S	T052	A∅	
65	2N6012	420MΔ	25n	12n	350n	150n	1.0	1.0	1.0	10m	250	Δ	N	Si	150J	R203a	A	
66	2N6016	420MΔ	25n	12n	350n	150n	1.0	1.0	1.0	10m	250	Δ	N	Si	150J	R203a	A	
67	GES8012	425MΔ	25n	12n	350n	150n	1.0	1.0	1.0	10m	130	Δ	N-PE∅	Si	150S	T092	A	
68	GES8018	425MΔ	25n	12n	350n	150n	1.0	1.0	1.0	10m	130	Δ	N-PE∅	Si	150S	T092	A	
69#	25C1376H	500M	25n∅	5.0n	12n	40n	300m	1.0	1.0	150m∅	40	Δ	N	Si	175J	T018	A	
70	TP3451	500M	25n	10n	20n	12n	300m	3.0	3.0	10m	120	#Δ	P	Si		T092	A	
71	JAN2N4029	600MΔ	25n	15n	175n	35n	500m	5.0	5.0	100m∅	300	#Δ	P	Si	200J	T018	A∅	
72	JAN2N4033	600MΔ	25n	15n	175n	35n	800m	5.0	5.0	100m∅	300	#Δ	P	Si	200J	T039	A∅	
73	JAN2N4405	600MΔ	25n	15n	175n	50n	5.0	5.0	5.0	500m∅	50	#Δ	P	Si	200A	T039	A∅	
74	TP4208	700M	25n	10n	20n	12n	300m	1.0	1.0	50m	30		P	Si		T092	A	
75	MM1614	200MΔ	26n∅			70n∅	800m	10	10	150m∅	120	Δ	P	Si	200J	T05	A	
76	MM2614	200MΔ	26n∅			70n∅	500m	10	10	150m∅	120	Δ	P	Si	200J	T018	A	
77	MM2712	200MΔ	26n∅			70n∅	500m	10	10	150m∅	300	Δ	P	Si	200J	T018	A	
78	MM1613	250MΔ	26n∅			70n∅	800m	10	10	150m∅	120	Δ	N	Si	200J	T05	A	
79	MM1711	250MΔ	26n∅			70n∅	800m	10	10	150m∅	300	Δ	N	Si	200J	T05	A	
80	MM2613	250MΔ	26n∅			70n∅	500m	10	10	150m∅	120	Δ	N	Si	200J	T018	A	
81	MM2711	250MΔ	26n∅			70n∅	500m	10	10	150m∅	300	Δ	N	Si	200J	T018	A	
82#	BSY28	200MΔ	27n∅		50n	130n∅	300m	2.0	2.0	50m	60	Δ	N-PE	Si	175J	T018	A∅	
83#	BSY27	200MΔ	27n∅		5													



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	2N2234	50MΔ	30n			800n	1.0	2.0	500m	8.0	Δ #	2.5	N	Si	150C	T03	C	
2	2N2236	50.0MΔ	30n		600n	160n	1.6	1.0	100m	60	Δ #	2.5	N	Si	150C	T05	A	
3#	BFR51	50MΔ	30n	25n		35n	1.6	6.0	10m	30	Δ	2.3	N-PE	Si	150J	R188	B	
4#	BFR52	50MΔ	30n	25n	220n	40n	1.6	6.0	10m	30	Δ	2.3	N-PE	Si	150J	R188	B	
5#	BFR61	50MΔ	30n	25n	160n	35n	1.6	6.0	10m	30	Δ	2.3	P-PE	Si	150J	R188	B	
6#	BFR62	50MΔ	30n	25n	220n	40n	1.6	6.0	10m	30	Δ	2.3	P-PE	Si	150J	R188	B	
7#	BFT54	50MΔ	30n	25n	160n	35n	360m	6.0	10m	30	Δ	2.3	N-PE	Si	200J	T018	A	
8#	BFT55	50MΔ	30n	25n	220n	40n	360m	6.0	10m	30	Δ	2.3	N-PE	Si	200J	T018	A	
9	2N1427	60.0M*	30n	120n			25m*	3.0	500u	120	†	10	N-PE	Si	85J	T024	A	
10	2N2389	60.0MΔ	30n				450m	1.0	150m	40	Δ	10	N-PL	Si	200J	W4		
11	2N3506	60.0MΔ	30n	15n	55n	35n	5.0	1.0	500m	50	Δ	1.0	N	Si	200S	T05	A	
12	2N3507	60.0MΔ	30n	15n	55n	35n	5.0	1.0	500m	35	Δ	1.0	N	Si	200S	T05	A	
13#	BFR50	60MΔ	30n	25n	140n	35n	1.6	6.0	10m	20	Δ	1.3	N-PE	Si	150J	R188	B	
14#	BFR60	60MΔ	30n	25n	140n	35n	1.6	6.0	10m	20	Δ	1.3	P-PE	Si	150J	R188	B	
15#	BFT53	60MΔ	30n	25n	140n	35n	360m	6.0	10m	20	Δ	1.3	N-PE	Si	200J	T018	B	
16	2N1411	70.0MΔ	30n	160n			25m*	1.0	50m	75		3.0p	P-MA	Ge	85J	T024	F	
17#	BFR39	100MΔ	30n	25n	140n	35n	1.6	10	1.0	20	Δ #	6.5p	N-PE	Si	150S	T092	B	
18#	BFR39T05	100MΔ	30n	25n	140n	35n	1.6	10	1.0	20	Δ #	6.5p	N-PE	Si	150S	R188	B	
19#	BFR40	100MΔ	30n	25n	140n	35n	1.6	10	1.0	25	Δ #	6.5p	N-PE	Si	150S	T092	B	
20#	BFR40T05	100MΔ	30n	25n	140n	35n	1.6	10	1.0	25	Δ #	6.5p	N-PE	Si	150S	R188	B	
21#	BFR41	100MΔ	30n	25n	220n	40n	1.6	10	1.0	25	Δ #	6.5p	N-PE	Si	150S	T092	B	
22#	BFR41T05	100MΔ	30n	25n	220n	40n	1.6	10	1.0	25	Δ #	6.5p	N-PE	Si	150S	R188	B	
23#	BFR79	100MΔ	30n	25n	140n	35n	1.6	10	100m	80		10p	P-PE	Si	150S	T092	B	
24#	BFR79T05	100MΔ	30n	25n	140n	35n	1.6	10	100m	80		10p	P-PE	Si	150S	R188	B	
25#	BFR80	100MΔ	30n	25n	140n	35n	1.6	10	100m	110		10p	P-PE	Si	150S	T092	B	
26#	BFR80T05	100MΔ	30n	25n	140n	35n	1.6	10	100m	110		10p	P-PE	Si	150S	R188	B	
27#	BFR81	100MΔ	30n	25n	220n	40n	1.6	10	100m	170		10p	P-PE	Si	150S	T092	B	
28#	BFR81T05	100MΔ	30n	25n	220n	40n	1.6	10	100m	170		10p	P-PE	Si	150S	R188	B	
29#	BSX95	100MΔ	30n	20n	20n	20n	700m*	10	150m	40	Δ	8.0	N-PE	Si	200J	T039	A	
30#	BSX96	100MΔ	30n	20n	25n	20n	700m*	10	150m	100	Δ	8.0	N-PE	Si	200J	T039	A	
31	KS6128	120M	30n	40n	120n	50n		5.0	15	15	Δ	200p	N-PE	Si	200J	T03	A	
32	2N1499B	150MΔ	30n		120n		75m	3.0	10m	40	Δ	15	P	Ge	100S	T09	A	
33	2N2635	150MΔ	30n	20n	185n	65n	150m	1.0	100m	30	Δ	5.0p	P	Ge	100S	T018	A	
34	2N3468	150MΔ	30n	10n	60n	30n	1.0	1.0	150m	25	Δ	25p	N	Si	200S	T05	A	
35	2N4225	150MΔ	30n	5.0n	50n	25n		5.0	2	25	Δ	25p	N	Si	175	R179w	A	
36	2N4226	150MΔ	30n	5.0n	50n	25n		5.0	2	20	Δ	25p	N	Si	175	R179w	A	
37#	BC182	150MΔ	30n			65n	300m	5.0	2.0m	100	Δ #	5.0p	N-PE	Si	150S	R203	A	
38#	BC182A	150MΔ	30n			65n	300m	5.0	2.0m	125	Δ	5.0p	N-PE	Si	150S	R203	A	
39#	BC182B	150MΔ	30n			65n	300m	5.0	2.0m	240	Δ	5.0p	N-PE	Si	150S	R203	A	
40#	BC182L	150MΔ	30n			65n	300m	5.0	2.0m	100	Δ #	5.0p	N-PE	Si	150S	T092	B	
41#	BC182LA	150MΔ	30n			65n	300m	5.0	2.0m	125	Δ	5.0p	N-PE	Si	150S	T092	B	
42#	BC182LB	150MΔ	30n			65n	300m	5.0	2.0m	240	Δ	5.0p	N-PE	Si	150S	T092	B	
43#	BC183	150MΔ	30n			65n	300m	5.0	2.0m	100	Δ #	5.0p	N-PE	Si	150S	R203	A	
44#	BC183A	150MΔ	30n			65n	300m	5.0	2.0m	125	Δ	5.0p	N-PE	Si	150S	R203	A	
45#	BC183B	150MΔ	30n			65n	300m	5.0	2.0m	240	Δ	5.0p	N-PE	Si	150S	R203	A	
46#	BC183C	150MΔ	30n			65n	300m	5.0	2.0m	450	Δ	5.0p	N-PE	Si	150S	R203	A	
47#	BC183L	150MΔ	30n			65n	300m	5.0	2.0m	100	Δ #	5.0p	N-PE	Si	150S	T092	B	
48#	BC183LA	150MΔ	30n			65n	300m	5.0	2.0m	125	Δ	5.0p	N-PE	Si	150S	T092	B	
49#	BC183LB	150MΔ	30n			65n	300m	5.0	2.0m	240	Δ	5.0p	N-PE	Si	150S	T092	B	
50#	BC183LC	150MΔ	30n			65n	300m	5.0	2.0m	450	Δ	5.0p	N-PE	Si	150S	T092	B	
51#	BC184	150MΔ	30n			65n	300m	5.0	2.0m	250	Δ #	5.0p	N-PE	Si	150S	R203	A	
52#	BC184B	150MΔ	30n			65n	300m	5.0	2.0m	240	Δ	5.0p	N-PE	Si	150S	R203	A	
53#	BC184C	150MΔ	30n			65n	300m	5.0	2.0m	450	Δ	5.0p	N-PE	Si	150S	R203	A	
54#	BC184L	150MΔ	30n			65n	300m	5.0	2.0m	250	Δ	5.0p	N-PE	Si	150S	T092	B	
55#	BC184LB	150MΔ	30n			65n	300m	5.0	2.0m	240	Δ	5.0p	N-PE	Si	150S	T092	B	
56#	BC184LC	150MΔ	30n			65n	300m	5.0	2.0m	450	Δ	5.0p	N-PE	Si	150S	T092	B	
57	KS6117	150M	30n	25n	100n	40n		5.0	5.0	15	Δ	90p	N-PE	Si	200J	T03	A	
58	KS6122	150M	30n	60n	140n	60n		5.0	10	15	Δ	90p	N-PE	Si	200J	T03	A	
59	MD3762	150MΔ	30n	10n	80n	30n	600m	2.0	1.0	40	Δ #	1.0 #	P-AN	Si	200J	R131f	PA	
60	MD3762F	150MΔ	30n	10n	80n	30n	350m	2.0	1.0	40	Δ #	1.0 #	P-AN	Si	200J	X22	A	
61	2N5022	170MΔ	30n	15n	65n	30n	4.0	1.0	100m	15	Δ	80	P	Si	200S	T039	A	
62	2N5242	170MΔ	30n	15n	65n	30n	500m	1.0	50m	100	Δ #	125S	P	Si	125S	T0105	A	
63	2N5243	170MΔ	30n	15n	65n	30n	500m	1.0	50m	100	Δ #	125S	P	Si	125S	T0105	A	
64	2N3467	175MΔ	30n	10n	60n	30n	1.0	1.0	150m	40	Δ	2.3	N	Si	200S	T05	A	
65#	BFW52	175MΔ	30n	15n	50n	30n	150m	1.0	500m	25	Δ	12p	NPE	Si	200J	S5a	A	
66	2N3252	200MΔ	30n	15n	40n	30n	5.0	1.0	500m	90	Δ #	12p	N	Si	200J	T05	A	
67	2N3928	200MΔ	30n	5.0n	50n	25n	5.0	5.0	1.0	40	Δ #	25p	N	Si	175J	R179w	A	
68	2N3929	200MΔ	30n	5.0n	50n	25n	20	5.0	1.0	40	Δ #	25p	N	Si	175J	T059	A	
69	2N5023	200MΔ	30n	15n	65n	30n	1.0	1.0	100m	30	Δ	1.7	N	Si	200S	T039	A	
70#	2SA495G	200MΔ	30n		250n	30n	400m	1.0	10m	240	Δ #	50	P-E	Si	125J	T092	B	
71	LDA404	200MΔ	30n			225n	360m	10	150m	40	Δ	2.6	N-PE	Si	150J	S5	P	
72	LDA405	200MΔ	30n			225n	360m	10	150m	100	Δ #	2.6	N-PE	Si	150J	S5	P	
73	MM3724	200MΔ	30n			50n	1.0	2.0	500m	25	Δ	9.0p	N-EA	Si	200J	T05	A	
74	MM3725	200MΔ	30n			50n	1.0	2.0	500m	25	Δ	9.0p	N-EA	Si	200J	T05	A	
75	MM3726	200MΔ	30n			50n	1.0	2.0	500m	25	Δ	10p	P-EA	Si	200J	T05	A	
76	MD3467	220MΔ	30n	10n	80n	30n	600m	1.0	500m	20	Δ #	20p	P-AN	Si	200J	R131f	PA	
77	MD3467F	220MΔ	30n	10n	80n	30n	350m	1.0	500m	20	Δ #	20p	P-AN	Si	200J	X22	A	
78	2N2956	250MΔ	30n	15n	55n	35n	150m	1.0	50m	76		4.0p	P	Ge	100J	T018	A	
79	2N3545	250MΔ	30n	30n	40n	50n	360m	1.0	10m	120	Δ	20	P	Si	200J	T018	A	
80	2N5028	250MΔ	30n	15n	35n	35n	320m	10	10m	50	Δ #	67m #	N	Si	120J	T098	B	
81	2N5793	250MΔ	30n	15n	250n	60n	600m	1.0	100m	20	Δ	8.0p	N	Si	200S	T078	A	
82	2N5794	250MΔ	30n	15n	250n	60n	600m	1.0	100m	35	Δ	8.0p	N	Si	200S	T078	A	
83	2N5859	250MΔ	30n	8.0n	35n	35n	5.0	1.0	500m	30	Δ	800m	N	Si	200J	T039	A	
84#	BFW68	250MΔ	30n			240n	1.2	1.0	1.0m	120	#	4.0p	N	Si	200J			

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	2N994		35n		45n	200m	2.0	10m	140	18	8.0p		P	Ge	150S	TO18	A	
2	2N2096		35n		70n	60n	750m	1.5	400m	15	3.0	20p	PA	Ge	100S	TO31	A	
3	2N2099		35n		70n	60n	750m	1.5	400m	15	3.0	20p	PA	Ge	100S	TO9	A	
4	JAN2N5116		35n		50n	55n	500m	1.0	500m	50	1.2	27p	P	Si	200J	TO18	DA	
5	2SC1150		35n		50n	55n	800m	1.0	500m	50	1.2	27p	N-PE	Si	200S	R216	A	
6	2SC1635		35n		50n	55n	800m	1.0	500m	50	1.2	27p	N-PE	Si	200S	R216a	A	
7	3N176		35n	30n	55n	150n	225m	1.0	100m	75	1.0	5.0p	NMOS	Si	200S	TO72	DR	
8	3N182		35n	35n	160n	180n	300m	1.0	100m	75	1.0	25p	PMOS	Si	200S	TO72	DR	
9	BSV69		35n		60n	60n	3.0	100m	75	1.0	10p	N-PE	Si	200J	TO39	DM		
10	CM697		35n		35n	400m	350m	1.0	10m	300	15	27p	N-E	Si	200J	R135d	DD	
11	U306		35n	25n	35n	60n	350m	1.0	10m	300	15	27p	P	Si	150S	TO18	DA	
12	2N3251	300m	35n	35n	200n	380m	3.0	10m	300	15	6.0p	25n	P	Si	200J	TO18	A	
13	BFS92	40m	35n	20n	500n	65n	5.0	1.0m	90	15	20p		P	Si	200J	TO39	A	
14	BFS93	40m	35n	20n	500n	65n	5.0	1.0m	90	15	20p		P	Si	200J	TO39	A	
15	BFS94	40m	35n	20n	500n	65n	5.0	1.0m	90	15	20p		P	Si	200J	TO39	A	
16	BFS95	40m	35n	20n	500n	65n	5.0	1.0m	90	15	20p		P	Si	200J	TO39	A	
17	BFV30	140m	35n		150n	150m	1.0	10m	30	10	7.0p		PPE	Si	200J	S5a	P	
18	2N3444	150m	35n	15n	40n	30n	100m	1.0	500m	60	12p		N	Si	200S	TO5	A	
19	2N3554	150m	35n	15n	85n	40n	800m	1.0	750m	100	25p		N	Si	200S	TO5	A	
20	2N3762A	150m	35n	8.0n	80n	35n	4.0	1.0m	35	1.0	15p		P	Si	200S	TO5	A	
21	2N3763	150m	35n	8.0n	80n	35n	1.0	1.0m	40	1.0	15p		P	Si	200S	TO5	A	
22	2N3763S	150m	35n	8.0n	80n	35n	1.0	1.0m	40	1.0	15p		P	Si	200S	TO5	A	
23	2N3764A	150m	35n	8.0n	80n	35n	2.0	1.5	80	1.4	15p		P	Si	200S	TO46	A	
24	2N3765	150m	35n	8.0n	80n	35n	500m	1.5	1	20	10	15p	P	Si	200S	TO46	A	
25	2N4989	150m	35n	20n	300n	80n	5.0m	10	10m	30	8.0		N	Si	125S	TO108	A	
26	2SC1781HA	150m	35n		300n	350n	1.0	3.0	10m	80	6.0p		NE	Si	175J	TO18	A	
27	2SC1781HB	150m	35n		300n	350n	1.0	3.0	10m	110	6.0p		NE	Si	175J	TO18	A	
28	2SC1781HC	150m	35n		300n	350n	1.0	3.0	10m	150	6.0p		NE	Si	175J	TO18	A	
29	KS6118	150m	35n	30n	120n	50n	120m	5.0	5.0	15	90p		N-PE	Si	200J	TO3	A	
30	ZTX4402	150m	35n		255n	500m	1.0	10m	50	2.7	8.5p		P-PLT	Si	175J	B58	A	
31	2N3244	175m	35n	15n	140n	45n	5.0	500m	50	2.3	25p		P	Si	200J	TO5	A	
32	2N3253	175m	35n	15n	40n	30n	5.0	375m	75	2.3	12p		N	Si	200J	TO5	A	
33	BFV55	175m	35n	15n	50n	30n	150m	1.0	500m	25	12p		NPE	Si	200J	S5a	P	
34	2N3762	180m	35n	8.0n	80n	35n	1.0	1.0m	40	10	15p		P	Si	200S	TO5	A	
35	2N3762S	180m	35n	8.0n	80n	35n	1.0	1.0m	40	10	15p		P	Si	200S	TO39	A	
36	2N3764	180m	35n	8.0n	80n	35n	500m	1.5	1	30	10	15p	P	Si	200S	TO46	A	
37	NS3762	180m	35n	8.0n	80n	35n	1.0	1.5	1.0	30	18p		P	Si	200S	TO39	A	
38	NS3763	180m	35n	8.0n	80n	35n	1.0	1.5	1.0	20	18p		P	Si	200S	TO39	A	
39	2N3502	200m	35n	25n	70n	50n	700m	10	10m	80	2.6	8.0p	P	Si	200J	TO5	A	
40	2N3503	200m	35n	25n	70n	50n	700m	10	10m	80	2.6	8.0p	P	Si	200J	TO5	A	
41	2N3504	200m	35n	25n	70n	50n	400m	10	10m	80	2.6	8.0p	P	Si	200J	TO18	A	
42	2N3505	200m	35n	25n	70n	50n	400m	10	10m	80	2.6	8.0p	P	Si	200J	TO18	A	
43	2N3844	200m	35n	25n	70n	50n	700m	10	100m	40	8.0p		P	Si	125J	R110a	A	
44	2N3845	200m	35n	25n	70n	50n	700m	10	100m	40	8.0p		P	Si	125J	R110a	A	
45	2N3905	200m	35n	25n	200n	60n	350m	1.0	100m	30	2.5m	4.5p	P	Si	150J	TO92	A	
46	2N5382	200m	35n	35n	200n	60n	360m	1.0	100m	30	4.5p		P	Si	150J	R207	A	
47	2N5795	200m	35n	15n	100n	40n	600m	10	100m	40	8.0p		P	Si	200S	TO78	A	
48	2N5796	200m	35n	15n	100n	40n	600m	10	100m	75	8.0p		P	Si	200S	TO78	A	
49	2SA876HA	200m	35n		250n	300n	1.0	100m	20	2.6	20p		PE	Si	175J	TO18	A	
50	2SA876HB	200m	35n		250n	300n	1.0	100m	20	2.6	20p		PE	Si	175J	TO18	A	
51	2SA876HC	200m	35n		250n	300n	1.0	100m	20	2.6	20p		PE	Si	175J	TO18	A	
52	A5T3504	200m	35n	25n	70n	50n	625m	10	150m	100	2.7	8.0p	P	Si	150S	R203	A	
53	A5T3505	200m	35n	25n	70n	50n	625m	10	150m	100	2.7	8.0p	P	Si	150S	R203	A	
54	A5T3905	200m	35n	25n	200n	60n	360m	1.0	1.0m	40	4.5p		P-PE	Si	150S	R203	A	
55	A8T3844	200m	35n	25n	70n	50n	625m	10	150m	300	5.0	8.0p	P	Si	150S	R210a	A	
56	A8T3845	200m	35n	25n	70n	50n	625m	10	150m	300	5.0	8.0p	P	Si	150S	R210a	A	
57	BSS69	200m	35n	35n	225n	75n	100m	1.0	10m	150	25	4.5p	P-PL	Si	150S	X156a	A	
58	BSS69#	200m	35n	35n	225n	75n	200m	1.0	50m	30	4.5p		P	Si	175J	X156a	B	
59	BSS69R	200m	35n	35n	225n	75n	100m	1.0	10m	150	25	4.5p	P-PL	Si	150S	X156a	C	
60	BSS69R#	200m	35n	35n	225n	75n	200m	1.0	50m	30	4.5p		P	Si	175J	X156a	B	
61	EN3905	200m	35n	25n	200n	60n	700m	10	10m	50	25	4.5p	P-DPE	Si	135J	TO106	A	
62	FMMT3905	200m	35n	35n	200n	60n	200m	1.0	1.0m	40	25	4.5p	P-PLT	Si	175A	X156d	A	
63	LDA452	200m	35n		150n	360m	10	300m	20	2.6	8.0p		P-PE	Si	150J	S5	P	
64	LDA453	200m	35n		150n	360m	10	300m	30	2.6	8.0p		P-PE	Si	150J	S5	P	
65	MM3905	200m	35n	35n	200n	60n	360m	1.0	100m	30	5.0p		PAN	Si	200J	TO52	A	
66	MPS3644	200m	35n	25n	70n	50n	310m	10	150m	100	8.0p		P	Si	135J	TO92	A	
67	MPS3845	200m	35n	25n	70n	50n	310m	10	150m	100	8.0p		P	Si	135J	TO92	A	
68	NS3905	200m	35n	35n	200n	60n	360m	1.0	10m	50	4.5p		P	Si	200S	TO18	A	
69	ZTX3905	200m	35n	35n	200n	60n	500m	1.0	10m	50	25	4.5p	P-PLT	Si	175J	B58	A	
70	ZTX4400	200m	35n		255n	500m	1.0	150m	50	2.7	8.5p		N-PLT	Si	175J	B58	A	
71	ZTX4403	200m	35n		255n	500m	1.0	10m	100	2.7	8.5p		N-PLT	Si	175J	B58	A	
72	2N1204A	220m	35n		200n	200m	50	200m	25	4.0p	8.0p		Ge	100	TO39	A		
73	2N8011	240m	35n	10n	375n	50n	1.0	10m	100	8.0	15p		P	Si	150J	R203a	A	
74	2N8015	240m	35n	10n	375n	50n	1.0	10m	100	8.0	15p		P	Si	150J	R203a	A	
75	JAN2N2218A	250m	35n		18n*	300n	3.0	10	150m	40	2.0	8.0p	N	Si	200S	TO39	A	
76	JAN2N2219A	250m	35n		18n*	300n	3.0	10	150m	100	2.0	8.0p	N	Si	200S	TO39	A	
77	JAN2N2221A	250m	35n		18n*	300n	1.8	10	150m	40	2.0	8.0p	N	Si	200J	TO18	A	
78	JAN2N2222A	250m	35n		18n*	300n	1.8	10	150m	100	2.0	8.0p	N	Si	200J	TO18	A	
79	2N3250	250m	35n	35n	175n	50n	360m	1.0	10m	150	25	6.0p	P	Si	200J	TO18	A	
80	2N3250A	250m	35n	35n	175n	50n	360m	1.0	10m	150	25	6.0p	P	Si	200J	TO18	A	
81	2N3251A	250m	35n	35n	200n	50n	360m	1.0	10m	300	25	6.0p	P-EA	Si	200J	TO18	A	
82	2N3903	250m	35n	35n	175n	50n	350m	1.0	100m	20	2.0m	4.0p	N	Si	150J	TO92	A	
83	2N3906	250m	35n	35n	225n	75n	350m	1.0	100m	60	2.5m	4.5p	P	Si	150J	TO92	A	
84	JAN2N3906	250m	35n	35n	225n	75n	310m	1.0										

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O A D E
								Vcb (V)	Ic (A)	hFE								
1	MM3903	250MΔ	35n	35n	175n	50n	360m	1.0	1.0m	35 Δ #	5.0p		N-AN	Si	200J	T052	A	
2	MM3906	250MΔ	35n	35n	225n	75n	360m	1.0	100u	60 Δ #	5.0p		PAN	Si	200J	T052	A	
3	MPS4249Z	250MΔ	35n	35n	200n	50n	500m	5.0	100u	300	6.0p		NDPE	Si	150J	T092	A	
4	MPS4250Z	250MΔ	35n	35n	200n	50n	500m	5.0	100u	700	6.0p		NDPE	Si	150J	T092	A	
5	NS3903	250MΔ	35n	35n	175n	50n	360m	1.0	10m	50 Δ	4.0p		N	Si	200S	T018	A	
6	NS3906	250MΔ	35n	35n	225n	75n	360m	1.0	10m	100 Δ	4.5p		P	Si	200S	T018	A	
7#	NTM3906	250MΔ	35n	35n	225n	75n	200m	1.0	10m	300 Δ #	4.5p		P-E	Si	150J	X156h	A	
8	PN3250	250MΔ	35n	35n	200n	50n	500m	1.0	10m	150	6.0p		NDPE	Si	150J	T092	A	
9	PN3250A	250MΔ	35n	35n	200n	50n	500m	1.0	10m	150	6.0p		NDPE	Si	150J	T092	A	
10	PN3946	250MΔ	35n	35n	200n	50n	500m	1.0	10m	150	4.0p		NDPE	Si	150J	T092	A	
11#	ZTX3903	250MΔ	35n	35n	175n	50n	500m	1.0	10m	50 Δ #	4.0p	20	N-PL†	Si	175J	B58	A	
12#	ZTX3906	250MΔ	35n	35n	225n	75n	500m	1.0	10m	100	4.5p	25	P-PL†	Si	175J	B58	A	
13#	ZTX4401	250MΔ	35n		255n		500m	1.0	150m	100	6.5p	2.7	N-PL†	Si	175J	B58	A	
14	2N3605	300MΔ	35n		20n	45n	200m	1.0	10m	30 Δ	25	2.5	N	Si	150J	T098	B	
15	2N3605A	300MΔ	35n	20n		45n	320m	1.0	10m	120	6.0p	2.5m#	N	Si	120J	T098	B	
16	2N3904	300MΔ	35n	35n	200n	50n	350m	1.0	100u	40 Δ #	20	4.0p	N	Si	150J	T092	A	
17	JAN2N3904	300MΔ	35n	35n	200n	50n	350m	1.0	100u	40 Δ #	20 #	4.0p	N	Si	150J	T092	A	
18	2N4013	300MΔ	35n	10n	50n	25n	1.2	1.0	10m	30 # Δ			N	Si	200J	T018	A	
19	2N4014	300MΔ	35n	10n	70n	30n	1.2	1.0	10m	30 # Δ			N	Si	200J	T018	A	
20	2N5381	300MΔ	35n	35n	200n	50n	360m	1.0	100u	40 Δ		4.0p	N	Si	150J	R207	A	
21	AST3904	300MΔ	35n	35n	200n	50n	360m	1.0	1.0m	70 Δ		4.0p	N-PE	Si	150S	R203	A	
22	BSR17	300MΔ	35n	35n	200n	50n	310m	1.0	1.0m	40			N-PL	Si	150	X156c	B	
23#	BSS66#	300MΔ	35n†	35n†	200n†	50n†	200m	1.0	30 Δ	30 Δ		4.0p	N	Si	175J	XXXXX	B	
24#	BSS66R#	300MΔ	35n†	35n†	200n†	50n†	200m	1.0	50m	30 Δ		4.0p	N	Si	175J	XXXXX	B	
25#	BSS67	300MΔ	35n	35n	200n	50n	200m	1.0	10m	300	85	4.0p	N-PL	Si	150S	X156a	A	
26#	BSS67#	300MΔ	35n†	35n†	200n†	50n†	200m	1.0	50m	60 Δ		4.0p	N	Si	175J	XXXXX	A	
27#	BSS67R	300MΔ	35n	35n	200n	50n	200m	1.0	10m	300	85	4.0p	N-PL	Si	150S	X156a	B	
28#	BSS67R#	300MΔ	35n†	35n†	200n†	50n†	200m	1.0	50m	60 Δ		4.0p	N	Si	175J	XXXXX	A	
29	EN3904	300MΔ	35n	35n	200n	50n	700m	1.0	10m	100 # Δ	20	4.0p	N-DPE	Si	135J	T0106	A	
30#	FMMT3904	300MΔ	35n	35n	200n	50n	200m	1.0	1.0m	70 # Δ	20	4.0p	N-PL†	Si	175A	X156d	A	
31	GES2222A	300MΔ	35n			285n	1.0	1.0	150m	300 # Δ	2.0 #	8.0p	N-PE	Si	150S	T092	A	
32	LDS203	300MΔ	35n	35n	200n	50n	360m	1.0	100u	80 # Δ		6.0p	PE	Si	150J	T0122	A	
33	MM3904	300MΔ	35n	35n	200n	50n	360m	1.0	1.0m	70 # Δ		5.0p	N-AN	Si	200J	T052	A	
34	MPS3725	300MΔ	35n		200n	60n	1.5	1.0	100m	60 Δ #		10p	N-ANT	Si	150J	T092	A	
35	NS3904	300MΔ	35n	35n	200n	50n	360m	1.0	10m	100		4.0p	N	Si	200S	T018	A	
36	NTM3904	300MΔ	35n†			50n†	200m	1.0	10m	100		4.0	N-E	Si	150J	X156b	A	
37	PN3251	300MΔ	35n	35n	200n	50n	625m	1.0	10m	300 # Δ		6.0p	N-DPE	Si	150J	T092	A	
38	PN3251A	300MΔ	35n	35n	200n	50n	500m	1.0	10m	300		6.0p	NDPE	Si	150J	T092	A	
39	PN3947	300MΔ	35n	35n	200n	50n	500m	1.0	10m	300		4.0p	NDPE	Si	150J	T092	A	
40#	ZTX3904	300MΔ	35n	35n	200n	50n	500m	1.0	10m	100 Δ #	20	4.0p	N-PL†	Si	175J	B58	A	
41	2N1204	320MΔ	35n			200n	200m	1.5	400m	15 # Δ	2.5	7.0p	P-AD	Ge	100S	T039	A	
42	2N1494	320MΔ	35n			200n	400m	1.5	400m	15 # Δ	2.5	7.0p	P-AD	Ge	100S	T031	A	
43	2N834	350MΔ	35n	25n	125n	75n	300m	1.0	10m	25 Δ	25	4.0p	N	Si	175J	T018	A	
44	2N4349	350MΔ	35n	20n		40n	7.0	1.0	1.0	20		12p	N-PE	Si	200	T05	0	
45	40220	350MΔ	35n	25n		75n	300m	1.0	10m	25 1Δ		4.0p	N	Si	175	T052	0	
46	2N6013	360MΔ	35n	10n	450n	75n	1.0	1.0	10m	250 Δ	8.0	15p	P	Si	150J	R203a	A	
47	2N6017	360MΔ	35n	10n	450n	75n	1.0	1.0	10m	250 Δ	8.0	15p	P	Si	150J	R203a	A	
48#	ZSA1153	400MΔ	35n		225n	25n	600m	-2	-5	50		5.0p	PE	Si	150J	T092	B	
49#	ZSC2720	400MΔ	35n		225n	275n	600m	1.0	150m	150		3.5p	NE	Si	150J	XXXXX	B	
50#	BSS26	400MΔ	35n		60u		360m	1.0	100u	40		4.8p	N	Si	200J	T018	A	
51#	BSV77	400MΔ	35n		60n		800m	1.0	100m	60 Δ		4.8p	N	Si	200J	T039	A	
52#	BSV95	400MΔ	35n		60n		800m	1.0	500m	20 Δ		4.8p	N	Si	200J	T039	A	
53#	BSY58	400MΔ	35n		60n		2.5	1.0	100m	42 †	30	4.5p	N-DPE	Si	200J	T039	A	
54	MM3734	400MΔ	35n		60n		4.0	1.5	1.0	35 #	25 #	15p	N-AN	Si	200J	T039	A	
55	MM3735	400MΔ	35n		60n		4.0	1.5	1.0	35 #	25 #	15p	N-AN	Si	200J	T039	A	
56#	BSX59	475MΔ	35n		60n		800m	1.0	150m	70	2.0	10p	N-E	Si	200J	T05	A	
57	JAN2N3253	500MΔ	35n	15n	40n	30n	5.0	5.0	1.0	20 Δ	1.2	12p	N-E	Si	200S	T05	A	
58	JAN2N3253S	500MΔ	35n	15n	40n	30n	1.0	5.0	1.0	1.0	1.2	12p	N-E	Si	200S	T05	A	
59	JAN2N3444	500MΔ	35n	15n	40n	30n	5.0	5.0	1.0	1.0	1.2	12p	N-E	Si	200S	T05	A	
60	JAN2N3444S	500MΔ	35n	15n	40n	30n	1.0	5.0	1.0	1.0	1.2	12p	N-E	Si	200S	T05	A	
61	2N2851	600MΔ	35n		25n	75n	360m	1.0	10m	50		2.6p	N-PE	Si	300	T018	A	
62	JAN2N3762	600MΔ	35n	8.0n	80n	35n	1.0	1.0	10m	35 Δ	1.0 #	15p	P	Si	200J	T05	A	
63	JAN2N3763	600MΔ	35n	8.0n	80n	35n	1.0	1.0	10m	35 Δ	1.0 #	15p	P	Si	200J	T05	A	
64	JAN2N3764	600MΔ	35n	8.0n	80n	35n	500m	1.0	10m	35 Δ	1.0 #	15p	P	Si	200J	T046	A	
65	JAN2N3765	600MΔ	35n	8.0n	80n	35n	500m	1.0	10m	35 Δ	1.0 #	15p	P	Si	200J	T046	A	
66	JAN2N3250A	900MΔ	35n	35n	175n	50n	1.2	1.0	10m	50 # Δ	25	6.0p	P	Si	200S	T018	A	
67	JAN2N3251A	900MΔ	35n	35n	200n	50n	1.2	1.0	10m	100 # Δ	25	6.0p	P	Si	200S	T018	A	
68	2N5413	250MΔ	37n	5.0n	50n	35n	5.0	1.0	50m	30 Δ #		16p	N	Si	200S	T039	A	
69	2N5414	250MΔ	37n	5.0n	60n	35n	5.0	1.0	50m	30 Δ #		16p	N	Si	200S	T039	A	
70	2N3862	600MΔ	39n	39n	25n	25n	360m	1.0	10m	50 # Δ		4.0p	N	Si	200A	T018	A	
71	2N3972		40n	40n	100n		1.8				100		N	Si	200S	T018	DB	
72	JAN2N4093		40n			80n	360m					16p	N	Si	175A	T018	DB	
73	2N4093A		40n	20n		80n	1.8				80		N	Si	200S	T018	DB	
74	2N5189		40n			70n	1.0		1.0	15 Δ	1.0		N	Si	200S	R179q	A	
75#	ZSC1072		40n		50n	60n	800m	1.0	500m	35 Δ		12p	N-PE	Si	175J	R179n	A	
76#	ZSC1072A		40n		50n	60n	800m	1.0	500m	35 Δ		3.0p	N-PE	Si	175J	R179n	A	
77#	ZSC1385H		40n		50n	60n	800m	1.2	500m	20 Δ			N-PE	Si	175J	T039	A	
78#	BFV51		40n		50n	50n	150m	10	500m	20 Δ	3.3	8.0p	NPE	Si	200J	S5a	P	
79#	BFV53		40n		50n	50n	150m	10	500m	20 Δ	3.3	8.0p	NPE	Si	200J	S5a	P	
80#	BFX30Z		40n	15n	250n	50n	600m	-4	-10m	50 Δ			P-PE	Si	200J	T039	A	
81	J4093		40n	20n	80n		350m				80 *	16p	N-S	Si	150S	T092	DE	
82	MFE2004		40n	20n		80n	1.8					16p	N	Si	175J	T018	DB	
83#	MPS3644K		40n			100n	1.2		10	100u	170	5.0 #	PPL	Si	175A	X167	A	
84#	MPS3644L		40n			100												

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	2N3121	130MΔ	40n∅		100n∅			1.0	1.0	50m∅	30 # Δ	5.0	10p∅	P	Si	200J	T018	A∅
2#	ZTX750	140M∅	40n∅		450 ∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
3#	ZTX750K	140M∅	40n∅		450 ∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
4#	ZTX750L	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
5#	ZTX750M	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
6#	ZTX750S	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
7#	ZTX751	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
8#	ZTX751K	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
9#	ZTX751L	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
10#	ZTX751M	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
11#	ZTX751S	140M∅	40n∅		450n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
12#	ZTX752	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
13#	ZTX752K	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
14#	ZTX752L	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
15#	ZTX752M	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
16#	ZTX752S	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
17#	ZTX753	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
18#	ZTX753K	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
19#	ZTX753L	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
20#	ZTX753M	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
21#	ZTX753S	140M∅	40n∅		600n∅		1.0	-2	-2	200 #	300 #			P-PLT	Si	200J	B58a	A
22	2N3245	150MΔ	40n∅	15n	120n		45n	5.0	1.0	500m∅	30 # Δ		25p∅	P	Si	200J	T05	A∅
23#	BFW31	150MΔ	40n∅				250n∅	1.0	1.0	10m∅	120		12p∅	P-PE∅	Si	150A	T018	A∅
24#	BFW32	150MΔ	40n∅				250n∅	1.0	1.0	10m∅	120		12p∅	N-PE∅	Si	150A	T018	A∅
25	EN2905	150MΔ	40n∅	10n∅	80n		30n	300m	1.0	150m∅	300 # Δ		8.0p∅	P	Si	125J	T0105	A
26	EN2907	150MΔ	40n∅	10n∅	80n		30n	200m	1.0	150m∅	300 # Δ		8.0p∅	P	Si	125J	T0106	A
27	EN3502	150MΔ	40n∅		100n∅		300m	200m	1.0	150m∅	100 # Δ		8.0p∅	P	Si	125J	T0106	A
28	EN3504	150MΔ	40n∅		100n∅		200m	200m	1.0	150m∅	100 # Δ		8.0p∅	P	Si	125J	T0105	A
29	KS6119	150M	40n∅	35n	140n		60n	360m	5.0	5.0	15 Δ		90p	N-PE	Si	200J	T03	∅
30	TPS112	150M	40n∅	10n	80n		70n	360m	1.0	150m∅	100 Δ		8.0p	P	Si	200J	T092	A
31#	2SC318A	170M∅	40n∅	20n	80n		20n	300m	3.0	1.0m∅	90 *	6.0	3.0p	N	Si	175J	T018	A
32#	2SC352A	170M∅	40n∅	20n	80n		20n	750m	3.0	1.0m∅	70 *	6.0	3.0p	N	Si	175J	T05	A∅
33#	2SC353A	170M∅	40n∅	20n	80n		20n	750m	3.0	1.0m∅	70 *	6.0	3.0p	N	Si	175J	T05	A∅
34#	2SC46	180M∅	40n∅		80n		600n	600m	6.0	1.0m∅	50	6.0	15p	N-ME	Si	150J	T05	A
35	2N706A	200MΔ	40n∅		25n		75n∅	300m	1.0	10m∅	60 ∅	60	5.0p∅	N	Si	175J	T018	A∅
36	2N706C	200MΔ	40n∅	25n∅			75n∅	360	1.0	10m∅	20 Δ	40	5.0p∅	N	Si	200J	T018	A∅
37	2N753	200MΔ	40n∅				75n∅	1.0	1.0	10m∅	120	60m	5.0p∅	N	Si	200J	T018	A∅
38	2N849	200MΔ	40n∅		25n∅		75n∅	300m	1.0	10m∅	60 # ∅		5.0p∅	N	Si	200S	W5a	B
39	2N850	200MΔ	40n∅		35n∅		75n∅	300m	1.0	10m∅	120 # ∅		5.0p∅	N	Si	200S	W5a	B
40	2N2205	200MΔ	40n∅		25n		75n∅	300m	1.0	10m∅	20 Δ	22	6.0p∅	N	Si	200A	T018	A∅
41	2N2206	200MΔ	40n∅		35n		75n∅	300m	1.0	10m∅	40 Δ	22	6.0p∅	N	Si	200A	T046	A∅
42	2N2904	200MΔ	40n∅	10n	80n		30n	600m	1.0	10m∅	20 Δ		8.0p∅	P	Si	200S	T05	A∅
43	2N2904A	200MΔ	40n∅	10n	80n		30n	600m	1.0	10m∅	40 Δ		8.0p∅	P	Si	200S	T05	A∅
44	2N2905	200MΔ	40n∅	10n	80n		30n	600m	1.0	10m∅	35 Δ		8.0p∅	P	Si	200S	T05	A∅
45	2N2905A	200MΔ	40n∅	10n	80n		30n	600m	1.0	10m∅	75 Δ		8.0p∅	P	Si	200S	T05	A∅
46	2N2906	200MΔ	40n∅	10n	80n		30n	400m	1.0	10m∅	20 Δ		8.0p∅	P	Si	200S	T018	A∅
47	2N2906A	200MΔ	40n∅	10n	80n		30n	400m	1.0	10m∅	40 Δ		8.0p∅	P	Si	200S	T018	A∅
48	2N2907	200MΔ	40n∅	10n	80n		30n	400m	1.0	10m∅	35 Δ		8.0p∅	P	Si	200S	T018	A∅
49	2N2907A	200MΔ	40n∅	10n	80n		30n	400m	1.0	10m∅	75 Δ	20	8.0p∅	P	Si	200S	T018	A∅
50	2N2955	200MΔ	40n∅	15n	40n		40n	150m∅	1.0	50m∅	60 ∅	3.2	4.0p∅	P-EA	Ge	100S	T018	A∅
51	2N3485	200M∅	40n∅	10n	80n		30n	2.0	1.0	100u∅	20 Δ		8.0p∅	P-EA	Si	200S	T046	A∅
52	2N3485A	200M∅	40n∅	10n	80n		30n	2.0	1.0	100u∅	40 Δ	3.2	8.0p∅	P-EA	Si	200S	T046	A∅
53	2N3486	200M∅	40n∅	10n	80n		30n	2.0	1.0	100u∅	35 Δ	3.2	8.0p∅	P-EA	Si	200S	T046	A∅
54	2N3486A	200M∅	40n∅	10n	80n		30n	2.0	1.0	100u∅	75 Δ	3.2	8.0p∅	P-EA	Si	200S	T046	A∅
55	2N3671	200MΔ	40n∅	10n	80n		30n	600m	1.0	10m∅	75 Δ		9.0p∅	P	Si	200S	T05	A∅
56	2N3672	200MΔ	40n∅	10n	80n		30n	400m	1.0	10m∅	75 Δ		9.0p∅	P	Si	200S	T018	A∅
57	2N3673	200MΔ	40n∅	10n	80n		30n	350m	1.0	10m∅	75 Δ		9.0p∅	P	Si	200S	T046	A∅
58	2N3838	200MΔ	40n∅	10n	25n		90n	350m	1.0	1.0m∅	50 Δ		8.0p∅	P	Si	200S	T089	PB
59	2N4142	200M∅	40n∅	10n	80n		30n	300m	1.0	150m∅	120	3.2	8.0p∅	P	Si	125J	R110	A
60	2N4143	200M∅	40n∅	10n	80n		30n	300m	1.0	150m∅	300	3.2	8.0p∅	P	Si	125J	R110	A
61	2N4228	200MΔ	40n∅	10n	80n		30n	300m	1.0	150m∅	150	3.2	8.0p∅	P	Si	125J	R110	PA
62	2N4854	200MΔ	40n∅	20n	280n		70n	600m	1.0	1.0m	50 Δ		8p∅	∅	Si	200S	T078	PR
63	2N4855	200MΔ	40n∅	20n	280n		70n	600m	1.0	1.0m	25 Δ		8p∅	∅	Si	200S	T078	PR
64	2N4970	200MΔ	40n∅	25n	350n		90n	500	1.0	150m∅	100 # Δ		8.0p∅	N	Si	125S	T0108	A
65#	2SA742H	200MΔ	40n∅				100n∅	3.0	5.0	150m∅	250	25	8.0p∅	N-PE	Si	175J	T039	A∅
66#	2SC395A	200MΔ	40n∅		50n		30n	250m	1.0	10m∅	200		6.0p∅	N-PE	Si	175J	T018	A∅
67	40218	200MΔ	40n∅	25n∅			75n∅	300m	1.0	10m∅	20 ∅		5.0p∅	N	Si	175	T052	∅
68	40222	200MΔ	40n∅	25n∅			75n∅	300m	1.0	10m∅	20 ∅		6.0p∅	N	Si	175	T052	∅
69	AST2907	200MΔ	40n∅	10n	80n		30n	1.6	1.0	1.0m∅	50 Δ	3.2 #	8.0p∅	P†	Si	150S	R203	A
70	AST2907A	200MΔ	40n∅	10n	80n		30n	1.6	1.0	1.0m∅	100 Δ	3.2 #	8.0p∅	P†	Si	150S	R203	A
71#	BFV49	200MΔ	40n∅		35n		75n∅	150m	1.0	10m∅	30 Δ		8.0p∅	NPE	Si	200J	S5a	P
72#	BFV86	200MΔ	40n∅	10n	80n		30n	360m	1.0	10m∅	75 Δ		8.0p∅	PPE	Si	200S	W5a	B
73#	BFV88A	200MΔ	40n∅	10n	80n		30n	380m	1.0	10m∅	100 Δ		8.0p∅	PPE	Si	200S	W5a	B
74#	BFV88B	200MΔ	40n∅	10n	80n		30n	380m	1.0	10m∅	35 Δ		8.0p∅	PPE	Si	200S	W5a	B
75#	BFV88C	200MΔ	40n∅	10n	80n		30n	360m	1.0	10m∅	40 Δ		8.0p∅	PPE	Si	200S	W5a	B
76#	BSR15R	200MΔ	40n∅	10n	80n		30n	310m	-1.0	-1m∅	35 Δ #			P-PE	Si	150J	X156e	CC
77#	BSR18R	200MΔ	40n∅	10n	80n		30n	310m	-1.0	-1m∅	75 Δ #			P-PE	Si	150J	X156e	CC
78#	BSS80	200MΔ	40n∅	10n	80n		30n	350m	1.0	150m∅	40							



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1#	NTM2907A	200MΔ	40n	10n	80n	30n	200m	10	150m	300	1.2	10p	P-E	Si	150J	X156h	A	
2	TD712	200MΔ	40n	20n	280n	70n	600m	10	100m	300	1.2	10p	N-P	Si	150J	T078	PR	
3	TD713	200MΔ	40n	20n	280n	70n	600m	10	150m	320	1.2	10p	N-P	Si	150J	T078	PR	
4#	ZTX360	200MΔ	40n	15n	170n	75n	500m	1.0	500m	150	1.2	10p	N-PLT	Si	175S	S14b	F	
5	2N14 10A	230M	40n		30n	30n	800m	1.0	150m	60	2.0	12p	N	Si	175J	T05	A0	
6	JAN2N2218	250MΔ	40n		18n*	250n	3.0	10	150m	100	2.6	8.0p	N	Si	200S	T039	A0	
7	JAN2N2219	250MΔ	40n		18n*	250n	3.0	10	150m	100	2.6	8.0p	N	Si	200S	T039	A0	
8	JAN2N2221	250MΔ	40n		18n*	250n	1.8	10	150m	100	3.2	8.0p	N	Si	200J	T018	A0	
9	JAN2N2222	250MΔ	40n		18n*	250n	1.8	10	150m	100	3.2	8.0p	N	Si	200J	T018	A0	
10	2N2537	250MΔ	40n		20n	40n	3.0	10	10m	30	Δ	8.0p	N	Si	200J	T05	A0	
11	2N2538	250MΔ	40n		20n	40n	3.0	10	10m	30	Δ	8.0p	N	Si	200J	T05	A0	
12	2N2539	250MΔ	40n		20n	40n	1.8	10	10m	30	Δ	8.0p	N	Si	200J	T018	A0	
13	2N2540	250MΔ	40n		20n	40n	1.8	10	10m	30	Δ	8.0p	N	Si	200J	T018	A0	
14	2N2845	250MΔ	40n		40n	40n	360m	10	150m	120	f#Δ	8.0p	N	Si	200J	T018	A0	
15	2N2846	250MΔ	40n		40n	40n	800m	10	150m	120	f#Δ	8.0p	N	Si	200J	T05	A0	
16	2N3015	250MΔ	40n		60n	60n	3.0	10	150m	120	#Δ	8.0p	N	Si	200J	T05	A0	
17	2N3735	250MΔ	40n	8.0n	60n	60n	4.0	1.0	10m	35	Δ	9.0p	N	Si	200S	T05	A0	
18	2N3737	250MΔ	40n	8.0n	60n	60n	2.0	1.0	10m	35	Δ	9.0p	N	Si	200S	T046	A0	
19	2N4140	250MΔ	40n	10n	250n	60n	300m	10	150m	120	Δ	8.0p	N	Si	125J	R110	A	
20	2N4141	250MΔ	40n	10n	250n	60n	300m	10	150m	300	Δ	8.0p	N	Si	125J	R110	A	
21	2N4227	250MΔ	40n	10n	250n	60n	300m	10	150m	150	Δ	8.0p	N	Si	125J	R110	A	
22	2N4951	250MΔ	40n		350n	360m	360m	10	10m	40	#Δ	8p	N	Si	150S	T098	B	
23	2N4952	250MΔ	40n		350n	360m	360m	10	10m	75	Δ	8p	N	Si	150S	T098	B	
24	2N4953	250MΔ	40n		400n	360m	360m	10	10m	150	Δ	8p	N	Si	150S	T098	B	
25	2N4954	250MΔ	40n		400n	360m	360m	10	10m	40	Δ	8p	N	Si	150S	T098	B	
26	2N5368	250MΔ	40n		350n	360m	360m	10	10m	40	#Δ	8p	N	Si	150J	R207	A	
27	2N5369	250MΔ	40n		350n	360m	360m	10	10m	75	#Δ	8p	N	Si	150J	R207	A	
28	2N5370	250MΔ	40n		400n	360m	360m	10	10m	150	#Δ	8p	N	Si	150J	R207	A	
29	2N5371	250MΔ	40n		400n	360m	360m	10	10m	40	#Δ	8p	N	Si	150J	R207	A	
30#	ZSC619	250M	40n		150n	250n	250m	6.0	10m	110	#	7.0p	N	Si	125J	T092	D	
31#	ZSC714	250M	40n		150n	250n	250m	6.0	10m	60	#	7.0p	N	Si	125J	T092	D	
32#	BFV54	250MΔ	40n		60n	150m	150m	7.0	300m	10	Δ	8.0p	NPE	Si	200J	S5a	P	
33#	BFV88A	250MΔ	40n	20n	40n	360m	360m	10	1.0m	20	Δ	8.0p	NPE	Si	200J	W5a	B	
34#	BFV88B	250MΔ	40n	20n	40n	360m	360m	10	1.0m	35	Δ	8.0p	NPE	Si	200J	W5a	B	
35#	BFV88C	250MΔ	40n	20n	40n	360m	360m	10	300m	10	#Δ	8.0p	NPE	Si	200J	W5a	B	
36#	BSV59	250M	40n		40n	360m	360m	10	150m	30	f	8.0p	N	Si	200	T018	A	
37#	BSX30	250MΔ	40n		60n	3.0	700m	10	300m	50	#	8.0p	N-DPE	Si	200J	T05	0	
38	GES5368	250M	40n		350n	360m	360m	10	1.0m	20	Δ	8.0p	N-PE	Si	150S	T092	A	
39	GES5369	250M	40n		350n	360m	360m	10	1.0m	50	Δ	8.0p	N-PE	Si	150S	T092	A	
40	GES5370	250M	40n		400n	360m	360m	10	1.0m	75	Δ	8.0p	N-PE	Si	150S	T092	A	
41	GES5371	250M	40n		400n	360m	360m	10	1.0m	20	Δ	8.0p	N-PE	Si	150S	T092	A	
42	JAN2N708	300MΔ	40n		25n	75n	1.2	1.0	500u	15	Δ	4.0	N	Si	200S	T018	A0	
43	2N914A	300MΔ	40n		40n	1.2	5.0	1.0	500m	25	#Δ	8.0p	N	Si	200J	T018	A0	
44	2N1708A	300MΔ	40n		25n	75n	1.0	1.0	10m	30	Δ	22	N	Si	200J	T046	A0	
45	2N2272	300MΔ	40n		20n	40n	360m	1.0	10m	60	#Δ	8.0p	N	Si	200	T018	A0	
46	2N3210	300MΔ	40n		20n	40n	1.2	1.0	10m	120	#Δ	3.7	N	Si	300S	T018	A0	
47	2N3806	300MΔ	40n		35n	60n	200m	1.0	10m	30	Δ	25	N	Si	150J	T098	B	
48	2N3806A	300MΔ	40n	35n	60n	320m	200m	1.0	10m	120	Δ	2.5m	N	Si	120J	T098	B	
49	2N3734	300MΔ	40n	8.0n	60n	4.0	1.0	10m	35	Δ	20	N	Si	200S	T05	A0		
50	2N3736	300MΔ	40n	8.0n	60n	2.0	1.0	10m	35	Δ	20	N	Si	200S	T046	A0		
51#	ZSA571	300M	40n		130n	160n	800m	10	50m	40	Δ	1.2	N	Si	175J	T05	A0	
52	40221	300MΔ	40n		40n	360m	360m	1.0	10m	30	fΔ	8.0p	N	Si	200	T052	0	
53#	BFV46	300MΔ	40n	30n	50n	150m	2.0	200m	12	Δ	3.5	N	Si	200J	S5a	P		
54#	BFV83A	300MΔ	40n	20n	40n	300m	5.0	500m	10	Δ	3.5	N	Si	200J	W5a	P		
55#	BSV35A	300MΔ	40n	25n	75n	550m	1.0	10m	20	Δ	60	N-PL	Si	175J	X156f	C		
56#	BSX87	300MΔ	40n		40n	360m	1.0	10m	30	Δ	3.5	NPE	Si	200J	T018	A0		
57#	BSX88	300MΔ	40n		40n	360m	1.0	10m	30	#Δ	4.0	NPE	Si	200J	T018	A0		
58	BSY19	300MΔ	40n	25n	70n	320m	1.0	10m	30	#Δ	4.0	NAN	Si	200J	T018	A		
59#	BSY21	300MΔ	40n		40n	360m	1.0	10m	120	#Δ	3.5	N	Si	200J	T018	A		
60#	BSY63	300MΔ	40n		75n	400m	1.0	10m	120	Δ	2.7p	N-PE	Si	200J	T018	A		
61	EN708	300MΔ	40n		75n	200m	1.0	10m	120	#Δ	85	N	Si	125J	T0108	A		
62	EN914	300MΔ	40n		40n	200m	1.0	10m	120	#Δ	80	N	Si	125J	T0106	A		
63	MM5189	350M	40n		70n	4.0	1.0	1.0	20	#	1.0	N-AN	Si	200J	T039	A		
64	2N706B	400M	40n		75n	300m	1.0	10m	40	Δ	4.5p	N-ME	Si	175J	T018	A0		
65	2N4121	400M	40n	15n	140n	200m	1.0	10m	70	#Δ	130	N	Si	125J	R110	A		
66	2N4122	400M	40n	15n	140n	200m	1.0	10m	150	#Δ	130	N	Si	125J	R110	A		
67	2N4916	400M	40n	15n	140n	200m	1.0	10m	70	#Δ	4.5p	P	Si	125J	R124	A		
68	2N4035	450MΔ	40n	15n	140n	40n	1.0	1.0m	150	#Δ	130	P	Si	200J	T018	A0		
69	2N4917	450MΔ	40n	15n	140n	200m	1.0	10m	150	#Δ	130	P	Si	125J	R124	A		
70#	BSX80	475M	40n		70n	800m	1.0	150m	100	#	2.0	N-PE	Si	200J	T05	A0		
71	JAN2N3735	600MΔ	40n	8.0n	60n	1.0	1.0	10m	35	Δ	1.0	N	Si	200J	T046	A0		
72	JAN2N3737	600MΔ	40n	8.0n	60n	500m	1.0	10m	35	Δ	1.0	N	Si	200J	T046	A0		
73	JAN2N706	700MΔ	40n		35n	300m	1.0	1.0m	20	Δ	50	N	Si	200S	T018	A0		
74	JAN2N914	1.2G	40n		20n	1.2	1.0	200m	15	#	6.0p	N	Si	200S	T018	A0		
75#	ZSC913	42n	25n	38n	300m	300m	1.0	30m	45	fΔ								



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	C O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	JAN2N5783	200MΔ	45n∅			310n∅	500m	10 ∅	150m∅	40 Δ #	3.0	8.0p∅	N	Si	200J	R131f		
2	JAN2N5784	200MΔ	45n∅			310n∅	500m	10 ∅	150m∅	100 Δ #	3.0	8.0p∅	N	Si	200J	R131f		
3 #	2SC1833	200MΔ	45n∅		190n∅	250n∅	300m	1.0 ∅	100m∅	80	6.0	5.0p∅	NE	Si	150J	R182b	B	
4	MD3725	200MΔ	45n∅			75n∅	800m	1.0 ∅	100m∅	50 Δ	2.8 #	10p∅	N-AN	Si	200J	R131f	PA	
5	MD3725F	200MΔ	45n∅			75n∅	350m	1.0 ∅	100m∅	50 Δ	2.8 #	10p∅	N-AN	Si	200J	X22		
6 #	PL4031	200MΔ	45n∅		80n	100n∅	380m	1.0 ∅	10m∅	20 Δ		8.0p∅	PPE	Si	175S	S6		
7 #	PL4032	200MΔ	45n∅		80n	100n∅	380m	1.0 ∅	100p∅	40 Δ		8.0p∅	P-PE	Si	175S	S6		
8 #	PL4033	200MΔ	45n∅		80n	100n∅	380m	1.0 ∅	10m∅	35 Δ		8.0p∅	PPE	Si	175S	S6		
9 #	PL4034	200MΔ	45n∅		80n	100n∅	380m	1.0 ∅	10m∅	75 Δ		8.0p∅	PPE	Si	175S	S6		
10	2N1131A	300MΔ	45n∅			35n∅	2.0 ∅	10 ∅	150m∅	20 Δ #	10	30p∅	P	Si	200J	TO39	A∅	
11	2N1132A	300MΔ	45n∅			35n∅	2.0 ∅	10 ∅	150m∅	30 Δ #	10	30p∅	P	Si	200J	TO39	A∅	
12	2N3607	300MΔ	45n∅		45n	70n	200m	1.0 ∅	10m∅	30 Δ	25	6.0p∅	N	Si	150J	TO98	B	
13	2N5139	300MΔ	45n∅	20n	170n	50m∅	500m∅	1.0 ∅	50m∅	15 # Δ		5p∅	P	Si	125J	TO106	A	
14	JAN2N3485A	1.0GΔ	45n∅			175n∅	2.0 ∅	10 ∅	150m∅	40 Δ		8.0p∅	P	Si	200S	TO46	A∅	
15	JAN2N3486A	1.0GΔ	45n∅			200n∅	2.0 ∅	10 ∅	150m∅	100 Δ		8.0p∅	P	Si	200S	TO46	A∅	
16 #	2SA537AHB	50n∅	50n∅		300n	350n∅	750m	4.0 ∅	50m∅	50 Δ		35p∅	PE	Si	200J	TO39	A∅	
17 #	2SA537AHC	50n∅	50n∅		300n	350n∅	750m	4.0 ∅	50m∅	80 Δ		35p∅	PE	Si	200J	TO39	A∅	
18 #	2SA537HB	50n∅	50n∅		300n	350n∅	750m	4.0 ∅	50m∅	50 Δ		35p∅	PE	Si	200J	TO39	A∅	
19 #	2SA537HC	50n∅	50n∅		300n	350n∅	750m	4.0 ∅	50m∅	80 Δ		35p∅	PE	Si	200J	TO39	A∅	
20 #	2SC1388	50n∅	50n∅		80n	100n∅	800m	3.0 ∅	500m∅	15 *	1.2		N-PE	Si	200J	TO39	A	
21	IRF420	50n	80n		80n∅	30	40				3.0 *	300p∅	N	Si	150J	TO3	DE	
22	IRF421	50n	80n		80n∅	30	40				3.0 *	300p∅	N	Si	150J	TO3	DE	
23	IRF422	50n	80n		80n∅	30	40				4.0 *	300p∅	N	Si	150J	TO3	DE	
24	IRF423	50n	80n		80n∅	30	40				4.0 *	300p∅	N	Si	150J	TO3	DE	
25	IRF820	50n	80n		80n∅	30	40				3.0 *	400p∅	N	Si	150J	Y220b	DF	
26	IRF821	50n	80n		80n∅	30	40				3.0 *	400p∅	N	Si	150J	Y220b	DF	
27	IRF822	50n	80n		80n∅	30	40				4.0 *	400p∅	N	Si	150J	Y220b	DF	
28	IRF823	50n	80n		80n∅	30	40				4.0 *	400p∅	N	Si	150J	Y220b	DF	
29 #	BCW60AA	250m∅	50n	35n	400n	80n	150m	5.0 ∅	2.0m∅	500	35		N-PE∅	Si	150J	X156a	A	
30 #	BCW60AB	250m∅	50n	35n	400n	80n	150m	5.0 ∅	2.0m∅	500	35		N-PE∅	Si	150J	X156a	A	
31 #	BCW60AC	250m∅	50n	35n	400n	80n	150m	5.0 ∅	2.0m∅	500	35		N-PE∅	Si	150J	X156a	A	
32 #	BCW60AD	250m∅	50n	35n	400n	80n	150m	5.0 ∅	2.0m∅	500	35		N-PE∅	Si	150J	X156a	A	
33	CT760	8.0M	50n	10n	450n	120n	400m	5.0 ∅	1.0u∅	50 Δ		8.0p	P	Si		TO92	A	
34	2N337	10MΔ	50n		20n	80n	125m	5.0 ∅	10m∅	20 Δ	150	3.0p∅	N-GD	Si	150J	TO5	A	
35	2N1103	12MΔ	50n∅		20n	80n	125m	3.0 ∅	10m∅	30 Δ	150	3.0p∅	N	Si	150S	TO5	A	
36	CT764	20M	50n	10n	450n	120n	400m	5.0 ∅	150m∅	25 Δ		8.0p	P	Si		TO92	A	
37	2N1104	30MΔ	50n∅		20n	80n	125m	3.0 ∅	10m∅	45 Δ	150	3.0p∅	N	Si	150S	TO5	A	
38	2N5334	40.0MΔ	50n		950n	100n	6 ∅	2.0 ∅	2.0m∅	15 # Δ		75p	N	Si	200J	TO39	A∅	
39	2N5335	40.0MΔ	50n		950n	100n	6 ∅	2.0 ∅	2.0m∅	15 # Δ		75p	N	Si	200J	TO39	A∅	
40	D43C1	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
41	D43C2	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
42	D43C3	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	2.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
43	D43C4	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
44	D43C5	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
45	D43C6	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	2.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
46	D43C7	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
47	D43C8	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
48	D43C9	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	2.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
49	D43C10	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
50	D43C11	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
51	D43C12	40M∅	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	2.0 ∅	20 Δ	500m	125p∅	P†	Si	150J	B15b	B∅	
52	D45C1	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	10 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
53	D45C2	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
54	D45C3	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	2.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
55	D45C4	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	10 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
56	D45C5	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
57	D45C6	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	2.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
58	D45C7	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	10 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
59	D45C8	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
60	D45C9	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	2.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
61	D45C10	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	10 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
62	D45C11	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	1.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
63	D45C12	40M∅	50n∅		500n∅	50n∅	1.6	1.0 ∅	2.0 ∅	20 Δ	500m #	125p∅	P†	Si	150J	B22	B∅	
64	SP45C1	40M∅	50n∅		500n	50n	30 ∅	1.0 ∅	1.0	10 Δ	500m		P-PL	Si	150J	Y220b	D∅	
65	SP45C2	40M∅	50n∅		500n	50n	30 ∅	1.0 ∅	1.0	20 Δ	500m		P-PL	Si	150J	Y220b	D∅	
66	SP45C3	40M∅	50n∅		500n	50n	30 ∅	1.0 ∅	2.0	20 Δ	500m		P-PL	Si	150J	Y220b	D∅	
67	SP45C4	40M∅	50n∅		500n	50n	30 ∅	1.0 ∅	1.0	10 Δ	500m		P-PL	Si	150J	Y220b	D∅	
68	SP45C5	40M∅	50n∅		500n	50n	30 ∅	1.0 ∅	1.0	20 Δ	500m		P-PL	Si	150J	Y220b	D∅	
69	SP45C6	40M∅	50n∅		500n	50n	30 ∅	1.0 ∅	2.0	20 Δ	500m		P-PL	Si	150J	Y220b	D∅	
70	SP45C7	40M∅	50n∅		500n	5												

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc AIR FREE @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	le (A)	hFE								
1#	BCX59X	125MSΔ	50n	35n	400n	80n	450m	5.0	2.0m	380	5.0	4.5p	N-PET	Si	150J	R204c	A	
2#	BCX70G	125MSΔ	50n	35n	400n	80n	200m	5.0	10m	78		4.5p	N	Si	175J	X156a	B	
3#	BCX70H	125MSΔ	50n	35n	400n	80n	200m	1.0	50m	70		4.5p	N	Si	175J	X156a	B	
4#	BCX70J	125MSΔ	50n	35n	400n	80n	200m	1.0	50m	90		4.5p	N	Si	175J	X156a	B	
5#	BCX70K	125MSΔ	50n	35n	400n	80n	200m	1.0	50m	100		4.5p	N	Si	175J	XXXXX	B	
6#	BCY65IX	125MSΔ	50n	35n	400n	80n	1.0	5.0	2.0m	460		3.5p	N-PET	Si	200J	TO18	A	
7#	BCY65VII	125MSΔ	50n	35n	400n	80n	1.0	5.0	2.0m	220		3.5p	N-PET	Si	200J	TO18	A	
8#	BCY65VIII	125MSΔ	50n	35n	400n	80n	1.0	5.0	2.0m	310		3.5p	N-PET	Si	200J	TO18	A	
9#	2SA509G	140MS	50n	35n	400n	40n	600m	2.0	50m	240	1.6	22p	P-E	Si	200J	TO92	A	
10	2N5372	150MSΔ	50n			150n	360m	10	10m	30		10p	P	Si	150J	R207	A	
11	2N5373	150MSΔ	50n			150n	360m	10	10m	75		10p	P	Si	150J	R207	A	
12	2N5374	150MSΔ	50n			175n	360m	10	10m	150		10p	P	Si	150J	R207	A	
13	2N5375	150MSΔ	50n			175n	360m	10	10m	30		10p	P	Si	150J	R207	A	
14#	BCW618A	150MS	50n	35n	400n	80n	150m	5.0	2.0m	470	35	6.0p	P-PET	Si	150J	X156a	A	
15#	BCW618B	150MS	50n	35n	400n	80n	150m	5.0	2.0m	250	35	6.0p	P-PET	Si	150J	X156a	A	
16#	BCW618C	150MS	50n	35n	400n	80n	150m	5.0	2.0m	350	35	6.0p	P-PET	Si	150J	X156a	A	
17#	BCW618D	150MS	50n	35n	400n	80n	150m	5.0	2.0m	500	35	6.0p	P-PET	Si	150J	X156a	A	
18#	BCX718G	150MS	50n	35n	400n	80n	150m	5.0	2.0m	170	35	6.0p	N-PET	Si	150J	X156a	A	
19#	BCX718H	150MS	50n	35n	400n	80n	150m	5.0	2.0m	250	35	6.0p	N-PET	Si	150J	X156a	A	
20#	BCX718J	150MS	50n	35n	400n	80n	150m	5.0	2.0m	350	35	6.0p	N-PET	Si	150J	X156a	A	
21#	BCX718K	150MS	50n	35n	400n	80n	150m	5.0	2.0m	500	35	6.0p	N-PET	Si	150J	X156a	A	
22	BCY58IX	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	350	35	6.0p	NAN	Si	200J	TO18	A	
23	BCY58VII	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	170	35	6.0p	NAN	Si	200J	TO18	A	
24	BCY58VIII	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	250	35	6.0p	NAN	Si	200J	TO18	A	
25	BCY58XIX	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	500	35	6.0p	NAN	Si	200J	TO18	A	
26	BCY59IX	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	350	35	6.0p	NAN	Si	200J	TO18	A	
27	BCY59VII	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	170	35	6.0p	NAN	Si	200J	TO18	A	
28	BCY59VIII	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	250	35	6.0p	NAN	Si	200J	TO18	A	
29	BCY59XIX	150MSΔ	50n	35n	400n	80n	775m	5.0	2.0m	500	35	6.0p	NAN	Si	200J	TO18	A	
30#	BSW43A	150MSΔ	50n	20n	200n	50n	300m	4.5	2.0m	180	6.0	8.0p	N-E	Si	125J	R110	A	
31#	BSX51	150MSΔ	50n	20n	200n	50n	300m	4.5	2.0m	225	6.0	5.0p	N-PE	Si	175A	TO18	A	
32#	BSX51A	150MSΔ	50n	20n	200n	50n	300m	4.5	2.0m	225	6.0	4.0p	N-PE	Si	175A	TO18	A	
33#	BSX52	150MSΔ	50n	20n	200n	50n	300m	4.5	2.0m	540	6.0	5.0p	N-PE	Si	175A	TO18	A	
34#	BSX52A	150MSΔ	50n	20n	200n	50n	300m	4.5	2.0m	540	6.0	4.0p	N-PE	Si	175A	TO18	A	
35	D41D1	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	10	1.0	10p	P	Si	150S	B15b	F	
36	D41D2	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	20	1.0	10p	P	Si	150S	B15b	F	
37	D41D4	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	10	1.0	10p	P	Si	150S	B15b	F	
38	D41D5	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	20	1.0	10p	P	Si	150S	B15b	F	
39	D41D7	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	10	1.0	10p	P	Si	150S	B15b	F	
40	D41D8	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	20	2.0	10p	P	Si	150S	B15b	F	
41	D41D10	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	10	1.0	10p	P	Si	150S	B15b	F	
42	D41D11	150MS	50n	75n	40n	1.6	1.0	2.0	1.0	10	1.0	10p	P	Si	150S	B15b	F	
43	D41D13	150MS	50n	75n	40n	1.6	1.0	2.0	100m	50	2.0	10p	P	Si	150S	B15b	F	
44	D41D14	150MS	50n	75n	40n	1.6	1.0	2.0	100m	150	2.0	10p	P	Si	150S	B15b	F	
45	MPS3903	150MSΔ	50n	35n	800n	90n	625m	1.0	10m	150	20	4.0p	N	Si	150J	TO92	A	
46	40450	175MS	50n	25n	500n	75n	1.0	1.0	10m	175	1.2	20p	N-PET	Si	175J	R119	A	
47	40451	175MS	50n	25n	500n	75n	1.0	1.0	10m	200	1.0	20p	N-PET	Si	175J	R119	A	
48#	2SC112	180M	50n			17n	750m	2.0	200m	125		7.0p	N	Si	175	TO5	A	
49#	BCW80A	180MS	50n	35n	400n	80n	150m	5.0	2.0m	170	25	4.5p	N-PET	Si	150J	X156a	A	
50#	BCW80B	180MS	50n	35n	400n	80n	150m	5.0	2.0m	250	25	4.5p	N-PET	Si	150J	X156a	A	
51#	BCW80C	180MS	50n	35n	400n	80n	150m	5.0	2.0m	350	25	4.5p	N-PET	Si	150J	X156a	A	
52#	BCW80D	180MS	50n	35n	400n	80n	150m	5.0	2.0m	500	25	4.5p	N-PET	Si	150J	X156a	A	
53#	BCW81A	180MS	50n	35n	400n	80n	150m	5.0	2.0m	170	25	6.0p	P-PET	Si	150J	X156a	A	
54#	BCW81B	180MS	50n	35n	400n	80n	150m	5.0	2.0m	250	25	6.0p	P-PET	Si	150J	X156a	A	
55#	BCW81C	180MS	50n	35n	400n	80n	150m	5.0	2.0m	350	25	6.0p	P-PET	Si	150J	X156a	A	
56#	BCW81D	180MS	50n	35n	400n	80n	150m	5.0	2.0m	500	25	6.0p	P-PET	Si	150J	X156a	A	
57#	BCX71G	180MS	50n	35n	400n	80n	150m	1.0	50m	60		6.0p	P	Si	175J	X156a	C	
58#	BCX71H	180MS	50n	35n	400n	480n	310m	5.0	2.0m	120		6.0p	P	Si	150J	Y236	B	
59#	BCX71I	180MS	50n	35n	400n	80n	200m	1.0	50m	80		6.0p	P	Si	175J	X156a	B	
60#	BCX71J	180MS	50n	35n	400n	480n	310m	5.0	2.0m	250		6.0p	P	Si	150J	Y236	B	
61#	BCX71K	180MS	50n	35n	400n	80n	200m	1.0	50m	100		6.0p	P	Si	175J	X156a	B	
62#	BCX71L	180MS	50n	35n	400n	480n	310m	5.0	2.0m	350		6.0p	P	Si	175C	Y236	B	
63#	BCX71M	180MS	50n	35n	400n	80n	200m	1.0	50m	110		6.0p	P	Si	175	X156a	B	
64#	BCY71K	180MS	50n	35n	400n	480n	310m	5.0	2.0m	500		7.0p	P	Si	150C	Y236	B	
65#	BCY71I	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	350		7.0p	P-PET	Si	200J	TO18	A	
66#	BCY71J	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	170		7.0p	P-PET	Si	200J	TO18	A	
67#	BCY71K	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	250		7.0p	P-PET	Si	200J	TO18	A	
68#	BCY71L	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	270		7.0p	P-PET	Si	200J	TO18	A	
69#	BCY71M	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	140		7.0p	P-PET	Si	200J	TO18	A	
70#	BCY71N	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	200		7.0p	P-PET	Si	200J	TO18	A	
71#	BCY71O	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	340		7.0p	P-PET	Si	200J	TO18	A	
72#	BCY71P	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	470		7.0p	P-PET	Si	200J	TO18	A	
73#	BCY71Q	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	200		7.0p	P-PET	Si	200J	TO18	A	
74#	BCY71R	180MS	50n	35n	400n	80n	1.0	5.0	2.0m	200		7.0p	P-PET	Si	200J	TO18	A	
75	2N3052	200MSΔ	50n	35n	400n	80n	1.0	5.0	10m	130		8.0p	N*	Si	200S	TO92	A	
76	2N3630	200MSΔ	50n	12n	35n	40n	30n	1.0	500m	35		12p	P	Si	200S	TO5	A	
77	2N3831	200MSΔ	50n	10n	40n	30n	1.0	1.0	500m	35		12p	P	Si	200S	TO5	A	
78	JAN2N5795	200MSΔ	50n	10n	40n	30n	500m	1.0	150m	100	3.2	8.0p	N	Si	200J	R131f	A	
79	JAN2N5796	200MSΔ	50n	10n	40n	30n	500m	1.0	150m	100	3.2	8.0p	N	Si	200J	R131f	A	
80#	2SC344	200MSΔ	50n			140n	250m	10	2.0m	400		3.0p	N-PE	Si	200J	TO92	A	
81#	2SC344S	200MSΔ	50n			800n	210m	10	2.0m	400		3.0p	N-E	Si	255	X156a	B	
82	40453	200MS	50n	25n	500n	75n	500m											

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	2N2790	250MΔ	50n	50n	50n	1.8	5.0	1.0	15	Δ	8.0pZ		N	SI	200J	TO18	A	
2	2N2791	250MΔ	50n	50n	60n	1.8	5.0	1.0	30	Δ	8.0pZ		N	SI	200J	TO18	A	
3	2N2792	250MΔ	50n	50n	70n	1.8	5.0	1.0	80	Δ	8.0pZ		N	SI	200J	TO18	A	
4#	2SA544	250MΔ	50n	200n	250n	750m	10	10m	40	#	13	7.0pZ	P-PE	SI	175J	TO39	A	
5#	2SC97	250MΔ	50n	100n	150n	800m	10	150m	60	#		20pZ	N-PE	SI	175J	TO5	A	
6#	BCX70AG	250MΔ	50n	35n	400n	80n	150m*	5.0	2.0m	170	35		N-PE	SI	150J	X156a	A	
7#	BCX70AH	250MΔ	50n	35n	400n	80n	150m*	5.0	2.0m	250	35		N-PE	SI	150J	X156a	A	
8#	BCX70AJ	250MΔ	50n	35n	400n	80n	150m*	5.0	2.0m	350	35		N-PE	SI	150J	X156a	A	
9#	BCX70AK	250MΔ	50n	35n	400n	80n	150m*	5.0	2.0m	500	35		N-PE	SI	150J	X156a	A	
10#	BCX70G#	250MΔ	50n	35n	400n	480n	310m#	5.0	2.0m	120	Δ		N	SI	150J	Y236	C	
11#	BCX70H#	250MΔ	50n	35n	400n	480n	310m#	5.0	2.0m	180	Δ		N	SI	150J	Y236	C	
12#	BCX70J#	250MΔ	50n	35n	400n	480n	310m#	5.0	2.0m	180	Δ		N	SI	150J	Y236	C	
13#	BCX70K#	250MΔ	50n	35n	400n	480n	310m#	5.0	2.0m	380	Δ		N	SI	150J	Y236	C	
14#	BCY58PA	250MΔ	50n	35n	400n	80n	400m	1.0	100m	40	Δ	6.0p\$	N	SI	200J	B58	F	
15#	BCY58PB	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
16#	BCY58PBK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
17#	BCY58PBL	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
18#	BCY58PBM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
19#	BCY58PC	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
20#	BCY58PCK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
21#	BCY58PCL	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
22#	BCY58PCM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
23#	BCY58PD	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
24#	BCY58PDK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
25#	BCY58PDL	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
26#	BCY58PDM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
27#	BCY59PA	250MΔ	50n	35n	400n	80n	400m	1.0	100m	40	Δ	6.0p\$	N	SI	200J	B58	F	
28#	BCY59PAK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	40	Δ	6.0p\$	N	SI	200J	B58	F	
29#	BCY59PAL	250MΔ	50n	35n	400n	80n	400m	1.0	100m	40	Δ	6.0p\$	N	SI	200J	B58	F	
30#	BCY59PAM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	40	Δ	6.0p\$	N	SI	200J	B58	F	
31#	BCY59PB	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
32#	BCY59PBK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
33#	BCY59PBL	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
34#	BCY59PBM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	45	Δ	6.0p\$	N	SI	200J	B58	F	
35#	BCY59PC	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
36#	BCY59PCK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
37#	BCY59PCM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
38#	BCY59PD	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
39#	BCY59PDK	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
40#	BCY59PDL	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
41#	BCY59PDM	250MΔ	50n	35n	400n	80n	400m	1.0	100m	60	Δ	6.0p\$	N	SI	200J	B58	F	
42#	BCY65E	250MΔ	50n	15n	30n	15n	1.0 *	1.0	10m	260		3.5p\$	N-PE	SI	200J	TO18	A	
43#	BCY65EIX	250MΔ	50n	35n	400n	80n	400m	1.0	2.0m	350		6.0pZ	N-PE	SI	200J	TO18	A	
44#	BCY65EPA	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
45#	BCY65EPAK	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
46#	BCY65EPAL	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
47#	BCY65EPAM	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
48#	BCY65EPB	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
49#	BCY65EPBK	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
50#	BCY65EPBL	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
51#	BCY65EPBM	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
52#	BCY65EPC	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
53#	BCY65EPCCK	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
54#	BCY65EPCCL	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
55#	BCY65EPCM	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
56#	BCY65EPD	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
57#	BCY65EPDK	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
58#	BCY65EPDL	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
59#	BCY65EPDM	250MΔ	50n	35n	400n	80n	400m					6.0p\$	N	SI	200J	B58	F	
60#	BCY65EVI	250MΔ	50n	35n	400n	80n	1.0	5.0	2.0m	170		6.0pZ	N-PE	SI	200J	TO18	A	
61#	BCY65EVI	250MΔ	50n	35n	400n	80n	1.0	5.0	2.0m	250		6.0pZ	N-PE	SI	200J	TO18	A	
62#	BSW41	250MΔ	50n	50n	110n	1.0	1.0	1.0	150m	40	Δ	3.3	8.0p\$Z	N-PE	SI	200J	TO18	A
63	BSX49Z	250MΔ	50n	50n	90n	1.0	1.0	1.0	10m	30		2.0	4.5p	NAN	SI	200J	TO18	A
64	MPS3906	250MΔ	50n	35n	750n	90n	625m	1.0	10m	300	Z	25	4.5pZ	P	SI	150J	TO92	A
65#	BCY58IX	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	190		35	3.0p\$	PE	SI	200J	TO18	A
66#	BCY58VII	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	20		35	3.0p\$	PE	SI	200J	TO18	A
67#	BCY58VIII	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	95		35	3.0p\$	PE	SI	200J	TO18	A
68#	BCY58X	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	300		35	3.0p\$	PE	SI	200J	TO18	A
69#	BCY59IX	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	190		35	3.0p\$	PE	SI	200J	TO18	A
70#	BCY59VII	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	20		35	3.0p\$	PE	SI	200J	TO18	A
71#	BCY59VIII	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	95		35	3.0p\$	PE	SI	200J	TO18	A
72#	BCY59X	280MΔ	50n	35n	400n	80n	1.0 *	5.0	10u	300		35	3.0p\$	PE	SI	200J	TO18	A
73	2N829	300MΔ	50n	50n	100n	300m	1.0	150m	50	Δ	20	4.0pZ	P	Ge	100J	TO18	A	
74	JAN2N962	300MΔ	50n	50n	100n	150m	1.0	100m	20	Δ	20	5.0pZ	P-E	Ge	100J	TO18	A	
75	JAN2N964	300MΔ	50n	50n	85n	150m	1.0	100m	40	Δ	18	5.0pZ	P-E	Ge	100J	TO18	A	
76	2N964A	300MΔ	50n	50n	85	300m	1.0	100m	40	Δ	18	5.0pZ	P	Ge	100J	TO18	A	
77	2N3722	300MΔ	50n	12n	45n	800m	1.0	100m	40	#	Δ	150	10pZ	N	SI	200J	TO5	A
78	2N5228	300MΔ	50n	25n	90n	50n	350m	1.0	50m	15	Δ	40	5.0p\$Z	P	SI	150S	TO92	A
79	MPS5139	300MΔ	50n	250n	200n	625m	1.0	100m	30	Δ	150	#	5.0p\$Z	P	SI	150S	TO92	A
80#	2SC52	350MΔ	50n	50n	50n	500m	6.0	1.0m	50		2.5	4.0p	N-PL	SI	150J	TO18	A	
81#	2SC1218	350MΔ	50n	50n	300n	750m	1.0	50m	80	↑		6.0pZ	N-E	SI	175J	TO39	A	
82#	BFX48	400MΔ	50n	50n	180n	1.0	1.0	1.0	10m	160	#	3.5pZ	P-DPE					

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-N-P N-N-P-N	M A T	MAX. TEMP (°C)	DWG # Y200 s/a T0200 Ser.	L C O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>								
1	2N979	100MΔ	60n				60m	500m	10	50	12	15p	P-MD	Ge	100S	T018	A	
2	2N980	100MΔ	60n	120n#			60m	300m	10m	30	20	3.0p	P	Ge	100S	T018	A	
3	2N995A	100MΔ	60n			90n	360m	1.0	20m	140	5.0	6.0p	P	Si	200J	T018	A	
4	2N1499A	100MΔ	60n	120n#			60m	500m	40m	20	25	3.0p	P	Ge	100S	T09	A	
5	JAN2N1499A	100MΔ	60n				60m	500m	40m	20	20	3.0p	P	Ge	100S	T09	A	
6	2N1958A	100MΔ	60n		25n	45n	600m	10	1	15	#	14p	N	Si	200J	T05	A	
7	2N1959A	100MΔ	60n		25n	45n	600m	10	1	25	#	14p	N	Si	200J	T05	A	
8#	2SA628	100MΔ	60n		100n	290	150m	6.0	1.0m	55	#	3.5p	P-PE†	Si	125J	T092	D	
9#	2SA628A	100MΔ	60n		100n	290	150m	6.0	1.0m	55	#	3.5p	P-PE†	Si	125J	T092	D	
10#	2SC509G	100MΔ	60n		400n†	50n†	600m	2.0	50m	240	#	1.0	N-E	Si	150J	T092	B	
11#	2SC713	100MΔ	60n		120n	30n	200m	6.0	10m	90	#	35	N-PE†	Si	125J	T092	D	
12	2N2048	150MΔ	60n			60n	150m	500m	50m	35	4.0	3.0p	P	Ge	100S	T09	A	
13	2N3081	150MΔ	60n			175n	600m	10	150m	30	Δ	2.0	P-PE	Si	200J	T05	A	
14	2N3400	150MΔ	60n	30n	200n	60n	150m	.50	50m	300	Δ	4.0	P	Ge	100S	T09	A	
15	2N4406	150MΔ	60n	15n	175n	50n	5.0	5.0	150m	30	#	15p	P	Si	200S	T039	A	
16	2N4407	150MΔ	60n	15n	175n	50n	5.0	5.0	150m	80	#	15p	P	Si	200S	T039	A	
17	2N4436	150MΔ	60n			200n	500m	10	500m	15	#	8.0p	N	Si	125J	R124	A	
18#	2SC189	150MΔ	60n		700n	300n	600m	10	150m	20	Δ	250m	N-PL	Si	175J	T05	A	
19#	2SC889	150MΔ	60n		120n	30n	200m	6.0	1.0m	35	Δ		N-PE	Si	125J	XXXXX	B	
20#	BFX50	150MΔ	60n			200n	350m	10	150m	30	Δ	1.2	NPE	Si	200J	T018	A	
21	2N3973	200MΔ	60n			110n	360m	1.0	10m	100	Δ	2.0	N	Si	150S	R67b	B	
22	2N3974	200MΔ	60n			110n	360m	1.0	10m	200	Δ	2.0	N	Si	150S	R67b	B	
23	2N3975	200MΔ	60n			200n	360m	1.0	10m	100	Δ	2.0	N	Si	150S	R67b	B	
24	2N3976	200MΔ	60n			250n	360m	1.0	10m	200	Δ	2.0	N	Si	150S	R67b	B	
25	2N4971	200MΔ	60n	20n	150n	50n	500m	10	150m	40	#	8.0p	P	Si	125S	T0106	A	
26#	BC212	200MΔ	60n			30n	300m	5.0	2.0m	60	#	10p	PE	Si	150S	R203	A	
27#	BC212A	200MΔ	60n			30n	300m	5.0	2.0m	100	Δ	10p	PE	Si	150S	R203	A	
28#	BC212B	200MΔ	60n			30n	300m	5.0	2.0m	200	Δ	10p	PE	Si	150S	R203	A	
29#	BC212K	200MΔ	60n			30n	300m	5.0	2.0m	50	Δ	10p	P-PE	Si	125A	R204a	A	
30#	BC212KA	200MΔ	60n			30n	300m	5.0	2.0m	300	Δ	10p	P-PE	Si	125A	R204a	A	
31#	BC212KB	200MΔ	60n			30n	300m	5.0	2.0m	400	Δ	10p	P-PE	Si	125A	R204a	A	
32#	BC212L	200MΔ	60n			30n	300m	5.0	2.0m	60	#	10p	PE	Si	150S	T092	B	
33#	BC212LA	200MΔ	60n			30n	300m	5.0	2.0m	100	Δ	10p	PE	Si	150S	T092	B	
34#	BC212LB	200MΔ	60n			30n	300m	5.0	2.0m	200	Δ	10p	PE	Si	150S	T092	B	
35#	BC213	200MΔ	60n			30n	300m	5.0	2.0m	80	#	10p	PE	Si	150S	R203	A	
36#	BC213A	200MΔ	60n			30n	300m	5.0	2.0m	100	Δ	10p	PE	Si	150S	R203	A	
37#	BC213B	200MΔ	60n			30n	300m	5.0	2.0m	200	Δ	10p	PE	Si	150S	R203	A	
38#	BC213C	200MΔ	60n			30n	300m	5.0	2.0m	350	Δ	10p	PE	Si	150S	R203	A	
39#	BC213K	200MΔ	60n			30n	300m	5.0	2.0m	70	Δ	10p	P-PE	Si	125A	R204a	A	
40#	BC213KA	200MΔ	60n			30n	300m	5.0	2.0m	300	Δ	10p	P-PE	Si	125A	R204a	A	
41#	BC213KB	200MΔ	60n			30n	300m	5.0	2.0m	400	Δ	10p	P-PE	Si	125A	R204a	A	
42#	BC213KC	200MΔ	60n			30n	300m	5.0	2.0m	600	Δ	10p	P-PE	Si	125A	R204a	A	
43#	BC213L	200MΔ	60n			30n	300m	5.0	2.0m	80	#	10p	PE	Si	150S	T092	B	
44#	BC213LA	200MΔ	60n			30n	300m	5.0	2.0m	100	Δ	10p	PE	Si	150S	T092	B	
45#	BC213LB	200MΔ	60n			30n	300m	5.0	2.0m	200	Δ	10p	PE	Si	150S	T092	B	
46#	BC213LC	200MΔ	60n			30n	300m	5.0	2.0m	350	Δ	10p	PE	Si	150S	T092	B	
47#	BC214	200MΔ	60n			30n	300m	5.0	2.0m	140	#	10p	PE	Si	150S	R203	A	
48#	BC214A	200MΔ	60n			30n	300m	5.0	2.0m	140	Δ	10p	PE	Si	150S	R203	A	
49#	BC214B	200MΔ	60n			30n	300m	5.0	2.0m	200	Δ	10p	PE	Si	150S	R203	A	
50#	BC214C	200MΔ	60n			30n	300m	5.0	2.0m	350	Δ	10p	PE	Si	150S	R203	A	
51#	BC214K	200MΔ	60n			30n	300m	5.0	2.0m	125	Δ	10p	P-PE	Si	125A	R204a	A	
52#	BC214KB	200MΔ	60n			30n	300m	5.0	2.0m	400	Δ	10p	P-PE	Si	125A	R204a	A	
53#	BC214KC	200MΔ	60n			30n	300m	5.0	2.0m	600	Δ	10p	P-PE	Si	125A	R204a	A	
54#	BC214L	200MΔ	60n			30n	300m	5.0	2.0m	140	#	10p	PE	Si	150S	T092	B	
55#	BC214LA	200MΔ	60n			30n	300m	5.0	2.0m	140	Δ	10p	PE	Si	150S	T092	B	
56#	BC214LB	200MΔ	60n			30n	300m	5.0	2.0m	200	Δ	10p	PE	Si	150S	T092	B	
57#	BC214LC	200MΔ	60n			30n	300m	5.0	2.0m	350	Δ	10p	PE	Si	150S	T092	B	
58	EN706	200MΔ	60n				200m	1.0	10m	20	#	90	N	Si	125J	T0106	A	
59	2N963	250MΔ	60n			120n	150m	1.0	100m	20	Δ	20	P	Ge	100S	T018	A	
60	2N967	250MΔ	60n			120n	150m	1.0	100m	40	Δ	20	P	Ge	100S	T018	A	
61	2N3299	250MΔ	60n			150n	3.0	10	150m	120	#	1.2	N	Si	200J	T05	A	
62	2N3300	250MΔ	60n			150n	3.0	10	150m	300	#	1.2	N	Si	200J	T05	A	
63	2N3301	250MΔ	60n			150n	1.8	10	150m	120	#	1.2	N	Si	200J	T018	A	
64	2N3302	250MΔ	60n			150n	360m	10	150m	300	#	1.2	N	Si	200J	T018	A	
65	2N4437	250MΔ	60n			150n	500m	10	150m	300	#	8.0p	N†	Si	125J	R124	A	
66#	2SA717	280MΔ	60n		130n	160n	5.0	10	50m	80		1.2	P-E	Si	175S	T039	A	
67	2N2319	300MΔ	60n		20n	50n	300m	.30	1.0m	20	Δ	5.0p	N	Si	200S	T046	A	
68#	BSX32	300MΔ	60n			60n	3.5	1.0	100m	90	#	10p	N-DPE	Si	200J	T05	A	
69	BSX32Z	300MΔ	60n			60n	3.5	1.0	100m	30	#	2.5	NAN	Si	200J	T039	A	
70#	BFR10	350MΔ	60n		150n		800m	10	150m	60	Δ	5.0p	N	Si	200J	T039	A	
71#	BFR11	350MΔ	60n		150n		400m	10	500	40	Δ	5.0p	N	Si	200J	T018	A	
72#	BFV31	350MΔ	60n			100n	150m	1.0	100m	15	Δ	20	PPE	Si	200J	S5a	P	
73#	BFV32	350MΔ	60n			100n	150m	1.0	100m	10	Δ	20	PPE	Si	200J	S5a	P	
74#	BFX29	360MΔ	60n			150n	600m	10	100u	90		2.6	P-PE	Si	200J	T05	A	
75#	BFX87	360MΔ	60n			150n	600m	10	1.0m	40	Δ	2.6	P-PE	Si	200J	T05	A	
76#	BFX88	360MΔ	60n			150n	600m	10	1.0m	40	Δ	2.6	P-PE	Si	200J	T05	A	
77	2N2894	400MΔ	60n			20n	360m	.50	30m	150	#	6.0p	P	Si	200J	T018	A	
78	2N3209	400MΔ	60n			90n	360m	1.0	30m	30	#	6.0	P-PE	Si	200J	T018	A	
79	40217	400MΔ	60n				300m	1.0	10m	20	Δ	5.0p	N	Si	175J	T052	A	
80#	BFV81	400MΔ	60n			90n	300m	.50	30m	40	#	6.0p	PPE	Si	200J	W5a	B	
81#	BFV81A	400MΔ	60n			75n	300m	.50	30m	30	#	6.0p	PPE	Si	200J	W5a	B	
82#	BSV21	400MΔ	60n			75n	360m	.50	30m	120	#	6.0p	PPE	Si	200J	T018	A	
83#	BSV37	400MΔ	60n			90n	550m	500m	30m	150	#	15	P-PL	Si	175J	X156f	C	
84#	ZTX510	400MΔ	60n			90n	300m	500m	30m	150	#	15	P-PL†	Si	175S	X59a	F	
85	2N3304	500MΔ	60n			60n	300m	.30	10m	63		10	P	Si	200J	T018	A	
86	2N4449	500MΔ	60n	9.0n	12n	8.0n	300m	.35	10m	40	#	4p	N	Si	200S	T046	A	
87	TP3304																	



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) f<sub>β</sub> &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a T0200 Ser.	L C O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	PT9501	1.0M	70n		15u	700n	625 ∅	80	300 ∅	10	18m		N	Si	200C			
2	PT9502	1.0M	70n		15u	700n	625 ∅	100	300 ∅	10	16m		N	Si	200C			
3	2N1301	35MΔ	70n	90n	90n	70n	150m	500m∅	40m∅	40			P-DM	Si Ge	85A	R179g	A	
4	2N2192	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	10m∅	15 Δ	2.3	20p∅	N	Si	200J	T05	A∅	
5	2N2192A	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	10m∅	15 Δ	1.7	20p∅	N	Si	200J	T05	A∅	
6	2N2192B	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	10m∅	15 Δ	1.2	20p∅	N	Si	200J	T05	A∅	
7	2N2193	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	100u∅	15 Δ		20p∅	N	Si	200J	T039	A∅	
8	2N2193A	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	100u∅	15 Δ		20p∅	N	Si	200J	T039	A∅	
9	2N2193B	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	10m∅	15 Δ	1.2	20p∅	N	Si	200J	T05	A∅	
10	2N2194	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	150m	60 #∅	2.3	20p∅	N	Si	200J	T05	A∅	
11	2N2194A	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	500m∅	12 # Δ	1.7	20p∅	N	Si	200S	T05	A∅	
12	2N2194B	50.0MΔ	70n		150n	50n	2.8 ∅	10 ∅	150m∅	20 # Δ	1.2	20p∅	N	Si	200J	T05	A∅	
13	2N2350	50.0MΔ	70n		150n	50n	400m	10 ∅	150m∅	300 #∅	2.3	20p∅	N-PE	Si	200J	T046	A∅	
14	2N2350A	50.0MΔ	70n		150n	50n	400m	10 ∅	150m∅	300 #∅	1.6	20p∅	N-PE	Si	200J	T046	A∅	
15	2N2351	50.0MΔ	70n		150n	50n	400m	10 ∅	150m∅	120 #∅	2.3	20p∅	N-PE	Si	200J	T046	A∅	
16	2N2351A	50.0MΔ	70n		150n	50n	400m	10 ∅	150m∅	120 #∅	1.6	20p∅	N-PE	Si	200J	T046	A∅	
17	2N2352	50.0MΔ	70n		150n	50n	400m	10 ∅	150m∅	60 #∅	2.3	20p∅	N-PE	Si	200J	T046	A∅	
18	2N2352A	50.0MΔ	70n		150n	50n	400m	10 ∅	150m∅	60 #∅	1.6	20p∅	N-PE	Si	200J	T046	A∅	
19	2N2364	50.0MΔ	70n	50n	500n	100n	400m	10 ∅	150m∅	120 #∅	2.3	15p∅	N-PE	Si	200J	T046	A∅	
20	2N2364A	50.0MΔ	70n	50n	500n	100n	400m	10 ∅	150m∅	120 #∅	1.6	15p∅	N-PE	Si	200J	T046	A∅	
21	A5T2192	50.0MΔ	70n		150n	50n	625m	10 ∅	150m∅	100 Δ	2.3	20p∅	N	Si	150S	R203	A	
22	A5T2193	50.0MΔ	70n		150n	50n	625m	10 ∅	150m∅	40 Δ	1.7	20p∅	N	Si	150S	R203	A	
23 #	BSY46	50.0MA	70n		150n	50n	800m	10 ∅	150m∅	80 #		20p∅	N-PE	Si	200J	T05	A	
24	MM2193A	50.0MΔ	70n		150n	50n	5.0 ∅	10 ∅	100u∅	15 Δ	1.6	20p∅	N-AN	Si	200J	T039	A	
25	2N4036	60MΔ	70n		800n	100n	7.0 ∅	10 ∅	150m∅	40	4.3m		P	Si	200J	T05	A∅	
26 #	BFR23	60MΔ	70n	110n∅	600n	100n	7.0 ∅	10 ∅	500m∅	20 Δ		30p	P	Si	200J	T039	A∅	
27 #	2N770	75MΔ	70n		20n	40n	150m	1.0 ∅	10m∅	60 ∅	2.5	3.5p∅	N	Si	150S	T018	A	
28	2N772	75MΔ	70n		40n	70n	150m	5.0 ∅	20m∅	20 Δ	2.5	3.5p∅	N	Si	150S	T018	A	
29	2N3638	100MΔ	70n	20n	140n	70n	700m∅	1.0 ∅	50m∅	30 Δ #		20p∅	P	Si	125J	R110a	A	
30	2N5142	100MΔ	70n	50n	150n	75n	700m∅	1.0 ∅	50m∅	30 # Δ		10p∅	P	Si	125J	T0105	A	
31	2N5143	100MΔ	70n	50n	150n	75n	500m∅	1.0 ∅	50m∅	30 # Δ		10p∅	P	Si	125J	T0106	A	
32 #	A5T3638	100MΔ	70n	20n	140n	70n	625m	1.0 ∅	50m∅	30 Δ	3.3	20p∅	P	Si	150S	R203	A	
33	MPS3638	100MΔ	70n		140n	70n	310m	1.0 ∅	50m∅	30 Δ		20p∅	P-PA	Si	135	T092	A	
34	MPS3638 #	100MΔ	70n	20n	140n	70n	700m∅	10 ∅	10m	20 Δ #	5.0 #	10p∅	P/PE	Si	150S	T092	A	
35	MPS3638A #	100MΔ	70n	20n	140n	70n	700m∅	10 ∅	10m	100 Δ #	5.0 #	10p∅	P/PE	Si	150S	T092	A	
36 #	MPS3638K	100MΔ	70n	20n	140n	70n	1.2 ∅	10 ∅	10m∅	20 Δ #	5.0 #	20p∅	PPL	Si	175A	X167	A	
37 #	MPS3638L	100MΔ	70n	20n	140n	70n	1.2 ∅	10 ∅	10m∅	20 Δ #	5.0 #	20p∅	PPL	Si	175A	X168	A	
38 #	MPS3638M	100MΔ	70n	20n	140n	70n	1.2 ∅	10 ∅	10m∅	20 Δ #	5.0 #	20p∅	PPL	Si	175A	X169	A	
39	TP3638	100MΔ	70n	20n	140n	70n	360m	10 ∅	10m∅	20 Δ #		20p∅	P-PL	Si	150J	R203a	A	
40	TP5142	100M	70n	50n	150n	75n	625m	1.0 ∅	50m∅	30 Δ		10p	P	Si	150S	T092	A	
41	2N1199	140MΔ	70n		20n	40n	150m	1.0 ∅	20m∅	25	25	3.5p∅	N-DA	Si Ge	150S	T09	A	
42	2N1472	140MΔ	70n		40n	70n	150m	5.0 ∅	10m∅	35	25	3.5p∅	N-DA	Si Ge	150S	T09	A	
43 #	25C1816	140MΔ	70n	40n	600n	70n	1.3	2.0 ∅	100m∅	100 *	400m	45p	N-ME	Si	120J	Y220b	D∅	
44 #	25C1816H	140MΔ	70n	40n	600n	70n	1.7	2.0 ∅	100m∅	100 *	400m	45p	N-ME	Si	120J	Y220b	D∅	
45 #	2N3638A	150MΔ	70n	20n	140n	70n	700m∅	10 ∅	1.0m∅	80 Δ		10p∅	P	Si	125J	R110a	A	
46 #	A5T3638A	150MΔ	70n	20n	140n	70n	625m	1.0 ∅	50m∅	100 Δ	3.3	10p∅	P	Si	150S	R203	A	
47	MPS3638A	150MΔ	70n	20n	140n	70n	310m	1.0 ∅	50m∅	100 Δ		10p∅	P-PA	Si	135	T092	A	
48 #	MPS3638AK	150MΔ	70n	20n	140n	70n	1.2 ∅	10 ∅	10m∅	100 Δ #		10p∅	PPL	Si	175A	X167	A	
49 #	MPS3638AL	150MΔ	70n	20n	140n	70n	1.2 ∅	10 ∅	10m∅	100 Δ #	5.0 #	10p∅	PPL	Si	175A	X168	A	
50 #	MPS3638AM	150MΔ	70n	20n	140n	70n	1.2 ∅	10 ∅	10m∅	100 Δ #	5.0 #	10p∅	PPL	Si	175A	X169	A	
51	TP3638A	150MΔ	70n	20n	140n	70n	360m	10 ∅	10m∅	100 Δ #		10p∅	P-PL	Si	150J	R203a	A	
52	2N4452	200MΔ	70n	25n	140n	70n	3 ∅	10 ∅	10m∅	120 Δ		8p∅	P	Si	200J	T046	A	
53 #	25C715	200MΔ	70n		170n	60n	125m	6.0 ∅	1.0m∅	80		3.0p	N-PE	Si	125J	R145	D	
54 #	BFY72	250MΔ	70n		170n	60n	3.0 ∅	10 ∅	1.0m∅	85		8.0p∅	N-DPE	Si	200J	T05	∅	
55	2N828	300MΔ	70n		50n	50n	300m∅	3.0 ∅	10m∅	25 Δ	20	6.0p∅	P	Si	100J	T018	A∅	
56	2N3723	300MΔ	70n	15n	110n	50n	800m	1.0 ∅	100m∅	40 # Δ		9.0p∅	N	Si	200J	T05	A	
57	2N5141	300MΔ	70n	45n	100n	70n	500m∅	2.0 ∅	10m∅	25 # Δ		7p∅	P	Si	125J	T0106	A	
58 #	25C423	500MΔ	70n		120n	60n	500m	5.0 ∅	20m∅	80		5.0p	N-PE	Si	175J	T039	B	
59 #	25C933	500MΔ	70n		120n	60n	300m	5.0 ∅	20m∅	150			N-PE	Si	125J	T092	B	
60 #	25C934	500MΔ	70n		120n	60n	200m	5.0 ∅	20m∅	80			N-PE	Si	125J	T0104	B	
61 #	25A711	800MΔ	70n		130n	170n	300m	1.0 ∅	10m∅	70 Δ		4.0p∅	P-E	Si	150J	T018	A∅	
62	2N2930	4.0MΔ	73n	350n	100n	73n	250m	6.0 ∅	100m∅	50 Δ	2.5	20p∅	P	Si	100S	T05	A	
63	2N695	75n∅			100n	100n	75m	300m∅	10m∅	25 Δ	2.0	5.0p∅	P	Si	100J	T017	G	
64	JAN2N695	75n∅			100n	100n	150m	300m∅	10m∅	25 Δ	20	5.0p∅	P	Si	100J	T017	G	
65	JAN2N705	75n∅			100n	100n	150m	300m∅	10m∅	10 Δ			P	Si	100J	T018	A	
66	2N705A	75n∅			50n	75n	150m	300m∅	10m∅	25 Δ	30	8.0p∅	P	Si	100J	T018	A	
67	2N710A	75n∅			50n	75n	50m	500m∅	10m∅	25 Δ	50	8.0p∅	P	Si	100S	T018	A∅	
68	2N782	75n∅			35n	75n∅	300m∅	25 ∅	10m∅	20 Δ	20		P	Si	100J	T018	A∅	
69	2N5019	75n	15n	100n∅			1.8 ∅				150 \$	45p∅	P	Si	200J	T018	DA∅	
70	P1087E	75n	15n			100n∅	350m					45p∅	P	Si	125J	R97b	DB	
71	P1087RR	75n	15n			75n	300m					45p∅	\$	Si	150S	T092	DF	
72	ETP2008	20MΔ	75n∅			75n∅	800m	50	5.0m∅	65 †	100	7.0p	N-PL	Si	175J	T05	A∅	
73	2N865	24MΔ	75n		100n	75n	150m	500m∅	5.0m∅	45 Δ	2.0	9.0p∅	P	Si	140S	T018	A	
74 #	25C1636	30MΔ	75n	30n	600n	130n	300m	3.0 ∅	1.0m∅	2.0K∅	7.5	4.0p	N-E∅	Si	120J	X153	B	
75	2N2695	100MΔ	75n∅		170n	170n	360m	1.0 ∅	50m∅	30 † #	3.0	20p∅	P-PE	Si	200J	T046	A∅	
76	2N2696	100MΔ	75n∅		170n	170n	360m	1.0 ∅	50m∅	30 † #	3.0	20p∅	P-PE	Si	200J	T018	A∅	
77	2N2927	100MΔ	75n∅		170n	170n	3.0 ∅	1.0 ∅	50m∅	30 † Δ	5.0	20p∅	P	Si	200J	T05	A∅	
78 #	BD124	120MΔ	75n		240n	40n	15 ∅	5.0 ∅	500m∅	75	500m		N-PE	Si	175J	F9b	C∅	
79	2N2400	150MΔ	75n∅	140n	150n	130n	150m	5.0 ∅	10m∅	30 Δ								



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								Vcb (V)	Ie (A)	hFE								
1	2N2634	20M5Δ	80n		60n	80n	20 ∅	5.0	5.0	40 Δ		150pZ	N	Si	175J	T25c	A	
2	2N2657	20.0M5Δ	80n		60n	80n	4 ∅	6.0	5.0	15 Δ #		150pZ	N	Si	200J	T05	A	
3	2N2658	20.0M5Δ	80n		60n	80n	4 ∅	6.0	5.0	15 Δ #		150pZ	N	Si	200J	T05	A	
4	2N2697	20M5Δ	80n	100n∅	60n	80n	10 ∅	6.0	5.0	15 Δ #		150pZ	N	Si	200C	T9	B	
5	2N2698	20M5Δ	80n	100n∅	60n	80n	10 ∅	6.0	5.0	15 Δ #		150pZ	N	Si	200C	T9	B	
6#	2S503	30.0M5Δ	80n∅		100n∅	5.0u∅	300m	5.0	10u∅	180 Δ	100	8.0pZ	N-PL∅	Si	175J	T018	B	
7	2N1384	35.0M	80n	20n	250n	100n	240m	5.0	200m	50 Δ		150pZ	P-D	Ge	85A	T011	A	
8	2N3747	40.0M5Δ	80n		60n	80n	30 ∅	5.0	5.0	15 Δ		150pZ	N	Si	200J	T53	G	
9	2N3748	40.0M5Δ	80n		60n	80n	30 ∅	5.0	5.0	15 Δ		150pZ	N	Si	200J	T53	G	
10	2N3749	40.0M5Δ	80n		60n	80n	30 ∅	5.0	5.0	15 Δ		150pZ	N	Si	200J	T53	G	
11	2N2878	50M5Δ	80n		60n	80n	30 ∅	2.0	10m∅	30 Δ		150pZ	N	Si	200J	T0111	A	
12	2N2880	50M5Δ	80n		60n	80n	30 ∅	2.0	10m∅	30 Δ		150pZ	N	Si	200J	T0111	A	
13	2N3750	50.0M5Δ	80n		60n	80n	30 ∅	5.0	5.0	20 Δ		150pZ	N	Si	200J	T53	G	
14	2N3751	50.0M5Δ	80n		60n	80n	30 ∅	5.0	5.0	20 Δ		150pZ	N	Si	200J	T53	G	
15	2N3752	50.0M5Δ	80n		60n	80n	30 ∅	5.0	5.0	20 Δ		150pZ	N	Si	200J	T53	G	
16	2N5320	50.0M5Δ	80n∅		800n∅	10 ∅	2.0	1.0	10 Δ	10 Δ	1.0		N	Si	200J	T05	A	
17	2N5321	50.0M5Δ	80n∅		800n∅	10 ∅	4.0	500m	250	30 Δ #	1.6		N	Si	200J	T05	A	
18	2N6178	50M5Δ	80n∅		800n∅	10 ∅	4.0	500m	30 Δ #	1.0 #			N	Si	150J	B24	A	
19	2N6179	50M5Δ	80n∅		800n∅	10 ∅	4.0	500m	40 Δ #	1.8 #			N	Si	150J	B24	A	
20#	BSS15	50M5Δ	80n∅		800n∅	10 ∅	4.0	500m	30 Δ				N-PE	Si		T039	A	
21#	BSS16	50M5Δ	80n∅		800n∅	10 ∅	4.0	500m	40 Δ				N-PE	Si		T039	A	
22#	BUR10	50M5Δ	80n∅		800n∅	10 ∅	4.0	500m	30 Δ				N-PE	Si		T039	A	
23#	2SC850	70.0M5	80n		60n	80n	30	2.0	1.0	120		100m#	N	Si	200J	T066	A	
24#	BSS44	70M5Δ	80n∅		800n	15n	500m	4.0	10m	160		100p#	N	Si	175J	T018	A	
25#	2SC803	90.0M5	80n		2.0u	1.0u	5.0	4.0	400m	70	1.0	9.0p	P-PE	Si	175J	T05	A	
26#	2SC1707AHB	100MΔ	80n∅		220n∅	300n∅	200m	1.0	10m	100	2.6p		N	Si	175J	T018	A	
27#	2SC1707HB	100MΔ	80n∅		220n∅	300n∅	200m	1.0	10m	100	2.6p		N	Si	175J	T018	A	
28#	2SC1707HC	100MΔ	80n∅		220n∅	300n∅	200m	1.0	10m	160	2.6p		N	Si	175J	T018	A	
29#	2SC1707HD	100MΔ	80n∅		220n∅	300n∅	200m	1.0	10m	250	2.6p		N	Si	175J	T018	A	
30#	ZT80	120M5Δ	80n∅		300n∅	300m	6.0	10m	162	40	8.0pZ		N-PE	Si	150J	T018	A	
31#	ZT81	120M5Δ	80n∅		300n∅	300m	6.0	10m	162	40	8.0pZ		N-PE	Si	150J	T018	A	
32#	ZT82	120M5Δ	80n∅		300n∅	300m	6.0	10m	250	20	8.0pZ		N-PE	Si	150J	T018	A	
33#	ZT83	120M5Δ	80n∅		300n∅	300m	6.0	10m	85	20	8.0pZ		N-PE	Si	200J	T018	A	
34#	ZT84	120M5Δ	80n∅		300n∅	300m	6.0	10m	70	40	8.0pZ		N-PE	Si	200J	T018	A	
35#	ZT86	120M5Δ	80n∅		300n∅	300m	6.0	10m	85	40	8.0pZ		N-PE	Si	200J	T018	A	
36#	ZT87	120M5Δ	80n∅		300n∅	300m	6.0	10m	250	40	8.0pZ		N-PE	Si	200J	T018	A	
37#	ZT88	120M5Δ	80n∅		300n∅	300m	6.0	10m	170	20	8.0pZ		N-PL∅	Si	200J	T018	A	
38#	ZT89	120M5Δ	80n∅		300n∅	300m	6.0	10m	250	20	8.0pZ		N-PL∅	Si	200J	T018	A	
39#	ZTX652	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
40#	ZTX652K	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
41#	ZTX652L	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
42#	ZTX652M	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
43#	ZTX652S	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
44#	ZTX653	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
45#	ZTX653K	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
46#	ZTX653L	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
47#	ZTX653M	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
48#	ZTX653S	175M5	80n∅		1.2u∅	1.0	2.0	500m	200	300m#			N-PLT	Si	200J	B58a	A	
49	2N2478	200M5Δ	80n		130n	55n	600m	1.5	150m	30 Δ		12p	N-PE	Si	175A	T05	A	
50	101A	320M5	80n∅		120n	80n	150m	3.0	50m	40	30		P-ME	Ge		T018	A	
51	101B	320M5	80n∅		120n	80n	150m	3.0	50m	40	30		P-ME	Ge		T018	A	
52	101M	320M5	80n∅		120n	80n	150m	3.0	50m	40	30		P-ME	Ge		T018	A	
53#	V405A	400M5Δ	80n∅		110n∅	1.0 ∅	2.0	10m	20	∅ Δ		3.0n	P-DPE	Si	175J	T018	A	
54	2N2086	150M5Δ	85n		130n	55n	2.0	1.5	150m	20	4.5	12pZ	N	Si	175J	T05	A	
55	2N2087	150M5Δ	85n		100n	55n	2.0	1.0	150m	120	3.3	12pZ	N	Si	175J	T05	A	
56	2N4305	90n	50n	300n	100n	1.5	2.0	5.0m	10	∅ #	.20 #	100pZ	N	Si	200J	T05	A	
57	2N4306	90n	50n	300n	100n	4.0	2.0	5.0m	10	∅ #	.20 #	100pZ	N	Si	200J	T65	A	
58	2N4307	90n	50n	300n	100n	1.5	2.0	5.0m	10	∅ #	.20 #	100pZ	N	Si	200J	T05	A	
59	2N4308	90n	50n	300n	100n	4.0	2.0	5.0m	10	∅ #	.20 #	100pZ	N	Si	200C	T65	A	
60	2N4309	90n	50n	300n	100n	1.5	2.0	5.0m	10	∅ #	.33 #	100pZ	N	Si	200J	T05	A	
61	2N4310	90n	50n	300n	100n	4.0	2.0	5.0m	10	∅ #	.33 #	100pZ	N	Si	200C	T65	A	
62	2N4311	90n	50n	300n	100n	1.5	2.0	5.0m	10	∅ #	.33 #	100pZ	N	Si	200J	T05	A	
63	2N4312	90n	50n	300n	100n	4.0	2.0	5.0m	10	∅ #	.33 #	100pZ	N	Si	200C	T65	A	
64#	2SA530HB	100M5Δ	90n∅		300n	180n∅	200m	1.0	10m	60	8.0pZ		PE	Si	175J	T018	A	
65#	2SA530HC	100M5Δ	90n∅		300n	180n∅	200m	1.0	10m	100	8.0pZ		PE	Si	175J	T018	A	
66	2N5865	100M5Δ	90n	30n	350n	150n	7.0	1.0	1.0m	40	2.5	20pZ	P	Si	200S	T039	A	
67	2SA530H	200M5Δ	90n∅		150n∅	180n∅	200m	1.0	10m	35	12	8.0pZ	P-PE	Si	175J	T018	A	
68#	2SC1007	150M5Δ	95n∅		195n∅	240n∅	300m	1.0	10m	80	7.0	5.5pZ	N-E	Si	150S	T018	A	
69#	2SC1776	220M5	95n∅		190n∅	240n∅	300m	1.0	10m	150	7.0	5.0p	N-PE	Si	150S	R212	A	
70	JAN2N559	1000M5Z	95n	50n∅	95n	100n	300m∅	500m∅	10m	120	2.6	6.0pZ	P	Ge	150S	T018	A	
71	2N1072	100n∅	100n∅		300n∅	12 ∅	5.0	750m	15		1.5	55pZ	N	Si	150J	T038	A	
72	JAN2N1072	100n∅	100n∅		300n∅	12 ∅	5.0	750m	20		1.5	55pZ	N	Si	150S	T038	A	
73	2N1450	100n	100n	100n	85n	120m	1.0	10m	20	Δ			P-AD	Ge	85S	T09	A	
74	JAN2N1450M	100n	100n	100n	85n	120m	1.0	10m	20	Δ			P	Ge	100S	R179e	A	
75	2N3966	100n	20n		100n∅	320m				25	220 \$	6.0pZ	N	Si	200S	T072	DH	
76	D4D20	100n	100n	100n	100n	150m	5.0	10m	15		150	4.0pZ	N-GD	Si	150J	R133	A	
77	D4D21	100n	100n	100n	100n	150m	5.0	10m	15		150	4.0pZ	N-GD	Si	150J	R133	A	
78	IRF330	100n	50n∅	100n∅	100n	75					1.0 *	1.0nZ	Ns	Si	150J	T03	\$	
79	IRF331	100n	50n∅	100n∅	100n	75					1.0 *	1.0nZ	Ns	Si	150J	T03	\$	
80	IRF332	100n	50n∅	100n∅	100n	75					1.5 *	1.0nZ	Ns	Si	150J	T03	\$	
81	IRF333	100n	50n∅	100n∅	100n	75					1.5 *	1.0nZ	Ns	Si	150J	T03	\$	
82	IRF450	100n	80n	300nZ	140n	150					0.4 *	3.0nZ	N	Si	150J	T03	DE	
83	IRF451	100n	80n	300nZ	140n	150					0.4 *	3.0nZ	N	Si				

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a T0200 Sar.	L E O A D E
								Vcb (V)	Ic (A)	hFE								
1	GSTU8040	25M5Δ	100n	50n	2.7u	350n	188	5.0	8.0	10	100m	300p	N-D	Si	175J	T03	C	
2	XGSR10040	25M5Δ	100n		500n	400n	100	5.0	10	20	80m	350p	ND	Si	175J	T03	C	
3	2N2225	30.0M	100n		100n	100n	200m	5.0	10	60	1.2	14p	P-A	Si	85C	T05	Ø	
4	2N5336	30.0M5Δ	100n	100n	2.0u	200n	8	2.0	500m	20			N	Si	200J	T039	A	
5	2N5337	30.0M5Δ	100n	100n	2.0u	200n	8	2.0	500m	40			N	Si	200J	T039	A	
6	2N5338	30.0M5Δ	100n	100n	2.0u	200n	6.0	2.0	500m	20			N	Si	200J	T039	A	
7	2N5339	30.0M5Δ	100n	100n	2.0u	200n	8	2.0	500m	40			N	Si	200J	T039	A	
8	2N5346	30.0M5Δ	100n	100n	2.0u	200n	80	2.0	500m	20		250p	N	Si	200J	T059	A	
9	2N5347	30.0M5Δ	100n	100n	2.0u	200n	60	2.0	500m	40		250p	N	Si	200J	T059	A	
10	2N5348	30.0M5Δ	100n	100n	2.0u	200n	80	2.0	500m	20		250p	N	Si	200J	T059	A	
11	2N5349	30.0M5Δ	100n	100n	2.0u	200n	80	2.0	500m	40		250p	N	Si	200J	T059	A	
12	2N5427	30M5Δ	100n	100n	2.0u	200n	40	2.0	500m	20		250p	N	Si	200J	T066	C	
13	2N5428	30M5Δ	100n	100n	2.0u	200n	40	2.0	500m	40		250p	N	Si	200J	T066	C	
14	2N5429	30M5Δ	100n	100n	2.0u	200n	40	2.0	500m	20		250p	N	Si	200J	T066	C	
15	2N5430	30M5Δ	100n	100n	2.0u	200n	40	2.0	500m	40		250p	N	Si	200J	T066	C	
16	2N5477	30.0M5Δ	100n	100n	2.0u	200n	60	2.0	500m	30		250p	N	Si	200J	T059	C	
17	2N5478	30.0M5Δ	100n	100n	2.0u	200n	60	2.0	500m	60		250p	N	Si	200J	T059	C	
18	2N5479	30.0M5Δ	100n	100n	2.0u	200n	60	2.0	500m	30		250p	N	Si	200J	T059	C	
19	2N5480	30.0M5Δ	100n	100n	2.0u	200n	60	2.0	500m	60		250p	N	Si	200J	T059	C	
20	2N5552	30.0M5Δ	100n		700n		15	5.0	10m	30		150p	N	Si	200J	R179k	A	
21	2N6182	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	20		300p	P	Si	200J	T039	A	
22	2N6183	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	40		300p	P	Si	200J	T039	A	
23	2N6184	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	20		300p	P	Si	200J	T039	A	
24	2N6185	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	40		300p	P	Si	200J	T039	A	
25	2N6186	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	20		300p	P	Si	200J	T039	A	
26	2N6187	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	40		300p	P	Si	200J	T039	A	
27	2N6188	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	20		300p	P	Si	200J	T039	A	
28	2N6189	30M5Δ	100n	100n	2.0u	200n	60	2.0	500m	40		300p	P	Si	200J	T039	A	
29	2N6190	30M5Δ	100n	100n	2.0u	200n	10	2.0	500m	20		300p	P	Si	200J	T039	A	
30	2N6191	30M5Δ	100n	100n	2.0u	200n	10	2.0	500m	40		300p	P	Si	200J	T039	A	
31	2N6192	30M5Δ	100n	100n	2.0u	200n	10	2.0	500m	20		300p	P	Si	200J	T039	A	
32	2N6193	30M5Δ	100n	100n	2.0u	200n	10	2.0	500m	40		300p	P	Si	200J	T039	A	
33	2852-1	30M5	100n	50n	400n	150n	5.0	1.0	50m	15		400m	N-PL	Si	200A	T05	A	
34	2852-2	30M5	100n	50n	400n	150n	2.2	1.0	50m	15		400m	N-PL	Si	200A	T059	A	
35	2856-1	30M5	100n	50n	400n	150n	5.0	1.0	50m	25		60p	N-PL	Si	200A	T32	A	
36	2856-2	30.0M5	100n	50n	400n	150n	2.0	1.0	50m	15		125p	N-PL	Si	200A	T059	A	
37	HEPS3010-RT	30M5Δ	100n	1.5u	500n	10	2.0	1.0	30	30		200m	N	Si	200J	T039	A	
38	MJ500	30M5Δ	100n	100n	1.0u	150n	60	2.0	500m	15		350m	P	Si	200J	T059	A	
39	MJ501	30M5Δ	100n	100n	1.0u	150n	60	2.0	500m	15		350m	P	Si	200J	T059	A	
40	MJ4647	30M5Δ	100n	100n		720n	5.0	1.0	100m	25		3.0	P	Si	200J	T039	A	
41	MJ4648	30M5Δ	100n	100n		720n	5.0	1.0	100m	25		3.0	P	Si	200J	T039	A	
42	MJ6700	30M5Δ	100n	100n	1.0u	150n	60	2.0	500m	15		300p	P	Si	200J	T059	A	
43	MJ6701	30M5Δ	100n	100n	1.0u	150n	60	2.0	500m	15		300p	P	Si	200J	T059	A	
44	MJ8100	30M5Δ	100n	100n	1.0u	150n	10	2.0	500m	15		300p	P	Si	200J	T039	A	
45	MJ8101	30M5Δ	100n	100n	1.0u	150n	10	2.0	500m	15		300p	P	Si	200J	T039	A	
46	SVT350-3	30M	100n	50n	1.5u	150n	75	5.0	30	15		350p	N-DM	Si	150J	T03	C	
47	SVT350-5	30M	100n	50n	1.5u	150n	100	5.0	50	15		500p	N-DM	Si	150J	T03	C	
48	SVT400-3	30M	100n	50n	1.5u	150n	75	5.0	30	15		350p	N-DM	Si	150J	T03	C	
49	SVT400-5	30M	100n	50n	1.5u	150n	100	5.0	50	15		500p	N-DM	Si	150J	T03	C	
50	SVT450-3	30M	100n	50n	1.5u	150n	75	5.0	30	15		350p	N-DM	Si	150J	T03	C	
51	SVT450-5	30M	100n	50n	1.5u	150n	100	5.0	50	15		500p	N-DM	Si	150J	T03	C	
52	XGSR50020	30M5Δ	100n		700n	200n	100	5.0	50	8.0		50m	NDPL	Si	175J	T03	C	
53	2850-1	40M5	100n	50n	400n	150n	5.0	1.0	50m	25		250m	N-PL	Si	200A	T05	A	
54	2850-2	40M5	100n	50n	400n	150n	2.2	1.0	50m	25		250m	N-PL	Si	200A	T059	A	
55	2851-1	40M5	100n	50n	400n	150n	5.0	1.0	50m	25		400m	N-PL	Si	200A	T05	A	
56	2851-2	40M5	100n	50n	400n	150n	2.2	1.0	50m	25		400m	N-PL	Si	200A	T059	A	
57	2853-1	40M5	100n	58n	400n	200n	5.0	3.0	50	35		60p	N-PL	Si	200A	T05	A	
58	2853-2	40.0M5	100n	50n	400n	200n	2.0	3.0	50	20		300m	N-PL	Si	200A	T059	A	
59	2855-1	40M5	100n	50n	400n	150n	2.2	1.0	50m	50		60p	N-PL	Si	200A	T059	A	
60	2855-2	40.0M5	100n	50n	400n	150n	2.0	1.0	50m	25		400m	N-PL	Si	200A	T059	A	
61	MJ4645	40M5Δ	100n	100n		720n	5.0	1.0	100m	25		2.0	P	Si	200J	T039	A	
62	MJ4646	40M5Δ	100n	100n		720n	5.0	1.0	100m	25		2.4	P	Si	200J	T039	A	
63	2N3039	50.0M5Δ	100n	50n	500n	150n	1.0	1.0	100u	15		20	P	Si	200S	T050	A	
64	2N3040	50.0M5Δ	100n	50n	500n	150n	1.0	1.0	100u	30		20	P	Si	200S	T050	A	
65	2N3341	50.0M5Δ	100n				400m	1.0	10u	40		25k	P	Si	175A	T046	A	
66	2N5322	50.0M5Δ	100n				1u	10	1	10		1.4	P	Si	200J	T05	A	
67	2N5323	50.0M5Δ	100n				1u	10	40	500m	250	2.4	P	Si	200J	T05	A	
68	2N5357	50M5Δ	100n	50n	600n	100n	30	1.0	10m	50		3.0	P	Si	200J	T037	A	
69	2N6180	50M5Δ	100n				1.0u	4.0	500m	30		1.4	P	Si	150J	B24	A	
70	2N6181	50M5Δ	100n				1.0u	4.0	500m	40		2.4	P	Si	150J	B24	A	
71	2854-1	50M5	100n	50n	300n	150n	5.0	1.0	50m	50		60p	N-PL	Si	200A	T05	A	
72	2854-2	50M5	100n	50n	300n	150n	2.2	1.0	50m	50		60p	N-PL	Si	200A	T059	A	
73	D42C1	50M5	100n	50n	500n	75n	1.7	1.0	1.0	10		500m	N					

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								Vcb (V)	Ic (A)	hFE								
1	UPT113	50M	100n			250n	4.0	5.0	2.0	15	1.0	50p	N-PL	Si	200J	T05	A	
2	UPT114	50M	100n			250n	4.0	5.0	2.0	15	1.0	50p	N-PL	Si	200J	T05	A	
3	UPT115	50M	100n			250n	4.0	5.0	2.0	15	1.0	50p	N-PL	Si	200J	T05	A	
4	2N3021	60.0MΔ	100n		325n	75n	25	2.0	1.0m	20	.50		P	Si	175C	T03	C	
5	2N3022	60.0MΔ	100n		325n	75n	25	2.0	1.0m	20	.50		P	Si	175C	T03	C	
6	2N3023	60.0MΔ	100n		325n	75n	25	2.0	1.0m	20	.50		P	Si	175C	T03	C	
7	2N3024	60.0MΔ	100n		325n	75n	25	2.0	1.0m	50	.33		P	Si	175C	T03	C	
8	2N3025	60.0MΔ	100n		325n	75n	25	2.0	1.0m	50	.33		P	Si	175C	T03	C	
9	2N3026	60.0MΔ	100n		325n	75n	25	2.0	1.0m	50	.33		P	Si	175C	T03	C	
10	2N3719	60.0MΔ	100n		400n	6	6	1.5	1	25	#Δ		P	Si	200J	T05	A	
11	2N3720	60.0MΔ	100n		400n	6	6	1.5	1	25	#Δ		P	Si	200J	T05	A	
12#	2SA1040	60M	100n		100n	700n	100	5.0	1.0	100		240m	P-PE	Si	175J	T03	C	
13#	2SA1041	60M	100n		100n	700n	100	5.0	1.5	100		214m	P-PE	Si	175J	T03	C	
14#	2SA1042	60M	100n		100n	700n	100	5.0	1.5	100		214m	P-PE	Si	175J	T03	C	
15#	2SA1043	60M	100n		100n	700n	150	5.0	3.0	100		100m	P-PE	Si	175J	F6e	C	
16#	2SA1044	60M	100n		100n	100n	150	5.0	3.0	100		100m	P-PE	Si	175J	F6e	C	
17	TIP501	60MΔ	100n		400n	6.0	6.0	1.5	500m	20	#	120p	N	Si	200J	T039	A	
18	TIP502	60MΔ	100n		400n	6.0	6.0	1.5	500m	20	#	120p	N	Si	200J	T039	A	
19	JAN2N702	70MΔ	100n		100n	800m	600m	5.0	10m	60	#	6.0p	N-DPL	Si	200S	T018	A	
20	JAN2N703	70MΔ	100n		100n	800m	600m	5.0	10m	100	#	6.0p	N-DPL	Si	200S	T018	A	
21	2N3340	70.0MΔ	100n			400m	400m	1.0	0.1m	40	#	6.0p	N	Si	175A	T046	A	
22	D40C1	75M	100n		350n	800n	1.3	5.0	20m	10k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
23	D40C2	75M	100n		350n	800n	1.3	5.0	20m	20k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
24	D40C3	75M	100n		350n	800n	1.3	5.0	20m	90k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
25	D40C4	75M	100n		350n	800n	1.3	5.0	20m	10k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
26	D40C5	75M	100n		350n	800n	1.3	5.0	20m	20k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
27	D40C7	75M	100n		350n	800n	1.3	5.0	20m	10k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
28	D40C8	75M	100n		350n	800n	1.3	5.0	20m	20k	3.0	5.0p	N-PE	Si	150J	B15b	KN	
29#	BD320A	80M	100n		770n	5.0	5.0	10	100m	4.0	1.6	6.0p	N-PL	Si	175S	R216h	A	
30#	BD320B	80M	100n		770n	5.0	5.0	10	100m	4.0	1.6	6.0p	N-PL	Si	175S	R216h	A	
31#	BD320C	80M	100n		770n	5.0	5.0	10	100m	4.0	1.6	6.0p	N-PL	Si	175S	R216h	A	
32#	BD321A	80M	100n		650n	5.0	5.0	10	100m	4.0	850m	8.5p	N-PL	Si	175S	R216h	A	
33#	BD321B	80M	100n		650n	5.0	5.0	10	100m	4.0	850m	8.5p	N-PL	Si	175S	R216h	A	
34#	BD321C	80M	100n		650n	5.0	5.0	10	100m	4.0	850m	8.5p	N-PL	Si	175S	R216h	A	
35#	BD322A	80M	100n		770n	7.5	7.5	10	100m	4.0	1.6	6.0p	N-PL	Si	175S	R216h	A	
36#	BD322B	80M	100n		770n	7.5	7.5	10	100m	4.0	1.6	6.0p	N-PL	Si	175S	R216h	A	
37#	BD322C	80M	100n		770n	7.5	7.5	10	100m	4.0	1.6	6.0p	N-PL	Si	175S	R216h	A	
38#	BD323A	80M	100n		650n	10	10	10	100m	4.0	850m	8.5p	N-PL	Si	175S	R216h	A	
39#	BD323B	80M	100n		650n	10	10	10	100m	4.0	850m	8.5p	N-PL	Si	175S	R216h	A	
40#	BD323C	80M	100n		650n	10	10	10	100m	4.0	850m	8.5p	N-PL	Si	175S	R216h	A	
41	2N4354	100MΔ	100n		400m	800m	800m	10	10m	50	#	30p	P	Si	125J	R124b	A	
42	2N4355	100MΔ	100n		400m	800m	800m	10	10m	100	#	30p	P	Si	125J	R124b	A	
43	2N4356	100MΔ	100n		400m	800m	800m	10	10m	50	#	30p	P	Si	125J	R124b	A	
44#	A54026	100MΔ	100n		350n	625m	625m	10	100m	40	1.0	20p	P	Si	150S	R203	A	
45#	A54027	100MΔ	100n		350n	625m	625m	10	100m	40	1.0	20p	P	Si	150S	R203	A	
46#	BCW65A	100M	100n		400n	350m	350m	1.0	100m	250	3.0	12p	N-PL	Si	175S	X156a	A	
47#	BCW65B	100M	100n		400n	350m	350m	1.0	100m	400	3.0	12p	N-PL	Si	175S	X156a	A	
48#	BCW65C	100M	100n		400n	350m	350m	1.0	100m	630	3.0	12p	N-PL	Si	175S	X156a	A	
49#	BCW65EA	100MΔ	100n		400n	350m	350m	1.0	100m	250	3.0	12p	N-PE	Si	150J	X156	A	
50#	BCW65EB	100MΔ	100n		400n	350m	350m	1.0	100m	400	3.0	12p	N-PE	Si	150J	X156	A	
51#	BCW65EC	100MΔ	100n		400n	350m	350m	1.0	100m	630	3.0	12p	N-PE	Si	150J	X156	A	
52#	BCW66EF	100MΔ	100n		400n	350m	350m	1.0	100m	250	3.0	12p	N-PE	Si	150J	X156	A	
53#	BCW66EG	100MΔ	100n		400n	350m	350m	1.0	100m	400	3.0	12p	N-PE	Si	150J	X156	A	
54#	BCW66EH	100MΔ	100n		400n	350m	350m	1.0	100m	630	3.0	12p	N-PE	Si	150J	X156	A	
55#	BCW66F	100M	100n		400n	350m	350m	1.0	100m	250	3.0	12p	N-PL	Si	175S	X156a	A	
56#	BCW66G	100M	100n		400n	350m	350m	1.0	100m	400	3.0	12p	N-PL	Si	175S	X156a	A	
57#	BCW66H	100M	100n		400n	350m	350m	1.0	100m	630	3.0	12p	N-PL	Si	175S	X156a	A	
58#	BCW67A	100MΔ	100n		400n	350m	350m	1.0	100m	250	3.0	18p	P-PL	Si	175S	X156a	A	
59#	BCW67B	100MΔ	100n		400n	350m	350m	1.0	100m	400	3.0	18p	P-PL	Si	175S	X156a	A	
60#	BCW67C	100MΔ	100n		400n	350m	350m	1.0	100m	630	3.0	18p	P-PL	Si	175S	X156a	A	
61#	BCW67DA	100MΔ	100n		400n	350m	350m	1.0	100m	250	3.0	18p	N-PE	Si	150J	X156	A	
62#	BCW67DB	100MΔ	100n		400n	350m	350m	1.0	100m	400	3.0	18p	N-PE	Si	150J	X156	A	
63#	BCW67DC	100MΔ	100n		400n	350m	350m	1.0	100m	630	3.0	18p	N-PE	Si	150J	X156	A	
64#	BCW68DF	100MΔ	100n		400n	350m	350m	1.0	100m	250	3.0	18p	N-PE	Si	150J	X156	A	
65#	BCW68DG	100MΔ	100n		400n	350m	350m	1.0	100m	400	3.0	18p	N-PE	Si	150J	X156	A	
66#	BCW68DH	100MΔ	100n		400n	350m	350m	1.0	100m	630	3.0	18p	N-PE	Si	150J	X156	A	
67#	BCW68F	100M	100n		400n	350m	350m	1.0	100m	250	3.0	12p	P-PL	Si	175S	X156a	A	
68#	BCW68G	100M	100n		400n	350m	350m	1.0	100m	400	3.0	12p	P-PL	Si	175S	X156a	A	
69#	BCW68H	100M	100n		400n	350m	350m	1.0	100m	630	3.0	12p	P-PL	Si	175S	X156a	A	
70#	BCX73-16	100MΔ	100n		400n	625m	625m	1.0	100m	250	8.0p		N-PLT	Si	150J	R204c	A	
71#	BCX73-25	100MΔ	100n		400n	625m	625m	1.0	100m	400	8.0p		N-PLT	Si	150J	R204c	A	
72#	BCX73-40	100MΔ	100n		400n	625m	625m	1.0	100m	630	8.0p		N-PLT	Si	150J	R204c	A	
73#	BCX74-16	100MΔ	100n		400n	625m	625m	1.0	100m	250	8.0p		N-PLT	Si	150J	R204c	A	
74#	BCX74-25	100MΔ	100n		400n	625m	625m	1.0	100m	400	8.0p		N-PLT	Si	150J	R204c	A	
75#	BCX74-40	100MΔ	100n		400n	625m	625m	1.0	100m	630	8.0p		N-PLT	Si	150J	R204c	A	
76#	BCX75-16	100MΔ	100n		400n	625m	625m	1.0	100m	250	2.5	12p	P-PET	Si	150J	R204c	A	
77#	BCX75-25	100MΔ	100n		400n	625m	625m	1.0	100m	400	2.5	12p	P-PET	Si	150J	R204c	A	
78#	BCX75-40	100MΔ	100n		400n	625m	625m	1.0	100m	630	2.5	12p	P-PET	Si	150J	R204c	A	
79#	BCX76-25	100MΔ	100n		400n	625m	625m	1.0	100m	400	2.5	12p	P-PET	Si	150J	R204c	A	
80#	BCX76-40	100MΔ	100n		400n	625m	625m	1.0	100m	630	2.5	12p	P-PET	Si	150J	R204c	A	
81#	BFX38	100MΔ	100n		350n	50n	4.0m	5.0	100m	30	#	20p	N-DPE	Si	200J	T05	A	
82	BFX38	100MΔ	100n		350n	50n	4.0	5.0	100m	60	1.0	20p	PAN	Si	200J	T039	A	
83#	BFX39	1																

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y230 s/a TO200 Ser.	L C O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1#	2SA552	250M	100n		270n	300n	750m	10	10	40	18	7.0p	P-PE	Si	150J	T039	A	
2	2N4028	400M	100n		350n	50n	2.0	5.0	500m	25	1.0	20p	P	Si	200J	T018	A	
3	2N4027	400M	100n		350n	50n	2.0	5.0	500m	25	1.0	20p	P	Si	200J	T018	A	
4	2N4030	400M	100n		350n	50n	4.0	5.0	500m	25	1.0	20p	P	Si	200J	T05	A	
5	2N4031	400M	100n		350n	50n	4.0	5.0	500m	25	1.0	20p	P	Si	200J	T05	A	
6#	2SC752G	400M	100n		30n	70n	200m	1.0	10m	240	12	6.0p	N-PE	Si	125J	R87a	B	
7#	2SC585	450M	100n		100n	300m	300m	1.0	10m	80	4.0	4.0p	N-PE	Si	150J	T018	A	
8	2N4028	500M	100n		350n	50n	2.0	5.0	500m	70	1.0	20p	P	Si	200J	T018	A	
9	2N4029	500M	100n		350n	50n	2.0	5.0	500m	70	1.0	20p	P	Si	200J	T018	A	
10	2N4032	500M	100n		350n	50n	4.0	5.0	500m	70	1.0	20p	P	Si	200J	T05	A	
11	2N4033	500M	100n		350n	50n	4.0	5.0	500m	70	1.0	20p	P	Si	200J	T05	A	
12	MPS4354	500M	100n		400n	1.5	10	100	25	Δ	1.0	30p	P-ANT	Si	150J	T092	A	
13	MPS4355	500M	100n		400n	1.5	10	100	25	Δ	1.0	30p	P-ANT	Si	150J	T092	A	
14	MPS4356	500M	100n		400n	1.5	10	100	25	Δ	1.0	30p	P-ANT	Si	150J	T092	A	
15	2N1300	40.0M	110nt	140nt	140nt	110nt	150m	300m	10m	50		30p	P-ME	Ge	85A	T05	A	
16#	2SA780AKB	120M	110nt		900nt	1.0u	10	4.0	50m	60	Δ		PE	Si	150J	B11	D	
17#	2SA608	180M	110n		70n	80n	100m	1.0	10	100		12p	P-PE	Si	125J	R145	D	
18#	2SC1217	250M	110nt		330nt	420nt	750m	10	50m	70	↑	6.0p	N-E	Si	175J	T039	A	
19#	2SA712	300M	110nt		350nt	750m	750m	10	50m	110	↑	5.5p	P-E	Si	175J	T039	A	
20	JAN2N3488	800M	115n		1.1u	5.0	5.0	10	100	20	Δ	10p	N	Si	200J	T05	A	
21	JAN2N3489	800M	115n		1.1u	5.0	5.0	10	100	35	Δ	10p	N	Si	200J	T05	A	
22	JAN2N3500	800M	115n		1.1u	5.0	5.0	10	100	20	Δ	8.0p	N	Si	200J	T05	A	
23	JAN2N3501	800M	115n		1.1u	5.0	5.0	10	100	35	Δ	8.0p	N	Si	200J	T05	A	
24#	BD744		120nt	20nt	600nt	300nt	2.0	-4	-5	20	Δ	8.0p	P-DE	Si	150J	Y220a	D	
25#	BD744A		120nt	20nt	600nt	300nt	2.0	-4	-5	20	Δ		P-DE	Si	150J	Y220a	D	
26#	BD744B		120nt	20nt	600nt	300nt	2.0	-4	-5	20	Δ		P-DE	Si	150J	Y220a	D	
27#	BD744C		120nt	20nt	600nt	300nt	2.0	-4	-5	20	Δ		P-DE	Si	150J	Y220a	D	
28#	BD744D		120nt	20nt	600nt	300nt	2.0	-4	-5	20	Δ		P-DE	Si	150J	Y220a	D	
29#	BD746		120nt	20nt	600nt	300nt	3.5	-4	-5	20	Δ		P-DE†	Si	150J	T03	D	
30#	BD746A		120nt	20nt	600nt	300nt	3.5	-4	-5	20	Δ		P-DE†	Si	150J	T03	D	
31#	BD746B		120nt	20nt	600nt	300nt	3.5	-4	-5	20	Δ		P-DE†	Si	150J	T03	D	
32#	BD746C		120nt	20nt	600nt	300nt	3.5	-4	-5	20	Δ		P-DE†	Si	150J	T03	D	
33#	BD746D		120nt	20nt	600nt	300nt	3.5	-4	-5	20	Δ		P-DE†	Si	150J	T03	D	
34#	MTM8N10		120n	50n	60n	75	75					500m*	N	Si	150J	Y204a	DEF	
35#	MTP8N08		120n	50n	60n	75	75					500m*	N	Si	150J	Y204a	DF1	
36#	MTP8N10		120n	50n	60n	75	75					500m*	N	Si	150J	Y204a	DF5	
37#	2SC1008	75m	120nt		250nt	300nt	800m	2.0	500m	120	#	17p	NE	Si	150J	R216e	A	
38	TIP61	3.0M	120n		700n	15	10	10	50m	20	Δ	1.4	N	Si	150J	B1	B	
39	TIP61A	3.0M	120n		700n	15	10	10	50m	20	Δ	1.4	N	Si	150J	B1	B	
40	TIP61B	3.0M	120n		700n	15	10	10	50m	20	Δ	1.4	N	Si	150J	B1	B	
41	TIP61C	3.0M	120n		700n	15	10	10	50m	20	Δ	1.4	N	Si	150J	B1	B	
42	TIP62	3.0M	120nt		1.0u	15	4.0	500m	15	Δ	1.4		P-DM	Si	150J	B1	B	
43	TIP62A	3.0M	120nt		1.0u	15	4.0	500m	15	Δ	1.4		P-DM	Si	150J	B1	B	
44	TIP62B	3.0M	120nt		1.0u	15	4.0	500m	15	Δ	1.4		P-DM	Si	150J	B1	B	
45	TIP62C	3.0M	120nt		1.0u	15	4.0	500m	15	Δ	1.5		P-DM	Si	150J	B1	B	
46	TIP74	5.0M	120n	20n	600n	300n	2.0	4.0	15	5.0	Δ	260m#	P-DM	Si	150J	B1	B	
47	TIP74A	5.0M	120n	20n	600n	300n	2.0	4.0	15	5.0	Δ	260m#	P-DM	Si	150J	B1	B	
48	TIP74B	5.0M	120n	20n	600n	300n	2.0	4.0	15	5.0	Δ	260m#	P-DM	Si	150J	B1	B	
49	TIP74C	5.0M	120n	20n	600n	300n	2.0	4.0	15	5.0	Δ	260m#	P-DM	Si	150J	B1	B	
50	2N1808	14.0M	120n		60n	320n	120n	.25	20m	125		13p	N-A	Ge	85J	T05	A	
51	2N4007	15.0M	120n	60n	320n	120n	400m					10p		Si	200	T046	A	
52	2N4008	15.0M	120n	60n	320n	120n	400m					10p		Si	200	T046	A	
53	2N4006	20.0M	120n	60n	320n	120n	400m					10p		Si	200	T046	A	
54	2N2877	30M	120n	60n	80n	30	30	2.0	10m	15	Δ	150p	N	Si	200J	T0111	A	
55	2N2879	30M	120n	60n	80n	30	30	2.0	10m	15	Δ	150p	N	Si	200J	T0111	A	
56	2N3744	30.0M	120n	60n	80n	30	30	5.0	5	10	Δ	150p	N	Si	200J	T53	G	
57	2N3745	30.0M	120n	60n	80n	30	30	5.0	5	10	Δ	150p	N	Si	200J	T53	G	
58	2N3746	30.0M	120n	60n	80n	30	30	5.0	5	10	Δ	150p	N	Si	200J	T53	G	
59	SP44Q1	50M	120n	1.3u	600n	1.6	10	200m	30	Δ		26p	N-PL	Si	200J	Y220b	A	
60	SP44Q3	50M	120n	1.3u	600n	1.6	10	200m	30	Δ		26p	N-PL	Si	200J	Y220b	A	
61#	2SC1008A	70M	120nt		250nt	300nt	800m	2.0	500m	90	#	15p	NE	Si	150J	R216e	A	
62#	2SA728A	100M	120nt		290nt	100m	100m	6.0	1.0m	300		.30	P-PE	Si	125J	B40	B	
63#	ZT180	150M	120nt		250nt	300m	300m	6.0	10m	38	Δ	20	P-PL	Si	150J	T018	A	
64#	ZT181	150M	120nt		250nt	300m	300m	6.0	10m	38	Δ	20	P-PL	Si	150J	T018	A	
65#	ZT182	150M	120nt		250nt	300m	300m	6.0	10m	38	Δ	20	P-PL	Si	150J	T018	A	
66#	ZT183	150M	120nt		250nt	300m	300m	6.0	10m	38	Δ	8.0	P-PL	Si	150J	T018	A	
67#	ZT184	150M	120nt		250nt	300m	300m	6.0	10m	75	Δ	8.0	P-PL	Si	150J	T018	A	
68#	ZT187	150M	120nt		250nt	300m	300m	6.0	10m	75	Δ	20	P-PL	Si	150J	T018	A	
69#	ZT189	150M	120nt		250nt	300m	300m	6.0	10m	75	Δ	4.0	P-PL	Si	150J	T018	A	
70	2N863	10M	125n	100n	100n	150m	150m	5.0m	5.0m	25	Δ	3.0	P	Si	140S	T018	A	
71	2N2849	30.0M	125n	50n	300n	175n	850m	1.0	500m	50	Δ	400m	N-PE	Si	200S	R61	Ø	
72	2N2850	30.0M	125n	50n	400n	175n	850m	1.0	500m	25	Δ	250m	N-PE	Si	200S	R61	Ø	
73	2N2851	30.0M	125n	50n	400n	175n	850m	1.0	500m	25	Δ	400m	N-PE	Si	200S	R61	Ø	
74	2N2852	30.0M	125n	50n	400n	175n	850m	1.0	500m	15	Δ	400m	N-PE	Si	200S	R61	Ø	
75	2N2853	30.0M	125n	50n	400n	200n	850m	3.0	5.0	20	#	300m	N-PE	Si	200S	R61	Ø	
76	2N2854	30.0M	125n	50n	300n	175n	850m	1.0	50m	50	Δ	400m	N-PE	Si	200S	R61	Ø	
77	2N2855	30.0M	125n	50n	400n	175n	850m	1.0	50m	25	Δ	400m	N-PE	Si	200S	R61	Ø	
78	2N2856	30.0M	125n	50n	400n	175n	850m	1.0	50m	15	Δ	400m	N-PE	Si	200S	R61	Ø	
79	2N5487	40.0M	125n		450n	15	5.0	5.0m	25	Δ		75p	N	Si	200J	R179k	A	
80	2N5488	40.0M	125n		550n	15	5.0	5.0m	15	Δ		75p	N	Si	200J	R179k	A	
81	2N2380	100M	125n		65n	1.0	2.5	150m	15	Δ		8.7	N	Si	175J	T05	A	
82	2N2380A	100M	125n		130n	85n	1.0	2.5	150m	15	Δ	10	N	Si	175J	T05	A	
83	2N4960	250M	125n	50n	800n	250n	3.5	10	10m	30	Δ	15p	N	Si	200J	T039	A	
84	2N4961	250M	125n	50n	800n	250n	1.5	10	10m	30	Δ	15p	N	Si	200J	T039	A	
85	2N4962	250M	125n	50n	800n	250n	3.5	10	10m	30	Δ							



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								Vcb (V)	le (A)	hFE								
1	2SA779KB	110M	130n		450n	550n	10	2.0	500m	60	Δ #		PE	Si	150J	B11	D	
2	2SA779KC	110M	130n		450n	550n	10	2.0	500m	100	Δ #		PE	Si	150J	B11	D	
3	D45H1	40M	135n		500n	100n	1.6	1.0	4.0	20	Δ #	125m	PT	Si	150S	B22	B	
4	D45H2	40M	135n		500n	100n	1.6	1.0	4.0	40	Δ	125m	PT	Si	150S	B22	B	
5	D45H4	40M	135n		500n	100n	1.6	1.0	4.0	20	Δ	125m	PT	Si	150S	B22	B	
6	D45H5	40M	135n		500n	100n	1.6	1.0	4.0	40	Δ	125m	PT	Si	150S	B22	B	
7	D45H7	40M	135n		500n	100n	1.6	1.0	4.0	20	Δ	125m	PT	Si	150S	B22	B	
8	D45H8	40M	135n		500n	100n	1.6	1.0	4.0	40	Δ	125m	PT	Si	150S	B22	B	
9	D45H9	40M	135n		500n	100n	1.6	1.0	4.0	40	Δ	125m	PT	Si	150S	B22	B	
10	D45H10	40M	135n		500n	100n	1.6	1.0	4.0	20	Δ	125m	PT	Si	150S	B22	B	
11	D45H11	40M	135n		500n	100n	1.6	1.0	4.0	40	Δ	125m	PT	Si	150S	B22	B	
12	D45H12	40M	135n		500n	100n	1.6	1.0	4.0	40	Δ	125m	PT	Si	150S	B22	B	
13	SP45H1	40M	135n		500n	100n	50	1.0	4.0	20	Δ	125m	P-PL	Si	150J	Y220b	D	
14	SP45H2	40M	135n		500n	100n	50	1.0	4.0	40	Δ	125m	P-PL	Si	150J	Y220b	D	
15	SP45H4	40M	135n		500n	100n	50	1.0	4.0	20	Δ	125m	P-PL	Si	150J	Y220b	D	
16	SP45H5	40M	135n		500n	100n	50	1.0	4.0	40	Δ	125m	P-PL	Si	150J	Y220b	D	
17	SP45H7	40M	135n		500n	100n	50	1.0	4.0	20	Δ	125m	P-PL	Si	150J	Y220b	D	
18	SP45H8	40M	135n		500n	100n	50	1.0	4.0	40	Δ	125m	P-PL	Si	150J	Y220b	D	
19	SP45H10	40M	135n		500n	100n	50	1.0	4.0	20	Δ	125m	P-PL	Si	150J	Y220b	D	
20	SP45H11	40M	135n		500n	100n	50	1.0	4.0	40	Δ	125m	P-PL	Si	150J	Y220b	D	
21	2SA778AK	50M	135n		1.0u	1.7u	200m	3.0	15m	30	Δ	67	P	Si	125J	S8	B	
22	2SA778K	50M	135n		1.0u	1.7u	200m	3.0	15m	30	Δ	67	P	Si	125J	S8	B	
23	2SA873	290M	135n		130n	320n	300m	1.0	10m	140		7.0	P-PE	Si	150J	R212	A	
24	IRF230		140n	50n	100n	140n	75					400m	Ns	Si	150J	T03	\$	
25	IRF231		140n	50n	100n	140n	75					400m	Ns	Si	150J	T03	\$	
26	IRF232		140n	50n	100n	140n	75					600m	Ns	Si	150J	T03	\$	
27	IRF233		140n	50n	100n	140n	75					600m	Ns	Si	150J	T03	\$	
28	IRF630		140n	50n	100n	140n	75					400m	Ns	Si	150J	Y220b	DF	
29	IRF631		140n	50n	100n	140n	75					400m	Ns	Si	150J	Y220b	DF	
30	IRF632		140n	50n	100n	140n	75					600m	Ns	Si	150J	Y220b	DF	
31	IRF633		140n	50n	100n	140n	75					600m	Ns	Si	150J	Y220b	DF	
32	IRF9130		140n	60n	140n	140n	75					.30	N	Si	150J	T03	DE	
33	IRF9131		140n	60n	140n	140n	75					.30	N	Si	150J	T03	DE	
34	IRF9132		140n	60n	140n	140n	75					.40	N	Si	150J	T03	DE	
35	IRF9133		140n	60n	140n	140n	75					.40	N	Si	150J	T03	DE	
36	IRF9530		140n	60n	140n	140n	75					0.3	N	Si	150J	Y220b	DF	
37	IRF9531		140n	60n	140n	140n	75					0.3	N	Si	150J	Y220b	DF	
38	IRF9532		140n	60n	140n	140n	75					0.4	N	Si	150J	Y220b	DF	
39	BCY92	15.0M	140n	40n	200n	140n	350m	6.0	1.0m	60		4.0p	P-PE	Si	150J	TO18	A	
40	BCY92B	15.0M	140n	40n	200n	140n	400m	6.0	1.0m	60		4.0p	P-PE	Si	150J	TO5	A	
41	BCY95	15.0M	140n	40n	200n	140n	350m	6.0	1.0m	60		4.0p	P-PE	Si	150J	TO18	A	
42	BCY95B	15.0M	140n	40n	200n	140n	400m	6.0	1.0m	60		4.0p	P-PE	Si	150J	TO5	A	
43	TCH98	15.0M	140n	40n	200n	140n	350m	6.0	1.0m	115		4.0p	P-PE	Si	150J	TO18	A	
44	TCH98B	15.0M	140n	40n	200n	140n	400m	6.0	1.0m	115		4.0p	P-PE	Si	150J	TO5	A	
45	TCH99	15.0M	140n	40n	200n	140n	350m	6.0	1.0m	115		4.0p	P-PE	Si	150J	TO18	A	
46	TCH99B	15.0M	140n	40n	200n	140n	400m	6.0	1.0m	115		4.0p	P-PE	Si	150J	TO5	A	
47	SVT60-5	50M	140n	40n	300n	100n	11	2.0	5.0	10	Δ #	100p	N	Si	200	TO39	A	
48	SVT80-5	50M	140n	40n	300n	100n	11	2.0	5.0	10	Δ #	100p	N	Si	200	TO39	A	
49	T1486	50M	140n	40n	2.6u	2.6u	1.0	5.0	200m	20	Δ #	30p	N-DPL	Si	200C	TO5	A	
50	T1487	50M	140n	40n	2.6u	2.6u	2.0	5.0	200m	20	Δ #	30p	N-DPL	Si	200C	T13	A	
51	2SC1516KB	110M	140n		600n	650n	10	2.0	500m	60	Δ		NE	Si	150J	B11	D	
52	2SC1516KC	110M	140n		600n	650n	10	2.0	500m	100	Δ		NE	Si	150J	B11	D	
53	2N3342		150n		200n	250m	1.0	1.0	5.0m	30	Δ	20	P	Si	175S	TO5	A	
54	2N4065		150n	100n	400n	1.0	15	0.0	400u	4.5p	Δ	1.5k	P	Si	175J	TO72	DM	
55	2N4120		150n	100n	400n	1.0	15	0.0	700u	4.5p	Δ	1.0k	P	Si	175J	TO72	DM	
56	2SD590		150n		1.8u	2.1u	1.0	2.0	2.0	100		240m	N-PE	Si	200J	TO39	A	
57	2SD660		150n		1.8u	2.1u	1.0	2.0	2.0	60	Δ	400m	N-PE	Si	200J	TO39	A	
58	IRF130		150n	50n	100n	150n	75					.18	Ns	Si	150J	T03	\$	
59	IRF131		150n	50n	100n	150n	75					.18	Ns	Si	150J	T03	\$	
60	IRF132		150n	50n	100n	150n	75					.25	Ns	Si	150J	T03	\$	
61	IRF133		150n	50n	100n	150n	75					.25	Ns	Si	150J	T03	\$	
62	IRF350		150n	60n	400n	150n	150					300m	Ns	Si	150J	T03	\$	
63	IRF351		150n	60n	400n	150n	150					300m	Ns	Si	150J	T03	\$	
64	IRF352		150n	60n	400n	150n	150					400m	Ns	Si	150J	T03	\$	
65	IRF353		150n	60n	400n	150n	150					400m	Ns	Si	150J	T03	\$	
66	IRF530		150n	50n	100n	150n	75					180m	Ns	Si	150J	Y220b	DF	
67	IRF531		150n	50n	100n	150n	75					180m	Ns	Si	150J	Y220b	DF	
68	IRF532		150n	50n	100n	150n	75					250m	Ns	Si	150J	Y220b	DF	
69	IRF533		150n	50n	100n	150n	75					250m	Ns	Si	150J	Y220b	DF	
70	MTM7N12		150n	20n	50n	75						700m	Ns	Si	150J	Y204a	DES	
71	MTM7N15		150n	20n	50n	75						700m	Ns	Si	150J	Y204a	DES	
72	MTP7N12		150n	20n	50n	75						700m	Ns	Si	150J	Y220b	DFS	
73	MTP7N15		150n	20n	50n	75						700m	Ns	Si	150J	Y220b	DFS	
74	2SC2527	80M	150n		500n	110n	150	5.0	5.0	40	Δ #	380m	N	Si	150J	Y220a	D	
75	2N1012	3.0M	150n		150m	200n	60	2.0	250m	100m	40	Δ	2.0	N	Ge	100S	TO5	A
76	2N861	7.5M	150n		100n	150n	150m	5.0	5.0	25	Δ	3.0	P	Si	140S	TO18	A	
77	2N864A	16.0M	150n		150n	150n	300m	6.0	1.0m	350	Δ	20	P	Si	200S	TO18	A	
78	2N3850	20M	150n	50n	700n	200n	30	2.0	2.0	30	#	125p	N	Si	200C	TO59	A	
79	2N3851	20M	150n	50n	700n	200n	30	2.0	2.0	20	#	125p	N	Si	200C	TO59	A	
80	2N3852	20M	150n	50n	700n	200n	30	2.0	2.0	20	#	125p	N	Si	200C	TO59	A	
81	2N3853	20M	150n	50n	700n	200n	30	2.0	2.0	20	#	125p	N	Si	200C	TO59	A	
82	2N5658	30.0M	150n		800n	30	2.0	5.0	40	Δ #		150p	N	Si	200J	TO59	A	
83	2N5659	30.0M	150n		800n	30	2.0	5.0	40	Δ #		150p	N	Si	200J	TO111	G	
84	2SC1062	35M	150n		5.4u	6.4u	700m	2.0	50m	60	#	5.0p	N-D	Si	175J	TO39	A	
85	2SC2429	35M	150n		800n	150n	150	5.0	10	10	Δ #	300m	N	Si	175J	TO3	A	
86	2N3036	50.0M	150n	30n	1.0u	200n	5.0	10	10m	15	Δ	15p	N	Si	200S	TO5	A	
87	2N3037	50.0M	150n	30n	1.0u	200n	1.0	10	100u	15	Δ	20	N	Si	200S	TO50	A	
88	2N3038	50.0M	150n	30n	1.0													



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab	1 MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/A TO200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	BDY61	100M	150nt	10nt	200nt	80nt	15 Ø*	10	500mØ	45 Δ	180m	35p*	N-PE	Si	175J	T03	CØ	
2	BDY62	100M	150nt	10nt	200nt	80nt	15 Ø*	10	500mØ	45 Δ	180m	35p*	N-PE	Si	175J	T03	CØ	
3	BCY58A	125MΔ	150mØ			800nØ	1.0 Ø*	5.0	10uØ	78	35	6.0p*	N-PDØ	Si	200J	T018	AØ	
4	BCY58B	125MΔ	150mØ			800nØ	1.0 Ø*	5.0	10uØ	145	35	6.0p*	N-PDØ	Si	200J	T018	AØ	
5	BCY58C	125MΔ	150mØ			800nØ	1.0 Ø*	5.0	10uØ	220	35	6.0p*	N-PDØ	Si	200J	T018	AØ	
6	BCY58D	125MΔ	150mØ			800nØ	1.0 Ø*	5.0	10uØ	300	35	6.0p*	N-PDØ	Si	200J	T018	AØ	
7	BCY59A#	125MΔ	150mØ			800nØ	400m	5.0	2.0mØ	170	35	6.0p*	N-PLØ	Si	200S	T018	A	
8	BCY59B#	125MΔ	150mØ			800nØ	400m	5.0	2.0mØ	250	35	6.0p*	N-PLØ	Si	200S	T018	A	
9	BCY59C#	125MΔ	150mØ			800nØ	400m	5.0	2.0mØ	350	35	6.0p*	N-PLØ	Si	200S	T018	A	
10	BCY59D#	125MΔ	150mØ			800nØ	400	5.0	2.0mØ	500	35	6.0p*	N-PLØ	Si	200S	T018	A	
11	BCY65EA	125MΔ	150mØ			800nØ	400m	5.0	2.0mØ	170	35	6.0p*	N-PLØ	Si	200S	T018	A	
12	BCY65EB	125MΔ	150mØ			800nØ	400m	5.0	2.0mØ	250	35	6.0p*	N-PLØ	Si	200S	T018	A	
13	BCY65EC	125MΔ	150mØ			800nØ	400m	5.0	2.0mØ	350	35	6.0p*	N-PLØ	Si	200S	T018	A	
14	2SA718	150MΔ	150mØt		240nt	300ntØ	300m	1.0	100mØ	70	7.0	10p	P-E	Si	150S	T018	AØ	
15	2SC306	150M	150n		300n	150n	800m	10	150mØ	85 #	4.7	10p	N-PL	Si	200J	T05	AØ	
16	BCY77A	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	170	25	7.0p*	P-PLØ	Si	200S	T018	A	
17	BCY77B	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	250	25	7.0p*	P-PLØ	Si	200S	T018	A	
18	BCY77C	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	350	25	7.0p*	P-PLØ	Si	200S	T018	A	
19	BCY77PA	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
20	BCY77PAK	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
21	BCY77PAL	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
22	BCY77PAM	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
23	BCY77PB	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
24	BCY77PBK	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
25	BCY77PBL	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
26	BCY77PBM	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
27	BCY77PC	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
28	BCY77PCK	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
29	BCY77PCL	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
30	BCY77PCM	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
31	BCY78A#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	170	25	7.0p*	P-PLØ	Si	200S	T018	A	
32	BCY78B#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	250	25	7.0p*	P-PLØ	Si	200S	T018	A	
33	BCY78C#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	350	25	7.0p*	P-PLØ	Si	200S	T018	A	
34	BCY78D#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	500	25	7.0p*	P-PLØ	Si	200S	T018	A	
35	BCY78PA	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
36	BCY78PAK	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
37	BCY78PAL	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
38	BCY78PAM	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
39	BCY78PB	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
40	BCY78PBK	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
41	BCY78PBL	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
42	BCY78PBM	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
43	BCY78PC	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
44	BCY78PCK	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
45	BCY78PCL	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
46	BCY78PCM	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
47	BCY78PD	180M	150mØ			800nØ	400m	5.0	2.0mØ	500	25	7.0p*	P-PL	Si	200S	B58	A	
48	BCY78PDK	180M	150mØ			800nØ	400m	5.0	2.0mØ	500	25	7.0p*	P-PL	Si	200S	B58	A	
49	BCY78PDL	180M	150mØ			800nØ	400m	5.0	2.0mØ	500	25	7.0p*	P-PL	Si	200S	B58	A	
50	BCY78PDM	180M	150mØ			800nØ	400m	5.0	2.0mØ	500	25	7.0p*	P-PL	Si	200S	B58	A	
51	BCY79A#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	170	25	7.0p*	P-PLØ	Si	200S	T018	A	
52	BCY79B#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	250	25	7.0p*	P-PLØ	Si	200S	T018	A	
53	BCY79C#	180M	150mØ			800nØ	1.0 Ø*	5.0	2.0mØ	350	25	7.0p*	P-PLØ	Si	200S	T018	A	
54	BCY79PA	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
55	BCY79PAK	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
56	BCY79PAL	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
57	BCY79PAM	180M	150mØ			800nØ	400m	5.0	2.0mØ	170	25	7.0p*	P-PL	Si	200S	B58	A	
58	BCY79PB	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
59	BCY79PBK	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
60	BCY79PBL	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
61	BCY79PBM	180M	150mØ			800nØ	400m	5.0	2.0mØ	250	25	7.0p*	P-PL	Si	200S	B58	A	
62	BCY79PC	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
63	BCY79PCK	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
64	BCY79PCL	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
65	BCY79PCM	180M	150mØ			800nØ	400m	5.0	2.0mØ	350	25	7.0p*	P-PL	Si	200S	B58	A	
66	2SC307	200M	150n		300n	150n	800m	10	150mØ	85 #	4.7	10p	N-PL	Si	200J	T05	AØ	
67	BSX38A	200MΔ	150mØ			800nØ	300m	1.0	50 Ø	75 Δ	20	5.0p*	N-PE	Si	200J	T018	AØ	
68	BSX38B	200MΔ	150mØ			800nØ	300m	1.0	50 Ø	75 Δ	20	5.0p*	N-PE	Si	200J	T018	AØ	
69	BSW19	300MΔ	150mØ			800nØ	215m*	1.0	10mØ	120	30	6.0p*	N-PE	Si	175J	T018	AØ	
70	2SC772	350M	150n		60n	150n	120m	6.0	1.0mØ	45	1.5p	15p*	N-PE	Si	125J	R145	D	
71	SE8020	600MΔ	150mØ			1.0uØ	800mØ	10	100uØ	60	10	15p*	N-DPE	Si	125J	T0105	A	
72	SE8021	600MΔ	150mØ			1.0uØ	800mØ	10	100uØ	70	10	15p*	N-DPE	Si	125J	T0105	A	
73	2SC2070	180nØ	180nØ		130n	172nØ	300m	1.0	30mØ	70	68m	100p*	N-PE	Si	175J	T018	AØ	
74	TIP150	10MΔ	180nt	20nt	3.4ut	1.5ut	2.0	5.0	2.5 Ø	150 Δ#	750m#	100p*	N	Si	150J	Y220b	KE	
75	TIP151	10MΔ	180nt	20nt	3.4ut	1.5ut	2.0	5.0	2.5 Ø	150 Δ#	750m#	100p*	N	Si	150J	Y220b	KE	
76	TIP152	10MΔ	180nt	20nt	3.4ut	1.5ut	2.0	5.0	2.5 Ø	150 Δ#	750m#	100p*	N	Si	150J	Y220b	KE	
77	BUY81	60M	180ntØ		430ntØ	430ntØ	12 Ø*	5.0	7.5 Ø	20	133m	55p	N-PL	Si	175C	T035	AØ	
78	BUY80	60M	170ntØ		200ntØ	200ntØ	10 Ø*	5.0	5.0 Ø	20	200m	25p	N-PL	Si	175C	T039	AØ	
79	BCW85	200MΔ	170nt	110nt	70nt	40nt	300m	5.0	10uØ	80 Δ	5.0p	5.0p	P-PET	Si	150S	R203c	A	
80	BCW86	200MΔ	170nt	110nt	70nt	40nt	300m	5.0	10uØ	80 Δ	5.0p	5.0p	P-PET	Si	150S	R203c	A	
81	2N599	100MΔ	175n		1.0u	185n	250m	1.0	200mØ	300	20	20p*	P	Ge	100J	T05	AØ	
82	JAN2N599	100M	175n		1.0u	1												

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) f<sub>ab</sub> & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O D E
								Vcb (V)	Ic (A)	hFE								
1	MJ18012		200n	20n	900n	150n	175	5.0	15	7.0 Δ			N	Si	150J	T03		
2	XGSA3040		0.2u			35u	10	5.0	3.0	10 Δ#			N	Si	175J	T05	A	
3#	BD240	3.0MΔ	200n		2.0u	400n	2.0	4.0	1.0	10 Δ#	700m	250p	P-D	Si	150J	B1	D	
4#	BD240A	3.0MΔ	200n			400n	2.0	4.0	1.0	10 Δ#	700m		P-D	Si	150J	B1	D	
5#	BD240B	3.0MΔ	200n			400n	2.0	4.0	1.0	10 Δ#	700m		P-D	Si	150J	B1	D	
6#	BD240C	3.0MΔ	200n			400n	2.0	4.0	1.0	10 Δ#	700m		P-D	Si	150J	B1	D	
7#	BD242	3.0MΔ	200n			300n	2.0	4.0	3.0	8.0 Δ#	400m		N-D	Si	150J	Y220b	D	
8#	BD242A	3.0MΔ	200n			300n	2.0	4.0	3.0	8.0 Δ#	400m		N-D	Si	150J	Y220b	D	
9#	BD242B	3.0MΔ	200n			300n	2.0	4.0	3.0	8.0 Δ#	400m		N-D	Si	150J	Y220b	D	
10#	BD242C	3.0MΔ	200n			300n	2.0	4.0	3.0	8.0 Δ#	400m		N-D	Si	150J	Y220b	D	
11#	BD244	3.0MΔ	200n			800n	65	4.0	300m	30 Δ	250m		P-D	Si	150J	B1	D	
12#	BD244A	3.0MΔ	200n			800n	65	4.0	300m	30 Δ	250m		P-D	Si	150J	B1	D	
13#	BD244B	3.0MΔ	200n			800n	65	4.0	300m	30 Δ	250m		P-D	Si	150J	B1	D	
14#	BD244C	3.0MΔ	200n			800n	65	4.0	300m	30 Δ	250m		P-D	Si	150J	B1	D	
15#	BD246	3.0MΔ	200n			800n	80	4.0	3.0	12 Δ	333m		P-D	Si	150S	B19	D	
16#	BD246A	3.0MΔ	200n			800n	80	4.0	3.0	12 Δ	333m		P-D	Si	150S	B19	D	
17#	BD246B	3.0MΔ	200n			800n	80	4.0	3.0	12 Δ	333m		P-D	Si	150S	B19	D	
18#	BD246C	3.0MΔ	200n			800n	80	4.0	3.0	12 Δ	333m		P-D	Si	150S	B19	D	
19#	BD250	3.0MΔ	200n			400n	125	4.0	15	10 Δ#	120m		P-D	Si	150S	B19	D	
20#	BD250A	3.0MΔ	200n			400n	125	4.0	15	10 Δ#	120m		P-D	Si	150S	B19	D	
21#	BD250B	3.0MΔ	200n			400n	125	4.0	15	10 Δ#	120m		P-D	Si	150S	B19	D	
22#	BD250C	3.0MΔ	200n			400n	125	4.0	15	10 Δ#	120m		P-D	Si	150S	B19	D	
23	RCA30	3.0MΔ	200n			1.0u	30	10	200m	20 Δ			P-E†	Si	150J	Y220b	X	
24	RCA30A	3.0MΔ	200n			1.0u	30	10	200m	20 Δ			P-E†	Si	150J	Y220b	X	
25	RCA30B	3.0MΔ	200n			1.0u	30	10	200m	20 Δ			P-E†	Si	150J	Y220b	X	
26	RCA30C	3.0MΔ	200n			1.0u	30	10	200m	20 Δ			P-E†	Si	150J	Y220b	X	
27	RCA32	3.0MΔ	200n			1.0u	30	10	500m	20 Δ			P-E†	Si	150J	Y220b	X	
28	RCA32A	3.0MΔ	200n			1.0u	40	10	500m	20 Δ			P-E†	Si	150J	Y220b	X	
29	RCA32B	3.0MΔ	200n			1.0u	40	10	500m	20 Δ			P-E†	Si	150J	Y220b	X	
30	RCA32C	3.0MΔ	200n			1.0u	40	10	500m	20 Δ			P-E†	Si	150J	Y220b	X	
31	TIP30Z	3.0MΔ	200n			1.0u	30	10	200m	20 Δ	700m#		P-E†	Si	150J	Y220b	X	
32	TIP30AZ	3.0MΔ	200n			1.0u	30	10	200m	20 Δ	700m#		P-E†	Si	150J	Y220b	X	
33	TIP30BZ	3.0MΔ	200n			1.0u	30	10	200m	20 Δ	700m#		P-E†	Si	150J	Y220b	X	
34	TIP30CZ	3.0MΔ	200n			1.0u	30	10	200m	20 Δ	700m#		P-E†	Si	150J	Y220b	X	
35	TIP32Z	3.0MΔ	200n			1.0u	40	10	500m	20 Δ	400m#		P-E†	Si	150J	Y220b	X	
36	TIP32AZ	3.0MΔ	200n			1.0u	40	10	500m	20 Δ	400m#		P-E†	Si	150J	Y220b	X	
37	TIP32BZ	3.0MΔ	200n			1.0u	40	10	500m	20 Δ	400m#		P-E†	Si	150J	Y220b	X	
38	TIP32CZ	3.0MΔ	200n			1.0u	40	10	500m	20 Δ	400m#		P-E†	Si	150J	Y220b	X	
39	TIP47Z	5.0MΔ	200n		2.0u	500n	40	10	200m	25 Δ	1.0		P-E†	Si	150J	Y220b	X	
40	TIP48Z	5.0MΔ	200n		2.0u	500n	40	10	200m	25 Δ	1.0		N	Si	150J	Y220b	X	
41	TIP49Z	5.0MΔ	200n		2.0u	500n	40	10	200m	25 Δ	1.0		N	Si	150J	Y220b	X	
42	TIP50Z	5.0MΔ	200n		2.0u	500n	40	10	200m	25 Δ	1.0		N	Si	150J	Y220b	X	
43	2N859	6.0MΔ	200n		100n	150n	150m	500m	5.0m	25 Δ	3.0	9.0p	P	Si	140S	T08	A	
44	2N860	6.5MΔ	200n		100n	150n	150m	500m	5.0m	10 Δ	3.0	9.0p	P	Si	140S	T08	A	
45	2N862	8.0MΔ	200n		100n	200n	150m	500m	5.0m	12 Δ	3.0	9.0p	P	Si	140S	T08	A	
46#	10B72	10MΔ	200n			700n	175	4.0	20	15 Δ#	140m		N-DM	Si	200J	T03	C	
47#	10P72	10MΔ	200n			700n	175	4.0	20	15 Δ#	140m		N-DM	Si	200J	T03	C	
48#	BUY69CZ	10MΔ	200n		1.7u	30u	100	10	2.5	15 Δ			NEM	Si	200J	T03	C	
49	TIP47	10MΔ	200n			2.0u	40	10	200m	25 Δ			N	Si	150J	B1	B	
50	TIP48	10MΔ	200n			2.0u	40	10	200m	25 Δ			N	Si	150J	B1	B	
51	TIP49	10MΔ	200n			2.0u	40	10	200m	25 Δ			N	Si	150J	B1	B	
52	TIP50	10MΔ	200n			2.0u	40	10	200m	25 Δ			N	Si	150J	B1	B	
53	2N1091	13.0M	200n	50n	170n	130n	120m	.20	20m	70	10	17p	N-A	Ge	85A	T09	A	
54	2N1580	15M	200n			400n	120m	.30	400m	30 Δ	750m		P-A	Ge	71A	T05	A	
55	2N4150	15.0MΔ	200n		2.0u	200n	5.0	5.0	5.0	40 Δ#			N	Si	200J	T05	A	
56#	2SC519A	20.0M	200n	50n	3.0u	800n	50	5.0	5.0	10 Δ	400m	150p	N-DM	Si	150J	T03	C	
57#	2SC520A	20.0M	200n	50n	3.0u	800n	50	5.0	5.0	15 Δ	400m	150p	N-DM	Si	150J	T03	C	
58#	2SC521A	20.0M	200n	50n	3.0u	800n	50	5.0	5.0	15 Δ	400m	150p	N-DM	Si	150J	T03	C	
59#	2SC827	20.0M	200n		2.0u	200n	700m	4.0	50m	370 *	500m	10p	N-D	Si	175J	T05	A	
60#	2SC2388A	20M	200n		1.5u	400n	75	5.0	2.0	20 #	350m	90p	N	Si	175J	T03	C	
61#	BUW84	20M	200n		2.0u	40u	50	5.0	10	50			N-D	Si	150J	B13	D	
62#	BUW85	20M	200n		2.0u	40u	50	5.0	10	50			N-D	Si	150J	B13	D	
63	2N6653	25MΔ	200n	50n	1.5u	350n	150	2.0	15	10 Δ	40m	300p	N	Si	175J	T03	C	
64	2N6654	25MΔ	200n	50n	1.5u	350n	150	2.0	15	10 Δ	40m	300p	N	Si	175J	T03	C	
65	2N6655	25MΔ	200n	50n	1.5u	350n	150	2.0	15	10 Δ	40m	300p	N	Si	175J	T03	C	
66	GSTU6030	25MΔ	200n	50n	2.0u	500n	125	5.0	6.0	10 Δ#	133m#	150p	N-D	Si	175J	T03	C	
67	GSTU6035	25MΔ	200n	50n	2.0u	500n	125	5.0	6.0	10 Δ#	133m#	150p	N-D	Si	175J	T03	C	
68	GSTU6040	25MΔ	200n	50n	2.0u	500n	125	5.0	6.0	10 Δ#	133m#	150p	N-D	Si	175J	T03	C	
69#	XGSR10025	25MΔ	200n		1.5u	500n	100	5	10	25 #	80m#	350p	N	Si	175J	T03	C	
70#	XGSR10030	25MΔ	200n		1.5u	500n	100	5	10	20 #	80m#	350p	ND	Si	175J	T03	C	
71#	XGSR10035	25MΔ	200n		1.5u	500n	100	5	10	15 #	80m#	350p	ND	Si	175J	T03	C	
72	2N5316	30.0MΔ	200n		1.0u	200n	50	5.0	10	10 Δ#	500p		N	Si	200J	T061	A	
73	2N5318	30.0MΔ	200n		1.0u	200n	50	5.0	10	10 Δ#	500p		N	Si	200J	T061	A	
74	2N5729	30MΔ	200n		3.0u	500n	10	5.0	10	5.0 Δ	300m	150p	N	Si	200J	T05	A	
75	2N5730	30MΔ	200n		3.0u	500n	45	5.0	10	5.0 Δ	240m	150p	N	Si	200J	T059	A	
76	GSDS50020	30MΔ	200n	40n	750n	175n	100	4.0	50	8.0 Δ#	20m#	350p	N	Si	175J	T03	C	
77	SDT3105	30.0MΔ	200n		1.0u	200n	87	5.0	5.0	90 Δ#	500p		P-PE	Si	200J	T061	A	
78	SDT3106	30.0MΔ	200n		1.0u	200n	87	5.0	5.0	90 Δ#	500p		P-PE	Si	200J	T061	A	
79	SDT3107	30.0MΔ	200n		1.0u	200n	87	5.0	5.0	90 Δ#	500p		P-PE	Si	200J	T061	A	
80	SDT3108	30.0MΔ	200n		1.0u	200n	87	5.0	5.0	90 Δ#	500p		P-PE	Si	200J	T061	A	
81	SDT3109	30.0MΔ	200n		1.0u	200n	87	5.0	5.0	90 Δ#	500p		P-PE	Si	200J	T061	A	
82	UPT521	30M	200n			900n	2.0	5.0	3.0	10 Δ#	333m#	120p	N-PL	Si	200J	T066	C	
83	UPT522	30M	200n			900n	2.0	5.0	3.0	10 Δ#	333m#	120p	N-PL	Si	200J	T066	C	
84	UPT523	30M	200n			900n	2.0	5.0	3.0	10 Δ#	333m#	120p	N-PL	Si	200J	T066	C	
85	UPT524	30M	200n			900n	2.0	5.0	3.0	10 Δ#	333m#	120p	N-PL	Si	200J	T066	C	
86	UPT525	30M	200n			90												

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	D44Q3	50MΔ	200n		2.0u	1.7u	1.8	1.0	200m	80	500m#	40p#	N	Si	150J	B22	B0	
2	D44Q5	50MΔ	200n		2.0u	1.7u	1.6	10	200m	80	500m#	40p#	N	Si	150J	B22	B0	
3	SDT5951	50MΔ	200n		1.0u	800n	35	5.0	500m	150 #	700m	50pZ	N-PL	Si	200J	T068	A0	
4	SDT5952	50MΔ	200n		1.0u	600n	35	5.0	500m	150 #	700m	50pZ	N-PL	Si	200J	T068	A0	
5	SDT5953	50MΔ	200n		1.0u	600n	35	5.0	500m	150 #	700m	50pZ	N-PL	Si	200J	T068	A0	
6	SDT5954	50MΔ	200n		1.0u	600n	35	5.0	500m	30 #	700m	50pZ	N-PL	Si	200J	T068	A0	
7	SDT5955	50MΔ	200n		1.0u	600n	35	5.0	500m	30 #	700m	50pZ	N-PL	Si	200J	T068	A0	
8	SDT5956	50MΔ	200n		1.0u	600n	35	5.0	500m	30 #	700m	50pZ	N-PL	Si	200J	T068	A0	
9	U2T301	50MΔ	200n	100n	800n	300n	1.0	5.0	2.0	1.0k	750m#	60pZ	N-PL	Si	200A	T033	KD	
10	U2T401	50MΔ	200n	100n	800n	300n	2.0	5.0	2.0	1.0k	750m#	60pZ	N-PL	Si	200A	F24	KH	
11	JAN2N897	60.0MΔ	200n		1.0u	1.0u	2.0	1.0	500m	20 Δ	10	25pZ	N	Si	200S	T05	A0	
12	2N3108	60.0MΔ	200n		600n		5.0	1.0	150m	40 #	20pZ		N	Si	200S	T05	A0	
13	2N3110	60.0MΔ	200n		600n		5.0	1.0	150m	40 #	25pZ		N	Si	200S	T05	A0	
14	2N5344	60MΔ	200n		700n		40	5.0	1.0	7.0 Δ	3.0 #		P	Si	200J	T068	C0	
15	2N5345	60MΔ	200n		700n		40	5.0	1.0	7.0 Δ	3.0 #		P	Si	200J	T068	C0	
16	2N5412	60.0MΔ	200n	25n	300n	300n	100	5.0	2	20 Δ	10		N	Si	175J	T061	A0	
17	B148000	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #	10		N	Si	175J	T061	A0	
18	B148001	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #	10		N	Si	175J	T061	A0	
19	B148002	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #	10		N	Si	175J	T061	A0	
20	B148003	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #	10		N	Si	175J	T061	A0	
21	B148004	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #	10		N	Si	175J	T061	A0	
22	B148005	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #	10		N	Si	175J	T061	A0	
23	BD121	60MΔ	200n	30n	350n	150n	45	10	1.0	30	650m		N-D	Si	175J	T03	C0	
24	BD123	60MΔ	200n	30n	350n	150n	45	10	1.0	30	650m		N-D	Si	175J	T03	C0	
25#	BSX33	60.0MΔ	200n		600n	800n	1.8	10	10m	40 Δ		25pZ	N-DPE	Si	200J	T018	0	
26	SVT200-20	60MΔ	200n	100n	900n	300n		5.0	20	15 Δ	50m		N-PL	Si	200J	T03	C0	
27	SVT250-20	60MΔ	200n	100n	900n	300n		5.0	20	15 Δ	50m		N-PL	Si	200J	T03	C0	
28	SVT300-20	60MΔ	200n	100n	900n	300n		5.0	20	15 Δ	50m		N-PL	Si	200J	T03	C0	
29	2N3107	70.0MΔ	200n		1u	1u	5.0	10	10m	35 Δ	20pZ		N	Si	200J	T05	A0	
30	2N3109	70.0MΔ	200n		1u	1u	5.0	10	10m	35 Δ	25pZ		N	Si	200J	T05	A0	
31#	2SA624	70MΔ	200n		600n	800n	7.0	4.0	500m	35 Δ	1.0		P-PE	Si	125J	B15a	P	
32#	2SA647	70MΔ	200n		600n	800n	7.0	4.0	300m	20 Δ	2.0		P-PE	Si	125J	B15a	P	
33#	2SC1013	70MΔ	200n		1.0u	1.2u	7.0	4.0	500m	35 Δ	1.0		N-PE	Si	150J	B15f	A	
34#	2SC1014	70MΔ	200n		1.0u	1.2u	7.0	4.0	500m	35 Δ	1.0		N-PE	Si	150J	B15f	A	
35#	2SC2337	70MΔ	200n		1.5u	1.8u	100	5.0	2.0	150 #			NE	Si	150J	Y204a	C	
36#	2SC2337A	70MΔ	200n		1.5u	1.8u	100	5.0	2.0	150 #			NE	Si	150J	Y204a	C	
37	PTC193	70MΔ	200n		1.2u	1.5u	7.0	4.0	500m	35 Δ	1.0	15p	N	Si		B15a	P	
38#	2SC2428	80MΔ	200n		600n	150n	120	5.0	500m	200	140m		N	Si	175J	T03	C0	
39#	2SC2430	80MΔ	200n		200n	150n	100	5.0	1.0	100	240m	200p	N-PE	Si	175J	T03	C0	
40#	2SC2431	80MΔ	200n		200n	150n	100	5.0	1.5	100	214m	250p	N-PE	Si	175J	T03	C0	
41#	2SC2432	80MΔ	200n		200n	150n	100	5.0	1.5	100	214m	250p	N-PE	Si	175J	T03	C0	
42	2N1838	90.0MΔ	200n		800n		2.0	1.4	100m	10 Δ	14	27pZ	N	Si	175J	T05	A	
43	2N1839	90.0MΔ	200n		600n		2.0	1.4	150m	10 Δ	9.3	27pZ	N	Si	175J	T05	A	
44	2N5327	100MΔ	200n		900n		5.0	5.0	5	50 Δ	.50		N	Si	200J	T05	A	
45	2N5328	100MΔ	200n		900n		30	5.0	5	50 Δ	.12		N	Si	200J	T059	A	
46	PT8944	100MΔ	200n		800n		80	3.0	5.0	40 Δ		150p	N	Si	200A	T03	C0	
47	PT8945	100MΔ	200n		800n		80	3.0	5.0	40 Δ		150p	N	Si	200A	T03	C0	
48	PT8946	100MΔ	200n		800n		80	3.0	5.0	30 Δ		150p	N	Si	200A	T03	C0	
49	2N1837	140MΔ	200n		500n		2.0	.80	150m	10 Δ	5.3	18pZ	N	Si	175J	T05	A	
50	2N1837A	140MΔ	200n		500n		2.8	.80	150m	10 Δ	5.3	18pZ	N	Si	175J	T05	A0	
51	2N1837B	140MΔ	200n		500n		800m	10	150m	40 *Δ		18pZ	N	Si	200J	T05	A0	
52#	BUX77	1.0GΔ	200n		500n	200n	40	5.0	500m	70 Δ	200m		N-PE	Si	200J	T066	A0	
53#	BUX78	1.0GΔ	200n		500n	200n	40	5.0	500m	70 Δ	200m		N-PE	Si	200J	T066	A0	
54#	2SC129	8.00MΔ	220n	45n	880n	420n	125m	5.0	100m	45			N-A	Ge	75J	T05		
55	TIP663	10MΔ	220n	50n	6.5u	1.3u	5.5	5.0	20	25 Δ	150m#	250pZ	N	Si	200J	T03	KF0	
56	TIP664	10MΔ	220n	50n	6.5u	1.3u	5.5	5.0	20	25 Δ	150m#	250pZ	N	Si	200J	T03	KF0	
57	TIP665	10MΔ	220n	50n	6.5u	1.3u	5.5	5.0	20	25 Δ	150m#	250pZ	N	Si	200J	T03	KF0	
58#	BFY56	88.0MΔ	225n		625n		5.0m	10	100u	15 Δ		25pZ	N-DPE	Si	200J	T05	A0	
59	2N2945	10.0M	230n		150n	230n	400m	6.0	200m	200	20	9.0p	P-DE	Si	200J	T046	A	
60	2N696A	40MΔ	230n		300n		800m	10	150m	20 Δ	.10	35p	N	Si	200J	T05	A0	
61	2N1252A	40MΔ	230n		150n		800m	10	150m	45 Δ	.10	45p	N	Si	200J	T05	A0	
62#	2SA923-1	170MΔ	230n	16n	220n	200n	625m	10	10m	150 *	6.0	3.5pZ	P	Si	150J	R179e	A0	
63#	2SA923-2	170MΔ	230n	16n	220n	200n	625m	10	10m	150 *	6.0	3.5pZ	P	Si	150J	R179e	A0	
64	2N1808	25.0MΔ	235n		235n		100m	5.0	15m	6.0 Δ			P	Si	140S	T05	A0	
65	2N598	5.6MΔ	240n		900n	330n	250m	1.0	200m	50 Δ	20	20pZ	Ge	100J	T05	A0		
66	JAN2N598	5.6MΔ	240n		900n	330n	250m	1.0	200m	160 Δ	20	20pZ	P	Ge	100S	T05	A0	
67	JAN2N600	5.6MΔ	240n		900n	330n	250m	1.0	200m	160 Δ	20	20pZ	P	Ge	100S	T05	A0	
68	2N1998	6.6MΔ	240n	60n	750n	330n	250m	1.0	100m	225 Δ	20	20pZ	P	Ge	100S	T05	A	
69	2N600	8.00MΔ	240n		900n	330n	250m	1.0	100m	125 Δ			P-A	Ge	100J	T80		
70#	2SC2388		250n		1.3u	450n	75	5.0	2.0	20	350m		N-DM	Si	175J	T03	C0	
71	GE8251		250n		2.5u	1.0u	100	5.0	3.0	140 Δ			N	Si	150J	T03	C0	
72	GE8252		250n		2.5u	1.0u	100	5.0	3.0	140 Δ			N	Si	150J	T03	C0	
73	GE8253		250n		2.5u	1.0u	100	5.0	3.0	140 Δ			N	Si	150J	T03	C0	
74#	MTM12N18		250n	50n		120n	100				350m*	1.2nZ	N	Si	150J	Y220b	DF	
75#	MTM12N20		250n	50n		120n	100				350m*	1.2nZ	N	Si	150J	Y220b	DF	
76#	MTM15N12		250n	50n		120n	100				250m*	1.2nZ	N	Si	150J	Y220b	DF	
77#	MTM15N15		250n	50n		120n	100				250m*	1.2nZ	N	Si	150J	Y220b	DF	
78#	MTP12N18		250n	50n		120n	100				350m*	1.2nZ	N	Si	150J	Y204a	DE	
79#	MTP12N20		250n	50n		120n	100				350m*	1.2nZ	N	Si	150J	Y204a	DE	
80#	MTP15N12		250n	50n		120n	100				250m*	1.2nZ	N	Si	150J	Y204a	DE	
81#	MTP15N15		250n	50n		120n	100				250m*	1.2nZ	N	Si	150J	Y204a	DE	
82	DTS410	2.0MΔ	250n		600n	150n	100	5.0	2.5	10 Δ	800m		N-D	Si	150J	Y204a	C0	
83	TIP51	2.5MΔ	250n		500n	100n	100	10	200m	30 Δ			N	Si	150J	B19	B0	
84	TIP52(A)	2.5MΔ	250n		500n	100n	100	10	200m	3								

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y204 s/a TO200 Ser.	LEODE
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	GSTU10035	25MΔ	.25u	.05u	2.2u	.40u	175	5.0	10	8.0 Δ#	300p		N	Si	200J	Y204a	C	
2	GSTU10040	25MΔ	.25u	.05u	2.2u	.40u	175	5.0	10	8.0 Δ#	300p		N	Si	200J	Y204a	C	
3	SDT89511	25MΔ	250n		600n	250n	7.0	5.0	50	150 #	80p		P-PL	Si	200J	T039	A	
4	SDT89512	25MΔ	250n		600n	250n	7.0	5.0	50	150 #	80p		P-PL	Si	200J	T039	A	
5	SDT89513	25MΔ	250n		600n	250n	7.0	5.0	50	150 #	80p		P-PL	Si	200J	T039	A	
6	SDT89601	25MΔ	250n		600n	250n	35	5.0	500m	30 # Δ	80p	700m	P-PL	Si	200J	T066	A	
7	SDT89602	25MΔ	250n		600n	250n	35	5.0	500m	30 # Δ	80p	700m	P-PL	Si	200J	T066	A	
8	SDT89603	25MΔ	250n		600n	250n	35	5.0	500m	30 # Δ	80p	700m	P-PL	Si	200J	T066	A	
9	SDT89604	25MΔ	250n		600n	250n	35	5.0	500m	30 # Δ	80p	700m	P-PL	Si	200J	T066	A	
10	SDT89605	25MΔ	250n		600n	250n	35	5.0	500m	30 # Δ	80p	700m	P-PL	Si	200J	T066	A	
11	SDT89609	25MΔ	250n		600n	250n	35	5.0	500m	150 #	80p	700m	P-PL	Si	200J	T066	A	
12	SDT89610	25MΔ	250n		600n	250n	35	5.0	500m	150 #	80p	700m	P-PL	Si	200J	T066	A	
13	SDT89611	25MΔ	250n		600n	250n	35	5.0	500m	150 #	80p	700m	P-PL	Si	200J	T066	A	
14	SDT89612	25MΔ	250n		600n	250n	35	5.0	500m	150 #	80p	700m	P-PL	Si	200J	T066	A	
15	SDT89613	25MΔ	250n		600n	250n	35	5.0	500m	150 #	80p	700m	P-PL	Si	200J	T066	A	
16	2N6232	30MΔ	250n		450n	1.2u	15	2.0	500m	250			N-PL	Si	200J	T05	A	
17	1723-0405	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
18	1723-0605	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
19	1723-0805	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
20	1723-1005	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
21	1723-1205	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
22	1723-1405	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
23	1723-1605	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
24	1723-1805	30MΔ	250n		450n	250n	85	4.0	5.0	20 Δ#	200m	800p	N-E	Si	200J	T066	C	
25	UPT721	30MΔ	250n		800n	2.0	2.0	5.0	1.0	25 Δ#	200m	120p	N-PL	Si	200J	T066	C	
26	UPT722	30MΔ	250n		800n	2.0	2.0	5.0	1.0	25 Δ#	200m	120p	N-PL	Si	200J	T066	C	
27	UPT723	30MΔ	250n		800n	2.0	2.0	5.0	1.0	25 Δ#	200m	120p	N-PL	Si	200J	T066	C	
28	UPT724	30MΔ	250n		800n	2.0	2.0	5.0	1.0	25 Δ#	200m	120p	N-PL	Si	200J	T066	C	
29	UPT725	30MΔ	250n		800n	2.0	2.0	5.0	1.0	25 Δ#	200m	120p	N-PL	Si	200J	T066	C	
30	XGSQ1530	30MΔ	250n	400n	1.4u	350n	10	5.0	1.5	10 Δ#	300m	50p	N	Si	175J	T066	C	
31	XGSQ1535	30MΔ	250n	400n	1.4u	350n	10	5.0	1.5	10 Δ#	300m	50p	N	Si	175J	T066	C	
32	XGSQ1540	30MΔ	250n	400n	1.4u	350n	10	5.0	1.5	10 Δ#	300m	50p	N	Si	175J	T066	C	
33	UPT611	40MΔ	250n		500n	1.0	1.0	5.0	5.0	15 Δ#	200m	120p	N-PL	Si	200J	T05	A	
34	UPT612	40MΔ	250n		500n	1.0	1.0	5.0	5.0	15 Δ#	200m	120p	N-PL	Si	200J	T05	A	
35	UPT613	40MΔ	250n		500n	1.0	1.0	5.0	5.0	15 Δ#	200m	120p	N-PL	Si	200J	T05	A	
36	UPT614	40MΔ	250n		500n	1.0	1.0	5.0	5.0	15 Δ#	200m	120p	N-PL	Si	200J	T05	A	
37	UPT615	40MΔ	250n		500n	1.0	1.0	5.0	5.0	15 Δ#	200m	120p	N-PL	Si	200J	T05	A	
38	2N6702	50MΔ	250n	100n	1.0u	500n	50	2.0	20	30 Δ	180m		N-T	Si	150J	Y220a	C	
39	2N6703	50MΔ	250n	100n	1.0u	500n	50	2.0	20	30 Δ	180m		N-T	Si	150J	Y220a	C	
40	2N6704	50MΔ	250n	100n	1.0u	500n	50	2.0	20	30 Δ	175m		N-T	Si	150J	Y220a	C	
41#	BC140	50.0MΔ	250n		850n	3.7	1.0	1.0	1	15 Δ*	25p		N-E	Si	175J	T039	A	
42#	BC140A	50.0MΔ	250n		850n	750m	1.0	1.0	1	15	25p		N-PL	Si	175J	R216h	A	
43#	BC140B	50.0MΔ	250n		850n	750m	1.0	1.0	1	20	25p		N-PL	Si	175J	R216h	A	
44#	BC140C	50.0MΔ	250n		850n	750m	1.0	1.0	1	30	25p		N-PL	Si	175J	R216h	A	
45#	BC141	50.0MΔ	250n		850n	3.7	1.0	1.0	1	15 Δ*	25p		N-E	Si	175J	T039	A	
46#	BC141A	50.0MΔ	250n		850n	750m	1.0	1.0	1	15	25p		N-PL	Si	175J	R216h	A	
47#	BC141B	50.0MΔ	250n		850n	750m	1.0	1.0	1	20	25p		N-PL	Si	175J	R216h	A	
48#	BC141C	50.0MΔ	250n		850n	750m	1.0	1.0	1	30	25p		N-PL	Si	175J	R216h	A	
49	BC313	50MΔ	250n		850n	4.2	2.0	2.0	150m	40 Δ	30p		P-PL	Si	175J	T039	A	
50	BC313A	50MΔ	250n		850n	4.2	2.0	2.0	150m	40 Δ	30p		P-PL	Si	175J	T039	A	
51	D44VM1	50MΔ	250n	30n	500n	75n	50	1	4	40	70p		N	Si	150J	Y220bn	D	
52	D44VM4	50MΔ	250n	30n	500n	75n	50	1	4	40	70p		N	Si	150J	Y220bn	D	
53	D44VM7	50MΔ	250n	30n	500n	75n	50	1	4	40	70p		N	Si	150J	Y220bn	D	
54	SDT5906	50MΔ	250n		200n	35	5.0	5.0	500m	30 # Δ	700m	50p	N-PL	Si	200J	T066	A	
55	SDT5907	50MΔ	250n		200n	35	5.0	5.0	500m	30 # Δ	700m	50p	N-PL	Si	200J	T066	A	
56	SDT5908	50MΔ	250n		200n	35	5.0	5.0	500m	30 # Δ	700m	50p	N-PL	Si	200J	T066	A	
57	BSX45Z	60MΔ	250n		600n	5.0	1.0	1.0	100u	40	25p		NAN	Si	200J	T039	A	
58	BSX46Z	60MΔ	250n		600n	5.0	1.0	1.0	100u	40	20p		NAN	Si	200J	T039	A	
59	JAN2N5660	70MΔ	250n		850n	20	5.0	5.0	1.0	15 Δ#			N	Si	200A	T066	C	
60	JAN2N5661	70MΔ	250n		850n	1.2u	20	5.0	1.0	15 Δ#			N	Si	200A	T066	C	
61	JAN2N5662	70MΔ	250n		850n	15	5.0	5.0	1.0	15 Δ#			N	Si	200A	T05	A	
62	JAN2N5663	70MΔ	250n		850n	1.2u	15	5.0	1.0	15 Δ#			N	Si	200A	T05	A	
63	JAN2N5664	70MΔ	250n		850n	1.5u	30	5.0	3.0	15 Δ#			N	Si	200A	T066	C	
64	JAN2N5665	70MΔ	250n		850n	2.0u	30	5.0	3.0	10 Δ#			N	Si	200A	T066	C	
65	JAN2N5666	70MΔ	250n		850n	1.5u	15	5.0	3.0	15 Δ#			N	Si	200A	T05	A	
66	JAN2N5667	70MΔ	250n		850n	2.0u	15	5.0	3.0	10 Δ#			N	Si	200A	T05	A	
67	DTS2000	75MΔ	250n		300n	180n	720m			2.0k	2.0	15p	N	Si	150J	T092	KC	
68	DTS2001	75MΔ	250n		300n	180n	720m			2.0k	2.0	12p	N	Si	150J	T092	KC	
69	DTS2002	75MΔ	250n		300n	180n	720m			2.0k	2.0	12p	N	Si	150J	T092	KC	
70	DTS2003	75MΔ	250n		300n	180n	720m			2.0k	2.0	12p	N	Si	150J	T092	KC	
71	JAN2N3766	80MΔ	250n		800n	2.5u	25	5.0	10	20 Δ	2.0 #	50p	N	Si	200J	T066	C	
72	JAN2N3767	80MΔ	250n		800n	2.5u	25	5.0	10	20 Δ	2.0 #	50p	N	Si	200J	T066	C	
73	2N1444	100M	250n		200n	200n	800m	5.0	10	10	250m		N-ME	Si	150J	T029	A	
74#	2SC309	120MΔ	250n		200n	200n	800m	10	150m	85 #	10	10p	N-PL	Si	200J	T05	A	
75#	2SC310	120MΔ	250n		200n	200n	800m	10	150m	85 #	10	10p	N-PL	Si	200J	T05	A	
76#	2SC805A1	140MΔ	250n	12n	350n	240n	750m	5.0	3.0m	150 *	6.0	2.4p	N-E	Si	175J	T05	A	
77#	2SC805A2	140MΔ	250n	12n	350n	240n	750m	5.0	3.0m	150 *	6.0	2.4p	N-E	Si	175J	T05	A	
78#	2SC1517AKB	150MΔ	250n		3.0u	3.5u	10	4.0	50m	80 Δ	30p		NE	Si	150J	B11	D	
79#	2SC1517AKC	150MΔ	250n		3.0u	3.5u	10	4.0	50m	100 Δ	30p		NE	Si	150J	B11	D	
80	2N1807	10.0MΔ	265n		265n	100m	400m	5.0	1.0m	6.0	100 Δ		N	Si	140S	T05	A	
81	2N6566	3.0MΔ	270n	30n	150n	400m	400m	6.0	1.0m	30	2.0	10p	N	Si	200S	T046	A	
82	2N6567	3.0MΔ	270n	30n	150n	400m	400m	6.0	1.0m	30	2.0	10p	N	Si	200S	T046	A	
83#	2SC128	5.50MΔ	270n	50n	850n	450n	125m	5.0										



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	Ie (A)	hFE								
1	SVT6001#	789m	300n	60n	1.0u	70nt	135	5.0	10	60 Δ	350pZ		N	Si	200J	T03		
2	SVT6002#	789m	300n	60n	1.0u	70nt	135	5.0	10	60 Δ	350pZ		N	Si	200J	T03		
3	CPS1540B	20k#	300n		2.5u	500n	100	5.0	5.0	40 Δ	400m		N-D	Si	200J	T03	KF	
4	CPS1545B	20k#	300n		2.5u	500n	100	5.0	5.0	40 Δ	400m		N-D	Si	200J	T03	KF	
5	CPS1550B	20k#	300n		2.5u	500n	100	5.0	5.0	40 Δ	400m		N-D	Si	200J	T03	KF	
6	CPS2540B	20k#	300n		2.5u	500n	125	5.0	10	40 Δ	200m		N-DM	Si	200J	T03	KF	
7	CPS2545B	20k#	300n		2.5u	500n	125	5.0	10	40 Δ	200m		N-DM	Si	200J	T03	KF	
8	CPS2550B	20k#	300n		2.5u	500n	125	5.0	10	40 Δ	200m		N-DM	Si	200J	T03	KF	
9	CPS4040B	20k#	300n		2.5u	500n	150	5.0	10	40 Δ	100m		N-DM	Si	175J	T03	KF	
10	CPS4045B	20k#	300n		2.5u	500n	150	5.0	10	40 Δ	100m		N-DM	Si	175J	T03	KF	
11	CPS4050B	20k#	300n		2.5u	500n	150	5.0	10	40 Δ	100m		N-DM	Si	175J	T03	KF	
12	2N1997	3.0MΔ	300n	60n	750n	400n	250m	1.0	100mZ	200 Z	20	20pZ	P	Ge	100S	T05		
13	BD233	3.0MΔ	300nZ		1.1uZ	25	2.0	2.0	150mZ	250 Z	600m		N-E	Si	150J	TO126	B0	
14	BD234	3.0MΔ	300nZ		700nZ	25	2.0	2.0	150mZ	250 Z	600m		N-E	Si	150J	TO126	B0	
15	BD235	3.0MΔ	300nZ		1.1uZ	25	2.0	2.0	150mZ	250 Z	600m		N-E	Si	150J	TO126	B0	
16	BD236	3.0MΔ	300nZ		700nZ	25	2.0	2.0	150mZ	250 Z	600m		P-E	Si	150J	TO126	B0	
17	BD237	3.0MΔ	300nZ		1.1uZ	25	2.0	2.0	150mZ	160 Z	600m		P-E	Si	150J	TO126	B0	
18	BD238	3.0MΔ	300nZ		700nZ	25	2.0	2.0	150mZ	160 Z	600m		P-E	Si	150J	TO126	B0	
19	BD239	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N-D	Si	150J	B1	D	
20	BD239#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N	Si	150J	Y220	D0	
21	BD239A	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N-D	Si	150J	B1	D	
22	BD239A#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N	Si	150J	Y220	D0	
23	BD239B	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N-D	Si	150J	B1	D	
24	BD239B#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N	Si	150J	Y220	D0	
25	BD239C	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N-D	Si	150J	B1	D	
26	BD239C#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	700m		N	Si	150J	Y220	D0	
27	BD241	3.0MΔ	300nZ		1.0uZ	2.0	4.0	3.0	20	8.0 Δ	400m		N-D	Si	150J	B1	D	
28	BD241#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	400m		N	Si	150J	Y220b	D0	
29	BD241A	3.0MΔ	300nZ		1.0uZ	2.0	4.0	3.0	20	8.0 Δ	400m		N-D	Si	150J	B1	D	
30	BD241A#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	400m		N	Si	150J	Y220	D0	
31	BD241B	3.0MΔ	300nZ		1.0uZ	2.0	4.0	3.0	20	8.0 Δ	400m		N-D	Si	150J	B1	D	
32	BD241B#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	400m		N	Si	150J	Y220	D0	
33	BD241C	3.0MΔ	300nZ		1.0uZ	2.0	4.0	3.0	20	8.0 Δ	400m		N-D	Si	150J	B1	D	
34	BD241C#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	400m		N	Si	150J	Y220	D0	
35	BD243	3.0MΔ	300nZ		1.0uZ	65	4.0	3.0	15	15 Δ	250m		N-D	Si	150J	B1	D	
36	BD243A	3.0MΔ	300nZ		1.0uZ	65	4.0	3.0	15	15 Δ	250m		N-D	Si	150J	B1	D	
37	BD243A#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	250m		N	Si	150J	Y220	D0	
38	BD243B	3.0MΔ	300nZ		1.0uZ	65	4.0	3.0	15	15 Δ	250m		N-D	Si	150J	B1	D	
39	BD243B#	3.0MΔ	300nZ		800nZ	2.0	4.0	1.0	10	20 Δ	250m		N	Si	150J	Y220	D0	
40	BD243C	3.0MΔ	300nZ		1.0uZ	65	4.0	3.0	15	15 Δ	250m		N-D	Si	150J	B1	D	
41	BD245	3.0MΔ	300nZ		1.0uZ	80	4.0	3.0	12	12 Δ	333m		N-D	Si	150S	B19	D	
42	BD245A	3.0MΔ	300nZ		1.0uZ	80	4.0	3.0	12	12 Δ	333m		N-D	Si	150S	B19	D	
43	BD245B	3.0MΔ	300nZ		1.0uZ	80	4.0	3.0	12	12 Δ	333m		N-D	Si	150S	B19	D	
44	BD245C	3.0MΔ	300nZ		1.0uZ	80	4.0	3.0	12	12 Δ	333m		N-D	Si	150S	B19	D	
45	TIP30B	3.0MΔ	300nZ		1.0uZ	30	4.0	2.0	200mZ	20 Δ	400m#		P-DM	Si	150J	B1	B0	
46	TIP30C	3.0MΔ	300nZ		1.0uZ	30	4.0	2.0	200mZ	20 Δ	400m#		P-DM	Si	150J	B1	B0	
47	TIP32	3.0MΔ	300nZ		1.0uZ	40	4.0	10	500mZ	20 Δ	400m#		P-DM	Si	150J	B1	B0	
48	TIP32A	3.0MΔ	300nZ		1.0uZ	40	4.0	10	500mZ	20 Δ	400m#		P-DM	Si	150J	B1	B0	
49	TIP32B	3.0MΔ	300nZ		1.0uZ	40	4.0	10	500mZ	20 Δ	400m#		P-DM	Si	150J	B1	B0	
50	TIP32C	3.0MΔ	300nZ		1.0uZ	40	4.0	10	500mZ	20 Δ	400m#		P-DM	Si	150J	B1	B0	
51	BDT91#	4.0MΔ	300nZ		1.5uZ	90	4.0	4.0	200	#Z			N-E	Si	150J	Y220b	D0	
52	BDT92#	4.0MΔ	300nZ		1.5uZ	90	4.0	4.0	200	#Z			P-E	Si	150J	Y220b	D0	
53	BDT93#	4.0MΔ	300nZ		1.5uZ	90	4.0	4.0	200	#Z			N-E	Si	150J	Y220b	D0	
54	BDT94#	4.0MΔ	300nZ		1.5uZ	90	4.0	4.0	200	#Z			P-E	Si	150J	Y220b	D0	
55	BDT95#	4.0MΔ	300nZ		1.5uZ	90	4.0	4.0	200	#Z			N-E	Si	150J	Y220b	D0	
56	BDT96#	4.0MΔ	300nZ		1.5uZ	90	4.0	4.0	200	#Z			P-E	Si	150J	Y220b	D0	
57	BDV91	4.0MΔ	300nZ		1.5uZ	500nt	90	4.0	10	5.0 Δ	300m		N-E	Si	150J	B46	D0	
58	BDV92	4.0MΔ	300nZ		700nt	300nt	90	4.0	10	5.0 Δ	300m		P-E	Si	150J	B46	D0	
59	BDV93	4.0MΔ	300nZ		1.5uZ	500nt	90	4.0	10	5.0 Δ	300m		N-E	Si	150J	B46	D0	
60	BDV94	4.0MΔ	300nZ		700nt	300nt	90	4.0	10	5.0 Δ	300m		P-E	Si	150J	B46	D0	
61	BDV95	4.0MΔ	300nZ		1.5uZ	500nt	90	4.0	10	5.0 Δ	300m		N-E	Si	150J	B46	D0	
62	BDV96	4.0MΔ	300nZ		700nt	300nt	90	4.0	10	5.0 Δ	300m		P-E	Si	150J	B46	D0	
63	2N2946	5.0M	300n		150n	300n	400m	6.0	200Δ	200	20	9.0p	P-DE	Si	200J	TO46	A	
64	2SB566AKB	7.0MΔ	300nZ		2.5uZ	3.0uZ	40	4.0	1.0	60 Δ	500m		PD	Si	150J	Y220b	D0	
65	2SB566AKC	7.0MΔ	300nZ		2.5uZ	3.0uZ	40	4.0	1.0	100 Δ	500m		PD	Si	150J	Y220b	D0	
66	2SB566KC	7.0MΔ	300nZ		2.5uZ	3.0uZ	40	4.0	1.0	200 *Z	500m		PD	Si	150J	Y220b	D0	
67	2SB566KB	7.0MΔ	300nZ		2.5uZ	3.0uZ	40	4.0	1.0	60 Δ	500m		PD	Si	150J	Y220b	D0	
68	2SB566KC	7.0MΔ	300nZ		2.5uZ	3.0uZ	40	4.0	1.0	100 Δ	500m		PD	Si	150J	Y220b	D0	
69	2N1806	7.20MΔ	300n		300nZ	100m	5.0	15mZ	6.0 Δ				P	Si	140S	TO5		
70	2SD219	8.0M	300n	40n	2.4u	2.6u	500m	4.0	200m	80	1.0		N-D	Si	150J	TO5	A0	
71	2SD220	8.0M	300n	40n	2.4u	2.6u	500m	4.0	200m	80	1.0		N-D	Si	150J	TO5	A0	
72	2SD221	8.0M	300n	40n	2.4u	2.6u	500m	4.0	200m	80	1.0		N-D	Si	150J	TO5	A0	
73	2SD223	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	F43	A0	
74	2SD236	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	TO66	C0	
75	2SD237	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	TO66	C0	
76	2SD238	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	TO68	C0	
77	IR5251	8.0MΔ	300nt		2.0uZ	100	5.0	3.0	140 Δ	300m			ND	Si	150J	T03	KF0	
78	IR5252	8.0MΔ	300nt		2.0uZ	100	5.0	3.0	140 Δ	300m			ND	Si	150J	T03	KF0	
79	IR5253	8.0MΔ	300nt		2.0uZ	100	5.0	3.0	140 Δ	300m			ND	Si	150J	T03	KF0	
80	2N440	10MΔ	300n		600n	200n	100m	1.0	50mZ	70	5.0		N-A	Ge	85J	TO5	A	
81	2N440A	10MΔ	300n		600n	200n	150m	1.0	50mZ	70	5.0	20pZ	A	Ge	85J	TO5	A	
82	2N2648	10MΔ	300n		900n	500n	300m	5.0	1.0	500 Z	400m		P	Ge	100C	TO5	A0	
83	2N5050	10MΔ	300n		3.5u	1.2u	40	5.0	1.0	25 Δ	250pZ		N	Si	175J	TO66	C0	
84	2N5051	10MΔ	300n		3.5u	1.2u	40	5.0	1.0	25 Δ	250pZ		N	Si	175J			



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP. (°C)	DWG # Y200 s/a T0200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1	1723-0810	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
2	1723-0810	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
3	1723-1010	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
4	1723-1210	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
5	1723-1410	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
6	1723-1610	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
7	1723-1810	30MΔ	300n∅		500n	300n	85 ∅	4.0 ∅	10 ∅	20 Δ#	125m#	800p∅	N-E	Si	200J	T066	C∅	
8	1743-0810	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T03	C∅	
9	1743-1210	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T03	C∅	
10	1743-1610	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T03	C∅	
11	1748-0610	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
12	1748-0810	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
13	1748-1010	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
14	1748-1210	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
15	1748-1410	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
16	1748-1610	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
17	1748-1810	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 #Δ		800p∅	N-E	Si	200J	T063	A	
18	1763-0610	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
19	1763-0810	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
20	1763-1010	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
21	1763-1210	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
22	1763-1410	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
23	1763-1610	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
24	1763-1810	30MΔ	300n∅		500n	300n	85 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T03	C∅	
25	1768-0610	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
26	1768-0810	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
27	1768-1010	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
28	1768-1210	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
29	1768-1410	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
30	1768-1610	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
31	1768-1810	30MΔ	300n∅		500n	300n	100 ∅	2.0 ∅	10 ∅	20 Δ#		800p∅	N-E	Si	200J	T063	A	
32	1814-2001	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
33	1814-2201	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
34	1814-2501	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
35	1814-2701	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
36	1814-3001	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
37	1814-3201	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
38	1814-3501	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
39	1814-3701	30MΔ	300n		600n	300n	44 ∅	4.0 ∅	1.0 ∅	20 Δ#	600m#	250p∅	N-E	Si	150J	T066	C∅	
40#	BSX62-10	30MΔ	300n∅	1.5u∅			875m	1.0 ∅	100m∅	110	700m	70p#∅	N-PE	Si	200J	T039	A∅	
41#	BSX62-16	30MΔ	300n∅	1.5u∅			875m	1.0 ∅	100m∅	180	700m	70p#∅	N-PE	Si	200J	T039	A∅	
42#	BSX63-10	30MΔ	300n∅	1.5u∅			875m	1.0 ∅	100m∅	180	700m	70p#∅	N-PE	Si	200J	T039	A∅	
43#	BSX63-16	30MΔ	300n∅	1.5u∅			875m	1.0 ∅	100m∅	180	700m	70p#∅	N-PE	Si	200J	T039	A∅	
44#	BSX64-10	30MΔ	300n∅	1.5u∅			875m	1.0 ∅	100m∅	110	700m	70p#∅	N-PE	Si	200J	T039	A∅	
45	SCA14024	30M∅	300n		500n	100n	200 ∅	5.0 ∅	20 ∅	30 Δ	50m		N	Si	200J	T063	A	
46	SCA14025	30M∅	300n		500n	100n	200 ∅	5.0 ∅	20 ∅	30 Δ	50m		N	Si	200J	T063	A	
47	SCA14026	30M∅	300n		500n	100n	200 ∅	5.0 ∅	20 ∅	30 Δ	50m		N	Si	200J	T063	A	
48	SCA14027	30M∅	300n		500n	100n	200 ∅	5.0 ∅	20 ∅	30 Δ	50m		N	Si	200J	T063	A	
49	SCA14028	30M∅	300n		500n	100n	200 ∅	5.0 ∅	20 ∅	30 Δ	50m		N	Si	200J	T063	A	
50	SCA14029	30M∅	300n		500n	100n	200 ∅	5.0 ∅	20 ∅	30 Δ	50m		N	Si	200J	T063	A	
51	SDT3205	30.0MΔ	300n	1.5u			87 ∅	5.0 ∅	50m∅	90 ∅		500p∅	N-PE	Si	200J	T061	A	
52	SDT3206	30.0MΔ	300n	1.5u			87 ∅	5.0 ∅	50m∅	90 ∅		500p∅	N-PE	Si	200J	T061	A	
53	SDT3207	30.0MΔ	300n	1.5u			87 ∅	5.0 ∅	50m∅	90 ∅		500p∅	N-PE	Si	200J	T061	A	
54	SDT3208	30.0MΔ	300n	1.5u			87 ∅	5.0 ∅	50m∅	90 ∅		500p∅	N-PE	Si	200J	T061	A	
55	SDT3209	30.0MΔ	300n	1.5u			87 ∅	5.0 ∅	50m∅	90 ∅		500p∅	N-PE	Si	200J	T061	A	
56	2N3418	40.0MΔ	300n∅	1.2u∅			15 ∅	2.0 ∅	120 ∅	1	25	150p∅	N	Si	200C	T05	A∅	
57	2N3419	40.0MΔ	300n∅	1.2u∅			15 ∅	2.0 ∅	120 ∅	1	25	150p∅	N	Si	200C	T05	A∅	
58	2N3420	40.0MΔ	300n∅	1.2u∅			15 ∅	2.0 ∅	120 ∅	1	25	150p∅	N	Si	200C	T05	A∅	
59	2N3421	40.0MΔ	300n∅	1.2u∅			15 ∅	2.0 ∅	120 ∅	1	25	150p∅	N	Si	200C	T05	A∅	
60	2N3451	40.0MΔ	300n∅	2.5u∅			40 ∅	5.0 ∅	10 ∅	90 ∅		850p	N	Si	200S	W39	A∅	
61	2N3552	40.0MΔ	300n∅	2.5u∅			40 ∅	5.0 ∅	10 ∅	90 ∅		850p	N	Si	200S	W39	A∅	
62	2N3552	40MΔ	300n∅			1.5u∅	30 ∅	5.0 ∅	10 ∅	15 Δ#		150p∅	N	Si	200J	T53	M	
63	2N3597	40MΔ	300n∅			2.0u∅	30 ∅	5.0 ∅	10 ∅	15 Δ#		150p∅	N	Si	200J	T52	M	
64	2N3598	40MΔ	300n∅			1.5u∅	30 ∅	5.0 ∅	10 ∅	15 Δ#		150p∅	N	Si	200J	T42	M	
65	2N3599	40MΔ	300n∅			2.0u∅	30 ∅	5.0 ∅	10 ∅	15 Δ#		150p∅	N	Si	200J	T42	M	
66	2N4000	40.0MΔ	300n∅			2u∅	15 ∅	5.0 ∅	50m∅	10 Δ	500m		N	Si	200J	T05	A∅	
67	2N4001	40.0MΔ	300n∅			2u∅	15 ∅	5.0 ∅	50m∅	10 Δ	500m		N	Si	200J	T05	A∅	
68	2N6338	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		300p∅	N	Si	200J	T03	C∅	
69	2N6339	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		300p∅	N	Si	200J	T03	C∅	
70	2N6340	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		300p∅	N	Si	200J	T03	C∅	
71	2N6341	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		300p∅	N	Si	200J	T03	C∅	
72	2N6436	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		700p∅	N	P	200J	T03	C∅	
73	2N6437	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		700p∅	P	P	200J	T03	C∅	
74	2N6438	40MΔ	300n		1.0u	250n	200 ∅	2.0 ∅	25 ∅	12 Δ#		700p∅	P	P	200J	T03	C∅	
75	1714-0402	40MΔ	300n∅		600n	300n∅	25 ∅	2.0 ∅	20 ∅	20 Δ#	300m#	250p∅	N-E	Si	200J	T066	C∅	
76	1714-0802	40MΔ	300n∅		600n	300n∅	25 ∅	2.0 ∅	20 ∅	20 Δ#	300m#	250p∅	N-E	Si	200J	T066	C∅	
77	1714-0802	40MΔ	300n∅		600n	300n∅	25 ∅	2.0 ∅	20 ∅	20 Δ#	300m#	250p∅	N-E	Si	200J	T066	C∅	
78	1714-1002	40MΔ	300															

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1	2N5085	50.0MΔ	300n	50n	350n	300n	35m	2.0	10	500m	40 #	80p	N	Si	200J	T059	C	
2	2N5425	50MΔ	300n			2.0u	32	10	500m	500 Δ	15p	N	Si	200S	R177c	A		
3	2N5426	50MΔ	300n			2.0u	32	10	500m	1.0k Δ	15p	N	Si	200S	R177c	A		
4 #	2SC1748	50MΔ	300n		3.5u	4.0u	800m	2.0	10	500m	30 Δ	4.2p	N-D	Si	150J	T039	A	
5 #	BUY49S	50MΔ	300n			1.0u	1.0	5.0	500m	80 #	30p	N-PE	Si	200J	T039	A		
6	D42D1	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y202a	A		
7	D42D2	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y202a	A		
8	D42D3	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y202a	A		
9	D42D4	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y202a	A		
10	D42D5	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y202a	A		
11	D42D6	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y202a	A		
12	D44D1	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y220b	D		
13	D44D2	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y220b	D		
14	D44D3	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y220b	D		
15	D44D4	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y220b	D		
16	D44D5	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y220b	D		
17	D44D6	50MΔ	300n	200n	1.2u	800n	2.1	2.0	1.0	5.0k Δ	45p	N-PE1	Si	150J	Y220b	D		
18	D44H1	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	20 Δ	125m	130p	N	Si	150J	B22	B	
19	D44H2	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	40 Δ	125m	130p	N	Si	150J	B22	B	
20	D44H4	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	20 Δ	125m	130p	N	Si	150J	B22	B	
21	D44H5	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	40 Δ	125m	130p	N	Si	150J	B22	B	
22	D44H7	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	20 Δ	125m	130p	N	Si	150J	B22	B	
23	D44H8	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	40 Δ	125m	130p	N	Si	150J	B22	B	
24	D44H10	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	20 Δ	125m	130p	N	Si	150J	B22	B	
25	D44H11	50MΔ	300n	200n	500n	140n	1.7	1.0	4.0	40 Δ	125m	130p	N	Si	150J	B22	B	
26	SP44H1	50MΔ	300n	200n	500n	140n	50	1.0	4.0	20 Δ	125m		N-PL	Si	150J	Y220b	D	
27	SP44H2	50MΔ	300n	200n	500n	140n	50	1.0	4.0	40 Δ	125m		N-PL	Si	150J	Y220b	D	
28	SP44H4	50MΔ	300n	200n	500n	140n	50	1.0	4.0	20 Δ	125m		N-PL	Si	150J	Y220b	D	
29	SP44H5	50MΔ	300n	200n	500n	140n	50	1.0	4.0	40 Δ	125m		N-PL	Si	150J	Y220b	D	
30	SP44H7	50MΔ	300n	200n	500n	140n	50	1.0	4.0	20 Δ	125m		N-PL	Si	150J	Y220b	D	
31	SP44H8	50MΔ	300n	200n	500n	140n	50	1.0	4.0	40 Δ	125m		N-PL	Si	150J	Y220b	D	
32	SP44H10	50MΔ	300n	200n	500n	140n	50	1.0	4.0	20 Δ	125m		N-PL	Si	150J	Y220b	D	
33	SP44H11	50MΔ	300n	200n	500n	140n	50	1.0	4.0	40 Δ	125m		N-PL	Si	150J	Y220b	D	
34	U2T101	50MΔ	300n	100n	600n	500n	1.0	5.0	5.0	2.0k Δ	300m	100p	N-PL	Si	200A	T033	KD	
35	U2T201	50MΔ	300n	100n	600n	500n	2.5	5.0	5.0	2.0k Δ	300m	100p	N-PL	Si	200A	F24	KH	
36	U2T305	50MΔ	300n	100n	800n	300n	1.0	5.0	5.0	1.0k Δ	1.2 #	60p	N-PL	Si	200A	T033	KD	
37	U2T405	50MΔ	300n	100n	800n	300n	2.0	5.0	5.0	1.0k Δ	1.2 #	60p	N-PL	Si	200A	F24	KH	
38	2N6689	70MΔ	300n	50n	500n	500n	7.0	1.0	1.0	20 *	200m	150p	N	Si	150S	Y220b	A	
39 #	BSX63	70MΔ	300n			1.5u	7 *	1.0	1.0	160 *			N-PE	Si	200J	T039	A	
40 #	BSX63-6	70MΔ	300n			1.5u	5.0	2.0	3.0	40 Δ			N-PE	Si	200A	T039	A	
41	2N4896	80MΔ	300n	50n	350n	300n	4.0	2.0	2.0	300 Δ	200m	80p	N	Si	200J	T039	C	
42	2N5084	80MΔ	300n	50n	350n	300n	35m	2.0	10	100 #	80p		N	Si	200J	T059	C	
43	2N6354	80MΔ	300n		1.0u	200n	80 #	2.0	5.0	20 Δ			N	Si	200J	T03	C	
44 #	2SA429G	100MΔ	300n		2.0u	400n	400m	3.0	10	240 Δ	3.0p		N-PL	Si	125J	T092	B	
45 #	2SC780AG	100MΔ	300n		2.0u	400n	150m	3.0	10	240 Δ	2.0p		N-E	Si	125J	R67a	B	
46	PT6947	100MΔ	300n			1.0u	125	5.0	5.0	40 Δ	400p		N	Si	200A	T03	C	
47	PT6948	100MΔ	300n			1.0u	125	5.0	5.0	40 Δ	400p		N	Si	200A	T03	C	
48	PT6949	100MΔ	300n			1.0u	125	5.0	5.0	30 Δ	400p		N	Si	200A	T03	C	
49	PT7948	100MΔ	300n			1.0u	175	5.0	5.0	20 Δ	400p		N	Si	200A	T063	C	
50	PT7950	100MΔ	300n			1.0u	175	5.0	5.0	20 Δ	400p		N	Si	200A	T063	C	
51	JAN2N3996	120MΔ	300n			1.5u	30 #	2.0	5.0	30 Δ	150p		N	Si	200S	T53f	M	
52	JAN2N3997	120MΔ	300n			2.0u	30 #	2.0	5.0	60 Δ	150p		N	Si	200S	T53f	M	
53	JAN2N3998	120MΔ	300n			1.5u	30 #	2.0	5.0	30 Δ	150p		N	Si	200S	T42d	A	
54	JAN2N3999	120MΔ	300n			2.0u	30 #	2.0	5.0	60 Δ	150p		N	Si	200S	T42d	A	
55	2N3495	150MΔ	300n		1.0u	600m	40 #	1.0	5.0	40 Δ	35	8.0p	P	Si	200S	T05	A	
56	2N3497	150MΔ	300n		1.0u	400m	40 #	1.0	5.0	40 Δ	35	6.0p	P	Si	200S	T018	A	
57 #	A5T3497	150MΔ	300n		1.0u	625m	40 #	1.0	10	40 Δ	35	6.0p	P	Si	150S	R203	A	
58	JAN2N3418	160MΔ	300n			1.2u	15 #	5.0	5.0	10 Δ	150p		N	Si	200A	T05	A	
59	JAN2N3419	160MΔ	300n			1.2u	15 #	5.0	5.0	10 Δ	150p		N	Si	200A	T05	A	
60	JAN2N3420	160MΔ	300n			1.2u	15 #	5.0	5.0	15 Δ	150p		N	Si	200A	T05	A	
61	JAN2N3421	160MΔ	300n			1.2u	15 #	5.0	5.0	15 Δ	150p		N	Si	200A	T05	A	
62	2N3494	200MΔ	300n		1.0u	600m	40 #	1.0	5.0	40 Δ	30	7.0p	P	Si	200S	T05	A	
63	2N3496	200MΔ	300n		1.0u	400m	40 #	1.0	5.0	40 Δ	30	7.0p	P	Si	200S	T018	A	
64 #	A5T3496	200MΔ	300n		1.0u	625m	40 #	1.0	10	40 Δ	30	7.0p	P	Si	150S	R203	A	
65	2N3946	250MΔ	300n	35n	300n	360m	30 #	1.0	1.0	250 Δ	20	4.0p	N	Si	200J	T018	A	
66	2N3947	300MΔ	300n	35n	375n	360m	75n	1.0	1.0	700 Δ	20	4.0p	N	Si	200J	T018	A	
67 #	BUY82	60MΔ	320n		245n	245n	15 #	5.0	10	30	100m	110p	N-PL	Si	175C	T039	A	
68	TIP75	10MΔ	340n	20n	1.4u	800n	2.0	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	150J	Y220b	D	
69	TIP75A	10MΔ	340n	20n	1.4u	800n	2.0	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	150J	Y220b	D	
70	TIP75B	10MΔ	340n	20n	1.4u	800n	2.0	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	150J	Y220b	D	
71	TIP75C	10MΔ	340n	20n	1.4u	800n	2.0	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	150J	Y220b	D	
72	TIP75E	10MΔ	340n	20n	1.4u	800n	5.5	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	200J	T03	C	
73	TIP755A	10MΔ	340n	20n	1.4u	800n	5.5	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	200J	T03	C	
74	TIP755B	10MΔ	340n	20n	1.4u	800n	5.5	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	200J	T03	C	
75	TIP755C	10MΔ	340n	20n	1.4u	800n	5.5	4.0	3.0	10 Δ	1.0 #	275p	N-DM	Si	200J	T03	C	
76	2N1386	350MΔ	350n		200n	200n	300m	1.0	10	90 Δ	120m	8.0p	N	Si	175S	T05	A	
77	2N1387	350MΔ	350n		350n	350n	300m	1.0	10	90 Δ	100m	8.0p	N	Si	175S	T05	A	
78 #	BD743	350n	20n		500n	400n	2.0	4.0	5.0	20 Δ			N-DE	Si	150J	Y220a	D	
79 #	BD743A	350n	20n		500n	400n	2.0	4.0	5.0	20 Δ			N-DE	Si	150J	Y220a	D	
80 #	BD743B	350n	20n		500n	400n	2.0	4.0	5.0	20 Δ			N-DE	Si	150J	Y220a	D	
81 #	BD743C	350n	20n		500n	400n	2.0	4.0	5.0	20 Δ			N-DE	Si	150J	Y220a	D	
82 #	BD743D	350n	20n		500n	400n	2.0	4.0	5.0	20 Δ			N-DE	Si	150J	Y220a	D	
83 #	BD745	350n	20n		500n	400n	3.5	4.0	5.0	20 Δ								

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2)  $f_{\beta}$  & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	IR411	2.5MΔ	350nt		800nt	150nt	100	5.0	2.5	20	800m		N-D	Si	150J	T03	C	
2	IR423	2.5MΔ	350nt		600nt	150nt	125	5.0	2.5	20	800m		N-D	Si	150J	T03	C	
3	IR424	2.5MΔ	350nt		600nt	150nt	125	5.0	2.5	20	800m		N-D	Si	150J	T03	C	
4	IR425	2.5MΔ	350nt		600nt	150nt	125	5.0	2.5	20	800m		N-D	Si	150J	T03	C	
5	IR430	2.5MΔ	350nt		600nt	200nt	125	5.0	3.5	15	380m		N-D	Si	150J	T03	C	
6	IR431	2.5MΔ	350nt		600nt	200nt	125	5.0	3.5	15	280m		N-D	Si	150J	T03	C	
7	RCA411	2.5MΔ	350nt		1.4ut	150nt	125	5.0	2.5	20	800m		N-E	Si	200J	T03	C	
8	410	4.0MΔ	350nt			150nt	125	5.0	2.5	20	800m		N-E	Si	200J	T03	C	
9	413	4.0MΔ	350nt			150nt	125	5.0	1.0	15	151Δ#		N-E	Si	200J	T03	C	
10	RCA410	4.0MΔ	350nt		1.4ut	150nt	125	5.0	2.5	20	800m		N-E	Si	200J	T03	C	
11	RCA413	4.0MΔ	350nt		1.4u	150nt	125	5.0	1.0	15	151Δ#		N-E	Si	200J	T03	C	
12	2N1892	5.0MΔ	350nt	150n	1.2u	650n	150m	350m	200m	15	2.0	20p	N-E	Ge	85J	T05	A	
13	TIP73	5.0MΔ	350n	20n	500n	400n	2.0	4.0	15	5.0	280m#		N-DMT	Si	150J	B1	B	
14	TIP73A	5.0MΔ	350n	20n	500n	400n	2.0	4.0	15	5.0	280m#		N-DMT	Si	150J	B1	B	
15	TIP73B	5.0MΔ	350n	20n	500n	400n	2.0	4.0	15	5.0	280m#		N-DMT	Si	150J	B1	B	
16	TIP73C	5.0MΔ	350n	20n	500n	400n	2.0	4.0	15	5.0	280m#		N-DMT	Si	150J	B1	B	
17#	ASY27-RT	6.0MΔ	350n	75n	1.5u	620n	150m	1.0	1.0	10	20	16p	F-A	Ge	85J	T05	A	
18#	BUY55	8.0MΔ	350nt		4.0u	1.5u	10	1.0	1.0	10	1.6 #		N-DM	Ge	200J	T039	A	
19	2N3216	9.0MΔ	350nt		250n	200n	150m	2.2	2.0	60	1.1	20p	P	Ge	100S	T05	A	
20#	2G605	9.40M	350nt	180nt	440nt	280nt	150m	2.25	4.5m	75	1.1	12p	P-A	Ge	85J	T05	A	
21	2N3445	10.0MΔ	350nt		2.0u	350n	115	5.0	3.0m	90	500m	400p	N-EA	Si	200J	T03	C	
22	2N3446	10.0MΔ	350nt		2.0u	350n	115	5.0	3.0m	90	500m	400p	N-EA	Si	200J	T03	C	
23	2N3447	10.0MΔ	350nt		2.0u	350n	115	5.0	5.0m	120	300m	400p	N-EA	Si	200J	T03	C	
24	2N3448	10.0MΔ	350nt		2.0u	350n	115	5.0	5.0m	120	300m	400p	N-EA	Si	200J	T03	C	
25	2N3487	10MΔ	350nt		2.0u	350n	115	5.0	5.0m	20	4.0	550p	N	Si	200C	T081	C	
26	2N3488	10MΔ	350nt		2.0u	350n	115	5.0	5.0m	20	4.0	550p	N	Si	200C	T081	C	
27	2N3489	10MΔ	350nt		2.0u	350n	115	5.0	5.0m	20	4.0	550p	N	Si	200C	T081	C	
28	2N3490	10MΔ	350nt		2.0u	350n	115	5.0	5.0m	40	3.3	550p	N	Si	200C	T081	C	
29	2N3491	10MΔ	350nt		2.0u	350n	115	5.0	5.0m	40	3.3	550p	N	Si	200C	T081	C	
30	2N3492	10MΔ	350nt		2.0u	350n	115	5.0	5.0m	40	3.3	550p	N	Si	200C	T081	C	
31	JAN2N337	12.5MΔ	350nt		200n	200n	125m	1.0	1.0	20	150	3.0p	N	Si	150A	T05	A	
32	2N907	12.5MΔ	350nt		200n	200n	150m	2.0	2.0	20	160	3.0p	N	Si	175S	R218	A	
33	2N6886	20MΔ	350nt	100n	1.0u	250n	200	2.0	2.5	15	60m		N	Si	200J	V204a	A	
34	2N6887	20MΔ	350nt	100n	1.0u	250n	200	2.0	2.5	15	60m		N	Si	200J	V204a	A	
35	2N6888	20MΔ	350nt	100n	1.0u	250n	200	2.0	2.5	15	75m		N	Si	200J	V204a	A	
36	JAN2N338	25MΔ	350nt		350n	350n	125m	5.0	10m	45	150	3.0p	N	Si	150A	T05	A	
37	2N6377	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	P	Si	200J	F11a	C	
38	2N6378	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	P	Si	200J	F11a	C	
39	2N6379	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	P	Si	200J	F11a	C	
40	2N6380	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	P	Si	200J	T063	A	
41	2N6381	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	P	Si	200J	T063	A	
42	2N6382	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	P	Si	200J	T063	A	
43	2N6405	25MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	1.5n	N	Si	200J	T066	C	
44	SDT40301	25MΔ	350nt		2.5u	500n	220	5.0	2.0	20	150m	120p	N	Si	200J	T03	C	
45	SDT40302	25MΔ	350nt		2.5u	500n	220	5.0	2.0	20	150m	120p	N	Si	200J	T03	C	
46	SDT40303	25MΔ	350nt		2.5u	500n	220	5.0	2.0	20	150m	120p	N	Si	200J	T03	C	
47	SDT40304	25MΔ	350nt		2.5u	500n	220	5.0	2.0	20	150m	120p	N	Si	200J	T03	C	
48	SDT40305	25MΔ	350nt		2.5u	500n	220	5.0	2.0	20	150m	120p	N	Si	200J	T03	C	
49	2N6274	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	F11a	C	
50	2N6275	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	F11a	C	
51	2N6276	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	F11a	C	
52	2N6277	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	F11a	C	
53	2N6278	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	T063	A	
54	2N6279	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	T063	A	
55	2N6280	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	T063	A	
56	2N6281	30MΔ	350nt		800n	250n	250	4.0	1.0	50	50m#	600p	N	Si	200J	T063	A	
57	XGSO7530	30MΔ	350nt	50n	750n	175n	25	2.0	5.0	10	93m#	150p	N	Si	175J	T066	C	
58	XGSO7535	30MΔ	350nt	50n	750n	175n	25	2.0	5.0	10	93m#	150p	N	Si	175J	T066	C	
59	XGSO7540	30MΔ	350nt	50n	750n	175n	25	2.0	5.0	10	93m#	150p	N	Si	175J	T066	C	
60	XGSR7530	30MΔ	350nt	50n	750n	175n	50	2.0	5.0	10	80m#	150p	N	Si	175J	T03	C	
61	XGSR7535	30MΔ	350nt	50n	750n	175n	50	2.0	5.0	10	80m#	150p	N	Si	175J	T03	C	
62	XGSR7540	30MΔ	350nt	50n	750n	175n	50	2.0	5.0	10	80m#	150p	N	Si	175J	T03	C	
63#	BUY24	50.0MΔ	350nt		650n	15	2.0	500u	100	15	75m	35p	N-DPE	Si	150J	T03	C	
64	2N5584	70MΔ	350nt		1.2m	1.0k	3.0	2.0	15	35	150m		N	Si	200J	T063	A	
65	BDY90	70MΔ	350nt		1.3u	200n	40	2.0	1.0	35	150m		N	Si	175J	T03	C	
66#	BDY90A	70MΔ	35u		1.3u	0.2u	40	2.0	1.0	35	150m		N	Si	175J	T03	C	
67	BDY91	70MΔ	350nt		1.3u	200n	40	2.0	1.0	35	150m		N	Si	175J	T03	C	
68#	BDY91	70MΔ	35u		1.3u	20u	60	5.0	5.0	30	100m		NPE	Si	175J	T03	C	
69	BDY92	70MΔ	350nt		1.3u	200n	40	2.0	1.0	35	100m		N	Si	175J	T03	C	
70#	BDY92	70MΔ	35u		1.3u	20u	60	5.0	5.0	30	100m		NPE	Si	175J	T03	C	
71	2N5329	80.0MΔ	350nt		1.1u	100	85	3.0	30	10	.09		N	Si	200J	T061	A	
72	2N5330	80.0MΔ	350nt		1.2u	80	80	3.0	30	10	.06		N	Si	200J	T061	A	
73	2N5331	80.0MΔ	350nt		1.2u	100	85	3.0	30	10	.06		N	Si	200J	T063	A	
74	PT3993	100MΔ	350nt		1.0u	200	200	2.0	15	25	600p		N	Si	200A	T063	A	
75	PT5955	100MΔ	350nt		1.0u	175	175	5.0	15	25	600p		N	Si	200A	T063	A	
76	PT6909	100MΔ	350nt		1.0u	175	175	2.0	10	20	600p		N	Si	200A	T081	C	
77	PT6910	100MΔ	350nt		1.0u	175	175	2.0	10	20	600p		N	Si	200A	T063	C	
78	PT6950	100MΔ	350nt		1.0u	175	175	5.0	10	40	600p		N	Si	200A	T03	C	
79	PT7930	100MΔ	350nt		1.0u	175	175	5.0	10	30	600p		N	Si	200A	T03	C	
80	PT7931	100MΔ	350nt		1.0u	175	175	5.0	10	40	600p		N	Si	200A	T03	C	
81	PT7932	100MΔ	350nt		1.0u	175	175	5.0	10	30	600p		N	Si	200A	T03	C	
82	PT7933	100MΔ	350nt		1.0u	175	175	5.0	10	30	600p		N	Si	200A	T03	C	
83	PT7934	100MΔ	350nt		1.0u	175	175	5.0	10	40	600p		N	Si	200A	T03	C	
84	PT7935	100MΔ	350nt		1.0u	175	175	5.0	10	30	600p							

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	LE O D E
								Vcb (V)	Ic (A)	hFE								
1	GE8081		400n		2.5u	1.0u	125	5.0	10	100 Δ			N	Si	150J	T03	Ø	
2	GE8062		400n		2.5u	1.0u	125	5.0	10	100 Δ			N	Si	150J	T03	Ø	
3	MJ13070		40u	50m	1.5u	.50u	125	5.0	3.0	8.0 Δ	250pZ		N	Si	200J	T03	Ø	
4	MJ13071		40u	80m	1.5u	.50u	125	5.0	3.0	8.0 Δ	250pZ		N	Si	200J	T03	Ø	
5	MJE13070		400n	50n	1.5u	500n	80	5.0	3.0	8 Δ	250pZ		N	Si	150J	Y220b	XØ	
6	MJE13071		400n	50n	1.5u	500n	80	5.0	3.0	8 Δ	250pZ		N	Si	150J	Y220b	XØ	
7	NTC1880		400n	100n	1.0u	300n	15	5.0	2.0	20 Δ			N-E	Si	200J	T039	AØ	
8	PTC8000		400n		2.5u	1.0u	125	5.0	15	20 Δ#	13		N-DM	Si	150J	T03	Ø	
9	PTC8001		400n		2.5u	1.0u	125	5.0	15	20 Δ#	13		N-DM	Si	150J	T03	Ø	
10	PTC8002		400n		2.5u	1.0u	125	5.0	15	20 Δ#	13		N-DM	Si	150J	T03	Ø	
11	PTC8003		400n		2.5u	1.0u	125	5.0	15	20 Δ#	13		N-DM	Si	150J	T03	Ø	
12	PTC8080		400n		2.5u	1.0u	125	5.0	20	15 Δ#	10		N-DM	Si	150J	T03	Ø	
13	PTC8081		400n		2.5u	1.0u	125	5.0	20	15 Δ#	10		N-DM	Si	150J	T03	Ø	
14	PTC8082		400n		2.5u	1.0u	125	5.0	20	15 Δ#	10		N-DM	Si	150J	T03	Ø	
15	PTC8083		400n		2.5u	1.0u	125	5.0	20	15 Δ#	10		N-DM	Si	150J	T03	Ø	
16	SDM8000		400n		3.0u	1.0u	80	5.0	10	100 Δ	140m		N	Si	200J	T03	AØ	
17	SDM8001		400n		3.0u	1.0u	80	5.0	10	100 Δ	140m		N	Si	200J	T03	AØ	
18	SDM8002		400n		3.0u	1.0u	80	5.0	10	100 Δ	140m		N	Si	200J	T03	AØ	
19	SDM8003		400n		3.0u	1.0u	80	5.0	10	100 Δ	140m		N	Si	200J	T03	AØ	
20	SDM8004		400n		3.0u	1.0u	80	5.0	10	100 Δ	140m		N	Si	200J	T03	AØ	
21	SVT8000		400n		2.5u	1.0u	98	5.0	10	40 Δ	150m		N	Si	150J	T03	Ø	
22	SVT6001		400n		2.5u	1.0u	98	5.0	10	40 Δ	150m		N	Si	150J	T03	Ø	
23	SVT6002		400n		2.5u	1.0u	98	5.0	10	40 Δ	150m		N	Si	150J	T03	Ø	
24	SVT6080		400n		2.5u	1.0u	98	5.0	15	30 Δ	150m		N	Si	150J	T03	Ø	
25	SVT6081		400n		2.5u	1.0u	98	5.0	15	30 Δ	150m		N	Si	150J	T03	Ø	
26	SVT6082		400n		2.5u	1.0u	98	5.0	15	30 Δ	150m		N	Si	150J	T03	Ø	
27	TIP2955		400mZ		2.5u	400mZ	90	4.0	1.0	15 Δ			N-P-DM	Si	150J	B19	BØ	
28	MA4404	1.0MΔ	400n	130n	1.1u	600n	300mZ	200	1.2	80	16	25pZ	P	Ge	100J	T05	AØ	
29	ET401	2.5MΔ	400n		1.7u	350n	100	5.0	500mZ	20 Δ			N-MD	Si	150J	T03	Ø	
30	ET402	2.5MΔ	400n		1.8u	600n	125	5.0	500mZ	20			N-MD	Si	150J	T03	Ø	
31	ET403	2.5MΔ	400n		1.8u	600n	125	5.0	500mZ	20			N-MD	Si	150J	T03	Ø	
32	ET409	2.5MΔ	400n		1.7u	350n	125	5.0	1.0	15 Δ			N-MD	Si	150J	T03	Ø	
33	ET410	2.5MΔ	400n		1.7u	350n	100	5.0	1.0	30 Δ			N-MD	Si	150J	T03	Ø	
34	ET411	2.5MΔ	400n		1.7u	350n	100	5.0	1.0	30 Δ			N-DM	Si	150J	T03	Ø	
35	ET423	2.5MΔ	400n		1.7u	350n	125	5.0	1.0	30 Δ			N-DM	Si	150J	T03	Ø	
36	ET424	2.5MΔ	400n		1.7u	350n	125	5.0	1.0	30 Δ			N-DM	Si	150J	T03	Ø	
37	ET425	2.5MΔ	400n		1.7u	350n	125	5.0	1.0	30 Δ			N-DM	Si	150J	T03	Ø	
38	ET430	2.5MΔ	400n		1.8u	600n	125	5.0	2.5	15 Δ			N-DM	Si	150J	T03	Ø	
39	ET431	2.5MΔ	400n		1.8u	600n	125	5.0	2.5	15 Δ			N-DM	Si	150J	T03	Ø	
40	IR409	2.5MΔ	400n		600n	200n	125	5.0	1.0	15 Δ	1.2		N-D	Si	150J	T03	Ø	
41	RCA28	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
42	RCA28A	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
43	RCA28B	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
44	RCA28C	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
45	RCA31	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
46	RCA31A	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
47	RCA31B	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
48	RCA31C	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ			N-E1	Si	150J	Y220b	XØ	
49	RCA42	3.0MΔ	400n		900n	65	65	10	500mZ	20 Δ			P-E1	Si	150J	Y220b	XØ	
50	RCA42A	3.0MΔ	400n		900n	65	65	10	500mZ	20 Δ			P-E1	Si	150J	Y220b	XØ	
51	RCA42B	3.0MΔ	400n		900n	65	65	10	500mZ	20 Δ			P-E1	Si	150J	Y220b	XØ	
52	RCA42C	3.0MΔ	400n		900n	65	65	10	500mZ	20 Δ			P-E1	Si	150J	Y220b	XØ	
53	TIP292Z	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ	700m#		N-E1	Si	150J	Y220b	XØ	
54	TIP294Z	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ	700m#		N-E1	Si	150J	Y220b	XØ	
55	TIP295Z	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ	700m#		N-E1	Si	150J	Y220b	XØ	
56	TIP296Z	3.0MΔ	400n		1.2u	30	30	10	200mZ	20 Δ	700m#		N-E1	Si	150J	Y220b	XØ	
57	TIP312Z	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ	400m#		N-E1	Si	150J	Y220b	XØ	
58	TIP314Z	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ	400m#		N-E1	Si	150J	Y220b	XØ	
59	TIP318Z	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ	400m#		N-E1	Si	150J	Y220b	XØ	
60	TIP31CZ	3.0MΔ	400n		1.2u	40	40	10	500mZ	20 Δ	400m#		N-E1	Si	150J	Y220b	XØ	
61	TIP34	3.0MΔ	400mZ		700mZ	80	80	10	500mZ	20 Δ			P-DM	Si	150S	B3	BØ	
62	TIP34A	3.0MΔ	400mZ		700mZ	80	80	10	500mZ	20 Δ			P-DM	Si	150S	B3	BØ	
63	TIP34B	3.0MΔ	400mZ		700mZ	80	80	10	500mZ	20 Δ			P-DM	Si	150S	B3	BØ	
64	TIP34C	3.0MΔ	400mZ		700mZ	80	80	10	500mZ	20 Δ			P-DM	Si	150S	B3	BØ	
65	TIP42	3.0MΔ	400mZ		900n	65	65	10	500mZ	20 Δ	333m#		P-E1	Si	150J	Y220b	XØ	
66	TIP42Z	3.0MΔ	400mZ		900n	65	65	10	500mZ	20 Δ	333m#		P-E1	Si	150J	Y220b	XØ	
67	TIP42A	3.0MΔ	400mZ		700mZ	85	85	10	500mZ	20 Δ			P-DM	Si	150J	B1	BØ	
68	TIP42AZ	3.0MΔ	400mZ		900n	65	65	10	500mZ	20 Δ	333m#		P-E1	Si	150J	Y220b	XØ	
69	TIP42B	3.0MΔ	400mZ		700mZ	85	85	10	500mZ	20 Δ			P-DM	Si	150J	B1	BØ	
70	TIP42BZ	3.0MΔ	400mZ		900n	65	65	10	500mZ	20 Δ	333m#		P-E1	Si	150J	Y220b	XØ	
71	TIP42C	3.0MΔ	400mZ		700mZ	85	85	10	500mZ	20 Δ			P-DM	Si	150J	B1	BØ	
72	TIP42CZ	3.0MΔ	400mZ		900n	65	65	10	500mZ	20 Δ	333m#		P-E1	Si	150J	Y220b	XØ	
73	2N4385	4.0MΔ	400n		1.5u	600n	200	2.0	1.0	40 Δ			P	Ge	200J	F4F	CØ	
74	2N4389	4.0MΔ	400n		1.5u	600n	200	2.0	1.0	40 Δ			P	Ge	200J	F4F	CØ	
75	2N4398	4.0MΔ	400n		1.5u	600n	200	2.0	1.0	40 Δ			P	Ge	200J	F4F	CØ	
76	ET413	4.0MΔ	400n	90n	1.7u	350n	100	5.0	5.0	20 Δ	1.6	16pZ	N-MD	Si	150J	T03	Ø	
77	IR413	4.0MΔ	400n		600n	200n	100	5.0	5.0	20 Δ			N-D	Si	150J	T03	Ø	
78	ZSC90	5.0M	400n		1.8u	120m	30	5.0	200n	120			N	Ge	85	T05	Ø	
79	ZSC180	5.0M	400n		1.8u	120m	30	5.0	200n	120			N	Ge	85	T01	Ø	
80	SDT7731	5.0MΔ	400n		800n	125	125	5.0	5.0	20 Δ	100m	350pZ	N	Si	200J	T03	CØ	
81	SDT7732	5.0MΔ	400n		800n	125	125	5.0	5.0	20 Δ	100m	350pZ	N	Si	200J	T03	CØ	
82	SDT7733	5.0MΔ	400n		800n	125	125	5.0	5.0	20 Δ	100m	350pZ	N	Si	200J	T03	CØ	
83	SDT7734	5.0MΔ	400n		800n	125	125	5.0	5.0	20 Δ	100m	350pZ	N	Si	200J	T03	CØ	
84	SDT7735	5.0MΔ	400n		800n	125	125	5.0	5.0	20 Δ	100m	350pZ	N	Si	200J	T03	CØ	
85	SDT7738	5.0MΔ	400n		800n	125	125	5.0	5.0	20 Δ	100m	350pZ	N	Si	200J	T03	CØ	
86	SDT7741	5.0MΔ	400n		800n	82	82	5.0	5.0	20 Δ	100m	350pZ	N	Si				



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ie (A)	hFE								
1	IR8081	8.0Ms	40n		2.5u	1.0u	125	5.0	10	100	150m		N		150J	T03	CØ	
2	IR8082	8.0Ms	40n		2.5u	1.0u	125	5.0	10	100	150m		N		150J	T03	CØ	
3#	2G603	9.40M	40n	180n	410n	280n	150m	5.0	10	150	150m		N		85J	T05	CØ	
4	SDT14411	10M\$Δ	40n		1.8u	300n	220	5.0	10	60	#		N-PL	Ge	200J	T063	AØ	
5	DTS515	15M\$Δ	40n		1.0u	250n	125	5.0	10	35	Δ	714m	N-D		200J	T03	CØ	
6	DTS518	15M\$Δ	40n		1.0u	250n	125	5.0	10	40	Δ	220p	N-D		200J	T03	CØ	
7	DTS517	15M\$Δ	40n		1.0u	250n	125	5.0	10	50	Δ	220p	N-D		200J	T03	CØ	
8	DTS518	15M\$Δ	40n		1.0u	250n	125	5.0	10	50	Δ	220p	N-D		200J	T03	CØ	
9	DTS519	15M\$Δ	40n		1.0u	250n	125	5.0	10	50	Δ	200m	N-D		200J	T03	CØ	
10	GSRU15030	15M\$Δ	40u	07u	2.2u	20u	175	5.0	15	10	Δ	500p	N		200J	Y204a	CØ	
11	GSRU15035	15M\$Δ	40u	07u	2.2u	20u	175	5.0	15	10	Δ	500p	N		200J	Y204a	CØ	
12	GSRU15040	15M\$Δ	40u	07u	2.2u	20u	175	5.0	15	10	Δ	500p	N		200J	Y204a	CØ	
13	XGSO3030	25M\$Δ	40n		2.0u	350n	15	5.0	3.0	10	Δ	266m#	N		175J	T066	CØ	
14	XGSO3035	25M\$Δ	40n		2.0u	350n	15	5.0	3.0	10	Δ	266m#	N		175J	T066	CØ	
15	XGSO3040	25M\$Δ	40n		2.0u	350n	15	5.0	3.0	10	Δ	266m#	N		175J	T066	CØ	
16	XGSR3030	25M\$Δ	40n		2.0u	350n	75	5.0	3.0	10	Δ	266m#	N		175J	T03	CØ	
17	XGSR3035	25M\$Δ	40n		2.0u	350n	75	5.0	3.0	10	Δ	266m#	N		175J	T03	CØ	
18	XGSR3040	25M\$Δ	40n		2.0u	350n	75	5.0	3.0	10	Δ	266m#	N		175J	T03	CØ	
19#	2SC1229	27M	40n		1.8n	500n	100	5.0	5.0	50	Δ	150m	N-DM		175J	T03	CØ	
20	2N5317	30.0M\$Δ	40n		1.2u	400n	50	5.0	10	10	#	500p	N		200J	T061	A	
21	2N5319	30.0M\$Δ	40n		1.2u	400n	50	5.0	10	10	#	500p	N		200J	T061	A	
22	1814-2002	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
23	1814-2202	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
24	1814-2502	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
25	1814-2702	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
26	1814-3002	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
27	1814-3202	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
28	1814-3502	30M\$Δ	40n		700n	400n	44	4.0	2.0	20	Δ	300m#	N-E		150J	T066	CØ	
29	2N3879	40.0M\$Δ	40n	500n	800n	400n	35	2.0	4	12	Δ	300m#	N		200J	T066	CØ	
30	JAN2N4399	40M\$Δ	40n		1.5u	2.1u	115	5.0	10	10	Δ	1.0	P		200A	T03	CØ	
31	1714-0405	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
32	1714-0605	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
33	1714-0805	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
34	1714-1005	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
35	1714-1205	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
36	1714-1405	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
37	1714-1605	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
38	1714-1805	40M\$Δ	40n		600n	300n	25	2.0	5.0	20	Δ	150m#	N-E		200J	T066	CØ	
39	1716-0405	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	150m#	N-EM		200J	T061	A	
40	1716-0605	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
41	1716-0805	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
42	1716-1005	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
43	1716-1205	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
44	1716-1405	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
45	1716-1605	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
46	1716-1805	40M\$Δ	40n		600n	300n	87	2.0	5.0	20	Δ	250p	N-EM		200J	T061	A	
47	1718-0405	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
48	1718-0605	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
49	1718-0805	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
50	1718-1005	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
51	1718-1205	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
52	1718-1405	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
53	1718-1605	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
54	1718-1805	40M\$Δ	40n		600n	300n	58	2.0	5.0	20	Δ	250p	N-EM		200J	T0111	G	
55	U2T105	50M\$Δ	40n	100n	500n	500n	1.0	5.0	5.0	1.0k	#	500m#	N-PL		200A	T033	KD	
56	U2T205	50M\$Δ	40n	100n	500n	500n	2.5	5.0	5.0	1.0k	#	500m#	N-PL		200A	F24	KH	
57	JAN2N3740	60M\$Δ	40n		1.0u	1.0u	25	10	50m	25	Δ	1.6	P		200J	T066	CØ	
58	JAN2N3741	60M\$Δ	40n		1.0u	1.0u	25	10	50m	25	Δ	1.6	P		200J	T066	CØ	
59	2N5202	60.0M\$Δ	40n		1.2u	400n	35m	1.2	4	10	Δ	30	N		200J	T066	CØ	
60	2N6500	60M\$Δ	40n		1.0u	500n	20	2.0	3.0	15	Δ	500m#	N		200J	T066	CØ	
61	JAN2N2812	70M\$Δ	40n		1.0u	400n	50	5.0	1.0	50	#	350p	N		200C	T061	AØ	
62	JAN2N2814	70M\$Δ	40n		1.0u	400n	50	5.0	1.0	50	#	350p	N		200C	T061	AØ	
63	2N6479	100M\$Δ	40n		800n	200n	50	2.0	12	20	#	62m#	N#		200J	W41	DØ	
64	2N6480	100M\$Δ	40n		800n	200n	50	2.0	12	20	#	62m#	N#		200J	W41	DØ	
65	2N6481	100M\$Δ	40n		800n	200n	67	2.0	12	20	#	62m#	N#		200J	W41	DØ	
66	2N6482	100M\$Δ	40n		800n	200n	67	2.0	12	20	#	62m#	N#		200J	W41	DØ	
67	2N3634	150M\$Δ	40n		600n	5.0	10	10m	45	Δ	22	10p	P		200S	T05	AØ	
68	2N3636	150M\$Δ	40n		600n	5.0	10	10m	45	Δ	22	10p	P		200S	T05	AØ	
69	2N3635	200M\$Δ	40n		600n	5.0	10	10m	90	Δ	22	10p	P		200S	T05	AØ	
70	2N3637	200M\$Δ	40n		600n	5.0	10	10m	90	Δ	22	10p	P		200S	T05	AØ	
71#	BSR50	250M\$Δ	40n		800m	10	500m	2.0k	1.6	▼		1.6	NPL		150J	R221a	B	
72#	BSR51	250M\$Δ	40n		800m	10	500m	2.0k	1.6	▼		1.6	NPL		150J	R221a	B	
73#	BDX42	262M\$Δ	40n		2.0u	1.2	10	150m	1.0k	Δ	2.6		PLT		150J	T0126	KBØ	
74#	BDX43	262M\$Δ	40n		2.0u	1.2	10	150m	1.0k	Δ	2.6		PLT		150J	T0126	KBØ	
75#	BDX44	262M\$Δ	40n		2.0u	1.2	10	150m	1.0k	Δ	2.6		PLT		150J	T0126	KBØ	
76#	BSS50	262M\$Δ	40n		2.0u	800m	10	150m	1.5k	Δ	1.6		N-PL		200J	T039	KCØ	
77#	BSS51	262M\$Δ	40n		2.0u	800m	10	150m	1.5k	Δ	1.6		N-PL		200J	T039	KCØ	
78#	BSS52	262M\$Δ	40n		2.0u	800m	10	150m	1.5k	Δ	1.6		N-PL		200J	T039	KCØ	
79#	BCX21	350M\$Δ	40n		1.5u	550m	10	150m	2.0k	Δ	2.6	10p	N-PL		150S	T039	KCØ	
80#	2SA781K	550M\$Δ	40n	150n	130n	200m	50	30m	20	Δ	16		P-PE		125J	S8	B	
81	JAN2N3634	800M\$Δ	40n		600n	5.0	10	100u	25	#	3.0	10p	PØ		200J	T05	AØ	
82	JAN2N3636	800M\$Δ	40n		600n	5.0	10	100u	25	#	3.0	10p	PØ		200J	T05	AØ	
83	JAN2N3635	850M\$Δ	40n		600n	5.0	10	100u	25	#	3.0	10p	PØ		200J	T05	AØ	
84	JAN2N3637	850M\$Δ	40n		600n	5.0	10	100u	25	#	3.0	10p	PØ		200J	T05		



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	1783-0820	30M5Δ	450n		550n	350n	85	20	20	20	800pZ		N-E	Si	200J	T03	C0	
2	1783-1020	30M5Δ	450n		550n	350n	85	20	20	20	800pZ		N-E	Si	200J	T03	C0	
3	1783-1220	30M5Δ	450n		550n	350n	85	20	20	20	800pZ		N-E	Si	200J	T03	C0	
4	1783-1420	30M5Δ	450n		550n	350n	85	20	20	20	800pZ		N-E	Si	200J	T03	C0	
5	1783-1620	30M5Δ	450n		550n	350n	85	20	20	20	800pZ		N-E	Si	200J	T03	C0	
6	1783-1820	30M5Δ	450n		550n	350n	85	20	20	20	800pZ		N-E	Si	200J	T03	C0	
7	1788-0820	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
8	1788-0820	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
9	1788-1020	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
10	1788-1220	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
11	1788-1420	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
12	1788-1620	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
13	1788-1820	30M5Δ	450n		550n	350n	100	20	20	20	800pZ		N-E	Si	200J	T063	A A	
14	GSDU7530	30M5Δ	0.45u	.05u	1.2u	0.3u	125	7.5	10	10	150pZ	150p	N	N	200J	T03	A C C C	
15	GSDU7535	30M5Δ	0.45u	.05u	1.2u	0.3u	125	7.5	10	10	150pZ	150p	N	N	200J	T03	A C C C	
16	GSDU7540	30M5Δ	0.45u	.05u	1.2u	0.3u	125	7.5	10	10	150pZ	150p	N	N	200J	T03	A C C C	
17	2N1042	250kΔ	480nt	200nt	290nt	2.1ut	1.1	3.0	60	60	250m	100p	P-A	Ge	100S	T28	A	
18	2N1043	250kΔ	480nt	200nt	290nt	2.1ut	1.1	3.0	60	60	250m	100p	P-A	Ge	100S	T28	A	
19	2N1044	250kΔ	480nt	200nt	290nt	2.1ut	1.1	3.0	60	60	250m	100p	P-A	Ge	100S	T28	A	
20	2N1045	250kΔ	480nt	200nt	290nt	2.1ut	1.1	3.0	60	60	250m	100p	P-A	Ge	100S	T28	A	
21#	ASY26-RT	4.0M5Δ	490n	90n	1.3u	730n	150m	10m	45	20	16pZ	85J	P-A	Ge	85J	T05	A5	
22	2N545		500n			800n	5	5	80	10	100pZ	10	N	Si	200S	T05	A0	
23	JAN2N545		500n			800n	600m	5	15	10	100pZ	10	N	Si	175S	T06	A0	
24	2N546		500n			800n	5.0	5	80	6.0	100pZ	10	N	Si	200S	T05	A0	
25	2N872		500n		400n	800n	300m	1.0	200	7.5	25pZ	85J	P	Ge	85J	RZ	A0	
26	2N873		500n		400n	800n	1.0	10m	200	7.5	25pZ	85J	P	Ge	85J	RZ	A0	
27	JAN2N1173		500n			2.0u	250m	1.0	200	7.5	25pZ	100S	N	Ge	100S	T029	A	
28	JAN2N1174		500n			2.0u	250m	1.0	200	7.5	25pZ	100S	N	Ge	100S	T029	A	
29#	2SA1008		.50u		1.5u	.50u	1.5	-1	40	40	150J	40	P	PE	150J	Y220a	X0	
30#	2SA1010		.50u		1.5u	.50u	1.5	-1	40	40	150J	40	P	PE	150J	Y220a	X0	
31#	2SB801		.50u		1.0u	1.0u	1.5	3.0	2.0k	40	150J	175J	PE	Si	150J	Y220a	X0	
32#	2SB791K		.50u		1.6u	1.5u	40	4.0	1.0k	30	150J	175J	PD	Si	150J	Y220b	X0	
33#	2SC1485		.50u		3.0u	1.0u	350m	10m	90	20	150J	175J	N-DM	Si	150J	T018	A0	
34#	2SC1810		.50u		1.5u	2.0u	100	5.0	30	20	175J	175J	N-EM	Si	175J	T03	C0	
35#	2SC1872		.50u		1.5u	2.0u	120	13	20	20	175J	175J	N-EM	Si	175J	T03	C0	
36#	2SC2331		.50u		1.5u	.50u	1.5	1.0	40	40	150J	150J	NE	Si	150J	Y220a	X0	
37#	2SC2334		.50u		1.5u	.50u	1.5	3.0	40	40	150J	150J	NE	Si	150J	Y220a	X0	
38#	2SC2518AK		0.5u		2.5u	0.5u	1.5	3	100	60	150J	150J	NE	Si	150J	Y220b	D0	
39#	2SC2518AL		0.5u		2.5u	0.5u	1.5	3	60	60	150J	150J	NE	Si	150J	Y220b	D0	
40#	2SC2518AM		0.5u		2.5u	0.5u	1.5	3	40	40	150J	150J	NE	Si	150J	Y220b	D0	
41#	2SC2518K		0.5u		2.5u	0.5u	1.5	3	100	60	150J	150J	NE	Si	150J	Y220b	D0	
42#	2SC2518L		0.5u		2.5u	0.5u	1.5	3	60	60	150J	150J	NE	Si	150J	Y220b	D0	
43#	2SC2518M		0.5u		2.5u	0.5u	1.5	3	40	40	150J	150J	NE	Si	150J	Y220b	D0	
44#	2SC2818H		500n		1.5u	500n	100	7	15	15	150J	150J	ND	Si	150J	T03	C0	
45#	2SC2819H		500n		1.5u	500n	100	7	15	15	150J	150J	ND	Si	150J	T03	C0	
46#	2SD580		500n		2.0u	1.5	30	2.0	500	400m	150J	150J	NE	Si	150J	Y220b	D0	
47#	2SD864K		500n		4.5u	1.1u	30	3	1k	150J	150J	150J	NE	Si	150J	Y220b	D0	
48#	2SD985		50u		1.0u	1.0u	1.0	2.0	2.0k	150J	150J	150J	N	Si	150J	T0126	X0	
49#	2SD988		.50u		1.0u	1.0u	1.0	1.0	2.0k	150J	150J	150J	N	Si	150J	T0128	X0	
50#	2SD1164K		0.5u		1u	1u	10	2	8k	150J	150J	150J	N	Si	150J	S34	D0	
51#	2SD1164L		0.5u		1u	1u	10	1	4k	150J	150J	150J	N	Si	150J	S34	D0	
52#	2SD1164M		0.5u		1u	1u	10	1	2k	150J	150J	150J	N	Si	150J	S34	D0	
53#	BU326Z		.50u		3.5u	.15u	60	80	20	15	150J	150J	N-DPL	Si	150J	T03	C0	
54#	BU326AZ		.50u		3.5u	.15u	60	80	20	15	150J	150J	N-DPL	Si	150J	T03	C0	
55#	BUR11		.50u		1.0u	.30u	175	10	15	1.0	200J	200J	NPE	Si	200J	T063	A	
56#	ESM1503		500n		2.5u	600nt	60	10	60	1.0	155J	155J	N-DM	Si	155J	T03	C0	
57	ET8000		500n	600n	2.5u	400n	125	10	60	150J	150J	150J	N-MD	Si	150J	T03	C0	
58	ET8001		500n	600n	2.5u	400n	125	10	60	150J	150J	150J	N-MD	Si	150J	T03	C0	
59	ET8002		500n	600n	2.5u	400n	125	10	60	150J	150J	150J	N-MD	Si	150J	T03	C0	
60	ET8251		500n	600n	2.5u	400n	125	10	100	150J	150J	150J	N-MD	Si	150J	T03	C0	
61	ET8252		500n	600n	2.5u	400n	125	10	100	150J	150J	150J	N-MD	Si	150J	T03	C0	
62	ET8253		500n	600n	2.5u	400n	125	10	100	150J	150J	150J	N-MD	Si	150J	T03	C0	
63	GT8000		500n		3.0u	1.0u	90	10	50	200m	150J	150J	N	Si	150J	T03	C0	
64	GT8001		500n		3.0u	1.0u	90	10	50	200m	150J	150J	N	Si	150J	T03	C0	
65	GT8002		500n		3.0u	1.0u	90	10	50	200m	150J	150J	N	Si	150J	T03	C0	
66	ID18000		500n		3.0u	1.0u	90	10	50	200m	150J	150J	N	Si	150J	T03	C0	
67	ID18001		500n		3.0u	1.0u	90	10	50	200m	150J	150J	N	Si	150J	T03	C0	
68	ID18002		500n		3.0u	1.0u	90	10	50	200m	150J	150J	N	Si	150J	T03	C0	
69	MJ6502		500n	100n	2.0u	500n	150	2.0	15	100p	200S	200S	N	Si	200S	T03	C0	
70	MJ6503		500n	100n	2.0u	500n	150	2.0	15	100p	200S	200S	N	Si	200S	T03	C0	
71	MJ10002		500n	100n	2.5u	1.0u	150	2.0	30	290m	275pZ	275pZ	P	Si	200J	T03	KF	
72	MJ10003		500n	100n	2.5u	1.0u	150	2.0	30	290m	275pZ	275pZ	P	Si	200J	T03	KF	
73	MJ10004		500n	200n	1.2u	350n	175	10	40	150m	325pZ	325pZ	N	Si	200J	T03	KF	
74	MJ10005		500n	200n	1.2u	350n	175	10	40	150m	325pZ	325pZ	N	Si	200J	T03	KF	
75#	MJ11017		500n	75n	2.7u	2.5u	175	10	400	800pZ	175J	175J	N	Si	175J	F59	C0	
76#	MJ11018		500n	75n	2.7u	2.5u	175	10	400	800pZ	175J	175J	N	Si	175J	F59	C0	
77#	MJ11019		500n	75n	2.7u	2.5u	175	10	400	800pZ	175J	175J	N	Si	175J	F59	C0	
78#	MJ11020		500n	75n	2.7u	2.5u	175	10	400	800pZ	175J	175J	N	Si	175J	F59	C0	
79#	MJ11021		500n	75n	2.7u	2.5u	175	10	400	800pZ	175J	175J	N	Si	175J	F59	C0	
80#	MJ11022		500n	75n	2.7u	2.5u	175	10	400	800pZ	175J	175J	N	Si	175J	F59	C0	
81	MJ13014		500n	100n	2.0u	500n	150	2.0	12	500m	350pZ	350pZ	N	Si	200J	T03	C0	
82	MJ13015		500n	100n	2.0u	500n	150	2.0	12	500m	350pZ	350pZ	N	Si	200J	T03	C0	
83	MJ13080		.50u	80m	1.5u	.50u	150	5.0	8.0	300pZ	300pZ	300pZ	N	Si	200J	T03	C0	
84	MJ13081		.50u	80m	1.5u	.50u	150	5.0										

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) f<sub>β</sub> & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	CMC7012A	10k#	500n		6.0u	1.0u	175	5.0	35	150	66m		N-DE	SI	200J	T03	KF	
2	CMC7015A	10k#	500n		6.0u	1.0u	175	5.0	35	150	66m		N-DE	SI	200J	T03	KF	
3	CPS2510B	20k#	500n		2.5u	500n	125	5.0	6.0	40	200m		N-DM	SI	175J	T03	KF	
4	CPS2512B	20k#	500n		2.5u	500n	125	5.0	6.0	40	200m		N-DM	SI	175J	T03	KF	
5	CPS2515B	20k#	500n		2.5u	500n	125	5.0	6.0	40	200m		N-DM	SI	175J	T03	KF	
6	CPS4010B	20k#	500n		2.5u	500n	150	5.0	6.0	40	200m		N-DM	SI	175J	T03	KF	
7	CPS4012B	20k#	500n		2.5u	500n	150	5.0	6.0	40	200m		N-DM	SI	175J	T03	KF	
8	CPS4015B	20k#	500n		2.5u	500n	150	5.0	6.0	40	200m		N-DM	SI	175J	T03	KF	
9	CPS7010B	20k#	500n		2.5u	500n	175	5.0	10	40	200m		N-DM	SI	175J	T03	KF	
10	CPS7012B	20k#	500n		2.5u	500n	175	5.0	10	40	200m		N-DM	SI	175J	T03	KF	
11	CPS7015B	20k#	500n		2.5u	500n	175	5.0	10	40	200m		N-DM	SI	175J	T03	KF	
12	MJE33	2.0M#	500n		2.5u	500n	80	4.0	1.0	40	333m		N	SI	150J	B16h	D	
13	MJE34	2.0M#	500n		1.0u	1.0u	80	4.0	1.0	40	333m		N	SI	150J	B16h	D	
14	MJE30	3.0M#	500n		1.0u	1.0u	30	4.0	200m	40	700m		P	SI	150J	B16f	D	
15	MJE31	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		N	SI	150J	B16f	D	
16	MJE31A	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		N	SI	150J	B16f	D	
17	MJE31B	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		N	SI	150J	B16f	D	
18	MJE31C	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		N	SI	150J	B16f	D	
19	MJE32	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		P	SI	150J	B16f	D	
20	MJE32A	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		P	SI	150J	B16f	D	
21	MJE32B	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		P	SI	150J	B16f	D	
22	MJE32C	3.0M#	500n		1.0u	1.0u	40	4.0	30	10	400m		P	SI	150J	B16f	D	
23	TIP28	3.0M#	500n		2.0u	2.0u	30	4.0	200m	40	200m		N-DM	SI	150J	B1	B	
24	TIP28A	3.0M#	500n		2.0u	2.0u	30	4.0	200m	40	200m		N-DM	SI	150J	B1	B	
25	TIP28B	3.0M#	500n		2.0u	2.0u	30	4.0	200m	40	200m		N-DM	SI	150J	B1	B	
26	TIP28C	3.0M#	500n		2.0u	2.0u	30	4.0	200m	40	200m		N-DM	SI	150J	B1	B	
27	TIP31	3.0M#	500n		2.0u	2.0u	40	10	500m	20	400m		N-DM	SI	150J	B1	B	
28	TIP31A	3.0M#	500n		2.0u	2.0u	40	10	500m	20	400m		N-DM	SI	150J	B1	B	
29	TIP31B	3.0M#	500n		2.0u	2.0u	40	10	500m	20	400m		N-DM	SI	150J	B1	B	
30	TIP31C	3.0M#	500n		2.0u	2.0u	40	10	500m	20	400m		N-DM	SI	150J	B1	B	
31	IR13066	4.0M#	500n	50n	2.0u	400n	80	5.0	2.0	8.0	20	25p	N-D	SI	150J	Y220b	D	
32	JAN2N123	5.0M#	500n	200n	1.0u	400n	150m	1.0	10m	30	5.0	20p	P-A	SI	85J	R109	A	
33	2N439	5.0M#	500n		700n	300n	100m	1.0	50m	45	5.0	20p	N-A	SI	85J	T05	A	
34	2N439A	5.0M#	500n		700n	300n	150m	1.0	50m	45	5.0	20p	A	SI	85J	T05	A	
35	2N1173	6.0M#	500n	500n	1.5u	1.5u	250m	1.0	10m	92	4.0	25p	N-A	SI	100S	T029	B	
36	2N1174	7.0M#	500n	500n	1.5u	1.5u	250m	1.0	10m	110	4.0	25p	N-A	SI	100S	T029	B	
37#	BDY93	8.0M#	500n		3.0u	600n	10	5.0	1.0	15	600m	85p	N	SI	125J	T03	C	
38#	BDY94	8.0M#	500n		3.5u	1.0u	10	5.0	1.0	25	600m	85p	N	SI	125J	T03	C	
39#	BDY95	8.0M#	500n		3.5u	1.0u	10	5.0	1.0	25	600m	85p	N	SI	125J	T03	C	
40#	BUX80	8.0M#	500n		3.5u	800n	100	5.0	10	75	300m		N-D	SI	150J	T03	C	
41#	BUX82	8.0M#	500n		3.5u	1.0u	60	5.0	10	75	600m		N	SI	150J	T03	C	
42	DTS4066	8.0M#	500n		5.0u	4.5u	100	5.0	10	75	175m	200p	N-D	SI	150J	T03	KF	
43	DTS4067	8.0M#	500n		5.0u	4.5u	100	5.0	10	150	100m	200p	N-D	SI	150J	T03	KF	
44	DTS4074	8.0M#	500n		3.2u	1.0u	100	5.0	10	75	175m	200p	N-D	SI	150J	T03	KF	
45	DTS4075	8.0M#	500n		3.2u	1.0u	100	5.0	10	150	115m	200p	N-D	SI	150J	T03	KF	
46	IR6582	8.0M#	500n	50n	2.5u	500n	125	3.0	7.0	35	250p	70p	N-D	SI	200J	T03	C	
47	IR6583	8.0M#	500n	50n	2.5u	500n	125	3.0	7.0	35	250p	70p	N-D	SI	200J	T03	C	
48#	2SA911	9.0M#	500n	650n	500n	850n	470m	5.0	10m	30	8.0p		N-O	SI	120J	T05	A	
49	2N2425	10.0M#	500n		375n	350n	375m	1.0	25m	20	14		P-A	SI	180S	T05	B	
50	2N6836	10.0M#	500n	100n	3u	350n	175	5	10	8	400p		N	SI	200J	Y204c	C	
51	2N6837	10.0M#	500n	100n	2.7u	350n	250	5	15	8	500p		N	SI	200J	Y204e	C	
52#	BDY96	10M#	500n		3.0u	400n	40	5.0	2.0	15	300m		N	SI	125J	T03	C	
53#	BDY97	10M#	500n		3.0u	900n	40	5.0	2.0	25	500m		N	SI	125J	T03	C	
54#	BDY98	10M#	500n		4.0u	900n	40	5.0	2.0	25	500m		N	SI	125J	T03	C	
55#	BUX84	10M#	500n		3.5u	300n	40	5.0	2.0	10	2.0		N-Dt	SI	150J	Y220b	D	
56	PT3512	10M	500n		1.2u	500n	350	5.0	30	10	10m	400p	N	SI	200	T063	A	
57	PT3513	10M	500n		1.2u	500n	350	5.0	30	10	10m	400p	N	SI	200	T063	A	
58	PT3520	10M#	500n		1.0u	500n	200	4.0	100	10	8.0m	400p	N	SI	200J	T063	A	
59	PT3522	10M#	500n		1.2u	500n	350	5.0	30	10	12m	400p	N	SI	200J	T063	A	
60	PT3523	10M#	500n		1.2u	500n	350	5.0	30	10	12m	400p	N	SI	200J	T063	A	
61	PT4500	10M#	500n		1.2u	500n	350	5.0	100	10	8.0m		N-D	SI	200J	T0114	A	
62	PT4502	10M#	500n		1.2u	500n	350	5.0	110	5.0	12m	400p	N-D	SI	200J	T0114	A	
63	PT4503	10M#	500n		1.2u	500n	350	5.0	110	5.0	12m	400p	N-D	SI	200J	T0114	A	
64#	SML4007	10M#	500n		2.0u	500n	350	4.0	50	15	13		N	SI	200J	T03	C	
65#	BUY50	13M#	50u		4.0u	1.0u	95	2.0	2.0	20			NE	SI	175J	T03	C	
66	2N4240	15M#	500n		6.0u	3.0u	35	2.0	750m	10	13		N	SI	200J	T066	C	
67	2N5804	15M#	500n		3.5u	2.0u	62	4.0	5.0	10	400m		N	SI	200J	T03	C	
68	2N5805	15M#	500n		3.5u	2.0u	62	4.0	5.0	10	400m		N	SI	200J	T03	C	
69	2N6423	15M#	500n		6.0u	3.0u	35	2.0	750m	10	13		P	SI	200J	T066	C	
70#	2SC3059	15M#	500n		3.5u	300n	100	5	15	15	60p		N	SI	175J	T03	C	
71#	2SC3060	15M#	500n		3.5u	300n	150	5	2	15	750m	120p	N	SI	175J	T03	C	
72#	2SC3061	15M#	500n		3.5u	300n	200	5	4	15	375m	220p	N	SI	175J	T03	C	
73#	2SC3178	15M#	500n		3.5u	300n	60	5	1	15	1.5	60p	N	SI	150J	Y220b	D	
74#	BUX86	15M#	500n		3.5u	300n	20	5	1	15	6.0		N-Dt	SI	150J	T0128	B	
75	MJ4240	15M#	500n		6.0u	3.0u	35	10	750m	30	13	120p	P	SI	200J	T066	C	
76	2N3263	20M#	500n		1.5u	500n	83	2.0	15	20	50m		N	SI	200J	W41	D	
77	2N3264	20M#	500n		1.5u	500n	83	3.0	15	20	80m		N	SI	200J	W41	D	
78	2N3265	20M#	500n		1.5u	500n	125	2.0	15	20	50m		N	SI	200J	T063	A	
79	2N3266	20M#	500n		1.5u	500n	125	3.0	15	20	80m		N	SI	200J	T063	A	
80	2N4070	20.0M#	500n		1.2u	450n	85	5.0	10	10	.15	200p	N	SI	200J	T03	C	
81	2N4071	20.0M#	500n		1.2u	450n	85	5.0	10	10	.15	200p	N	SI	200J	T03	C	
82	2N5539	20M#	500n		1.5u	500n	100	5.0	10	25			N	SI	200J	T063	A	
83	2N5541	20M#	500n	1.5u	500n	500n	5.0	5.0	5.0	30			N	SI	200J	T05	A	
84	2N5542	20M#	500n	1.5u	500n	500n	5.0	5.0	5.0	30			N	SI	200J	T081	A	
85	2N5677	20M#	500n		1.5u	500n	50	5.0	5.0	30			P	SI	200J	T061	A	

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-N-P N-N-P-N	M A T	MAX. TEMP (°C)	DWG # Y200 s/a T0200 Ser.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1	GSTU30020	20M5Δ	500n	100n	1.5u	300n	1.75	5.0	5.0	10	Δ #		N	Si	200J	Y204a	C0	
2	1843-2005	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
3	1843-2010	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
4	1843-2020	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
5	1843-2205	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
6	1843-2210	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
7	1843-2220	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
8	1843-2505	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
9	1843-2510	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
10	1843-2520	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
11	1843-2705	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
12	1843-2710	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
13	1843-2720	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
14	1843-3005	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
15	1843-3010	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
16	1843-3020	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
17	1843-3205	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
18	1843-3210	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
19	1843-3220	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
20	1843-3505	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
21	1843-3510	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
22	1843-3520	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
23	1843-3705	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	200m#	600pZ	N-EM	Si	200J	T03	C0
24	1843-3710	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	10	Δ #	125m#	600pZ	N-EM	Si	200J	T03	C0
25	1843-3720	25M5Δ	500n		1.5u	1.0u	85	5.0	5.0	20	Δ #	87m#	600pZ	N-EM	Si	200J	T03	C0
26	XGSQ5030	25M5Δ	500n		1.2u	400n	15	5.0	5.0	10	Δ #	160m#	250pZ	N	Si	175J	T066	C0
27	XGSQ5035	25M5Δ	500n		1.2u	400n	15	5.0	5.0	10	Δ #	160m#	250pZ	N	Si	175J	T066	C0
28	XGSO5040	25M5Δ	500n		1.2u	400n	15	5.0	5.0	10	Δ #	160m#	250pZ	N	Si	175J	T066	C0
29	XGSR5030	25M5Δ	500n		1.2u	400n	75	5.0	5.0	10	Δ #	160m#	250pZ	N	Si	175J	T03	C0
30	XGSR5035	25M5Δ	500n		1.2u	400n	75	5.0	5.0	10	Δ #	160m#	250pZ	N	Si	175J	T03	C0
31	XGSR5040	25M5Δ	500n		1.2u	400n	75	5.0	5.0	10	Δ #	160m#	250pZ	N	Si	175J	T03	C0
32	2SC2964	28M5	500n		1u	300n	150	5	5	10	7 Δ #	100m	230p	N	Si	175J	T03	A0
33	2SC2965	28M5	500n		1u	300n	150	5	5	10	7 Δ #	100m	230p	N	Si	175J	T03	A0
34	2SC3055	28M5	500n		3u	300n	15	5	5	100	35 #	2 #	25p	N	Si	150J	Y220b	D0
35	2N5312	30.0M5Δ	500n		750n	500n	50	5.0	5.0	20	5.0 Δ #	500pZ	500pZ	P	Si	200J	T061	A0
36	2N5313	30.0M5Δ	500n		1.0u	500n	50	5.0	5.0	20	5.0 Δ #	500pZ	500pZ	P	Si	200J	T061	A0
37	2N5314	30.0M5Δ	500n		750n	500n	50	5.0	5.0	20	5.0 Δ #	500pZ	500pZ	P	Si	200J	T061	A0
38	2N5315	30.0M5Δ	500n		1.0u	500n	50	5.0	5.0	20	5.0 Δ #	500pZ	500pZ	P	Si	200J	T061	A0
39	2N5929	30M5Z	500n		500n	300m	100	4.0	4.0	30	8.0 Δ #			N	Si	200J	F4f	C0
40	2N5930	30M5Z	500n		500n	300n	100	4.0	4.0	30	8.0 Δ #			N	Si	200J	F4f	C0
41	2N5931	30M5Z	500n		500n	300n	100	4.0	4.0	30	8.0 Δ #			N	Si	200J	F4f	C0
42	JAN2N6378	30M5Δ	500n		1.0u	1.0u	143	4.0	4.0	50	10 Δ #	60m#	1.5nZ	N	Si	200J	T03	C0
43	JAN2N6379	30M5Δ	500n		1.0u	1.0u	143	4.0	4.0	50	10 Δ #	60m#	1.5nZ	N	Si	200J	T03	C0
44	2SC2429A	30M5	500n		2.5u	300n	150	5.0	5.0	10	10 Δ #	100m#	240p	N	Si	175J	T03	C0
45	2SC2920	30M5	500n		3u	300n	150	5.0	5.0	10	10 Δ #	100m	240p	N	Si	175J	T03	A0
46	2SC3044	30M5	500n		1.5u	300n	100	5	5	3	15 #	333m#	100p	N	Si	175J	T03	C0
47	2SC3044A	30M5	500n		1.5u	300n	100	5	5	3	15 #	333m#	100p	N	Si	175J	T03	C0
48	2SC3056	30M5	500n		1.5u	300n	50	5	5	3	15 #	333m#	100p	N	Si	150J	Y220b	D0
49	2SC3056A	30M5	500n		1.5u	300n	50	5	5	3	15 #	333m#	100p	N	Si	150J	Y220b	D0
50	2SC3058	30M5	500n		3u	300n	200	5	5	20	14 #	50m#	420p	N	Si	175J	T03	C0
51	2SC3058A	30M5	500n		3u	300n	200	5	5	20	14 #	50m#	420p	N	Si	175J	T03	C0
52	1743-0610	30M5Δ	500n		500n	300n	100	4.0	4.0	30	8.0 Δ #	100m#	800pZ	N-E	Si	200A	T03	C0
53	1743-0830	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
54	1743-1010	30M5Δ	500n		500n	300n	100	4.0	4.0	30	8.0 Δ #	100m#	800pZ	N-E	Si	200A	T03	C0
55	1743-1230	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
56	1743-1410	30M5Δ	500n		500n	300n	100	4.0	4.0	30	8.0 Δ #	100m#	800pZ	N-E	Si	200A	T03	C0
57	1743-1630	30M5Δ	500n		600n	400n	150	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-EM	Si	200J	T03	C0
58	1743-1810	30M5Δ	500n		500n	300n	100	4.0	4.0	30	8.0 Δ #	100m#	800pZ	N-E	Si	200A	T03	C0
59	1748-0630	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
60	1748-0830	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
61	1748-1030	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
62	1748-1230	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
63	1748-1430	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
64	1748-1630	30M5Δ	500n		600n	400n	175	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-EM	Si	200J	T063	A
65	1748-1830	30M5Δ	500n		600n	400n	175	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-EM	Si	200J	T063	A
66	1763-0630	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
67	1763-0830	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
68	1763-1030	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
69	1763-1230	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
70	1763-1430	30M5Δ	500n		600n	400n	85	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T03	C0
71	1768-0630	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
72	1768-0830	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
73	1768-1030	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
74	1768-1230	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
75	1768-1430	30M5Δ	500n		600n	400n	100	3.0	3.0	30	20 Δ #	800pZ	800pZ	N-E	Si	200J	T063	A
76	1814-2005	30M5Δ	500n		700n	400n	44	4.0	4.0	5.0	20 Δ #	150m#	250pZ	N-E	Si	150J	T066	C0

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	3	TYPE No.	2	1	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc AIR FREE IN FREE @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
										Vcb (V)	le (A)	hFE								
1		SDT3403	40.0MΔ	500n		1.5u	300n	52	5.0	5.0	2.0	120	200p	N-PE		200J	T0111	G		
2		SDT3404	40.0MΔ	500n		1.5u	300n	52	5.0	5.0	2.0	120	200p	N-PE		200J	T0111	G		
3		SDT3405	40.0MΔ	500n		1.0u	300n	52	5.0	5.0	2.0	60	200p	N-PE		200J	T0111	G		
4		SDT3406	40.0MΔ	500n		1.0u	300n	52	5.0	5.0	2.0	60	200p	N-PE		200J	T0111	G		
5		SDT3407	40.0MΔ	500n		1.0u	300n	52	5.0	5.0	2.0	60	200p	N-PE		200J	T0111	G		
6		SDT3408	40.0MΔ	500n		1.0u	300n	52	5.0	5.0	2.0	60	200p	N-PE		200J	T0111	G		
7		SDT3409	40.0MΔ	500n		1.0u	300n	52	5.0	5.0	2.0	60	200p	N-PE		200J	T0111	G		
8		2N4390	50.0MΔ	500n	150n	800n	500n	500	1.0	2.0	20	20	100	N		175S	T0104	A		
9		2N5237	50.0MΔ	500n		1.5u	500n	50	5.0	5.0	20	40	N		200J	T05	A			
10		2N5238	50.0MΔ	500n		1.5u	500n	80	5.0	5.0	20	40	N		200J	T05	A			
11		2N5671	50MΔ	500n		1.5u	500n	80	5.0	5.0	20	40	N		200J	T05	A			
12		2N5672	50MΔ	500n		1.5u	500n	80	5.0	5.0	20	40	N		200J	T05	A			
13		JAN2N8032	50MΔ	500n			2.0u	140	10	10	2.0	20	1.0n	N		200J	T03	C		
14		JAN2N8033	50MΔ	500n			2.0u	140	10	10	2.0	20	1.0n	N		200J	T03	C		
15		2N6350	50MΔ	500n			1.2u	50	5.0	5.0	1.0	2.0kΔ	300m	N		200J	T033	KD		
16		2N6351	50MΔ	500n			1.2u	50	5.0	5.0	1.0	1.0kΔ	500m	N		200J	T033	KD		
17		2N6352	50MΔ	500n			1.2u	25	5.0	5.0	1.0	2.0kΔ	300m	N		200J	F24	KJ		
18		2N6353	50MΔ	500n			1.2u	25	5.0	5.0	1.0	1.0kΔ	500m	N		200J	F24	KJ		
19		2N6580	50MΔ	500n	100n	2.5u	500n	125	5.0	5.0	15	5.0	450p	N		200J	T03	C		
20		2N6582	50MΔ	500n	100n	2.5u	500n	100	5.0	5.0	15	5.0	450p	N		200J	T03	C		
21		2N6579	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
22		2N6580	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
23		2N6581	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
24		2N6582	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
25		2N6583	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
26		2N6584	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
27		2N6585	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
28		2N6586	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
29		2N6587	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
30		2N6588	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
31		2N6589	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
32		2N6590	50MΔ	500n	50n	2.0u	500n	71	5.0	5.0	7.0	7.0	250p	N		200J	T03	C		
33	#	BC160	50MΔ	500n			650n	3	1.0	1.0	10	15	1.0	P.D		175J	T039	A		
34	#	BC160A	50MΔ	500n			650n	750m	1.0	1.0	10	15	1.0	P.P.L		175S	R216h	A		
35	#	BC160B	50MΔ	500n			650n	750m	1.0	1.0	10	15	1.0	P.P.L		175S	R216h	A		
36	#	BC160C	50MΔ	500n			650n	750m	1.0	1.0	10	15	1.0	P.P.L		175S	R216h	A		
37	#	BC161	50MΔ	500n			650n	3	1.0	1.0	100	63	1.0	P.D		175J	T039	A		
38	#	BC161A	50MΔ	500n			650n	750m	1.0	1.0	10	15	1.0	P.P.L		175S	R216h	A		
39	#	BC161B	50MΔ	500n			650n	750m	1.0	1.0	10	15	1.0	P.P.L		175S	R216h	A		
40	#	BC161C	50MΔ	500n			650n	750m	1.0	1.0	10	15	1.0	P.P.L		175S	R216h	A		
41	#	BSV15-6	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	63	20p	P.P.E		200J	T039	A		
42	#	BSV15-10	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	100	20p	P.P.E		200J	T039	A		
43	#	BSV15-16	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	160	20p	P.P.E		200J	T039	A		
44	#	BSV16-6	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	63	20p	P.P.E		200J	T039	A		
45	#	BSV16-10	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	100	20p	P.P.E		200J	T039	A		
46	#	BSV16-16	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	160	20p	P.P.E		200J	T039	A		
47	#	BSV17-6	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	63	15p	P.P.E		200J	T039	A		
48	#	BSV17-10	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	100	15p	P.P.E		200J	T039	A		
49	#	BSV80	50MΔ	500n	500n	500n	150n	1.0	1.0	1.0	100	63	20p	P.P.E		200J	T039	A		
50	#	BUX20A	50MΔ	500n	1.5u		1.0u	6.2	2.0	2.0	200	70	450m	N.P.L		200J	T039	C		
51	#	GES6218	50MΔ	500n			500n	140	1.0	1.0	20	20	100	N-PE		150S	T092	A		
52	#	GES6219	50MΔ	500n			500n	10	1.0	1.0	20	20	100	N-PE		150S	T092	A		
53	#	GES6220	50MΔ	500n			500n	10	1.0	1.0	20	20	100	N-PE		150S	T092	A		
54	#	GES6221	50MΔ	500n			500n	10	1.0	1.0	20	20	115	N-PE		150S	T092	A		
55	#	SPT4624	50MΔ	500n		1.2u	700n	87	5.0	5.0	100	40	214m	N		200J	T03	C		
56	#	SPT4625	50MΔ	500n		1.2u	700n	87	5.0	5.0	100	40	214m	N		200J	T03	C		
57	#	SVT7520	50MΔ	500n		3.0u	500n	100	5.0	5.0	30	10	250p	N		200J	T204a	C		
58	#	SVT7521	50MΔ	500n	50n	3.0u	500n	100	5.0	5.0	30	10	250p	N		200J	T204a	C		
59	#	SVT7522	50MΔ	500n	50n	3.0u	500n	100	5.0	5.0	30	10	250p	N		200J	T204a	C		
60	#	SVT7523	50MΔ	500n	50n	3.0u	500n	100	5.0	5.0	30	10	250p	N		200J	T204a	C		
61	#	SVT7524	50MΔ	500n	50n	3.0u	500n	100	5.0	5.0	30	10	250p	N		200J	T204a	C		
62	#	SVT7525	50MΔ	500n	50n	3.0u	500n	100	5.0	5.0	30	10	250p	N		200J	T204a	C		
63	#	2N5038	60.0MΔ	500n	500n	1.5u	500n	140	5.0	5.0	12	20	125m	N		200J	T03	C		
64	#	2N5039	60.0MΔ	500n	500n	1.5u	500n	140	5.0	5.0	12	20	125m	N		200J	T03	C		
65	#	2N6496	60MΔ	500n	100n	1.2u	500n	125	5.0	5.0	8.0	12	125m	N		200J	T03	C		
66	#	2N6561	60MΔ	500n	100n	1.2u	500n	125	5.0	5.0	8.0	12	125m	N		200J	T03	C		
67	#	2N6563	60MΔ	500n	100n	1.2u	500n	125	5.0	5.0	8.0	12	125m	N		200J	T03	C		
68	#	2N6671	60MΔ	500n	100n	2.5u	400n	150	5.0	5.0	10	10	300p	N		200S	T204a	C		
69	#	2N6672	60MΔ	500n	100n	2.5u	400n	150	5.0	5.0	10	10	300p	N		200S	T204a	C		
70	#	2N6673	60MΔ	500n	100n	2.5u	400n	150	5.0	5.0	10	10	300p	N		200S	T204a	C		
71	#	BUW41	60MΔ	500n	100n	2.5u	400n	100	5.0	5.0	30	10	300p	N		150J	Y220bn	C		
72	#	BUW41A	60MΔ	500n	100n	2.5u	400n	100	5.0	5.0	30	10	300p	N		150J	Y220bn	C		
73	#	BUW41B	60MΔ	500n	100n	2.5u	400n	100	5.0	5.0	30	10	300p	N		150J	Y220bn	C		
74	#	STA1000	80MΔ	500n	0.5u	1.5u	500n	87	5.0	5.0	20	15	300p	N		200J	T05	C		
75	#	STA1001	80MΔ	500n	0.5u	1.5u	500n	87	5.0	5.0	20	15	300p	N		200J	T05	C		
76	#	STA1100	80MΔ	500n	0.5u	1.5u	500n	30	5.0	5.0	30	15	300p	N		200J	T066	C		
77	#	STA1101	80MΔ	500n	0.5u	1.5u	500n	30	5.0	5.0	30	15	300p	N		200J	T066	C		
78	#	STA9000	80MΔ	500n	0.5u	1.5u	500n	115	5.0	5.0	10	15	300p	N		200J	T03	C		
79	#	STA8001	80MΔ	500n	0.5u	1.5u	500n	115	5.0	5.0	10	15	300p	N		200J	T03	C		
80	#	STA9002	80MΔ	500n	0.5u	1.5u	500n	150	5.0	5.0	10	15	300p	N		200J	T03	C		
81	#	STA9003	80MΔ	500n	0.5u	1.5u	500n	150	5.0											



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1	2N6218	1.0G $\Delta$	500n $\emptyset$			5.0u $\emptyset$	1.0	10	2.0m $\emptyset$	10 $\Delta$	30	5.0p $\emptyset$	N	Si	150J	R207b	A	
2	2N6219	1.0G $\Delta$	500n $\emptyset$			5.0u $\emptyset$	1.0	10	2.0m $\emptyset$	10 $\Delta$	30	5.0p $\emptyset$	N	Si	150J	R207b	A	
3	2N6220	1.0G $\Delta$	500n $\emptyset$			5.0u $\emptyset$	1.0	10	2.0m $\emptyset$	10 $\Delta$	15	5.0p $\emptyset$	N	Si	150J	R207b	A	
4	2N6221	1.0G $\Delta$	500n $\emptyset$			5.0u $\emptyset$	1.0	10	2.0m $\emptyset$	10 $\Delta$	15	5.0p $\emptyset$	N	Si	150J	R207b	A	
5	DTS103	4.0M $\Delta$	550nt		1.0ut	350nt	125	1.5	5.0	20 $\Delta$	180m		N-DM	Si	150J	T03	C $\emptyset$	
6	DTS104	4.0M $\Delta$	550nt		1.0ut	350nt	125	1.5	5.0	50 $\Delta$	150m		N-DM	Si	150J	T03	C $\emptyset$	
7	DTS105	4.0M $\Delta$	550nt		1.0ut	350nt	125	1.5	5.0	20 $\Delta$	180m		N-DM	Si	150J	T03	C $\emptyset$	
8	DTS106	4.0M $\Delta$	550nt		1.0ut	350nt	125	1.5	5.0	20 $\Delta$	180m		N-DM	Si	150J	T03	C $\emptyset$	
9	DTS107	4.0M $\Delta$	550nt		1.0ut	350nt	125	1.5	5.0	20 $\Delta$	180m		N-DM	Si	150J	T03	C $\emptyset$	
10	2N395	4.5M	550nt	210n	500nt	400nt	150m	350m $\emptyset$	200m $\emptyset$	10 $\Delta$	4.0	12p	P-A	Ge	100S	T05	A $\emptyset$	
11	2N1354	4.50M	550nt	210nt	500nt	400nt	200m	1.0	10m	70 $\Delta$	4.0	12p	P-A	Ge	85J	T05	A $\emptyset$	
12	SDT55405	10M $\Delta$	55u		1.6u	50u	500	5.0	5.0	50 # $\Delta$	4.0	1.2n $\Delta$	N-PL	Si	200J	T063	A $\emptyset$	
13	SDT55407	10M $\Delta$	55u		1.6u	50u	500	5.0	5.0	50 # $\Delta$	4.0	1.2n $\Delta$	N-PL	Si	200J	T063	A $\emptyset$	
14	2N317A	600n $\emptyset$	600n		600n	600n	150m	250m $\emptyset$	1.0m $\Delta$	65 $\Delta$	500m		P	Ge	100S	T05	A $\emptyset$	
15#	BU426 $\Delta$	60u $\emptyset$	60u $\emptyset$		3.5u	15u $\emptyset$	70	5.0	1.0	30 $\Delta$			N-DPL	Si	150J	Y218a	A $\emptyset$	
16#	BU426A $\Delta$	60u $\emptyset$	60u $\emptyset$		3.5u	15u $\emptyset$	70	5.0	1.0	30 $\Delta$			N-DPL	Si	150J	Y218a	A $\emptyset$	
17#	BU810(A)	600n $\emptyset$	600n		1.5u	500n	75	5.0	10	30 $\Delta$			NEPL	Si	150J	T0220	D	
18#	BUT13	600n $\emptyset$	600n		1.5u	800n	175	5.0	10	30 $\Delta$			NEPL	Si	200J	T03	C $\emptyset$	
19#	BUT13P	600n $\emptyset$	600n		1.5u	800n	150	5.0	10	30 $\Delta$			NEPL	Si	175J	B81	C	
20#	BUV26	60u $\emptyset$	60u $\emptyset$		1.0u	15u	85	5.0	12	10 $\Delta$			N	Si	175J	T0220	C	
21	D44E1	600n $\emptyset$	600nt		2.0ut	500nt	1.6	5.0	5.0	1.0K $\Delta$	300m#	130p# $\Delta$	N	Si	150J	B22	KB $\emptyset$	
22	D44E2	600n $\emptyset$	600nt		2.0ut	500nt	1.6	5.0	5.0	1.0K $\Delta$	300m#	130p# $\Delta$	N	Si	150J	B22	KB $\emptyset$	
23	D44E3	600n $\emptyset$	600nt		2.0ut	500nt	1.6	5.0	5.0	1.0K $\Delta$	300m#	130p# $\Delta$	N	Si	150J	B22	KB $\emptyset$	
24	D45E1	600n $\emptyset$	600nt		2.0ut	500nt	1.6	5.0	5.0	1.0K $\Delta$	300m#	220p# $\Delta$	N	Si	150J	B22	KB $\emptyset$	
25	D45E2	600n $\emptyset$	600nt		2.0ut	500nt	1.6	5.0	5.0	1.0K $\Delta$	300m#	220p# $\Delta$	P	Si	150J	B22	KB $\emptyset$	
26	D45E3	600n $\emptyset$	600nt		2.0ut	500nt	1.6	5.0	5.0	1.0K $\Delta$	300m#	220p# $\Delta$	P	Si	150J	B22	KB $\emptyset$	
27#	MJ10000	600n	600n	200n	3.5u	2.4u	175	5.0	10	40 $\Delta$	150m	325p $\Delta$	N	Si	200J	Y204a	C $\emptyset$	
28#	MJ10001	600n	600n	200n	3.5u	2.4u	175	5.0	10	40 $\Delta$	150m	325p $\Delta$	N	Si	200J	Y204a	C $\emptyset$	
29	MJ10006	600n	600n	200n	1.5u	500n	150	5.0	5.0	30 $\Delta$	380m	275p $\Delta$	N	Si	200J	T03	CF	
30	MJ10007	600n	600n	200n	1.5u	500n	150	5.0	5.0	30 $\Delta$	380m	275p $\Delta$	N	Si	200J	T03	CF	
31#	SU426(A)	600n $\emptyset$	600n		3.5u	1.0u	113	5.0	1.0	1.0K $\Delta$	666m#		NEM	Si	150J	B81	C	
32#	SU426V(A)	600n $\emptyset$	600n		3.5u	1.0u	113	5.0	1.0	1.0K $\Delta$	666m#		NEM	Si	150J	B81	C	
33	TIP125 $\Delta$	600nt	600nt		1.0ut	1.2ut	65	5.0	1.0	1.0K $\Delta$	666m#		P	Si	150J	Y220b	KH $\emptyset$	
34	TIP126 $\Delta$	600nt	600nt		1.0ut	1.2ut	65	5.0	1.0	1.0K $\Delta$	666m#		P	Si	150J	Y220b	KH $\emptyset$	
35	TIP127 $\Delta$	600nt	600nt		1.0ut	1.2ut	65	5.0	1.0	1.0K $\Delta$	666m#		P	Si	150J	Y220b	KH $\emptyset$	
36	TIP3055	600n $\emptyset$	600nt		1.0ut	1.0ut	90	4.0	1.0	15 $\Delta$			N-DM	Si	150J	B19	C	
37	RCA41	3.0M $\Delta$	600nt		1.2ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-E1	Si	150J	Y220b	X	
38	RCA41A	3.0M $\Delta$	600nt		1.2ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-E1	Si	150J	Y220b	X	
39	RCA41B	3.0M $\Delta$	600nt		1.2ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-E1	Si	150J	Y220b	X	
40	RCA41C	3.0M $\Delta$	600nt		1.2ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-E1	Si	150J	Y220b	X	
41	TIP33#	3.0M $\Delta$	600nt		1.0ut	80	80	10	500n $\emptyset$	20 $\Delta$			N-DM	Si	150S	B3	C	
42	TIP33A#	3.0M $\Delta$	600nt		1.0ut	80	80	10	500n $\emptyset$	20 $\Delta$			N-DM	Si	150S	B3	C	
43	TIP33B#	3.0M $\Delta$	600nt		1.0ut	80	80	10	500n $\emptyset$	20 $\Delta$			N-DM	Si	150S	B3	C	
44	TIP33C#	3.0M $\Delta$	600nt		1.0ut	80	80	10	500n $\emptyset$	20 $\Delta$			N-DM	Si	150S	B3	C	
45	TIP41	3.0M $\Delta$	600nt		1.0ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-DM	Si	150J	B1	C	
46	TIP41 $\Delta$	3.0M $\Delta$	600nt		1.4ut	65	65	10	500m $\emptyset$	20 $\Delta$	333m#		N-E1	Si	150J	Y220b	X $\emptyset$	
47	TIP41A	3.0M $\Delta$	600nt		1.0ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-DM	Si	150J	B1	C	
48	TIP41A $\Delta$	3.0M $\Delta$	600nt		1.4ut	65	65	10	500m $\emptyset$	20 $\Delta$	333m#		N-E1	Si	150J	Y220b	X $\emptyset$	
49	TIP41B	3.0M $\Delta$	600nt		1.0ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-DM	Si	150J	B1	C	
50	TIP41B $\Delta$	3.0M $\Delta$	600nt		1.4ut	65	65	10	500m $\emptyset$	20 $\Delta$	333m#		N-E1	Si	150J	Y220b	X $\emptyset$	
51	TIP41C	3.0M $\Delta$	600nt		1.0ut	65	65	10	500m $\emptyset$	20 $\Delta$			N-DM	Si	150J	B1	C	
52	TIP41C $\Delta$	3.0M $\Delta$	600nt		1.4ut	65	65	10	500m $\emptyset$	20 $\Delta$	333m#		N-E1	Si	150J	Y220b	X $\emptyset$	
53	2N1353	3.50M	600nt	230nt	400nt	350nt	200m	1.0	10m	70 $\Delta$	4.0	12p	P-A	Ge	85J	T05	A $\emptyset$	
54	2N5970	4.0M $\Delta$	600n		1.4u	500n	85	1.5	1.0	20 $\Delta$ #			N	Si	200J	T03	C $\emptyset$	
55	2N5971	4.0M $\Delta$	600n		1.4u	500n	85	1.5	1.0	50 $\Delta$ #			N	Si	200J	T03	C $\emptyset$	
56	2N5972	4.0M $\Delta$	600n		1.4u	500n	85	1.5	1.0	30 $\Delta$ #			N	Si	200J	T03	C $\emptyset$	
57	2N5973	4.0M $\Delta$	600n		1.4u	600n	85	1.5	1.0	30 $\Delta$ #			N	Si	200J	T03	C $\emptyset$	
58	2N6306	5.0M $\Delta$	600n		1.6u	400n	125	5.0	8.0	4.0 $\Delta$ #	250p $\Delta$		N	Si	200J	T03	C $\emptyset$	
59	2N6307	5.0M $\Delta$	600n		1.6u	400n	125	5.0	8.0	4.0 $\Delta$ #	250p $\Delta$		N	Si	200J	T03	C $\emptyset$	
60	2N6308	5.0M $\Delta$	600n		1.6u	400n	125	5.0	8.0	3.0 $\Delta$ #	250p $\Delta$		N	Si	200J	T03	C $\emptyset$	
61#	HCS579	5.0M $\Delta$	600n	100n	600n	600n	125	5.0	3.0	12 $\Delta$ #	625m	250p	N-E	Si	200J	T03	C $\emptyset$	
62	2N2001	6.0M $\Delta$	600n		650n	650n	300m	5.0	500m $\emptyset$	60 $\Delta$	2.0	35p $\Delta$	P	Ge	100S	T05	A $\emptyset$	
63#	BU426	6.0M $\Delta$	600n $\emptyset$		3.5u	750n	70	5.0	600m $\emptyset$	30 $\Delta$	750m		N-D	Si	150J	B46	D $\emptyset$	
64#	BU426A	6.0M $\Delta$	600n $\emptyset$		3.5u	750n	70	5.0	600m $\emptyset$	60 $\Delta$	600m		D	Si	150J	B46	D $\emptyset$	
65#	BU433	6.0M $\Delta$	600n $\emptyset$		3.5u	700n	70	5.0	600m $\emptyset$	150 $\Delta$	600m		N-A	Si	150J	B46	D $\emptyset$	
66	2N368	8.00M	600n			150m		5.0	30m	150 $\Delta$			Ge	100S	T05	A $\emptyset$		
67	2N815	8.00M	600nt		400nt	400nt	75m	750m $\emptyset$	200m $\emptyset$	80 $\Delta$	14p		N-FA	Ge	85J	R180	A $\emptyset$	
68	2N816	8.00M	600nt		400nt	400nt	75m	750m $\emptyset$	200m $\emptyset$	80 $\Delta$	14p		N-FA	Ge	85J	R181	A $\emptyset$	
69	IR5000	8.0M $\Delta$	600nt		1.4ut	3.0ut	125	5.0	5.0	140 $\Delta$	150m		D	Si	100J	T03	CF $\emptyset$	
70	IR5001	8.0M $\Delta$	600nt		1.4ut	3.0ut	125	5.0	5.0	140 $\Delta$	150m		D	Si	100J	T03	CF $\emptyset$	
71	IR5002	8.0M $\Delta$	600nt		1.4ut	3.0ut	125	5.0	5.0	140 $\Delta$	150m		D	Si	100J	T03	CF $\emptyset$	
72	IR542	8.0M $\Delta$	600n	50n	3.0u	500n	100	2.0	1.5	60 $\Delta$			N-D	Si	200J	T03	C $\emptyset$	
73	IR6543	8.0M $\Delta$	600n	50n	3.0u	500n	100	2.0	3.0	35 $\Delta$			N-D	Si	200J	T03	C $\emptyset$	
74	IR6544	8.0M $\Delta$	600n	50n	3.0u	500n												



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1	GSTU15020	25MSΔ	600n	100n	1.2u	300n	140						N		200J	T204a	C0	
2	2N5932	30MSΔ	600n		550n	350n	100	4.0	30	10	12		N		200J	F41	C0	
3	2N5933	30MSΔ	600n		550n	350n	100	4.0	30	12	12		N		200J	F41	C0	
4	2N5934	30MSΔ	600n		550n	350n	100	4.0	30	12	12		N		200J	F41	C0	
5	2N6046	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200J	TO63	A0	
6	2N6047	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200J	TO63	A0	
7	2N6048	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200J	TO63	A0	
8	JAN2N6306	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200J	TO63	A0	
9	JAN2N6308	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200J	TO63	A0	
10	1743-0820	30MSΔ	600n		550n	350n	100	4.0	30	12	12		N		200A	TO3	C0	
11	1743-1220	30MSΔ	600n		550n	350n	100	4.0	30	12	12		N		200A	TO3	C0	
12	1743-1620	30MSΔ	600n		550n	350n	100	4.0	30	12	12		N		200A	TO3	C0	
13	1743-1820	30MSΔ	600n		550n	350n	100	4.0	30	12	12		N		200A	TO3	C0	
14	1748-0820	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200A	TO303	A0	
15	1748-1220	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200A	TO63	A0	
16	1748-1620	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200A	TO63	A0	
17	1748-1820	30MSΔ	600n		550n	350n	114	4.0	30	12	12		N		200A	TO63	A0	
18	2N5218	40.0MSΔ	600n	600n	4.5u	1.0u	50	5.0	50	75	75		N		200C	TO61	A0	
19	U2TA506	40MSΔ	600n		1.5u	800n	625m		750m	500	Δ		N		150A	TO92	A0	
20	U2TA508	40MSΔ	600n		1.5u	800n	625m		750m	500	Δ		N		150A	TO92	A0	
21	U2TA510	40MSΔ	600n		1.5u	800n	625m		750m	500	Δ		N		150A	TO92	A0	
22	2N6674	50MSΔ	600n	100n	2.5u	500n	175		10	8.0	Δ		N		200S	Y204a	A0	
23	2N6675	50MSΔ	600n	100n	2.5u	500n	175		10	8.0	Δ		N		200S	Y204a	A0	
24	2N6676	50MSΔ	600n	100n	2.5u	500n	175		15	8.0	Δ		N		200S	Y204a	A0	
25	2N6677	50MSΔ	600n	100n	2.5u	500n	175		15	8.0	Δ		N		200S	Y204a	A0	
26	2N6678	50MSΔ	600n	100n	2.5u	500n	175		15	8.0	Δ		N		200S	Y204a	A0	
27	2N6689	50MSΔ	600n	100n	2.5u	500n	175		10	20	Δ		N		200J	TO6	A0	
28	2N6690	50MSΔ	600n	100n	2.5u	500n	175		10	20	Δ		N		200J	TO61	A0	
29	GSD8 10008	50MSΔ	600n	200n	400n		10		20	20	Δ		N		200J	TO5	A0	
30	BUX34	60MSΔ	600n			1.2u	15		2.0	80			N		175S	R216h	A0	
31	BFX34	70MSΔ	600n			1.2u	5.0		2.0	150			N		200J	TO39	A0	
32	SDM3100	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	F24a	A0	
33	SDM3101	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	F24a	A0	
34	SDM3102	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	F24a	A0	
35	SDM3103	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	F24a	A0	
36	SDM3104	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	F24a	A0	
37	SDM3105	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	F24a	A0	
38	SDM3200	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	F24a	A0	
39	SDM3201	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	F24a	A0	
40	SDM3202	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	F24a	A0	
41	SDM3203	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	F24a	A0	
42	SDM3204	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	F24a	A0	
43	SDM3205	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	F24a	A0	
44	SDM3300	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	TO33	KM	
45	SDM3301	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	TO33	KM	
46	SDM3302	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	TO33	KM	
47	SDM3303	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	TO33	KM	
48	SDM3304	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	TO33	KM	
49	SDM3305	70MSΔ	600n			2.5u	20		1.0	1.0k			N		200J	TO33	KM	
50	SDM3400	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	TO33	KM	
51	SDM3401	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	TO33	KM	
52	SDM3402	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	TO33	KM	
53	SDM3403	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	TO33	KM	
54	SDM3404	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	TO33	KM	
55	SDM3405	70MSΔ	600n			1.5u	20		1.0	1.0k			N		200J	TO33	KM	
56	JAN2N6211	100MSΔ	600n			3.1u	35		1.0	10	Δ		N		200J	TO66	C0	
57	JAN2N6212	100MSΔ	600n			3.1u	35		1.0	10	Δ		N		200J	TO66	C0	
58	JAN2N6213	100MSΔ	600n			3.1u	35		1.0	10	Δ		N		200J	TO66	C0	
59	BSV64	100MSΔ	600n			1.2u	5.0		2.0	40			N		175J	TO39	A0	
60	2N398A	5.00MSΔ	650n	200n	800n	400n	200m		200m	15	Δ		N		100S	TO5	A5	
61	40403	5.00MSΔ	650n	200n	800n	400n	200m		200m	30	Δ		N		85	TO5	A5	
62	2N3439	15MSΔ	65u		1.9u	60u	10		10	20	Δ		N		200J	TO5	A0	
63	2N3440	15MSΔ	65u		1.9u	60u	10		10	20	Δ		N		200J	TO5	A0	
64	2N318A	700n	700n		700n	800n	150m		250m	1.0	Δ		N		100S	TO5	A0	
65	2N2636	700n	4.0u		3.5u	4.0u	100		10	35	Δ		N		110C	TO41	A0	
66	2N2637	700n	4.0u		3.5u	4.0u	100		10	35	Δ		N		110C	TO41	A0	
67	2N2638	700n	3.5u		3.5u	3.5u	100		10	35	Δ		N		110C	TO41	A0	
68	ZSA1194K	700n	700n		800n	800n	80		3.0	500			N		150	BT	A0	
69	BUR24	70u	70u		3.0u	80u	250		3.0	1.0k			N		200J	TO3	C0	
70	D44TE3	700n	700n	100n	3.5u	800n	2.0		5.0	90			N		150J	Y220a	A0	
71	D44TE5	700n	700n	100n	3.5u	800n	2.0		5.0	90			N		150J	Y220a	A0	
72	MJ13332	700n	700n	100n	4.0u	700n	175		5.0	10	Δ		N		200J	TO3	C0	
73	MJ13333	700n	700n	100n	4.0u	700n	175		5.0	10	Δ		N		200J	TO3	C0	
74	MJ13334	700n	700n	100n	4.0u	700n	175		5.0	10	Δ		N		200J	TO3	C0	
75	MJ13335	700n	700n	100n	4.0u	700n	175		5.0	10	Δ		N		200J	TO3	C0	
76	NTA959	700n	100n	100n	1.0u	300n	150		1.5	20	Δ		N		200J	TO3	C0	
77	NTC1863	700n	100n	100n	1.0u	300n	50		7.0	15	Δ		N		200J	TO3	C0	
78	XGSA5030#	70u	70u		2.2u	65u	10		5.0	10	Δ		N		250p	TO5	A0	
79	XGSA5035#	70u	70u		2.2u	65u	10		5.0	10	Δ		N		250p	TO5	A0	
80	2N2000	2.0MSΔ	700n	120n	650n	750n	300m		500m	300	Δ		N		100S	TO5	A0	
81	IR3771	2.0MSΔ	700n		1.0u	800n	200		30	5.0	Δ		N		200J	TO3	C0	
82	IR3772	2.0MSΔ	700n		1.0u	800n	200		30	5.0	Δ		N		200J	TO3	C0	
83	MJ3771	2.0MSΔ	700n		1.0u	800n	200		30	5.0	Δ		N		200J	TO3	C0	
84	MJ3772	2.0MSΔ	700n		1.0u	800n	200		30	5.0	Δ		N		200J	TO3	C0	
85	2N438A	2.5MSΔ	700n		800n	500n	150m		10	25	Δ		N		85	TO5	A0	
86	2N1993	3.00MSΔ	700n	120n	1.0u	800n	150m		10	20	Δ		N		100J	TO5	A0	
87	2N5867	4.0MSΔ	700n		1.0u	800n	87		3.0	4.0	Δ		N		200J	TO3	C0	
88	2N5868	4.0MSΔ	700n		1.0u	800n	87		3.0	4.0	Δ		N		200J	TO3	C0	
89	2N5869	4.0MSΔ	700n		1.0u	800n	87		3.0	4.0	Δ		N		200J	TO3	C0	
90	2N5870	4.0MSΔ	700n		1.0u	800n	87		3.0	4.0	Δ		N		200J	TO3	C0	
91	2N5871	4.0MSΔ	700n		1.0u	800												

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> AIR FREE @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	MJ4380	4.0MΔ	700n	100n	4.0u	900n	2.0	5.0	1.0	10 Δ	65p	N	N	Si	150J	T066	C0	
2	MJ4381	4.0MΔ	700n	100n	4.0u	900n	2.0	5.0	1.0	10 Δ	65p	N	N	Si	150J	T066	C0	
3	MJE13004	4.0MΔ	0.7u	1.0u	4.0u	0.9u	2.0	5.0	1.0	10 Δ	65p	N	N	Si	150J	B26	D	
4	MJET13005	4.0MΔ	0.7u	0.1u	4.0u	0.9u	2.0	5.0	1.0	10 Δ	65p	N	N	Si	150J	B26	D	
5	ET6542	6.0MΔ	700n	50n	3.5u	800n	100	2.0	1.5	12 Δ	200pZ	N-DM	N	Si	200J	T03	C0	
6	ET6543	6.0MΔ	700n	50n	3.5u	800n	100	2.0	1.5	12 Δ	200pZ	N-DM	N	Si	200J	T03	C0	
7	MJ4400	6.0MΔ	700n	50n	4.0u	800n	100	2.0	1.5	12 Δ	50p	N	N	Si	200S	T066	C0	
8	MJ4401	6.0MΔ	700n	50n	4.0u	800n	100	2.0	1.5	12 Δ	50p	N	N	Si	200S	T066	C0	
9	2N1000	7.0MΔ	700n	30n	700n	300n	150m	5.0	100m	35	14p	N-A	N	Ge	100S	T05	A	
10	2N1345	10.0MΔ	700n	30n	800n	700n	150m	.30	400m	60	14p	P-A	P-A	Ge	85J	T05	A	
11	2N1346	10.0MΔ	700n	30n	800n	700n	150m	.25	35m	125	14p	P-A	P-A	Ge	85J	T05	A	
12	2N438	25MΔ	700n	30n	800n	500n	100m	1.0	50m	25	20pZ	N-A	N	Ge	85J	T05	A	
13	2N6542	28MΔZ	700n	50n	4.0u	800n	57 φ	2.0	1.5	12 Δ	200pZ	N	N	Si	200J	T03	C0	
14	2N6543	28MΔZ	700n	50n	4.0u	800n	57 φ	2.0	1.5	12 Δ	200pZ	N	N	Si	200J	T03	C0	
15	2N3597	30.0MΔ	700n	700n	700n	2.7u	1.0m	2.0	0.5m	75 Δ	700p	N	N	Si	200	T063	A0	
16	2N3598	30.0MΔ	700n	700n	700n	2.7u	1.0m	2.0	0.5m	75 Δ	700p	N	N	Si	200	T063	A0	
17	2N3599	30.0MΔ	700n	700n	700n	2.7u	1.0m	2.0	0.5m	75 Δ	700p	N	N	Si	200	T063	A0	
18	2N5733	30MΔ	700n	700n	3.0u	1.0u	150 φ	5.0	30	5.0 Δ	60m	N	N	Si	200J	T063	A0	
19	2N5734	30MΔ	700n	700n	3.0u	1.0u	150 φ	5.0	30	5.0 Δ	60m	N	N	Si	200J	T03	A0	
20	2N5935	30MΔ	700n	700n	600n	400n	100 φ	4.0	30	20 Δ	33m#	N	N	Si	200J	F47	C0	
21	2N5936	30MΔ	700n	700n	600n	400n	100 φ	4.0	30	20 Δ	33m#	N	N	Si	200J	F47	C0	
22	2N5937	30MΔ	700n	700n	600n	400n	100 φ	4.0	30	20 Δ	33m#	N	N	Si	200J	F47	C0	
23	1743-0630	30MΔ	700n	700n	600n	400n	100 φ	4.0	40	10 Δ	33m#	N-E	N	Si	200A	T03	C0	
24	1743-1030	30MΔ	700n	700n	600n	400n	100 φ	4.0	40	10 Δ	33m#	N-E	N	Si	200A	T03	C0	
25	1743-1430	30MΔ	700n	700n	600n	400n	100 φ	4.0	40	10 Δ	33m#	N-E	N	Si	200A	T03	C0	
26	1743-1830	30MΔ	700n	700n	600n	400n	100 φ	4.0	40	10 Δ	33m#	N-E	N	Si	200A	T03	C0	
27	2N2693	42.0MΔ	700n	400n	900n	1.0u	1.0 φ	1.0	10m	60 Δ	20	N	N	Si	200S	T018	A0	
28	2N2692	66.0MΔ	700n	400n	500n	1.0u	300m	1.0	100m	90 Δ	20	N-PE	N-PE	Si	175J	T018	A0	
29	BUR23	.75u	700n	3.0u	.80u	250	125	5	-1	15 Δ	5.0pZ	NPE	PPE	Si	200J	T03	C0	
30	BUW32	.75u	700n	3.0u	.80u	125	125	5	-1	15 Δ	5.0pZ	NPE	PPE	Si	200J	T03	C0	
31	BUW44	.75u	700n	3.0u	.80u	175	175	5	1.0	35	5.0pZ	N	N	EM	200J	T03	C0	
32	BUW45	.75u	700n	3.0u	.80u	175	175	5	1.0	35	5.0pZ	N	N	EM	200J	T03	C0	
33	BUW46	.75u	700n	3.0u	.80u	175	175	5	1.0	35	5.0pZ	N	N	EM	200J	T03	C0	
34	PMS3K425	0.75u	750n	1.5u	0.3u	150	150	3.0	3.0	25 Z	150J	N	N	Si	150J	T03	C0	
35	PMS5K425	0.75u	750n	1.5u	0.3u	150	150	3.0	5.0	25 Z	150J	N	N	Si	150J	T03	C0	
36	PMS8K425	0.75u	750n	1.5u	0.3u	225	225	3.0	8.0	25 Z	150J	N	N	Si	150J	T03	C0	
37	2N8077	1.0MΔ	750n	5.0u	5.0u	750n	25 φ	1.0	1.2	12 Δ	416m	N	N	Si	200J	T066	C0	
38	2N8078	1.0MΔ	750n	5.0u	5.0u	750n	25 φ	1.0	1.2	12 Δ	416m	N	N	Si	200J	T066	C0	
39	2N8079	1.0MΔ	750n	5.0u	5.0u	750n	25 φ	1.0	1.2	12 Δ	416m	N	N	Si	200J	T066	C0	
40	2SD120H	1.1M	750n	410n	410n	60n	4.0 φ	4.0	200m	60	4.0	N-D	N-D	Si	175J	T039	A0	
41	2SD121H	1.1M	750n	410n	410n	60n	4.0 φ	4.0	200m	60	4.0	N-D	N-D	Si	175J	T039	A0	
42	2G396	8.00M	750n	230n	650n	450n	150m	1.0	10m	150 Z	4.0	P-A	P-A	Ge	85J	T05	A0	
43	2N2694	42.0MΔ	750n	450n	1.8u	1.3u	1.0 φ	1.0	10m	30 Δ	25	N	N	Si	200S	T018	A0	
44	JAN2N804	50MΔ	750n	800n	800n	450n	120m	1.0	500m	30 Δ	12	N	N	Ge	100S	R179f	A	
45	2N357A	800n	800n	800n	800n	150m	150m	.25	200m	70 Z	1.0	N	N	Ge	100S	T05	A	
46	2N358A	800n	800n	800n	800n	150m	150m	.25	300m	75 Z	.67	N	N	Ge	100S	T05	A	
47	JAN2N358A	800n	800n	800n	800n	150m	150m	.25	1.0m	65 Δ	20pZ	N	N	Ge	100S	T05	A	
48	2N803	800n	800n	800n	800n	550n	75m	350m	150m	15 Δ	2.1	N	N	Ge	85S	R180	A	
49	2N804	800n	800n	800n	800n	550n	75m	350m	150m	15 Δ	2.1	P	P	Ge	85S	R181	A	
50	2N805	800n	800n	800n	800n	500n	75m	350m	200m	20 Δ	1.6	P	P	Ge	85S	R180	A	
51	2N806	800n	800n	800n	800n	500n	75m	350m	200m	20 Δ	1.6	P	P	Ge	85S	R181	A	
52	JAN2N1853	800n	800n	800n	800n	900n	150m	1.0	200m	400 Z	33	N	N	Ge	85S	T05	A	
53	2SB765K	800n	800n	3.0u	1.5u	30	30	3.0	1.5	1.0k Δ	500m	PD	N-DM	Si	150J	Y220b	D	
54	2SD664	800n	800n	3.0u	2.5u	40 φ	40 φ	3.0	7.0	1.0k Δ	500m	N-DM	N-DM	Si	150J	T066	KF	
55	2SD1126K	800n	800n	3.0u	2.5u	40 φ	40 φ	3.0	7.0	1.0k Δ	500m	N-DM	N-DM	Si	150J	Y220b	D	
56	2SD1127K	800n	800n	3.0u	2.5u	40 φ	40 φ	3.0	7.0	1.0k Δ	500m	N-DM	N-DM	Si	150J	Y220b	D	
57	BU801	800n	800n	1.0u	500n	40 %	40 %	3.0	200m	100 Δ	8.0	N	NEPL	Si	150J	TO126	B	
58	BUV27	800n	800n	1.2u	.40u	85	85	5.0	8.0	10 Δ	10	N	N	Si	175J	TO220	C0	
59	BUW66	800n	800n	1.5u	700n	90	90	5.0	10	10 Δ	10	N-PE	N-PE	Si	200J	T03	C0	
60	BUW67	800n	800n	1.5u	700n	90	90	5.0	10	10 Δ	10	N-PE	N-PE	Si	200J	T03	C0	
61	GE5060	800n	800n	8.0u	3.5u	100	100	5.0	10	100 Δ	800m	N	N	Si	150J	T03	C0	
62	GE5061	800n	800n	8.0u	3.5u	100	100	5.0	10	100 Δ	800m	N	N	Si	150J	T03	C0	
63	GE5062	800n	800n	8.0u	3.5u	100	100	5.0	10	100 Δ	800m	N	N	Si	150J	T03	C0	
64	2N3902	40kΔ	800n	800n	1.7u	100	100	5.0	2.5	10 Δ	800m	N	N	Si	150J	T03	C0	
65	SDT401	2.0MΔ	800n	2.5u	.80u	100	100	5.0	.50	10 Δ	300	N-PL	N-PL	Si	200J	T03	A0	
66	SDT410	2.0MΔ	800n	2.5u	.80u	100	100	5.0	2.5	10 Δ	300pZ	NPL	NPL	Si	200J	T03	A	
67	SDT411	2.0MΔ	800n	2.5u	.80u	100	100	5.0	2.5	10 Δ	300pZ	NPL	NPL	Si	200J	T03	A	
68	SDT413	2.0MΔ	800n	2.5u	.80u	100	100	5.0	1.0	15 Δ	300pZ	N-PL	N-PL	Si	200J	T03	A0	
69	JAN2N3902	2.5MΔ	800n	3.5u	1.7u	100	100	5.0	2.5	10 Δ	800m	N	N	Si	200S	T03	C0	
70	JAN2N5157	2.5MΔ	800n	3.5u	1.7u	100	100	5.0	2.5	10 Δ	800m	N	N	Si	200S	T03	C0	
71	2N5241	2.5MΔ	800n	3.5u	1.7u	125	125	5.0	3.5	10 Δ	280m	N	N	Si	150J	T03	C0	
72	2N5466	2.5MΔ	800n	3.5u	1.7u	70	70	5.0	3.0	60 φ	200pZ	N	N	Si	200J	T03	A0	
73	2N5467	2.5MΔ	800n	3.5u	1.7u	70	70	5.0	3.0	60 φ	200pZ	N	N	Si	200J	T03	A0	
74	DTS431M	2.5MΔ	800n	3.8u	1.7u	125	125	5.0	2.5	15 Δ	300pZ	N-D	N-D	Si	150J	Y204a	A	
75	SDT423	2.5MΔ	800n	3.8u	1.7u	100	100	5.0	2.5	10 Δ	300pZ	NPL	NPL	Si	200J	T03	C0	
76	SDT425	2.5MΔ	800n	3.8u	1.7u	100	100	5.0	2.5	10 Δ	300pZ	NPL	NPL	Si	200J	T03	C0	
77	SDT430	2.5MΔ	800n	2.5u	800n	175	175	5.0	3.5	10 Δ	300pZ	N-PL	N-PL	Si	200J	T03	C0	
78	SDT431	2.5MΔ	800n	2.5u	800n	175	175	5.0	3.5	10 Δ	300pZ	N-PL	N-PL	Si	200J	T03	C0	
79	2N5157	2.80MΔ	800n	1.7u	1.7u	100	100	5.0	2.5	10 Δ	.71	N	N	Si	150J	T03	C0	
80	DTS423M	3.00MΔ	800n	1.7u	1.7u	100	100	5.0	2.5m	10 Δ	.80	N-D	N-D	Si	150J	T03	C0	
81	2N4395	4.00MΔ	800n	1.5u	1.5u	63	63	1.0	1.0	75 Δ	1							

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Sr.	L E O D E
								Vcb (V)	Ic (A)	hFE								
1#	BDW83D		900n		7.0u		3.5	3.0	6.0	750	#Δ		N	SI	150J	T03	D	
2#	BDW84		900n		7.0u		3.5	3.0	6.0	750	#Δ		P	SI	150J	T03	D	
3#	BDW84A		900n		7.0u		3.5	3.0	6.0	750	#Δ		P	SI	150J	T03	D	
4#	BDW84B		900n		7.0u		3.5	3.0	6.0	750	#Δ		P	SI	150J	T03	D	
5#	BDW84C		900n		7.0u		3.5	3.0	6.0	750	#Δ		P	SI	150J	T03	D	
6#	BDW84D		900n		7.0u		3.5	3.0	6.0	750	#Δ		P	SI	150J	T03	D	
7	NTC1861		900n	100n	1.5u	500n	15	5.0	1.0	15	Δ		N-E	SI	200J	T039	A	
8	NTC1862		900n	100n	2.5u	700n	15	5.0	1.0	15	Δ		D	SI	200J	T039	A	
9	NTC1864		900n	100n	1.5u	500n	50	5.0	5.0	50	Δ		E	SI	200J	T03	C	
10	NTC1865		900n	100n	2.0u	700n	50	5.0	5.0	50	Δ		ME	SI	200J	T03	C	
11	NTC1866		900n	100n	1.0u	300n	100	5.0	7.0	15	Δ		ME	SI	200J	T03	C	
12	NTC1867		900n	100n	1.5u	500n	100	5.0	5.0	15	Δ		ME	SI	200J	T03	C	
13	NTC1868		900n	100n	2.0u	700n	100	5.0	5.0	15	Δ		N-E	SI	200J	T03	C	
14	NTC1869		900n	100n	1.0u	300n	150	5.0	1.5	20			N-E	SI	200J	T03	C	
15	NTC1871A		900n	100n	2.0u	700n	150	5.0	1.5	10			N-E	SI	200J	T03	C	
16	TIP140		900n		1.1u		3.5	4.0	5.0	1.0k	#	300m	N	SI	150J	B3	K	
17	TIP141		900n		1.1u		3.5	4.0	5.0	1.0k	#	300m	N	SI	150J	B3	K	
18	TIP142		900n		1.1u		3.5	4.0	5.0	1.0k	#	300m	N	SI	150J	B3	K	
19	TIP145		900n		1.1u		3.5	4.0	5.0	1.0k	#	300m	P	SI	150J	B3	K	
20	TIP146		900n		1.1u		3.5	4.0	5.0	1.0k	#	300m	P	SI	150J	B3	K	
21	TIP147		900n		1.1u		3.5	4.0	5.0	1.0k	#	300m	P	SI	150J	B3	K	
22	TIP640		900n		1.1n		5.0	4.0	5.0	1.0k	#	300m	N	SI	200J	T03	K	
23	TIP641		900n		1.1n		5.0	4.0	5.0	1.0k	#	300m	N	SI	200J	T03	K	
24	TIP642		900n		1.1n		5.0	4.0	5.0	1.0k	#	300m	N	SI	200J	T03	K	
25	TIP645		900n		1.1n		5.0	4.0	5.0	1.0k	#	300m	P	SI	200J	T03	K	
26	TIP646		900n		1.1n		5.0	4.0	5.0	1.0k	#	300m	P	SI	200J	T03	K	
27	TIP647		900n		1.1n		5.0	4.0	5.0	1.0k	#	300m	P	SI	200J	T03	K	
28	2N578	5.0M	900n			600n	120m	3.0	400m	10	Δ	750m	P-A	SI	855	71A	T05	A
29	2N2172	5.0MΔ	900n		350n	450n	200m	1.0	10m	150	Δ	20	P	SI	855	T05	A	
30	GT123	5.00MΔ	900n				150m	1.0	90	1		15p	P-A	SI	100S	T05	A	
31	2N123	8.00M	900n		500n	500n	150m	5.0	1.0m	970m	Δ	8.0p	P-A	SI	855	R31	A5	
32	2N358	9.00M	900n		1.0u	1.2u	100m	25	300m	30		14p	N	SI	855	T05	A5	
33	2N6573	15M	900n	150n	2.5u	700n	71	5.0	10	5.0	Δ	500m	N	SI	200J	T03	C	
34	2N6574	15M	900n	150n	2.5u	700n	71	5.0	10	5.0	Δ	500m	N	SI	200J	T03	C	
35	2N6575	15M	900n	150n	2.5u	700n	71	5.0	10	5.0	Δ	500m	N	SI	200J	T03	C	
36	2N1681	5.00MΔ	950n		950n	180m	25	10m	75	10		20p	P-A	SI	100J	T05	A	
37	2N801		1.0u		600n	550n	75m	350m	100m	10	Δ	3.2	P	SI	855	R180	A	
38	2N802		1.0u		600n	550n	75m	350m	100m	10	Δ	3.2	P	SI	855	R181	A	
39#	2SA959		1.0u		1.5u	30u	100	5.0	5.0	30	#Δ*	20p	P	SI	150J	T03	C	
40#	2SA1045		1.0u		6.0u	2.0u	100	3.0	2.0	1.0k	#	400m	P-PE	SI	175J	T03	C	
41#	2SB727K		1.0u		3.0u	1.0u	400	3.0	3.0	1.0k	#		PE	SI	150J	Y205d	A	
42#	2SC1861		1.0u		1.0u	800m	5.0	10	80	60	#*		N	SI	150J	Y205d	A	
43#	2SC1862		1.0u		2.5u	1.0u	800m	5.0	10	40	#*		N	SI	150J	Y205d	A	
44#	2SC1864		1.0u		2.0u	1.0u	40	5.0	3.0	20	Δ	200m	NEM	SI	150J	F12b	C	
45#	2SC1865		1.0u		2.0u	1.0u	40	5.0	3.0	15	Δ	200m	NEM	SI	150J	F12b	C	
46#	2SC1866		1.0u		2.0u	1.0u	80	5.0	3.0	20	Δ	200m	NEM	SI	150J	T03	C	
47#	2SC1867		1.0u		2.0u	1.0u	80	5.0	3.0	20	Δ	200m	NEM	SI	150J	T03	C	
48#	2SC1868		1.0u		2.0u	1.0u	80	5.0	3.0	15	Δ	200m	NEM	SI	150J	T03	C	
49#	2SC1869		1.0u		2.0u	1.0u	100	5.0	5.0	20	Δ	100m	NEM	SI	150J	T03	C	
50#	2SC1870		1.0u		2.0u	1.0u	100	5.0	5.0	20	Δ	100m	NEM	SI	150J	T03	C	
51#	2SC1871A		1.0u		2.0u	1.0u	100	5.0	10	10	Δ		N	SI	150J	T03	C	
52#	2SC1881K		1.0u		5.0u	1.0u	30	1.5	1.5	1.0k	#	480m	N-D	SI	150J	B17	KE	
53#	2SC2126		1.0u		2.0u	1.0u	30	3.0	3.0	42		330m	ND	SI	150J	T066	C	
54#	2SC2127		1.0u		2.0u	1.0u	100	3.0	3.0	32		100m	ND	SI	150J	T03	C	
55#	2SC2128		1.0u		2.0u	1.0u	200	3.0	3.0	22		30m	ND	SI	150J	F29a	X	
56#	2SC2333		1.0u		2.5u	1.0u	1.5	5.0	1.0	20	#Δ*		N	SI	150J	Y220a	X	
57#	2SC2335		1.0u		2.5u	1.0u	1.5	5.0	1.0	20	#Δ*		ND	SI	150J	Y220a	X	
58#	2SC2356		1.0u		1.6u	700n	100	5.0	5.0	20		140m	N-DM	SI	175J	T03	C	
59#	2SC2366		1.0u		2.0u	1.0u	300	5.0	20	20		35m	N-DM	SI	175J	F1b	A	
60#	2SC2402		1.0u		1.6u	700n	150	5.0	5.0	20		140m	N-DM	SI	175J	T03	C	
61#	2SC2403		1.0u		2.0u	1.0u	300	5.0	20	20		35m	N-DM	SI	175J	F1b	A	
62#	2SC2425		1.0u		2.0u	1.0u	1.5	10	50m	80		40	N-PE	SI	150J	B44	D	
63#	2SC2435		1.0u		6.0u	2.0u	100	3.0	2.0	1.0k	#	400m	N-PE	SI	175J	T03	C	
64#	2SC2534		1.0u		2.5u	1.0u	20	5.0	500m	20	Δ	2.0	N-E	SI	150J	Y220b	D	
65#	2SC2535		1.0u		2.5u	1.0u	40	5.0	3.0	15	Δ	33m	N-E	SI	150J	Y220b	D	
66#	2SC2552		1.0u		2.5u	1.0u	20	5.0	100m	20	Δ	1.0	N	SI	150J	Y220b	D	
67#	2SC2553		1.0u		2.5u	1.0u	40	5.0	3.0	12	Δ	200m	N	SI	150J	Y220b	D	
68#	2SC2555		1.0u		2.5u	1.0u	80	5.0	1.0	15	Δ		N	SI	150J	B77	D	
69#	2SC2613K		1.0u		2.5u	1.0u	40	5.0	2.5	15	Δ		ND	SI	150J	Y220b	D	
70#	2SC2615K		1.0u		2.5u	1.0u	80	5.0	4.0	15	Δ	#	ND	SI	150J	F53	D	
71#	2SC2650		1.0u		2.5u	1.0u	100	5.0	5.0	10	Δ	300m	N-PL	SI	150J	W172	D	
72#	2SC2790		1.0u		4.0u	1.0u	80	5.0	0.5	17	Δ		N	SI	150J	T03	C	
73#	2SC2791		1.0u		3.5u	1.0u	100	5.0	3.0	10	Δ	333m	N	SI	150J	T03	C	
74#	2SC2792		1.0u		4.0u	1.0u	80	5.0	500m	10	Δ	2.0	N	SI	150J	B41	D	
75#	2SC2793		1.0u		3.5u	1.0u	100	5.0	3.0	10	Δ	333m	N	SI	150J	B60	D	
76#	2SC2858K		1.0u		2.5u	1.0u	85	5.0	4.0	15	Δ		ND	SI	150J	F53	D	
77#	2SC2913		1.0u		2.5u	1.0u	40	5.0	3.0	12	Δ	142m	N	SI	150J	T066	C	
78#	2SC2914		1.0u		2.5u	1.0u	120	5.0	5.0	12	Δ	100m	N	SI	150J	T03	C	
79#	2SC2979		1.0u		3u	1u	40	5.0	300m	15	Δ		ND	SI	150J	Y220b	D	
80#	2SC2980		1.0u		3u	1u	80	5.0	500m	15	Δ		ND	SI	150J	F57	D	
81#	2SC2981		1.0u		3u	1u	100	5.0	800m	15	Δ		ND	SI	150J	T03	C	
82#	2SC3051		1.0u		2.5u	1.5u	10	5.0	0.1	20	Δ		N	SI	150J	T0128	B	
83#	2SC3075		1.0u		2.5u	1.5u	10	5.0	0.1	20	Δ		N	SI	150J	B78	B	
84#	2SD180		1.0u		500n	3.0u	25	10	750m	50		1.0	N-D	SI	175J	T08	A	
85#	2SD423		1.0u		1.0u	800n	30	5.0	3.0	20		400m	N-DPL	SI	175J	T086	C	
86#	2SD684		1.0u		8.0u	5.0u	30	2.0	4.0	200	Δ	500m	N-DM	SI	150J	T066	K	
87#	2SD684A		1.0u		8.0u	5.0u	30	2.0	4.0	100	Δ	500m	N-DM	SI	150J	T066	K	
88#	2SD685		1.0u		12u	5.0u	100	2.0	8.0	100	Δ	250m	N-DM	SI	150J	T03	K	
89#	2SD700		1.0u		4.5u	8.0u	770	5.										

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ie (A)	hFE								
1#	BDW54		1.0u0		4.5u0		2.0	3.0	-1.0	750 #Δ			P	Si	150J	Y220a	D	
2#	BDW54A		1.0u0		4.5u0		2.0	3.0	-1.0	750 #Δ			P	Si	150J	Y220a	D	
3#	BDW54B		1.0u0		4.5u0		2.0	3.0	-1.0	750 #Δ			P	Si	150J	Y220a	D	
4#	BDW54C		1.0u0		4.5u0		2.0	3.0	-1.0	750 #Δ			P	Si	150J	Y220a	D	
5#	BDW54D		1.0u0		4.5u0		2.0	3.0	-1.0	750 #Δ			P	Si	150J	Y220a	D	
6#	BDW63		1.0u0		5.0u0		2.0	3.0	2.0	750 #Δ			N	Si	150J	Y220a	D	
7#	BDW63A		1.0u0		5.0u0		2.0	3.0	2.0	750 #Δ			N	Si	150J	Y220a	D	
8#	BDW63B		1.0u0		5.0u0		2.0	3.0	2.0	750 #Δ			N	Si	150J	Y220a	D	
9#	BDW63C		1.0u0		5.0u0		2.0	3.0	2.0	750 #Δ			N	Si	150J	Y220a	D	
10#	BDW63D		1.0u0		5.0u0		2.0	3.0	2.0	750 #Δ			N	Si	150J	Y220a	D	
11#	BDW64		1.0u0		5.0u0		2.0	3.0	-2.0	750 #Δ			P	Si	150J	Y220a	D	
12#	BDW64A		1.0u0		5.0u0		2.0	3.0	-2.0	750 #Δ			P	Si	150J	Y220a	D	
13#	BDW64B		1.0u0		5.0u0		2.0	3.0	-2.0	750 #Δ			P	Si	150J	Y220a	D	
14#	BDW64C		1.0u0		5.0u0		2.0	3.0	-2.0	750 #Δ			P	Si	150J	Y220a	D	
15#	BDW64D		1.0u0		5.0u0		2.0	3.0	-2.0	750 #Δ			P	Si	150J	Y220a	D	
16#	BDW73		1.0u0		5.0u0		2.0	3.0	3.0	750 #Δ			N	Si	150J	Y220a	D	
17#	BDW73A		1.0u0		5.0u0		2.0	3.0	3.0	750 #Δ			N	Si	150J	Y220a	D	
18#	BDW73B		1.0u0		5.0u0		2.0	3.0	3.0	750 #Δ			N	Si	150J	Y220a	D	
19#	BDW73C		1.0u0		5.0u0		2.0	3.0	3.0	750 #Δ			N	Si	150J	Y220a	D	
20#	BDW73D		1.0u0		5.0u0		2.0	3.0	3.0	750 #Δ			N	Si	150J	Y220a	D	
21#	BDW74		1.0u0		5.0u0		2.0	3.0	-3.0	750 #Δ			N	Si	150J	Y220a	D	
22#	BDW74A		1.0u0		5.0u0		2.0	3.0	-3.0	750 #Δ			N	Si	150J	Y220a	D	
23#	BDW74B		1.0u0		5.0u0		2.0	3.0	-3.0	750 #Δ			N	Si	150J	Y220a	D	
24#	BDW74C		1.0u0		5.0u0		2.0	3.0	-3.0	750 #Δ			N	Si	150J	Y220a	D	
25#	BDW74D		1.0u0		5.0u0		2.0	3.0	-3.0	750 #Δ			N	Si	150J	Y220a	D	
26#	BUR51		1.0u		2.0u		0.6u	350	4	50	15		P	Si	200J	T03	C	
27#	BUS11		1.0u0		4.0u		80u	100					N	Si	200J	T03	A	
28#	BUS11A		1.0u0		4.0u		80u	100					N	Si	200J	T03	A	
29#	BUS12		1.0u0		4.0u		80u	125					N	Si	200J	T03	A	
30#	BUS12A		1.0u0		4.0u		80u	125					N	Si	200J	T03	A	
31#	BUS13		1.0u0		4.0u		80u	175					N	Si	200J	T03	A	
32#	BUS13A		1.0u0		4.0u		80u	175					N	Si	200J	T03	A	
33#	BUS14		1.0u0		4.0u		80u	250					N	Si	200J	T03	A	
34#	BUS14A		1.0u0		4.0u		80u	250					N	Si	200J	T03	A	
35#	BUV28		1.0u0		2.0u		50u	85	6.0	10	Δ		N	Si	175J	TO220	C	
36#	BUX46		1.0u0		4.0u		800m	100					N-DPS	Si	200J	T03	C	
37#	BUX46A		1.0u0		4.0u		800m	100					N-DPS	Si	200J	T03	C	
38#	BUX47		1.0u0		4.0u		800m	107	6.0	5.0	Δ		N-DPS	Si	200J	T03	C	
39#	BUX47A		1.0u0		3.0u		80u	107					NEM	Si	200J	T03	C	
40#	BUX47A		1.0u0		4.0u		800m	125					N-DPS	Si	200J	T03	C	
41#	BUX48		1.0u0		3.0u		800m	125					NEM	Si	175J	T03	C	
42#	BUX48A		1.0u0		4.0u		800m	175					N-DPS	Si	200J	T03	C	
43#	D7ST4010(A)		1u	300n	4u		750m	3k%	2.5	200	5		N	Si	200S			
44#	D7ST4510(A)		1u	300n	4u		750m	3k%	2.5	200	5		N	Si	200S			
45#	D7ST5010(A)		1u	300n	4u		750m	3k%	2.5	200	5		N	Si	200S			
46#	D80T703005		1u	100n	4u		600m	885	15	10	Δ		N	Si	200S	T172		
47#	D80T704005		1u	100n	4u		600m	885	15	10	Δ		N	Si	200S	T172		
48#	D80T753005		1u	100n	4u		600m	885	15	10	Δ		N	Si	200S	T172		
49#	D80T754005		1u	100n	4u		600m	885	15	10	Δ		N	Si	200S	T172		
50#	D80T803005		1.0u	100n	4.0u		0.6M	885	15	10	Δ		N	Si	200S	T159		
51#	D80T804005		1u	100n	4u		600m	885	15	10	Δ		N	Si	200S	T172		
52#	D84TS3		1.0u	50n	4.0u		700m	195	5.0	60	Δ		N	Si	200S	T03		
53#	D84TS5		1.0u	50n	4.0u		700m	195	5.0	60	Δ		N	Si	200S	T03		
54#	D86DV5		1.0u	50u	3.0u		3.0u	125	150	25	Δ		N	Si	150J	X194		
55#	D86DV6		1.0u	50u	3.0u		3.0u	125	150	25	Δ		N	Si	150J	X194		
56#	D86DV7		1.0u	50u	3.0u		3.0u	125	150	25	Δ		N	Si	150J	X194		
57#	D87DE5		1.0u	50u	3.0u		3.0u	312	150	25	Δ		N	Si	150J	X193		
58#	D87DE6		1.0u	50u	3.0u		3.0u	312	150	25	Δ		N	Si	150J	X193		
59#	D87DE7		1.0u	50u	3.0u		3.0u	312	150	25	Δ		N	Si	150J	X193		
60#	ESM855		1.0u	15u	2.0u		0.6u	150	10	60	Δ		NE	Si	175J	T03		
61#	ESM856		1.0u	15u	2.0u		0.6u	150	10	60	Δ		NE	Si	175J	T03		
62#	ESM870		1.0u	0.2u	2.0u		0.6u	200	5.0	20	60	Δ	NE	Si	175J	T03		
63#	ESM871		1.0u	0.2u	2.0u		0.6u	200	5.0	20	60	Δ	NE	Si	175J	T03		
64#	IR640		1.0u0		4.0u0		2.9u	28m	4.0	5.0	1.0k	#	N	Si	200J	T03	KF	
65#	IR641		1.0u0		4.0u0		2.9u	28m	4.0	5.0	1.0k	#	N	Si	200J	T03	KF	
66#	IR642		1.0u0		4.0u0		2.9u	28m	4.0	5.0	1.0k	#	N	Si	200J	T03	KF	
67#	IR645		1.0u0		4.0u0		1.7u	28m	4.0	5.0	1.0k	#	N	Si	200J	T03	KF	
68#	IR646		1.0u0		4.0u0		1.7u	28m	4.0	5.0	1.0k	#	N	Si	200J	T03	KF	
69#	IR647		1.0u0		4.0u0		1.7u	28m	4.0	5.0	1.0k	#	N	Si	200J	T03	KF	
70#	MJ10015		1.0u	300n	2.5u		1.0u	250	5.0	20	25	Δ	N	Si	200J	F49b	KF	
71#	MJ10016		1.0u	300n	2.5u		1.0u	250	5.0	20	25	Δ	N	Si	200J	F49b	KF	
72#	MJ10020		1.0u	200n	3.5u		500m	250	5.0	15	75	Δ	N	Si	200J	T03	C	
73#	MJ10021		1.0u	200n	3.5u		500m	250	5.0	15	75	Δ	N	Si	200J	T03	C	
74#	MJ13330		1.0u	200n	3.5u		700m	175	5.0	5.0	15	Δ	N	Si	200J	T03	C	
75#	MJ13331		1.0u	200n	3.5u		700m	175	5.0	5.0	15	Δ	N	Si	200J	T03	C	
76#	2SD980K	80m	1u	2u	3.5u		30	500m	5.0	500	Δ		N	Si	150J	Y220b	D	
77#	CHV2080A	20k	1.0u		4.0u		1.0u	100	5.0	8.0	15	Δ	N-D	Si	150J	T03	KF	
78#	CHV2080A	20k	1.0u		4.0u		1.0u	100	5.0	8.0	15	Δ	N-D	Si	150J	T03	KF	
79#	CHV2090A	20k	1.0u		4.0u		1.0u	100	5.0	8.0	15	Δ	N-D	Si	150J	T03	KF	
80#	2SC407	400k	1.0u	200n	4.0u		1.0u	100	5.0	5.0	20		N	Si	200m	F6		
81#	2SC409	400k	1.0u	200n	4.0u		1.0u	100	5.0	5.0	20		N	Si	200m	F6		
82#	2SC410A	400k	1.0u	200n	4.0u		1.0u	100	5.0	5.0	20		N	Si	200m	F6		
83#	2SC411	400k	1.0u	200n	4.0u		1.0u	100	5.0	5.0	20		N	Si	200m	F6		
84#	2SC431	400k	1.0u	200n	4.0u		1.0u	200	5.0	10	20		N	Si	100m	F10		
85#	2SC433	400k	1.0u	200n	4.0u		1.0u	200	5.0	10	20		N	Si	100m	F10		
86#	2SC434A	400k	1.0u	200n	4.0u		1.0u	100	5.0	10	20		N	Si	100m	F10		
87#	2SC435	400k	1.0u	200n	4.0u		1.0u	200	5.0	10	20		N	Si	100m	F10		
88#	2N2033	1.0M	1.0u0		1.5u0		5.0	50	4.0	500m	60	Δ	N	Si	200C	T05	A	
89#	2N2034	1.0M	1.0u0		1.5u0		5.0	50	4.0	10	60	Δ	N	Si	200C	T05	A	
90#	2N2035	1.0M	1.0u0		1.5u0		14	5	4.0	1.5	60	Δ	N	Si	200C	T08	A	
91#	2N2036	1.0M	1.0u0		1.5u0		10	4	4.0	2.0	20	Δ	N	Si	500m	T037	A	
92#	PT3516	1.0M	1.0															

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 TO200 Ser.	L C O A D E
								Vcb (V)	Ie (A)	hFE								
1#	BDX93	4.0MSΔ	1.0uφ			2.0uφ	90 φ	10 φ	500mφ	40 Δ	266m		NE	Si	200J	TO3	Cφ	
2#	BDX94	4.0MSΔ	1.0uφ			2.0uφ	90 φ	10 φ	500mφ	40 Δ	266m		PE	Si	200J	TO3	Cφ	
3#	BDX95	4.0MSΔ	1.0uφ			2.0uφ	90 φ	10 φ	500mφ	40 Δ	266m		NE	Si	200J	TO3	Cφ	
4#	BDX96	4.0MSΔ	1.0uφ			2.0uφ	90 φ	10 φ	500mφ	40 Δ	266m		PE	Si	200J	TO3	Cφ	
5#	BUX46	4.0MS	1.0uφ			800n	85 φ				1.4 #		N-DM	Si	175J	TO3	Cφ	
6	IR13006	4.0MSΔ	1.0u	100n	3.0u	500n	80	5.0 φ	5.0 φ	6.0 Δ			N-D	Si	150J	Y220b	D	
7	IR13007	4.0MSΔ	1.0u	100n	3.0u	500n	80	5.0 φ	5.0 φ	6.0 Δ			N-D	Si	150J	Y220b	D	
8	MJE13006	4.0MSΔ	1.0u	100n	3.0u	700n	2.0	5.0 φ	2.0 φ	8.0 Δ#	500m#	110p	N	Si	150J	Y220b	Xφ	
9	MJE13007	4.0MSΔ	1.0u	100n	3.0u	700n	2.0	5.0 φ	2.0 φ	8.0 Δ#	500m#	110p	N	Si	150J	Y220b	Xφ	
10	MJE13008	4.0MSΔ	1.0u	100n	3.0u	700n	2.0	5.0 φ	2.0 φ	8.0 Δ#	250m#	180p	N	Si	150J	Y220b	Xφ	
11	MJE13009	4.0MSΔ	1.0u	100n	3.0u	700n	2.0	5.0 φ	2.0 φ	8.0 Δ#	250m#	180p	N	Si	150J	Y220b	Xφ	
12	UMT13006	4.0MSΔ	1.0u	1.0n	3.0u	7.0n	75	5.0 φ	2.0 φ	4.0 #Δ#		110p	N	PSΔ	Si	150S	Y220b	Xφ
13	UMT13007	4.0MSΔ	1.0u	1.0n	3.0u	7.0n	75	5.0 φ	2.0 φ	4.0 #Δ#		110p	N	PSΔ	Si	150S	Y220b	Xφ
14	UMT13008	4.0MSΔ	1.0u	1.0n	3.0u	7.0n	100	5.0 φ	2.0 φ	4.0 #Δ#		180p	N	PSΔ	Si	150S	Y220b	Xφ
15	UMT13009	4.0MSΔ	1.0u	1.0n	3.0u	7.0n	100	5.0 φ	2.0 φ	4.0 #Δ#		180p	N	PSΔ	Si	150S	Y220b	Xφ
16#	BUX47A	4.5MS	1.0uφ			700n	107		5.0 φ	5.0 Δ	300m#		N-DM	Si	175J	TO3	Cφ	
17	2N1624	5.0MSΔ	1.0uφ			700n	150m	1.0 φ	3.0m	180 Δ		25pZ	N	Ge	100J	Y220	Dφ	
18	2N6497	5.0MSΔ	1.0u			2.5u	1.0u	80 φ	5.0 φ	3.0 Δ#	1.0 #		N	Si	150J	Y220b	Dφ	
19	2N6498	5.0MSΔ	1.0u			2.5u	1.0u	80 φ	5.0 φ	3.0 Δ#	1.0 #		N	Si	150J	Y220b	Dφ	
20	2N6499	5.0MSΔ	1.0u			2.5u	1.0u	80 φ	5.0 φ	3.0 Δ#	1.0 #		N	Si	150J	Y220b	Dφ	
21#	BUV98	5.0MS	1.0uφ			3.0u	80u	150	2.0 φ	5.0 Δ			N	Si	175J	TO3	Cφ	
22#	BUV98A	5.0MS	1.0uφ			3.0u	80u	150	1.5 φ	5.0 Δ			N	Si	175J	TO3	Cφ	
23#	BUX98	5.0MS	1.0uφ			3.0u	0.8u	250	1.0 φ	5.0 Δ		500p	N	Si	175J	TO3	Cφ	
24	BUX98A	5.0MS	1.0uφ			3.0u	0.8u	250	1.0 φ	5.0 Δ		500p	N	Si	175J	TO3	Cφ	
25#	BUX48A	5.5MS	1.0uφ			3.0u	800n	125 φ			200m#		N-DM	Si	175J	TO3	Cφ	
26#	2N426	6.0M	1.0uφ			1.1uφ			350mφ	10mΔ	18	14p	P-FA	Ge	85J	TO5	A	
27	JAN2N6546	6.0MSΔ	1.0uφ			4.7uφ	175 φ	2.0 φ	10 φ	6.0 Δ#	150m	500pZ	N	Ge	200J	TO3	Cφ	
28	JAN2N6547	6.0MSΔ	1.0uφ			4.7uφ	175 φ	2.0 φ	10 φ	6.0 Δ#	150m	500pZ	N	Ge	200J	TO3	Cφ	
29	ET6544	6.0MSΔ	1.0u	50n	3.5u	1.0u	125	3.0 φ	2.5 φ	12 Δ		300pZ	N-DM	Si	200J	TO3	Cφ	
30	ET6545	6.0MSΔ	1.0u	50n	3.5u	1.0u	125	3.0 φ	2.5 φ	12 Δ		300pZ	N-DM	Si	200J	TO3	Cφ	
31	ET6546	6.0MSΔ	1.0u	50n	3.5u	700n	175	2.0 φ	5.0 φ	12 Δ		500pZ	N-DM	Si	200J	TO3	Cφ	
32	ET6547	6.0MSΔ	1.0u	50n	3.5u	700n	175	2.0 φ	5.0 φ	12 Δ		500pZ	N-DM	Si	200J	TO3	Cφ	
33	2N1344	7.0MSΔ	1000n	60n	500n	800n	150m	1.0 φ	2.0m	90		12p	P-A	Ge	85J	TO5	A	
34	D60T404010	7.0MSΔ	1.0u	110n	3.0u	500n	590 φ	2.5 φ	4.0 φ	10 Δ	31m	2.5n	N	Si	200J	T159		
35	D60T454010	7.0MSΔ	1.0u	110n	3.0u	500n	590 φ	2.5 φ	4.0 φ	10 Δ	31m	2.5n	N	Si	200J	T159		
36	D60T504010	7.0MSΔ	1.0u	110n	3.0u	500n	590 φ	2.5 φ	4.0 φ	10 Δ	31m	2.5n	N	Si	200J	T159		
37	D62T404010	7.0MSΔ	1.0u	110n	3.0u	500n	1.1kφ	2.5 φ	4.0 φ	10 Δ	31m	2.5n	N	Si	200J	X187		
38	D62T454010	7.0MSΔ	1.0u	110n	3.0u	500n	1.1kφ	2.5 φ	4.0 φ	10 Δ	31m	2.5n	N	Si	200J	X187		
39	D62T504010	7.0MSΔ	1.0u	110n	3.0u	500n	1.1kφ	2.5 φ	4.0 φ	10 Δ	25m	2.5n	N	Si	200J	X187		
40#	TIPL752	7.0MS	1.0uφ			2.5u	45u	150	5.0 φ	500mφ	80	105p	N	Si	200J	TO3		
41#	TIPL752A	7.0MS	1.0uφ			2.5u	45u	150	5.0 φ	500mφ	80	105p	N	Si	200J	TO3		
42#	2N388A	8.00M	1000nφ			700n	150m	50 φ	3.0m	180		20pZ	N	Ge	100J	TO5	Aφ	
43	2N576A	8.00M	1000n				200m	4.0 φ	4.0m	30		15p	N-A	Ge	100J	TO5	Aφ	
44#	BUX52	8.0MSΔ	1.0uφ			2.5u	800n	10 φ	4.0 φ	1.7 φ		588m#	N-DM	Si	200J	TO39	Aφ	
45#	BUX53	8.0MSΔ	1.0uφ			2.5u	1.0u	10 φ	4.0 φ	1.6 φ		666m#	N-DM	Si	200J	TO39	Aφ	
46#	BUX54	8.0MSΔ	1.0uφ			3.5u	1.2u	10 φ	4.0 φ	1.2 φ		1.0 #	N-DM	Si	200J	TO39	Aφ	
47#	BUX60	8.0MSΔ	1.0uφ			1.5u	400n	70 φ	4.0 φ	8.0 φ		175m#	N-DM	Si	200J	TO66	Cφ	
48#	BUX61	8.0MSΔ	1.0uφ			1.5u	400n	70 φ	4.0 φ	6.0 φ		233m#	N-DM	Si	200J	TO66	Cφ	
49#	BUX62	8.0MSΔ	1.0uφ			2.5u	500n	70 φ	4.0 φ	5.0 φ		280m#	N-DM	Si	200J	TO66	Cφ	
50#	DTS4062	8.0MSΔ	1.0uφ			1.8uφ	3.0uφ	100 φ	10 φ	10 φ	75 Δ	175m	N-D	Si	150S	TO3	Kφ	
51	DTS4072	8.0MSΔ	1.0uφ			1.5uφ	500nφ	100 φ	10 φ	10 φ	75 Δ	175m	N-D	Si	150S	TO3	Kφ	
52	2N1316	10.0MSΔ	1000nφ			800n	1.0u	200m	2.5 φ	1.0m	95		P-A	Ge	85J	TO5	A	
53	2N5049	10.0MSΔ	1000n			2.5u	1.0u	100 φ	4.0 φ	15 Δ	250m		N	Si	200S	TO61	Aφ	
54	2N6576	10MSΔ	1.0u	150n	2.0u	7.0u	87 φ	3.0 φ	4.0 φ	2.0kΔ	280m		N	Si	200J	TO3	Kφ	
55	2N6577	10MSΔ	1.0u	150n	2.0u	7.0u	87 φ	3.0 φ	4.0 φ	2.0kΔ	280m		N	Si	200J	TO3	Kφ	
56	2N6578	10MSΔ	1.0u	150n	2.0u	7.0u	87 φ	3.0 φ	4.0 φ	2.0kΔ	280m		N	Si	200J	TO3	Kφ	
57#	2SC2139	10MS	1.0u			2.0u	1.0u	100 φ	5.0 φ	5.0 φ		300m#	N	Si	150J	TO3		
58#	2SC2200	10MS	1.0u			2.0u	1.0u	40 φ	5.0 φ	3.0 φ		500m#	N	Si	150J	TO3		
59#	BDY180T2	10MS	1.0uφ				88		2.0 φ	15 Δ			ND			TO3		
60#	BDY181T2	10MS	1.0uφ				88		2.0 φ	15 Δ			ND			TO3		
61#	BDY182T2	10MS	1.0uφ				88		2.0 φ	15 Δ			ND			TO3		
62#	BDY183T2	10MS	1.0uφ				88		2.0 φ	15 Δ			ND			TO3		
63#	BDY184T2	10MS	1.0uφ				88		2.0 φ	15 Δ			ND			TO3		
64#	BDY185T2	10MS	1.0uφ				88		2.0 φ	15 Δ			ND			TO3		
65	MJ4360	10MS	1.0u	100n	4.0u	700n	1.4	2.0 φ	500mφ	8.0 Δ		21p	N	Si	150J	TO66	Cφ	
66	MJ4361	10MS	1.0u	100n	4.0u	700n	1.4	2.0 φ	500mφ	8.0 Δ		21p	N	Si	150J	TO66	Cφ	
67	MJE13002	10MS	1.0u	100n	4.0u	700n	1.4	2.0 φ	500mφ	8.0 Δ#	2.0 #	21p	N	Si	150J	TO128	D	
68	MJE13003	10MS	1.0u	100n	4.0u	700n	1.4	2.0 φ	500mφ	8.0 Δ#	2.0 #	21p	N	Si	150J	TO128	D	
69#	SML4005	10MSΔ	1.0uφ			2.0u	2.5uφ	250	1.0 φ	4.0 φ	8.0 Δ#		2.0 #		200J	TO3	Cφ	
70#	2SC2738	11MS	1.0uφ			3.0u	1.0u	25	5.0 φ	1.0 φ	8.0 Δ		N	Si	150J	B28	D	
71#	2SC2739	11MS	1.0uφ			3.0u	1.0u	40	5.0 φ	1.0 φ	8.0 Δ		N	Si	150J	B28	D	
72#	2SC2740	11MS	1.0uφ			2.5u	1.0u	100	5.0 φ	1.0 φ	8.0 Δ		N	Si	150J	B38	D	
73	2N316	12M	1.0uφ			800n	1.0u	100m	200mφ	200mφ	30 Δ		P-A	Ge	85S	TO5	A	
74#	2SC2199	12MS	1.0u			3.0u	1.0u	60 φ	4.0 φ	1.0 φ	600		N-EM	Si	150J	TO3	Cφ	
75#	BUY20	15MSΔ	1.0uφ			3.0u	1.0u	85 φ	5.0 φ	3.0 φ	40 #		N	Si	175J	TO3	Cφ	
76#	BUY21	15MSΔ	1.0uφ			3.0u	1.0u	85 φ	5.0 φ	3.0 φ	40 #		N	Si	175J	TO3	Cφ	
77#	BUY22	15MSΔ	1.0uφ			3.0u	1.0u	85 φ	5.0 φ	3.0 φ	40 #		N	Si	175J	TO3	Cφ	
78#	BUR52	16MS	1.0uφ			2.0u	60u	350	4.0 φ	5.0 φ	2.0 Δ		NPE	Si	200J	TO3	C	
79	2N3601	20.0MSΔ	1000n	300n	2.0u	700n	500m	1.5 φ	1.0 φ	180 Δ	330m		Ge	100J	R179q			
80	2N3602	20.0MSΔ	1000n	300n	2.0u	700n	750m	1.5 φ	1.0 φ	180 Δ	330m		Ge	100J	T55			
81	2N3603	20.0MSΔ	1000n	300n	2.0u	700n	500m	1.5 φ	1.0 φ	180 Δ	330m		Ge	100J	R179q			
82	JAN2N8051	20.0MSΔ	1000n	300n	2.0u	700n	750m	1.5 φ	1.0 φ	180 Δ	330m		P-DA	Ge	100J	T55		
83	JAN2N8052	20MSΔ	1.0uφ			6.0uφ	75 φ	3.0 φ	12 φ	150 #Δ	333m#	300pZ	P					



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								Vcb (V)	Ie (A)	hFE								
1	2N3389	36.0MΔ	1000n	200n	400n	1.2u	600m	1.5	2.5m	60 Δ	400	35p	N	Si	175A	T05	A	
2	JAN2N5302	40MΔ	1.0u		2.0u	3.0u	115	10	1.0	40 Δ		800p	N	Si	200J	F6c	C	
3	JAN2N5303	40MΔ	1.0u		2.0u	3.0u	115	10	1.0	40 Δ		800p	N	Si	200J	F6c	C	
4	2N5560	40.0MΔ	1.0u		2.0u	2.0u	150	2.0	15	30 Δ	.05	600p	N	Si	200J	T063	C	
5	JAN2N5745	40MΔ	1.0u		2.0u	3.0u	115	10	1.0	40 Δ		1.0k	N	Si	200A	T03	A	
6#	BUR13	40MΔ	1.0u		1.5u	50u	250	5.0	25	20 Δ			NPE	Si	200J	T063	A	
7	2N5264	50MΔ	1.0u		2.5u	1.5u	87	5.0	1.0	30 Δ		80p	N	Si	200J	T03	C	
8	2N6032	50MΔ	1.0u		1.5u	500n	80	2.6	50	10 Δ			N	Si	200J	F11	C	
9	2N6033	50MΔ	1.0u		1.5u	500n	80	2.0	40	10 Δ			N	Si	200J	F11	C	
10#	BUY18S	50MΔ	1.0u		1.0u	1.0u	50	5.0	1.0	40 #	200m#	55p	N-PE	Si	175J	T03	C	
11	JAN2N388	60MΔ	1.0u		700n	700n	150m	750m	200m	30 Δ		20p	N	Ge	100S	T05	A	
12	JAN2N3439	75MΔ	1.0u			10u	5.0	10	2.0m	30 Δ		10p	N	Si	200S	T05	A	
13	JAN2N3440	75MΔ	1.0u			10u	5.0	10	2.0m	30 Δ		10p	N	Si	200S	T05	A	
14	JAN2N5415	75MΔ	1.0u			10u	10	10	50m	30 Δ		15p	N	Si	200J	T05	A	
15	JAN2N5416	75MΔ	1.0u			10u	10	10	50m	30 Δ		15p	P	Si	200J	T05	A	
16	MM2261	100MΔ	1.0u			1.0u	5.0	10	300m	25 Δ	3.3	12p	NAN	Si	200J	T05	A	
17	MM2262	100MΔ	1.0u			1.0u	5.0	10	500m	25 Δ	2.0	12p	NAN	Si	200J	T05	A	
18	MM2263	100MΔ	1.0u			1.0u	5.0	10	750m	25 Δ	1.3	12p	NAN	Si	200J	T05	A	
19#	2SC408	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	40	.20	500p	P	Si	150J	F6	B	
20#	2SC410	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	40	.20	500p	P	Si	150J	F6	B	
21#	2SC412	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	40	.20	500p	P	Si	150J	F6	B	
22#	2SC432	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	40	.20	1m	P	Si	150J	F10	B	
23#	2SC434	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	40	.20	1m	P	Si	150J	F10	B	
24#	2SC436	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	40	.20	1m	P	Si	150J	F10	B	
25#	BSR60	1.0G‡	1.0u†		1.5u†	1.5u†	800m	10	500m	2.0k	2.2		PPL	Si	150J	R221a	B	
26#	BSR61	1.0G‡	1.0u†		1.5u†	1.5u†	800m	10	500m	2.0k	2.2		P-PL	Si	150J	R221a	B	
27#	BSS62	1.0G‡	1.0u†		1.5u†	1.5u†	800m	10	150m	1.0k	1.8		P-PL	Si	200J	TO39	KC	
28	JAN2N425	2.50MΔ	1050n			1.2u	150m	250m	1.0m	40	400m	20p	P	Ge	100S	T05	A	
29	JAN2N426	3.00MΔ	1050n			1.1u	150m	250m	1.0m	60	400m	20p	P	Ge	100S	T05	A	
30	2N425	4.00M	1050n			1.2u	170m	250m	1.0m	30	3.2	14p	P-FA	Ge	85J	T05	A	
31	D7ST4013(A)		1.1u	300n	4u	750n	3k%	2.5	250	5			N	Si	200S			
32	D7ST4513(A)		1.1u	300n	4u	750n	3k%	2.5	250	5			N	Si	200S			
33	TIP35D	3.0MΔ	1.1u†			800n†	125	10	1.0	25 Δ			P-DM	Si	150J	B19	B	
34	TIP35E	3.0MΔ	1.1u†			800n†	125	10	1.0	25 Δ			P-DM	Si	150J	B19	B	
35	TIP36	3.0MΔ	1.1u†			800n†	125	10	1.0	25 Δ			P-DM	Si	150J	B19	B	
36	TIP36A	3.0MΔ	1.1u†			800n†	125	10	1.0	25 Δ			P-DM	Si	150J	B19	B	
37	TIP36B	3.0MΔ	1.1u†			800n†	125	10	1.0	25 Δ			P-DM	Si	150J	B19	B	
38	TIP36C	3.0MΔ	1.1u†			800n†	125	10	1.0	25 Δ			P-DM	Si	150J	B19	B	
39	SGS13006(A)	4.0MΔ	1.1u†		3.0u	700n	120%	5.0	2.0	8.0 Δ			NEM	Si	150J	B81	B	
40	SGS13007(A)	4.0MΔ	1.1u†		3.0u	700n	120%	5.0	2.0	8.0 Δ			NEM	Si	150J	B81	B	
41	SGS13007A(A)	4.0MΔ	1.1u†		3.0u	700n	120%	5.0	2.0	8.0 Δ			NEM	Si	150J	B81	B	
42	D80T257510	7.0MΔ	1.1u	110m	3.0u	500m	590	2.5	75	10 Δ	.02	2.5m	N	Si	200J	T159		
43	D80T259010	7.0MΔ	1.1u	110m	3.0u	500m	590	2.5	90	10 Δ	.03	2.5m	N	Si	200J	T159		
44	D80T307510	7.0MΔ	1.1u	110m	3.0u	500m	590	2.5	75	10 Δ	.02	2.5m	N	Si	200J	T159		
45	D80T309010	7.0MΔ	1.1u	110m	3.0u	500m	590	2.5	90	10 Δ	.03	2.5m	N	Si	200J	T159		
46	D80T357510	7.0MΔ	1.1u	110m	3.0u	500m	590	2.5	75	10 Δ	.02	2.5m	N	Si	200J	T159		
47	D80T405010	7.0MΔ	1.1u	120n	3.0u	500m	590	2.5	50	10 Δ	.25m	2.5n	N	Si	200J	T159		
48	D80T455010	7.0MΔ	1.1u	120n	3.0u	500m	590	2.5	50	10 Δ	.25m	2.5n	N	Si	200J	T159		
49	D82T257510	7.0MΔ	1.1u	110m	3.0u	500m	1.1k	2.5	75	10 Δ	.02	2.5m	N	Si	200J	X187		
50	D82T259010	7.0MΔ	1.1u	110m	3.0u	500m	1.1k	2.5	90	10 Δ	.03	2.5m	N	Si	200J	X187		
51	D82T307510	7.0MΔ	1.1u	110m	3.0u	500m	1.1k	2.5	75	10 Δ	.02	2.5m	N	Si	200J	X187		
52	D82T309010	7.0MΔ	1.1u	110m	3.0u	500m	1.1k	2.5	90	10 Δ	.03	2.5m	N	Si	200J	X187		
53	D82T357510	7.0MΔ	1.1u	110m	3.0u	500m	1.1k	2.5	75	10 Δ	.02	2.5m	N	Si	200J	X187		
54	D82T405010	7.0MΔ	1.1u	120n	3.0u	500m	1.1k	2.5	50	10 Δ	.25m	2.5n	N	Si	200J	X187		
55	D82T455010	7.0MΔ	1.1u	120n	3.0u	500m	1.1k	2.5	50	10 Δ	.25m	2.5n	N	Si	200J	X187		
56	2N5957	10MΔ	1.1u			1.2u	150	10	1.0	40 Δ		90m	N	Si	200J	T061	A	
57	2N5958	10MΔ	1.1u			1.2u	150	10	1.0	40 Δ		100m	N	Si	200J	T061	A	
58	2N5959	10MΔ	1.1u			1.2u	150	10	1.0	40 Δ		90m	N	Si	200J	T061	A	
59	2N5960	10MΔ	1.1u			1.2u	150	10	1.0	40 Δ		100m	N	Si	200J	T061	A	
60	2N5966	10MΔ	1.1u			1.5u	187	10	1.0	40 Δ		80m	N	Si	200J	T063	A	
61	2N5967	10MΔ	1.1u			1.5u	187	10	1.0	40 Δ		80m	P	Si	200J	T063	A	
62	2N5968	10MΔ	1.1u			1.5u	187	10	1.0	40 Δ		80m	N	Si	200J	T063	A	
63	2N5969	10MΔ	1.1u			1.5u	187	10	1.0	40 Δ		80m	P	Si	200J	T063	A	
64	JAN2N5957	80MΔ	1.1u			1.2u	100	10	1.0	40 Δ		90m	N	Si	200J	T50a	A	
65	JAN2N5958	80MΔ	1.1u			1.2u	100	10	1.0	40 Δ		90m	N	Si	200J	T50a	A	
66	JAN2N5959	80MΔ	1.1u			1.2u	100	10	1.0	40 Δ		90m	N	Si	200J	T50a	A	
67	JAN2N5960	80MΔ	1.1u			1.2u	100	10	1.0	40 Δ		90m	N	Si	200J	T50a	A	
68	JAN2N5966	80MΔ	1.1u			1.5u	125	10	2.0	40 Δ		66m	N	Si	200J	T063	A	
69	JAN2N5967	80MΔ	1.1u			1.5u	125	10	2.0	40 Δ		66m	N	Si	200J	T063	A	
70	JAN2N5968	80MΔ	1.1u			1.5u	125	10	2.0	40 Δ		66m	N	Si	200J	T063	A	
71	JAN2N5969	80MΔ	1.1u			1.5u	125	10	2.0	40 Δ		66m	N	Si	200J	T063	A	
72	2N315A		1.2u		600n	1.0u	150m	250m	1.0m	25 Δ	1.5		Ge	100S	T05	A		
73	2N315B		1.2u		600n	1.0u	150m	250m	1.0m	25 Δ	1.5		Ge	100S	T05	A		
74#	BUR21		1.2u			1.8u	0.4u	200	4	25	10 Δ		PE	Si	200J	T03	C	
75#	BUR50		1.2u			2.0u	0.7u	350	4	25	15 Δ		PE	Si	200J	T03	C	
76	D7ST4015(A)		1.2u	300n	4u	750n	3k%	2.5	300	5			N	Si	200S			
77	DA3F3		1200n			30u	187	10	1.0	25 Δ			N	Si	100J	T7	C	
78	MJ10022		1.2u	200n	2.5u	900n	250	5.0	10	50 Δ		600p	N	Si	200J	T03	C	
79	MJ10023		1.2u	200n	2.5u	900n	250	5.0	10	50 Δ		600p	N	Si	200J	T03	C	
80	2N1067	750kΔ	1.2u	200n	700n	900n	2.5	4.0	200m	35	10		N-D	Si	175A	T08	A	
81	2N1092	750kΔ	1.2u	200n	700n	900n	1.0	4.0	200m	35	10		N-D	Si	175A	T05	A	
82	SDT55474	1.5MΔ	1.2u		4.0u	1.6u	620	5.0	10	10 Δ	100m		N-PL	Si	200J	T063	A	
83	SDT55476	1.5MΔ	1.2u		4.0u	1.6u	620	5.0	10	10 Δ	100m		N-PL	Si	200J	T063	A	
84#	2SC2831A	2.5MΔ	1.2u		3.0u	1.2u	25	5.0	10	8.0 Δ			N	Si	150J	B26	D	
85#	2SC2832A	3.0MΔ	1.2u		3.0u	1.2u	40	5.0	1.0	8.0 Δ			N	Si	150J	B26	D	
86#	2SD80	3.00M	1200n†	120n†														

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	3] TYPE No.	2] fab (Hz)	1] MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C E A D E
								Vcb (V)	le (A)	hFE								
1#	BUX21	8.0MΔ	1.2u		1.8u	40u	350	2.0	12	20 Δ			NPE	Si	200J	T03	C	
2#	BUX40	8.0MΔ	1.2u		1.0u	250u	120	4.0	15	8.0 Δ			NPE	Si	200J	T03	C	
3#	2N1969	10MΔ	1.2u		650n	650n	150m	250m	1.0m	200 ▽		250	NPE	Ge	85J	T05	C	
4#	2SC1111	10MΔ	1.2u	100n	2.1u	450u	50	4.0	3.0	60		500m	N-D	Si	150J	T03	C	
5#	2SC1112	10MΔ	1.2u	100n	2.1u	450u	50	4.0	3.0	60		500m	N-D	Si	150J	T03	C	
6#	2SC1115	10MΔ	1.2u	100n	2.7u	460u	100	4.0	3.0	60		500m	N-D	Si	150J	T03	C	
7#	2SC1116	10MΔ	1.2u	100n	2.7u	460u	100	4.0	3.0	60		500m	N-D	Si	150J	T03	C	
8#	BUX41N	1.0MΔ	1.3u		1.5u	0.8u	120	4	12	8 Δ			N	PE	200J	T03	C	
9#	2SD148	1.2MΔ	1.3u		2.5u	3.3u	20	4.0	2.0	35		500m	N-D	Si	175J	F12a	A	
10#	2SD15	2.00MΔ	1.30u	160n	2.5u	2.6u	80	4.0	1.5	30		1.0	N-D	Si	150J	T03	C	
11#	2SD16	2.00MΔ	1.30u	160n	2.5u	2.6u	80	4.0	1.5	30		1.0	N-D	Si	150J	T03	C	
12#	2N357	6.00MΔ	1.30u		700n	1.2u	100m	.25	200m	30			N	Ge	85S	T05	A	
13#	BUV22	8.0MΔ	1.3u		2.0u	500u	250	4.0	10	20 Δ#			N-DM	Si	200J	T03	C	
14#	BUX22	10MΔ	1.3u		2.0u	50u	350	4.0	10	20 Δ			NPE	Si	200J	T03	C	
15#	2SD417	30MΔ	1.3u		800n	600n	75	5.0	3.0	25		400m	N-DM	Si	175J	T03	C	
16#	2SD422	30MΔ	1.3u		800n	600n	30	5.0	3.0	25		400m	N-DM	Si	175J	T066	C	
17#	DT4335		1.4u	0.1u	0.9u	8.0u	100	2.0	5.0	100 Δ			NE	Si	175J	T0204	C	
18#	DT4336		1.4u	0.1u	0.9u	8.0u	100	2.0	5.0	100 Δ			NE	Si	175J	T0204	C	
19#	DT5335		1.4u	0.1u	0.9u	8.0u	100	2.0	5.0	100 Δ			NE	Si	175J	T0204	C	
20#	DT5336		1.4u	0.1u	0.9u	8.0u	100	2.0	5.0	100 Δ			NE	Si	175J	T0204	C	
21#	2SD163	2.00M	1.40u	160n	2.8u	3.2u	100	4.0	5	30 ▽		.30	N-D	Si	150J	T03	C	
22#	2SD164	2.00M	1.40u	160n	2.8u	3.2u	100	4.0	5	30 ▽		.30	N-D	Si	150J	T03	C	
23#	2SD165	2.00M	1.40u	160n	2.8u	3.2u	100	4.0	5	30 ▽		.30	N-D	Si	150J	T03	C	
24#	2SD166	2.00M	1.40u	160n	2.8u	3.2u	100	4.0	5	30 ▽		.30	N-D	Si	150J	T03	C	
25	SDT55456	2.0MΔ	1.4u		2.8u	1.3u	625	5.0	40	10 Δ		40m	N-PL	Si	200J	T063	A	
26	SDT55460	2.0MΔ	1.4u		2.8u	1.3u	625	5.0	40	10 Δ		40m	N-PL	Si	200J	T063	A	
27	SDT55462	2.0MΔ	1.4u		2.6u	1.3u	625	5.0	30	8.0 Δ		50m	N-PL	Si	200J	T063	A	
28	SDT55464	2.0MΔ	1.4u		2.6u	1.3u	625	5.0	30	8.0 Δ		50m	N-PL	Si	200J	T063	A	
29	SDT55556	2.0MΔ	1.4u		2.6u	1.3u	625	5.0	40	10 Δ		37m	N-PL	Si	200J	T063	A	
30	SDT55560	2.0MΔ	1.4u		2.6u	1.3u	625	5.0	40	10 Δ		37m	N-PL	Si	200J	T063	A	
31	SDT55956	2.0MΔ	1.4u		2.6u	1.3u	700	5.0	40	10 Δ		37m	N-PL	Si	200J	T0114	A	
32	SDT55960	2.0MΔ	1.4u		2.6u	1.3u	700	5.0	40	10 Δ		37m	N-PL	Si	200J	T0114	A	
33#	2G527	3.30M	1.40u	420n	1.5u	1.1u	700	225	1.0m	20		95	P-A	Ge	85J	T05	C	
34	2N823	4.0MΔ	1.4u				75m	250m	20m	40 Δ		8.3	N	Ge	85S	R180	A	
35	2N404	13.0M	1.40u				150m	.20	24	40		6.3	P-A	Ge	85A	T05	A	
36	2N1605	14.0M	1.40u				150m	.25	20m	125			N-A	Ge	100J	T05	A	
37#	2G1027	3.30M	1.40u	420n	1.4u	1.3u	225m	1.0	20m	95		27p	P-A	Ge	85J	T05	C	
38#	2SC1228		1.5u		1.6u	700n	100	5.0	5.0	15		300m	N-DM	Si	175J	T03	C	
39#	2SC1299		1.5u		2.5u	3.5u	200	5.0	10	40		100m	N-DM	Si	175J	F1a	C	
40#	2SD646		1.5u		8.0u	5.0u		5.0	30	700		40m	N-DM	Si	150J	F51	A	
41#	2SD832		1.5u		5.0u	2.0u	400	5.0	30	700		40m	N-DM	Si	175J	F52	C	
42#	BUR20		1.5u		1.2u	0.3u	200	4	50	10 Δ			N	PE	200J	T03	C	
43#	BUX11N		1.5u		1.5u	0.5u	150	4	15	20 Δ			N	PE	200J	T03	C	
44#	ESM4014		1.5u		3.0u	1.0u	750		90	5.0 Δ			N	ND				
45#	ESM4015		1.5u		3.0u	1.0u	750		70	5.0 Δ			N	ND			MU86	
46#	ESM4016		1.5u		5.0u	2.0u	550		40	5.0 Δ			N	ND				
47#	ESM4017		1.5u		5.0u	2.0u	550		35	5.0 Δ			N	ND				
48#	MJ10008		1.5u	250n	2.0u	600n	175	5.0	5.0	40 Δ		200m	N	Si	200J	Y204a	C	
49#	MJ10009		1.5u	250n	2.0u	600n	175	5.0	5.0	40 Δ		200m	N	Si	200J	Y204a	C	
50	TIP125		1.5u			8.5u	2.0	3.0	500m	1.0kΔ#		800m#	N	P	Si	150J	B1	C
51	TIP126		1.5u			8.5u	2.0	3.0	500m	1.0kΔ#		800m#	N	P	Si	150J	B1	C
52	TIP127		1.5u			8.5u	2.0	3.0	500m	1.0kΔ#		800m#	N	P	Si	150J	B1	C
53	TIP160		1.5u	40n	2.2u	2.6u	3.0	2.2	4.0	200 Δ			N	Si	150J	B3	B	
54	TIP161		1.5u	40n	2.2u	2.6u	3.0	2.2	4.0	200 Δ			N	Si	150J	B3	B	
55	TIP162		1.5u	40n	2.2u	2.6u	3.0	2.2	4.0	200 Δ			N	Si	150J	B3	B	
56	TIP660		1.5u	40n	2.2u	2.6u	5.5	2.2	4.0	200 Δ			N	Si	200S	T03	C	
57	TIP661		1.5u	40n	2.2u	2.6u	5.5	2.2	4.0	200 Δ			N	Si	200S	T03	C	
58	TIP662		1.5u	40n	2.2u	2.6u	5.5	2.2	4.0	200 Δ			N	Si	200S	T03	C	
59	IR3773	1.0MΔ	1.5u		2.0u	1.8u	200	4.0	1.0	40 TΔ		100m	N-D	Si	200J	T03	C	
60	MJ3773	1.0MΔ	1.5u		2.0u	1.8u	200	4.0	1.0	40 TΔ		100m	N-D	Si	200J	T03	C	
61	MJ6302	1.0MΔ	1.5u		2.0u	1.8u	150	4.0	1.0	40 TΔ		100m	N-D	Si	200J	T03	C	
62	2N2580M	2.00MΔ	1.50u		3.2u	3.2u	150	5.0	10	4.0 Δ		140m	N-D	Si	150J	T03	C	
63#	2G526	3.00M	1.50u	450n	1.4u	1.4u	700	225	1.0m	20		73	P-A	Ge	85J	T05	C	
64	2N6510	3.0MΔ	1.5u	200n	5.0u	1.5u	68	3.0	3.0	10 Δ#		500m	N	Si	200J	T03	C	
65	2N6511	3.0MΔ	1.5u	200n	5.0u	1.5u	68	3.0	4.0	10 Δ#		375m	N	Si	200J	T03	C	
66	2N6512	3.0MΔ	1.5u	200n	5.0u	1.5u	68	3.0	4.0	10 Δ#		375m	N	Si	200J	T03	C	
67	2N6513	3.0MΔ	1.5u	200n	5.0u	1.5u	68	3.0	4.0	10 Δ#		375m	N	Si	200J	T03	C	
68	2N6514	3.0MΔ	1.5u	200n	5.0u	1.5u	68	3.0	5.0	10 Δ#		300m	N	Si	200J	T03	C	
69#	2SC1142	3.0MΔ	1.5u		3.0u	125	5.0	5.0	5.0	15 #		400m	N-P	Si	150J	T03	C	
70#	2SC1143	3.0MΔ	1.5u		3.0u	125	5.0	5.0	5.0	15 #		400m	N-P	Si	150J	T03	C	
71	2N1343	4.0MΔ	1.5u			150m	350m	10m	15				P-A	Ge	85J	T05	A	
72	2N5838	5.0MΔ	1.5u		3.0u	1.5u	57	3.0	3.0	8.0 Δ#			N	Si	200J	T03	C	
73	2N5839	5.0MΔ	1.5u		3.7u	1.5u	57	3.0	2.0	10 Δ#			N	Si	200J	T03	C	
74	JAN2N6283	8.0MΔ	1.5u			7.5u	175	3.0	20	500 Δ		200m	N	Si	175J	T03	CF	
75	JAN2N6284	8.0MΔ	1.5u			7.5u	175	3.0	20	500 Δ		200m	N	Si	175J	T03	CF	
76	JAN2N6286	8.0MΔ	1.5u			7.5u	175	3.0	20	500 Δ		200m	N	Si	175J	T03	CF	
77	JAN2N6287	8.0MΔ	1.5u			7.5u	175	3.0	20	500 Δ		200m	N	Si	175J	T03	CF	
78#	2SC1136	8.0MΔ	1.5u			5.0u	200	5.0	10	20 #		100m	N-P	Si	150J	F29	C	
79#	2SC1140	8.0MΔ	1.5u			5.0u	150	5.0	7.5	15 #		266m	N-P	Si	150J	T03	C	
80#	2SC1141	8.0MΔ	1.5u			5.0u	150	5.0	7.5	15 #		266m	N-P	Si	150J	T03	C	
81#	BUV18	8.0MΔ	1.5u		1.2u	500u	250	4.0	80	10 Δ#			N-DM	Si	200J	T03	C	
82#	BUV19	8.0MΔ	1.5u		1.2u	400u	250	4.0	80	10 Δ#			N-DM	Si	200J	T03	C	
83#	BUV20	8.0MΔ	1.5u		1.2u	300u	250	5.0	50	10 Δ#			N-DM	Si	200J	T03	C	
84#	BUW38	8.0MΔ	1.5u		1.2u	500u	150	4.0	40	10 Δ#			N-DM	Si	200J	T03	C	
85#	BUW39	8.0MΔ	1.5u		1.2u	500u	150	4.0	30	10 Δ#			N-DM	Si	200J	T03	C	
86#	BUX10	8.0MΔ	1.5u		1.2u	200u	150	4.0	2.0	10 Δ		60m	N-DM	Si	200J	T03	C	
87#	BUX11	8																

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	JAN2N3792	20MSΔ	1.5u			2.0u	85	4.0	10	5.0	500p		P	Si	200A	TO3	C0	
2	2N5540	20MSΔ	1.5u	1.5u		1.5u	50	5.0	5.0	20			N	Si	200J	TO61	A0	
3	JAN2N5683	20MSΔ	1.5u		2.0u	3.0u	171	5.0	5.0	5.0	2.0n		P	Si	200S	F6c	C0	
4	JAN2N5684	20MSΔ	1.5u		2.0u	3.0u	171	5.0	5.0	5.0	2.0n		P	Si	200S	F6c	C0	
5	JAN2N5685	20MSΔ	1.5u		2.0u	3.0u	171	5.0	5.0	5.0	1.2n		N	Si	200S	F6r	C0	
6	JAN2N5686	20MSΔ	1.5u		2.0u	3.0u	171	5.0	5.0	5.0	1.2n		N	Si	200S	F6r	C0	
7	JAN2N5838	20MSΔ	1.5u			4.5u	100	5.0	500m	20	333m	150p	N	Si	200J	TO3	C0	
8	JAN2N5839	20MSΔ	1.5u			5.2u	100	5.0	500m	20	750m	150p	N	Si	200J	TO3	C0	
9	2N6594	25MSΔ	1.5u	400n	5.0u	1.5u	57	4.0	12	5.0	375m	1.0n	N	Si	200J	TO3	C0	
10#	2SC1301	25MS	1.5u		2.5u	1.0u	200	5.0	10	40	100m		N-DM	Si	175J	F1a	C0	
11#	2SD540	25MS	1.5u		3.0u	1.5u	200	5.0	10	40	133m	450p	N-ME	Si	175J	F1a	C0	
12#	2SD541	25MS	1.5u		3.0u	1.5u	200	5.0	10	40	133m	450p	N-ME	Si	175J	F1a	C0	
13	JAN2N3739	60MSΔ	1.5u			3.5u	10	10	10m	30	10	20p	N	Si	175A	TO66	C0	
14	JAN2N6060	80MSΔ	1.5u			2.0u	150	10	2.0	40			N	Si	200J	TO63	A0	
15	JAN2N6061	80MSΔ	1.5u			2.0u	150	10	2.0	40			N	Si	200J	TO63	A0	
16	JAN2N6062	80MSΔ	1.5u			2.0u	150	10	2.0	40			N	Si	200J	TO63	A	
17	JAN2N6063	80MSΔ	1.5u			2.0u	150	10	2.0	40			N	Si	200J	TO63	A	
18#	2G1026	3.00M	1540n	450n	1.4u	1.4u	225m	1.0	20m	73		27p	P-A	Ge	85J	TO5	C0	
19	2N1068	750kΔ	1.8u	200n	1.0u	1.8u	5.0	4.0	750m	38	2.6		N-D	Si	175A	TO8	A0	
20#	2SD124AH	1.0M	1.6u		2.2u	5.0u	60	4.0	1.5	40	200m		N-D	Si	175J	F6h	C0	
21#	2SD125AH	1.0M	1.6u		2.2u	5.5u	60	4.0	1.5	40	200m		N-D	Si	175J	F6h	C0	
22#	2SD126H	1.0M	1.6u		2.2u	6.0u	60	4.0	1.5	40	1.0		N-D	Si	175J	F6h	C0	
23	2N5840	5.0MSΔ	1.7u		3.0u	1.5u	57	3.0	2.0	10			N	Si	200J	TO3	C0	
24	JAN2N5840	20MSΔ	1.75u			4.5u	100	5.0	500m	20	750m	150p	N	Si	200J	TO3	C0	
25#	2SD329		1.8u		3.0u	3.5u	800m	4.0	1.0	40	500m		N-D	Si	175J	TO39	A	
26	MJ10024		1.8u	.30u	5.0u	1.8u	250	5.0	5.0	50		500p	N	Si	200J	F59	C	
27	MJ10025		1.8u	.30u	5.0u	1.8u	250	5.0	5.0	50		500p	N	Si	200J	F59	C	
28	2N1069	500kΔ	1.8u	200n	800n	1.4u	25	4.0	1.5	20	2.0		N-D	Si	175A	TO3	C0	
29	2N1070	500kΔ	1.8u	200n	800n	1.4u	25	4.0	1.5	20	670m		N-D	Si	175A	TO3	C0	
30	2N315	5.00M	1.8u		600n	1.0u	100m	2.0	100m	15		14p	P-A	Ge	85S	TO5	A	
31	2N587		2.0u			2.0u	150m	5.0	200m	20		30p	N	Ge		TO5	A	
32#	2SB853K		2.0u			8u	100	3	8	1k			N	PE	150J	F57	D	
33#	2SB854K		2.0u			8u	125	3	8	1k			N	PE	150J	F57	D	
34#	2SD472H		2.0u		8.0u	9.0	80	2.0	5.0	1.0k	150m		N-D	Si	150J	TO3	KF	
35#	2SD698		2.0u			3.0u	2.5k	5.0	800	100	4.2m		N-DM	Si	125J	X178	C0	
36#	2SD829K		2.0u			9u	100	2	15	4kt			ND	Si	150J	F53	C	
37#	2SD991K		2.0u			23u	50	2	4	500			ND	Si	150J	Y220b	D	
38#	2SD1113K		2.0u			23u	40	2	4	500			ND	Si	150J	Y220b	D	
39#	2SD1114K		2.0u			23u	50	2	4	500			ND	Si	150J	Y220b	D	
40#	2SD1129K		2.0u			8u	100	3	8	1k			NE	Si	150J	F57	D	
41#	2SD1130K		2.0u			8u	125	3	10	1k			NE	Si	150J	F57	D	
42#	2SD1141K		2.0u			23u	40	2	4	500			ND	Si	150J	Y220b	D	
43#	2SD1201		2.0u		2u	3u	100	3	5	200			N	Si	150J	TO3	C0	
44#	2SD1203		2.0u		2u	3u	100	3	5	200			N	Si	150J	TO3	C0	
45	MJ10013		2.0u	200n	4.0u	1.0u	175	5.0	5.0	20	250m	350p	N	Si	200J	TO3	KF	
46	MJ10014		2.0u	200n	4.0u	1.0u	175	5.0	5.0	20	250m	350p	N	Si	200J	TO3	KF	
47	MJE8500		2.0u	.20u	4.0u	2.0u	65	5.0	500m	7.5			N	Si	125J	Y220	X	
48	MJE8501		2.0u	.20u	4.0u	2.0u	65	5.0	500m	7.5			N	Si	125J	Y220	X	
49	MJE8502		2.0u	.20u	4.0u	2.0u	80	5.0	1.0	7.5			N	Si	125J	Y220	X	
50	MJE8503		2.0u	.20u	4.0u	2.0u	80	5.0	1.0	7.5			N	Si	125J	Y220	X	
51#	WT5301		2.0u		3.0u	2.0u	215	2.0	25	8.0			N	Si	150J	TO63		
52#	WT5303		2.0u		3.0u	1.5u	215	2.0	15	12			N	Si	150J	TO63		
53#	WT5304		2.0u		3.0u	1.5u	215	2.0	15	10			N	Si	150J	TO63		
54#	WT5305		2.0u		3.0u	1.5u	215	2.0	15	8.0			N	Si	150J	TO63		
55#	WT5306		2.0u		3.0u	1.5u	215	2.0	15	10			N	Si	150J	TO63		
56#	WT5503		2.0u		5.0u	1.5u	.85k	2.0	50	12			N	Si	150J	T169		
57#	WT5504		2.0u		5.0u	1.5u	.85k	2.0	50	10			N	Si	150J	T169		
58#	WT5505		2.0u		5.0u	1.5u	.85k	2.0	50	8			N	Si	150J	T169		
59#	WT5506		2.0u		5.0u	1.5u	.85k	2.0	50	10			N	Si	150J	T169		
60#	BDY20	800kΔ	2.0u		2.0u	2.5u	115	4.0	4.0	20	275m	250p	N-D	Si	200J	TO3	C0	
61	2N2858	1.00MSΔ	2000n	400n		5u	600m	4.0	1.0	20	.30		N-D	Si	200J	TO5	A0	
62	2N2859	1.00MSΔ	2000n			5u	600m	4.0	1.0	20	.30		N-D	Si	200J	TO5	A0	
63	PT7509	1.0M	2.0u	2.0n	2.0u	1.5u	350	2.0	30	10	100m	1.8n	N-DM	Si	200J	TO63		
64	PT7510	1.0M	2.0u	2.0n	2.0u	1.5u	350	2.0	40	10	100m	1.8n	N-DM	Si	200J	TO63		
65	PT7511	1.0M	2.0u	2.0n	2.0u	1.5u	350	2.0	50	10	100m	1.8n	N-DM	Si	200J	TO63		
66#	DT1311	1.5MS	2.0u	0.3u	2.0u	1.5u	1.0	4.0	200m	60		150p	N-D	Si	200A	TO5		
67#	DT1312	1.5MS	2.0u	0.3u	2.0u	1.5u	1.0	4.0	200m	60		150p	N-D	Si	200A	TO5		
68	SDT55470	1.5MSΔ	2.0u		3.5u	1.8u	620	5.0	20	10	50m		N-PL	Si	200J	TO63	A0	
69	SDT55472	1.5MSΔ	2.0u		3.5u	1.8u	620	5.0	20	10	50m		N-PL	Si	200J	TO63	A0	
70#	2G525	2.50M	2000n	500n	1.2u	1.5u	225m	2.25	1.0m	20	52	27p	P-A	Ge	85J	TO5		
71#	2G1025	2.50M	2000n	550n	1.3u	1.5u	100	1.0	20m	52		27p	P-A	Ge	85J	TO5		
72	2N6249	2.5MSΔ	2.0u		3.5u	1.0u	100	3.0	10	10	150m		N	Si	200J	TO3	C0	
73	JAN2N8249	2.5MSΔ	2.0u			4.5u	6.0	3.0	10	10	150m	500p	N	Si	200J	TO3	C0	
74	2N6250	2.5MSΔ	2.0u		3.5u	1.0u	100	3.0	10	8.0	150m		N	Si	200J	TO3	C0	
75	JAN2N6250	2.5MSΔ	2.0u			4.5u	6.0	3.0	10	8.0	150m	500p	N	Si	200J	TO3	C0	
76	2N6251	2.5MSΔ	2.0u		3.5u	1.0u	100	3.0	10	8.0	150m		N	Si	200J	TO3	C0	
77	JAN2N6251	2.5MSΔ	2.0u															

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1#	2SD538A		15M\$ 2.0u		3.0u	1.5u	150	5.0	5.0	5.0	25 #	200m#	N-ME	Si	175J	T03	CØ	
2#	2SD539		15M\$ 2.0u		3.0u	1.5u	100	5.0	5.0	5.0	15 #	300m#	N-ME	Si	175J	T03	CØ	
3#	2SD542		20M\$ 2.0u		4.0u	2.0u	200	5.0	5.0	10	25 #	133m#	N-ME	Si	175J	F1a	CØ	
4#	2SD543		20M\$ 2.0u		4.0u	2.0u	200	5.0	10	10	25 #	133m#	N-ME	Si	175J	F1a	CØ	
5#	BUY55		20M\$ 2.0uØ		1.2u	2.0uØ	60 \$	1.5	7.0	8.0	25 #	214m	N-D	Si	200J	T03	CØ	
6#	BUY56		20M\$ 2.0uØ		1.2u	2.0uØ	60 \$	1.5	7.0	8.0	25 #	214m	N-D	Si	200J	T03	CØ	
7#	BUY72		20M\$ 2.0uØ		1.2u	2.0uØ	60 \$	1.5	7.0	8.0	25 #	214m	N-D	Si	200J	T03	CØ	
8#	2SD622		25M\$ 2.0u		3.5u	2.0u	30	5.0	1.0	20	20 #	1.2 #	N-ME	Si	175J	T066	CØ	
9	JAN2N4865		70M\$ 2.0uØ		1.5u	500n	300 #	5.0	20	20	30 Δ#		N	Si	200J	T49a	AØ	
10	JAN2N5250		70M\$ 2.0uØ		1.5u	500n	300 #	5.0	20	20	30 Δ#		N	Si	200J	T49a	AØ	
11	JAN2N5251		70M\$ 2.0uØ		1.5u	500n	300 #	5.0	20	20	30 Δ#		N	Si	200J	T49a	AØ	
12	2N356A		2100nØ		500n	1.2u	150m	25	1.0	50	2.0		N	Ge	100S	T05	A\$	
13	2N356	3.00M\$	2100nØ		700n	2.0u	100m	25	1.0	50	30		N	Ge	85S	T05	A\$	
14	TIP120Z		2.3uØ	300nt	2.7u	4.5u	65	5.0	1.0	1.0kΔ	666m#	200pZ	N-E	Si	150J	Y220b	KHØ	
15	TIP121Z		2.3uØ	300nt	2.7u	4.5u	65	5.0	1.0	1.0kΔ	666m#	200pZ	N-E	Si	150J	Y220b	KHØ	
16	TIP122Z		2.3uØ	300nt	2.7u	4.5u	65	5.0	1.0	1.0kΔ	666m#	200pZ	N-E	Si	150J	Y220b	KHØ	
17#	2SD251		2.5uØ		3.5u	3.0u	30	5.0	10	500mØ	2.0		N-DM	Si	175J	T066	CØ	
18#	ESM2060		2.5uØ		2.5u	1.0u	400	4.0	60	8.0	25 #		N-DM	Si	200J	T083	CØ	
19	SEN-T173		2.5uØ	50nt	5.0u	5.0u	150 \$	4.0	10	10	100m#		N	Si	200J	T03	CØ	
20	CST1773	.015M	2500n		300n	400n	28	2.0	500m	25	.50		N	Ge	100	F35	CØ	
21	PT700	1.0M\$	2.5u		3.0u	3.0u	200	5.0	120	5.0		1.8n	N	Si	200A	T69b	CØ	
22	PT702	1.0M\$	2.5u		3.0u	2.5u	200	4.0	120	5.0		1.8n	N	Si	200A	T69b	CØ	
23	PT9503	1.0M	2.5u		3.0u	2.5u	625	5.0	120	200	10		N	Si	200C		CØ	
24	2N2580	2.0M\$Δ	2.5u		2.0u	1.0u	150 *	5.0	50	10	Δ	500m	N	Si	150C	T036	CØ	
25	2N2581	2.0M\$Δ	2.5u		2.0u	1.0u	150 *	5.0	50	10	Δ	500m	N	Si	150C	T036	CØ	
26	2N2582	2.0M\$Δ	2.5u		2.0u	1.0u	150 *	5.0	50	10	Δ	500m	N	Si	150C	T036	CØ	
27	2N2583	2.0M\$Δ	2.5u		2.0u	1.0u	150 *	5.0	50	10	Δ	500m	N	Si	150C	T036	CØ	
28	2N377	6.00M	2500nØ		700n	1.0u	150m	5.0	30	40		15p	N-A	Ge	100J	T05	A	
29	2N377A	6.00M	2500nØ		700n	1.0u	150m	5.0	30	40		20pZ	N	Ge	100J	T05	A\$	
30	JAN2N6383	20M\$Δ	2.5uØ		10uØ	10uØ	6.0	3.0	10	100	Δ#	400m#	N	Si	200J	T03	CØ	
31	JAN2N6384	20M\$Δ	2.5uØ		10uØ	10uØ	6.0	3.0	10	100	Δ#	400m#	N	Si	200J	T03	CØ	
32	JAN2N6385	20M\$Δ	2.5uØ		10uØ	10uØ	6.0	3.0	10	100	Δ#	400m#	N	Si	200J	T03	CØ	
33	JAN2N6648	50M\$Δ	2.5uØ		10uØ	10uØ	5.0	5.0	1.0	20	Δ#	400m	P	Si	175J	T03	KFØ	
34	JAN2N6649	50M\$Δ	2.5uØ		10uØ	10uØ	5.0	5.0	1.0	20	Δ#	400m	P	Si	175J	T03	KFØ	
35	JAN2N6650	50M\$Δ	2.5uØ		10uØ	10uØ	5.0	5.0	1.0	20	Δ#	400m	P	Si	175J	T03	KFØ	
36	TIP115		2.6uØ		4.5uØ	2.0	4.0	1.0	1.0kΔ	1.2 #			P	Si	150J	Y220b	KEØ	
37	TIP116		2.6uØ		4.5uØ	2.0	4.0	1.0	1.0kΔ	1.2 #			P	Si	150J	Y220b	KEØ	
38	TIP117		2.6uØ		4.5uØ	2.0	4.0	1.0	1.0kΔ	1.2 #			P	Si	150J	Y220b	KEØ	
39#	2SC1300		2.7uØ	2.5uØ		200	200	5.0	15	25	100m		N-DM	Si	175J	F1a	CØ	
40#	2SD465	6.5M	2.7uØ		12u	11u	400	5.0	50	100	Δ	50m	N	Si	150J	F40	KC	
41#	2SD466	6.5M	2.7uØ		12u	11u	400	5.0	50	100	Δ	50m	N	Si	150J	F40	KC	
42	2N1954		2750nØ		2.7u	3.5u	200m	500m	200m	22	Δ	8.7		P	Ge	100S	T05	A
43	2N1955		2750nØ		2.7u	3.5u	200m	500m	200m	22	Δ	8.7		P	Ge	100S	T05	A
44	2N1956		2750nØ		2.7u	3.5u	200m	500m	200m	22	Δ	8.7		P	Ge	100S	T05	A
45	2N1957		2750nØ		2.7u	3.5u	200m	500m	200m	22	Δ	8.7		P	Ge	100S	T05	A
46	2N1172		3000n		3.0u	3.0u	200	4.0	500m	30		.60	N	Ge	95J	T037	AØ	
47#	2SD301		3.0u		5.0u	25u	50	4.0	5.0	2.5k	600m		N-PE	Si	175J	T03	CØ	
48#	2SD548		3.0u		12u	8.0u	770	5.0	120	150	Δ	21m	N-DM	Si	125J	X177	C	
49#	2SD647A		3.0u		12u	6.0u	770	5.0	100	100	Δ	25m	N-DM	Si	125J	XXXXX	C	
50#	2SD648A		3.0u		13u	3.0u	2.5k	5.0	400	100	Δ	6.3m	N	Si	125J	XXXXX	C	
51#	2SD1166		3.0u		8.0u	8.0u	2.5k	5.0	200	80	Δ	12m	N	Si	125J	XXXXX	C	
52	153-04SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
53	153-06SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
54	153-08SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
55	153-10SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
56	153-12SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
57	153-14SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
58	153-16SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
59	153-18SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
60	153-20SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
61	153-22SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T52		
62	153-24		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T58		
63	153-24SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T58		
64	153-26SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T58		
65	153-28SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T58		
66	153-30SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	15	Δ	866m	N-A	Si	175J	T58		
67	154-04SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
68	154-06SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
69	154-08SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
70	154-10SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
71	154-12SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
72	154-14SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
73	154-16SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
74	154-18SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
75	154-20SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
76	154-22SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T52		
77	154-24		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T58		
78	154-24SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T58		
79	154-26SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T58		
80	154-28SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T58		
81	154-30SPC		3.0uØ		6.0uØ	200	200	4.0	1.5	25	Δ	833m	N-A	Si	175J	T58		
82#	ESM1000		3.0uØ		1.7u	500n	400	4.0	100	12	Δ#	15m#	N-DM	Si	200J	T083	C	
83#	WT635-01D		3uØ		10u	6u	850	2.5	150	30	Δ		N	Si	150J	T063	AØ	
84#	WT635-01M		3uØ		10u	6u	850	2.5	150	30	Δ		N	Si	150J	T171	AØ	
85#	WT635-02D		3uØ		10u	6u	850	2.5	150	30	Δ							

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	PT8502	1.0M	3.0u	2.0n	2.0u	2.0u	350	2.0	100	10	100m	1.8n	N	Si	200J	T0114		
2#	2G524	2.00M	3000n	600n	1.0u	1.6u	225m	2.25	1.0m	20	35	27p	P-A	Ge	85J	T05		
3#	2G1024	2.00M	3000n	600n	1.2u	1.6u	225m	1.0	2.0m	35		27p	P-A	Ge	85J	T05		
4	2N679	3.00M	3000n				150m	5.0	3.0m	30			N-A	Ge	85J	R5		
5	JAN2N2034	6.0M $\square$	3.0u $\square$			6.0u $\square$	7.5 $\square$	4.0	250m $\square$	35 $\Delta$ #		200p $\square$	N	Si	200A	T05	A $\square$	
6	JAN2N2858	6.0M $\square$	3.0u $\square$			6.0u $\square$	7.5 $\square$	4.0	250m $\square$	35 $\Delta$ #		200p $\square$	N	Si	200A	T05	A $\square$	
7	JAN2N2859	6.0M $\square$	3.0u $\square$			6.0u $\square$	7.5 $\square$	4.0	250m $\square$	35 $\Delta$ #		200p $\square$	N	Si	200A	T05	A $\square$	
8	JAN2N2911	6.0M $\square$	3.0u $\square$			6.0u $\square$	7.5 $\square$	4.0	250m $\square$	35 $\Delta$ #		200p $\square$	N	Si	200A	T05	A $\square$	
9	2N3584	10M $\Delta$	3.0u		4.0u	3.0u	35	2.0	1.0	80		750m	N	Si	200C	T066	C $\square$	
10	2N3585	10M $\Delta$	3.0u		4.0u	3.0u	35	2.0	1.0	80		750m	N	Si	200C	T066	C $\square$	
11	2N6421	10M $\Delta$	3.0u		4.0u	3.0u	35	2.0	1.0	8.0 $\Delta$ #		750m#	P	Si	200J	T066	C $\square$	
12	2N6422	10M $\Delta$	3.0u		4.0u	3.0u	35	2.0	1.0	8.0 $\Delta$ #		750m#	P	Si	200J	T066	C $\square$	
13#	BDY45	10M $\Delta$	3.0u $\square$			1.0u	95	2.0	1.0	5.0		200p $\square$	N	Si	200J	T03	C $\square$	
14#	BDY46	10M $\Delta$	3.0u $\square$			1.0u	95	2.0	1.0	5.0		200p $\square$	N	Si	200J	T03	C $\square$	
15#	BDY47	10M $\Delta$	3.0u $\square$			1.0u	95	2.0	1.0	5.0		200p $\square$	N	Si	200J	T03	C $\square$	
16#	BUX67	10M $\Delta$	3.0u		4.0u	3.0u	35	5.0	1.0	10 $\Delta$ #	2.5 #	120p	N	Si	200J	T066	C $\square$	
17#	BUX67A	10M $\Delta$	3.0u		4.0u	3.0u	35	5.0	1.0	10 $\Delta$ #	2.5 #	120p	N	Si	200J	T066	C $\square$	
18#	BUX67B	10M $\Delta$	3.0u		4.0u	3.0u	35	5.0	1.0	10 $\Delta$ #	2.5 #	120p	N	Si	200J	T066	C $\square$	
19#	BUX67C	10M $\Delta$	3.0u		4.0u	3.0u	35	5.0	1.0	10 $\Delta$ #	2.5 #	120p	N	Si	200J	T066	C $\square$	
20	JAN2N3584	75M $\square$	3.0u $\square$			7.0u $\square$	35	1.0	100m $\square$	40 $\Delta$		120p $\square$	N	Si	200J	T066	C $\square$	
21	JAN2N3585	75M $\square$	3.0u $\square$			7.0u $\square$	35	1.0	100m $\square$	40 $\Delta$		120p $\square$	N	Si	200J	T066	C $\square$	
22	2N556		3.5u			2.0u	100m	2.0m	1.0m	70	2.5	20p	N	Ge	85J	T05	A	
23	2N558		3.5u			2.0u	100m	2.0m	1.0m	20	3.7	20p	N-A	Ge	85J	T05	A	
24#	2SD231		3.5u		6.0u	5.0u	125	4.0	1.0	25		100m	N-D	Si	175J	T03	C $\square$	
25	CDT1319	.006M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	40	.30		P-A	Ge	100J	T03	C $\square$	
26	CDT1320	.006M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	40	.30		P-A	Ge	100J	T03	C $\square$	
27	CDT1321	.006M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	40	.30		P-A	Ge	100J	T03	C $\square$	
28	CDT1322	.006M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	40	.30		P-A	Ge	100J	T03	C $\square$	
29	CDT1310	.008M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	80	.30		P-A	Ge	100J	T03	C $\square$	
30	CDT1311	.008M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	80	.30		P-A	Ge	100J	T03	C $\square$	
31	CDT1312	.008M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	80	.30		P-A	Ge	100J	T03	C $\square$	
32	CDT1313	.008M $\square$	3500n		6.5u	2.5u	45m $\square$	2.0	2.0m	80	.30		P-A	Ge	100J	T03	C $\square$	
33	2N1759	15.0M $\square$	3500n				28m $\square$	2.0	.50m	105	.27		P-A	Ge	95J	F35		
34	2N1760	15.0M $\square$	3500n				28m $\square$	2.0	.50m	105	.27		P-A	Ge	95J	F35		
35	JAN2N2528		4000n		3.0u	2.0u	85	2.0	3.0m	20 $\Delta$		80m	N	Ge	110J	F41	C $\square$	
36	MJ2955A		4.0u	500n	3.0u	6.0u	115	4.0	1.0	5.0 $\Delta$	333m	600p	P	Si	200J	T03	C $\square$	
37#	WT5308		4.0u		3.0u	5.0u	215	2.0	2.0	6.0			N	Si	150J	T063		
38#	WT5510		4.0u		5.0u	3.0u	.85k						N	Si	150J	T169		
39#	WT5511		4.0u		5.0u	3.0u	.85k	2.0	100	7.0 $\Delta$			N	Si	150J	T169		
40#	WT5703		4.0u		5.0u	3.5u	1.5k	2.0	200	12 $\Delta$			N	Si	150J	T170		
41#	WT5704		4.0u		5.0u	3.5u	1.5k	2.0	200	10 $\Delta$			N	Si	150J	T170		
42#	WT5705		4.0u		5.0u	3.5u	1.5k	2.0	200	8.0 $\Delta$			N	Si	150J	T170		
43#	WT5706		4.0u		5.0u	3.5u	1.5k	2.0	200	10 $\Delta$			N	Si	150J	T170		
44#	BDY10	10k $\square$	4000n $\square$	250n $\square$	1.5u $\square$	3.0u $\square$	150	2.0	200m $\square$	20 $\Delta$	350m		N-D	Si	175J	T03	C $\square$	
45#	BDY11	10k $\square$	4000n $\square$	250n $\square$	1.5u $\square$	3.0u $\square$	150	2.0	200m $\square$	20 $\Delta$	350m		N-D	Si	175J	T03	C $\square$	
46	2N3429	20k $\Delta$	4000n		4.0u	8.0u	150	2.0	5.0	10 $\Delta$	200m		N	Si	175J	T52	B B	
47	2N3430	20k $\Delta$	4000n		4.0u	8.0u	150	2.0	5.0	10 $\Delta$	200m		N	Si	175J	T52	B B	
48	2N3431	20k $\Delta$	4000n		4.0u	8.0u	150	2.0	5.0	10 $\Delta$	200m		N	Si	175J	T52	B B	
49	2N3432	20k $\Delta$	4000n		4.0u	8.0u	150	2.0	5.0	10 $\Delta$	200m		N	Si	175J	T52	B B	
50	2N3433	20k $\Delta$	4000n		4.0u	8.0u	150	2.0	5.0	10 $\Delta$	200m		N	Si	175J	T52	B B	
51	2N3055A	6.0M $\square$	4.0u	500n	3.0u	6.0u	115	4.0	4.0	20 $\Delta$	333m	600p	N	Si	200S	T03	C $\square$	
52	2N2832	10.0M $\Delta$	4000n		6.0u	2.5u	85	2.0	1.0m	50 $\Delta$	25m		P	Ge	110C	T03	C $\square$	
53	2N2833	10.0M $\Delta$	4000n		6.0u	2.5u	85	2.0	1.0m	50 $\Delta$	25m		P	Ge	110C	T03	C $\square$	
54	2N2834	10.0M $\Delta$	4000n		6.0u	2.5u	85	2.0	1.0m	50 $\Delta$	25m		P	Ge	110C	T03	C $\square$	
55	JAN2N2834	10.0M $\Delta$	4000n		6.0u	2.5u	85	2.0	1.0m	25 $\Delta$	150m		P	Ge	110J	F4e	C $\square$	
56	2N3846	10.0M $\Delta$	4000n $\square$			7.0u $\square$	4.0	3.0	10	10 $\Delta$	80m	750p	N	Si	175C	T063		
57	2N3847	10.0M $\Delta$	4000n $\square$			7.0u $\square$	4.0	3.0	10	10 $\Delta$	80m	750p	N	Si	175C	T063		
58	2N3848	10.0M $\Delta$	4000n $\square$			7.0u $\square$	4.0	4.0	15	10 $\Delta$	670u	750p	N	Si	175C	T063		
59	2N3849	10.0M $\Delta$	4000n $\square$			7.0u $\square$	4.0	4.0	15	10 $\Delta$	670u	750p	N	Si	175C	T063		
60	2N1755	15.0M $\square$	4000n				28m $\square$	2.0	.50m	52	.23		P-A	Ge	95J	F35		
61	2N1756	15.0M $\square$	4000n				28m $\square$	2.0	.50m	52	.23		P-A	Ge	95J	F35		
62	2N1757	15.0M $\square$	4000n				28m $\square$	2.0	.50m	52	.23		P-A	Ge	95J	F35		
63	2N1758	15.0M $\square$	4000n				28m $\square$	2.0	.50m	52	.23		P-A	Ge	95J	F35		
64#	25C1302	20M $\square$	4.0u $\square$		4.0u	2.5u	200	5.0	15	25 #	100m#	700p	N-ME	Si	175J	F1a	C $\square$	
65#	25C1401	20M $\square$	4.0u $\square$		4.0u	2.5u	200	5.0	15	25 #	100m#	700p	N-ME	Si	175J	F1a	C $\square$	
66	JAN2N3846	35M $\square$	4.0u $\square$			7.0u $\square$	150	3.0	5.0	40 $\Delta$ #		750p	N	Si	175A	T063	A $\square$	
67	JAN2N3847	35M $\square$	4.0u $\square$			7.0u $\square$	150	3.0	5.0	40 $\Delta$ #		750p	N	Si	175A	T063	A $\square$	
68#	2G103	300M	4000n				150m	5.0	10m	40			N	Ge	100J	T018		
69	SDT31303	1.5M $\square$	4.5u $\square$		6.0u	1.1u	250	4.0	2.0	10 $\Delta$	250m		N	Si	200J	T03	C $\square$	
70	SDT31305	1.5M $\square$	4.5u $\square$		6.0u	1.1u	250	4.0	2.0	10 $\Delta$	250m		N	Si	200J	T03	C $\square$	
71	SDT31307	1.5M $\square$	4.5u $\square$		6.0u	1.1u	250	4.0	2.0	10 $\Delta$	250m		N	Si	200J	T03	C $\square$	
72	2N463	4.0k $\Delta$	4.6u		4.0u	1.5u	2.0	2.0	2.0	27	80m	310p	P-A	Si	100	T032	A $\square$	
73	153-04	250k $\Delta$	5.0u		5.0u	5.0u	200	4.0	1.5	15 $\Delta$	8.6	750p	N-A	Si	175A	T52	A	
74	153-05	250k $\Delta$	5.0u		5.0u	5.0u	200	4.0	1.5	15 $\Delta$	8.6	750p	N-A	Si	175A	T52	A	
75	153-06	250k $\Delta$	5.0u		5.0u	5.0u	200	4.0	1.5	15 $\Delta$	8.6	750p	N-A	Si	175A	T52	A	
76	153-07	250k $\Delta$	5.0u		5.0u	5.0u	200	4.0	1.5	15 $\Delta$	8.6	750p	N-A	Si	175A	T52	A	
77	153-08	250k $\Delta$	5.0u		5.0u	5.0u	200	4.0	1.									



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	1441-1215	500kΔ	5.0u			10u	625	4.0	150	10	Δ		N-D	Si	200J	T14a	C	
2	1441-0405	.50MΔ	5000n		10u		350m	4.0	50	10	#		N-D	Si	200J	TO114		
3	1441-0407	.50MΔ	5000n		10u		350m	4.0	75	10	#		N-D	Si	200J	TO114		
4	1441-0410	.50MΔ	5000n		10u		350m	4.0	100	10	#		N-D	Si	200J	TO114		
5	1441-0605	.50MΔ	5000n		10u		350m	4.0	50	10	#		N-D	Si	200J	TO114		
6	1441-0607	.50MΔ	5000n		10u		350m	4.0	75	10	#		N-D	Si	200J	TO114		
7	1441-0610	.50MΔ	5000n		10u		350m	4.0	100	10	#		N-D	Si	200J	TO114		
8	1441-0805	.50MΔ	5000n		10u		350m	4.0	50	10	#		N-D	Si	200J	TO114		
9	1441-0807	.50MΔ	5000n		10u		350m	4.0	75	10	#		N-D	Si	200J	TO114		
10	1441-0810	.50MΔ	5000n		10u		350m	4.0	100	10	#		N-D	Si	200J	TO114		
11	1441-1005	.50MΔ	5000n		10u		350m	4.0	50	10	#		N-D	Si	200J	TO114		
12	1441-1007	.50MΔ	5000n		10u		350m	4.0	75	10	#		N-D	Si	200J	TO114		
13	1441-1010	.50MΔ	5000n		10u		350m	4.0	100	10	#		N-D	Si	200J	TO114		
14	1441-1205	.50MΔ	5000n		10u		350m	4.0	50	10	#		N-D	Si	200J	TO114		
15	1441-1207	.50MΔ	5000n		10u		350m	4.0	100	10	#		N-D	Si	200J	TO114		
16	1441-1210	.50MΔ	5000n		10u		350m	4.0	100	10	#		N-D	Si	200J	TO114		
17	2N3675	1.00MΔ	5000n	5.0u	5.0u	5.0u	8.8	1.0	1.0m	12	Δ	800m	N	Si	200C	TO5	Ø	
18	2N3676	1.00MΔ	5000n	5.0u	5.0u	5.0u	8.8	1.0	1.0m	12	Δ	800m	N	Si	200C	TO5	Ø	
19 #	2SD161	1.0M	5.0u		1.5u	3.5u	100	4.0	5.0	30	200m		N-D	Si	175J	TO3	CØ	
20	2N1761	15.0M†	5000n				28m	2.0	.50m	105			P-A	Ge	95J	F35		
21	2N1762	15.0M†	5000n				28m	2.0	.50m	105			P-A	Ge	95J	F35		
22 #	2SC1463	25M‡	5.0u		5.0u	3.0u	75	5.0	1.0	18	#	1.2 #	N-ME	Si	175J	TO3	CØ	
23	2N3260		5.8u	6.0u	4.0u	6.0u	200	3.0	20	10	Δ	75m	N	Si	200C	T50	AØ	
24	2N2739		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T1a	B	
25	2N2740		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T1a	B	
26	2N2741		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T1a	B	
27	2N2742		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T1a	B	
28	2N2743		6.0u			12u	200	4.0	10	10	Δ		N	Si	175C	T1b	B	
29	2N2744		6.0u			12u	200	4.0	10	10	Δ		N	Si	175C	T1b	B	
30	2N2745		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T1a	B	
31	2N2746		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T1a	B	
32	2N2747		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T1a	B	
33	2N2748		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T1a	B	
34	2N2749		6.0u			12u	200	4.0	15	10	Δ	100m	N	Si	175C	T1b	B	
35	2N2750		6.0u			12u	200	4.0	15	10	Δ	100m	N	Si	175C	T1b	B	
36	2N2757		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T33	A	
37	2N2758		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T33	A	
38	2N2759		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T33	A	
39	2N2760		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T33	A	
40	2N2761		6000n		12u		.20m‡	12	2.5	25	Δ	.15	N	Si	175C	T33	A	
41	2N2762		6.0u			12u	200	4.0	10	10	Δ		N	Si	175C	T33	A	
42	2N2763		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T33	A	
43	2N2764		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T33	A	
44	2N2765		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T33	A	
45	2N2766		6000n		12u		.20m‡	12	3.7	20	Δ	.10	N	Si	175C	T33	A	
46	2N2767		6.0u			12u	200	4.0	15	10	Δ		N	Si	175C	T33	A	
47	2N2768		6.0u			12u	200	4.0	15	10	Δ		N	Si	175C	T33	A	
48	2N5926		6.0u	4.0u	6.0u		200	2.0	50	10	Δ	#	N	Si	200J	TO63	AØ	
49	2N5927		6.0u	4.0u	6.0u		200	2.0	50	10	Δ	#	N	Si	200J	TO114	AØ	
50 #	2SD232		6.0u	4.5u†	9.0u†		125	4.0	10	25		150m	N-D	Si	175J	TO3	CØ	
51	163-04A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
52	163-04SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
53	163-06A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
54	163-06SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
55	163-08A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
56	163-08SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
57	163-10A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
58	163-10SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
59	163-12A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
60	163-12SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
61	163-14A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
62	163-14SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
63	163-16A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
64	163-18A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
65	163-18SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
66	163-20A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
67	163-20SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
68	163-22A		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-DM	Si	175J	T33	AØ	
69	163-22SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
70	163-24		6.0u				200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
71	163-24SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N-A	Si	175J	T33	AØ	
72	163-28SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N	Si	175J	T33	AØ	
73	163-30SPC		6.0u		12u		200	4.0	5.0	15	Δ	220m	N	Si	175J	T33	AØ	
74	164-04A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
75	164-04SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
76	164-06A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
77	164-06SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
78	164-08A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
79	164-08SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
80	164-10A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
81	164-10SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
82	164-12A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
83	164-12SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
84	164-14A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
85	164-14SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
86	164-16A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
87	164-18A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
88	164-20A		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-DM	Si	175J	T33	AØ	
89	164-20SPC		6.0u		12u		200	4.0	5.0	25	Δ	200m	N-A	Si	175J	T33	AØ	
90	164-22A		6.0u		12u		200	4.0	5									

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	1 MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ie (A)	hFE								
1	2N1018F	20kΔ	8.0uΔ			10uΔ	150	4.0	5.0	10 Δ	500m		N-F	Si	150J	T1a	B	
2	2N2584	30kTΔ	8.0u		6.0u	5.0u	150	5.0	5.0	10 Δ	.14		N	Si	150C	TO36	CØ	
3	2N2585	30kTΔ	8.0u		6.0u	5.0u	150	5.0	5.0	10 Δ	1.0		N	Si	150C	TO36	CØ	
4	2N3079	.03M1Δ	8000n		6.0u	5.0u	150	5.0	5.0	10 Δ	.14		N	Si	150C	TO36	CØ	
5	2N3080	.03M1Δ	6000n		6.0u	5.0u	150	5.0	5.0	10 Δ	.14		N	Si	150C	TO36	CØ	
6	163-04	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
7	163-05	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
8	163-06	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
9	163-07	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
10	163-08	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
11	163-09	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
12	163-10	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
13	163-12	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
14	163-14	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
15	163-16	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
16	163-18	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
17	163-20	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	15 Δ	220m	1.5nZ	N-A	Si	175A	T33	AØ	
18	164-04	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
19	164-05	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
20	164-06	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
21	164-07	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
22	164-08	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
23	164-09	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
24	164-10	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
25	164-12	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
26	164-14	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
27	164-16	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
28	164-18	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
29	164-20	250kΔ	8.0u		5.0u	7.0u	200	4.0	5.0	25 Δ	200m	1.5nZ	N-A	Si	175A	T33	AØ	
30	DTG1010	450kΔ	6.0u	1.8u	1.8u	700n	108	2.0	4.0	25 Δ	160m		P	Ge	110J	TO3	CØ	
31	DTG1110	450kΔ	6.0u	1.8u	1.8u	700n	108	2.0	4.0	25 Δ	160m		P	Ge	110J	TO3	CØ	
32	DTG1110B	450kΔ	6.0u	1.8u	1.8u	700n	108	2.0	4.0	25 Δ	160m		P	Ge	110	TO3	CØ	
33	2N3667	500kΔ	8.0u		1.4u	12u	117	3.0	8.0	15 # Δ			N	Si	200J	TO3	CØ	
34	DTG1210A	700kΔ	8.0u	1.8u	1.8u	1.4u	105	2.0	1.0	35	160m		P-D	Ge	110	TO3	CØ	
35	2N5559	.80MΔ	6u			8u	100	2.0	4	20 Δ	200m	400pΔ	N	Si	200J	TO3	CØ	
36	JAN2N3055	4.0MΔ	8.0u			12u	117	4.0	500m	40 Δ #	700pZ	20pZ	N	Si	200J	TO3	CØ	
37	2N557	6.5u				2.5u	100m	200m	1.0mΔ	20 Δ	2.5		N-A	Ge	85J	TO5	A	
38	2N2751	7000n		13u			.20m	12	5.0	20 Δ	.07		N	Si	175C	T1a	B	
39	2N2752	7000n		13u			.20m	12	5.0	20 Δ	.07		N	Si	175C	T1a	B	
40	2N2753	7000n		13u			.20m	12	5.0	20 Δ	.07		N	Si	175C	T1a	B	
41	2N2754	7000n		13u			.20m	12	5.0	20 Δ	.07		N	Si	175C	T1a	B	
42	2N2755	7.0u				13u	200	4.0	20	10 Δ			N	Si	175C	T1b	B	
43	2N2756	7.0u				13u	200	4.0	20	10 Δ			N	Si	175C	T1b	B	
44	2N2769	7000n		13u			.20m	12	5	20 Δ	.07		N	Si	175C	T33	A	
45	2N2770	7000n		13u			.20m	12	5	20 Δ	.07		N	Si	175C	T33	A	
46	2N2771	7000n		13u			.20m	12	5	20 Δ	.07		N	Si	175C	T33	A	
47	2N2772	7000n		13u			.20m	12	5	20 Δ	.07		N	Si	175C	T33	A	
48	2N2773	7.0u				13u	200	4.0	20	10 Δ			N	Si	175C	T33	A	
49	2N2774	7.0u				13u	200	4.0	20	10 Δ			N	Si	175C	T33	A	
50	JAN2N5926	7.0u		4.0u		8.0u	300	4.0	90	5.0 Δ #			N	Si	200A	T69d	A	
51	JAN2N5927	7.0u		4.0u		8.0u	300	4.0	120	5.0 Δ #			N	Si	200A	T69c	A	
52	2N5928	7.0u		3.0u			200	2.0	100	10 Δ #			N	Si	200J	TO114	AØ	
53	151-04SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
54	151-06SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
55	151-08SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
56	151-10SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
57	151-12SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
58	151-14SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
59	151-16SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
60	151-18SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
61	151-20SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
62	151-22SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-A	Si	150J	T1a	B	
63	151-24	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	T1a	B	
64	151-26SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	T1a	B	
65	151-28SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	T1a	B	
66	151-30SPC	7.0u			14u		100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	T1a	B	
67	152-04SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
68	152-06SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
69	152-08SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
70	152-10SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
71	152-12SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
72	152-14SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
73	152-16SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
74	152-18SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
75	152-20SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
76	152-22SPC	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-A	Si	150J	T1a	B	
77	152-24	7.0u			14u		100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	T1a	B	
78	152-26SPC	7.0u			14u		100	4.0	1.5m	18 Δ	830m		N-F	Si	150J	T1a	B	
79	152-28SPC	7.0u			14u		100	4.0	1.5m	18 Δ	830m		N-F	Si	150J	T1a	B	
80	152-30SPC	7.0u			14u		100	4.0	1.5m	18 Δ	830m		N-F	Si	150J	T1a	B	
81	151-04	250kΔ	7.0u		14u		175	4.0	1.5m	11 Δ	866m		N-A	Si	150A	T1a	B	
82	151-05	250kΔ	7.0u		14u		175	4.0	1.5m	11 Δ	866m		N-A	Si	150A	T1a	B	
83	151-06	250kΔ	7.0u		14u		175	4.0	1.5m	11 Δ	866m		N-A	Si	150A	T1a	B	
84	151-07	250kΔ	7.0u		14u		175	4.0	1.5m	11 Δ	866m		N-A	Si	150A	T1a	B	
85	151-08	250kΔ	7.0u		14u		175	4.0	1.5m	11 Δ	866m		N-A	Si	150A	T1a	B	
86	151-09	250kΔ	7.0u		14u		175	4.0	1.5m	11 Δ	866m		N-A	Si	150A	T1a	B	
87	151-10	250kΔ	7.0u		14u													

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1	2N2775		8000n	14u			.20m	12	6.2m	20	.06		N	Si	175C	T33	A	
2	2N2776		8000n	14u			.20m	12	6.2m	20	.06		N	Si	175C	T33	A	
3	2N2777		8000n	14u			.20m	12	6.2m	20	.06		N	Si	175C	T33	A	
4	2N2778		8000n	14u			.20m	12	6.2m	20	.06		N	Si	175C	T33	A	
5	2N2779		8.0u			14u	200 s	4.0	25	10			N	Si	175C	T33	A	
6	2N2780		8.0u			14u	200 s	4.0	25	10			N	Si	175C	T33	A	
7	MP1534		8000n		3.0u	5.0u	90	2.0	3.0	35	400m		P-A	Ge	110J	TO41	C	
8	MP1535		8000n		3.0u	5.0u	90	2.0	3.0	35	400m		P-A	Ge	110J	TO41	C	
9	MP1536		8000n		3.0u	5.0u	90	2.0	3.0	35	400m		P-A	Ge	110J	TO41	C	
10	MP1537		8000n		3.0u	5.0u	90	2.0	3.0	35	400m		P-A	Ge	110J	TO41	C	
11	MP1538		8000n		3.0u	5.0u	90	2.0	3.0	35	400m		P-A	Ge	110J	TO41	C	
12	2N3863	.50m	8.0u			16u	117	2.0	3	30	.33		N	Si	200C	TO3	C	
13	2N3864	.50m	8.0u			16u	117	2.0	3	30	.33		N	Si	200C	TO3	C	
14	2N3865	.50m	8.0u			16u	117	2.0	3	30	.33		N	Si	200C	TO3	C	
15	JAN2N3772	3.0m	8.0u			10u	150	4.0	10	10	#	1.2n	N	Si	200J	TO3	C	
16	DTG2000	250k	9.0u			10u	60	2.0	8.0	25	36m		P	Ge	110J	Y204a	C	
17	DTG2100	250k	9.0u			10u	60	2.0	8.0	25	36m		P	Ge	110J	Y204a	C	
18	DTG2200	250k	9.0u			10u	60	2.0	8.0	25	36m		P	Ge	110J	Y204a	C	
19	DTG2300	250k	9.0u			10u	60	2.0	8.0	25	36m		P	Ge	110J	Y204a	C	
20	DTG2400	250k	9.0u			10u	60	2.0	8.0	25	36m		P	Ge	110J	Y204a	C	
21	2N4950	9.5u		10u	10u	10u	300	3.0	50	10	#	30 #	N	Si	200C	T69	A	
22	JAN2N1553A		10u	2.0u	5.0u	30u	90	2.0	10	60			P	Ge	100J	TO3	C	
23	JAN2N1554A		10u	2.0u	5.0u	30u	90	2.0	10	60			P	Ge	100J	TO3	C	
24	JAN2N1555A		10u	2.0u	5.0u	30u	90	2.0	10	60			P	Ge	100J	TO3	C	
25	JAN2N1556A		10u	2.0u	5.0u	30u	90	2.0	10	60			P	Ge	100J	TO3	C	
26	JAN2N1557A		10u	2.0u	5.0u	30u	90	2.0	5.0	60	50m		P	Ge	100J	TO3	C	
27	JAN2N1558A		10u	2.0u	5.0u	30u	90	2.0	5.0	60	50m		P	Ge	100J	TO3	C	
28	JAN2N1559A		10u	2.0u	5.0u	30u	90	2.0	5.0	60	50m		P	Ge	100J	TO3	C	
29	JAN2N1560A		10u	2.0u	5.0u	30u	90	2.0	5.0	60	50m		P	Ge	100J	TO3	C	
30	JAN2N1651		10u		6.0u	5.0u	100	1.5	25	20	26m		P	Ge	110S	TO41	C	
31	JAN2N1652		10u		6.0u	5.0u	100	1.5	25	20	26m		P	Ge	110S	TO41	C	
32	JAN2N1653		10u		6.0u	5.0u	100	1.5	25	20	26m		P	Ge	110S	TO41	C	
33	2N2294		10u			10u	60	5.0	2.0	40	200m		P	Ge	110C	TO41	C	
34	2N2295		10u			10u	60	5.0	2.0	40	200m		P	Ge	110C	TO41	C	
35	2N2296		10u			10u	60	5.0	2.0	40	200m		P	Ge	110C	TO41	C	
36	2N2526		10u	5.0u	4.0u	85	12	500m	10	10	80m		P	Ge	110C	F4j	C	
37	2N2527		10u	5.0u	4.0u	85	12	500m	10	10	80m		P	Ge	110C	F4j	C	
38	2N2528		10u	5.0u	4.0u	85	12	500m	10	10	80m		P	Ge	110C	F4j	C	
39	2N5578		10u			10u	150	3.0	40	10	#	37m #	N	Si	175J	F23	C	
40	2N6064		10u			15u	56	12	500m	10	80m		P	Ge	110J	R155	A	
41	MP600		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110J	F4r	C	
42	MP600A		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110S	F49c	C	
43	MP601		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110J	F4r	C	
44	MP601A		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110S	F49c	C	
45	MP602		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110J	F4r	C	
46	MP602A		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110S	F49c	C	
47	MP603		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110J	F4r	C	
48	MP603A		10u	6.0u	13u	85	2.0	5.0	50	50	30m		P-ADE	Ge	110S	F49c	C	
49	MP1529		10u	2.0u	5.0u	90	2.0	3.0	20	20	500m		P-A	Ge	110J	TO41	C	
50	MP1530		10u	2.0u	5.0u	90	2.0	3.0	20	20	500m		P-A	Ge	110J	TO41	C	
51	MP1531		10u	2.0u	5.0u	90	2.0	3.0	20	20	500m		P-A	Ge	110J	TO41	C	
52	MP1532		10u	2.0u	5.0u	90	2.0	3.0	20	20	500m		P-A	Ge	110J	TO41	C	
53	MP1533		10u	2.0u	5.0u	90	2.0	3.0	20	20	500m		P-A	Ge	110J	TO41	C	
54	2N1159	10kt	10u			10u	20	2.0	1.0	150	333m		P	Ge	95J	TO3	C	
55	2N1160	10kt	10u			10u	20	2.0	1.0	100	200m		P	Ge	95J	TO3	C	
56	2N663	15kt	10u			10u	10	2.0	2.0	15	300m		P	Ge	100C	TO3	C	
57	JAN2N3771	3.0m	10u		10u	12u	150	4.0	15	10	#	1.2n	N	Si	200J	TO3	C	
58	MP2000A	430k	11u			21u	106	2.0	8.0	25	24m		P	Ge	110J	F4r	C	
59	MP2100A	430k	11u			21u	106	2.0	8.0	25	24m		P	Ge	110J	F4r	C	
60	MP2200A	430k	11u			21u	106	2.0	8.0	25	24m		P	Ge	110J	F4r	C	
61	MP2300A	430k	11u			21u	106	2.0	8.0	25	24m		P	Ge	110J	F4r	C	
62	MP2400A	430k	11u			21u	106	2.0	8.0	25	24m		P	Ge	110J	F4r	C	
63	2N5435		12u		10u	12u	120	2.0	25	20			P	Ge	110J	TO3	C	
64	2N5436		12u		10u	12u	120	2.0	25	20			P	Ge	110J	TO3	C	
65	2N5437		12u		10u	12u	120	2.0	25	20			P	Ge	110J	TO3	C	
66	2N5438		12u		10u	12u	120	2.0	25	40			P	Ge	110J	TO3	C	
67	2N5439		12u		10u	12u	120	2.0	25	40			P	Ge	110J	TO3	C	
68	2N5440		12u		10u	12u	120	2.0	25	40			P	Ge	110J	TO3	C	
69	DTG600		12u	6.0u	14u	75	2.0	5.0	50	50	30m		P	Ge	110J	Y204a	C	
70	DTG601		12u	6.0u	14u	75	2.0	5.0	50	50	30m		P	Ge	110J	Y204a	C	
71	DTG602		12u	6.0u	14u	75	2.0	5.0	50	50	30m		P	Ge	110J	Y204a	C	
72	DTG603		12u	6.0u	14u	75	2.0	5.0	50	50	30m		P	Ge	110J	Y204a	C	
73	MP2357		12u	5.0u	6.0u	170	1.5	50	15	15	10m		P-ADE	Ge	110S	F49c	C	
74	MP2358		12u	5.0u	6.0u	170	1.5	50	15	15	10m		P-ADE	Ge	110S	F49c	C	
75	MP2359		12u	5.0u	6.0u	170	1.5	50	15	15	10m		P-ADE	Ge	110S	F49c	C	
76	MP5435	350k	12u		10u	8.0u	120	2.0	25	20	12m #		P-ADE	Ge	110S	F49d	C	
77	MP5436	350k	12u		10u	8.0u	120	2.0	25	20	12m #		P-ADE	Ge	110S	F49d	C	
78	MP5437	350k	12u		10u	8.0u	120	2.0	25	20	12m #		P-ADE	Ge	110S	F49d	C	
79	MP5438	350k	12u		10u	8.0u	120	2.0	25	40	8.3m #		P-ADE	Ge	110S	F49d	C	
80	MP5439	350k	12u		10u	8.0u	120	2.0	25	40	8.3m #		P-ADE	Ge	110S	F49d	C	
81	MP5440	350k	12u		10u	8.0u	120	2.0	25	40	8.3m #		P-ADE	Ge	110S	F49d	C	
82#	ACY41	800k	12u	900n	10u	35u	280m	0.0	50m	105	1.0	50nt	P-A	Ge	90J	TO6	A	
83#	ACY39	1.00m	12u	900n	10u	35u	280m	0.0	50m	100	1.0	50nt	P-A	Ge	90J	TO6	A	
84#	ACY19	1.30m	12u	900n	10u	35u	280m	0.0	50m	175	1.0	50nt	P-A	Ge	90J	TO6	A	
85	DTG603M		13u		6.0u	11u	60	2.0	5.0	40			P	Ge	110J	Y204a	C	
86	2N637		15.0u			35u	25	5.0	3	30			P	Ge	100J	TO3	C	
87	2N637A		15.0u			35u	25	5.0	3	30			P	Ge	100J	TO3	C	
88	2N637B		15.0u			35u	25	5.0	3	30			P	Ge	100J	TO3	C	
89	2N638		15.0u			35u	25	5.0	3	20			P	Ge	100J	TO3	C	
90	2N638A		15.0u			35u	25	5.0	3	20			P	Ge	100J	TO3	C	
91	2N638B		15.0u			35u	25											

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ie (A)	hFE								
1	2N1100	0.1M	15.0u			15u	30	2.0	12	20	.08		P	Ge	85J	T036	C	
2	2N174A	100kΔ	15u			15u	30	2.0	5.0	35	58m		P	Ge	95J	T036	C	
3	2N1358	100kΔ	15u†			15u†	30	2.0	5.0	35	58m		P	Ge	95J	T036	C	
4#	ACY40	800k	15u	900n	7.0u	35u	260m	0.0	50m	45	1.0	50nt	P-A	Ge	90J	T05	A	
5#	ACY18	1.00MΔ	15u	900n	8.0u	35u	260m	0.0	50m	65	1.0		P-A	Ge	90J	T05	A	
6	2N2266	200MΔ	15u		7.0n	15n	12	2.0	500m	40	150m		P	Ge	125C	T36	F	
7	2N2267	200MΔ	15u		7.0n	15n	12	2.0	500m	40	150m		P	Ge	125C	T36	F	
8	2N2268	200MΔ	15u		7.0n	15n	12	2.0	500m	40	150m		P	Ge	125C	T36	F	
9	2N2269	200MΔ	15u		7.0n	15n	12	2.0	500m	40	150m		P	Ge	125C	T36	F	
10	2N2730		18u		18u	37u	80	2.0	65	15	#Δ		P	Ge	110C	T036	C	
11	2N2731		18u		18u	37u	80	2.0	65	15	#Δ		P	Ge	110C	T036	C	
12	2N2732		18u		18u	37u	80	2.0	65	15	#Δ		P	Ge	110C	T036	C	
13	2N2733		18u		18u	37u	66	2.0	65	15	#Δ		P	Ge	110C	T23	B	
14	2N2734		18u		18u	37u	66	2.0	65	15	#Δ		P	Ge	110C	T23	B	
15	2N2735		18u		18u	37u	66	2.0	65	15	#Δ		P	Ge	110C	T23	B	
16	2N2736		18u		18u	37u	66	2.0	65	15	#Δ		P	Ge	110C	T23	B	
17	2N2737		18u		18u	37u	66	2.0	65	15	#Δ		P	Ge	110C	T23	B	
18	2N2738		18u		18u	37u	66	2.0	65	15	#Δ		P	Ge	110C	T23	B	
19	2N5155		18u		12u	18u	60	2.0	8.0	25	Δ	36m	P	Ge	110J	F4j	C	
20	DTG2400M		18u		12u	18u	60	2.0	10	25	Δ		P	Ge	110J	Y204a	C	
21	2N2082A	1.0kΔ	18u	20u	5.0u	9.0u	90	2.0	2.0	50	Δ	140m	P	Ge	100C	T03	C	
22	2N2084A	1.0kΔ	18u	20u	5.0u	9.0u	90	2.0	2.0	50	Δ	140m	P	Ge	100C	T03	C	
23	2N2086A	1.0kΔ	18u	20u	5.0u	9.0u	90	2.0	2.0	50	Δ	140m	P	Ge	100C	T03	C	
24	2N2081A	5.0kΔ	18u	20u	5.0u	9.0u	90	2.0	2.0	20	Δ	200m	P	Ge	100C	T03	C	
25	2N2083A	5.0kΔ	18u	20u	5.0u	9.0u	90	2.0	2.0	20	Δ	200m	P	Ge	100C	T03	C	
26	2N2085A	5.0kΔ	18u	20u	5.0u	9.0u	90	2.0	2.0	20	Δ	200m	P	Ge	100C	T03	C	
27	JAN2N456B		20u			65u	150	1.5	1.0	40	Δ		P	Ge	100J	T03	C	
28	JAN2N457B		20u			65u	150	1.5	1.0	40	Δ		P	Ge	100J	T03	C	
29	JAN2N458B		20u			65u	150	1.5	1.0	40	Δ		P	Ge	100J	T03	C	
30	JAN2N1021A		20u			65u	150	1.5	1.0	40	Δ		P	Ge	100J	T03	C	
31	JAN2N1022A		20u			65u	150	1.5	1.0	40	Δ		P	Ge	100J	T03	C	
32	2N1419		20u			20u	87	2.0	5.0	300	Δ	28	P	Si	95S	T03	C	
33	2N1809		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T14	C	
34	2N1810		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T14	C	
35	2N1811		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T14	C	
36	2N1812		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T14	C	
37	2N1813		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T14	C	
38	2N1814		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T14	C	
39	2N1816		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T14	C	
40	2N1817		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T14	C	
41	2N1818		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T14	C	
42	2N1819		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T14	C	
43	2N1820		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175C	T14	C	
44	2N1823		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T14	C	
45	2N1824		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T14	C	
46	2N1825		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T14	C	
47	2N1826		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T14	C	
48	2N1830		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T14	C	
49	2N1831		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T14	C	
50	2N1832		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T14	C	
51	2N1833		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T14	C	
52	2N2109		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T17	F	
53	2N2110		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T17	F	
54	2N2111		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T17	F	
55	2N2112		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T17	F	
56	2N2113		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T17	F	
57	2N2114		20u			25u	250	4.0	10	10	Δ	150m	N	Si	175J	T17	F	
58	2N2116		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T17	F	
59	2N2117		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T17	F	
60	2N2118		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T17	F	
61	2N2119		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175J	T17	F	
62	2N2120		20u			25u	250	4.0	15	10	Δ	100m	N	Si	175C	T17	F	
63	2N2123		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T17	F	
64	2N2124		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T17	F	
65	2N2125		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T17	F	
66	2N2126		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T17	F	
67	2N2127		20u			25u	250	4.0	20	10	Δ	75m	N	Si	175J	T083	C	
68	2N2130		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T17	F	
69	2N2131		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T17	F	
70	2N2132		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T17	F	
71	2N2133		20u			25u	250	4.0	25	10	Δ	60m	N	Si	175J	T17	F	
72	2N5692		20u		8.0u	15u	120	2.0	40	10	Δ		P	Ge	110J		C	
73	2N5693		20u		8.0u	15u	120	2.0	40	10	Δ		P	Ge	110J		C	
74	2N5694		20u		8.0u	15u	120	2.0	40	10	Δ		P	Ge	110J		C	
75	2N5695		20u		8.0u	15u	120	2.0	40	10	Δ		P	Ge	110J		C	
76	2N5696		20u		8.0u	15u	120	2.0	40	10	Δ		P	Ge	110J		C	
77	2N4048	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
78	2N4049	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
79	2N4050	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
80	2N4051	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
81	2N4052	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
82	2N4053	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
83	2N4276	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
84	2N4277	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
85	2N4278	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
86	2N4279	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
87	2N4280	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
88	2N4281	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
89	2N4282	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
90	2N4283	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T03	C	
91	MP4048	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge	110J	T036	C	
92	MP4049	2.0kΔ	20u			100u	170	2.0	15	60	#Δ		P	Ge				

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1	2N375	5.0M $\Delta$	20 $\mu$ t		5.0 $\mu$ t	40 $\mu$ t	45 $\emptyset$ t	4.0 $\emptyset$	3.0 $\emptyset$	22	500m		P	Ge	95J	T03	C $\emptyset$	
2	2N618	5.0M $\Delta$	20 $\mu$ t		5.0 $\mu$ t	40 $\mu$ t	45 $\emptyset$ t	4.0 $\emptyset$	3.0 $\emptyset$	35	400m		P	Ge	95J	T03	C $\emptyset$	
3#	ADY26	25 $\mu$ $\emptyset$	25 $\mu$ $\emptyset$			75 $\mu$ $\emptyset$	100 $\emptyset$ t	12 $\emptyset$	1.0 $\emptyset$	1.0 $\Delta$			P-A	Ge	90J	ZA4	C $\emptyset$	
4	2N2728	3.0k $\Delta$	25 $\mu$ t		20 $\mu$ t	15 $\mu$ t	170 $\emptyset$ t	2.0 $\emptyset$	2.0 $\emptyset$	40 $\Delta$	2.0m		P	Ge	110C	T036	C $\emptyset$	
5	2N378	5.0k $\Delta$	25 $\mu$ t			40 $\mu$ t	25 $\emptyset$ #	2.0 $\emptyset$	2.0 $\emptyset$	40 $\Delta$			PA	Ge	100S	T03	C $\emptyset$	
6	2N379	5.0k $\Delta$	25 $\mu$ t			40 $\mu$ t	25 $\emptyset$ #	2.0 $\emptyset$	2.0 $\emptyset$	20 $\Delta$			PA	Ge	100S	T03	C $\emptyset$	
7	2N459	5.0k $\Delta$	25 $\mu$ t			40 $\mu$ t	25 $\emptyset$ #	2.0 $\emptyset$	2.0 $\emptyset$	20 $\Delta$	60m	5.0p $\square$	P-A	Ge	100S	T03	C $\emptyset$	
8	JAN2N2079A	5.0k $\Delta$	25 $\mu$ t			25 $\mu$ t	150 $\emptyset$ #	2.0 $\emptyset$	12m $\emptyset$	12 $\Delta$	60m		P	Ge	100S	T036	C $\emptyset$	
9	2N2490	5.0k $\Delta$	25 $\mu$ $\emptyset$			15 $\mu$ $\emptyset$	170 $\emptyset$ #	2.0 $\emptyset$	12 $\emptyset$	8.0 $\Delta$	58m		P	Ge	110C	T036	C $\emptyset$	
10	2N2491	5.0k $\Delta$	25 $\mu$ $\emptyset$			15 $\mu$ $\emptyset$	170 $\emptyset$ #	2.0 $\emptyset$	12 $\emptyset$	12 $\Delta$	58m		P	Ge	110C	T036	C $\emptyset$	
11	2N2492	5.0k $\Delta$	25 $\mu$ $\emptyset$			15 $\mu$ $\emptyset$	170 $\emptyset$ #	2.0 $\emptyset$	12 $\emptyset$	10 $\Delta$	50m		P	Ge	110C	T036	C $\emptyset$	
12	2N2493	5.0k $\Delta$	25 $\mu$ $\emptyset$			15 $\mu$ $\emptyset$	170 $\emptyset$ #	2.0 $\emptyset$	12 $\emptyset$	10 $\Delta$	41m		P	Ge	110C	T036	C $\emptyset$	
13#	ASZ15	200k $\Delta$	25 $\mu$ t	2.0 $\mu$ t	10 $\mu$ t	20 $\mu$ t	30 $\emptyset$ *	1.0 $\emptyset$	6.0 $\emptyset$	15 $\Delta$	40m	190p $\square$	P-A	Ge	90J	T03	C $\emptyset$	
14#	ASZ17	220k $\Delta$	25 $\mu$ t	2.0 $\mu$ t	10 $\mu$ t	20 $\mu$ t	30 $\emptyset$ *	1.0 $\emptyset$	6.0 $\emptyset$	20 $\Delta$	40m	190p $\square$	P-A	Ge	90J	T03	C $\emptyset$	
15#	ASZ18	220k $\Delta$	25 $\mu$ t	2.0 $\mu$ t	10 $\mu$ t	20 $\mu$ t	30 $\emptyset$ *	1.0 $\emptyset$	6.0 $\emptyset$	20 $\Delta$	40m	190p $\square$	P-A	Ge	90J	T03	C $\emptyset$	
16	2N456		26 $\mu$ t			80 $\mu$ t	50 $\emptyset$	1.5 $\emptyset$	1.0 $\emptyset$	130	48m		P-A	Ge	95S	T03	C $\emptyset$	
17	2N457		26 $\mu$ t			80 $\mu$ t	50 $\emptyset$	1.5 $\emptyset$	1.0 $\emptyset$	130	48m		P-A	Ge	95S	T03	C $\emptyset$	
18	2N458		26 $\mu$ t			80 $\mu$ t	50 $\emptyset$	1.5 $\emptyset$	1.0 $\emptyset$	130	48m		P-A	Ge	95S	T03	C $\emptyset$	
19	2N1667	2.0k $\Delta$	30 $\mu$ t		25 $\mu$ t	50 $\mu$ t	30 $\emptyset$ *	2.0 $\emptyset$	6.0 $\emptyset$	35 $\Delta$	83m		P	Ge	90C	T03	C $\emptyset$	
20	2N1668	2.0k $\Delta$	30 $\mu$ t		25 $\mu$ t	50 $\mu$ t	30 $\emptyset$ *	2.0 $\emptyset$	6.0 $\emptyset$	20 $\Delta$	83m		P	Ge	90C	T03	C $\emptyset$	
21	2N1669	2.0k $\Delta$	30 $\mu$ t		25 $\mu$ t	50 $\mu$ t	30 $\emptyset$ *	2.0 $\emptyset$	6.0 $\emptyset$	20 $\Delta$	83m		P	Ge	90C	T03	C $\emptyset$	
22	2N2446	3.0k $\Delta$	30 $\mu$ $\emptyset$			35 $\mu$ $\emptyset$	90 $\emptyset$	2.0 $\emptyset$	5.0 $\emptyset$	15 $\Delta$	214m		P	Ge	100C	T03	C $\emptyset$	
23	2N1358A	100k $\Delta$	30 $\mu$ t		30 $\mu$ t	30 $\mu$ t	50 $\emptyset$ \$	2.0 $\emptyset$	1.2 $\emptyset$	40 $\Delta$	58m		P	Ge	100C	T036	A $\emptyset$	
24	SVT6251		250 $\mu$ t		2.5 $\mu$ t	1.0 $\mu$ t	98 $\emptyset$	5.0 $\emptyset$	5.0 $\emptyset$	50 $\Delta$	300m		N	Si	150J	T03		
25	SVT6252		250 $\mu$ t		2.5 $\mu$ t	1.0 $\mu$ t	98 $\emptyset$	5.0 $\emptyset$	5.0 $\emptyset$	50 $\Delta$	300m		N	Si	150J	T03		
26	SVT6253		250 $\mu$ t		2.5 $\mu$ t	1.0 $\mu$ t	98 $\emptyset$	5.0 $\emptyset$	5.0 $\emptyset$	50 $\Delta$	300m		N	Si	150J	T03		
27	2N2691	60k $\Delta$	700 $\mu$ t		3.0 $\mu$ t	3.0 $\mu$ t	100 $\emptyset$	1.5 $\emptyset$	20 $\emptyset$	100 $\square$	32m		P	Ge	110C	T041	C $\emptyset$	
28	2N2691A	.60m $\Delta$	700 $\mu$ t		3.0 $\mu$ t	3.0 $\mu$ t	170 $\emptyset$	1.5 $\emptyset$	20m $\emptyset$	100 # $\square$	.03		P	Ge	110C	T041	A $\emptyset$	
29	PT2523	10m	5000 $\mu$ t		1.5 $\mu$ t	500 $\mu$ t	625	500	100	10	8.0m		N		200	X197		
30	PT2524	10m	5000 $\mu$ t		1.5 $\mu$ t	500 $\mu$ t	625	500	100	10	8.0m		N		200	X197		
31#	2SC1860		.50 $\emptyset$		1.0 $\mu$ t	.50 $\mu$ t	800m	5.0 $\emptyset$	.10 $\emptyset$	70 #*			N	Si	150J	Y205d	A	
32	VN35AK#		8.0 $\emptyset$			8.0 $\emptyset$	6.2					50p $\square$	N $\emptyset$	Si	150J	T039	DA $\square$	
33	VN66AK#		8.0 $\emptyset$			8.0 $\emptyset$	6.2					50p $\square$	N $\emptyset$	Si	150J	T039	DA $\square$	
34	VN67AK#		8.0 $\emptyset$			8.0 $\emptyset$	6.2					50p $\square$	N $\emptyset$	Si	150J	T039	DA $\square$	
35	VN99AK#		8.0 $\emptyset$			8.0 $\emptyset$	6.2					50p $\square$	N $\emptyset$	Si	150J	T039	DA $\square$	



# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL & MAT. N-PNP	MIN. DERATE J TO C (W/°C)	hFE		TEST			ABSOLUTE MAX RATINGS @ 25°C				MAX COLL (CASE) DISS-Pc (W)	M A X T °C	MAX IC @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R U E	D W G No	L C O D E	
				2 I MIN Ø-TYP	MAX Ø-TYP	VCE ØVCB (V)	Ic ØIB (A)	IC Ø-IE (A)	IB Ø-IE (A)	BVCBO (V)	VEBO (V)	BVCEO ØBVCEs (V)									
1#	BDT80	PSi						4.0	100m	60	5	80	50	8J					Y220	D	
2#	BDT60A	PSi						4.0	100m	80	5	80	50	8J					Y220	D	
3#	BDT60B	PSi						4.0	100m	100	5	80	50	8J					Y220	D	
4#	BDT60C	PSi						4.0	100m	120	5	120	50	8J					Y220	D	
5#	BDT61	NSi						4.0	100m	60	5	60	50	8J					Y220	D	
6#	BDT61A	NSi						4.0	100m	80	5	80	50	8J					Y220	D	
7#	BDT61B	NSi						4.0	100m	100	5	100	50	8J					Y220	D	
8#	BDT61C	NSi						4.0	100m	120	5	120	50	8J					Y220	D	
9#	BU826	NSi						6.0	2.0			375	115	8J			∅Δ		B46	D	
10#	BU910	NSi						6.0	1.0		5.0	350	60	8J	1.0m\$			PE	Y220	D	
11#	BU911	NSi						6.0	1.0		5.0	400	60	8J	1.0m\$			PE	Y220	D	
12#	BU912	NSi						6.0	1.0		5.0	450	60	8J	1.0m\$			PE	Y220	D	
13#	BU920	NSi						10	1.0		5.0	350	120	8J	1.0m\$				T03	CØ	
14#	BU921	NSi						10	1.0		5.0	400	120	8J	1.0m\$				T03	CØ	
15#	BU922	NSi						10	1.0		5.0	450	120	8J	1.0m\$				T03	CØ	
16#	BU930	NSi						15	1.0		5.0	350	150	8J	1.0m\$				T03	CØ	
17#	BU931	NSi						15	1.0		5.0	400	150	8J	1.0m\$				T03	CØ	
18#	BU932	NSi						15	1.0		5.0	450	150	8J	1.0m\$				T03	CØ	
19#	ET6060	NSi						20	2.0	350		300	125				Δ		T03	A	
20#	ET6061	NSi						20	2.0	400		350	125				Δ		T03	A	
21#	ET6062	NSi						20	2.0	450		400	125				Δ		T03	A	
22#	ET10015	NSi						50	10	600		400	250				Δ		T03	A	
23#	ET10016	NSi						50	10	700		500	250				Δ		T03	A	
24#	ET10020	NSi						60	4.0	300		200	250				Δ		T03	A	
25#	ET10021	NSi						60	4.0	350		250	250				Δ		T03	A	
26#	ON630	NSi			5.0kØ	5.0	10m	500m				30	625m	8J	100n\$	125M		PE	T092	A	
27#	BC618#	NSi	4.0 Ø		5.0	10	10	500m		40	10	55	625m	8J	50n	150M			T092	A	
28#	DTS4060†	NSi	8.0		5.0	15	15				20	600	100	8J		8.0MΔ	120m	D	Y204a	KFØ	
29#	D66DV5†	N	25	100	5.0	150	50		10		8.0	400	125	8J	2.5mZ				X194		
30#	D66DV6†	N	25	100	5.0	150	50		10		8.0	450	125	8J	2.5mZ				X194		
31#	D66DV7†	N	25	100	5.0	150	50		10		8.0	500	125	8J	2.5mZ				X194		
32#	D67DE5†	N	25	100	5.0	150	100		10		8.0	400	312	8J	2.5mZ				X193		
33#	D67DE6†	N	25	100	5.0	150	100		10		8.0	450	312	8J	2.5mZ				X193		
34#	D67DE7†	N	25	100	5.0	150	100		10		8.0	500	312	8J	2.5mZ				X193		
35#	2SD1187	NSi	30		1.0	6.0	10		2.0	100	5.0	80	80	8J	10u	10M		D	B77		
36#	BU322	NSi	30		2.7Ø	7.0	7.0			450	6.0	400	100	8J	5.0m				T03	C	
37#	BU322A	NSi	30		2.7Ø	7.0	7.0			525	6.0	475	100	8J	5.0m				T03	C	
38#	BU323	NSi	30		2.7Ø	10	10			450	6.0	400	125	8J	5.0m				T03	C	
39#	BU323A	NSi	30		2.7Ø	10	10			525	6.0	475	125	8J	5.0m				T03	C	
40#	WT635-01M†		30		2.5	150	150		50			450	85k	8J	20mZ			Δ		T169	
41#	WT635-02M†		30		2.5	150	150		50			450	85k	8J	20mZ			Δ		T169	
42#	ESM737	N	50		60		8.0					400	75					D		Y220b	
43#	BUV37	N	60		10	15						400	125					D		B46	
44#	ESM855†	NSi	60 #		5.0	10	20		4.0		8.0	400	150	8J	0.5m*			Δ		T03	
45#	ESM856†	NSi	60 #		5.0	10	20		4.0		8.0	400	150	8J	0.5m*			Δ		T03	
46#	ESM870†	NSi	60 #		5.0	20	40		6.0		5.0	400	200	8J	1.0m*			Δ			
47#	ESM871†	NSi	60 #		5.0	20	40		6.0		5.0	400	200	8J	1.0m*			Δ			
48#	BDT20	P	100		3.0	50m	5.0	100m	180	5.0	130	40		8J						Y220	D
49#	BU184	N	100		5.0	8.0						400	60					D		Y220b	
50#	BU189	N	100		5.0	8.0						300	60					D		Y220b	
51#	DT4335	NSi	100	1.0k	2.0Ø	5.0	6.0			300	5.0	300	100	8J	5.0m				T03	C	
52#	DT4336	NSi	100	1.0k	2.0Ø	5.0	6.0			500	5.0	500	100	8J	5.0m				T03	C	
53#	DT5335	NSi	100	1.0k	2.0Ø	5.0	10			300	5.0	300	100	8J	5.0m				T03	C	
54#	DT5336	NSi	100	1.0k	2.0Ø	5.0	10			500	5.0	500	100	8J	5.0m				T03	C	
55#	NTD565	NSi	100		1.5Ø	6.0	8.0			500	8.0	400	100	8J	100u			D		T03	CØ
56#	SML2175	N-Si	100	1.0k	5.0	10	15 #			400	6.0	400	60	8J	100u	20MΔ				Y220	D
57#	2SD1314	NSi	100		5.0	15	15		1.0	600	6.0	450	150	8J	1.0m			D		B77	
58#	MG15G1AL2	NSi	100		5.0	15	15	1.0		600	6.0	450	120	8J	1.0m			D		X200	
59#	MG30G1BL2	NSi	100		5.0	30	30	2.0		600	6.0	450	250	8J	1.0m			D		X201	
60#	MG30G2CL2	NSi	100		5.0	30	30	2.0		600	6.0	450	250	8J	1.0m			D		X202	
61#	MG50G1BL2	NSi	100		5.0	50	50	3.0		600	6.0	450	300	8J	1.0m			D		X201	
62#	MG50G2CL2	NSi	100		5.0	50	50	3.0		600	6.0	450	300	8J	1.0m			D		X202	
63#	SML4009	NSi	100 #	250 Ø	2.0	50	50	10		100	10	60	250	8J	10u	50MΔ		PE		T03	CØ
64#	MG100G1AL2	NSi	100		5.0	100	100	5.0		600	6.0	450	600	8J	1.0m			D		X203	
65#	2SD978	NSi	120		1.5	3.0	5.0			450	6.0	350	40	8J	500u		625m	PL		Y220a	D
66#	BUX30†	NSi	150		3.0	5.0	15 #	2.5 #				400	90 Ø	8J	300uΔ					T03	CØ
67#	77K40	N	150	350 Ø	2.0	7.0	7.0	0.5		500	12	400	50	8J	0.1	11M				Y220a	D
68#	SML2167	N-Si	200		5.0	5.0	15			400	6.0	400	125	8J	500u	20M				T03	CØ
69#	DTS4040†	NSi	250		5.0	3.0	15				20	400	100	8J	100	8.0MΔ	120m	D		Y204a	KFØ
70#	GT811†	N-Si	300 Ø		5.0	5.0	8.0	2.0		330	6.0	400	60	8J	100u\$			PE		Y220	D
71#	GT812†	N-Si	300 Ø		5.0	5.0	8.0	2.0		400	6.0	400	60	8J	100u\$			PE		Y220	D
72#	BSS36	NSi	400		1.6	500m						600mØ						Δ		T012	KØ
73#	DTS4045†	NSi	500		5.0	3.0	15				20	400	100	8J	100	8.0MΔ	110m	D		Y204a	KFØ
74#	2SD1044	NSi	700	10k	4.0	1.0	6.0			100	6.0	80	60	8J	60	7.0M		DM		B38	KØ
75#	BD266B	PSi	750		3.0	3.0				100		100	60	8J				E		Y220b	DC
76#	BDX34D	P	750		3.0	10						120	70							Y220b	
77#	MPSD04Z	NSi	1.0k		5.0	10m	300m					25 Ø	625m			100MΔ				T092	A
78#	MPSD54Z	PSi	1.0k		5.0	10m	300m					25 Ø	625m			100MΔ				T092	A
79#	BD975	NSi	1.0k		10	150m	1.0		100m	60	5.0	45	1.6	8J	100n	200M		EPLT		Y202	B
80#	BD976	PSi	1.0k		10	150m	1.0		100m	60	5.0	45	1.6	8J	100n	200M		EPLT		Y202	B
81#	BD979	NSi	1.0k		10	150m	1.0		100m	100	5.0	80	1.6	8J	100n	200M		EPLT		Y202	B
82#	BD980	PSi	1.0k		10	150m	1.0		100m	100	5.0	80	1.6	8J	100n	200M		EPLT		Y202	B
83#	2SD617	NSi	1.0k		4.0	1.0	8.0	1.0													

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL & MAT. N-NPN P-PNP	1 MIN. DERATE J TO C (W/°C)	hFE		TEST		ABSOLUTE MAX RATINGS @ 25°C				MAX COLL (CASE) DISS-Pc (W)	M X T °C	MAX ICBO @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R U E	DWG No	L C O D E		
				2 MIN. hFE	MAX hFE	VCE	IC	IB	VCBO	VEBO	VCES									VCES	VCES
1#	2SD1111	NSi		5.0k		2	50m	700m			80	10	50	600m			PE	T092	B		
2	HS5306	NSi		7.0k	70k	5.0	2.0m			25	12	25	900m	\$J	100n	60M	7.0	R198	B		
3	HS5306A	NSi		7.0k	70k	5.0	2.0m			25	12	25	900m	\$J	100n	60M	7.0	R198	B		
4	HS5308	NSi		7.0k	70k	5.0	2.0m			40	12	40	900m	\$J	100n	60M	7.0	R198	B		
5	HS5308A	NSi		7.0k	70k	5.0	2.0m			40	12	40	900m	\$J	100n	60M	7.0	R198	B		
6#	BCV46	PSi		10k		5.0	100m	500m		80		60	350m				PE	X156c	A		
7#	BCV47	NSi		10k		5.0	100m	500m		80		60	350m					X156c	A		
8#	RCA1C15	N		10k		5.0	3.0					80	65		20M			Y220a	A		
9#	RCA1C16	N		10k	20k	5.0	3.0					80	65		20M			Y220a	A		
10	HEPS9100-RT	NSi		20k		5.0	100m	300m		30	10	30	500m	TJ	100n	200M		T092	KC		
11#	BCV26	PSi		20k		5.0	100m	500m		40		30	350m					X156c	A		
12#	BCV27	NSi		20k		5.0	100m	500m		40		30	350m					X156c	A		
13#	BC516	PSi		30k				400m		40		30			10n		PE	R203c	KC		
14#	BC517	NSi		30k				400m		40		30			10n		PE	R203c	KC		
15#	2SB865	PSiC		40k		2.0	500m	1.5		80	10	50	900m	\$J	100n	120M		R195e	B		
16#	2SD1153	NSiC		40k		2.0	500m	1.5		80	10	50	900m	\$J	100n	120M		R195e	B		
17#	MPSA66Z	PSi	1.0m	75k		5.0	10m	300m		30		30	500m			100M		T092	A		
18#	BDV64	PSi	1.0m	1.0k	1.5k	4.0	1.0	10	500m	60	5.0	60	125	\$J	400u	100k	400m	E	B46	D	
19#	BDV64A	PSi	1.0m	1.0k	1.5k	4.0	1.0	10	500m	80	5.0	80	125	\$J	400u	100k	400m	E	B46	D	
20#	BDV64B	PSi	1.0m	1.0k	1.5k	4.0	1.0	10	500m	100	5.0	100	125	\$J	400u	100k	400m	E	B46	D	
21#	BDV65	NSi	1.0m	1.0k	1.5k	4.0	1.0	10	500m	60	5.0	60	125	\$J	400u	70k	400m	E	B46	D	
22#	BDV65A	NSi	1.0m	1.0k	1.5k	4.0	1.0	10	500m	80	5.0	80	125	\$J	400u	70k	400m	E	B46	D	
23#	BDV65B	NSi	1.0m	1.0k	1.5k	4.0	1.0	10	500m	100	5.0	100	125	\$J	400u	70k	400m	E	B46	D	
24#	FMMTA13	NSi	1.3m	5.0k		5.0	10m	300m		30	10	30	200m	\$A	100n	15	PLT	X156d	A		
25#	FMMTA14	NSi	1.3m	10k		5.0	10m	300m		30	10	30	200m	\$A	100n	15	PLT	X156d	A		
26#	FMMTA12	NSi	1.3m	20k		5.0	10m	300m		10	10	20	200m	\$A	100n	100	PLT	X156d	A		
27#	2SC1280S	NSi	2.5m	4.0k	13k	5.0	5.0m	300m		15	10	15	250m	\$J	100n	180M	5.5	E	T092	B	
28#	2SC1280AS	NSi	2.5m	12k	20k	2.0	10m	300m		40	10	30	250m	\$J	100n	180M	10	E	T092	B	
29#	MMBTA13	NSi	2.8m	5k		5	10m	300m		30		30	350m	\$J	100n	125M			X156d	C	
30#	MMBTA63	PSi	2.8m	5k		5	10m	300m		30		30	350m	\$J	100n	125M			X156d	C	
31#	MMBT6427	NSi	2.8m	10k	100k	5	10m	300m		30	12	40	350m	\$J	50n				X156d	C	
32#	MMBTA14	NSi	2.8m	10k		5	10m	300m		30		30	350m	\$J	100n	125M			X156d	C	
33#	MMBTA64	PSi	2.8m	10k		5	10m	300m		30		30	350m	\$J	100n	125M			X156d	C	
34#	SL305B	NSi	4.0m	1.5k		5.0	1.0m	200m		30	9.0	12	600m	\$J	10n	60M	83	E*	R172	PD	
35	2N5305	NSi	4.0m	2.0k	20k	5.0	2.0m	200m		25	12	25	400m	\$S	100n	60M	7.0		T098	KB	
36	2N5307	NSi	4.0m	2.0k	20k	5.0	2.0m	200m		40	12	40	400m	\$S	100n	60M	7.0		T098	KB	
37	MPS5305	NSi	4.0m	2.0k	20k	5.0	2.0m	200m		25	12	25	400m		100n	60M	7.0		T092	A	
38	MPS5307	NSi	4.0m	2.0k	20k	5.0	2.0m	200m		40	12	40	400m		100n	60M	7.0		T092	A	
39#	2SC982Z	NSi	4.0m	5.0k		5.0	10m	200m		40	10	40	400m	\$J	100n	4.3		E	T092	B	
40#	9A1000	PSi	4.0m	5.0k		10	10m	200m		40	9.0	30	360m	\$S	100n	200M	2.0	#	R196d	KB	
41	D16P1	NSi	4.0m	6.0k		10	100m	200m	20m	18	12	12	400m	\$A	100n	400M			T098	KB	
42	2N5306	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		25	12	25	400m	\$S	100n	60M	7.0		T098	KB	
43	2N5306A	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		25	12	25	400m	\$S	100n	60M	7.0		T098	KB	
44	2N5308	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		40	12	40	400m	\$S	100n	60M	7.0		T098	KB	
45	2N5308A	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		40	12	40	400m	\$S	100n	60M	7.0		T098	KB	
46	MPS5306	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		25	12	25	400m		100n	60M	7.0		T092	A	
47	MPS5306A	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		25	12	25	400m		100n	60M	7.0		T092	A	
48	MPS5308	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		40	12	40	400m		100n	60M	7.0		T092	A	
49	MPS5308A	NSi	4.0m	7.0k	70k	5.0	2.0m	200m		40	12	40	400m		100n	60M	7.0		T092	A	
50	2N4975	PSi	4.5m	1.0k		5.0	1.0u	1.0		40	10	30	800m	\$S	10n	175M	4.0	#	R176c	KA	
51	2N4974	PSi	4.5m	5.0k		5.0	1.0u	1.0		40	10	30	800m	\$S	10n	175M	4.0	#	R176c	KA	
52	HEPS9120-RT	PSi	4.5m	50k		5.0	10m	300m		30	8.0	30	500m	TJ	100n	175M			T092	KC	
53#	MPSA13K	NSi	5.0m	5.0k		5.0	10m	500m		30	10	30	750m	\$A	100n	15	#	PLT	B58	A	
54	MPSA63	PSi	5.0m	5.0k		5.0	10m	300m		30	10	30	625m	\$J	100n	125M	15	#	R211	A	
55#	MPSA63Z	PSi	5.0m	5.0k		5.0	10m	300m		30	10	30	625m	\$J	100n	125M		DPE	T092	A	
56	2N6427	NSi	5.0m	10k	100k	5.0	10m	500m		40	12	40	625m	\$S	50n	130M	3.0		T092	KC	
57	GES6427	NSi	5.0m	10k	100k	5.0	10m	500m	50m	40	12	40	625m	\$S	50n	80M		PE	T092	A	
58	MPS-A25	N	5.0m	10k		5.0	10m	500m		40	10	40	625m	\$J	100n				T092	A	
59	MPS-A26	N	5.0m	10k		5.0	10m	500m		50	10	50	625m	\$J	100n				T092	A	
60	MPS-A27	N	5.0m	10k		5.0	10m	500m		60	10	60	625m	\$J	100n				T092	A	
61	MPS-A75	P	5.0m	10k		5.0	10m	300m		40	10	40	625m	\$J	100n				T092	A	
62	MPS-A76	P	5.0m	10k		5.0	10m	300m		50	10	50	625m	\$J	100n				T092	A	
63	MPS-A77	P	5.0m	10k		5.0	10m	300m		60	10	60	625m	\$J	100n				T092	A	
64#	MPSA14K	NSi	5.0m	10k		5.0	10m	500m		30	10	30	750m	\$A	100n	125M	15	#	PLT	B58	A
65	MPSA64	PSi	5.0m	10k		5.0	10m	300m		30	10	30	625m	\$J	100n	125M		DPE	T092	A	
66#	MPSA64Z	PSi	5.0m	10k		5.0	10m	300m		30	10	30	625m	\$J	100n	125M		DPE	T092	A	
67	2N8426	NSi	5.0m	20k	200k	5.0	10m	500m		40	12	40	625m	\$S	50n	150M	3.0		T092	KC	
68	GES6426	NSi	5.0m	20k	200k	5.0	10m	500m	50m	40	12	40	625m	\$J	50n	80M		PE	T092	A	
69#	MPSA12K	NSi	5.0m	20k		5.0	10m	500m		20	10	20	750m	\$A	100n	100	#	PLT	B58	A	
70	MPSA62	PSi	5.0m	20k		5.0	10m	300m		20	10	20	625m	\$J	100n	125M	100	#	R211	A	
71#	MPSA62Z	PSi	5.0m	20k		5.0	10m	300m		20	10	20	625m	\$J	100n	250M		DPE	T092	A	
72#	MPSA65Z	PSi	5.0m	50k		5.0	10m	500m		30	8.0	30	625m	\$J	100n	100M		DPE	T092	A	
73#	ZTX600	NSi	5.7m	2k	100k	5	500m	1		160	10	140	1	\$S	100n	250M			T092	A	
74#	ZTX600K	NSi	5.7m	2.0k	100k	5.0	0.5	1.0		160	10	140	2.5	\$A	0.1u	250M			B58	A	
75#	ZTX600L	NSi	5.7m	2.0k	100k	5.0	0.5	1.0		160	10	140	2.5	\$A	0.1u	250M			B58	A	
76#	ZTX600M	NSi	5.7m	2.0k	100k	5.0	0.5	1.0		160	10	140	2.5	\$A	0.1u	250M			B58	A	
77#	ZTX601	NSi	5.7m	2k	100k	5	500m	1		180	10	160	1	\$S	100n	250M			T092	A	
78#	ZTX601																				

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-NPN P-PNP	1 MIN. DERATE J TO C (W/°C)	hFE 2 MIN. ∅-TYP	hFE MAX ∅-TYP	ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	MAX ICBO @ MAX VCE ∅ (A)	ft (Hz)	MAX SAT RES (Ω)	S T U R U E	DWG No	L C O A D E		
						VCE ∅ (V)	IC ∅ (A)	IB ∅ (A)	V <sub>CE</sub> ∅ (V)	V <sub>BE</sub> ∅ (V)								V <sub>CE</sub> ∅ (V)	
1	MPSA14	NSi	8m	10k	5.0	10m	500m	1	30	10	30	1.0	125MΔ		PL	T092	KA		
2	MPSW14	NSi	8m	10k	5	10m	1				30	1	125MΔ			R210d	KA		
3	MPSW64	PSi	8m	10k	5	10m	500m	1			30	1	125MΔ			R210d	KA		
4	MPSA12	NSi	8.0m	20k	5.0	10m	500m	1	20	10	20	1.0	100MΔ		PL	T092	KA		
5	MPSW45	NSi	8m	25k	5	200m	1		50	12	40	1	100MΔ			R210d	KA		
6	D38L3	NSi	8.0m∅	50k#	5.0	2.0m	500m		40	14	40	1.0	80MΔ	3.0 #	PE	T092	A		
7	D38L6	NSi	8.0m∅	50k#	5.0	2.0m	500m		25	14	25	1.0	80MΔ	3.0 #	PE	T092	A		
8	D39C3	PSi	8.0m∅	50k#	5.0	2.0m	500m		40	14	40	1.0	80MΔ	3.5 #	PE	T092	A		
9	D39C6	PSi	8.0m∅	50k#	5.0	2.0m	500m		25	14	25	1.0	80MΔ	3.5 #	PE	T092	A		
10	GES5305	NSi	9.0m	2.0k	20k	5.0	2.0m	300m	50m	25	12	25	900m	30MΔ	7.0	PE	T092	A	
11	GES5307	NSi	9.0m	2.0k	20k	5.0	2.0m	300m	50m	40	12	40	900m	30MΔ	7.0	PE	T092	A	
12	GES5306	NSi	9.0m	7.0k	70k	5.0	2.0m	300m	50m	25	12	25	900m	30MΔ	7.0	PE	T092	A	
13	GES5306A	NSi	9.0m	7.0k	70k	5.0	2.0m	300m	50m	25	12	25	900m	30MΔ	7.0	PE	T092	A	
14	GES5308	NSi	9.0m	7.0k	70k	5.0	2.0m	300m	50m	40	12	40	900m	30MΔ	7.0	PE	T092	A	
15	GES5308A	NSi	9.0m	7.0k	70k	5.0	2.0m	300m	50m	40	12	40	900m	30MΔ	7.0	PE	T092	A	
16	NPCA13P	NSi	9.6m	10k	5.0	10m	1.0		30	10	30	1.2	125MΔ			B32	KA		
17	NPCA14P	NSi	9.6m	20k	5.0	10m	1.0		30	10	30	1.2	125MΔ			B32	KA		
18	2N2725	NSi	10m	2.0k	10k	5.0	100u	30m		45	10	45	1.8	100MΔ	100 #	∅	T072	KA	
19	2N2723	NSi	10m	2.0k	10k	5.0	10m	40m		80	12	60	1.8	100MΔ	100 #	∅	T072	KA	
20	BD875	NSi	10m∅	2.0k	10	500m	1.0		100m	60	5.0	45	1.2	200M	1.8	PE	T0126	KB	
21	BD877	NSi	10m∅	2.0k	10	500m	1.0		100m	80	5.0	60	1.2	200M	1.8	PE	T0126	KB	
22	BD879	NSi	10m∅	2.0k	10	500m	1.0		100m	100	5.0	80	1.2	200M	1.8	PE	T0126	KB	
23	2N2724	NSi	10m	7.0k	50k	5.0	10m	40m		80	12	60	1.8	100MΔ	100 #	∅	T072	KA	
24	BC618	NSi	10m	10k	50k	5.0	200m	1.0		100m	80	12	55	1.2	50M	1.8	PE	R204d	KA
25	TIS151	NSi	10m	10k#	50k	5.0	200m	1.0		100m	80	12	55	1.2	50M	1.8	PE	R210a	KA
26	TIS176	PSi	10m	10k	50k	5.0	200m	1.0		100m	80	12	55	1.2	50M	5.5 #	PE	R226a	KA
27	BC617	NSi	10m	20k	70k	5.0	200m	1.0		100m	50	12	40	1.2	50M	1.8	PE	R204d	KA
28	TIS150	NSi	10m	20k#	70k	5.0	200m	1.0		100m	50	12	40	1.2	50M	5.5 #	PE	R210a	KA
29	TIS175	PSi	10m	20k	100k	5.0	200m	1.0		100m	50	12	40	1.2	50M	5.5 #	PE	R226a	KA
30	U2TA508†	NSi	11m	500 #	5.0	3.0	750m		600m	80	5.0	60	1.5	40M	500m		T092	KA	
31	U2TA510†	NSi	11m	500 #	5.0	3.0	750m		600m	120	5.0	100	1.5	40M	500m		T092	KA	
32	U2TA510†	NSi	11m	500 #	5.0	3.0	750m		600m	120	5.0	100	1.5	40M	500m		T092	KA	
33	BCX38A	NSi	11m	1.0k	5.0	500m	800m		80	10	60	1.0	100M	1.6	PL	B58	KA		
34	BCX38B	NSi	11m	4.0k	5.0	500m	800m		80	10	60	1.0	100M	1.6	PL	B58	KA		
35	2N6521	PSi	11m	10k	25k	10	150m	1.0		100m	60	10	40	2.0	175MΔ	10	PL	R176c	KA
36	BCX38C	NSi	11m	10k	5.0	500m	800m		80	10	60	1.0	100M	1.6	PL	B58	KA		
37	2N6522	PSi	11m	20k	50k	10	150m	1.0		100m	60	10	40	2.0	175MΔ	10	PL	R176c	KA
38	MPSD04	NSi	12m	1.0k	#	5.0	300m	300m		10	25	1.5	100MΔ	10m#	∅	T092	KA		
39	MPSD54	PSi	12m	1.0k	#	5.0	300m	300m		10	25	1.5	100MΔ	10m#	∅	T092	KA		
40	MPSA65	PSi	12m	20k	#	5.0	100m	300m		30	8.0	30	1.5	175M	15 #	∅	T092	KA	
41	MPSA66	PSi	12m	40k	#	5.0	100m	300m		30	8.0	30	1.5	175M	15 #	∅	T092	KA	
42	2N6549	NSi	16m	15k	150k#	5.0	200m	2.0		100m	50	12	40	2.0	100MΔ	2.0	∅	Y202c	KA
43	2N6548	NSi	16m	25k	150k#	5.0	200m	2.0		100m	50	12	40	2.0	100MΔ	2.0	∅	Y202c	KA
44	2N6042	PSi	17m	1.0k	2.0k#	4.0	3.0	8.0		120m	100	1.0	100	2.2	500m#	4.0MΔ		B23a	KE
45	2N6045	NSi	17m	1.0k	2.0k#	4.0	3.0	8.0		120m	100	1.0	100	2.2	500m#	4.0MΔ		B23	KE
46	2N6040	PSi	17m	1.0k	2.0k#	4.0	4.0	8.0		120m	60	1.0	60	2.2	500m#	4.0MΔ		B23a	KE
47	2N6041	PSi	17m	1.0k	2.0k#	4.0	4.0	8.0		120m	80	1.0	60	2.2	500m#	4.0MΔ		B23a	KE
48	2N6043	NSi	17m	1.0k	2.0k#	4.0	4.0	8.0		120m	60	1.0	60	2.2	500m#	4.0MΔ		B23	KE
49	2N6044	NSi	17m	1.0k	2.0k#	4.0	4.0	8.0		120m	80	1.0	60	2.2	500m#	4.0MΔ		B23	KE
50	BSR50†	NSi	18m	1.0k∅	10	150m	2.0		100m	60	5.0	45	800m∅	350M	1.6	PL	R221a	B	
51	BSR51†	NSi	18m	1.0k∅	10	150m	2.0		100m	80	5.0	60	800m∅	350M	1.6	PL	R221a	B	
52	BSR60†	PSi	18m	1.0k∅	10	150m	2.0		100m	60	5.0	45	800m∅	1.0G	2.2	PL	R221a	B	
53	BSR61†	PSi	18m	1.0k∅	10	150m	2.0		100m	80	5.0	60	800m∅	1.0G	2.2	PL	R221a	B	
54	2N6724	NSi	20m	25k	5.0	200m	2.0		500m	50	12	40	2.0	100MΔ		PL	Y237	KA	
55	2N6725	NSi	20m	25k	5.0	200m	2.0		500m	60	12	50	2.0	100MΔ		PL	Y237	KA	
56	92PU45	NSi	20m	25k	5.0	200m	2.0		500m	50	12	40	1.2	100MΔ		PL	B32	KA	
57	92PU45A	NSi	20m	25k	5.0	200m	2.0		500m	60	12	50	1.2	100MΔ		PL	B32	KA	
58	SDN301	NSi	23m	1.0k	2.0	1.0	2.0			60	4.0	4.0	50M	750m		T033	KM		
59	SDN305	NSi	23m	1.0k	2.0	1.0	2.0			150	4.0	4.0	50M	750m		T033	KM		
60	SDP351	PSi	23m	1.0k	2.0	1.0	2.0			60	4.0	4.0	50M	750m		T033	KM		
61	SDP355	PSi	23m	1.0k	2.0	1.0	2.0			120	4.0	4.0	50M	750m		T033	KM		
62	TIP160†	NSi	24m∅	200	2.2	4.0	10		1.0	320	5.0	320	3.0	430m		B3	B		
63	TIP161†	NSi	24m∅	200	2.2	4.0	10		1.0	350	5.0	350	3.0	430m		B3	B		
64	TIP162†	NSi	24m∅	200	2.2	4.0	10		1.0	380	5.0	380	3.0	430m		B3	B		
65	MJ2300	NSi	24m	500	3.0	20m	2.0		100m	100	5.0	40	3.0	6.0M		T066	C		
66	MJ2305	NSi	24m	500	3.0	20m	4.0		100m	100	5.0	40	3.0	6.0M		T066	C		
67	BDW83†	NSi	28m	750 #	20k	3.0	6.0	15		500m	45	5.0	45	3.5	500u		∅	T03	D
68	BDW83A†	NSi	28m	750 #	20k	3.0	6.0	15		500m	60	5.0	60	3.5	500u		∅	T03	D
69	BDW83B†	NSi	28m	750 #	20k	3.0	6.0	15		500m	80	5.0	80	3.5	500u		∅	T03	D
70	SDN105	NSi	28m	1.0k	2.0	1.0	5.0			150	5.0	5.0	50M	500m		T033	KM		
71	SDP155	PSi	28m	1.0k															

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL & MAT. N-PNP	MIN. DERATE J TO C (W/°C)	hFE		TEST			ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	M A X T °C	ICBO @ MAXVCB @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	T U R U R E	DWG No	L C O D E
				2 MIN	MAX	VCE	IC	IB	VCBO	VEBO	VCES	IB	VCES								
1	D40C4	NSi	50m	10k	5.0	200m	500m	500m	40	13	40	6.2	8.0	500ns	75M	PE	B15b	KN			
2	D40C7	NSi	50m	10k	5.0	200m	500m	500m	50	13	50	6.2	8.0	500ns	75M	PE	B15b	KN			
3	D40C2	NSi	50m	40k	5.0	200m	500m	500m	30	13	30	6.2	8.0	500ns	75M	PE	B15b	KN			
4	D40C5	NSi	50m	40k	5.0	200m	500m	500m	40	13	40	6.2	8.0	500ns	75M	PE	B15b	KN			
5	D40C8	NSi	50m	40k	5.0	200m	500m	500m	50	13	50	6.2	8.0	500ns	75M	PE	B15b	KN			
6	D40C3	NSi	50m	90k	5.0	200m	500m	500m	30	13	30	6.2	8.0	500ns	75M	PE	B15b	KN			
7	2SA1194K	PSi	64m	1.0k	3.0	50	1.0	1.0	60	7.0	60	8.0	8.0	1.0u		E	T0126	B			
8	2SB678	PSi	64m	2.0k	2.0	100m	1.5	150m	100	10	100	8.0	8.0	10u		E	T039	A0			
9	2SD688	NSi	64m	2.0k	2.0	100m	1.5	150m	100	10	100	8.0	8.0	10u		E	T039	A0			
10	2SC2324K	NSi	64m	2.0k	10	500m	1.0	1.0	60	7.0	60	8.0	8.0	10u		E	B7a	B			
11	2SC2298A	NSi	64m	3.0k	3.0	10m	1.0	1.0	30	10	30	8.0	8.0	10u		E	B7a	B			
12	2SC2298B	NSi	64m	4.0k	3.0	10m	1.0	1.0	30	10	30	8.0	8.0	10u		E	B7a	B			
13	BD323A†	NSi	66m	500	5.0	2.0	1.0	1.0	80	8	108	60	10	1.0u	80M	PL	R216h	KC			
14	BD323B†	NSi	66m	2.5k	5.0	2.0	1.0	1.0	80	8	108	60	10	1.0u	80M	PL	R216h	KC			
15	BD323C†	NSi	66m	5.0k	5.0	2.0	1.0	1.0	80	8	108	60	10	1.0u	80M	PL	R216h	KC			
16	2SD1165A	NSi	80m	60	5.0	100	100	100	1.0k	6.0	900	1.2k	10	2.0n	100k	DM	X198	†			
17	2SD1034A	NSi	80m	150	5.0	300	300	300	12	600	6.0	450	1.2k	2.0n	200k	DM	X198	†			
18	2SD614	NSi	80m	800	4.0	3.0	3.0	3.0	100	6.0	80	10	10	100u		DM	T05	A0			
19	2SD615	NSi	80m	800	4.0	3.0	3.0	3.0	140	6.0	120	10	10	100u		DM	T05	A0			
20	RCS683	NSi	80m	1.0k	3.0	2.0	4.0	4.0	100m	40	5.0	40	10	150u	20MΔ	E	T039	KC0			
21	RCS683A	NSi	80m	1.0k	3.0	2.0	4.0	4.0	100m	60	5.0	60	10	150u	20MΔ	E	T039	KC0			
22	RCS683B	NSi	80m	1.0k	3.0	2.0	4.0	4.0	100m	80	5.0	80	10	150u	20MΔ	E	T039	KC0			
23	2SB679	PSi	80m	2.0k	2.0	100m	1.5	150m	100	10	100	10	10	10u		E	Y220b	D0			
24	2SD689	NSi	80m	2.0k	2.0	100m	1.5	150m	100	10	100	10	10	10u		E	Y220b	D0			
25	MPSU45	NSi	80m	4.0k#	12k	5.0	1.0	2.0	50	12	40	10	10	100n	320MΔ	†	B18	KC			
26	D40K1	NSi	80m	10k#	5.0	200m	2.0	100m	30	13	30	10	10	20u	75M	PE	Y202c	KC0			
27	D40K2	NSi	80m	10k#	5.0	200m	2.0	100m	50	13	50	10	10	20u	75M	PE	Y202c	KC0			
28	D40K3	NSi	80m	10k#	5.0	200m	2.0	100m	30	13	30	10	10	20u	75M	PE	Y202c	KC0			
29	D40K4	NSi	80m	10k#	5.0	200m	2.0	100m	50	13	50	10	10	20u	75M	PE	Y202c	KC0			
30	D41K1	PSi	80m	10k#	5.0	200m	2.0	100m	30	13	30	10	10	20u	100M	1.0 #	PE	Y202c	KC0		
31	D41K2	PSi	80m	10k#	5.0	200m	2.0	100m	50	13	50	10	10	20u	100M	1.0 #	PE	Y202c	KC0		
32	D41K3	PSi	80m	10k#	5.0	200m	2.0	100m	30	13	30	10	10	20u	100M	1.5	PE	Y202c	KC0		
33	D41K4	PSi	80m	10k#	5.0	200m	2.0	100m	50	13	50	10	10	20u	100M	1.5	PE	Y202c	KC0		
34	HEPS9103-RT	NSi	80m	15k	5.0	500m	2.0	2.0	50	12	40	10	10	100n	300M		B18	KC			
35	HEPS9123-RT	NSi	80m	15k	5.0	500m	2.0	2.0	50	10	40	10	10	100n	50M		B18	KC			
36	NSD153	NSi	80m	20k	5.0	10m	5.0	5.0	12	30	10	10	10	100n	100MΔ	PL	Y202a	KC0			
37	NSD154	NSi	80m	20k	5.0	10m	5.0	5.0	12	40	10	10	10	100n	100MΔ	PL	Y202a	KC0			
38	NSDU45	NSi	80m	25k	150k	5.0	200m	5.0	50	12	40	10	10	100n	50MΔ	PL	Y202a	KC0			
39	NSDU45A	NSi	80m	25k	150k	5.0	200m	2.0	60	12	50	10	10	100n	100MΔ	PL	Y202a	KA			
40	NSD151	NSi	83m	5.0k	250k	5.0	100m	1.0	12	30	10	1.7	10	100n	100M	PL†	Y202a	KC			
41	NSD152	NSi	83m	5.0k	250k	5.0	100m	1.0	12	40	10	1.7	10	100n	100M	PL†	Y202a	KC			
42	BD466A	PSi	85m	8.0k	10	500m	1.0	100m	30	10	30	8.5	10	100n	170M	PE†	T0126	KB0			
43	BD466B	PSi	85m	8.0k	10	500m	1.0	100m	45	10	45	8.5	10	100n	170M	PE†	T0126	KB0			
44	BD477A	NSi	85m	8.0k	10	500m	1.0	100m	30	10	30	8.5	10	100n	170M	PE†	T0126	KB0			
45	BD477B	NSi	85m	8.0k	10	500m	1.0	100m	45	10	45	8.5	10	100n	170M	PE†	T0126	KB0			
46	SDN401	NSi	91m	1.0k	2.0	1.0	2.0	2.0	60	16	16	16	16	1.0u	50M	750m	T066	C0			
47	SDN405	NSi	91m	1.0k	2.0	1.0	2.0	2.0	150	16	16	16	16	1.0u	50M	1.2	T066	C0			
48	SDP451	PSi	91m	1.0k	2.0	1.0	2.0	2.0	60	16	16	16	16	1.0u	50M	750m	T066	C0			
49	SDP455	PSi	91m	1.0k	2.0	1.0	2.0	2.0	120	16	16	16	16	1.0u	50M	1.2	T066	C0			
50	BUT131	NSi	100m	30	5.0	10	28	6.0	600	10	40	175	10	1.0u	350M	EPL	T03				
51	BDX42†	NSi	100m	1.5k	10	500m	1.0	100m	60	5.0	45	9.0	10	100n	350M	PL†	T0126	KB0			
52	BDX43†	NSi	100m	1.5k	10	500m	1.0	100m	80	5.0	60	9.0	10	100n	350M	PL†	T0126	KB0			
53	BDX44†	NSi	100m	1.5k	10	500m	1.0	100m	100	5.0	80	9.0	10	100n	350M	PL†	T0126	KB0			
54	BDX45†	PSi	100m	1.5k	10	500m	1.0	100m	60	5.0	45	5.0	10	100n	1.0GΔ	PL	T0126	KB0			
55	BDX46†	PSi	100m	1.5k	10	500m	1.0	100m	80	5.0	60	5.0	10	100n	1.0GΔ	PL	T0126	KB0			
56	BD876	PSi	100m	2.0k	10	500m	1.0	100m	65	5.0	45	9.0	10	100n	200M	PE	T0126	B			
57	BD878	PSi	100m	2.0k	10	500m	1.0	100m	80	5.0	60	9.0	10	100n	200M	PE	T0126	B			
58	BD880	PSi	100m	2.0k	10	500m	1.0	100m	100	5.0	80	9.0	10	100n	200M	PE	T0126	B			
59	BDX47	PSi	100m	2.0k	10	500m	1.0	100m	100	5.0	80	9.0	10	100n	1.0G	PL	T0126	KB0			
60	2SD405	NSi	100m	2.0k	12k	2.0	1.0	2.0	70	7.0	70	15	15	1.0u	50M	E	T039	KC0			
61	2SD406	NSi	100m	2.0k	12k	2.0	1.0	2.0	100	7.0	100	15	15	1.0u	50M	E	T039	KC0			
62	D43D1†	PSi	100m	2.0k	10k	2.0	1.0	4.0	500m	5.0	50	12	12	1.0u	50M	PE†	Y220b	A			
63	D43D2†	PSi	100m	2.0k	10k	2.0	1.0	4.0	500m	5.0	50	12	12	1.0u	50M	PE†	Y220b	A			
64	D43D3†	PSi	100m	2.0k	10k	2.0	1.0	4.0	500m	5.0	70	12	12	1.0u	50M	PE†	Y220b	A			
65	D43D4†	PSi	100m	2.0k	10k	2.0	1.0	4.0	500m	5.0	70	12	12	1.0u	50M	PE†	Y220b	A			
66	D43D5†	PSi	100m	2.0k	10k	2.0	1.0	4.0	500m	5.0	90	12	12	1.0u	50M	PE†	Y220b	A			
67	D43D6†	PSi	100m	2.0k	10k	2.0	1.0	4.0	500m	5.0	90	12	12	1.0u	50M	PE†	Y220b	A			
68	D42D1†	NSi	100m	5.0k	20k	2.0	1.0	4.0	500m	5.0	50	12	12	1.0u	50M	PE†	Y202a	A			
69	D42D2†	NSi	100m	5.0k	20k	2.0	1.0	4.0	500m	5.0	50	12	12	1.0u	50M	PE†	Y202a	A			
70	D42D3†	NSi	100m	5.0k	20k	2.0	1.0	4.0	500m	5.0	70	12	12	1.0u	50M	PE†	Y202a	A			
71	D42D4†	NSi	100m	5.0k	20k	2.0	1.0	4.0	500m	5.0	70	12	12	1.0u	50M	PE†	Y202a	A			
72	D42D5†	NSi	100m	5.0k	20k	2.0	1.0	4.0	500m	5.0	90	12	12	1.0u	50M	PE†	Y202a	A			
73	D42D6†	NSi	100m	5.0k	20k	2.0	1.0	4.0	500m	5.0	90	12	12	1.0u	50M	PE†	Y202a	A			
74	SDN722	NSi	114m	1.0k	5.0	1.0	2	2	200	20	20	15	15	10u	80M	750m	T066	C0			
75	SDN723	NSi	114m	1.0k	5.0	1.0	2	2	300	20	20	15	15	10u	80M	750m	T066	C0			
76	MJE270	NSi	12	500	3.0	20m	2.0	0.1	100	15	15	15	15	1.0m	6.0MΔ	†	T0126	D			
77	MJE271	NSi	12	500	3.0	20m	2.0	0.1	100	15	15	15	15	1.0m	6.0MΔ	†	T0126	D			
78	BD861	NSi	120m	750	3.0	1.5	4.0	1													

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP	1 MIN. DERATE J TO C (W/C)	hFE		TEST					ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	MAX IC @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R U E	DWG No	L C O A D E
				2 MIN	MAX	VCE	IC	IB	IC	IB	VCE	IC	IB	VCE	IC							
1	SDM3200†	PSi	200m	1.0k	5.0	5.0	5.0	500m	80	10	40	20	1.0u	70M	800m			F24a	CD0			
2	SDM3201†	PSi	200m	1.0k	5.0	5.0	5.0	500m	80	10	60	20	1.0u	70M	600m			F24a	CD0			
3	SDM3202†	PSi	200m	1.0k	5.0	5.0	5.0	500m	100	10	80	20	1.0u	70M	600m			F24a	CD0			
4#	2SD409	NSi	200m	1.5k	2.0	5.0	5.0	100	7.0	100	30	10u						T066	KF0			
5#	2SD410	NSi	200m	1.5k	2.0	5.0	5.0	150	7.0	150	30	10u						T066	KF0			
6#	2SD687	NSi	200m	2.0k	2.0	1.0	3.0	300m	60	5.0	40	25	20u					Y220b	D0			
7	D45D1†	PSi	238m	2.0k	10k	2.0	1.0	6.0	500m	5.0	50	30	1.0u	50M				Y220b	D			
8	D45D2†	PSi	238m	2.0k	10k	2.0	1.0	6.0	500m	5.0	50	30	1.0u	50M				Y220b	D			
9	D45D3†	PSi	238m	2.0k	10k	2.0	1.0	6.0	500m	5.0	70	30	1.0u	50M				Y220b	D			
10	D45D4†	PSi	238m	2.0k	10k	2.0	1.0	6.0	500m	5.0	70	30	1.0u	50M				Y220b	D			
11	D45D5†	PSi	238m	2.0k	10k	2.0	1.0	6.0	500m	5.0	90	30	1.0u	50M				Y220b	D			
12	D45D6†	PSi	238m	2.0k	10k	2.0	1.0	6.0	500m	5.0	90	30	1.0u	50M				Y220b	D			
13	D44D1†	NSi	238m	5.0k	20k	2.0	1.0	6.0	500m	5.0	50	30	1.0u	50M				Y220b	D			
14	D44D2†	NSi	238m	5.0k	20k	2.0	1.0	6.0	500m	5.0	50	30	1.0u	50M				Y220b	D			
15	D44D3†	NSi	238m	5.0k	20k	2.0	1.0	6.0	500m	5.0	70	30	1.0u	50M				Y220b	D			
16	D44D4†	NSi	238m	5.0k	20k	2.0	1.0	6.0	500m	5.0	70	30	1.0u	50M				Y220b	D			
17	D44D5†	NSi	238m	5.0k	20k	2.0	1.0	6.0	500m	5.0	90	30	1.0u	50M				Y220b	D			
18	D44D6†	NSi	238m	5.0k	20k	2.0	1.0	6.0	500m	5.0	90	30	1.0u	50M				Y220b	D			
19#	2SD884A†	NSi	240m	60k	2.0	2.0	6.0	1.0	800	5.0	400	30	500u		500m	DM		T066	KF0			
20#	2SB765K	PSi	240m	1.0k	20k	3.0	1.5	3.0	120	7.0	120	30	100u					Y220	D			
21#	2SC1881K†	PSi	240m	1.0k	1.5	1.5	3.0	60	7.0	60	30	200u		480m	D		B17	KE				
22#	2SD864K	NSi	240m	1.0k	20k	3.0	1.5	3.0	120	7.0	120	30	100u					Y220	D			
23#	2SD884†	NSi	240m	1.5k	2.0	2.0	6.0	1.0	600	5.0	300	30	500u		500m	DM		T066	KF0			
24#	2SD1088	NSi	240m	2.0k	2.0	2.0	6.0	1.0	300	5.0	250	30	500u					Y220	D0			
25#	2SD560†	NSi	240m	2.0k	4.0k	2.0	3.0	5.0	500m	150	7.0	100	30	1.0u		500m	E	Y220b	D0			
26	U2T205†	NSi	250m	1.0k	10k	2.0	1.0	5.0	500m	12	150	25	1.0u		500m	PL		F24	KH			
27	2N6353	NSi	250m	1.0k	10k	5.0	5.0	10	500m	150	12	150	25	1.0u	50M			F24	KJ0			
28	JAN2N6353†	NSi	250m	1.0k	10k	5.0	5.0	5.0	500m	150	12	150	25	1.0u	50M			F24	KJ0			
29#	2SD686	NSi	250m	2.0k	10k	2.0	1.0	4.0	300m	80	5.0	60	30	20u				Y220b	D			
30	U2T201†	NSi	250m	2.0k	10k	2.0	1.0	5.0	500m	12	80	25	1.0u	50M			F24	KH				
31	2N6352	NSi	250m	2.0k	10k	5.0	5.0	5.0	500m	80	12	80	25	1.0u	50M			F24	KJ0			
32	JAN2N6352†	NSi	250m	2.0k	10k	5.0	5.0	5.0	500m	80	12	80	25	1.0u	50M			F24	KJ0			
33	HEP59101-RT	NSi	280m	750	1.5	4.0	4.0	60	5.0	60	40	2.0m		300m				B16b	KB			
34	HEP59121-RT	PSi	280m	750	1.5	4.0	4.0	80	5.0	80	40	2.0m	2.0M					B16b	KB			
35#	2SB750	PSi	280m	1.0k	10k	4.0	2.0	2.0	80	5.0	60	35	1.0m			PE		B26	D			
36#	2SB750A	PSi	280m	1.0k	10k	4.0	2.0	2.0	80	5.0	80	35	1.0m			PE		B26	D			
37#	2SD836	NSi	280m	1.0k	10k	4.0	2.0	2.0	80	5.0	80	35	1.0m			PE		B26	D			
38#	2SD836A	NSi	280m	1.0k	10k	4.0	2.0	2.0	80	5.0	80	35	1.0m			PE		B26	D			
39#	BD262	PSi	285m	500	3.0	4.0	4.0	100m	60	5.0	60	36	200u	7.0M	1.6	ET		TO126	KB0			
40#	BD262A	PSi	285m	500	3.0	4.0	4.0	100m	80	5.0	80	36	200u	7.0M	1.6	ET		TO126	KB0			
41#	BD262B	PSi	285m	500	3.0	4.0	4.0	100m	100	5.0	100	36	200u	7.0M	1.6	ET		TO126	KB0			
42#	BD263	NSi	285m	500	3.0	4.0	4.0	100m	80	5.0	60	36	200u	7.0M	1.6	ET		TO126	KB0			
43#	BD263A	NSi	285m	500	3.0	4.0	4.0	100m	100	5.0	80	36	200u	7.0M	1.6	ET		TO126	KB0			
44#	BD263B	NSi	285m	500	3.0	4.0	4.0	100m	120	5.0	100	36	200u	7.0M	1.6	ET		TO126	KB0			
45	2N6294	NSi	286m	750	18k	3.0	2.0	4.0	80m	60	5.0	60	50	500u	4.0M			T066	KF0			
46	2N6295	NSi	286m	750	18k	3.0	2.0	4.0	80m	60	5.0	60	50	500u	4.0M			T066	KF0			
47	SDN605	NSi	286m	1.0k	2.0	5.0	10	10	150	5.0	50	50	1.0u	50M	200m			T03	C0			
48	SDN601	NSi	286m	2.0k	2.0	5.0	10	10	80	5.0	50	50	1.0u	50M	200m			T03	C0			
49	2N6534	NSi	288m	100	5.0k	3.0	8.0	8.0	250m	80	5.0	14	14	20M	375m			T066	KF0			
50	2N6535	NSi	288m	100	5.0k	3.0	8.0	8.0	250m	100	5.0	14	14	20M	375m			T066	KF0			
51	2N6536	NSi	288m	100	5.0k	3.0	8.0	8.0	250m	100	5.0	14	14	20M	375m			T066	KF0			
52	2N6537	NSi	288m	100	5.0k	3.0	8.0	8.0	250m	120	5.0	14	14	20M	375m			T066	KF0			
53#	PMD28K100	NSi	29	750	1.8k	3.0	2.0	4.0	80m	100	5.0	50	50			PSE		T066	C			
54#	PMD29K100	PSi	29	750	1.8k	3.0	2.0	4.0	80m	100	5.0	50	50			PSE		T066	C			
55#	BU801†	NSi	320m	100	3.0	200m	3.0	1.0	600	7.0	400	40	200u			EPL		TO126	B			
56#	2SA892	PSi	320m	300	4.0	5.0	6.0	500m	40	6.0	40	40	100u	15m				B61	D			
57#	2SD691	NSi	320m	500	3.0k	4.0	1.0	6.0	100	6.0	80	40	10u		566m			T066	KF			
58#	2SD1115K	NSi	320m	500	2.0	2.0	3.0	300	7.0	300	40	40	40					Y220	D			
59#	2SD1116K	NSi	320m	500	2.0	2.0	3.0	400	7.0	300	40	40	40					Y220	D			
60#	2SD1113K	NSi	320m	500	2.0	4.0	6.0	300	7.0	300	40	40	40					Y220	D			
61#	BD675	NSi	320m	500	3.0	4.0	4.0	100m	45	5.0	45	40	200n	1.0M	1.6	E		TO126	KB0			
62#	BD677	NSi	320m	500	3.0	4.0	4.0	100m	80	5.0	60	40	200n	1.0M	1.6	E		TO126	KB0			
63#	BD679	NSi	320m	500	3.0	4.0	4.0	100m	80	5.0	80	40	200n	1.0M	1.6	E		TO126	KB0			
64#	BD681	NSi	320m	500	3.0	4.0	4.0	100m	100	5.0	100	40	200n	1.0M	1.6	E		TO126	KB0			
65#	BD676	PSi	320m	750	3.0	1.5	4.0	100m	45	5.0	45	40	200u	1.0M	1.6	E		TO126	KB0			
66#	BD678	PSi	320m	750	3.0	1.5	4.0	100m	60	5.0	60	40	200u	1.0M	1.6	E		TO126	KB0			
67#	BD680	PSi	320m	750	3.0	1.5	4.0	100m	80	5.0	80	40	200u	1.0M	1.6	E		TO126	KB0			
68#	BD682	PSi	320m	750	3.0	1.5	4.0															



# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP	MIN. DERATE J TO C (W/C)	hFE		TEST		ABSOLUTE MAX RATINGS @ 25°C				MAX COLL (CASE) DISS-Pc (W)	MAX ICBO @ MAXVCB @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	T U R U C	DWG No	L C O A D E
				2 MIN Ø-TYP	MAX Ø-TYP	VCE (V)	IC (A)	IC Ø-E (A)	IB Ø-E (A)	BVCBO (V)	VEBO (V)							
1	BU180A	NSi	400m	15	50 Ø	5.0	1.0	2.5	1.0	400	8.0	50	50	375m#		B3	KB	
2	KPD2502M	NSi	400m							300	5.0	25	25	1.0m	DM	TO3	KE	
3	2SD692	NSi	400m		3.0k	4.0	1.0	6.0	1.0	100	6.0	80	80	1.0m		TO3	KE	
4	TIP115f	PSi	400m		#	4.0	2.0	2.0	50m	60	5.0	60	50	1.0m		Y220b	KE	
5	TIP116f	PSi	400m		#	4.0	2.0	2.0	50m	80	5.0	80	50	1.0m		Y220b	KE	
6	TIP117f	PSi	400m		#	4.0	2.0	2.0	50m	100	5.0	100	50	1.0m		Y220b	KE	
7	2SD1114K	NSi	400m			4.0	4.0	6.0	300	7.0	300	50	50			Y220	D	
8	2SB711	PSi	400m			4.0	7.0	10	1.0	1.0	80	80	80	100u		B26	DØ	
9	2SB712	PSi	400m			4.0	7.0	10	1.0	1.0	100	6.0	100	100u		B26	DØ	
10	2SD721	NSi	400m			4.0	7.0	10	1.0	1.0	100	6.0	80	100u		B26	DØ	
11	2SD722	NSi	400m			4.0	7.0	10	1.0	1.0	120	6.0	100	100u		B26	DØ	
12	BD677Z	NSi	400m			3.0	1.5	4.0	100m	60	5.0	60	40	200u		B18f	KB	
13	BD678Z	PSi	400m			3.0	1.5	4.0	100m	60	5.0	60	40	200u		B18f	KB	
14	BD679Z	NSi	400m			3.0	1.5	4.0	100m	80	5.0	80	40	200u		B18f	KB	
15	BD680Z	PSi	400m			3.0	1.5	4.0	100m	80	5.0	80	40	200u		B18f	KB	
16	MJE802T	NSi	400m			3.0	1.5	4.0	0.1	80	5.0	80	50	100u		F56	XØ	
17	BD675A	NSi	400m			3.0	2.0	4.0	100m	45	5.0	45	40	200u		B18f	KB	
18	BD676A	PSi	400m			3.0	2.0	4.0	100m	45	5.0	45	40	200u		B18f	KB	
19	BD677A	NSi	400m			3.0	2.0	4.0	100m	60	5.0	60	40	200u		B18f	KB	
20	BD678A	PSi	400m			3.0	2.0	4.0	100m	60	5.0	60	40	200u		B18f	KB	
21	BD679A	NSi	400m			3.0	2.0	4.0	100m	80	5.0	80	40	200u		B18f	KB	
22	BD680A	PSi	400m			3.0	2.0	4.0	100m	80	5.0	80	40	200u		B18f	KB	
23	BDW23	NSi	400m		20k	3.0	2.0	6.0	200m	45	5.0	45	50	200u		Y220b	D	
24	BDW23A	NSi	400m		20k	3.0	2.0	6.0	200m	60	5.0	60	50	200u		Y220b	D	
25	BDW23B	NSi	400m		20k	3.0	2.0	6.0	200m	60	5.0	60	50	200u		Y220b	D	
26	BDW23C	NSi	400m		20k	3.0	2.0	6.0	200m	100	5.0	100	50	200u		Y220b	D	
27	BDW24	PSi	400m		20k	3.0	2.0	6.0	200m	45	5.0	45	50	200u		Y220b	D	
28	BDW24A	PSi	400m		20k	3.0	2.0	6.0	200m	60	5.0	60	50	200u		Y220b	D	
29	BDW24B	PSi	400m		20k	3.0	2.0	6.0	200m	80	5.0	80	50	200u		Y220b	D	
30	BDW24C	PSi	400m		20k	3.0	2.0	6.0	200m	100	5.0	100	50	200u		Y220b	D	
31	MJE803T	NSi	400m			3.0	2.0	4.0	0.1	80	5.0	80	50	100u		F56	XØ	
32	ESM213	NSi	400m		#	3.0	4.0	5.0	100m	60	5.0	60	50	200u		Y220b		
33	ESM214	NSi	400m		#	3.0	4.0	5.0	100m	80	5.0	80	50	200u		Y220b		
34	SPM110	NSi	400m		1.0k#	4.0	1.0	2.0	50m	60	5.0	60	50	1.0m		Y220		
35	SPM111	NSi	400m		1.0k#	4.0	1.0	2.0	50m	80	5.0	80	50	1.0m		Y220		
36	SPM112	NSi	400m		1.0k#	4.0	1.0	2.0	50m	100	5.0	100	50	1.0m		Y220		
37	SPM115	PSi	400m		1.0k#	4.0	1.0	2.0	50m	60	5.0	60	50	1.0m		Y220		
38	SPM116	PSi	400m		1.0k#	4.0	1.0	2.0	50m	80	5.0	80	50	1.0m		Y220		
39	SPM117	PSi	400m		1.0k#	4.0	1.0	2.0	50m	100	5.0	100	50	1.0m		Y220		
40	2SB791K	PSi	400m		20k	3.0	4.0	8.0	120	7.0	120	50	50	100u		Y220	D	
41	2SD1126K	NSi	400m		20k	3.0	5.0	10	120	7.0	120	50	50	100u		Y220	D	
42	D44E1f	NSi	400m		1.0k#	5.0	5.0	10	40	7.0	40	50	50	10u		B22	KBØ	
43	D44E2f	NSi	400m		1.0k#	5.0	5.0	10	60	7.0	60	50	50	10u		B22	KBØ	
44	D44E3f	NSi	400m		1.0k#	5.0	5.0	10	80	7.0	80	50	50	10u		B22	KBØ	
45	D44E1f	NSi	400m		1.0k#	5.0	5.0	10	40	7.0	40	50	50	10u		B22	KBØ	
46	D45E2f	PSi	400m		1.0k#	5.0	5.0	10	60	7.0	60	50	50	10u		B22	KBØ	
47	D45E3f	PSi	400m		1.0k#	5.0	5.0	10	80	7.0	80	50	50	10u		B22	KBØ	
48	2SD1127K	NSi	400m		1.0k	2.0	1.0	2.0	150	7.0	120	50	50	100u		Y220	D	
49	2SD643*	N	416m		150	5.0	3.0	3.0	2.0	300	5.0	200	300	800u		F44	CØ	
50	2SD644*	N	416m		150	5.0	3.0	3.0	2.0	600	5.0	450	300	600u		F44	CØ	
51	2N6298	PSi	428m		750	18k#	3.0	4.0	8.0	120m	60	5.0	60	75	500u		T066	KEØ
52	2N6299	PSi	428m		750	18k#	3.0	4.0	8.0	120m	80	5.0	80	75	500u		T066	KEØ
53	2N6300	NSi	428m		750	18k#	3.0	4.0	8.0	120m	60	5.0	60	75	500u		T066	KEØ
54	2N6301	NSi	428m		750	18k#	3.0	4.0	8.0	120m	80	5.0	80	75	500u		T066	KEØ
55	HEP59144-RT	NSi	428m		750	4.0	4.0	8.0	80	5.0	80	75	75	500u		T03	KEØ	
56	HEP59145-RT	NSi	428m		750	4.0	4.0	8.0	80	5.0	80	75	75	500u		T03	KEØ	
57	MJ4000	NSi	428m		1.0k	3.0	1.5	4.0	50m	60	5.0	60	75	200u		T03	KEØ	
58	MJ4001	NSi	428m		1.0k	3.0	1.5	4.0	50m	80	5.0	80	75	200u		T03	KEØ	
59	MJ4010	PSi	428m		1.0k	3.0	1.5	4.0	50m	60	5.0	60	75	200u		T03	KEØ	
60	MJ4011	PSi	428m		1.0k	3.0	1.5	4.0	50m	80	5.0	80	75	2.0m		T03	KEØ	
61	BU806	NSi	480m		375 Ø	5.0	4.0	8.0	2.0	400	6.0	60	60	100u		Y220b	DØ	
62	BU807	NSi	480m		375 Ø	5.0	4.5	8.0	2.0	330	6.0	60	60	100u		Y220b	DØ	
63	BD266	PSi	480m		750	3.0	3.0	8.0	60			60	60			Y220b	KEØ	
64	BD266A	PSi	480m		750	3.0	3.0	8.0	80			80	60			Y220b	KEØ	
65	BD267	NSi	480m		750	3.0	3.0	8.0	80			80	60			Y220b	KEØ	
66	BD267A	NSi	480m		750	3.0	3.0	8.0	100			80	60			Y220b	KEØ	
67	BD267B	NSi	480m		750	3.0	3.0	8.0	120			100	60			Y220b	KEØ	
68	BD331	NSi	480m		750	3.0	3.0	6.0	150m	60	5.0	60	60	200u		B13	KE	
69	BD332	PSi	480m		750	3.0	3.0	6.0	150m	60	5.0	60	60	200u		B13	KE	
70	BD333	NSi	480m		750	3.0	3.0	6.0	150m	80	5.0	80	60	200u		B13	KE	
71	BD334	PSi	480m		750	3.0	3.0	6.0	150m	80	5.0	80	60	200u		B13	KE	
72	BD335	NSi	480m		750	3.0	3.0	6.0	150m	100	5.0	100	60	200u		B13	KE	
73	BD336	PSi	480m		750	3.0	3.0	6.0	100			100	60	200u		B13	KE	
74	BD895	NSi	480m		750	3.0	3.0	15	45	5.0	45	60	60	0.2m		Y220b	DØ	
75	BD896	PSi	480m		750	3.0	3.0	15	45	5.0	45	60	60	0.2m		Y220b	DØ	
76	BD897	NSi	480m		750	3.0	3.0	15	60	5.0	60	60						

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP	MIN. DERATE J TO C (W/°C)	hFE		TEST		ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	MAX ICBO @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R E	DWG No	L C O D E
				2 MIN	MAX	VCE	IC	IB	BVC	VEBO	VCES	IC							
1#	BUW871	NSi	514m					10	2.0	330	60.0	200	90	1000			TO3	CO	
2	RCA1000	NSi	515m	750	3.0	4.0	8.0	100m	60	80	60.0	80	90	500uΔ	666m#	E	TO3	KFO	
3	RCA1001	NSi	515m	750	3.0	4.0	8.0	100m	60	80	60.0	80	90	500uΔ	666m#	E	TO3	KFO	
4#	BDX62	PSi	515m	750	3.0	8.0	8.0	150m	60	80	60.0	80	90	200u	7.0M	666m	E	TO3	KFO
5#	BDX62A	PSi	515m	750	3.0	8.0	8.0	150m	60	80	60.0	80	90	200u	7.0M	666m	E	TO3	KFO
6#	BDX62B	PSi	515m	750	3.0	8.0	8.0	150m	100	100	60.0	100	90	200u	7.0M	666m	E	TO3	KFO
7#	BDX63	NSi	515m	750	3.0	8.0	8.0	150m	80	80	60.0	80	90	200u	7.0M	666m	E	TO3	KFO
8#	BDX63A	NSi	515m	750	3.0	8.0	8.0	150m	100	100	60.0	80	90	200u	7.0M	666m	E	TO3	KFO
9#	BDX63B	NSi	515m	750	3.0	8.0	8.0	150m	120	100	60.0	100	90	200u	7.0M	666m	E	TO3	KFO
10#	BDX62C	PSi	515m	1.0k			12	120	120	120	60.0	120	90	200u	7.0M	666m	E	TO3	CO
11#	BDX63C	NSi	515m	1.0k			12	140	120	120	60.0	120	90	200u	7.0M	666m	E	TO3	CO
12	IR900	PSi	515m	1.0k#	3.0	3.0	8.0	100m	60	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
13	IR901	PSi	515m	1.0k#	3.0	3.0	8.0	100m	60	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
14	IR1000	NSi	515m	1.0k#	3.0	3.0	8.0	100m	60	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
15	IR1001	NSi	515m	1.0k#	3.0	3.0	8.0	100m	60	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
16	MJ900	PSi	515m	1.0k	#	3.0	4.0	8.0	100m	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
17	MJ901	PSi	515m	1.0k	#	3.0	4.0	8.0	100m	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
18	MJ1000	NSi	515m	1.0k	#	3.0	4.0	8.0	100m	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
19	MJ1001	NSi	515m	1.0k	#	3.0	4.0	8.0	100m	60	60.0	60	90	500uΔ	666m	E	TO3	KFO	
20	BU1811	NSi	520m	8.0		1.5	8.0	10	600	600	60.0	600	65	100u	500m		B3	KB	
21	BU181A†	NSi	520m	8.0		1.5	8.0	10	800	800	60.0	800	65	100u	500m		B3	KB	
22	2N6530	NSi	520m	100	5.0k#	3.0	8.0	8.0	250m	80	60.0	100	26		20MΔ	375m#	Y220b	KE	
23	2N6531	NSi	520m	100	5.0k#	3.0	8.0	8.0	100	100	60.0	100	26		20MΔ	375m#	Y220b	KE	
24	2N6532	NSi	520m	100	5.0k#	3.0	8.0	8.0	250m	100	60.0	100	26		20MΔ	375m#	Y220b	KE	
25	2N6533	NSi	520m	100	5.0k#	3.0	8.0	8.0	250m	120	60.0	120	26		20MΔ	375m#	Y220b	KE	
26	TIP120%	NSi	52	500	3.0	5.0	8.0	25	25	25	60.0	25	65	50 Δ			Y220b	DO	
27	TIP121%	NSi	52	500	3.0	5.0	8.0	25	25	25	60.0	25	65	50 Δ			Y220b	DO	
28	TIP122%	NSi	52	500	3.0	5.0	8.0	25	100	5.0	100	65	65	50 Δ			Y220b	DO	
29	TIP125%	NSi	52	500	3.0	7.5	8.0	25	60	60	60.0	60	65	50 Δ			Y220b	DO	
30	TIP126%	NSi	52	500	3.0	7.5	8.0	25	80	80	60.0	80	65	50 Δ			Y220b	DO	
31	TIP127%	NSi	52	500	3.0	7.5	8.0	25	100	60.0	100	65	65	50 Δ			Y220b	DO	
32	2N6666	PSi	520m	1.0k#	20k	3.0	3.0	8.0	250m	40	60.0	40	26	3.0m†	20MΔ	375m#	Y220b	KE	
33	HEPS9150-RT	NSi	520m	1.0k			3.0	8.0	60	60	60.0	60	65	200u			Y220b	XO	
34	HEPS9151-RT	NSi	520m	1.0k			3.0	8.0	100	100	60.0	100	65	200u			Y220b	XO	
35	HEPS9152-RT	NSi	520m	1.0k			3.0	8.0	60	60	60.0	60	65	200u			Y220b	XO	
36	HEPS9153-RT	NSi	520m	1.0k			3.0	8.0	100	100	60.0	100	65	200u			Y220b	XO	
37	RCA120	NSi	520m	1.0k#	3.0	3.0	8.0	250m	60	60	60.0	60	65	200u	20MΔ	666m#	E	Y220b	KHO
38	RCA121	NSi	520m	1.0k#	3.0	3.0	8.0	250m	80	80	60.0	80	65	200u	20MΔ	666m#	E	Y220b	KHO
39	RCA122	NSi	520m	1.0k#	3.0	3.0	8.0	250m	100	100	60.0	100	65	200u	20MΔ	666m#	E	Y220b	KHO
40	RCA125	PSi	520m	1.0k#	3.0	3.0	8.0	250m	60	60	60.0	60	65	500uΔ	20MΔ	666m#	E	Y220b	KHO
41	RCA126	PSi	520m	1.0k#	3.0	3.0	8.0	250m	80	80	60.0	80	65	500uΔ	20MΔ	666m#	E	Y220b	KHO
42	RCAR203	PSi	520m	1.0k	20k#	3.0	3.0	8.0	250m	40	60.0	40	65	1.0 Δ	20MΔ	666m#	E	Y220b	KHO
43	TIP120†	NSi	520m	1.0k#	3.0	3.0	8.0	250m	60	60	60.0	60	65	200u	20MΔ	666m#	E	Y220b	KHO
44	TIP121†	NSi	520m	1.0k#	3.0	3.0	8.0	250m	80	80	60.0	80	65	200u	20MΔ	666m#	E	Y220b	KHO
45	TIP122†	NSi	520m	1.0k#	3.0	3.0	8.0	250m	100	100	60.0	100	65	200u	20MΔ	666m#	E	Y220b	KHO
46	TIP125†	PSi	520m	1.0k	#	3.0	3.0	5.0	100m	60	60.0	60	65	200u	20MΔ	800m#	E	B1	KB
47	TIP125†	PSi	520m	1.0k#	#	3.0	3.0	8.0	250m	60	60.0	60	65	500uΔ	20MΔ	666m#	E	Y220b	KHO
48	TIP126†	PSi	520m	1.0k	#	3.0	3.0	5.0	100m	80	60.0	80	65	200u	20MΔ	800m#	E	B1	KB
49	TIP126†	PSi	520m	1.0k#	#	3.0	3.0	8.0	250m	80	60.0	80	65	500uΔ	20MΔ	666m#	E	Y220b	KHO
50	TIP127†	PSi	520m	1.0k	#	3.0	3.0	5.0	100m	100	60.0	100	65	200u	20MΔ	800m#	E	B1	KB
51	TIP127†	PSi	520m	1.0k#	#	3.0	3.0	8.0	250m	100	60.0	100	65	500uΔ	20MΔ	666m#	E	Y220b	KHO
52	2N6386	NSi	520m	1.0k	20k#	3.0	5.0	10	250m	40	60.0	40	60	1.0mΔ	20MΔ		Y220b	KE	
53	2N6387	NSi	520m	1.0k	20k#	3.0	5.0	10	250m	60	60.0	60	60	1.0mΔ	20MΔ		Y220b	KE	
54	2N6388	NSi	520m	1.0k	20k#	3.0	5.0	10	250m	80	60.0	80	60	1.0mΔ	20MΔ		Y220b	KE	
55	2N6667	PSi	520m	1.0k#	20k	3.0	5.0	10	250m	60	60.0	60	26	3.0m†	20MΔ	300m#	Y220b	KE	
56	2N6668	PSi	520m	1.0k#	20k	3.0	5.0	10	250m	80	60.0	80	26	3.0m†	20MΔ	300m#	Y220b	KE	
57	RCAR203A	PSi	520m	1.0k	20k#	3.0	5.0	10	250m	60	60.0	60	65	1.0 Δ	20MΔ	400m#	E	Y220b	KHO
58	RCAR203B	PSi	520m	1.0k	20k#	3.0	5.0	10	250m	80	60.0	80	65	1.0 Δ	20MΔ	400m#	E	Y220b	KHO
59	SPM120	NSi	521m	1.0k#	3.0	500m	5.0	0.1	60	60	60.0	60	65	200u			Y220		
60	SPM121	NSi	521m	1.0k#	3.0	500m	5.0	0.1	80	80	60.0	80	65	200u			Y220		
61	SPM122	NSi	521m	1.0k#	3.0	500m	5.0	0.1	100	100	60.0	100	65	200u			Y220		
62	SPM125	PSi	521m	1.0k#	3.0	500m	5.0	0.1	60	60	60.0	60	65	200u			Y220		
63	SPM126	PSi	521m	1.0k#	3.0	500m	5.0	0.1	80	80	60.0	80	65	200u			Y220		
64	SPM127	PSi	521m	1.0k#	3.0	500m	5.0	0.1	100	100	60.0	100	65	200u			Y220		
65#	ESM113	NSi	528m	750	#	3.0	4.0	5.0	100m	60	60.0	60	90	200u	1.0MΔ	666m	E	TO3	KFO
66#	ESM114	NSi	528m	750	#	3.0	4.0	5.0	100m	80	60.0	80	90	200u	1.0MΔ	666m	E	TO3	KFO
67#	BUX29	NSi	555m	100		5.0	4.0	6.0	250m	7.0	400	80	80	400u	1.0MΔ	333m	Δ	TO3	KFO
68#	BUX28	NSi	555m	300		5.0	4.0	8.0	250m	7.0	350	80	80	400u	1.0MΔ	250m	Δ	TO3	KFO
69#	ESM217	NSi	555m	1.0k	#	3.0	5.0	10	200m	60	60.0	60	70	400u	1.0MΔ	500m	E	Y220b	
70#	ESM218	NSi	555m	1.0k	#	3.0	5.0	10	200m	80	60.0	80	70	400u	1.0MΔ	500m	E	Y220b	
71	BD702Z	PSi	560m	750m#	3.0	3.0	8.0	100m	100	100	60.0	100	70	200u	1.0MΔ	833m#	E	B16h	KB
72	SE9300	NSi	560m	100	#	3.0	7.5	10	60	60	60.0	60	70	200u	1.0MΔ	600		Y220b	KE
73	SE9301	NSi	560m	100	#	3.0	7.5	10	80	80	60.0	80	70	200u	1.0MΔ	800		Y220b	KE
74	SE9302	NSi	560m	100	#	3.0	7.5	10	100	100	60.0	100	70	200u	1.0MΔ	1.0k		Y220b	KE
75	SE9400	PSi	560m	100	#	3.0	7.5	10	60	60	60.0	60	70	200u	1.0MΔ			Y220b	KE
76	SE9401	PSi	560m	100	#	3.0	7.5	10	80	80	60.0	80	70						

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP P-PNP	1 MIN. DERATE J TO C (W/C)	hFE		ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	M A X T °C	I C B O @ MAXVCB @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R U R U C	DWG No	L C O D E		
				2 MIN Δ-TYP	MAX Δ-TYP	IC Δ-IE (A)	IB Δ-IE (A)	VCBO (V)	VEBO (V)	VCES (V)										
				TEST VCE (V)	IC (A)	IC (A)	IC (A)	IC (A)	IC (A)	IC (A)										
1	BD700A	PSi	560m	750 #	3.0	4.0	8.0	100m	80	5.0	80	70	\$J	200u	1.0MΔ	720m#	†	B16h	KB	
2	BD895A#	NSi	.56	750 #	3.0	4.0	8.0	0.1	45	5.0	45	70	\$J	0.2m				Y220a	DD	
3	BD897A#	NSi	.56	750 #	3.0	4.0	8.0	0.1	60	5.0	60	70	\$J	0.2				Y220a	DD	
4	BD899A#	NSi	.56	750 #	3.0	4.0	8.0	0.1	80	5.0	80	70	\$J	0.2m				Y220a	DD	
5	BDX33	NSi	560m	750 #	3.0	4.0	10	250m	45	5.0	45	70	\$J	1.0m†	20MΔ	625m#		Y220b	L0	
6	BDX33A	NSi	560m	750 #	3.0	4.0	10	250m	60	5.0	60	70	\$J	1.0m†	20MΔ	625m#		Y220b	L0	
7	BDX34	PSi	560m	750 #	3.0	4.0	10	250m	45	5.0	45	70	\$J	1.0m†	20MΔ	625m#		Y220b	L0	
8	BDX34A	PSi	560m	750 #	3.0	4.0	10	250m	60	5.0	60	70	\$J	1.0m†	20MΔ	625m#		Y220b	L0	
9	MD695A	NSi	560m	750 #	3.0	4.0	8.0	40	5.0	40	70	\$J	200u	1.0MΔ	833m	ME	B19	B		
10	MD696A	PSi	560m	750 #	3.0	4.0	8.0	40	5.0	40	70	\$J	200u	1.0MΔ	833m	ME	B19	B		
11	MD697A	NSi	560m	750 #	3.0	4.0	8.0	40	5.0	40	70	\$J	200u	1.0MΔ	833m	ME	B19	B		
12	MD698A	PSi	560m	750 #	3.0	4.0	8.0	60	5.0	60	70	\$J	200u	1.0MΔ	833m	ME	B19	B		
13	MJE1091	PSi	560m	750 #	3.0	4.0	5.0	100m	80	5.0	80	70	\$J	200m†	1.0MΔ	700m#	†	B16d	KB	
14	MJE1093	PSi	560m	750 #	3.0	4.0	5.0	100m	80	5.0	80	70	\$J	200m†	1.0MΔ	700m#	†	B16d	KB	
15	MJE1101	NSi	560m	750 #	3.0	4.0	5.0	100m	60	5.0	60	70	\$J	200m†	1.0MΔ	700m#	†	B16d	KB	
16	MJE1103	NSi	560m	750 #	3.0	4.0	5.0	100m	80	5.0	80	70	\$J	200m†	1.0MΔ	700m#	†	B16d	KB	
17	MJE2091	PSi	560m	750 #	3.0	4.0	5.0	100m	60	5.0	60	70	\$J	200m†	1.0MΔ	700m#	†	B23	KE	
18	MJE2093	PSi	560m	750 #	3.0	4.0	5.0	100m	80	5.0	80	70	\$J	200m†	1.0MΔ	700m#	†	B23	KE	
19	MJE2101	NSi	560m	750 #	3.0	4.0	5.0	100m	60	5.0	60	70	\$J	200m†	1.0MΔ	700m#	†	B23	KE	
20	MJE2103	NSi	560m	750 #	3.0	4.0	5.0	100m	80	5.0	80	70	\$J	200m†	1.0MΔ	700m#	†	B23	KE	
21	BDX33A#	N.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
22	BDX33B#	NSi	560m	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
23	BDX33C#	N.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
24	BDX33D#	N.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
25	BDX34#	P.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
26	BDX34A#	P.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
27	BDX34B#	P.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
28	BDX34C#	P.Si	.56	1.0k†	5.0	1.0	10	.25				70	\$J	.50 Δ				Y220	D0	
29	TIP130	NSi	560m	1.0k	4.0	4.0	8.0	300m	60	5.0	60	70	\$J	200u		500m#	E	B1	KB0	
30	TIP131	NSi	560m	1.0k	4.0	4.0	8.0	300m	80	5.0	80	70	\$J	200u		500m#	E	B1	KB0	
31	TIP132	NSi	560m	1.0k	4.0	4.0	8.0	300m	100	5.0	100	70	\$J	200u		500m#	E	B1	KB0	
32	TIP135	PSi	560m	1.0k	4.0	4.0	8.0	300m	60	5.0	60	70	\$J	200u		500m#	E	B1	KB0	
33	TIP136	PSi	560m	1.0k	4.0	4.0	8.0	300m	80	5.0	80	70	\$J	200u		500m#	E	B1	KB0	
34	TIP137	PSi	560m	1.0k	4.0	4.0	8.0	300m	100	5.0	100	70	\$J	200u		500m#	E	B1	KB0	
35	TIP1790A(A)	NSi	562m	60	500	5.0	500m	10	200	5.0	150	70	\$J	5.00uΔ	11M		EPL	Y220	B	
36	JAN2N6648T	PSi	567m	1.0k	20k#	3.0	5.0	10	250m	40	5.0	40	85	\$J	1.0m	50MΔ	400m		TO3	KF0
37	JAN2N6649T	PSi	567m	1.0k	20k#	3.0	5.0	10	250m	60	5.0	60	85	\$J	1.0m	50MΔ	400m		TO3	KF0
38	JAN2N6650T	PSi	567m	1.0k	20k#	3.0	5.0	10	250m	80	5.0	80	85	\$J	1.0m	50MΔ	400m		TO3	KF0
39	SE9403	PSi	570m	100 #	3.0	7.5	10	100	60	5.0	60	100	\$J	200u	1.0MΔ			TO3	KF0	
40	SE9404	PSi	570m	100 #	3.0	7.5	10	100	80	5.0	80	100	\$J	200u	1.0MΔ			TO3	KF0	
41	SE9405	PSi	570m	100 #	3.0	7.5	10	100	100	5.0	100	100	\$J	200u	1.0MΔ			TO3	KF0	
42	TIP600†	NSi	570m	1.0k	20k	4.0	3.0	10	1.0	60	5.0	60	100	\$J	50u	666m		TO3	C0	
43	TIP601†	NSi	570m	1.0k	20k	4.0	3.0	10	1.0	80	5.0	80	100	\$J	50u	666m		TO3	C0	
44	TIP602†	NSi	570m	1.0k	20k	4.0	3.0	10	1.0	100	5.0	100	100	\$J	50u	666m		TO3	C0	
45	TIP605†	PSi	570m	1.0k	20k	4.0	3.0	10	1.0	60	5.0	60	100	\$J	50u	666m		TO3	C0	
46	TIP606†	PSi	570m	1.0k	20k	4.0	3.0	10	1.0	80	5.0	80	100	\$J	50u	666m		TO3	C0	
47	TIP607†	PSi	570m	1.0k	20k	4.0	3.0	10	1.0	100	5.0	100	100	\$J	50u	666m		TO3	C0	
48	2N6383	NSi	570m	1.0k	20k#	3.0	5.0	10	250m	40	5.0	40	100	\$J	1.0mΔ	20MΔ		TO3	KF0	
49	2N6384	NSi	570m	1.0k	20k#	3.0	5.0	10	250m	60	5.0	60	100	\$J	1.0mΔ	20MΔ		TO3	KF0	
50	2N6385	NSi	570m	1.0k	20k#	3.0	5.0	10	250m	80	5.0	80	100	\$J	1.0mΔ	20MΔ		TO3	KF0	
51	2N6648	PSi	570m	1.0k	20k#	3.0	5.0	10	250m	40	5.0	40	100	\$J	300u	20MΔ	300m#		Y204a	KF0
52	2N6649	PSi	570m	1.0k	20k#	3.0	5.0	10	250m	60	5.0	60	100	\$J	300u	20MΔ	300m#		Y204a	KF0
53	2N6650	PSi	570m	1.0k	20k#	3.0	5.0	10	250m	80	5.0	80	100	\$J	300u	20MΔ	300m#		Y204a	KF0
54	2N6053	PSi	571m	750	18k#	3.0	4.0	8.0	120m	60	5.0	60	100	\$J	500u	4.0MΔ			TO3	KF0
55	2N6054	PSi	571m	750	18k#	3.0	4.0	8.0	120m	80	5.0	80	100	\$J	500u	4.0MΔ			TO3	KF0
56	2N6055	NSi	571m	750	18k#	3.0	4.0	8.0	120m	60	5.0	60	100	\$J	500u	4.0MΔ			TO3	KF0
57	2N6056	NSi	571m	750	18k#	3.0	4.0	8.0	120m	80	5.0	80	100	\$J	500u	4.0MΔ			TO3	KF0
58	BDX85	NSi	571m	750	18k	3.0	4.0	10	100m	45	5.0	45	100	\$J	500u	10M	666m	E	TO3	C0
59	BDX85A	NSi	571m	750	18k	3.0	4.0	10	100m	60	5.0	60	100	\$J	500u	10M	666m	E	TO3	C0
60	BDX85B	NSi	571m	750	18k	3.0	4.0	10	100m	80	5.0	80	100	\$J	500u	10M	666m	E	TO3	C0
61	BDX85C	NSi	571m	750	18k	3.0	4.0	10	100m	100	5.0	100	100	\$J	500u	10M	666m	E	TO3	C0
62	BDX86	PSi	571m	750	18k	3.0	4.0	10	100m	45	5.0	45	100	\$J	500u	10M	666m	E	TO3	C0
63	BDX86A	PSi	571m	750	18k	3.0	4.0	10	100m	60	5.0	60	100	\$J	500u	10M	666m	E	TO3	C0
64	BDX86B	PSi	571m	750	18k	3.0	4.0	10	100m	80	5.0	80	100	\$J	500u	10M	666m	E	TO3	C0
65	BDX86C	PSi	571m	750	18k	3.0	4.0	10	100m	100	5.0	100	100	\$J	500u	10M	666m	E	TO3	C0
66	HEPS9140-RT	NSi	571m	1.0k	4.0	4.0	8.0	60	5.0	60	100	\$J		4.0M				TO3	KF0	
67	HEPS9141-RT	PSi	571m	1.0k	20k#	3.0	5.0	10	250m	40	5.0	40	100	\$J	1.0m	20MΔ	400m#		TO3	C0
68	JAN2N6383†	NSi	571m	1.0k	20k#	3.0	5.0	10	250m	60	5.0	60	100	\$J	1.0m	20MΔ	400m#		TO3	C0
69	JAN2N6384†	NSi	571m	1.0k	20k#	3.0	5.0	10	250m	80	5.0	80	100	\$J	1.0m	20MΔ	400m#		TO3	C0
70	JAN2N6385†	PSi	571m	1.0k	20k#	3.0	5.0	10	250m	40	5.0	40	70	\$J	1.0m	20MΔ	400m#		TO3	C0
71	RCAB350	NSi	571m	1.0k	20k#	3.0	5.0	10	250m	40	5.0	40	70	\$J	1.0m	20MΔ	400m#		TO3	KF0
72	RCAB350A	PSi	571m	1.0k	20k#	3.0	5.0	10	250m	60	5.0	60	70	\$J	1.0m	20MΔ	400m#		TO3	KF0
73	RCAB350B	PSi	571m	1.0k	20k#	3.0	5.0	10	250m	80	5.0	80	70	\$J	1.0m	20MΔ	400m#		TO3	KF0
74	SVT6521	NSi	600m	40 #	5.0	10	10	5.0	400	400	135		\$J	1.0m				TO61	A	
75	SVT6522	NSi	6																	

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR (2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-NPN P-PNP	1 MIN. DERATE J TO C (W/C)	hFE		ABSOLUTE MAX RATINGS @ 25°C						MAX COLL (CASE) DISS-Pc (W)	MAX ICBO @ MAXVCB @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R R U E	DWG No	L C O D E	
				2 MIN. Q-TYP	MAX Q-TYP	VCE QVCB (V)	IC QIE (A)	IB QIE (A)	BVCBO (V)	VEBO (V)	VCCEO QVBCES (V)								
1	TIP107I	PSi	640m	1.0k#	20k	4.0	3.0	10	1.0	100	5.0	100	80	50	100m#	DEA	B1	B0	
2#	2SB638H	PSi	640m	1.0k	20k#	3.0	5.0	10	2.0	100	7.0	100	80	100u	400m#	DEA	T03	A0	
3#	2SB818K	PSi	640m	1.0k	20k	3.0	5	10		100	7	100	80				F55	D	
4#	2SD472HT	NSi	640m	1.0k	20k	2.0	5.0	10		150	7.0	100	80	100u	150m	DEA	T03	KF0	
5#	2SD628H	NSi	640m	1.0k	20k#	3.0	5.0	10	2.0	100	7.0	100	80	100u	300m	DEA	T03	A0	
6#	2SD1050K	NSi	640m	1.0k	20k	3.0	5	10	2	100	7	100	80				F55	D	
7#	2SD411	NSi	640m	1.0k	20k	2.0	10	10		100	8.0	80	80	100u	EM	T03	KF0		
8#	BDW93	NSi	641m	750	20k	3.0	5.0	12	200m	45	5.0	45	80	100u	20MΔ	400m	E	Y220b	
9#	BDW93A	NSi	641m	750	20k	3.0	5.0	12	200m	60	5.0	60	80	100u	20MΔ	400m	E	Y220b	
10#	BDW93B	NSi	641m	750	20k	3.0	5.0	12	200m	80	5.0	80	80	100u	20MΔ	400m	E	Y220b	
11#	BDW93C	NSi	641m	750	20k	3.0	5.0	12	200m	100	5.0	100	80	100u	20MΔ	400m	E	Y220b	
12#	BDW94	PSi	641m	750	20k	3.0	5.0	12	200m	45	5.0	45	80	100u	20MΔ	400m	E	Y220b	
13#	BDW94A	PSi	641m	750	20k	3.0	5.0	12	200m	60	5.0	60	80	100u	20MΔ	400m	E	Y220b	
14#	BDW94B	PSi	641m	750	20k	3.0	5.0	12	200m	80	5.0	80	80	100u	20MΔ	400m	E	Y220b	
15#	BDW94C	PSi	641m	750	20k	3.0	5.0	12	200m	100	5.0	100	80	100u	20MΔ	400m	E	Y220b	
16	SPM100	NSi	641m	1.0k	20k	4.0	3.0	8.0	1.0	60	5.0	60	80	50u	Y220				
17	SPM101	NSi	641m	1.0k	20k	4.0	3.0	8.0	1.0	80	5.0	80	80	50u	Y220				
18	SPM102	NSi	641m	1.0k	20k	4.0	3.0	8.0	1.0	100	5.0	100	80	50u	Y220				
19	SPM105	PSi	641m	1.0k	20k	4.0	3.0	8.0	1.0	60	5.0	60	80	50u	Y220				
20	SPM106	PSi	641m	1.0k	20k	4.0	3.0	8.0	1.0	80	5.0	80	80	50u	Y220				
21	SPM107	PSi	641m	1.0k	20k	4.0	3.0	8.0	1.0	100	5.0	100	80	50u	Y220				
22	SDM4014	NSi	666m	750 #		4.0	2.0	10	100m		5.0	100	117	2.0m	600kΔ	500m#	D	T03	KF0
23	SDM4015	NSi	666m	750 #		4.0	2.0	10	100m		5.0	120	117	2.0m	600kΔ	500m#	D	T03	KF0
24	SDM4016	NSi	666m	750 #		4.0	2.0	10	100m		5.0	140	117	2.0m	600kΔ	500m#	D	T03	KF0
25	SDM4017	NSi	666m	750 #		4.0	2.0	10	100m		5.0	160	117	2.0m	600kΔ	500m#	D	T03	KF0
26	SDM4004	NSi	666m	750 #		4.0	4.0	15	150m		5.0	40	117	2.0m	800kΔ	275m#	D	T03	KF0
27	SDM4005	NSi	666m	750 #		4.0	4.0	15	150m		5.0	60	117	2.0m	800kΔ	275m#	D	T03	KF0
28	SDM4006	NSi	666m	750 #		4.0	4.0	15	150m		5.0	80	117	2.0m	800kΔ	275m#	D	T03	KF0
29	SDM4010	NSi	666m	1.0k#		4.0	2.0	10	100m		5.0	100	117	2.0m	600kΔ	500m#	D	T03	KF0
30	SDM4011	NSi	666m	1.0k#		4.0	2.0	10	100m		5.0	120	117	2.0m	600kΔ	500m#	D	T03	KF0
31	SDM4012	NSi	666m	1.0k#		4.0	2.0	10	100m		5.0	140	117	2.0m	600kΔ	500m#	D	T03	KF0
32	SDM4013	NSi	666m	1.0k#		4.0	2.0	10	100m		5.0	160	117	2.0m	600kΔ	500m#	D	T03	KF0
33	SDM3003*	CSi	666m	1.0k		5.0	2.5	10		60 #	10 #	40 #	115	50u	40MΔ	800m		F54	
34	SDM3004*	CSi	666m	1.0k		5.0	2.5	10		80 #	10 #	60 #	115	50u	40MΔ	800m		F54	
35	SDM3005*	CSi	666m	1.0k		5.0	2.5	10		100 #	10 #	80 #	115	50u	40MΔ	800m		F54	
36	SDM4001	NSi	666m	1.0k#		4.0	4.0	15	150m		5.0	40	117	2.0m	800kΔ	275m#	D	T03	KF0
37	SDM4002	NSi	666m	1.0k#		4.0	4.0	15	150m		5.0	60	117	2.0m	800kΔ	275m#	D	T03	KF0
38	SDM4003	NSi	666m	1.0k#		4.0	4.0	15	150m		5.0	80	117	2.0m	800kΔ	275m#	D	T03	KF0
39#	BDX64C	PSi	666m	1.0k		4.0	5.0	16		120		120	117	400u	7.0M	500m#	E	T03	C0
40#	BDX65C	NSi	666m	1.0k		5.0	5.0	18		140		120	117	400u	7.0M	500m#	E	T03	C0
41#	BDX64	PSi	666m	1.5k		3.0	10	12	200m	60	5.0	60	117	400u	7.0M	500m#	E	T03	KF0
42#	BDX64A	PSi	666m	1.5k		3.0	10	12	200m	80	5.0	80	117	400u	7.0M	500m#	E	T03	KF0
43#	BDX64B	PSi	666m	1.5k		3.0	10	12	200m	100	5.0	100	117	400u	7.0M	500m#	E	T03	KF0
44#	BDX65	NSi	666m	1.5k		3.0	10	12	200m	80	5.0	60	117	400u	7.0M	500m#	E	T03	KF0
45#	BDX65A	NSi	666m	1.5k		3.0	10	12	200m	100	5.0	80	117	400u	7.0M	500m#	E	T03	KF0
46#	BDX65B	NSi	666m	1.5k		3.0	10	12	200m	120	5.0	100	117	400u	7.0M	500m#	E	T03	KF0
47	SDM3000*	CSi	666m	10k		5.0	1.0	10		60 #	10 #	40 #	115	50u	40MΔ	400m		F54	
48	SDM3001*	CSi	666m	10k		5.0	1.0	10		80 #	10 #	60 #	115	50u	40MΔ	400m		F54	
49	SDM3002*	CSi	666m	10k		5.0	1.0	10		100 #	10 #	80 #	115	50u	40MΔ	400m		F54	
50	PMD13K40	PSi	667m	800	20k	3.0	4.0	8.0	120m	40	5.0	40	100	200u	200u	500m	P-E	T03	C0
51	PMD13K60	PSi	667m	800	20k	3.0	4.0	8.0	120m	60	5.0	60	100	200u	200u	500m	P-E	T03	C0
52	PMD13K80	PSi	667m	800	20k	3.0	4.0	8.0	120m	80	5.0	80	100	200u	200u	500m	P-E	T03	C0
53	PMD13K100	PSi	667m#	800	20k	3.0	4.0	8.0	120m	100	5.0	100	100	200u	200u	500m	P-E	T03	C0
54#	2SA1045I	PSi	667m	1.0k	20k	3.0	2.0	10		100	5.0	100	100	50u	PE	T03	C0		
55#	2SC2435I	PSi	667m	1.0k	20k	3.0	2.0	10		100	5.0	100	100	50u	PE	T03	C0		
56	PMD12K40	NSi	667m	1.0k	20k	3.0	4.0	8.0	120m	40	5.0	40	100	200u	200u	500m	N-E	T03	C0
57	PMD12K60	NSi	667m	1.0k	20k	3.0	4.0	8.0	120m	60	5.0	60	100	200u	200u	500m	N-E	T03	C0
58	PMD12K80	NSi	667m	1.0k	20k	3.0	4.0	8.0	120m	80	5.0	80	100	200u	200u	500m	N-E	T03	C0
59	PMD12K100	NSi	667m#	1.0k	20k	3.0	4.0	8.0	120m	100	5.0	100	100	200u	200u	500m	N-E	T03	C0
60	SDN6251	NSi	672m	140		5.0	3.0	10		400		84		1.0mΔ	300m			T03	C0
61	SDN6252	NSi	672m	140		5.0	3.0	10		450		84		1.0mΔ	300m			T03	C0
62	SDN6253	NSi	672m	140		5.0	3.0	10		500		84		1.0mΔ	300m			T03	C0
63	MJ920*	PSi	680m	100		3.0	8.0	8.0	120m	60	5.0	60	120	500u	4.0MΔ	500m		F26	KD0
64	MJ921*	PSi	680m	100		3.0	8.0	8.0	120m	80	5.0	80	120	500u	4.0MΔ	500m		F26	KD0
65	MJ1200*	NSi	680m	100		3.0	8.0	8.0	120m	60	5.0	60	120	500u	4.0MΔ	500m		F26	KD0
66	MJ1201*	NSi	680m	100		3.0	8.0	8.0	120m	80	5.0	80	120	500u	4.0MΔ	500m		F26	KD0
67	2N8578I	NSi	686m	500	5.0k	3.0	10	15 #	250m#	60	7.0	60	120	500u	200MΔ	280m		T03	C0
68	2N8577I	NSi	686m	500	5.0k	3.0	10	15 #	250m#	90	7.0	90	120	500u	200MΔ	280m		T03	C0
69	2N8578I	NSi	686m	500	5.0k	3.0	10	15 #	250m#	120	7.0	120	120	500u	200MΔ	280m		T03	C0
70#	BDX87	NSi	689m	750	18k	3.0	6.0	12	200m	45	5.0	45	120	500u	10M	333m	E	T03	C0
71#	BDX87A	NSi	689m	750	18k	3.0	6.0	12	200m	60	5.0	60	120	500u	10M	333m	E	T03	C0
72#	BDX87B	NSi	689m	750	18k	3.0	6.0	12	200m	80	5.0	80	120	500u	10M	333m	E	T03	C0
73#	BDX87C	NSi	689m	750	18k	3.0	6.0	12	200m	100	5.0	100	120	500u	10M	333m	E	T03	C0
74#	BDX88	PSi	689m	750	18k	3.0	6.0	12	200m	45	5.0	45	120	500u	10M	333m	E	T03	C0
75#	BDX88A	PSi	689m	750	18k	3.0	6.0	12	200m	60	5.0	60	120	500u	10M	333m	E	T03	C0
76#	BDX88B	PSi	689m	750	18k	3.0	6.0	12	200m	80	5.0	80	120	500u	10M	333m	E	T03	C0
77#	BDX88C	PSi																	







# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP	1 MIN. DERATE J TO C (W/C)	hFE 2 [MIN]	T-hfe MAX 3	TEST					ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	M A X T °C	MAX ICBO @ 25°C (A)	ft (Hz)	MAX SAT RES (Ω)	S T R U C T U R E	D W G No	L C O D E	
						hFE 2 [MIN]	MAX 3	VCE 4	IC 5	IB 6	BVCEO 7	BVCEOS 8	IC 9	IB 10	BVCEO 11									BVCEOS 12
1	SDM5018	NSi	854m	750 #		4.0	4.0	10	10	150m	5.0	140	150	SJ	2.0m	600kΔ	275m#	D	TO3	KF				
2	SDM5017	NSi	854m	750 #		4.0	4.0	10	10	150m	5.0	160	150	SJ	2.0m	600kΔ	275m#	D	TO3	KF				
3	ESM117	NSi	854m	1.0k	#	3.0	5.0	10	10	200m	6.0	80	150	SJ	400u	1.0MΔ	500m#	E	TO3	KF				
4	ESM118	NSi	854m	1.0k	#	3.0	5.0	10	10	200m	6.0	80	150	SJ	400u	1.0MΔ	500m#	E	TO3	KF				
5	BDX66C	PSi	854m	1.0k	#	3.0	5.0	10	10	200m	6.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
6	BDX67C	NSi	854m	1.0k	#	3.0	5.0	10	10	200m	6.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
7	BDX86	PSi	855m	1.0k		3.0	5.0	10	5.0	100	5.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
8	BDX86A	PSi	855m	1.0k		3.0	5.0	10	5.0	100	5.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
9	BDX86B	PSi	855m	1.0k		3.0	5.0	10	5.0	100	5.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
10	BDX87	NSi	855m	1.0k		3.0	5.0	10	5.0	100	5.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
11	BDX87A	NSi	855m	1.0k		3.0	5.0	10	5.0	100	5.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
12	BDX87B	NSi	855m	1.0k		3.0	5.0	10	5.0	100	5.0	80	150	SJ	1.0m	7.0M	200m#	E	TO3	KF				
13	2N6050	PSi	857m	750	18k #	3.0	6.0	12	12	200m	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
14	2N6051	PSi	857m	750	18k #	3.0	6.0	12	12	200m	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
15	2N6052	PSi	857m	750	18k #	3.0	6.0	12	12	200m	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
16	2N6057	NSi	857m	750	18k #	3.0	6.0	12	12	200m	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
17	2N6058	NSi	857m	750	18k #	3.0	6.0	12	12	200m	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
18	2N6059	NSi	857m	750	18k #	3.0	6.0	12	12	200m	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
19	HEPS8148-RT	NSi	857m	750		3.0	6.0	12	12	100	5.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
20	HEPS8147-RT	NSi	857m	750		3.0	6.0	12	12	100	5.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
21	HEPS8148-RT	NSi	857m	750		3.0	6.0	12	12	100	5.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
22	HEPS8149-RT	NSi	857m	750		3.0	6.0	12	12	100	5.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
23	MJ2500	PSi	857m	1.0k	#	3.0	5.0	10	10	200	6.0	80	150	SJ	400u	1.0MΔ	500m#	E	TO3	KF				
24	MJ2501	PSi	857m	1.0k	#	3.0	5.0	10	10	200	6.0	80	150	SJ	400u	1.0MΔ	500m#	E	TO3	KF				
25	MJ3000	NSi	857m	1.0k	#	3.0	5.0	10	10	200	6.0	80	150	SJ	400u	1.0MΔ	500m#	E	TO3	KF				
26	MJ3001	NSi	857m	1.0k	#	3.0	5.0	10	10	200	6.0	80	150	SJ	400u	1.0MΔ	500m#	E	TO3	KF				
27	MJ4030	PSi	857m	1.0k	#	3.0	5.0	10	16	500	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
28	MJ4031	PSi	857m	1.0k	#	3.0	5.0	10	16	500	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
29	MJ4032	PSi	857m	1.0k	#	3.0	5.0	10	16	500	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
30	MJ4033	NSi	857m	1.0k	#	3.0	5.0	10	16	500	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
31	MJ4034	NSi	857m	1.0k	#	3.0	5.0	10	16	500	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
32	MJ4035	NSi	857m	1.0k	#	3.0	5.0	10	16	500	6.0	80	150	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
33	MJ10002†	NSi	880m	30	300	5.0	5.0	10	2.5	100	8.0	350	150	SJ	5.0m*	10MΔ	290m	E	TO3	KF				
34	MJ10003†	NSi	880m	30	300	5.0	5.0	10	2.5	100	8.0	400	150	SJ	5.0m*	10MΔ	290m	E	TO3	KF				
35	MJ10006†	NSi	880m	30	300	5.0	5.0	10	2.5	100	8.0	350	150	SJ	5.0m*	10MΔ	290m	E	TO3	KF				
36	MJ10007†	NSi	880m	30	300	5.0	5.0	10	2.5	100	8.0	400	150	SJ	5.0m*	10MΔ	290m	E	TO3	KF				
37	HEPS8142-RT	NSi	914m	1.0k		3.0	6.0	10	20	100	5.0	100	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
38	HEPS8143-RT	NSi	914m	1.0k		3.0	6.0	10	20	100	5.0	100	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
39	2N6282	NSi	915m	750	18k #	3.0	6.0	10	20	500	6.0	80	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
40	2N6283	NSi	915m	750	18k #	3.0	6.0	10	20	500	6.0	80	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
41	2N6284	NSi	915m	750	18k #	3.0	6.0	10	20	500	6.0	80	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
42	2N6285	PSi	915m	750	18k #	3.0	6.0	10	20	500	6.0	80	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
43	2N6286	PSi	915m	750	18k #	3.0	6.0	10	20	500	6.0	80	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
44	2N6287	PSi	915m	750	18k #	3.0	6.0	10	20	500	6.0	80	160	SJ	1.0m	4.0MΔ	500m#	E	TO3	KF				
45	IR4060†	NSi	1.0	8.0		5.0	5.0	15	4.0	600	2.0	600	125	SJ	250uΔ	8.0MΔ	133m	D	TO3	KF				
46	ET5066	NSi	1.0	8.0		5.0	5.0	10	20	4.0	1.0k	15	900	125	SJ	1.0m	8.0M	200m	D	TO3	KF			
47	IR5066	N	1.0	8.0		5.0	5.0	10	15	5.0	1.0k	20	900	125	SJ	1.0m	8.0M	200m	D	TO3	KF			
48	ET5065	NSi	1.0	10		5.0	5.0	10	20	4.0	850	15	750	125	SJ	1.0m	8.0M	200m	D	TO3	KF			
49	IR5065	N	1.0	10		5.0	5.0	10	15	5.0	850	20	750	125	SJ	1.0m	8.0M	200m	D	TO3	KF			
50	MJ10013†	NSi	1.0	10	250	5.0	5.0	10	10	7.0	8.0	550	175	SJ	5.0m*	8.0MΔ	250m	D	TO3	KF				
51	MJ10014†	NSi	1.0	10	250	5.0	5.0	10	10	7.0	8.0	600	175	SJ	5.0m*	8.0MΔ	250m	D	TO3	KF				
52	IR5000†	NSi	1.0	10		5.0	5.0	15	15	4.0	400	20	400	125	SJ	1.0m	8.0MΔ	120m	D	TO3	KF			
53	IR5001†	NSi	1.0	10		5.0	5.0	15	15	4.0	450	20	450	125	SJ	1.0m	8.0MΔ	120m	D	TO3	KF			
54	IR5002†	NSi	1.0	10		5.0	5.0	15	15	4.0	500	20	500	125	SJ	1.0m	8.0MΔ	120m	D	TO3	KF			
55	ET5063	NSi	1.0	12		5.0	5.0	15	20	4.0	600	15	500	125	SJ	1.0m	8.0M	133m	D	TO3	KF			
56	IR5063	N	1.0	12		5.0	5.0	15	15	5.0	600	20	500	125	SJ	1.0m	8.0M	133m	D	TO3	KF			
57	ET5064	NSi	1.0	14		5.0	5.0	10	20	4.0	700	15	600	125	SJ	1.0m	8.0M	200m	D	TO3	KF			
58	IR5064	N	1.0	14		5.0	5.0	10	15	5.0	700	20	600	125	SJ	1.0m	8.0M	200m	D	TO3	KF			
59	IR4065†	NSi	1.0	15		5.0	5.0	15	15	4.0	600	20	600	125	SJ	250uΔ	8.0MΔ	120m	D	TO3	KF			
60	IR5060†	NSi	1.0	15		5.0	5.0	20	20	4.0	350	20	350	125	SJ	1.0m	8.0MΔ	100m	D	TO3	KF			
61	IR5061†	NSi	1.0	15		5.0	5.0	20	20	4.0	400	20	400	125	SJ	1.0m	8.0MΔ	100m	D	TO3	KF			
62	IR5062†	NSi	1.0	15		5.0	5.0	20	20	4.0	450	20	450	125	SJ	1.0m	8.0MΔ	100m	D	TO3	KF			
63	MJ3040	NSi	1.0	25		5.0	5.0	10	10	4.0	400	8.0	300	175	SJ	1.0m	8.0M	880m	D	TO3	KF			
64	BUT13P†	NSi	1.0	30		5.0	5.0	10	28	6.0	600	10	400	150	SJ	1.0m	8.0M	200m	EPL	B81	KF			
65	MJ10008†	NSi	1.0	30	300	5.0	5.0	10	2.5	100	8.0	450	175	SJ	5.0m*	8.0MΔ	200m	D	TO3	KF				
66	MJ10009†	NSi	1.0	30	300	5.0	5.0	10	2.5	100	8.0	500	175	SJ	5.0m*	8.0MΔ	200m	D	TO3	KF				
67	PTC6060†	NSi	1.0	30	#	5.0	5.0	10	20	4.0	350	15	350	125	SJ	1.0m	8.0M	10	DM	TO3	KF			
68	PTC6061†	NSi	1.0	30	#	5.0	5.0	10	20	4.0	400	15	400	125	SJ	1.0m	8.0M	10	DM	TO3	KF			
69	PTC6062†	NSi	1.0	30	#	5.0	5.0	10	20	4.0	450	15	450	125	SJ	1.0m	8.0M	10	DM	TO3	KF			
70	PTC6063†	NSi	1.0	30	#	5.0	5.0	10	20	4.0	550	15	550											

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP P-PNP	1) MIN. DERATE J TO C (W/°C)	hFE		ABSOLUTE MAX RATINGS @ 25°C				MAX COLL (CASE) DISS-Pc (W)	M A X T °C	MAX ICBO @ MAX VCB @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R U C	DWG No	L C O D E
				2) MIN ∅-TYP	MAX ∅-TYP	VCE ∅VCB (V)	IC ∅IB (A)	IC ∅-IE (A)	IB ∅-IE (A)								
1	MJ10012T	NSi	1.0	100 #	2.0k #	6.0	6.0	10	2.0	600	8.0	400	175	1.0m		Y204a	C0
2	RCAB766	NSi	1.0	100 #		3.0	6.0	10	1.0	350	5.0	350	150	1.0M*		TO3	KF
3	RCAB766B	NSi	1.0	100 #		3.0	6.0	10	1.0	400	5.0	400	150	1.0M*	10MΔ	TO3	KF
4	RCAB766D	NSi	1.0	100 #		3.0	6.0	10	1.0	450	5.0	450	150	1.0M*	10MΔ	TO3	KF
5	SDM10012	NSi	1.0	100 #	4.0k #	6.0	6.0	10	2.0	600	8.0	400	175	1.0m		TO3	KF
6	CMC4010AT	NSi	1.0	100		5.0	10	20	500m #	200		100	150	1.0mΔ	5.0MΔ	400m	DE
7	CMC4012AT	NSi	1.0	100		5.0	10	20	500m #	200		120	150	1.0mΔ	5.0MΔ	400m	DE
8	CMC4015AT	NSi	1.0	100		5.0	10	20	500m #	200		150	150	1.0mΔ	5.0MΔ	400m	DE
9	CMC4030AT	NSi	1.0	100		5.0	10	20	500m #	600		400	150	1.0mΔ	5.0MΔ	100m	D
10	CMC4035AT	NSi	1.0	100		5.0	10	20	500m #	600		400	150	1.0mΔ	5.0MΔ	100m	D
11	CMC4040AT	NSi	1.0	100		5.0	10	20	500m #	600		400	150	1.0mΔ	5.0MΔ	100m	D
12	ET5060	NSi	1.0	100		5.0	10	20	4.0	350	15	350	125	1.0m	8.0M	140m	D
13	ET5061	NSi	1.0	100		5.0	10	20	4.0	400	15	400	125	1.0m	8.0M	140m	D
14	GE8060T	NSi	1.0	100		5.0	10	20	4.0	350		350	125	1.0m		TO3	C0
15	GE8061T	NSi	1.0	100		5.0	10	20	4.0	400		400	125	1.0m		TO3	C0
16	GE8062T	NSi	1.0	100		5.0	10	20	4.0	450		450	125	1.0m		TO3	C0
17	IR6060T	N	1.0	100		5.0	10	20	4.0	350		350	125	1.0mΔ	8.0MΔ	150m	D
18	IR6061T	N	1.0	100		5.0	10	20	4.0	400		400	125	1.0mΔ	8.0MΔ	150m	D
19	IR6062T	N	1.0	100		5.0	10	20	4.0	450		450	125	1.0mΔ	8.0MΔ	150m	D
20	IR4050T	NSi	1.0	100		5.0	15	15	4.0	500	20	500	125	1.0mΔ	8.0MΔ	133m	D
21	IR6000T	N	1.0	150		5.0	5.0	15	4.0	400		400	125	1.0mΔ	8.0MΔ	150m	D
22	IR6001T	N	1.0	150		5.0	5.0	15	4.0	450		450	125	1.0mΔ	8.0MΔ	150m	D
23	IR6002T	N	1.0	150		5.0	5.0	15	4.0	500		500	125	1.0mΔ	8.0MΔ	150m	D
24	BU323Z	NSi	1.0	150	2.0k	6.0	6.0	10	3.0	500	8.0	350	175	1.0m		TO3	C0
25	CMC1530AT	NSi	1.0	150		5.0	8.0	8.0	500m #	600		400	100	1.0mΔ	5.0MΔ	400m	D
26	CMC1535AT	NSi	1.0	150		5.0	8.0	8.0	500m #	600		400	100	1.0mΔ	5.0MΔ	400m	D
27	CMC1540AT	NSi	1.0	150		5.0	8.0	8.0	500m #	600		400	100	1.0mΔ	5.0MΔ	400m	D
28	CMC2530AT	NSi	1.0	150		5.0	12	12	500m #	600		400	125	1.0mΔ	5.0MΔ	200m	D
29	CMC2535AT	NSi	1.0	150		5.0	12	12	500m #	600		400	125	1.0mΔ	5.0MΔ	200m	D
30	CMC2540AT	NSi	1.0	150		5.0	12	12	500m #	600		400	125	1.0mΔ	5.0MΔ	200m	D
31	CMC7010AT	NSi	1.0	150		5.0	35	35	500m #	200		100	175	1.0mΔ	5.0MΔ	66m	DE
32	CMC7012AT	NSi	1.0	150		5.0	35	35	500m #	200		120	175	1.0mΔ	5.0MΔ	66m	DE
33	CMC7015AT	NSi	1.0	150		5.0	35	35	500m #	200		150	175	1.0mΔ	5.0MΔ	66m	DE
34	IR4055T	NSi	1.0	200		5.0	3.0	15	4.0	500	20	500	125	1.0mΔ	8.0MΔ	120m	D
35	ET4055	NSi	1.0	200		5.0	3.0	15	4.0	500	15	500	125	1.0mΔ	8.0MΔ	240m	D
36	ET4065	NSi	1.0	200		5.0	3.0	15	4.0	600	15	600	125	1.0mΔ	8.0MΔ	240m	D
37	ET4040	NSi	1.0	250		5.0	3.0	15	4.0	400	15	325	125	1.0mΔ	8.0MΔ	280m	D
38	ET4045	NSi	1.0	250		5.0	3.0	15	4.0	600	15	600	125	1.0mΔ	8.0MΔ	240m	D
39	FT359	NSi	1.0	250 #		3.0	3.0	15 #	2.0 #	375	5.0	350	125	5.0mΔ		ME	TO3
40	IR4040T	NSi	1.0	250		5.0	3.0	15	4.0	400	20	400	125	1.0mΔ	8.0MΔ	133m	D
41	PMD25K120T	NSi	1.0	300		3.0	5.0	9.0	200m	120	2.0	120	150	500uΔ		360m	TO3
42	PMD25K150T	NSi	1.0	300		3.0	5.0	9.0	200m	150	2.0	150	150	500uΔ		360m	TO3
43	PMD20K120T	NSi	1.0	300		3.0	10	14	500m	120	2.0	120	150	500uΔ		180m	TO3
44	PMD20K150T	NSi	1.0	300		3.0	10	14	500m	150	2.0	150	150	500uΔ		180m	TO3
45	PMD20K200T	NSi	1.0	300		3.0	10	14	500m	200	2.0	200	150	500uΔ		170m	TO3
46	PMD25K200T	NSi	1.0	300		3.0	10	9.0	200m	200	2.0	200	150	500uΔ		170m	TO3
47	IR4045T	NSi	1.0	500		5.0	5.0	15	4.0	400	20	400	125	1.0mΔ	8.0MΔ	120m	D
48	IR640T	NSi	1.0	500 #	5.0k∅	4.0	10	10	500m	60	5.0	60	175	1.0m		400m	TO3
49	IR641T	NSi	1.0	500 #	5.0k∅	4.0	10	10	500m	80	5.0	80	175	1.0m		400m	TO3
50	IR642T	NSi	1.0	500 #	5.0k∅	4.0	10	10	500m	100	5.0	100	175	1.0m		400m	TO3
51	IR645T	NSi	1.0	500 #	1.0k∅	4.0	10	10	500m	60	5.0	60	175	1.0m		400m	TO3
52	IR646T	PSi	1.0	500 #	1.0k∅	4.0	10	10	500m	80	5.0	80	175	1.0m		400m	TO3
53	IR647T	PSi	1.0	500 #	1.0k∅	4.0	10	10	500m	100	5.0	100	175	1.0m		400m	TO3
54	TIP140T	NSi	1.0	500 #		4.0	10	10	500m	60	5.0	60	125	1.0m		300m #	B3
55	TIP141T	NSi	1.0	500 #		4.0	10	10	500m	80	5.0	80	125	1.0m		300m #	B3
56	TIP142T	NSi	1.0	500 #		4.0	10	10	500m	100	5.0	100	125	1.0m		300m #	B3
57	TIP145T	NSi	1.0	500 #		4.0	10	10	500m	60	5.0	60	125	1.0m		300m #	B3
58	TIP146T	PSi	1.0	500 #		4.0	10	10	500m	80	5.0	80	125	1.0m		300m #	B3
59	TIP147T	PSi	1.0	500 #		4.0	10	10	500m	100	5.0	100	125	1.0m		300m #	B3
60	TIP640T	NSi	1.0	500 #	5.0k∅	4.0	10	10	500m	60	5.0	60	175	1.0m		300m #	TO3
61	TIP641T	NSi	1.0	500 #	5.0k∅	4.0	10	10	500m	80	5.0	80	175	1.0m		300m #	TO3
62	TIP642T	NSi	1.0	500 #	5.0k∅	4.0	10	10	500m	100	5.0	100	175	1.0m		300m #	TO3
63	TIP645T	NSi	1.0	500 #	1.0k∅	4.0	10	10	500m	60	5.0	60	175	1.0m		300m #	TO3
64	TIP646T	PSi	1.0	500 #	1.0k∅	4.0	10	10	500m	80	5.0	80	175	1.0m		300m #	TO3
65	TIP647T	PSi	1.0	500 #	1.0k∅	4.0	10	10	500m	100	5.0	100	175	1.0m		300m #	TO3
66	PMD11K40	PSi	1.0	800	20k	3.0	6.0	12	200m	40	5.0	40	150	200uΔ		333m	P-E
67	PMD11K60	PSi	1.0	800	20k	3.0	6.0	12	200m	60	5.0	60	150	200uΔ		333m	P-E
68	PMD11K80	PSi	1.0	800	20k	3.0	6.0	12	200m	80	5.0	80	150	200uΔ		333m	P-E
69	PMD11K100	PSi	1.0	800	20k	3.0	6.0	12	200m	100	5.0	100	150	200uΔ		333m	P-E
70 #	BDV84C	PSi	1.0	1.0k		5.0	12	12	120	120		120	125	400u	7.0M		B48
71 #	BDV85C	PSi	1.0	1.0k		5.0	12	12	120	120		120	125	400u	7.0M		B46
72	JAN2N6051T	PSi	1.0	1.0k	10k #	3.0	6.0	12	200m	80	5.0	80	150	500u #	20MΔ	333m #	TO3
73	JAN2N6052T	NSi	1.0	1.0k	10k #	3.0	6.0	12	200m	100	5.0	100	150	500u #	20MΔ	333m #	TO3
74	JAN2N6058T	NSi	1.0	1.0k	18k #	3.0	6.0	12	200m	80	5.0	80	150	500u #	20MΔ	333m #	TO3
75	JAN2N6059T	NSi	1.0	1.0k	18k #	3.0	6.0	12	200m	100	5.0	100	150	500u #	20MΔ	333m #	TO3
76	PMD10K40	NSi	1.0	1.0k	20k	3.0	6.0	12	200m	40	5.0	40	150	200uΔ		333m	N-E
77	PMD10K60	NSi	1.0	1.0k	20k	3.0	6.0	12	200m	60	5.0	60	150	200uΔ		333m	N-E
78	PMD10K80	NSi	1.0	1.0k	20k	3.0	6.0	12	200m	80	5.0	80	150	200uΔ		333m	N-E
79	PMD10K100	NSi	1.0	1.0k	20k	3.0	6.0	12	200m	100	5.0	100	150	200uΔ		333m	N-E
80 #	2SB693H	PSi	1.0	1.0k #	20k	3.0	10	20	4.0	100	7.0	100	125	1.0uΔ		200m	EΔ
81 #	2SD729H	NSi	1.0	1.0k #	20k	3.0	10	20	4.0	100	7.0	100	125	1.0uΔ		200m	EΔ
82 #	2SB694H	PSi	1.0	1.0k	20k	3.0	12	25	5	100	7	100					

# 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN hFE (3) IC TEST (4) TYPE No.

LINE No.	TYPE No.	POL. & MAT. N-PNP	MIN. DERATE J TO C (W/°C)	hFE		TEST			ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	M A X T °C	MAX ICBO @ 25°C (A)	fT (Hz)	MAX SAT RES (Ω)	S T U R E U C	D W G No	L E A D E
				MIN	MAX	VCE	IC	IB	IC	IE	IE	IC	IC								
1	2N8355	NSi	1.2	500	5.0k #	5.0	4.0	2.0	1.0	50 ↑	5.0	150	150	150	2.0m #					TO3	KFO
2	2N8357	NSi	1.2	500	5.0k #	5.0	4.0	2.0	1.0	80 ↑	5.0	150	150	150	2.0m #					TO3	KFO
3	2SD6871	NSi	1.2	500		5.0	5.0	15	2.0	600	5.0	400	150	500				200m	DM	TO3	KFO
4	2SD6831A	NSi	1.2	500		5.0	5.0	15	2.0	140	5.0	450	150	500				200m	DM	TO3	KFO
5	2SC1830	NSi	1.2	500		2.0	8.0	15	1.0	140	7.0	140	150	100			10M		DM	TO3	KFO
6	PMD1800K	NSi	1.2	750	20k	3.0	10	20	500m	40	5.0	40	180	7.0m #				200m		F49e	KFO
7	PMD1700K	PSi	1.2	750	20k	3.0	10	20	500m	40	5.0	40	180	7.0m #				200m		F49e	KFO
8	2SB833	PSi	1.2	1.0k		3.0	20	30	1.0	80	5.0	80	150	100			10M			TO3	KFO
9	JAN2N62831	NSi	1.2	1.2k	18k #	3.0	10	20	500m	80	7.0	80	175	1.0mΔ			8.0MΔ			TO3	KFO
10	JAN2N62841	NSi	1.2	1.2k	18k #	3.0	10	20	500m	100	7.0	100	175	1.0mΔ			8.0MΔ			TO3	KFO
11	JAN2N62861	PSi	1.2	1.2k	18k #	3.0	10	20	500m	80	7.0	80	175	1.0mΔ			8.0MΔ			TO3	KFO
12	JAN2N62871	PSi	1.2	1.2k	18k #	3.0	10	20	500m	100	7.0	100	175	1.0mΔ			8.0MΔ			TO3	KFO
13	2N8356	NSi	1.2	1.5k	10k #	5.0	4.0	2.0	1.0	50 ↑	5.0	40	150	2.0m #						TO3	KFO
14	2N8358	NSi	1.2	1.5k	10k #	5.0	4.0	2.0	1.0	80 ↑	5.0	40	150	2.0m #						TO3	KFO
15	DTS4021	NSi	1.3	75	10k #	5.0	10	20	5.0	7.0	600	100	100	250			8.0MΔ	175m	D	TO3	KFO
16	DTS40661	NSi	1.3	75	10k #	5.0	10	20	5.0	7.0	600	100	100	250			8.0MΔ	175m	D	TO3	KFO
17	DTS40721	NSi	1.3	75	10k #	5.0	10	20	5.0	2.0	600	100	100	250			8.0MΔ	175m	D	TO3	KFO
18	DTS40741	NSi	1.3	75	10k #	5.0	10	20	5.0	2.0	600	100	100	250			8.0MΔ	175m	D	TO3	KFO
19	DTS4010	NSi	1.3	150		5.0	10	20	2.0	5.0	250	100	100	250					D	Y204a	KFO
20	DTS4025	NSi	1.3	150		5.0	10	20	2.0	5.0	400	100	100	250				360m	D	Y204a	KFO
21	DTS4026	NSi	1.3	150		5.0	10	20	2.0	5.0	600	100	100	250				360m	D	Y204a	KFO
22	DTS40571	NSi	1.3	150		5.0	10	20	5.0	7.0	600	100	100	250			8.0MΔ	100m	D	TO3	KFO
23	DTS40751	NSi	1.3	150		5.0	10	20	5.0	2.0	600	100	100	250			8.0MΔ	115m	D	TO3	KFO
24	DTS40391	NSi	1.3	200		5.0	3.0	15	4.0	20	400	100	100	250			8.0MΔ	200m	DM	Y204a	KFO
25	DTS40581	NSi	1.3	200		5.0	3.0	15	4.0	20	600	100	100	250			8.0MΔ	200m	DM	Y204a	KFO
26	DTS40411	NSi	1.3	250		5.0	3.0	15	4.0	20	400	100	100	250			8.0MΔ	146m	DM	Y204a	KFO
27	DTS40611	NSi	1.3	250		5.0	3.0	15	4.0	20	600	100	100	250			8.0MΔ	146m	DM	Y204a	KFO
28	MJ10015	NSi	1.4	10		5.0	40	50	10	8.0	400	250	250	250				110m		F49b	KFO
29	MJ10016	NSi	1.4	10		5.0	40	50	10	8.0	500	250	250	250				110m		F49b	KFO
30	PTC70001	NSi	1.4	15		5.0	50	50	8.0	350	350	250	250	1.0mΔ				04	DM	TO3	KFO
31	PTC70011	NSi	1.4	15		5.0	50	50	8.0	400	400	250	250	1.0mΔ				04	DM	TO3	KFO
32	PTC70021	NSi	1.4	15		5.0	50	50	8.0	450	450	250	250	1.0mΔ				04	DM	TO3	KFO
33	PTC70031	NSi	1.4	15		5.0	50	50	8.0	550	550	250	250	1.0mΔ				04	DM	TO3	KFO
34	MJ100241	N	1.4	50	600	5.0	5.0	20	10	8.0	750	250	250	25mΔ						F59	KFO
35	MJ100251	N	1.4	50	600	5.0	5.0	20	10	8.0	850	250	250	25mΔ						F59	KFO
36	MJ100221	N	1.4	50	600	5.0	5.0	20	10	8.0	350	250	250	25mΔ						TO3	KFO
37	MJ100231	N	1.4	50	600	5.0	5.0	10	40	8.0	400	250	250	25mΔ						TO3	KFO
38	MJ100201	NSi	1.4	75	1.0k	5.0	1.5	60	20	200	250	250	250	5.0mΔ						TO3	KFO
39	MJ100211	NSi	1.4	75	1.0k	5.0	1.5	60	20	250	250	250	250	5.0mΔ						TO3	KFO
40	TIP666	NSi	1.5	40	800 #	5.0	2.5	10	2.0	400	8.0	300	150	50uAΔ			10MΔ	380m #		TO3	KFO
41	TIP667	NSi	1.5	40	800 #	5.0	2.5	10	2.0	450	8.0	350	150	50uAΔ			10MΔ	380m #		TO3	KFO
42	TIP668	NSi	1.5	40	800 #	5.0	2.5	10	2.0	550	8.0	450	150	50uAΔ			10MΔ	380m #		TO3	KFO
43	TIP6631	NSi	1.5	500	10k	5.0	5.0	20	5.0	400	8.0	300	150	250uAΔ			10MΔ	150m #		TO3	KFO
44	TIP6641	NSi	1.5	500	10k	5.0	5.0	20	5.0	450	8.0	350	150	250uAΔ			10MΔ	150m #		TO3	KFO
45	TIP6651	NSi	1.5	500	10k	5.0	5.0	20	5.0	500	8.0	400	150	250uAΔ			10MΔ	150m #		TO3	KFO
46	PMD17K40	PSi	1.5	800	20k	3.0	10	20	500m	40	5.0	40	225 #	200uAΔ				200m	P-E	TO3	KFO
47	PMD17K60	PSi	1.5	800	20k	3.0	10	20	500m	60	5.0	60	225 #	200uAΔ				200m	P-E	TO3	KFO
48	PMD17K80	PSi	1.5	800	20k	3.0	10	20	500m	80	5.0	80	225 #	200uAΔ				200m	P-E	TO3	KFO
49	PMD17K100	PSi	1.5	800	20k	3.0	10	20	500m	100	5.0	100	225 #	200uAΔ				200m	P-E	TO3	KFO
50	PMD18K40	NSi	1.5	1.0k	20k	3.0	10	20	500m	40	5.0	40	225 #	200uAΔ				200m	N-E	TO3	KFO
51	PMD18K60	NSi	1.5	1.0k	20k	3.0	10	20	500m	60	5.0	60	225 #	200uAΔ				200m	N-E	TO3	KFO
52	PMD18K80	NSi	1.5	1.0k	20k	3.0	10	20	500m	80	5.0	80	225 #	200uAΔ				200m	N-E	TO3	KFO
53	PMD18K100	NSi	1.5	1.0k	20k	3.0	10	20	500m	100	5.0	100	225 #	200uAΔ				200m	N-E	TO3	KFO
54	MJ11028	NSi	1.7	1.0k	18k	5.0	25	50	60	5.0	60	300	300	2.0m #				100m		F49b	KFO
55	MJ11029	PSi	1.7	1.0k	18k	5.0	25	50	90	5.0	90	300	300	2.0m #				100m		F49b	KFO
56	MJ11030	NSi	1.7	1.0k	18k	5.0	25	50	120	5.0	120	300	300	2.0m #				100m		F49b	KFO
57	MJ11031	PSi	1.7	1.0k	18k	5.0	25	50	120	5.0	120	300	300	2.0m #				100m		F49b	KFO
58	MJ11032	NSi	1.7	1.0k	18k	5.0	25	50	120	5.0	120	300	300	2.0m #				100m		F49b	KFO
59	MJ11033	PSi	1.7	1.0k	18k	5.0	25	50	120	5.0	120	300	300	2.0m #				100m		F49b	KFO
60	WT635-01D1	NSi	1.9	30	2.5	150	150	15	15	850	2.0mΔ	850	250	20mΔ					D	TO63	KFO
61	WT635-02D1	NSi	1.9	30	2.5	150	150	15	15	850	2.0mΔ	850	250	20mΔ					D	TO63	KFO
62	MT5002Δ	N	2.0	100	4.0	100	50	25	450	10	400	325	325	5.0m #				25m		S23	KFO
63	PT5000	N	2.0	175	4.0	250	250	25	60	10	60	350	350	5.0m #			1.0k		M		KFO
64	PT5001	N	2.0	175	4.0	250	250	25	80	10	80	350	350	5.0m #			1.0k		M		KFO
65	MT5000	N	2.0	500	4.0	125	125	25	60	10	60	350	350	5.0m #				12m #		S18	KFO
66	MT5001	N	2.0	500	4.0	125	125	25	80	10	80	350	350	5.0m #				12m #		S18	KFO
67	2SD8321	NSi	2.7	700	5.0	30	50	30	500	400	400	400	400	1.0m					DM	F52	KFO
68	2SD695	NSi	2.8	150	5.0	30	30	2.0	400	5.0	350	350	350	600u					DM	F51	KFO
69	2SD4651	Si	3.2	100	5.0	50	50	3.0	500	4.0	400	400	400	1.0m			6.5M			F40	KFO
70	2SD4661	Si	3.2	100	5.0	50	50	3.0	800	4.0	450	400	400	1.0m			6.5M			F40	KFO
71	2SD646	NSi	3.2	150	5.0	50	50	3.0	600	6.0	450	400	400	1.0m					DM	F51	KFO
72	2SD646A	NSi	3.2	150	5.0	50	50	3.0	600	6.0	450	400	400	1.0m					DM	F51	KFO
73	2SD696	NSi	3.2	150	5.0	50	50	3.0	400	6.0											

# 14. TRANSISTOR ARRAYS

IN ORDER OF: (1)TECHNO.(2)TRANS./DEVICE  
(3)MAX IC(4)MAX V<sub>ceo</sub>(5)TYPE NO.

LINE No.	TYPE NO.	DATA SHT.	TECH	ARRAY CONFIG.				MAX. I <sub>c</sub> (A)	MAX. V <sub>ceo</sub> (V)	POLARITY AND MAT'L.	MINIMUM HFE			DYNAMIC CHARACTER		MAX. OPER. POWER DISS. (W)	OPER. TEMP. RANGE CODE		DRAWINGS	
				T	C	SPECIAL CKT. FEAT.	NC OK T				@ I <sub>c</sub> (A)	@ V <sub>ceo</sub> (V)	MIN. FT (Hz)	MAX. Ton (S)	-		+	LOGIC OR BLOCK	OUTLINE	
1	2C5192																			
2	ULN2083A														750m	0	8	T00-42	DL16cw	
3	ULS2083H														750m	0	8	T0042	DL16cw	
4	SL2363CCM							6.0										T0081	T05	
5	SL2364CDG							6.0						2.5G				T0081a	DL14am	
6	M54515P		BIP					16m	17						1.5	3	8	T00-89	DL16bb	
7	M54568P		BIP					30m	20	P					0.5	2	7	T00-105	SL10A	
8	M54569P		BIP					30m	20	P					1.8	2	7	T00-106	DL18i	
9	M54514AP		BIP					.05	20	N					1.5	2	7	T00-88	DL16bb	
10	M54513P		BIP					.05	40	N					1.8	2	7	T00-87	DL18ii	
11	M54577FP		BIP					30m	30	N					0.4	1	8	T00-97	FP150	
12	M54512L		BIP					.05	20	N					0.5	1	7	T00-86	SL8B	
13	M54565P		BIP					50m	20	N/P					1.5	2	7	T00-102	DL18i	
14	M54577P		BIP					50m	30	N					1.5	1	8	T00-97	DL16bb	
15	M54560P		BIP					0.1	40	N/P					1.5	2	7	T00-100	DL16bb	
16	M54527P		BIP					150m	40	N					1.5	2	7	T00-92	DL14bm	
17	M54528P		BIP					150m	40	N					1.5	2	7	T00-20	DL16bb	
18	M54529P		BIP					0.3	20	N					1.5	2	7	T00-93	DL14bm	
19	M54533P		BIP					0.3	20	N					1.5	2	7	T00-95	DL16bb	
20	M54534P		BIP					0.3	20	N					1.5	2	7	T00-95	DL16bb	
21	M56529AP		BIP					0.3	20	N					1.5	2	7		DL16bb	
22	M56529P		BIP					0.3	20	N					1.5	2	7		DL16bb	
23	M54537P		BIP					350m	20	N					1.5	2	7	T00-97	DL16bb	
24	M54538P		BIP					350m	20	N					1.8	2	7	T00-98	DL18i	
25	M54517P		BIP			DA		0.4	25	N		3.0k	300m	4.0	1.5	2	7	T00-88	DL16bb	
26	M54519P		BIP			DA		0.4	40	N		3.0k	300m	2.5	1.5	2	7	T00-88	DL16bb	
27	M54522P		BIP			DA		0.4	40	N					1.5	2	7	T00-91	DL18i	
28	M54530P		BIP			DA		0.4	40	N					1.5	2	7	T00-20	DL16bb	
29	M54531P		BIP			DA		0.4	40	N					1.5	2	7	T00-20	DL16bb	
30	M54516P		BIP			DA		0.5	25	N		3.0k	300m	4.0	1.5	2	7	T00-90	DL14bm	
31	M54521P		BIP			DA		0.5	30	N		7.0k	200m	4.0	1.5	2	7	T00-90	DL14bm	
32	M54523P		BIP			DA		0.5	50	N					1.5	2	7	T00-20	DL16bb	
33	M54524P		BIP			DA		0.5	50	N					1.5	2	7	T00-20	DL16bb	
34	M54525P		BIP			DA		0.5	50	N					1.5	2	7	T00-20	DL16bb	
35	M54526P		BIP			DA		0.5	50	N					1.5	2	7	T00-20	DL16bb	
36	M54539P		BIP			DA		0.7	20	N					1.5	2	7	T00-99	DL16bb	
37	M54532P		BIP			DA		1.5	50	N					2.5	2	7	T00-94	DL16bb	
38	M54580P		BIP			IN		0.1	40	N/P					1.5	2	7	T00-109	DL16bb	
39	M54561P		BIP			DA		0.3	40	N/P					1.5	2	7	T00-100	DL16bb	
40	M54566P		BIP			DA		0.4	50	N/P					1.5	2	7	T00-103	DL16bb	
41	M54567P		BIP			DA		1.5	50	N/P					2.5	2	7	T00-104	DL16bb	
42	M54576FP		BIP			DA		50m	30	N					0.4	1	8	T00-108	FP150	
43	M54562P		BIP			DA		0.5	50	N/P					1.8	2	7	T00-101	DL18i	
44	M54563P		BIP			DA		0.5	50	N/P					1.8	2	7	T00-101	DL18i	
45	M54564P		BIP			DA		0.5	50	N/P					1.8	2	7	T00-101	DL18i	
46	M54536P		BIP			DA		150m	10	N					1.5	2	7	T00-96	DL18i	
47	M54571P		BIP			IN		350m	40	N					1.8	2	7	T00-107	DL20f	
48	FT5709		DCM					200m	15	NSi		40	10m	1.0	12n	450m	H	T0014	T0116	
49	FT5709M		DCM					200m	15	NSi		30	10m	1.0	12n	250m	F	T0014	T0116	
50	FT5712M		DCM					200m	20	NSi		30	10m	1.0	150M	20nR	F	T0014	T0116	
51	FT5714M		DCM					200m	30	PSi		30	10m	1.0	30nR	300m	F	T0014	T0116	
52	FT5713M		DCM					500m	30	NSi		30	100m	2.0	80nR	400m	F	T0014	T0116	
53	FPQ3467		DCM					500m	40	PSi		30	500m				F	T0014	T0116	
54	FPQ3724		DCM					500m	40	NSi		30	500m				F	T0014	T0116	
55	FQ3467		DCM					500m	40	PSi		30	500m				F	T0014	T086	
56	FQ3724		DCM					500m	40	NSi		30	500m				F	T0014	T086	
57	FPQ3468		DCM					500m	50	PSi		20	500m				F	T0014	T0116	
58	FPQ3725		DCM					500m	50	NSi		20	500m				F	T0014	T0116	
59	FQ3468		DCM					500m	50	PSi		20	500m				F	T0014	T086	
60	FQ3725		DCM					500m	50	NSi		20	500m				F	T0014	T086	
61	FPQ2222		DCM					600m	40	NSi		30	300m	10	200M	2.0	5	F	T0014	T0116
62	FPQ2907		DCM					600m	40	PSi		50	300m	10	200M	2.0	5	F	T0014	T0116
63	BGY17		DCM					1.0	40	NSi		25	500m	2.0	35n	1.0	5	F	T0014	T0116
64	FT5702		DCM					1.0	40	NSi		25	500m	1.0	40n	750m	H	T0014	T0116	
65	FT5702M		DCM					1.0	40	NSi		20	500m	1.0	40n	525m	F	T0014	T0116	
66	FT5701		DCM					1.0	50	NSi		25	500m	1.0	35n	750m	H	T0014	T0116	
67	FT5701AM		DCM					1.0	50	NSi		25	500m	1.0	35n	525m	F	T0014	T0116	
68	FT5751M		DCM					1.0	50	NSi		90	200m	1.0	100M	400m	F	T0014	T0116	
69	FT5723M		DCM					1.0	60	NSi		35	200m	1.0	100M	400m	F	T0014	T0116	
70	FT5748M		DCM					1.5	60	PSi		18	1.0	1.5	150M	45n	525m	F	T0014	T0116
71	BSW17		DCM					120	NSi		30	30m	10		800m	5	F	T0013	T0116	
72	FT5742M		DCM					500m	250	NSi		15	150m	5.0		400m	5	F	T0018	T0116
73	FT5743M		DCM					500m	250	PSi		15	150m	5.0		400m	5	F	T0018a	T0116
74	BGY15		DCM					40	NSi		80	50m	5.0		150n	800m	5	F	T0012	DL24c
75	BGY16		DCM					40	PSi		80	50m	5.0		150n	800m	5	F	T0012a	DL24c
76	KTS622A		MON					600m	25	PSi		25	5.0	200M	400m	7				
77	KTS622B		MON					600m	10	PSi		10	5.0	150M	400m	7				
78	SG3851J		MON					750m	1.0k	NSi		350m	2.0		2.0	5	C	T0020	DL16dd	
79	SG3852J		MON					750m	1.0k	NSi		350m	2.0		2.0	5	C	T0020	DL16dd	
80	SG3853J		MON					750m	1.0k	NSi		350m	2.0		2.0	5	C	T0020	DL16dd	
81	ULN2074B		MON					1.2	1.6	Si						0	7	T0044	DL16dp	
82	SL362C		MON					50m	8.0	NSi		30	100m	2.0	1.0G	300m	5	H	T007	CN6a
83	SL301LCM		MON					50ma	12	N		40	100u	5.0	400M	5	F	T0080	T05	
84	SL305B		MON					50m	12	NSi		500	1.0m	5.0	300M	600m	5	H	T004	CN6a
85	SFC2018M#mil		MON					50m	15	N		40	1.0m	3.0	300M	300m	5	C	T0082	T0101
86	SFC2036M#mil		MON					50m	15	N		40	1.0m	5.0	150M	300m	5	C	T0083	T0101
87	TPP1000		MON					4.0		N		2.0k	5.0		2.0	5	C		T0116	
88	CA3054		MON					50m	15	NSi						4	8	T00-54a	DL14ab	
89	SFC2054EC		MON					50m	15	N						4	8	T0084	DL14cy	
90	CA3095E		MON					50ma	35 a	N		1.0k	100u	5.0	100M†	750m	5	C	T0062	DLZ
91	CA3093E		MON					100ma	15 a	N		40	10m	3.0		750m	5	C	T0081	DLZ
92	TPQ4258		MON					12	PSi											

# 14. TRANSISTOR ARRAYS

IN ORDER OF: (1) TECHNO. (2) TRANS./DEVICE  
(3) MAX IC (4) MAX V<sub>ceo</sub> (5) TYPE NO.

LINE No.	TYPE NO.	DATA SHT.	TECH	ARRAY CONFIG.			MAX. Ic (A)	MAX. V <sub>ceo</sub> (V)	POLARITY AND MAT'L.	MINIMUM HFE		DYNAMIC CHARACTER		MAX. OPER. POWER DISS. (W)	OPER. TEMP. RANGE (°C)	DRAWINGS		
				T	C	SPECIAL CKT. FEAT.				Ic (A)	V <sub>ce</sub> (V)	MIN. FT (Hz)	MAX. Ton (S)			LOGIC OR BLOCK	OUTLINE	
																		NO
1	TPQ3725A		MON	4	IN		50	NSI	40	100m	200M	1.7	0	8	TOO14	TO118		
2	TPQ3799		MON	4	IN		80	PSI	300	100u	60M	1.7	0	8	TOO1	TO118		
3	TPQA06		MON	4	IN		80	NSI	50	10m	100M	1.7	0	8	TOO14	DL14cc		
4	TPQ2907A		MON	4	IN		20nc	PSI	75	10m	200M	1.7	0	8	TOO1	DL14z		
5	TPQ4354		MON	4	IN		50nc	PSI	50	10m	100M	1.7	0	8	TOO1	DL14z		
6	TPQ5401		MON	4	IN		50nc	PSI	50	10m	100M	1.7	0	8	TOO1	DL14z		
7	TPQ5551		MON	4	IN		50nc	NSI	80	10m	100M	1.7	0	8	TOO14	DL14z		
8	TPQA05		MON	4	IN		100nc	NSI	50	10m	100M	1.7	0	8	TOO14	DL14z		
9	TPQA56		MON	4	IN		100nc	PSI	100	10m	100M	1.7	0	8	TOO1	DL14z		
10	TPQ5400		MON	4	IN		100nc	PSI	100	10m	100M	1.7	0	8	TOO14	DL14z		
11	TPQ5550		MON	4	IN		100nc	NSI	120	10m	100M	1.7	0	8	TOO14	DL14z		
12#	BFV98		MON	4	IN		30m	NSI	60	10m	100M	1.7	0	8	TOO14	DL14z		
13#	BFV98N		MON	4	IN		30m	NSI	150	500u	30M	25nT	400m	-	K	TOO15a	TO84	
14#	BFV97		MON	4	IN		50m	NSI	20	3.0m	600M	400m	400m	5	K	TOO15a	DL14r	
15#	BFV97N		MON	4	IN		50m	NSI	20	3.0m	600M	400m	400m	5	H	TOO15a	TO84	
16	CA3018		MON	4	DA	MP	50ma	NSI	30	1.0m	300M	450m	450m	5	C	TOO50	TO5	
17	CA3018A		MON	4	DA	MP	50ma	NSI	60	1.0m	300M	450m	450m	5	C	TOO50	TO5	
18	CA3036		MON	4	DA	MP	50ma	NSI	30	1.0m	150M	600m	600m	5	C	TOO51	TO5	
19	CA3118T		MON	4	IN	DA	50ma	NSI	30	1.0m	300M	450m	450m	5	C	TOO50	TO5	
20	CA3118AT		MON	4	IN	DA	50ma	NSI	30	1.0m	300M	450m	450m	5	C	TOO50	TO5	
21	TPQ2483		MON	4	IN		50m	NSI	100	100u	50M	1.7	0	8	TOO14	TO118		
22	TPQ2484		MON	4	IN		50m	NSI	200	100u	50M	1.7	0	8	TOO14	TO118		
23	CA3084		MON	4	IN	DA	50m	NSI	15	10m	100M	1.7	0	8	TOO14	DL14z		
24#	BFV91		MON	4	IN		-10ma	NSI	15	30m	500m	400m	60n	5	H	TOO59	TO84	
25#	BFV91N		MON	4	IN		200m	PSI	15	30m	500m	400m	60n	5	H	TOO15	DL14r	
26	MHQ3546		MON	4	IN		200m	PSI	12	10m	600M	9.0nT	1.5	5	K	TOO1	TO118	
27	MPQ3546		MON	4	IN		200m	PSI	30	10m	600M	9.0nT	1.5	5	C	TOO1	TO118	
28#	BFV92		MON	4	IN		200m	NSI	12	30m	350M	16n	400m	-	H	TOO15a	TO84	
29#	BFV92N		MON	4	IN		200m	NSI	12	30m	350M	16n	400m	-	H	TOO15a	DL14r	
30#	KTS613A		MON	4	IN		400m	NSI	25	5.0m	200M	800m	800m	-	C	TOO15a	DL14r	
31#	KTS613B		MON	4	IN		400m	NSI	40	5.0m	200M	800m	800m	-	C	TOO15a	DL14r	
32#	KTS613G		MON	4	IN		400m	NSI	50	5.0m	200M	800m	800m	-	C	TOO15a	DL14r	
33#	KTS613V		MON	4	IN		400m	NSI	20	5.0m	200M	800m	800m	-	C	TOO15a	DL14r	
34	MHQ2369		MON	4	IN		500m	NSI	40	10m	450M	9nT	1.5	5	K	TOO14	TO118	
35	MPQ2369		MON	4	IN		500m	NSI	40	10m	450M	9nT	1.5	5	C	TOO14	TO118	
36	MPQ1500		MON	4	IN		500m	PSI	40	150m	150M	3.0	3.0	5	F	TOO1	TO118	
37	TPQ6001		MON	4	IN		500m	PNSI	40	150m	200M	1.7	0	8	TOO17	TO118		
38	TPQ6002		MON	4	IN		500m	PNSI	100	150m	200M	1.7	0	8	TOO17	TO118		
39	TPQ6501		MON	4	IN		500m	PNSI	40	150m	200M	1.7	0	8	TOO19	TO118		
40	TPQ6502		MON	4	IN		500m	PNSI	100	150m	200M	1.7	0	8	TOO19	TO118		
41	TPQ2222		MON	4	IN		500m	NSI	100	150m	200M	1.7	0	8	TOO14	TO118		
42	TPQ2907		MON	4	IN		600m	NSI	75	10m	200M	1.7	0	8	TOO14	DL14cc		
43#	TD62107P		MON	4	CE	DA	750m	NSI	25	500m	175M	5.0uT	2.7	3	7	TOO45	DL16cz	
44#	BFV96		MON	4	IN		800m	NSI	25	500m	175M	45n	400m	5	H	TOO15a	TO84	
45#	BFV96N		MON	4	IN		800m	NSI	25	500m	175M	45n	400m	5	H	TOO15a	DL14r	
46#	BFV93		MON	4	CE		800m	NSI	20	500m	250M	25nT	400m	-	H	TOO16	TO84	
47#	BFV93N		MON	4	CE		800m	NSI	20	500m	250M	25nT	400m	-	H	TOO16	DL14r	
48#	BFV94		MON	4	IN		800m	NSI	20	500m	250M	25nT	400m	-	H	TOO15a	TO84	
49#	BFV94N		MON	4	IN		800m	NSI	20	500m	250M	25nT	400m	-	H	TOO15a	DL14r	
50#	BFV95		MON	4	IN		800m	PSI	20	500m	250M	25nT	400m	-	H	TOO15	TO84	
51#	BFV95N		MON	4	IN		800m	PSI	20	500m	250M	25nT	400m	-	H	TOO15	DL14r	
52	MPQ3303		MON	4	IN		1.0	NSI	40	300m	500m	400M	15n	2	C	TOO14	TO118	
53	CA3138AG		MON	4	IN		1.0	N	80	100m	5.0	6.0nR	2.0	5	C	TOO14	DL14z	
54	CA3138G		MON	4	IN		1.0	N	80	100m	5.0	6.0nR	2.0	5	C	TOO14	DL14z	
55	TPQ3724		MON	4	IN		1.0	NSI	35	100m	250M	38nT	2.0	0	8	TOO14	MO001AB	
56	CA1724G		MON	4	IN		1.0	N	35	100m	1.0	40n	2.0	0	8	TOO14	DL14z	
57	CA3724G		MON	4	IN		1.0	N	35	100m	1.0	40n	2.0	0	8	TOO14	DL14z	
58	MHQ3487		MON	4	IN		1.0	PSI	20	500m	1.0	125M	40n	6.3	5	K	TOO17	TO118
59	MPQ3487		MON	4	IN		1.0	PSI	20	500m	1.0	125M	40n	2.7	5	K	TOO1	TO118
60	MPQ3725		MON	4	IN		1.0	NSI	25	500m	2.0	250M	35n	2.5	5	F	TOO14	TO118
61	Q213467		MON	4	IN		1.0	PSI	40	500m	1.0	175M	30nR	1.5	0	8	TOO14a	MO001AA
62	TPQ3725		MON	4	IN		1.0	PSI	35	100m	1.0	250M	30n	1.7	0	8	TOO14	TO118
63#	uPA47D		MON	4	IN		1.0	NSI	40	500m	1.0	250M	30n	1.7	0	8	TOO14	DL14aj
64	CA1725G		MON	4	IN		1.0	N	35	100m	1.0	38nT	2.0	5	C	TOO14	MO001AB	
65	CA3725G		MON	4	IN		1.0	N	35	100m	1.0	40n	2.0	5	C	TOO14	DL14z	
66	MPQ3725A		MON	4	IN		1.0	NSI	35	500m	2.0	200M	35n	2.5	5	C	TOO14	TO118
67#	uPA48B		MON	4	IN		1.0	NSI	35	500m	2.0	200M	40n	2.5	5	C	TOO14	TO118
68#	TD62064P		MON	4	CE	DA	1.5	NSI	800	1.0	2.0	10uT	2.7	3	7	TOO43	DL16cz	
69#	TD62074P		MON	4	IN		1.5	NSI	800	1.0	2.0	10uT	2.7	3	7	TOO44	DL16cz	
70	2N5148		MON	4	IN		1.5	PSI	20	1.0	2.0	150M	40n	500m	-	K	TOO1	TO88
71	MHQ14001A		MON	4	IN		1.5	NSI	30	500m	1.0	200M	40n	2.5	5	K	TOO14	TO118
72	MHQ4013		MON	4	IN		1.5	NSI	35	500m	1.0	200M	35n	2.5	5	K	TOO14	TO118
73	MPQ3782		MON	4	IN		1.5	PSI	35	150m	1.0	150M	50n	2.7	5	K	TOO1	TO118
74	MHQ4002A		MON	4	IN		1.5	NSI	30	500m	1.0	200M	40n	2.5	5	K	TOO14	TO118
75	MHQ4014		MON	4	IN		1.5	NSI	35	500m	1.0	200M	40n	2.5	5	K	TOO14	TO118
76	TPP2000		MON	4	DA		4.0	N	2.0k	500m	5.0	500M	2.0	5	C	TOO14	TO118	
77	CA3127E		MON	5	IN		20ma	NSI	35	5.0m	6.0	1.1Gt	425m	5	C	TOO66	DL14z	
78#	SL3145CDP		MON	5	IN	DF	20ma	NSI	35	5.0m	6.0	1.6Gt	200m	5	C	TOO66	DL16de	
79#	SL3145CDG		MON	5	IN	DF	20ma	NSI	40	5.0m	6.0	1.6Gt	200m	5	C	TOO60	DL14am	
80	SG3086J		MON	5	MP	IN	3	NSI	80	10m	5	500M†	500M†	0	0	C	TOO8	DL16dd
81	SG3086N		MON	5	MP	IN	3	NSI	80	10m	5	500M†	500M†	0	0	C	TOO8	DL16de
82	SG3821J		MON	5	MP	IN	3	NSI	80	10m	5	500M†	500M†	0	0	C	TOO8	DL16dd
83	SG3821N		MON	5	MP	IN	3	NSI	80	10m	5	500M†	500M†	0	0	C	TOO8	DL16de
84#	TDA3310		MON	5	DA	IN	1	NSI	300	100u	5.0	500M†	500M†	0	0	C	TOO70	DL14y
85#	TDA3320		MON	5	IN	DF	1	NSI	300	100u	5.0	500M†	500M†	0	0	C	TOO28	DL14w
86	CA3045		MON	5	IN	MP	1	NSI	40	1.0m	3.0	750m	750m	5	C	TOO62	DL14z	
87	CA3045F		MON	5	IN	MP	1	NSI	40	1.0m	3.0	750m	750m	5	C	TOO82	DL14z	
88	CA3048		MON	5	IN	MP	1	NSI	40	1.0m	3.0	750m	750m	5	C	TOO82	DL14z	



# 14. TRANSISTOR ARRAYS

IN ORDER OF: (1)TECHNO.(2)TRANS./DEVICE  
(3)MAX IC(4)MAX Vceo(5)TYPE NO.

LINE No.	TYPE NO.	DATA SHT.	TECH	ARRAY CONFIG.				MAX. Ic (A)	MAX. Vceo (V)	POLARITY AND MAT'L.	MINIMUM HFE			DYNAMIC CHARACTER		MAX. OPER. POWER DISS. (W)	OPER. TEMP. RANGE (°C)	DRAWINGS		
				T	C	SPECIAL CKT. FEAT.	NC OK T				@ Ic (A)	@ Vce (V)	MIN. FT (Hz)	MAX. Ton (S)	LOGIC OR BLOCK			OUTLINE		
																			N	O
1#	TCA871		MON	5	IN	DF	1	200m	32	NSI				300M	150n	300M	2	8	T00-26a	DL14cp
2#	TCA991		MON	5	IN	DF	1	200m	32	NSi				300M	150n	300M	2	8	T00-26	DL14cp
3#	TCA991K		MON	5	IN	DF	1	200m	32	NSi				300M	150n	300M	2	8	T00-48	FP145
4#	TD62507P		MON	5	IN	DF	1	200m	35	N,Si	70	2m	10	300M	150n	300M	3	7	T0039	DL16cr
5#	TCA671		MON	5	IN	DF	1	200m	42	NSi				300M	150n	300M	2	8	T00-26a	DL14cp
6#	TCA971		MON	5	IN	DF	1	200m	42	NSi				300M	150n	300M	2	8	T00-26	DL14cp
7#	uPA53C		MON	5	CE	DA		2.0	30	NSi	2.0k	200m	5.0			1.2	2	7	T0034	DL14bw
8#	BD328		MON	5	CE	DARL		2.0	60	NSi	500	2.0	5.0			600m	2	7	T0032	DL14au
9#	CA3600E		MON	6	CM	MP	3			N/P						750m	-5	5	T0067	DL14z
10	SG3822J		MON	6	DF	DF	2	50m		NSi	80	10m	5	500Mf			0	0	T0054	DL16dd
11	SG3822N		MON	6	DF	DF	1	50m		NSi	80	10m	5	500Mf			0	0	T0054	DL16de
12	SG3823J		MON	6	DA	IN	2	50m		NSi	1.5k	1.0m	5	500Mf			0	0	T0055	DL16dd
13	SG3823N		MON	6	DA	IN	2	50m		NSi	1.5k	1.0m	5	500Mf			0	0	T0055	DL16de
14#	TD62703P		MON	6	CC	DA		50m	60	PNSi	100	15m	5.0			1.0	3	7	T0046	DL14ch
15#	TD62705P		MON	6	CC	DA		50m	60	PNSi						1.0	3	7	T0047	DL16cz
16#	TD62706P		MON	6	CC	DA		50m	60	PNSi						1.0	3	7	T0047	DL16cz
17#	uPA57C		MON	6	CE	DA		2.0	30	NSi	1.0k	400m	2.0		50n	1.5	2	7	T0036	T14C
18#	TPP3000		MON	6	DA			4.0		N	2.0k	500m	5.0			2.0	3	7		TO116
19#	M54514P		MON	7	CE			10m	20	NSi						500m	3	7	T0028	DL16bb
20	CA3081		MON	7	CE			100ma	16 a	NSi	30	30m	.50			750m	5	5	T0056	DL14z
21	CA3082		MON	7	CE			100ma	16 a	NSi	30	30m	.50			750m	5	5	T0057	DL14z
22	SG3081J		MON	7	CE			100ma	16 a	NSi	50	30m	5.0			500m	4	8	T009	DL16dd
23	SG3081N		MON	7	CE			100ma	16 a	NSi	50	30m	5.0			500m	4	8	T009	DL16de
24	SG3082J		MON	7	CE			100ma	16 a	NSi	50	30m	5.0			500m	4	8	T009a	DL16dd
25	SG3082N		MON	7	CE			100ma	16 a	NSi	50	30m	5.0			500m	4	8	T009a	DL16de
26#	CA3081F		MON	7	CE	IN		100m	35 *	N	30 f					500m	4	8	T0023	DL16ar
27#	CA3081N		MON	7	CE	IN		100m	35 *	N	30 f					500m	4	8	T0023	DL16be
28#	CA3082F		MON	7	CC	IN		100m	35 *	N	30 f					500m	4	8	T0024	DL16be
29#	CA3082N		MON	7	CC	IN		100m	35 *	N	30 f					500m	4	8	T0024	DL16be
30#	TD62301P		MON	7	IN	DA		200m	15	N,Si	1.0k	120m	2.0			1.0	3	7	T00-37	DL16cr
31#	TD62302P		MON	7	IN	DA		200m	15	N,Si	1.0k	120m	2.0			1.0	3	7	T00-37	DL16cr
32#	TD62501P		MON	7	CE			200m	35	N,Si	70	2m	10			1.0	3	7	T0041a	DL16cr
33#	TD62502P		MON	7	CE			200m	35	N,Si	50	2m	10			1.0	3	7	T0041	DL16cr
34#	TD62503P		MON	7	CE			200m	35	N,Si	50	2m	10			1.0	3	7	T0041	DL16cr
35#	TD62504P		MON	7	CE			200m	35	N,Si	50	2m	10			1.0	3	7	T0041	DL16cr
36#	TD62505P		MON	7	CC			200m	35	N,Si	70	2m	10			1.0	3	7	T0038	DL16cr
37#	TD62506P		MON	7	CC			200m	35	N,Si	70	2m	10			1.0	3	7	T0038a	DL16cr
38#	TD62101P		MON	7	IN	DA		500m	25	N,Si	1.0k	350m	2.0			1.0	3	7	T00-40	DL16cr
39#	TD62103P		MON	7	IN	DA		500m	25	N,Si	1.0k	350m	2.0			1.0	3	7	T00-40a	DL16cr
40#	TD62104P		MON	7	IN	DA		500m	25	N,Si	1.0k	350m	2.0			1.0	3	7	T00-40b	DL16cr
41#	TD62105P		MON	7	IN	DA		500m	25	N,Si	1.0k	350m	2.0			1.0	3	7	T00-40c	DL16cr
42#	TD62001P		MON	7	IN	DA		500m	35	N,Si	1.0k	350m	2.0			1.0	3	7	T00-20	DL16cr
43#	TD62002P		MON	7	IN	DA		500m	35	N,Si	1.0k	350m	2.0			1.0	3	7	T00-20	DL16cr
44#	TD62003P		MON	7	IN	DA		500m	35	N,Si	1.0k	350m	2.0			1.0	3	7	T00-20	DL16cr
45#	TD62004P		MON	7	IN	DA		500m	35	N,Si	1.0k	350m	2.0			1.0	3	7	T00-20	DL16cr
46	MC1411P		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		1.0u		0	8	T0020	DL16bo
47	MC1412P		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		1.0u		0	8	T0020	DL16bo
48	MC1413P		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		1.0u		0	8	T0020	DL16bo
49	MC1416P		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		1.0u		0	8	T0020	DL16bo
50#	TDB3001DP		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0			1.5	0	8	T0020	DL14z
51#	TDB3002DP		MON	7	IN	DARL		500m	50	NSi	1.0k	350m	2.0			1.5	0	8	T0020	DL14z
52#	TDB3003DP		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0			1.5	0	8	T0020	DL14z
53	ULN2001AJ		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0			1.0	0	8	T0020	DL16v
54	ULN2001AN		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0			1.2	0	8	T0020	DL16i
55	ULN2002AJ		MON	7	IN	DA		500m	50	NSi						1.0	0	8	T0020	DL16v
56	ULN2002AN		MON	7	IN	DA		500m	50	NSi						1.2	0	8	T0020	DL16i
57	ULN2003AJ		MON	7	IN	DA		500m	50	NSi						1.0	0	8	T0020	DL16v
58	ULN2003AN		MON	7	IN	DA		500m	50	NSi						1.2	0	8	T0020	DL16i
59	ULN2003N		MON	7	DA	MP		500m	50	N,Si						1.3	0	8	T0020	DL16be
60	ULN2004AJ		MON	7	IN	DA		500m	50	NSi						1.0	0	8	T0020	DL16v
61	ULN2004AN		MON	7	IN	DA		500m	50	NSi						1.2	0	8	T0020	DL16i
62	ULN2004N		MON	7	DA	MP		500m	50	N,Si						1.3	0	8	T0020	DL16be
63	ULS2001H		MON	7	IN	DA		500m	50	NSi	500	350m	2.0		1.0u	1.2	5	5	T0020	DL16cf
64	ULS2002H		MON	7	IN	DA		500m	50	NSi	500	350m	2.0		1.0u	1.2	5	5	T0020	DL16cf
65	ULS2003H		MON	7	IN	DA		500m	50	NSi	500	350m	2.0		1.0u	1.2	5	5	T0020	DL16cf
66	ULS2004H		MON	7	IN	DA		500m	50	NSi	500	350m	2.0		1.0u	1.2	5	5	T0020	DL16cf
67	XR2201CP		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		5.0u	2.0	0	8	T0020	DL14z
68	XR2202CP		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		5.0u	2.0	0	8	T0020	DL14z
69	XR2203CP		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		5.0u	2.0	0	8	T0020	DL14z
70	XR2204CP		MON	7	IN	DA		500m	50	NSi	1.0k	350m	2.0		5.0u	2.0	0	8	T0020	DL14z
71	SN75466J		MON	7	IN	DA		500m	100	NSi	1.0k	350m	2.0			1.0	0	8	T0020	DL16v
72	SN75466N		MON	7	IN	DA		500m	100	NSi	1.0k	350m	2.0			1.2	0	8	T0020	DL16i
73	SN75467J		MON	7	IN	DA		500m	100	NSi						1.0	0	8	T0020	DL16v
74	SN75467N		MON	7	IN	DA		500m	100	NSi						1.2	0	8	T0020	DL16i
75	SN75468J		MON	7	IN	DA		500m	100	NSi						1.0	0	8	T0020	DL16v
76	SN75468N		MON	7	IN	DA		500m	100	NSi						1.2	0	8	T0020	DL16i
77	SN75469J		MON	7	IN	DA		500m	100	NSi						1.0	0	8	T0020	DL16v
78	SN75469N		MON	7	IN	DA		500m	100	NSi						1.2	0	8	T0020	DL16i
79#	SN75465J		MON	7	IN	DA		500	100	N,Si						1.0	0	7	T00-20	DL16i
80#	SN75465N		MON	7	IN	DA		500	100	N,Si						1.1	0	7	T00-20	DL16i
81	TPP4000		MON	8	DA			4.0		N	2.0k	500m	5.0			2.0	0	5	C	TO116

# 14. TRANSISTOR ARRAYS

IN ORDER OF: (1)TECHNO. (2)TRANS./DEVICE  
(3)MAX IC (4)MAX V<sub>ceo</sub> (5)TYPE NO.

LINE No.	TYPE NO.	DATA SHT.	TECH	ARRAY CONFIG.			MAX. I <sub>c</sub> (A)	MAX. V <sub>ceo</sub> (V)	POLAR-ITY AND MAT'L.	MINIMUM HFE	DYNAMIC CHARACTER		MAX. OPER. POWER DISS. (W)	OPER. TEMP. RANGE	DRAWINGS	
				N	R	C					MIN.	MAX.			LOGIC OR BLOCK	OUTLINE
1	ULN2014A		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
2	ULN2015A		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
3	ULN2021A		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
4	ULN2022A		MOS	7	DA	MP	500m	50	N.Si	100 f	300m	2.0	0	7	T00-20	DL 18cw
5	ULN2023A		MOS	7	DA	MP	500m	50	N.Si	100 f	300m	2.0	0	7	T00-20	DL 18cw
6	ULN2024A		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
7	ULN2025A		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
8	ULS2001R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
9	ULS2002R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
10	ULS2003R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
11	ULS2004R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
12	ULS2005H		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
13	ULS2005R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
14	ULS2021H		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
15	ULS2021R		MOS	7	DA	MP	500m	50	N.Si	100 f	300m	2.0	0	7	T00-20	DL 18cw
16	ULS2022H		MOS	7	DA	MP	500m	50	N.Si	100 f	300m	2.0	0	7	T00-20	DL 18cw
17	ULS2022R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
18	ULS2023H		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
19	ULS2023R		MOS	7	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
20	ULS2011R		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
21	ULS2012R		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
22	ULS2013R		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
23	ULS2014H		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
24	ULS2014R		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
25	ULS2015H		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
26	ULS2015R		MOS	7	DA	MP	800m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
27	ULS2012R		MOS	7	DA	MP	800	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
28	ULS2013R		MOS	7	DA	MP	800	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
29	ULN2801A		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
30	ULN2802A		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
31	ULN2803A		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
32	ULN2804A		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
33	ULN2805A		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
34	ULS2801H		MOS	8	DA	MP	500	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18k
35	ULS2801R		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
36	ULS2802H		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
37	ULS2802R		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
38	ULS2803H		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
39	ULS2803R		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
40	ULS2804H		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
41	ULS2804R		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
42	ULS2805H		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
43	ULS2805R		MOS	8	DA	MP	500	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
44	ULN2821A		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18j
45	ULN2822A		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18j
46	ULN2823A		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18j
47	ULN2824A		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18j
48	ULN2825A		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18j
49	ULS2821H		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18k
50	ULS2822H		MOS	8	DA	MP	500	95	N	100 f	300m	2.0	0	7	T00-20	DL 18k
51	ULS2823H		MOS	8	DA	MP	500	95	N	100 f	300m	2.0	0	7	T00-20	DL 18k
52	ULS2824H		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18k
53	ULS2825H		MOS	8	DA	MP	500	95	N	100 f	350m	2.0	0	7	T00-20	DL 18k
54	ULN2811A		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
55	ULN2812A		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
56	ULN2813A		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
57	ULN2814A		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
58	ULN2815A		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18j
59	ULS2811H		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
60	ULS2811R		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
61	ULS2812H		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
62	ULS2812R		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
63	ULS2813H		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
64	ULS2813R		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
65	ULS2814H		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
66	ULS2814R		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
67	ULS2815H		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18k
68	ULS2815R		MOS	8	DA	MP	800	50	N	100 f	350m	2.0	0	7	T00-20	DL 18m
69	ULN2001R		MOS	14	DA		500m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18cw
70	ULN2002R		MOS	14	DA		500m	50	N.Si			2.0	0	7	T00-20	DL 18cw
71	ULN2003R		MOS	14	DA		500m	50	N.Si			2.0	0	7	T00-20	DL 18cw
72	ULN2004R		MOS	14	DA		500m	50	N.Si			2.0	0	7	T00-20	DL 18cw
73	ULN2005R		MOS	14	DA		500m	50	N.Si			2.0	0	7	T00-20	DL 18cw
74	ULN2801R		MOS	14	DA		500m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18m
75	ULN2802R		MOS	14	DA		500m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18m
76	ULN2803R		MOS	14	DA		500m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18m
77	ULN2804R		MOS	14	DA		500m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18m
78	ULN2805R		MOS	14	DA		500m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18m
79	ULN2011R		MOS	14	DA		800m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18cw
80	ULN2012R		MOS	14	DA		800m	50	N.Si			2.0	0	7	T00-20	DL 18cw
81	ULN2013R		MOS	14	DA		800m	50	N.Si			2.0	0	7	T00-20	DL 18cw
82	ULN2014R		MOS	14	DA		800m	50	N.Si			2.0	0	7	T00-20	DL 18cw
83	ULN2015R		MOS	14	DA		800m	50	N.Si			2.0	0	7	T00-20	DL 18cw
84	ULN2811R		MOS	14	DA		800m	50	N.Si	1.0k	350m	2.0	0	7	T00-20	DL 18m
85	ULN2812R		MOS	14	DA		800m	50	N.Si			2.2	0	7	T00-20	DL 18m
86	ULN2813R		MOS	14	DA		800m	50	N.Si			2.2	0	7	T00-20	DL 18m
87	ULN2814R		MOS	14	DA		800m	50	N.Si			2.2	0	7	T00-20	DL 18m
88	ULN2815R		MOS	14	DA		800m	50	N.Si			2.2	0	7	T00-20	DL 18m
89	ULN2004A		MOS	70	DA	MP	500m	50	N.Si	100 f	350m	2.0	0	7	T00-20	DL 18cw
90	SG3083J		NON	5	IN		100m		N.Si	50	10m	3.0	5	C	T0058	DL 18dd
91	SG3083N		NON	5	IN		100m		N.Si	50	10m	3.0	4	C	T0058	DL 18de
92	SG3183AJ		NON	5	IN		100m</									

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	USTRUC- S E T U R E	M DWG # A Y200 s/a T O200 S e r.	L C E O A D E	DESCRIPTION
1	2C3904	N	Si	C39ba		Sm-Signal Transistor Dice;BVCEO 40Vdc,hFE 100min at Ic 10mA/VCE 1V
2	2C3906	P	Si	C39bb		Sm-Signal Transistor Dice;BVCEO 40Vdc,hFE 100min at Ic 10mA/VCE 1V
3	2N3033	1	N	Si	T018	Pt-300mW;BVCEO-160V max;IC-10A peak;tr-2nsec max;td-3nsec max.
4	2N3034	1	N	Si	T018	Pt-300mW;BVCEO-120V max;IC-10A peak;tr-2nsec max;td-3nsec max.
5	2N3035	1	N	Si	T018	Pt-300mW;BVCEO-90V max;IC-10A peak;tr-2nsec max;td-3nsec max.
6	2N52711	1	N	Si	T039	Pt 600mW;BVCEV 280V max;ICER 20nA max;ICER(H) 500uA min;VO 100V min.
7	CK273	1	N	Si	T05	Pc-25W max; BVCEO-25V.
8	CK277	1	N	Si	T05	Pc-25W max; BVCEO-90V.
9	NS11101	1	N	Si	T018	ICBO-1.0uA max;Ih-300mA;VH-9.0V;IA-2.0mA;Ip-2.0A;BVCEs-110V min.
10	NS11111	1	N	Si	T018	ICBO-1.0uA max;Ih-300mA;VH-9.0V;IA-2.0mA;Ip-1.5A;BVCEs-80V min.
11	NS11112	1	N	Si	T018	Pt-300 min;BVCEO-150V;Ic-10A peak;tr-1ns max;td-5ns max.
12	NS2360*	1	N	Si	T018	BVCEs 65V min,120V max;td 5ns max;tr 1.0ns max;tf 4.0ns max;fp 1.5A min
13	2N592	2	P-A	Ge	T05	A Pt 125mW;BVCEO 20V;ICBO 5.0uA;hfe 40typ;Cob 35p typ;NF 16db;fab 400k min
14	2N593	2	P-A	Ge	T05	A Pt 125mW;BVCEO 40V;ICBO 5.0uA;hfe 80typ;Cob 35p typ;NF 16db;fab 600k min
15	2N594	2	P-A	Ge	T05	A Pt 100mW;BVCEO 20V;ICBO 5.0uA;hfe 30typ;Cob 15p typ;NF 16db;fab 1.5M min
16	2N595	2	P-A	Ge	T05	A Pt 100mW;BVCEO 15V;ICBO 5.0uA;hfe 45typ;Cob 15p typ;NF 16db;fab 3.0M min
17	2N596	2	P-A	Ge	T05	A Pt 100mW;BVCEO 10V;ICBO 5.0uA;hfe 60typ;Cob 15p typ;NF 16db;fab 5.0M min
18	2N1169	2	P-A	Ge	T05	A Pt 120mW;BVCEO 40V max;VP 20V max;fab 4.5MHz min;hFE 20 min.
19	2N1170	2	P-A	Ge	T05	A Pt 120mW;BVCEO 40V max;VP 39V max;fab 4.5MHz min;hFE 20 min.
20	2N1640	2	P-Δ	Si	T05	A Pc-25W max;BVCEO-30V;IC-50mA max;fab-40Mc typ.
21	2N1641	2	P-Δ	Si	T05	A Pc-25W max;BVCEO-30V;IC-50mA max;fab-80Mc Typ.
22	2N1642	2	P-Δ	Si	T05	A Pc-25W max;BVCEO-30V;IC-50mA max;fab-1.2Mc Typ.
23	2N1891*	2	P-A	Ge	T05	A Pc-150mW;VEBO-25V max;VCBO-25V max;fab-5.0Mc min.
24	2N1994	2	P-A	Ge	T05	A Pc-15W max;BVCEO-30V;IC-30A max;ton-1500ns;toff-1800ns;fab-3Mc
25	2N1995	2	P-A	Ge	T05	A Pc-15W max;BVCEO-25V;IC-30A max;ton-1300ns;toff-1800ns;fab-5Mc
26	2N1996	2	P-A	Ge	T05	A Pc-15W max;BVCEO-20V;IC-30A max;ton-1100ns;toff-1800ns;fab-8Mc
27	2N2474	2	P-Δ	Si	T05	A Pc-25W max;BVCEO-30V;VEBO-30V;BVCEO-15V;hFE-15;VO-6mV max.
28	2N2968	2	P-A	Si	T05	A Pd-150mW max;hFE-15 at 100uA;BVCEO-30V; IC-50mA max.
29	2N2969	2	P-A	Si	T018	A Pd-150mW max;hFE-15 at 100uA;BVCEO-30V; IC-50mA max.
30	2N2970	2	P-A	Si	T05	A Pd-150mW max;hFE-10 at 100uA;BVCEO-20V; IC-50mA max.
31	2N2971	2	P-A	Si	T018	A Pd-150mW max;hFE-10 at 100uA;BVCEO-20V; IC-50mA max.
32	AC130	2	P-A	Ge	T01	Pc-14W max; BVCEO-20V; IC-1A max; fab-2.0Mc.
33	GT34S	2	P	Ge	T022	Pc-150mW;BVCEO-40V;VEBO-40V;ICBO-100uA;hfe-15 at 10mA.
34	2S355	3	Δ	Si	T03	DF MOS FET;toff 18ns,ton 12ns,tstg 9ns,Coss 700pF,Crss 60pF
35	2S356	3	Δ	Si	T03	C MOS FET;toff 18ns,ton 12ns,tstg 9ns,Coss 700pF,Crss 60pF
36	3SK47*	3	N-MOS	Si	T072	DX Dual Gate Hi-Freq Ampl/Variable Resistor
37	AD842	3	P	Si	T071	PA Dual Gate;IG 50pAmax;VGS(1-2)25mVmax;ΔVGS(1-2)/ΔI 40uV/°C
38	AD3954	3	P	Si	T071	PA Dual Gate;IG 50pAmax;VGS(1-2)10mVmax;ΔVGS(1-2)/ΔI 10uV/°C
39	AD3954A	3	P	Si	T071	PA Dual Gate;IG 50pAmax;VGS(1-2)10mVmax;ΔVGS(1-2)/ΔI 5uV/°C
40	AD3955	3	P	Si	T071	PA Dual Gate;IG 50pAmax;VGS(1-2)25mVmax;ΔVGS(1-2)/ΔI 25uV/°C
41	AD3956	3	P	Si	T071	PA Dual Gate;IG 50pAmax;VGS(1-2)25mVmax;ΔVGS(1-2)/ΔI 50uV/°C
42	AD3958	3	P	Si	T071	PA Dual Gate;IG 50pAmax;VGS(1-2)25mVmax;ΔVGS(1-2)/ΔI 100uV/°C
43	BF735	3	N	Si	W52c	VMOS;30-175MHz;Po 7W;Vds 35;EFF 50%;Gain 12db
44	BF25-35	3	N	Si	W129	VMOS;30-175MHz;Po 25W;VDS 35;EFF 50%;Gain 10db min
45	BF50-35	3	N	Si	W129	VMOS;30-175MHz;Po 50W;Vds 35;EFF 50%; Gain 9db min
46	BF100-35	3	N	Si		VMOS;30-175MHz;Po 100W;Vds 35;EFF 50% min;Gain 8db min
47	CD643	3	N	Si	T05	Broadband R.F.Amp;Dual,Matched for Vpo±25mV,gm±5%;Thru 500MHz
48	CD860	3	N	Si	T071	Ultra Low Noise;Dual,Matched for Vpo±25mV,gm±5%;Max Vpo 3.0V
49	CM856	3	N	Si	T046	Low Ron Switching;Max Rds(On) 1.0Ω;Idss Min 750mA;Vp-10V
50	HCR1020	3	P	Si	T03	FA High Conduct Rect;Vprv 20V;VF 8V;IF 40A;Pt 32W;IR 100mADC
51	HCR1025	3	P	Si	T03	FA High Conduct Rect;Vprv 25V;VF 8V;IF 40A;Pt 32W;IR 100mADC
52	HCR1030	3	P	Si	T03	FA High Conduct Rect;Vprv 30V;VF 8V;IF 40A;Pt 32W;IR 100mADC
53	HCR1040	3	P	Si	T03	FA High Conduct Rect;Vprv 40V;VF 8V;IF 40A;PT 32W;IR 100mADC
54	HCR1050	3	P	Si	T03	FA High Conduct Rect;Vprv 50V;VF 8V;IF 40A;PT 32W;IR 100mADC
55	HCR1070	3	P	Si	T03	FA High Conduct Rect;Vprv 70V;VF 8V;IF 40A;PT 32W;IR 100mADC
56	HCR1100	3	P	Si	T03	FA High Conduct Rect;Vprv 100V;VF 8V;IF 40A;PT 32W;IR 100mADC
57	PTC181	3	P	Si	T072	ES Dual Gate VHF Mosfet;gfs 8.0m Mhos;VDS 25V;Pd 1.2W;IG 10/10mA Max
58	SA2345	3	N-PL	Si	T078	BVDCO-50V min;IGSS-50nA max;RP-80mohms min;IG-20nA max.
59	SK3187-RT	3	N	Si	R176k	DXA Dual;PT 360mW;ID 50mA;VDS 27V;IDS 15mA;VGS 1 and 2 ±6.0V;gfs 25mMho
60	SK3448-RT	3	N	Si	R182e	DA Junction;PT 150mW;ID 10mA;VDG 30V;IDS 12mA;VGS 1.5V;gfs 3.0mMho
61	SK3531-RT	3	N	Si	R176k	DW PT 330mW;VDS 35V;ID 50mA;IDS 15mA;VGS ±10V;gfs 6.0mMho
62	2N1019	4	PNN	Ge	Si	Pc-10W max;BVCEO-30V; Ic-3.0A max;hFE-15000 Typ/VCE-5.0V;Ic-1.0A.
63	2N529	5	N-P	Ge	T05	A BVCEO 15V;Pt 100mW max;fab 2.5MHz;hfe 15-20
64	2N530	5	N-P	Ge	T05	A BVCEO 15V;Pt 100mW max;fab 3.0MHz;hfe 20-25
65	2N531	5	N-P	Ge	T05	A BVCEO 15V;Pt 100mW max;fab 3.5MHz;hfe 25-30
66	2N532	5	N-P	Ge	T05	A BVCEO 15V;Pt 100mW max;fab 4.0MHz;hfe 30-35
67	2N533	5	N-P	Ge	T05	A BVCEO 15V;Pt 100mW max;fab 4.5MHz;hfe 35-40.
68	2N2707	5	N	Ge	T01	A Matched pair of 2N2430 and 2N2706; hFE1/2-1.1 max.
69	2N3773	5	N	Si	T03	C w/2N8609;PT 150W;VCBO 160V;VCE(sus)140V;hFE 5 min At IC 16A,VCE 4V;VCE(sat)25 max
70	2N3838T	5	Δ	Si	T089	PB Pt-35W;BVCEO-60V;hFE-35 min;tr-200Mc min;tr-40ns;tr-90ns.
71	JAN2N3838T	5	P-N	Si	X27	Pd 350mW both;BVCEO 60V;VEBO 5.0V;BVCEO 40V;ICBO 10nA at VCB 50V.
72	2N4079	5	PN	Ge		2N4077/2N4078;hFE1/hFE2 1.40 max at VCB 0.0 and IE 500mA.
73	2N4107	5	P	Ge	T01	A 2N4105/2N4106;hFE1/hFE2-1.25 at VCB-0V;IE-500mA.
74	2N4136	5	P	Ge	T01	A Pair of 2N2430 and 2N2431;hFE1/hFE2-1.4 at VCB-0.0V and IE-300mA.
75	2N4854T	5	P	Si	R138	PN Pc-30W each;VC1-2-120V max;BVCEO-60V max;IC-600mA;BVCEO-40V max.
76	JAN2N4854T	5	P-N	Si	R52	PL Pd 600m both;BVCEO 60V;VEBO 5.0V;BVCEO 40V;ICBO 10n at VCB 50V.
77	2N4855T	5	P	Si	R138	PN Pc-30W each;VC1-2-120V max;BVCEO-60V max;IC-600mA;BVCEO-40V max.
78	2N8609	5	P	Si	T03	C w/2N3773;Pt 150W;VCBO 160V;VCE(sus)140V;hFE 5 min At IC 16A,VCE 4V;VCE(sat)25 max
79	2S843	5	P-A	Ge	T01	A fab-1.0Mc; BVCEO-25V; IC-0.5A max; hFE-70 at IC-0.5A
80	2SD43	5	P-A	Ge	T01	A fab-1.0Mc; BVCEO-25V; IC-0.5A max; hFE-70 at IC-0.5A
81	40396	5	N-P	Ge	T01	A Pt-30W(each);VCBO-18V max;VEBO-2.5V max.
82	AC128/AC178	5	P-NA	Ge	T01	A Matched Pair;hFE1/hFE2 1.2max at VCB 0V,IC 500mA
83	AC187/AC188	5	P	Ge	T01	A hFE1/2-.89 min; BVCEO-25V; IC peak-2A.
84	AC188-01/AC187-01	5	P-N-A	GR	T01	F Matched Pair;hFE2 1.25max at VCE IV,IC 500mAComple-
85	AD161/AD162	5	P-A	Ge	F4b	B BVCEO-32V;IC-2.0A;ft-1.0Mc;Pd-3.0W;hFE-40min;hFE1/2-1.25max.
86	BC639-BC640	5	N-P-PET	Si	T092	B Pt 1.0W each;hFE1/2 1.3 At IC 150mA,VCE 2.0V;VCBO 100V;VCEO 100V;ICM 1.5A
87	BD135-BD136	5	N-P-PL	Si	B21	D Complementary Pairs;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
88	BD137-BD138	5	N-P-PL	Si	B21	D Complementary Pairs;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
89	BD139-BD140	5	N-P-PL	Si	B21	D Complementary Pairs;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
90	BD201-BD202	5	N-P-E	Si	B23	B Pt 55W;hFE1/2 1.6 max at IC 1.0A,VCE 2.0V.
91	BD203-BD204	5	N-P-E	Si	B23	B Pt 55W;hFE1/2 1.6 max at IC 1.0A,VCE 2.0V.
92	BD226-BD227	5	N-P-PL	Si	B21	B Pt 10W;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
93	BD228-BD229	5	N-P-PL	Si	B21	B Pt 10W;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
94	BD230-BD231	5	N-P-PL	Si	B21	B Pt 10W;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
95	BD233-BD234	5	N-P-E	Si	B21	B Pt 25W;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
96	BD235-BD236	5	N-P-E	Si	B21	B Pt 25W;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
97	BD237-BD238	5	N-P-E	Si	B21	B Pt 25W;hFE1/2 1.6 max at IC 150mA,VCE 2.0V.
98	BD433-BD434	5	N-P-E	Si	T0126	B Complementary Pairs;hFE1/2 1.4 max at IC 500mA,VCE 1.0V.
99	BD435-BD436	5	N-P-E	Si	T0126	B Complementary Pairs;hFE1/2 1.4 max at IC 500mA,VCE 1.0V.
100	BD437-BD438	5	N-P-E	Si	T0126	B Complementary Pairs;hFE1/2 1.8 max at IC 500mA,VCE 1.0V.
101	BD645/646	5	N-P	Si		B Complementary Darlington;Pt 62.5W;VCBO 60;IC 12A;hfe 1/2 2.5
102	BD647/648	5	N-P	Si		B Complementary Darlington;Pt 62.5W;VCBO 80;IC 12A;hfe 1/2 2.5
103	BD649/650	5	N-P	Si		B Complementary Darlington;Pt 62.5W;VCBO 100;IC 12A;hfe 1/2 2.5
104	BD651/652	5	N-P	Si		B Complementary Darlington;Pt 62.5W;VCBO 120;IC 12A;hfe 1/2 2.5
105	BD677/678	5	N-P	Si	T0126	B Complementary Darlington;Pt 40W;VCBO 60;IC 8A;hfe 1/2 2.5
106	BD679/680	5	N-P	Si	T0126	B Complementary Darlington;Pt 40W;VCBO 80;IC 8A;hfe 1/2 2.5
107	BD681/682	5	N-P	Si	T0126	B Complementary Darlington;Pt 40W;VCBO 100;IC 8A;hfe 1/2 2.5
108	BD683/684	5	N-P	Si	T0126	B Complementary Darlington;Pt 40W;VCBO 120;IC 8A;hfe 1/2 2.5
109	BD62/63	5	N-P	Si	T03	C Darlington;Pt 90W;BVCEO 60V;BVCEO 60V;hFE1/hFE2 2.5 max.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	MATERIAL	DWG #	L C O A D E	DESCRIPTION
1#	BDX82A/83A	5 P-N	Si	TO3	CØ	Darlington;Pt 90W;BVBCBO 80V;BVCEO 80V;hFE1/hFE2 2.5 max.
2#	BDX82B/83B	5 P-N	Si	TO3	CØ	Darlington;Pt 90W;BVBCBO 100V;BVCEO 100V;hFE1/hFE2 2.5 max
3#	BDX84/85	5 P-N	Si	TO3	CØ	Darlington;Pt 117W;BVBCBO 60V;BVCEO 60V;hFE1/hFE2 2.5 max
4#	BDX84A/85A	5 P-N	Si	TO3	CØ	Darlington;Pt 117W;BVBCBO 80V;BVCEO 80V;hFE1/hFE2 2.5 max.
5#	BDX84B/85B	5 P-N	Si	TO3	CØ	Darlington;Pt 117W;BVBCBO 100V;hFE1/hFE2 2.5 max.
6#	BFX79	5 DPE	Si	TO77	PA	BVBCO-80V;BVCEO-60V;Pt-600mW;ft-100Mc;hFE-100 at IC-500mA.
7#	BFX80	5 DPL	Si	TO77	PA	BVBCO-60V;BVCEO-60V;Pt-500mW;ft-40Mc min;hFE-200 at IC-01mA.
8#	BFX81	5 DPE	Si	TO77	PA	BVBCO-25V;BVCEO-20V;Pt-500mW;ft-350Mc min;hFE-30 min at IC-10mA.
9#	FT5315	5 N-PE	Si	R240	B	Darlington;Pt 600mW;BVBCBO 250V;BVCEO 250V;hFE 500 min at IC 500mA,VCE 2V
10	MD985	5 P/N-AN*	Si	R131f	PA	VCB 40Vdc;VCEO 15Vdc;Pd 550mW;ft 200MHz min;ton 25ns typ;toff 75ns typ.
11	MD985F	5 P/N-AN*	Si	X22	PA	VCB 40Vdc;VCEO 15Vdc;Pd 350mW;ft 200MHz min;ton 25ns typ;toff 75ns typ.
12	MD986	5 E	Si	TO77	PA	VCBO-40V;VCEO-15V;Pc-500mW;ft-200Mc min;hFE-25 min. at IC-10mA.
13	MD986F	5 E	Si	X22	PA	VCBO-40V;VCEO-15V;Pc-250mW;ft-200Mc min;hFE-25 min. at IC-10mA.
14	MD8001	5 N-PAN	Si	R131f	PA	Pd 550mW;VCB 60Vdc;VCEO 30Vdc;ft 200MHz min;Max tr 40,td 20,ts 280,tf 70ns.
15	MD8001F	5 N-PAN	Si	X22	PA	Pd 350mW;VCB 60Vdc;VCEO 30Vdc;ft 200MHz min;Max tr 40,td 20,ts 280,tf 70ns.
16	MD8002	5 N-PAN	Si	R131f	PA	Pd 550mW;VCB 60Vdc;VCEO 30Vdc;ft 200MHz min;Max tr 40,td 20,ts 280,tf 70ns.
17	MD8002F	5 N-PAN	Si	X22	PA	Pd 350mW;VCB 60Vdc;VCEO 30Vdc;ft 200MHz min;Max tr 40,td 20,ts 280,tf 70ns.
18	MD8003	5 N-PAN	Si	R131f	PA	Pd 550mW;VCB 50Vdc;VCEO 30Vdc;ft 200MHz min;Cob 8.0pf max.
19	MD8003F	5 N-PAN	Si	X22	PA	Pd 350mW;VCB 50Vdc;VCEO 30Vdc;ft 200MHz min;Cob 8.0pf max.
20	MD8100	5 P-NAN	Si	TO99	PA	Pt-600mW(both sides);VCEO-45V;hFE-100 at 100uA;5.0V.
21	MD8100F	5 P-NAN	Si	TO89	PB	PD(both sides)400mW max;VCEO 45V;hFE 100 at 100uA,5.0V.
22	MD8900	5 N-PAN	Si	R131b	PA	Pd 600mW(both);VCB 12Vdc;VCEO 10Vdc;ICBO 10nAdc;hFE 40-200;IC 10mAdc;VCE 5Vdc.
23	MD7021	5 N-PAN	Si	R131f	PA	Pd 550mW;VCEO 50Vdc;VCEO 40Vdc;ft 200MHz min;ton 28 ns;toff 72ns.
24	MD7021F	5 N-PAN	Si	X22	PA	Pd 350mW;VCEO 50Vdc;VCEO 40Vdc;ft 200MHz min;ton 28ns;toff 72ns.
25	MJE6040*	5 N-P	Si	B5	B	W/MJE6043;PT 75W;BVBCBO 80V;BVCEO 80V;hFE 1/2 1.0k min at IC 4.0A,VCE 4.0V
26	MJE6041*	5 N-P	Si	B5	B	W/MJE6044;PT 75W;BVBCBO 80V;BVCEO 80V;hFE 1/2 1.0k min at IC 4.0A,VCE 4.0V
27	MJE6042*	5 N-P	Si	B5	B	W/MJE6045;PT 75W;BVBCBO 100V;BVCEO 100V;hFE 1/2 1.0k min at IC 3.0A,VCE 4.0V
28#	PA6015	5 N-P-PE	Si	R222	F	W/PB6015;PT 500mW;BVBCBO 25V min;ICBO 500nA max;hFE 60 min;Cob 12pF max
29#	PA6015A	5 NPE	Si	R222	F	W/PB6015A;PT 500mW;BVBCBO 25V min;ICBO 500nA max;hFE 60 min;Cob 12pF max
30#	PA6015B	5 NPE	Si	R222	F	W/PB6015B;PT 500mW;BVBCBO 25V min;ICBO 500nA max;hFE 200 min;Cob 12pF max
31#	PB6015	5 N-P-PE	Si	R222	F	W/PA6015;PT 500mW;BVBCBO 25V min;ICBO 500nA max;hFE 60 min;Cob 12pF max
32#	PB6015A	5 PPE	Si	R222	F	W/PA6015A;PT 500mW;BVBCBO 25V min;ICBO 500nA max;hFE 120 min;Cob 12pF max
33#	PB6015B	5 PPE	Si	R222	F	W/PA6015B;PT 500mW;BVBCBO 25V min;ICBO 500nA max;hFE 200 min;Cob 12pF max
34#	PBM6003	5 N-P-PE	Si	R216g	A	BVBCO 25V min;Pt 800mW;hFE 40 min;VCE(Sat)300mV max;ft 150MHz.
35	SDM3000*	5 N-P	Si	F54		Compl Darlington Pair;Pt 115W;BVBCBO 60V min;hFE 10k min;ft 50MHz.
36	SDM3001*	5 N-P	Si	F54		Compl Darlington Pair;Pt 115W;BVBCBO 80V min;hFE 10k min;ft 50MHz.
37	SDM3002*	5 N-P	Si	F54		Compl Darlington Pair;Pt 115W;BVBCBO 100V min;hFE 10k min;ft 50MHz.
38	SDM3003*	5 N-P	Si	F54		Compl Darlington Pair;Pt 115W;BVBCBO 60V min;hFE 1.0k min;ft 40MHz.
39	SDM3004*	5 N-P	Si	F54		Compl Darlington Pair;Pt 115W;BVBCBO 80V min;hFE 1.0k min;ft 40MHz.
40	SDM3005*	5 N-P	Si	F54		Compl Darlington Pair;Pt 115W;BVBCBO 100V min;hFE 1.0k min;ft 40MHz.
41	TD600	5 PLTØ	Si	R138	PN	Pt-400mW;hFE1/2-90min;ft 20MHz min;IC-500mA max.
42	TD601	5 PLT	Si	R138	PN	Pt-400mW;ft-20MHz min;hFE at 1.0mA-50min;IC-500mA max.
43	TD602	5 PLT	Si	R138	PN	Pt-400mW;ft-20MHz min;hFE at 1.0mA-50min;IC-500mA max.
44	TD700	5 P-N-PLØ†	Si	R138	PL	Pt 400mW;hFE1/2 .90 min;BVBCBO 40V;BVCEO 30V;hFE 120 min at IC 1.0mA;ft 20M min.
45	TD701	5 P-N-PL†	Si	R138	PL	Pt 400mW;BVBCBO 40V;BVCEO 30V;VBEBO 5.0V;hFE 100 min at IC 10uA;ft 20MHz min.
46	TD702	5 P-N-PL†	Si	R138	PL	Pt 400mW;BVBCBO 40V;BVCEO 30V;VBEBO 5.0V;hFE 120 min at IC 150mA;ft 200MHz min.
47	TD709	5 N-PA	Si	R131f	PA	Pt 400mW;hFE 40;lc 150mA;VCE 10V;BVBCBO 60V;BVCEO 30V
48	TD710	5 N-PA	Si	R131f	PA	Pt 400mW;hFE 100;lc 150mA;VCE 10V;BVBCBO 60V;BVCEO 30V
49	TD711	5 N-P	Si	R131f	PA	Pt 400mW;hFE 70;lc 150mA;VCE 10V;BVBCBO 50V;BVCEO 30V
50	TD712†	5 N-PA	Si	R131f	PA	Pt 400mW;hFE 100;lc 100mA;VCE 10V;BVBCBO 60V;BVCEO 40V
51	TD713†	5 N-PA	Si	TO78	PA	Pt 400mW;hFE 40;lc 150mA;VCE 10V;BVBCBO 60V;BVCEO 40V
52	TIS60M	5 N-PL	Si	TO92	B	Consist of TIS60 and TIS61;Available only with matching TIS61M.
53	TIS90M	5 N	Si	TO92	B	Same as TIS90, available only with matching TIS91M
54	TIS91M	5 P	Si	TO92	B	Same as TIS91, available only with matching TIS90M.
55#	2AC128-01	6 P-A	Ge	X9c	F	Matched pair AC128/01;hFE1/hFE2 1.25 max. at IC 50mA and 300mA.
56#	2AC132	6 P-A	Ge	TO1	F	Matched pair of AC132;hFE1/2 1.1 at IC 50mA,VCBO,0
57#	2AC188	6 P-A	Ge	TO1	F	Matched pair of AC188;hFE1/2-1.25 max at IC-500mA.
58#	2AC188-01	6 P-A	Ge	X9c	F	Matched pair AC188/01;hFE1/hFE2 1.25 max. at IC 50mA and 500mA.
59#	2AD149	6 P-A	Ge	TO3	CØ	Matched Pair of AD149;hFE1/2 1.25 at IC 300mA.
60#	2BDY20	6 N-D	Si	TO3	CØ	Matched pair of BDY20;hFE1/2 1.6 at IC 400mA,VCE 4.0V.
61#	2BDY38	6 N-D	Si	TO3	CØ	Matched pair of BDY38;hFE1/2 1.5 at IC 200mA, VCE 4.0V.
62	2N282	6 P	Ge	R8		Matched Pair of 2N281
63	2N2060*	6 N-Ø	Si	R131c		Pt-6W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-10uV/deg.C.
64	JAN2N2060*	6 N-Ø	Si	R52		Pt 600mW both;VBE(1-2) 5.0mV max;hFE1/2 .900 min;ΔVBE(1-2) 800uV max.
65	2N2060A*	6 N	Si	R131c		Pt-600mW both;VBE(1-2)-3.0mV max;hFE1/2-.90 min.
66	2N2060B*	6 N-Ø	Si	R131c		Pt-600mW;BVBCBO-100V;hFE1/2-.85 min;VBE(1-2)-1.5mV;hFE-120 max.
67	2N2223*	6 N	Si	R131c		Pt-6W;hFE1/2-.80 min;VBE(1-2)-15mV max;ΔVBE(1-2)ΔT-25uV/deg.C.
68	2N2223A*	6 N	Si	R131c		Pt-6W;hFE1/2-.90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-25uV/deg.C.
69	2N2376	6 P	TO5	A		Pt 250mW;BVBCBO 35;Forward-current transfer Ratio Match 20%.
70	2N2414*	6 N	Si	R131c		Pt 600mW max;hFE 250 max. each side.
71	2N2453*	6 N	Si	R131c		Pt-30W;hFE1/2-.90 min;VBE1-2-5.0mV max;ΔVBE(1-2)ΔT-10uV/Deg.C
72	2N2453A*	6 N	Si	R131c		Pt-30W;hFE1/2-.90 min;VBE(1-2)-5.0mV max.
73	2N2480*	6 N-Ø	Si	R131c		Pt-6W;hFE1/2-.80 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-15uV/deg.C.
74	2N2480A*	6 N-Ø	Si	R131c		Pt-6W;hFE1/2-.80 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-15uV/deg.C.
75	2N2639*	6 N-Ø	Si	R131c		Pt 600mW max;hFE1/2).90 min;VBE(1-2)5.0mV max;ΔVBE(1-2)ΔT 10uV/°C max.
76	JAN2N2639*	6 N-Ø	Si	TO77		Pt-600mW both;hFE1/2-.90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uA/°C.
77	2N2640*	6 N-Ø	Si	R131c		Pt 600mW max;hFE1/2).80 min;VBE(1-2)10mV max;ΔVBE(1-2)ΔT 20uV/°C max.
78	2N2642*	6 N-Ø	Si	R131c		Pt 600mW max;hFE1/2).90 min;VBE(1-2)5.0mV max;ΔVBE(1-2)ΔT 10uV/°C max.
79	JAN2N2642*	6 N-Ø	Si	TO77		Pt-600mW both;hFE1/2-.90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uA/°C.
80	2N2643*	6 N-Ø	Si	R131c		Pt 600mW max;hFE1/2).80 min;VBE(1-2)10mV max;ΔVBE(1-2)ΔT 20uV/°C max.
81	2N2652*	6 N-Ø	Si	R131c		Pt-6W;hFE1/2-.85 min;VBE(1-2)-3mV;ΔVBE1-2ΔT-10uV/deg.C.
82	2N2652A*	6 N-Ø	Si	R131c		Pd-600mW both;hFE1/2-.90 min;VBE(1-2)-3mV;ΔVBE1-2ΔT-10uV/deg.C.
83	2N2720*	6 N	Si	R131c		Pt-600mW;hFE1/2-.90 min;VBE(1-2)-5mV max;ΔVBE1-2ΔT-1mV.
84	2N2721*	6 N	Si	R131c		Pt-600mW;hFE1/2-.80 min;VBE(1-2)-10mV max;ΔVBE1-2ΔT-2mV.
85	2N2722*	6 N	Si	R131c		Pt-600mW;hFE1/2-.90 min;VBE(1-2)-5mV max;ΔVBE1-2ΔT-1mV.
86	2N2802*	6 P	Si	R131c	PA	Pt-50W;hFE1/2-.90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uV/Deg.C.
87	2N2803*	6 P	Si	R131c	PA	Pt-50W;hFE1/2-.80 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-20uV/Deg.C.
88	2N2806*	6 P	Si	R131c	PA	Pt-50W;hFE1/2-.90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uV/Deg.C.
89	2N2806*	6 P	Si	R131c	PA	Pt-50W;hFE1/2-.80 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-20uV/Deg.C.
90	2N2903*	6 N	Si	R131c		Pt-30W;hFE1/2-.80 min;VBE1-2-1.0mV max;ΔVBE(1-2)ΔT-20uV/Deg.C
91	2N2903A*	6 N	Si	R131c		Pt-30W;hFE1/2-.90 min;VBE(1-2)-5.0mV max.
92	2N2910*	6 N	Si	TO77		Pt-600mW both;hFE1/2-.80 min;VBE(1-2)-10mV;ΔVBE(1-2)ΔT-20uV/deg.C
93	2N2915*	6 N-Ø	Si	R131c		Pt-50W;hFE1/2-.90 min;VBE(1-2)-5.0mV max;VCE(sat)-35 ohms.
94	2N2915A*	6 N-Ø	Si	R131c		hFE1/2-.85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg.C.
95	2N2916*	6 N	Si	R131c		Pt-50W;hFE1/2-.90 min;VBE(1-2)-5.0mV;ΔVBE(1-2)-80mV.
96	2N2916A*	6 N-Ø	Si	R131c		hFE1/2-.85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg.C.
97	2N2917*	6 N	Si	R131c		Pt-50W;hFE1/2-.80 min;VBE(1-2)-10mV;ΔVBE(1-2)-1.6mV.
98	2N2918*	6 N	Si	R131c		Pt-50W;hFE1/2-.80 min;VBE(1-2)-10mV;ΔVBE(1-2)-1.6mV.
99	2N2919*	6 N	Si	R131c		Pt-50W;hFE1/2-.90 min;VBE(1-2)-5.0mV;ΔVBE(1-2)-80mV.
100	JAN2N2919*	6 N-Ø	Si	R131d		Pt-50W both;hFE1/2-1.1max;ΔVBE1-2-800uVmax;IEBO-2.0nA max.
101	2N2919A*	6 N-Ø	Si	R131c		hFE1/2-.85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg.C.
102	2N2920*	6 N	Si	R131c		Pt-50W;hFE1/2-.90 min;VBE(1-2)-5.0mV;ΔVBE(1-2)-80mV.
103	JAN2N2920*	6 N-Ø	Si	R131d		Pt-50W both;hFE1/2-1.1max;ΔVBE1-2-800uVmax;IEBO-2.0nA max.
104	2N2920A*	6 N-Ø	Si	R131c		hFE1/2-.85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg.C.
105	2N2936	6 N	Si	TO77		VCBO-80V max;each;VCEO-55V max;each;VEBO-5.0V max;each;Pc-8W
106	2N2937	6 N	Si	TO77		VCBO-80V max;each;VCEO-55V max;each;VEBO-5.0V max;each;Pc-8W
107	2N2974*	6 N-Ø	Si	TO71		Pt-30W;hFE1/2-.90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-80mV.
108	2N2975*	6 N-Ø	Si	TO71		Pt-30W;hFE1/2-.90 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-80mV.
109	2N2978*	6 N-Ø	Si	TO71		Pt-30W;hFE1/2-.80 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-1.6mV.
110	2N2977*	6 N-Ø	Si	TO71		Pt-30W;hFE 1/2-.80min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-1.6mV.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	LEAD	CODE	DESCRIPTION
1	2N2978*	6	N*	S	TO71			Pt. 30W;hFE1/2-.90 min;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-80mV.
2	2N2979*	6	N*	S	TO71			Pt. 30W;hFE1/2-.90 min;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-80mV.
3	2N2980*	6	N*	S	TO71			Pt. 30W;hFE1/2-.90 min;VBE(1-2)-3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-10uV/deg.C.
4	2N2981*	6	N*	S	TO71			Pt. 30W;hFE1/2-.80 min;VBE(1-2)-0.15V max; $\Delta$ VBE(1-2)/ $\Delta$ T-25uV/deg.C.
5	2N2982*	6	N*	S	TO71			Pt. 30W;hFE1/2-.90 min;VBE(1-2)-0.05V max; $\Delta$ VBE(1-2)/ $\Delta$ T-15uV/deg.C.
6	2N3043*	6	N*	S	TO89			Pt. 350mW;hFE1/2-.90 min;VBE(1-2) 5mVmax; $\Delta$ VBE(1-2)/ $\Delta$ T 80mV max.
7	2N3044*	6	N*	S	TO89			Pt. 350mW;hFE1/2-.80 min;VBE(1-2) 10mVmax; $\Delta$ VBE(1-2)/ $\Delta$ T 1.6mVmax.
8	2N3046*	6	N*	S	TO89			Pt. 350mW;hFE1/2-.90 min;VBE(1-2) 5mVmax; $\Delta$ VBE(1-2)/ $\Delta$ T 80mVmax.
9	2N3047*	6	N*	S	TO89			Pt. 350mW;hFE1/2-.80 min;VBE(1-2) 10mVmax; $\Delta$ VBE(1-2)/ $\Delta$ T 1.6mVmax.
10	2N3048*	6	N*	S	TO89			Pt. 350mW;hFE1/2-.90 min;VBE(1-2) 5mVmax; $\Delta$ VBE(1-2)/ $\Delta$ T 80mVmax.
11	2N3050*	6	N*	S	TO89			Pt. 350mW;hFE1/2-.80 min;VBE(1-2) 10mVmax; $\Delta$ VBE(1-2)/ $\Delta$ T 1.6mVmax.
12	2N3162*	6	N*	S	TO33			VCEO-25V max;ICBO-10nA max;hFE-50 min;hFE1/hFE2-1.0 max.
13	2N3333*	6	N*	S	TO89	PV		Pt. 40mW;ID(on)1/2-.95 min;VGS1/2-.95 min;VGS(1-2)-15mV.
14	2N3334*	6	N*	S	TO89	PV		Pt. 40mW;ID(on)1/2-.95 min;VGS1/2-.95 min;VGS(1-2)-20mV.
15	2N3335*	6	N*	S	TO89	PV		Pt. 40mW;ID(on)1/2-.90 min;VGS1/2-.90 min;VGS(1-2)-40mV.
16	2N3336*	6	N*	S	TO89	PV		Pt. 40mW;ID(on)1/2-.80 min;VGS1/2-.80 min;VGS(1-2)-80mV.
17	2N3347*	6	N*	S	R131c	PA		Pt. 6W;hFE1/2-.90 min;R(sat)-50ohms.
18	2N3348*	6	N*	S	R131c	PA		Pt. 6W;hFE1/2-.80 min;R(sat)-50ohms.
19	2N3349*	6	N*	S	R131c	PA		Pt. 6W;hFE1/2-.80 min;R(sat)-50ohms.
20	2N3350*	6	N*	S	R131c	PA		Pt. 6W;hFE1/2-.90 min;R(sat)-50ohms.
21	2N3351*	6	N*	S	R131c	PA		Pt. 6W;hFE1/2-.80 min;R(sat)-50ohms.
22	2N3352*	6	N*	S	R131c	PA		Pt. 6W;hFE1/2-.80 min;R(sat)-50ohms.
23	2N3409*	6	N*	S	R131f			Pt. 600mW both;hFE1/2-.80 min;VBE(1-2)-10mV;VC1C2-100V.
24	2N3410*	6	N*	S	R131f			Pt. 600mW both;hFE1/2-.90 min;VBE(1-2)-10mV;VC1C2-100V.
25	2N3411*	6	N*	S	R131f			Pt. 600mW both;hFE1/2-.90 min;VBE(1-2)-5.0mV;VC1C2-100V.
26	2N3423*	6	N*	S	R131c			Pt. 45W;hFE1/2-.80 min;VBE(1-2)-10mV; $\Delta$ VBE(1-2)/ $\Delta$ T-4uV/deg.C.
27	2N3424*	6	N*	S	R131c			Pt. 45W;hFE1/2-.90 min;VBE(1-2)-5mV; $\Delta$ VBE(1-2)/ $\Delta$ T-2uV/deg.C.
28	2N3513	6	N*	S	R131c			Pt. 75W both sides;VCBO-80V max;VCEO-40V max;VEBO-5.0V max.
29	2N3515	6	N*	S	X27			Pt. 1.4W both sides;VCBO-80V max;VCEO-40V max;VEBO-5.0V max.
30	2N3516	6	N*	S	R131e			Pt. 75W both sides;VCBO-100V max;VCEO-60V max;VEBO-7.0V max.
31	2N3517	6	N*	S	XXXX			Pt. 1.4W both sides;VCBO-100V max;VCEO-60V max;VEBO-7.0V max.
32	2N3521	6	N*	S	R33			Pt. 1.5W both sides;VCBO-70V max;VCEO-55V max;VEBO-7.0V max.
33	2N3522	6	N*	S	R131e			Pt. 75W both sides;VCBO-70V max;VCEO-55V max;VEBO-7.0V max.
34	2N3587*	6	N*	S	R131c			Pt. 600mW;VBE 1-2-20mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-1.2mV max;VC1C2-50V.
35	2N3680*	6	N*	S	R131c			Pt. 30W;hFE1/2-.85 min;VBE(1-2)-3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-400uV.
36	2N3728*	6	N*	S	R131c			Pt. 55W;hFE1/2-.80 min;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-20uV/deg.C.
37	2N3729*	6	N*	S	R131c			Pt. 55W;hFE1/2-.90 min;VBE(1-2)-3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-10uV/deg.C.
38	2N3802*	6	N*	S	TO71	PM		Pt. 360mW;hFE1/2-.80 min;VBE1-2-8.0mV max.
39	2N3803*	6	N*	S	TO71	PM		Pt. 360mW;hFE1/2-.80 min;VBE1-2-8.0mV max.
40	2N3804*	6	N*	S	TO71	PM		Pt. 360mW;hFE1/2-.90 min;VBE1-2-8.0mV max.
41	2N3804A*	6	N*	S	TO71	PM		Pt. 36W;hFE1/2-.95 min;VBE1/2-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-.50mV/deg.C.
42	2N3805*	6	N*	S	TO71	PM		Pt. 360mW;hFE1/2-.90 min;VBE1-2-8.0mV max.
43	2N3805A*	6	N*	S	TO71	PM		Pt. 36W;hFE1/2-.95 min;VBE1/2-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-.50mV/deg.C.
44	2N3808*	6	N*	S	R131c	PA		Pt. 600mW;hFE1/2-.80 min;VBE1-2-8.0mV max.
45	2N3809*	6	N*	S	R131c	PA		Pt. 600mW;hFE1/2-.80 min;VBE1-2-8.0mV max.
46	2N3810*	6	N*	S	R131c	PA		Pt. 600mW;hFE1/2-.90 min;VBE1-2-5.0mV max.
47	JAN2N3810	6	N*	S	R131a			Pt.(both sides) 600mW;hFE1/2-.90 to 1.1;VBE(1-2) 3.0mV max;BVCEO 60V.
48	2N3810A*	6	N*	S	R131a			Pt. 6W;hFE1/2-.95 min;VBE1/2-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-.50mV/deg.C.
49	2N3811*	6	N*	S	R131c	PA		Pt. 600mW;hFE1/2-.90 min;VBE1-2-5.0mV max.
50	JAN2N3811	6	N*	S	R131a			Pt.(both sides) 600mW;hFE1/2-.90 to 1.1;VBE(1-2) 3.0mV max;BVCEO 60V.
51	2N3811A*	6	N*	S	R131a			Pt. 6W;hFE1/2-.95 min;VBE1/2-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-.50mV/deg.C.
52	2N3814*	6	N*	S	X22			Pt. 35W;VBE(1-2)-8.0mV max;hFE1/2-1.0 max. at IC-1mA;VCE-5V.
53	2N3815*	6	N*	S	X22			Pt. 35W;VBE(1-2)-8.0mV max;hFE1/2-1.0 max. at IC-1mA;VCE-5V.
54	2N3816*	6	N*	S	X22			Pt. 35W;VBE(1-2)-5.0mV max;hFE1/2-1.0 max. at IC-1mA;VCE-5V.
55	2N3816A*	6	N*	S	X22			Pt. 35W;hFE1/2-.95 min;VBE1/2-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-.50mV/deg.C.
56	2N3817*	6	N*	S	X22			Pt. 35W;VBE(1-2)-5.0mV max;hFE1/2-1.0 max. at IC-1mA;VCE-5V.
57	2N3817A*	6	N*	S	X22			Pt. 35W;hFE1/2-.95 min;VBE1/2-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-.50mV/deg.C.
58	2N3907*	6	N*	S	R131c			Pt. 6W;hFE1/2-.90 min;VBE(1-2)-2.5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-5uV/deg.C.
59	2N3908*	6	N*	S	R131c			Pt. 6W;hFE1/2-.90 min;VBE(1-2)-2.5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-5uV/deg.C.
60	2N3921*	6	N*	S	TO71	PJ		Pt. 300mW;gm 1/2-.95min;VGS(1-2)-5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T-10uV/°C.
61	2N3922*	6	N*	S	TO71	PJ		Pt. 300mW;gm 1/2-.95min;VGS(1-2)-5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T-25uV/°C.
62	2N3934*	6	N*	S	TO71	PJ		Pt. 300mW;gm 1/2-.95min;VGS(1-2)-5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T-10uV/°C.
63	2N3935*	6	N*	S	TO71	PJ		Pt. 300mW;gm 1/2-.95min;VGS(1-2)-5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T-25uV/°C.
64	2N3941*	6	N*	S	TO78			BVCEO-80V;IC-50mA;Pt. 1.5W;VBE(1-2)-3.0mV;hFE1/2-.90min.
65	2N3942*	6	N*	S	TO78			BVCEO-80V;IC-50mA;Pt. 1.5W;VBE(1-2)-10mV;hFE1/2-.80min.
66	2N3943*	6	N*	S	TO71			BVCEO-80V;IC-50mA;Pt. 75W;VBE(1-2)-3.0mV;hFE1/2-.90min.
67	2N3944*	6	N*	S	TO71			BVCEO-80V;IC-50mA;Pt. 75W;VBE(1-2)-10mV;hFE1/2-.80min.
68	2N3954*	6	N*	S	TO71	PJ		Pt. 50W;IDSS1/2-.95 min;VGS(1-2)-10mV max;Yfs1/2-.95 min.
69	2N3954A*	6	N*	S	TO71	PJ		Pt. 50W;IDSS 1/2-.95min;VGS(1-2)-5mV; $\Delta$ VGS(1-2)/ $\Delta$ T-.5mV.
70	2N3955*	6	N*	S	TO71	PJ		Pt. 50W;IDSS1/2-.95 min;VGS(1-2)-10mV max;Yfs1/2-.95 min.
71	2N3955A*	6	N*	S	TO71	PJ		Pt. 50W;IDSS1/2-.95 min;VGS(1-2)-5mV; $\Delta$ VGS(1-2)/ $\Delta$ T-1.5mV.
72	2N3956*	6	N*	S	TO71	PJ		Pt. 50W;IDSS1/2-.95 min;VGS(1-2)-15mV max;Yfs1/2-.95 min.
73	2N3957*	6	N*	S	TO71	PJ		Pt. 50W;IDSS1/2-.90 min;VGS(1-2)-20mV max;Yfs1/2-.90 min.
74	2N3958*	6	N*	S	TO71	PJ		Pt. 50W;IDSS1/2-.85 min;VGS(1-2)-25mV max;Yfs1/2-.85 min.
75	2N4010	6	N*	S	TO46	A0		Matched Pair 2N4006;Voff-.02mV; $\Delta$ RS(ON)-5.0 ohms; $\Delta$ VCB-100mV max.
76	2N4011	6	N*	S	TO46	A0		Matched Pair 2N4007;Voff-.02mV; $\Delta$ RS(ON)-5.0 ohms; $\Delta$ VCB-100mV max.
77	2N4011*	6	N*	S	TO46	A0		Matched Pair 2N4008;Voff-.02mV; $\Delta$ RS(ON)-5.0 ohms; $\Delta$ VCB-100mV max.
78	2N4016*	6	N*	S	R131c	PA		BVCEO-60V;IC-300mA max;Pt. 50W;VBE(1-2)-5.0mV;hFE1/2-.90 min.
79	2N4018*	6	N*	S	R131c	PA		BVCEO-60V;IC-300mA max;Pt. 50W;VBE(1-2)-2.5mV;hFE1/2-.90 min.
80	2N4020*	6	N*	S	R131c	PA		BVCEO-45V;IC-200mA max;Pt. 60W;VBE(1-2)-5.0mV;hFE1/2-.80 min.
81	2N4021*	6	N*	S	R131c	PA		BVCEO-60V;IC-200mA max;Pt. 60W;VBE(1-2)-5.0mV;hFE1/2-.80 min.
82	2N4022*	6	N*	S	R131c	PA		BVCEO-60V;IC-200mA max;Pt. 60W;VBE(1-2)-5.0mV;hFE1/2-.80 min.
83	2N4023*	6	N*	S	R131c	PA		BVCEO-45V;IC-200mA max;Pt. 60W;VBE(1-2)-3.0mV;hFE1/2-.90 min.
84	2N4024*	6	N*	S	R131c	PA		BVCEO-60V;IC-200mA max;Pt. 60W;VBE(1-2)-3.0mV;hFE1/2-.90 min.
85	2N4025*	6	N*	S	R131c	PA		BVCEO-80V;IC-200mA max;Pt. 60W;VBE(1-2)-3.0mV;hFE1/2-.90 min.
86	2N4042	6	N*	S	L2m			BVCEO-60V;IC-10mA;Pt. 50W;VBE(1-2)-3.0mV;hFE1/2-.90min.
87	2N4043	6	N*	S	L2m			BVCEO-45V;IC-10mA;Pt. 50W;VBE(1-2)-5.0mV;hFE1/2-.80min.
88	2N4044	6	N*	S	TO78	PA		BVCEO-60V;IC-10mA;Pt. 75W;VBE(1-2)-3.0mV;hFE1/2-.90 min.
89	2N4045	6	N*	S	TO78	PA		BVCEO-45V;IC-10mA;Pt. 75W;VBE(1-2)-5.0mV;hFE1/2-.80 min.
90	2N4082	6	N*	S	TO71	FJ		VGS(off)at ID-.50nA-3.0V;Yfs-300umhos min;Yfs1/2-.95 min;BVDS-50V
91	2N4083	6	N*	S	TO71	FJ		VGS(off)at ID-.50nA-3.0V;Yfs-300umhos min;Yfs1/2-.95 min;BVDS-50V
92	2N4084	6	N*	S	TO71	FJ		VGS(off)at ID-1.0nA-3.0V;Yfs-150umhos min;Yfs1/2-.95 min;BVDS-50V
93	2N4085	6	N*	S	TO71	FJ		VGS(off)at ID-1.0nA-3.0V;Yfs-150umhos min;Yfs1/2-.95 min;BVDS-50V
94	2N4099*	6	N*	S	L2m			VBE(1-2)-5.0mV max;IB(1-2)-10nA max; $\Delta$ IB(1-2)-70nA/deg.C max.
95	2N4100*	6	N*	S	TO78	PA		VBE1/VBE2 5.0mVmax;IB1-IB2-10nAmax; $\Delta$ IB(1-2)-70nA/deg.C max.
96	2N4878*	6	N*	S	TO71	PA		Pt. 5W;hFE1/2-.90 min;VBE(1-2)-3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-3uV/deg.C
97	2N4879*	6	N*	S	TO71	PA		Pt. 5W;hFE1/2-.85 min;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-5uV/deg.C
98	2N4880*	6	N*	S	TO71	PA		Pt. 5W;hFE1/2-.80 min;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-10uV/deg.C
99	2N4937*	6	N*	S	R131e	PA		Pt. 30W;VBE(1-2)-3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-1.0mV/deg.C;hFE1/2-.85 min.
100	2N4938*	6	N*	S	R131c	PA		Pt. 60W;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-2mV/deg.C;hFE1/2-.70 min.
101	2N4940*	6	N*	S	TO89	PB		Pt. 35W;hFE1/2-.80 min;VBE(1-2)-5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-2.0mV max.
102	2N4941*	6	N*	S	TO89	PB		Pt. 30W;hFE1/2-.90 min;VBE(1-2)-3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T-1.0mV max.
103	2N4966	6	N*	S	R137			Pt. 450mW;VC1C2-80V;hFE1/



# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG # Y200 TO200 Ser.	LEAD CODE	DESCRIPTION
1	2N5121*	6	P-N	Si	TO71	PA	Pt. 50W;VBE(1-2) 5.0mV;ΔVBE(1-2) 5.0uV/C;hFE1/2 .85 min.
2	2N5122*	6	P-N	Si	TO71	PA	Pt. 50W;VBE(1-2) 5.0mV;ΔVBE(1-2) 10uV/C;hFE1/2 .80 min.
3	2N5123*	6	P-N	Si	R138	PL	Pt.750mW;VBE(1-2)3mV;ΔVBE(1-2)3uV/C;hFE1/2.90min.
4	2N5124*	6	P-N	Si	R138	PL	Pt.750mW;VBE(1-2)5mV;ΔVBE(1-2)5uV/C;hFE1/2.85min.
5	2N5125*	6	P-N	Si	R138	PL	Pt.750mW;VBE(1-2)5mV;ΔVBE(1-2)10uV/C;hFE1/2.80min.
6	2N5196*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 5.0mV max;yfs1/2 .97 min.
7	2N5197*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 5.0mV max;yfs1/2 .97 min.
8	2N5198*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 10mV max;yfs1/2 .95 min.
9	2N5199*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 15mV max;yfs1/2 .95 min.
10	2N5255*	6	P-N	Si	R137	PA	Pt.43W;hFE1/2.80 min;VBE(1-2)5.0mV max;ΔVBE(1-2)/ΔT.20uV/deg.C
11	2N5256*	6	P-N	Si	R137	PA	Pt.43W;hFE1/2.90 min;VBE(1-2)3.0mV max;ΔVBE(1-2)/ΔT.10uV/deg.C
12	2N5452*	6	N-P	Si	TO71	PC	Pt.50W;VGS(1-2)5mV;ΔVGS(1-2)5uV/deg.C;yfs1/2.97 min.
13	2N5453*	6	N-P	Si	TO71	PC	Pt.50W;VGS(1-2)10mV;ΔVGS(1-2)10uV/deg.C;yfs1/2.97 min.
14	2N5454*	6	N-P	Si	TO71	PC	Pt.50W;VGS(1-2)15mV;ΔVGS(1-2)25uV/deg.C;yfs1/2.95 min.
15	2N5508*	6	P-N	Si	TO71	PC	Pt.3W;IG(1-2)50pA;Yos(1-2)1.5umhos;VGS(1-2)15mV;VGS(1-2)/TA.1.9mV
16	2N5510*	6	P-N	Si	TO71	PC	Pt.3W;IG(1-2)50pA;Yos(1-2)1.0umhos;VGS(1-2)5mV;VGS(1-2)/TA.8mV
17	2N5515*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 5.0mV max;yfs1/2 .97 min.
18	2N5516*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 5.0mV max;yfs1/2 .97 min;CMRR 100dB min.
19	2N5517*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 10mV max;yfs1/2 .95 min;CMRR 90dB min.
20	2N5518*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 15mV max;yfs1/2 .95 min;yos(1-2) 100nmho.max.
21	2N5519*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 15mV max;yfs1/2 .95 min;yos(1-2) 100nmho.max.
22	2N5520*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 5.0mV max;yfs1/2 .97 min;CMRR 100dB min.
23	2N5521*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 5.0mV max;yfs1/2 .97 min;CMRR 100dB min.
24	2N5522*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 10mV max;yfs1/2 .95 min;CMRR 90dB min.
25	2N5523*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 15mV max;yfs1/2 .95 min;yos(1-2) 100nmho.max.
26	2N5524*	6	N-P	Si	R120	PC	Pt 375mW;IDSS1/2 .95 min;VGS(1-2) 15mV max;yfs1/2 .95 min;yos(1-2) 100nmho.max.
27	2N5545*	6	N-P	Si	TO71	PJ	Pt.40W;IDSS1/2.95 min;ΔVGS(1-2)/ΔT.8mV;Yos(1-2)1.0umho
28	JAN2N5545*	6	N-P	Si	TO71	PJ	Pt 400m both;yfs1/2 .970 min;VGS(1-2) 5.0mV max;ΔVGS(1-2)/ΔT 1.0mV max.
29	2N5546*	6	N-P	Si	TO71	PJ	Pt.40W;IDSS1/2.90 min;ΔVGS(1-2)/ΔT.1.6mV;Yos(1-2)2.0umho
30	JAN2N5546*	6	N-P	Si	TO71	PJ	Pt 400m both;yfs1/2 .850 min;VGS(1-2) 10mV max;ΔVGS(1-2)/ΔT 2.0mV max.
31	2N5547*	6	N-P	Si	TO71	PJ	Pt.40W;IDSS1/2.90 min;ΔVGS(1-2)/ΔT.3.2mV;Yos(1-2)3.0umho
32	JAN2N5547*	6	N-P	Si	TO71	PJ	Pt 400m both;yfs1/2 .900 min;VGS(1-2) 15mV max;ΔVGS(1-2)/ΔT 4.0mV max.
33	2N5561*	6	N-P	Si	TO71	PJ	Pt.500mW;IDSS1/2.95min;VGS(1-2)5mVmax;ΔVGS(1-2)/ΔT.500uVmax;yfs1/2.97min.
34	2N5562*	6	N-P	Si	TO71	PJ	Pt.500mW;IDSS1/2.95min;VGS(1-2)10mVmax;ΔVGS(1-2)/ΔT.800uVmax;yfs1/2.97min.
35	2N5563*	6	N-P	Si	TO71	PJ	Pt.500mW;IDSS1/2.95min;VGS(1-2)15mVmax;ΔVGS(1-2)/ΔT.2.0mVmax;yfs1/2.95min.
36	2N5564*	6	N-P	Si	TO71	PJ	Pt.650mW;IDSS1/2.95min;VGS(1-2)5mVmax;ΔVGS(1-2)/ΔT.800uVmax;yfs1/2.95min.
37	2N5565*	6	N-P	Si	TO71	PJ	Pt.650mW;IDSS1/2.95min;VGS(1-2)10mVmax;ΔVGS(1-2)/ΔT.2.0mVmax;yfs1/2.90min.
38	2N5566*	6	N-P	Si	TO71	PJ	Pt.650mW;IDSS1/2.95min;VGS(1-2)20mVmax;ΔVGS(1-2)/ΔT.4.0mVmax;yfs1/2.90min.
39	2N5843*	6	P-N	Si	L2g	PE	Pt 600mW;hFE1/2 .95 min;VBE(1-2) 2.0mV max;ΔVBE(1-2)ΔT 8.0uV/C max.
40	2N5844*	6	P-N	Si	L2g	PE	Pt 600mW;hFE1/2 .95 min;VBE(1-2) 2.0mV max;ΔVBE(1-2)ΔT 8.0uV/C max.
41	2N5902*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 2.0nA max;IDSS1/2 .95 min;VGS(1-2) 5.0mV max.
42	2N5903*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 2.0nA max;IDSS1/2 .95 min;VGS(1-2) 5.0mV;yfs1/2 .97 min.
43	2N5904*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 2.0nA max;IDSS1/2 .95 min;VGS(1-2) 10mV;yfs1/2 .95 min.
44	2N5905*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 2.0nA max;IDSS1/2 .95 min;VGS(1-2) 15mV;yfs1/2 .95 min.
45	2N5906*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 200pA max at 125°C;IDSS1/2 .95 min;VGS(1-2)5.0mV;yfs1/2 .97 min.
46	2N5907*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) at 125°C 200pA max;VGS(1-2) 5.0mV;yfs1/2 .97 min.
47	2N5908*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) at 125°C 200pA max;IDSS1/2 .95 min;VGS(1-2) 10mV;yfs1/2 .95 min.
48	2N5909*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) at 125°C 200pA max;IDSS1/2 .95 min;VGS(1-2) 15mV;yfs1/2 .95 min.
49	2N5911*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 20nA max;IDSS(1-2) .95 min;VGS(1-2) 10mV max.
50	2N5912*	6	N-P	Si	TO78	PE	Pt 500mW;IG(1-2) 20nA max;IDSS(1-2) .95 min;VGS(1-2) 15mV max.
51	2N6085*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .70 min;VBE(1-2) 10mV;ΔVBE(1-2)/ΔT 4.0mV;Cc(1-2) 4.0pf.
52	2N6086*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .70 min;VBE(1-2) 10mV;ΔVBE(1-2)/ΔT 4.0mV;Cc(1-2) 4.0pf.
53	2N6087*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .90 min;VBE(1-2) 3.0mV;ΔVBE(1-2)/ΔT 1.0mV;Cc(1-2) 4.0pf.
54	2N6088*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .90 min;VBE(1-2) 3.0mV;ΔVBE(1-2)/ΔT 1.0mV;Cc(1-2) 4.0pf.
55	2N6089*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .80 min;VBE(1-2) 5.0mV;ΔVBE(1-2)/ΔT 2.0mV;Cc(1-2) 4.0pf.
56	2N6090*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .80 min;VBE(1-2) 5.0mV;ΔVBE(1-2)/ΔT 2.0mV;Cc(1-2) 4.0pf.
57	2N6091*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .90 min;VBE(1-2) 3.0mV;ΔVBE(1-2)/ΔT 1.0mV;Cc(1-2) 4.0pf.
58	2N6092*	6	N-P	Si	TO78	PE	Pt 600mW;hFE1/2 .90 min;VBE(1-2) 3.0mV;ΔVBE(1-2)/ΔT 1.0mV;Cc(1-2) 4.0pf.
59	2N6441*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 10mV max;1C-2C ±0.005uA.
60	2N6442*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 10mV max;1C-2C ±0.005uA.
61	2N6443*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 5.0mV max;1C-2C ±0.005uA.
62	2N6444*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 5.0mV max;1C-2C ±0.005uA.
63	2N6445*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 3.0mV max;1C-2C ±0.005uA.
64	2N6446*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 3.0mV max;1C-2C ±0.005uA.
65	2N6447*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 3.0mV max;1C-2C ±0.005uA.
66	2N6448*	6	N-P	Si	TO78	PE	Pt 550mW;VBE1-2 3.0mV max;1C-2C ±0.005uA.
67	2N6483*	6	N-P	Si	TO71	PJ	Pt 500mW;IDSS1/2 .95 min;VGS(1-2)5mV max;yfs1/2 .97 min.
68	2N6484*	6	N-P	Si	TO71	PJ	Pt 500mW;IDSS1/2 .95 min;VGS(1-2)10mV max;yfs1/2 .97 min.
69	2N6485*	6	N-P	Si	TO71	PJ	Pt 500mW;IDSS1/2 .95 min;VGS(1-2)15mV max;yfs1/2 .95 min.
70#	2PT6	6	P-A	Ge	F4n	A0	hFE1/hFE2 1.25 Max;Matched Pair Pts;Pt 6W both sides.
71#	2SA798	6	P	Si	B39	RF	Pt 400mW both;hFE1/hFE2 0.8 min;VBE(1-2) 10mV max;BVCEO 50V
72#	2SA799	6	P	Si	B39	RF	Pt 400mW both;hFE1/hFE2 0.8 min;VBE(1-2) 10mV max;BVCEO 100V
73#	2SA995	6	P	Si	B39	RG	Pt 400mW both;IC2/IC1 0.8 min-1.25 max;VBE(1-2) 10mV max;BVCEO 100V
74#	2SC294*	6	N-D	Si	R131h	PD	Pt 300mW(both sides);max;hFE1/2 .80 min;ΔVBE 10mV max
75#	2SC1583	6	N	Si	B39	RF	Pt 400mW both;hFE1/hFE2 0.8 min;VBE(1-2) 10mV max;BVCEO 50V
76#	2SC1910	6	N-PEΔ	Si	W35	PG	Pt 200mW;BVCEO 15V;hFE at 50mA-30 min;ft 6.0G min;Cob 1.5pF max;ΔVBE(1-2)30mV.
77#	2SC1911	6	N-PEΔ	Si	W35	PG	Pt 150mW;BVCEO 20V;hFE at 10mA-40 min;ft 5.0G min;Cob .80pF max;ΔVBE(1-2)15mV.
78#	2SC1912	6	N-PEΔ	Si	W35	PH	Pt 150mW;BVCEO 20V;hFE at 10mA-40 min;ft 5.0G min;Cob .80pF max;ΔVBE(1-2)15mV.
79#	2SC1920	6	N-PEΔ	Si	W35	PH	Pt 200mW;BVCEO 15V;hFE at 30mA-30 min;ft 6.0G min;Cob 1.5pF max;ΔVBE(1-2)30mV.
80#	2SC2259	6	N	Si	B39	RF	Pt 400mW both;hFE1/hFE2 0.8 min;VBE(1-2)10mV max;BVCEO 100V
81#	2SC2291	6	N	Si	B39	RG	Pt 400mW both;IC2/IC1 0.8 min-1.25 max;VBE(1-2)10mV max;BVCEO 100V
82#	2SJ39	6	P	Si	B34	RC	VGS(1-2)50mV max;IDSS1/IDSS2 0.85 min;yfs1/yfs2 0.9 min
83#	2SK109*	6	N	Si	B34	RC	VGS(1-2) 50mV max;IDSS 1/2 0.85 min;yfs 1/2 0.9 min
84	3N165*	6	P-A	Si	TO99	A	Pt.525mW;yfs1/2.90min;VGS(th)(1-2)100mVmax;tr 30nS;ton 15nS;toff 50nS.
85	3N188*	6	PMOSΔ	Si	TO99	QC	Pt 525mW;yfs1/2 .85 min;VGS(th)1-2 100mV;tr 30nS;tr 30nS;toff 50nS;td 15nS.
86	3N190*	6	PMOSΔ	Si	TO99	QC	Pt 525mW;yfs1/2 .85 min;VGS(th)1-2 100mV;tr 30nS;td 15nS;toff 50nS.
87#	40809	6	P-N	Ge	TO1	A	Matched Pair of AC127 and AC128.
88	AD810*	6	N	Si	TO71	PA	Pt 500mW(both sides);VBE(1-2)3.0mVmax;ΔVBE(1-2)/ΔT 15uV/C
89	AD811*	6	N	Si	TO71	PA	Pt 500mW(both sides);VBE(1-2)1.5mVmax;ΔVBE(1-2)/ΔT 7.5uV/C
90	AD812*	6	N	Si	TO71	PA	Pt 500mW(both sides);VBE(1-2)1.0mVmax;ΔVBE(1-2)/ΔT 5.0uV/C
91	AD813*	6	N	Si	TO71	PA	Pt 500mW(both sides);VBE(1-2)0.5mVmax;ΔVBE(1-2)/ΔT 2.5uV/C
92	AD814*	6	N	Si	TO71	PA	Pt 750mW(both sides);VBE(1-2)1.0mVmax;ΔVBE(1-2)/ΔT 5.0uV/C
93	AD815*	6	N	Si	TO71	PA	Pt 750mW(both sides);VBE(1-2)1.0mVmax;ΔVBE(1-2)/ΔT 5.0uV/C
94	AD816*	6	N	Si	TO71	PA	Pt 750mW(both sides);VBE(1-2)1.0mVmax;ΔVBE(1-2)/ΔT 5.0uV/C
95	AD818	6	N	Si	TO52	A	hFE 150-600;VBE(1-2)1.0mVmax;ΔVBE(1-2)/ΔT 5uV/C;BVCEO 20V
96	AD820	6	P	Si	TO71	PA	BVCEO 25V min;hFE100 min;IC10uA;VCE5V;VBE(1-2)5.0mV max;ΔVBE(1-2)ΔT20uV/C
97	AD821	6	P	Si	TO71	PA	Pt 200MHz min;BVCEO 45Vmin;hFE 150-600;IC 10uA;VBE(1-2)1.0mVmax;ΔVBE(1-2)/ΔT 5uV/C
98	AD822	6	P	Si	TO71	PA	Pt 200MHz min;BVCEO 60Vmin;hFE 200-600;IC 10uA;VBE(1-2)0.5mVmax;ΔVBE(1-2)/ΔT 2.5uV/C
99	AD830*	6	N	Si	TO78	PJ	Pt 750mW(both sides);VGS(1-2)25mVmax;ΔVGS(1-2)/ΔT 5.0uV/Cmax;yfs 1/2 .99
100	AD831*	6	N	Si	TO78	PJ	Pt 750mW(both sides);VGS(1-2)25mVmax;ΔVGS(1-2)/ΔT 10uV/Cmax;yfs 1/2 .99
101	AD832*	6	N	Si	TO78	PJ	Pt 750mW(both sides);VGS(1-2)25mVmax;ΔVGS(1-2)/ΔT 20uV/Cmax;yfs 1/2 .99
102	AD833*	6	N	Si	TO78	PJ	Pt 750mW(both sides);VGS(1-2)25mVmax;ΔVGS(1-2)/ΔT 40uV/Cmax;yfs 1/2 .99
103	AD833A*	6	N	Si	TO78	PJ	Pt 750mW(both sides);VGS(1-2)25mVmax;ΔVGS(1-2)/ΔT 75uV/Cmax;yfs 1/2 .99
104	AD840*	6	N	Si	TO71	PJ	Pt 400mW(both sides);VGS(1-2)5.0mVmax;ΔVGS(1-2)/ΔT 5.0uV/Cmax;yfs(1-2)/yfs .6%
105	AD841*	6	N	Si	TO71	PJ	Pt 400mW(both sides);VGS(1-2)5.0mVmax;ΔVGS(1-2)/ΔT 10uV/Cmax;yfs(1-2)/yfs .6%
106#	ADY27*	6	P-A	Ge	F9d	C0	hFE1/hFE2 1.25 max;Pt 27.5W;ICEV 150uA;R 450kHz.
107#	B1181MP	6	PNP	Ge	TO3	A	Matched Pairs within 5% 4.0V at 5.0 amps
108#	BC140-6*	6	N-PEΔ	Si	TO39	A0	Pt 3.7W at 45°C case;Vset 1.0V max;hFE 1/2 1.25 max
109#	BC140-10*	6	N-PEΔ	Si	TO39	A0	Pt 3.7W at 45°C case;Vset 1.0V max;hFE 1/2 1.25 max
110#	BC140-16*	6	N-PEΔ	Si	TO39	A0	Pt 3.7W at 45°C case;Vset 1.0V max;hFE 1/2 1.25 max

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	LEADS	DESCRIPTION
1#	BC141-6*	6	N-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
2#	BC141-10*	6	N-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
3#	BC141-16*	6	N-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
4#	BC160-6*	6	P-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
5#	BC160-10*	6	P-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
6#	BC160-16*	6	P-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
7#	BC161-6*	6	P-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
8#	BC161-10*	6	P-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
9#	BC161-16*	6	P-PEA	Si	TO39	A0	Pt 3.7W at 45°C case;Vsat 1.0V max;hFE 1/2 1.25 max
10	BC328/BC338	6	N-PE	Si	TO92	F	hFE1/2 1.25 typ, 1.4 max;Pt 500mW;BVCEs 30V;ft 100MHz
11	BC337/BC327	6	N-PE	Si	TO92	F	hFE1/2 1.25 typ, 1.4 max;Pt 500mW;BVCEs 50V;ft 100MHz
12#	BCY55*	6	N-PL	Si	F37	PL	Pt 300mW; C1 /2 .85 min;VBE(1-2) 4.0mV max;ΔV/ΔT 3.0uV/°C;ΔI/ΔT 1.5nA/°C
13#	BCY87	6	N-PL	Si	TO71	PS	VBE(1-2)-3.0mV max;IB(1-2)-25nA max;ΔV/ΔT-1.0uV/deg.C
14#	BCY88	6	N-PL	Si	TO71	PS	VBE(1-2)-6.0mV max;IB(1-2)-80nA max;ΔV/ΔT-2.0uV/deg.C
15#	BCY89	6	N-PL	Si	TO71	PS	VBE(1-2)-10mV max;IB(1-2)-300nA max;ΔV/ΔT-4.0uV/deg.C
16	BD181*	6	N-D	Si	TO3	C0	BVCBO 55V;Pt 78W;hFE1/hFE2 1.3 max at Ic 3.0A,VCE 4.0V
17	BD182*	6	N-D	Si	TO3	C0	BVCBO 70V;Pt 117W;hFE1/hFE2 1.3 max at Ic 4.0A,VCE 4.0V
18	BD183*	6	N-D	Si	TO3	C0	BVCBO 85V;Pt 117W;hFE1/hFE2 1.3 max at Ic 3.0A,VCE 4.0V
19#	BFQ10*	6	N	Si	TO71	PJ	dΔVGS/dt 5uV/°C;ΔVGS 5mV;ΔgoS/gfs 10uV/V;ID1-S1S/ID2-S2S 1.03max
20#	BFQ11*	6	N	Si	TO71	PJ	dΔVGS/dt 5uV/°C;ΔVGS 10mV;ΔgoS/gfs 30uV/V;ID1-S1S/ID2-S2S 1.03max
21#	BFQ12*	6	N	Si	TO71	PJ	dΔVGS/dt 10uV/°C;ΔVGS 10mV;ΔgoS/gfs 30uV/V;ID1-S1S/ID2-S2S 1.05max
22#	BFQ13*	6	N	Si	TO71	PJ	dΔVGS/dt 20uV/°C;ΔVGS 10mV;ΔgoS/gfs 30uV/V;ID1-S1S/ID2-S2S 1.05max
23#	BFQ14*	6	N	Si	TO71	PJ	dΔVGS/dt 20uV/°C;ΔVGS 15mV;ΔgoS/gfs 30uV/V;ID1-S1S/ID2-S2S 1.08max
24#	BFQ15*	6	N	Si	TO71	PJ	dΔVGS/dt 40uV/°C;ΔVGS 20mV;ΔgoS/gfs 30uV/V;ID1-S1S/ID2-S2S 1.10max
25#	BFQ16*	6	N	Si	TO71	PJ	dΔVGS/dt 50uV/°C;ΔVGS 50mV;ΔgoS/gfs 100uV/V;ID1-S1S/ID2-S2S 1.20max
26#	BFW39	6	N	Si	R131	C0	Pt-40W;Ic-30mA;hFE1/2-90 min;VBE(1-2)-5mV;hFE-60 min
27#	BFW39A	6	N	Si	R131	C0	hFE1/2-85 min;VBE(1-2)-2.0mV max;Pt-50W
28#	BFW40	6	N	Si	R131	C0	Pt-40W;Ic-30mA;hFE1/2-99 min;VBE(1-2)-5mV;hFE-150 min
29#	BFX11*	6	P-DPE	Si	TO78	C0	Pt-40W each;ICBO-10nA max;hFE1/2-80 min;ΔVBE-5.0mV max
30#	BFX15*	6	N-PL	Si	TO78	C0	Pt-50W each;VBE1/2-5.0mV max;hFE1/2-90 min;ICBO-10nA max
31#	BFX38*	6	P-DPE	Si	TO77	C0	Pt-40W each;hFE1/hFE2-90 min;VBE1/2-3.0mV max;ICBO-10nA max
32#	BFX70*	6	N-DPL	Si	TO77	C0	Pt-6W;hFE1-2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)/ΔT-10uV/deg.C
33#	BFX71*	6	N-DPL	Si	TO77	C0	Pt-6W;hFE1-2-80 min;VBE(1-2)-15mV max;ΔVBE(1-2)/ΔT-25uV/deg.C
34#	BFX72*	6	N-DPL	Si	TO77	C0	Pt-6W;hFE1-2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)/ΔT-25uV/deg.C
35#	BFX99*	6	N-DPL	Si	TO77	C0	Pt-6W;hFE1-2-90 min;VBE(1-2)-1.5mV max;ΔVBE(1-2)-5.0mV max
36#	BFY20	6	N-PL	Si	R131	C0	ft-245Mc;BVCBO-40V;hFE-10 min/10mA;10mV-VBE match;pt-60W
37#	BFY81	6	NDPL	Si	TO77	C0	Pt-60W;BVCBO-45V;ft-60Mc min;hFE1/2-80 min;VBE(1-2)-10mV max
38#	BFY82	6	NDPL	Si	TO77	C0	Pt-50W;BVCBO-60V;ft-250Mc min;hFE1/2-80 min;VBE(1-2)-15mV max
39#	BFY83	6	NDPL	Si	TO77	C0	Pt-60W;BVCBO-100V;ft-50Mc min;hFE1/2-80 min;VBE(1-2)-15mV max
40#	BFY84	6	NDPE	Si	TO77	C0	Pt-38W;BVCBO-30V;ft-600Mc min;hFE1/2-80 min;VBE(1-2)-15mV max
41#	BFY85*	6	N-PE	Si	R131c	C0	Pt-260mW;hFE Diff. 20% max;VBE Diff. 10mV max
42#	BFY86*	6	N-PE	Si	R131c	C0	Pt-260mW;hFE Diff. 10% max;VBE Diff. 5.0mV max
43#	BFY91	6	N-PL	Si	R131c	C0	ft-60Mc;BVCBO-45V;hFE-60-240/10uA;5mV-VBE match;10%hFE match
44#	BFY92	6	N-PL	Si	R131c	C0	ft-60Mc;BVCBO-45V;hFE-60-240/10uA;10mV-VBE match;20%hFE match
45#	C94EG	6	N02	Si	TO92	DA	IGSS 50uA max;GmIDSS VGS match 10%;VGS diff 10mV max;Drift 100uV/°C max
46#	C94ER	6	N02	Si	TO92	DA	IGSS 50uA max;GmIDSS VGS match 5.0%;VGS diff 5.0mV max;Drift 50uV/°C max
47#	C95EG	6	N02	Si	TO92	DA	IGSS 50uA max;GmIDSS VGS match 10%;VGS diff 10mV max;Drift 100uV/°C max
48#	C95ER	6	N02	Si	TO92	DA	IGSS 50uA max;GmIDSS VGS match 5.0%;VGS diff 5.0mV max;Drift 50uV/°C max
49#	C96EG	6	N02	Si	TO92	DA	IGSS 50uA max;GmIDSS VGS match 10%;VGS diff 20mV max;Drift 100uV/°C max
50#	C97EG	6	N#	Si	TO92	DA	IGSS 50pA max;VGS diff 10mV;gfs IDSS VGS match 10%;Drift 100uV/°C max
51#	C97ER	6	N#	Si	TO92	DA	IGSS 50pA max;VGS diff 5.0mV;gfs IDSS VGS match 5.0%;Drift 50uV/°C max
52#	C98EG	6	N#	Si	TO92	DA	IGSS 50pA max;VGS diff 10mV;gfs IDSS VGS match 10%;Drift 100uV/°C max
53#	C98ER	6	N#	Si	TO92	DA	IGSS 50pA max;VGS diff 5.0mV;gfs IDSS VGS match 5.0%;Drift 50uV/°C max
54	D15117/5120	6	P	Si			Chips;Match Char at Ic 10uA,Vce 5V-Vbe Diff 3.0mV Max,DC Gain Ratio 0.9-1.0
55	D15118/5121	6	P	Si			Chips;Match Char at Ic 10uA,Vce 5V-Vbe Diff 5.0mV Max,DC Gain Ratio 0.85-1.0
56	D15119-1	6	P	Si			Chips;Match Char at Ic 10uA,Vce 5V-Vbe Diff 10.0mV Max,DC Gain Ratio 0.8-1.0
57	D15119/5122	6	P	Si			Chips;Match Char at Ic 10uA,Vce 5V-Vbe Diff 5.0mV Max,DC Gain Ratio 0.8-1.0
58#	ESM25*	6	N	Si	TO71	PJ	Pt 400mW(both sides);IDSS 1/2 0.8min,1.0max;VGS(1-2)25mV max;VGS(1-2)/ΔT80uV/°C max
59#	FT5320	6	N-PE	Si	R131d	PD	Pt 200mW(Each);BVCBO 150V;BVCEO 150V;hfe 1/2 .9 min, 1.0 max
60#	FT5321	6	P-PE	Si	R131d	PD	Pt 200mW(Each);BVCBO 150V;BVCEO 150V;hFE 1/2 .9 min,1.0 max
61	HA7807	6	P-A	Si	TO5		Pair of HA7808;Vo-2.0mV max
62	HA7809	6	P-A	Si	TO5		Pair of HA7808;Vo-1.5mV max
63	IMF5564*	6	N	Si	TO71	PC	Matched Dual JFETs;VGS(1-2)5.0mV;G-S Diff Drift 10uV/°C;IDSS(1-2)1.0 Max
64	IMF5565*	6	N	Si	TO71	PC	Matched Dual JFETs;VGS(1-2)10mV;G-S Diff Drift 25uV/°C;IDSS(1-2)1.0 Max
65	IMF5566*	6	N	Si	TO71	PC	Matched Dual JFETs;VGS(1-2)20mV;G-S Diff Drift 50uV/°C;IDSS(1-2)1.0 Max
66	IMF5911	6	N*	Si	TO99	PF0	Dielectrically Isolated;gfs1/gfs2 1.0max,0.95min;VGS(1-2)25mV;JFET
67	IMF5912	6	N*	Si	TO99	PF0	Dielectrically Isolated;gfs1/gfs2 1.0max,0.95min;VGS(1-2)50mV;JFET
68	IMF6485*	6	N*	Si	TO71	PJ	FET;Pt 500mW(both sides);VGS (1-2) 25mVmax;ΔVGS(1-2)/ΔT 40uV/°C
69	IT120*	6	N-PL	Si	TO78	PA	Pd 750mW(both sides)max;VBE(1-2)2.0mV max;IB(1-2)5.0nA max
70	IT120A*	6	N-PL	Si	TO78	PA	Pd 750mW(both sides)max;VBE(1-2)1.0mV max;IB(1-2)2.5nA max
71	IT121*	6	N-PL	Si	TO78	PA	Pd 750mW(both sides)max;VBE(1-2)3.0mV max;IB(1-2)25nA max
72	IT122*	6	N-PL	Si	TO78	PA	Pd 750mW(both sides)max;VBE(1-2)5.0mV max;IB(1-2)25nA max
73	IT124*	6	N-PL	Si	TO78	PA	Pd 750mW(both sides);VBE(1-2) 2.0mV;VBE(1-2)/°C 5.0uV/°C;IB(1-2) 800pA max
74	IT125*	6	N-PL	Si	TO78	PA	Pd 750mW(Both Sides);VBE(1-2)2.0mVtyp;IB(1-2)600pAmax;Cc1c2 800fFmax;Ic1c2 250pAmax
75	IT126*	6	N-PL	Si	TO78	PA	Pd 750mW(both sides)max;VBE(1-2)1.0mV max;IB(1-2)2.5nA max
76	IT127*	6	N-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)2.0mV max;IB(1-2)5.0nA max
77	IT128*	6	N-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)3.0mV max;IB(1-2)10nA max
78	IT129*	6	N-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)5.0mV max;IB(1-2)20nA max
79	IT130*	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)2.0mV max;IB(1-2)5.0nA max
80	IT130A*	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)1.0mV max;IB(1-2)2.5nA max
81	IT131*	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)3.0mV max;IB(1-2)25nA max
82	IT132*	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)5.0mV max;IB(1-2)25nA max
83	IT136*	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)1.0mV max;IB(1-2)2.5nA max
84	IT137	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)2.0mV max;IB(1-2)5.0nA max
85	IT138	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)3.0mV max;IB(1-2)10nA max
86	IT139	6	P-PL	Si	TO78	PA	Pt 750mW(both sides)max;VBE(1-2)5.0mV max;IB(1-2)20nA max
87	IT500*	6	N*	Si	R131	PJ	Dual JFET;Pd 500mW(both sides);VGS(1-2) 5.0mV;IG(1-2) 5.0nA
88	IT501*	6	N*	Si	R131	PJ	Dual JFET;Pd 500mW(both sides);VGS(1-2) 5.0mV;IG(1-2) 5.0nA
89	IT502*	6	N*	Si	R131	PJ	Dual JFET;Pd 500mW(both sides);VGS(1-2) 10mV;IG(1-2) 5.0nA
90	IT503*	6	N*	Si	R131	PJ	Dual JFET;Pd 500mW(both sides);VGS(1-2) 15mV;IG(1-2) 5.0nA
91	IT5911	6	N*	Si	TO71	PF0	gfs1/gfs2 1.0max,.95min;VGS(1-2)10mVmax;IG(1-2)20nA;JFET
92	IT5912	6	N*	Si	TO71	PF0	gfs1/gfs2 1.0max,.95min;VGS(1-2)15mVmax;IG(1-2)20nA;JFET
93	KH5196*	6	N0	Si	TO71	PJ	Pt 500mW;Idss 1/2 .95 min;Vgs(1-2) 5.0mV max;Vfs 1/2 .97 min
94	KH5197*	6	N0	Si	TO71	PJ	Pt 500mW;Idss 1/2 .95 min;Vgs(1-2) 5.0mV max;Vfs 1/2 .97 min
95	KH5198*	6	N0	Si	TO71	PJ	Pt 500mW;Idss 1/2 .95 min;Vgs(1-2) 10mV max;Vfs 1/2 .95 min
96	KH5199*	6	N0	Si	TO71	PJ	Pt 500mW;Idss 1/2 .95 min;Vgs(1-2) 15mV max;Vfs 1/2 .95 min
97	LDA400MP	6	N	Si	S5	A	Matched Pair LDA400 Pt-360mW;hFE 1/2-90 min;VBE 1/2-10mV max;ΔVBE 1-2/ΔTA-10uV/°Cmax
98	LDA401MP*	6	N	Si	S5	A	Matched Pair LDA 401 Pt-360mW;hFE1/2-90min;VBE1/2-10mVmax;ΔVBE1-2/ΔTA-10uV/°Cmax
99	MA7807	6	P-A	Si	TO5		Matched pair of HA7808;ΔVoff-50uVmax
100	MA7809	6	P-A	Si	TO5		Matched pair of HA7808;ΔVoff-50uVmax
101	MAT01AH*	6	N	Si	TO99	PA	Typ Diff Op AMP Ckt max Offsets;Vos 100uV,los 800pA;hFE1/hFE2 1.03max
102	MAT01FH*	6	N	Si	TO99	PA	Typ Diff Op AMP Ckt max Offsets;Vos 500uV,los 3.2nA;hFE1/hFE2 1.08max
103	MAT01GH*	6	N	Si	TO99	PA	Typ Diff Op AMP Ckt max Offsets;Vos 500uV,los 3.2nA;hFE1/hFE2 1.08max
104	MAT01H*	6	N	Si	TO99	PA	Typ Diff Op AMP Ckt max Offsets;Vos 100uV,los 800pA;hFE1/hFE2 1.03max
105	MD708A*	6	N-AN*	Si	R131f	PA	Pd 800mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mVdc;ΔVBE(1-2)/ΔTA 10uVdc
106	MD708AF*	6	N-AN*	Si	X22	PA	Pd 400mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mVdc;ΔVBE(1-2)/ΔTA 10uVdc
107	MD708B*	6	N-AN*	Si	R131f	PA	Pd 800mW(both sides);hFE1/2 .80 min;VBE(1-2) 10mVdc;ΔVBE(1-2)/ΔTA 20uVdc
108	MD708BF*	6	N-AN*	Si	X22	PA	Pd 400mW(both sides);hFE1/2 .80 min;VBE(1-2) 10mVdc;ΔVBE(1-2)/ΔTA 20uVdc
109	MD918A*	6	N-AN0	Si	TO99	PA	Pd 800mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mVdc;ΔVBE(1-2)/ΔTA 10uVdc/°C
110	MD918AF*	6	N-AN0	Si	TO99	PB	Pd 800mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mVdc;ΔVBE(1-2)/ΔTA 1

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	L C O A D E	DESCRIPTION
1	MD9188*	6	N-AN	SI	TO99	PA	Pd 800mW(both sides);hFE1/2 .80 min;VBE(1-2) 10mVdc;ΔVBE(1-2)/ΔTA 20uVdc/°C.
2	MD9188B*	6	N-AN	SI	TO89	PB	Pd 600mW(both sides);hFE1/2 .80 min;VBE(1-2) 10mVdc;ΔVBE(1-2)/ΔTA 20uVdc/°C.
3	MD981	6	N-E	SI	TO78		Pt(both sides)-600mW;VCBO-60V;IC-500mA;hFE-35 min.
4	MD982	6	P-E	SI	TO78	PR	Pt(both sides)-600mW;VCBO-60V;IC-500mA;hFE-35 min.
5	MD982F	6	P-E	SI	TO89	PB	Pt(both sides)-350mW;VCBO-60V;IC-500mA;hFE-35 min.
6	MD984	6	P-AN	SI	R238	PA	Pt(both sides) 625mW;VCBO 40V;IC 200mA;hFE 25 min pulsed;ft 250MHz min.
7	MD990	6	P-E	SI	TO78	PA	Pt(both sides)-600mW;VCBO-50V;IC-600mA;hFE-50 min.
8	MD1120	6	N	SI	R131b		hFE-30/120 at IC-100uA;VBE(1-2) max-10mV at IC-100uA.
9	MD1120F	6	N-AN	SI	X22	PB	hFE 30/120 at IC 100uA;VBE(1-2)max 10mV at IC 100uA.
10	MD1121	6	N	SI	R131b		hFE-30/120 at IC-100uA;VBE(1-2) max-10mV at IC-100uA.
11	MD1122	6	N	SI	R131b		hFE-30/120 at IC-100uA;VBE(1-2) max-10mV at IC-100uA.
12	MD1123	6	P	SI	R131		hFE-30/120 at IC-100uA;(VBE1-VBE2) max.-10mV at IC-100uA
13	MD1124	6	P	SI	R131		hFE-30/120 at IC-100uA;(VBE1-VBE2) max.-10mV at IC-100uA
14	MD1125	6	P	SI	R131		hFE-30/120 at IC-100uA;(VBE1-VBE2) max.-5.0mV at IC-100uA
15	MD1126	6	N-E	SI	TO78		Pt(both sides)-400mW;VCBO-40V;IC-200mA;hFE-30 min.
16	MD1127	6	N-E	SI	TO78		Pt(both sides)-400mW;VCBO-40V;IC-200mA;hFE-30 min.
17	MD11281	6	N-PE	SI	TO78		Pt(both sides)-400mW;VCBO-40V;hFE-25 min at IC-10mA and VCE-1V.
18	MD1129*	6	NAN	SI	R131b	PA	Pd 625mW(ALL);hFE1/2 0.9 min -1 max;VBE(1-2)5mVdc;ΔVBE(1-2)0.8mVdc.
19	MD1129F*	6	NAN	SI	X22	PB	Pd 400mW(ALL);hFE1/2 0.9 min-1 max;VBE(1-2)5mVdc;ΔVBE(1-2)1mVdc.
20	MD1130	6	P	SI	R131b		hFE-100/300 at IC-100uA;VBE1/2-5.0mV max. at IC-100uA.
21	MD1130F	6	P-AN	SI	X22	PB	hFE 100/300 at IC 100uA;VBE 1/2 5.0mV at IC 100uA.
22	MD1131	6	N-E	SI	TO78		VCBO-30V;VCEO-15V;IC-50mA max;ft-600Mc min;hFE-50 min at IC-1mA.
23	MD1132*	6	N-AN	SI	TO99	PA	Pd 600mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mVdc;ΔVBE(1-2) .80mVdc.
24	MD1134	6	N-E	SI	R131b		Pt 600mW(both sides);VCBO 40V;hFE 50 min. at IC 10mA and VCE 1.0V.
25	MD2369A*	6	N-AN	SI	TO99	PA	Pd 800mW(both sides);hFE1/2 .90;VBE(1-2) 5mV;ΔVBE(1-2)/ΔTA 10uV/°C;ton 15;toff 20ns.
26	MD2369AF*	6	N-AN	SI	TO89	PB	Pd 400mW(both sides);hFE1/2 .90;VBE(1-2) 5mV;ΔVBE(1-2)/ΔTA 10uV/°C;ton 15;toff 20ns.
27	MD2369B*	6	N-ANA	SI	TO99	PA	Pd 600mW(both sides);hFE1/2 .80;VBE(1-2) 10mV;ΔVBE(1-2)/ΔTA 20uV/°C;ton 15;toff 20ns
28	MD2369BF*	6	N-ANA	SI	TO89	PB	Pd 400mW(both sides);hFE1/2 .80;VBE(1-2) 10mV;ΔVBE(1-2)/ΔTA 20uV/°C;ton 15;toff 20ns
29#	MD2974*	6	N-PL	SI	R148a		Pd 250mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2) 800uV max.
30#	MD2975*	6	N-PL	SI	R148a		Pd 250mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2) 800uV max.
31#	MD2978*	6	N-PL	SI	R148a		Pd 250mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2) 800uV max.
32#	MD2979*	6	N-PL	SI	R148a		Pd 250mW(both sides);hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2) 800uV max.
33	MD3250A*	6	P-AN	SI	R131f	PA	Pd 625mW(both sides);hFE1/2 .900 min;VBE(1-2) 3.0mVdc;ΔVBE1/2 .800mVdc.
34	MD3250AF*	6	P-AN	SI	X22		Pd 400mW(both sides);hFE1/2 .900 min;VBE(1-2) 3.0mVdc;ΔVBE1/2 .800mVdc.
35	MD3251A*	6	P-AN	SI	R131f	PA	Pd 625mW(both sides);hFE1/2 .900 min;VBE(1-2) 3.0mVdc;ΔVBE1/2 .800mVdc.
36	MD3251AF*	6	P-AN	SI	X22		Pd 400mW(both sides);hFE1/2 .900 min;VBE(1-2) 3.0mVdc;ΔVBE1/2 .800mVdc.
37	MD3409*	6	N-AN	SI	TO99	PA	Pd 825mW(both sides);ΔVBE(1-2) 1.6mVdc.
38	MD3410*	6	N-AN	SI	TO99	PA	Pd 625mW(both sides);ΔVBE(1-2) .80mVdc.
39	MD4280*	6	PAN	SI	R131b	PA	Pd 800mW(Both);hFE1/2 0.8 min - 1 max;VBE(1-2)10mVdc.
40	MD4281*	6	PAN	SI	R131b	PA	Pd 800mW(Both);hFE1/2 0.8 min - 1 max;VBE(1-2)10mVdc.
41	MD5000*	6	P-EA	SI	TO99	PA	Pd(both sides)-400mW;VCEO-15V;hFE1/2-.70 min;VBE(1-2)-5.0mV max.
42	MD5000A*	6	P-EA	SI	TO99	PA	Pd(both sides)-400mW;VCEO-15V;hFE1/2-.90 min;VBE(1-2)-5.0mV max.
43	MD5000B*	6	P-EA	SI	TO99	PA	Pd(both sides)-400mW;VCEO-15V;hFE1/2-.80 min;VBE(1-2)-10mV max.
44	MD8001*	6	N-AN	SI	R131f	PA	Pd 625mW(both side);VBE(1-2)15mVdc max;IEBO 50nAdc max;Cib 2.3pF typ.
45	MD8002*	6	N-AN	SI	R131f	PA	Pd 625mW(both sides);VBE(1-2)15mVdc max;IEBO 50nAdc max;Cib 2.3pF typ.
46	MD8003*	6	N-AN	SI	R131f	PA	Pd 625mW(both sides);VBE(1-2)15mVdc max;IEBO 50nAdc max;Cib 2.3pF typ.
47	MMF1*	6	N	SI	R206	DH	Yfs1/2 .98 min;VGS(1-2) 5.0mVdc max;IDSS1/2 .95;Yos1/2 1.0umΩ max.
48	MMF2*	6	N	SI	R206	DH	Yfs1/2 .98 min;VGS(1-2) 5.0mVdc max;IDSS1/2 .95;Yos1/2 1.0umΩ max.
49	MMF3*	6	N	SI	R206	DH	Yfs1/2 .98 min;VGS(1-2) 5.0mVdc max;IDSS1/2 .90;Yos1/2 1.0umΩ max.
50	MMF4*	6	N	SI	R206	DH	Yfs1/2 .98 min;VGS(1-2) 5.0mVdc max;IDSS1/2 .90;Yos1/2 1.0umΩ max.
51	MMF5*	6	N	SI	R206	DH	Yfs1/2 .98 min;VGS(1-2) 5.0mVdc max;IDSS1/2 .90;Yos1/2 1.0umΩ max.
52	MMF6*	6	N	SI	R206	DH	Yfs1/2 .98 min;VGS(1-2) 5.0mVdc max;IDSS1/2 .90;Yos1/2 1.0umΩ max.
53	MP2060-1	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-30 min., 45 max.
54	MP2060-2	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-40 min., 60 max.
55	MP2060-3	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-50 min., 75 max.
56	MP2060-4	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-60 min., 90 max.
57	MP2060-5	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-80 min., 120 max.
58	MP2060-6	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-100 min., 150 max.
59	MP2060-7	6	P	Ge	TO3	C	Matched Pair of MP2060; hFE-130 min., 200 max.
60	MP2061-1	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-30 min., 45 max.
61	MP2061-2	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-40 min., 60 max.
62	MP2061-3	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-50 min., 75 max.
63	MP2061-4	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-60 min., 90 max.
64	MP2061-5	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-80 min., 120 max.
65	MP2061-6	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-100 min., 150 max.
66	MP2061-7	6	P	Ge	TO3	C	Matched Pair of MP2061; hFE-130 min., 200 max.
67	MP2062-1	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-30 min., 45 max.
68	MP2062-2	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-40 min., 60 max.
69	MP2062-3	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-50 min., 75 max.
70	MP2062-4	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-60 min., 90 max.
71	MP2062-5	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-80 min., 120 max.
72	MP2062-6	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-100 min., 150 max.
73	MP2062-7	6	P	Ge	TO3	C	Matched Pair of MP2062; hFE-130 min., 200 max.
74	MP2063-1	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-30 min., 45 max.
75	MP2063-2	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-40 min., 60 max.
76	MP2063-3	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-50 min., 75 max.
77	MP2063-4	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-60 min., 90 max.
78	MP2063-5	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-80 min., 120 max.
79	MP2063-6	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-100 min., 150 max.
80	MP2063-7	6	P	Ge	TO3	C	Matched Pair of MP2063; hFE-130 min., 200 max.
81	NDF9401*	6	N-EQ	SI	TO78	PE	Pt 500mW;VGS(1-2)-5.0mV;ΔVGS(1-2)-5.0uV/°C;Yfs1/2 .97 min;CMRR 120db min.
82	NDF9402*	6	N-EQ	SI	TO78	PE	Pt 500mW;VGS(1-2)-5.0mV;ΔVGS(1-2)-10uV/°C;Yfs1/2 .97 min;CMRR 120db min.
83	NDF9403*	6	N-EQ	SI	TO78	PE	Pt 500mW;VGS(1-2)-10mV;ΔVGS(1-2)-10uV/°C;Yfs1/2 .95 min;CMRR 110db min.
84	NDF9404*	6	N-EQ	SI	TO78	PE	Pt 500mW;VGS(1-2)-15mV;ΔVGS(1-2)-10uV/°C;Yfs1/2 .95 min;CMRR 110db min.
85	NDF9405*	6	N-EQ	SI	TO78	PE	Pt 500mW;VGS(1-2)-25mV;ΔVGS(1-2)-25uV/°C;Yfs1/2 .90 min;CMRR 100db min.
86	NDF9406*	6	N-EQ	SI	R120	PC	Pt 375mW;VGS(1-2)-5.0mV;ΔVGS(1-2)-5.0uV/°C;Yfs1/2 .97 min;CMRR 120db min.
87	NDF9407*	6	N-EQ	SI	R120	PC	Pt 375mW;VGS(1-2)-5.0mV;ΔVGS(1-2)-10uV/°C;Yfs1/2 .97 min;CMRR 120db min.
88	NDF9408*	6	N-EQ	SI	R120	PC	Pt 375mW;VGS(1-2)-10mV;ΔVGS(1-2)-10uV/°C;Yfs1/2 .95 min;CMRR 110db min.
89	NDF9409*	6	N-EQ	SI	R120	PC	Pt 375mW;VGS(1-2)-15mV;ΔVGS(1-2)-10uV/°C;Yfs1/2 .95 min;CMRR 110db min.
90	NDF9410*	6	N-EQ	SI	R120	PC	Pt 375mW;VGS(1-2)-25mV;ΔVGS(1-2)-25uV/°C;Yfs1/2 .90 min;CMRR 100db min.
91	SA2253*	6	N	SI	TO78		VCBO-40V min;hFE1/hFE2-.7/1.0;VBE1-VBE2-20mV at IC-100uA
92	SA2254	6	N	SI	TO78		hFE1/hFE2-.8-1.0;VBE1-VBE2-10mV at IC-100uA;VCBO-60V min.
93	SA2255	6	N	SI	TO78		VCBO-45V min;hFE1/hFE2-.8-1.0;VBE1-VBE2-10mV at IC-50uA
94	SA2644*	6	N-PE	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-.50mV max.
95	SA2648*	6	N-PF	SI	TO78		Pt-.6W;hFE1/2-.9 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-.3mV max.
96	SA2710*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
97	SA2711*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
98	SA2712*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-3mV max;ΔVBE(1-2)/ΔT-5uV/deg.C.
99	SA2713*	6	N	SI	TO78		Pt-.6W;hFE1/2-.80 min;VBE(1-2)-3mV max;ΔVBE(1-2)/ΔT-5uV/deg.C.
100	SA2714*	6	N	SI	TO78		Pt-.6W;hFE1/2-.80 min;VBE(1-2)-5mV max;ΔVBE(1-2)/ΔT-10uV/deg.C.
101	SA2715*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
102	SA2716*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
103	SA2717*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
104	SA2718*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-3mV max;ΔVBE(1-2)/ΔT-5uV/deg.C.
105	SA2719*	6	N	SI	TO78		Pt-.6W;hFE1/2-.80 min;VBE(1-2)-5mV max;ΔVBE(1-2)/ΔT-10uV/deg.C.
106	SA2720*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
107	SA2721*	6	N	SI	TO78		Pt-.6W;hFE1/2-.80 min;VBE(1-2)-5mV max;ΔVBE(1-2)/ΔT-10uV/deg.C.
108	SA2722*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
109	SA2723*	6	N	SI	TO78		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-3mV max;ΔVBE(1-2)/ΔT-5uV/deg.C.
110	SA2724*	6	N	SI	TO78		Pt-.6W;hFE1/2-.80 min;VBE(1-2)-5mV max;ΔVBE(1-2)/ΔT-10uV/deg.C.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	L E A D E	DESCRIPTION
1	SA2738*	6 N	N	SI	T078		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-1.5mV max;ΔVBE(1-2)/ΔT-3uV/deg.C.
2	SA2739*	6 N	N	SI	T078		Pt-.6W;hFE1/2-.90 min;VBE(1-2)-2.5mV max;ΔVBE(1-2)/ΔT-5uV/deg.C.
3	SDF500*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 3mV;ΔVGS(1-2)/ΔT 5.0uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
4	SDF501*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 5.0mV;ΔVGS(1-2)/ΔT 5.0uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
5	SDF502*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 10mV;ΔVGS(1-2)/ΔT 10uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
6	SDF503*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 15mV;ΔVGS(1-2)/ΔT 20uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .95 min
7	SDF504*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 20mV;ΔVGS(1-2)/ΔT 30uV/°C;IDSS 1/2 .90 min;Yfs 1/2 .90 min
8	SDF505*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 3mV;ΔVGS(1-2)/ΔT 5.0uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
9	SDF506*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 5mV;ΔVGS(1-2)/ΔT 5.0uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
10	SDF507*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 10mV;ΔVGS(1-2)/ΔT 10uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
11	SDF508*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 15mV;ΔVGS(1-2)/ΔT 20uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .95 min
12	SDF509*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 20mV;ΔVGS(1-2)/ΔT 30uV/°C;IDSS 1/2 .90 min;Yfs 1/2 .90 min
13	SDF510*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 3mV;ΔVGS(1-2)/ΔT 5.0uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
14	SDF511*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 5mV;ΔVGS(1-2)/ΔT 5.0uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
15	SDF512*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 10mV;ΔVGS(1-2)/ΔT 10uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .97 min
16	SDF513*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 15mV;ΔVGS(1-2)/ΔT 20uV/°C;IDSS 1/2 .95 min;Yfs 1/2 .95 min
17	SDF514*	6 N-PEØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 20mV;ΔVGS(1-2)/ΔT 30uV/°C;IDSS 1/2 .90 min;Yfs 1/2 .90 min
18	SDF661*	6 NØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 5mV;IDSS 1/2 .95 min;Yfs 1/2 .97 min
19	SDF662*	6 NØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 10mV;IDSS 1/2 .95 min;Yfs 1/2 .97 min
20	SDF663*	6 NØ	N	SI	T071	PJ	Pt 500mW;VGS(1-2) 15mV;IDSS 1/2 .95 min;Yfs 1/2 .95 min
21	SU2080*	6 N	N	SI	T071	PJ	Pt-250mW; gm 1/2-.90 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-35uV/Deg.C.
22	SU2081*	6 N	N	SI	T071	PJ	Pt-250mW; gm 1/2-.90 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-60uV/Deg.C.
23	SU2385*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 5mV max;ΔVGS/ΔT 10uV/°C max.
24	SU2386A*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 5mV max;ΔVGS/ΔT 10uV/°C max.
25	SU2386B*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 10mV max;ΔVGS/ΔT 10uV/°C max.
26	SU2386A*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 10mV max;ΔVGS/ΔT 10uV/°C max.
27	SU2387*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 10mV max;ΔVGS/ΔT 25uV/°C max.
28	SU2387A*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 10mV max;ΔVGS/ΔT 25uV/°C max.
29	SU2388*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 15mV max;ΔVGS/ΔT 25uV/°C max.
30	SU2388A*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 15mV max;ΔVGS/ΔT 25uV/°C max.
31	SU2389*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 20mV max;ΔVGS/ΔT 40uV/°C max.
32	SU2389A*	6 NØ	N	SI	T071	PJ	Pt 300mW;VGS(1-2) 20mV max;ΔVGS/ΔT 40uV/°C max.
33	SU2655*	6 NØ	N	SI	T071	PJ	Pt 600mW;VGS(1-2) 15mV max;ΔVGS/ΔT 25uV/°C max.
34	TD100*	6 N-PL	N	SI	R138		Pt-.40W;hFE1/2-.90 min;VBE(1-2)-5mV max;ΔVBE(1-2)/ΔT-20uV/deg.C max
35	TD101*	6 N-PL	N	SI	R138	PN	Pt-.40W;hFE1/2-.90 min;VBE(1-2)-10mV max;ΔVBE(1-2)/ΔT-30uV/deg.C max
36	TD200*	6 N-PLØ	N	SI	R138	PL	Pt 400mW;hFE1/2-.90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 20uV/°C max.
37	TD201*	6 N-PLØ	N	SI	R138	PL	Pt 400mW;hFE1/2-.90 min;VBE(1-2) 10mV max;ΔVBE(1-2)/ΔT 20uV/°C max.
38	TD224*	6 N	N	SI	R131b		PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 10mV/°C;BVCEO 50V;BVCEO 40V
39	TD225*	6 N	N	SI	R131b		PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 10mV/°C;ΔVBE1-VBE2 10uV/°C
40	TD226*	6 N	N	SI	R131b		PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 5.0mV/°C;ΔVBE1-VBE2 10uV/°C
41	TD227*	6 N	N	SI	R131b	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 5.0mV/°C;ΔVBE1-VBE2 10uV/°C
42	TD230*	6 NØ	N	SI	R131c	PA	PT 400 mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 45V;BVCEO 45V
43	TD230*	6 NØ	N	SI	R131c	PA	PT 400 mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 45V;BVCEO 45V
44	TD232*	6 N	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 45V;BVCEO 45V
45	TD233*	6 N	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 45V;BVCEO 45V
46	TD234*	6 NØ	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 45V;BVCEO 45V
47	TD235*	6 NØ	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 45V;BVCEO 45V
48	TD237*	6 NØ	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 45V;BVCEO 45V
49	TD238*	6 NØ	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 45V;BVCEO 45V
50	TD240*	6 NØ	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 5.0uV/°C;BVCEO 60V;BVCEO 50V
51	TD242*	6 NØ	N	SI	R131c	PA	hFE1(2)90min;VBE(1-2)3.0mV max;ΔVBE(1-2)/ΔT 10uV/°C max
52	TD243*	6 NØ	N	SI	R131c	PA	PT 400 mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 5.0uV/°C;BVCEO 45V;BVCEO 45V
53	TD243*	6 NØ	N	SI	R131c	PA	PT 400 mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 5.0uV/°C;BVCEO 45V;BVCEO 45V
54	TD250*	6 N-PLØ	N	SI	R139		Pt 400mW;hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 15uV/°C max.
55	TD400*	6 P-PLØ	N	SI	R138	PN	Pt-400mW;hFE1/2-.90min;VBE1/2-5.0mV max;ΔVBE(1-2)/ΔT-20uV/deg.C.
56	TD401*	6 P-PLØ	N	SI	R138	PN	Pt-400mW;hFE1/2-.90min;VBE1/2-10mV max;ΔVBE(1-2)/ΔT-30uV/deg.C.
57	TD500*	6 P-PLØ	N	SI	R138	PL	Pt 400mW;hFE1/2-.90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 20uV/°C max.
58	TD501*	6 P-PLØ	N	SI	R138	PL	Pt 400mW;hFE1/2-.90 min;VBE(1-2) 10mV max;ΔVBE(1-2)/ΔT 30uV/°C max.
59	TD509*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 25V;BVCEO 20V
60	TD510*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 25V;BVCEO 20V
61	TD512*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 25V;BVCEO 20V
62	TD513*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 25V;BVCEO 20V
63	TD517*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 50V;BVCEO 40V
64	TD518*	6 P	N	SI	T099	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 50V;BVCEO 40V
65	TD525*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 60V;BVCEO 80V
66	TD528*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .80/1.0;ΔVBE1-VBE2 20uV/°C;BVCEO 60V;BVCEO 80V
67	TD527*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 60V;BVCEO 80V
68	TD528*	6 P	N	SI	R131c	PA	PT 400mW;HFE1/HFE2 .90/1.0;ΔVBE1-VBE2 10uV/°C;BVCEO 60V;BVCEE 80V
69	TD550*	6 P-PLØ	N	SI	R138		Pt 400mW;hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 1.5uV/°C. max.
70	TS25	6 N-PE	N	SI	T078	PJ	FET;BVGSS 50V;IDSS 8.0mA max;Yfs match 5.0%;Yfs 1500umhos min.
71	TS26	6 N-PE	N	SI	T078	PJ	FET;BVGSS 50V;IDSS 8.0mA max;Yfs match 10%;Yfs 1500umhos min.
72	TS27	6 N-PE	N	SI	T078	PJ	FET;BVGSS 50V;IDSS 8.0mA max;Yfs match 20%;Yfs 1500umhos min.
73#	uPA15A*	6 N-D	N	SI	R131h	PD	Dual Trans for Lo Level Diff Ampl;hFE1/HFE2 .80 min at Vce 10V,ic 1.0mA
74#	uPA33A*	6 P-MOS	N	SI	T099	PW	Dual FET;ΔVGS 20Vmax;ΔVGS(th) 20Vmax;gm 1/gm2 90min
75#	uPA34A*	6 N-MOS	N	SI	T078	PW	Dual FET;ΔIDSS 10mA max;IDSS 2.5mA max;IGSS 10pA max
76#	uPA37A*	6 N-E	N	SI	R131h	PD	Dual Trans for Hi Speed Lo Level Diff Ampl;f 400MHz typ
77#	uPA38A*	6 N-EØ	N	SI	T078	QS	Dual Trans for Lo Noise Lo Level Diff Ampl;NF 1.0dB typ at 1.0kHz,Vce 5.0V,ic 10uA
78#	uPA39A*	6 N-EØ	N	SI	T078	QS	Dual Trans for Lo Noise Lo Level Diff Ampl;NF 2.0dB typ at 1.0kHz,Vce 5.0V,ic 10uA
79#	uPA49A*	6 NØ	N	SI	T078	QS	Dual Trans for Lo Level Diff Ampl;hFE1/HFE2 .80 min,1.25 max at Vce 1.0V,ic 1.0mA
80	U231*	6 N	N	SI	R120		IG(1-2)10nA max;VGS(1-2)10mV max;ΔVGS(1-2)/ΔT 10uV/°C.
81	U232*	6 N	N	SI	R120		IG(1-2)10nA max;VGS(1-2)10mV max;ΔVGS(1-2)/ΔT 25uV/°C.
82	U233*	6 N	N	SI	R120		IG(1-2)10nA max;VGS(1-2)15mV max;ΔVGS(1-2)/ΔT 50uV/°C.
83	U234*	6 N	N	SI	R120		IG(1-2)10nA max;VGS(1-2)20mV max;ΔVGS(1-2)/ΔT 75uV/°C.
84	U235*	6 N	N	SI	R120		IG(1-2)10nA max;VGS(1-2)25mV max;ΔVGS(1-2)/ΔT 100uV/°C.
85	U257*	6 N	N	SI	T099	PJ	IDSS 1/2 1.0 max;gfs 1/2 1.0 max;gss(1-2) 20umho max;VGS(1-2) 100mV max.
86	U401	6 N	N	SI	T071	PJ	BVG(1-2)50V;ΔVGS(1-2)/ΔT 10uV/°C;VGS(1-2) 5mV;JFET
87	U402	6 N	N	SI	T071	PJ	BVG(1-2)50V;ΔVGS(1-2)/ΔT 10uV/°C;VGS(1-2) 10mV;JFET
88	U403	6 N	N	SI	T071	PJ	BVG(1-2)50V;ΔVGS(1-2)/ΔT 25uV/°C;VGS(1-2) 10mV;JFET
89	U404	6 N	N	SI	T071	PJ	BVG(1-2)50V;ΔVGS(1-2)/ΔT 25uV/°C;VGS(1-2) 15mV;JFET
90	U405	6 N	N	SI	T071	PJ	BVG(1-2)50V;ΔVGS(1-2)/ΔT 40uV/°C;VGS(1-2) 20mV;JFET
91	U406	6 N	N	SI	T071	PJ	BVG(1-2)50V;ΔVGS(1-2)/ΔT 80uV/°C;VGS(1-2) 40mV;JFET
92	U421	6 N*	N	SI	T099	PF	CMMR95dB TYP;VGS(1-2)10mVmax;VGS(1-2)/ΔT 10uV/°C max;JFET
93	U422	6 N*	N	SI	T099	PF	CMMR 90dB TYP;VGS(1-2)15mV;VGS(1-2)/ΔT 25uV/°C max;JFET
94	U423	6 N*	N	SI	T099	PF	CMMR90dB TYP;VGS(1-2)25mVmax;VGS(1-2)/ΔT 40uV/°C max;JFET
95	U424	6 N*	N	SI	T099	PF	CMMR95dB TYP;VGS(1-2)10mVmax;VGS(1-2)/ΔT 10uV/°C max;JFET
96	U425	6 N*	N	SI	T099	PF	CMMR90dB TYP;VGS(1-2)15mVmax;VGS(1-2)/ΔT 25uV/°C max;JFET
97	U426	6 N*	N	SI	T099	PF	CMMR90dB TYP;VGS(1-2)25mVmax;VGS(1-2)/ΔT 40uV/°C max;JFET
98	U430*	6 N	N	SI	T099	QV	Matched Dual;IDSS 1/2 10% max;Vp 1/2 10% max;gfs 1/2 10% max;VG(1-2)200mV max.
99	U431*	6 N	N	SI	T099	QV	Matched Dual;IDSS 1/2 10% max;Vp 1/2 10% max;gfs 1/2 10% max;VG(1-2)200mV max.
100	UCX2910*	6 N-DØ	N	SI	T078		Pt-.75W;hFE1/2-.90 min;VBE(1-2)-1mV;tr-20ns;tf-20ns.
101#	ZDT40	6 N-PL	N	SI	T078		PL-500mW(both sides);Pair of ZT 82.
102#	ZDT41	6 N-PL	N	SI	T078		PL-500mW(both sides);Pair of ZT 84.
103#	ZDT42	6 N-PL	N	SI	T078		PL-500mW(both sides);VBE(1-2)-5mV max;hFE1/hFE2-1.0 max.
104#	ZDT44	6 N-PL	N	SI	T078		PL-500mW(both sides);VBE(1-2)-10mV max;hFE1/hFE2-1.0 max.
105#	ZDT45	6 N-PL	N	SI	T078		PL-500mW(both sides);VBE(1-2)-10mV max;hFE1/hFE2-1.0 max.
106	2N489	9 P	N	SI	R33	CC	Pt 450mW;n .62 max;RBB 6.8kΩ max;lv 8.0mA min;lp 12uA max;IB 2(MOD) 22mA max.
107	2N489A	9 P	N	SI	R33	CC	Pt .45W max;RBB 6.8kΩ max;n .62 max;lp 12uA max;lv 8.0mA min.
108	JAN2N489A	9 P	N	SI	R33	CA	Pt .60W;VBE 60V;RBB 6.8kΩ max;n .62 max;lp 12uA max.
109	2N489B	9 P	N	SI	R33	CC	Pt 450mW;n .62 max;RBB 6.8kΩ max;lp 8.0uA max;lv 8.0mA min.
110	2N490	9 P	N	SI	R33	CC	Pt 450mW;n .62 max;RBB 9.1kΩ max;lv 8.0mA min;lp 12uA max;IB 2(MOD) 22mA max.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	1	CATEGORY	M	DWG #	L	C	DESCRIPTION
		U	S	A	Y200	E	A	
		S	T	T	s/a	D	D	
		E	R		TO200	E	E	
					Ser.			
1	2N490A	9	P	Si	R33	CC	Pt .45W max;RBBO 9.1kΩ max;n .62 max;lp 12uA max;lv 8.0mA min.	
2	JAN2N490A	9	P	Si	R33	CA	Pt .60W;VB2E 60V;RBB 9.1kΩ max;n .62 max;lp 12uA max.	
3	2N490B	9	P	Si	R33	CC	Pt 450mW;n .62 max;RBBO 9.1kΩ max;lp 6.0uA max;lv 8.0mA min.	
4	2N490C	9	P	Si	R33	CC	Pt .45W;RBB 9.1kohms;n .51 min;VEB(sat) 4.0V max.	
5	2N491	9	P	Si	R33	CC	Pt 450mW;n .68 max;RBB 6.8kΩ max;lv 8.0mA min;lp 12uA max;lv 8.0mA min.	
6	2N491A	9	P	Si	R33	CC	Pt .45W max;RBBO 6.8kΩ max;n .68 max;lp 12uA max;lv 8.0mA min.	
7	JAN2N491A	9	P	Si	R33	CA	Pt .60W;VB2E 60V;RBB 6.8kΩ max;n .68 max;lp 12uA max.	
8	2N491B	9	P	Si	R33	CC	Pt 450mW;n .68 max;RBBO 6.8kΩ max;lp 6.0uA max;lv 8.0mA min.	
9	2N492	9	P	Si	R33	CC	Pt 450mW;n .68 max;RBB 9.1kΩ max;lv 8.0mA min;lp 12uA max;lv 8.0mA min.	
10	2N492A	9	P	Si	R33	CC	Pt .45W max;RBBO 9.1kΩ max;n .68 max;lp 12uA max;lv 8.0mA min.	
11	JAN2N492A	9	P	Si	R33	CA	Pt .60W;VB2E 60V;RBB 9.1kΩ max;n .68 max;lp 12uA max.	
12	2N492B	9	P	Si	R33	CC	Pt 450mW;n .68 max;RBBO 9.1kΩ max;lp 6.0uA max;lv 8.0mA min.	
13	2N492C	9	P	Si	R33	CC	Pt .45W;RBB 9.1kohms;n .56 min;VEB(sat) 4.3V max.	
14	2N493	9	P	Si	R33	CC	Pt 450mW;n .75 max;RBB 6.8kΩ max;lv 8.0mA min;lp 12uA max;lv 8.0mA min.	
15	2N493A	9	P	Si	R33	CC	Pt .45W max;RBBO 6.8kΩ max;n .75 max;lp 12uA max;lv 8.0mA min.	
16	JAN2N493A	9	P	Si	R33	CA	Pt .60W;VB2E 60V;RBB 6.8kΩ max;n .75 max;lp 12uA max.	
17	2N493B	9	P	Si	R33	CC	Pt 450mW;n .75 max;RBBO 6.8kΩ max;lp 6.0uA max;lv 8.0mA min.	
18	2N494	9	P	Si	R33	CC	Pt 450mW;n .75 max;RBB 9.1kΩ max;lv 8.0mA min;lp 12uA max;lv 8.0mA min.	
19	2N494A	9	P	Si	R33	CC	Pt .45W max;RBBO 9.1kΩ max;n .75 max;lp 12uA max;lv 8.0mA min.	
20	JAN2N494A	9	P	Si	R33	CA	Pt .60W;VB2E 60V;RBB 9.1kΩ max;n .75 max;lp 12uA max.	
21	2N494B	9	P	Si	R33	CC	Pt 450mW;n .75 max;RBBO 9.1kΩ max;lp 6.0uA max;lv 8.0mA min.	
22	2N494C	9	P	Si	R33	CC	Pt .45W;RBB 9.1kohms;n .62 min;VEB1 4.6V max.	
23	2N1671	9	P	Si	R33	CC	Pt .45W;n .62 max;RBB 9.1kohms max;lv 8.0mA min;lp 25uA max.	
24	2N1671A	9	P	Si	R33	CC	Pt .45W;n .62 max;RBB 9.1kΩ max;lv 8.0mA min;lp 25uA max.	
25	2N1671B	9	P	Si	R33	CC	Pt 450mW;n .62 max;RBBO 9.1kΩ max;lv 8.0mA min;lp 6.0uA max.	
26	2N1671C	9	P	Si	R33	CC	Pt 450mW;VB2E 30V;VB2B1 35V;RBB 4.7 to 9.1kΩ;n .47 to .62;lv 2(MOD) 6.8 to 22mA.	
27	2N2160	9	P	Si	R33	CC	Pt .45W;VB2B1 35V max;lv 70mA;n .80 max;lp 25uA max.	
28	2N2417	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .62 max;lp 12uA max;lv 2(MOD) 22mA max.	
29	2N2417A	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .62 max;VEB1(sat) 5.0V max;lv 8.0mA min.	
30	JAN2N2417A	9	P	Si	TO72	CA	Pt .35W;VB2E 60V;RBB 6.8kΩ max;n .62 max;lp 12uA max.	
31	2N2417B	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .62 max;lp 6.0uA max;VOB1 3.0V min.	
32	2N2418	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .62 max;lp 12uA max;lv 2(MOD) 22mA max.	
33	2N2418A	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .62 max;VEB1(sat) 5.0V max;lv 8.0mA min.	
34	JAN2N2418A	9	P	Si	TO72	CA	Pt .35W;VB2E 60V;RBB 9.1kΩ max;n .62 max;lp 12uA max.	
35	2N2418B	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .62 max;lp 6.0uA max;VOB1 3.0V min.	
36	2N2419	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .68 max;lp 12uA max;lv 2(MOD) 22mA max.	
37	2N2419A	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .68 max;VEB1(sat) 5.0V max;lv 8.0mA min.	
38	JAN2N2419A	9	P	Si	TO72	CA	Pt .35W;VB2E 60V;RBB 6.8kΩ max;n .68 max;lp 12uA max.	
39	2N2419B	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .68 max;lp 6.0uA max;VOB1 3.0V min.	
40	2N2420	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .68 max;lp 12uA max;lv 2(MOD) 22mA max.	
41	2N2420A	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .68 max;VEB1(sat) 5.0V max;lv 8.0mA min.	
42	JAN2N2420A	9	P	Si	TO72	CA	Pt .35W;VB2E 60V;RBB 9.1kΩ max;n .68 max;lp 12uA max.	
43	2N2420B	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .68 max;lp 6.0uA max;VOB1 3.0V min.	
44	2N2421	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .75 max;lp 12uA max;lv 2(MOD) 22mA max.	
45	2N2421A	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .75 max;VEB1(sat) 5.0V max;lv 8.0mA min.	
46	JAN2N2421A	9	P	Si	TO72	CA	Pt .35W;VB2E 60V;RBB 6.8kΩ max;n .75 max;lp 12uA max.	
47	2N2421B	9	P	Si	R33c	CC	Pt 300mW;RBB 6.8kΩ max;n .75 max;lp 6.0uA max;VOB1 3.0V min.	
48	2N2422	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .75 max;lp 12uA max;lv 2(MOD) 22mA max.	
49	2N2422A	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .75 max;VEB1(sat) 5.0V max;lv 8.0mA min.	
50	JAN2N2422A	9	P	Si	TO72	CA	Pt .35W;VB2E 60V;RBB 9.1kΩ max;n .75 max;lp 12uA max.	
51	2N2422B	9	P	Si	R33c	CC	Pt 300mW;RBB 9.1kΩ max;n .75 max;lp 6.0uA max;VOB1 3.0V min.	
52	2N2646	9	P	Si	TO72	CCs	Pt .30W;VB2E 30V;VB2B1 35V;RBBO 9.1kΩ max;VOB1 3V;IP 5uA;n .56-.75;lv 4mA min	
53	2N2647	9	P	Si	TO72	CCs	Pt .30W;VB2E 30V;VB2B1 35V;RBBO 9.1kΩ max;VOB1 6V;IP 2uA;n .68-.82;lv 8-18mA	
54	2N2840	9	P	Si	TO72	CA	Pt .30W;VB2E 30V;VBB 35V;lp 10uA max;lv 70mA max.	
55	2N3479	9	P	Si	R33	GF	Pc .40W;RBB 9.1kohms max;n .62 max;lv 4.0mA min;lp 20uA max.	
56	2N3480	9	P	Si	R33	GF	Pc .40W;RBBO 9.1kohms max;n .75 max;lv 4.0mA min;lp 20uA max.	
57	2N3481	9	P	Si	R33	GF	Pc .40W;RBBO 9.1kohms max;n .85 max;lv 4.0mA min;lp 20uA max.	
58	2N3483	9	P	Si	R33	GF	Pc .40W;RBBO 9.1kΩ max;n .72 max;lv 4.0mA min;lp 5.0uA max.	
59	2N3484	9	P	Si	R33	GF	Pc .40W;RBBO 9.1kohms max;n .85 max;lv 4.0mA min;lp 5.0uA max.	
60	2N3980	9	P	Si	TO72	CA	Pt .36W;le 50mA;RBB 8.0kohms;n .82 max;lp 2.0uA max;lv 10mA max.	
61	2N4851	9	P	Si	TO72	CA	Pd .30W;RBB 9.1kohms max;n .75 max;lv 2.0mA max;lp 2.0uA max;le(DC).	
62	2N4852	9	P	Si	TO72	CA	Pd .30W;RBB 9.1kohms max;n .85 max;lv 4.0mA max;lp 2.0uA max.	
63	2N4853	9	P	Si	TO72	CA	Pt 300mW;n .85 max;RBBO 9.1kΩ max;lv 6.0mA min;lp 400nA max.	
64	2N4870	9	P	Si	TO92	CB	Pd .30W;VB2B1 35V max;lv 2.0mA min;VOB1 3.0V min;n .75 max.	
65	2N4871	9	P	Si	TO92	CB	Pd .30W;VB2B1 35V max;lv 4.0mA min;VOB1 5.0V min;n .85 max.	
66	2N4891	9	P	Si	R203	CG	Pt 360mW;RBB 9.1kΩ max;n .82 max;VEB1(sat) 4.0V max;VOB1 3.0V min;lp 5.0uA max.	
67	2N4892	9	P	Si	R203	CG	Pt 360mW;RBB 9.1kΩ max;n .69 max;VEB1(sat) 4.0V max;VOB1 3.0V min;lp 2.0uA max.	
68	2N4893	9	P	Si	R203	CG	Pt 360mW;RBB 12kΩ max;n .82 max;VEB1(sat) 4.0V max;VOB1 3.0V min;lp 2.0uA max.	
69	2N4894	9	P	Si	R203	CG	Pt 360mW;RBB 12kΩ max;n .86 max;VEB1(sat) 4.0V max;VOB1 3.0V min;lp 1.0uA max.	
70	2N4947	9	P	Si	R33a	CCs	Pt .36W;RBB 9.1kohms max;n .69 max;lp 2.0uA max.	
71	JAN2N4947	9	P	Si	R33a	CA	Pt .360mW;RBBO 9.1kΩ max;n .69 max;lp 2.0uA max;VB2E 30V.	
72	2N4948	9	P	Si	R33a	CCs	Pt .36W;RBB 12kohms max;n .82 max;lp 2.0uA max.	
73	JAN2N4948	9	P	Si	R33a	CA	Pt .360mW;RBBO 12kΩ max;n .82 max;lp 2.0uA max;VB2E 30V.	
74	2N4949	9	P	Si	R33a	CCs	Pt .36W;RBB 12kohms max;n .86 max;lp 1.0uA max.	
75	JAN2N4949	9	P	Si	R33a	CA	Pt .360mW;RBBO 12kΩ max;n .86 max;lp 1.0uA max;VB2E 30V.	
76	2N5431	9	P	Si	R33c	CA	Pt .30W;n .80 max;RBB 8.5kohms;lp 4.0uA max;lv 2.0mA min.	
77	JAN2N5431	9	P	Si	R33a	CC	Pt 300mW;le 50mA;RBBO 8.5kΩ max;n .80 max;lv 2.0mA min;lp 400nA max.	
78	2N6114	9	N	Si	R33c	CC	Pt 300mW;IP 15uA;lv 1.0mA;RBB 8.2kΩ max;VOB1 3.5V min;n .62 max.	
79	2N6115	9	N	Si	R33c	CC	Pt 300mW;IP 15uA;lv 1.0mA;RBB 15kΩ max;VOB1 3.5V min;n .62 max.	
80	2N6119	9	P	Si	TO18	CE0	Pt 400mW;VT 1.8V max;IP 5.0uA max;lv 1.5mA max;VO 9.0V max;VF 1.0V max.	
81	2N6120	9	P	Si	TO18	CE0	Pt 400mW;VT 600mV max;IP 1.0uA max;lv 1.0mA max;VO 9.0V max;VF 1.0V max.	
82#	2SH11	9	N	Si	TO5		Pc .450mW;n .58-.75;VBB 450ohms;le(DC) 50mA.	
83#	2SH20	9	P	Si	TO18	CB	Pt 200mW;n .90 max;RBB 4.0kohms min;lv 2.0mA min;IP 8.0uA min.	
84#	2SH21	9	P	Si	TO18	CB	Pt 250mW;n .85 max;RBB 4kΩ min;lv 4.0mA min;IP 4.0uA max.	
85#	BRY56	9	PPL	Si	TO92	A	UNIUNION,Programmable Xistor;VGA 70Vmax;IA(av) 175mAmax;IP 5uAmax	
86#	BRY61	9	N-PL	Si			VGA 70V;IA 175mA;IARM 2.5A;Pt 250mW;lp 1.0uA max at IV 50V	
87#	BSV57B	9	PT	Si	R186	CB	RBB 4.7kΩ min;lp 6.0uA max;lv 4.0mA min;Pd 300mW;Intrinsic standoff ratio .68 to .82	
88	D5J37	9	P	Si	R33c	CC*	Pt 300mW;n .85 max;RBBO 12kΩ max;lp 25uA max;lv 4.0mA min;IB2 22mA max	
89	D5J43	9	P	Si	R33c	CC*	Pt 300mW;n .82 max;RBBO 9.1kΩ max;lp 2.0uA max;lv 6.0mA min;IB2 12mA typ	
90	D5J44	9	P	Si	R33c	CC*	Pt 300mW;n .82 max;RBBO 9.1kΩ max;lp 5.0uA max;lv 4.0mA min;IB2 12mA typ	
91	D5J45	9	P	Si	R33c	CC*	Pt 300mW;n .82 max;RBBO 9.1kΩ max;lp 2.0uA max;lv 8.0mA min;IB2 12mA typ	
92	D5K1	9	N-PL	Si	R33c	CCA	Pt .30W;RBB 8.2kohms max;lv 2.0mA typ;n .62 max.	
93	D5K2	9	N-PL	Si	R33c	CCA	Pt .20W;RBB 15kohms max;lv 2.0mA typ;n .62 max.	
94	GET4870	9	P	Si	TO72	CCs	Pt 300mW;n .75 max;Rbb 9.1kΩ max;lp 5.0uA max;lv 2.0mA min.	
95	GET4871	9	P	Si	TO72	CCs	Pt 300mW;n .85 max;RBB 9.1kΩ max;lp 5.0uA max;lv 4.0mA min.	
96	HEPS9001-RT	9		Si	TO92	CE	IT 200mA;IG ±20mA;VGKF 40V;VGKR 5.0V;VAK 40V;Pd 375mW Adjustable.	
97	HEPS9002-RT	9		Si	TO92	A	Pt 300mW;RBB 9.1kΩ max;le 50mA;lv 2.0mA min;Interbase 35V	
98#	KU119B	9	N	Si	S33	CB	Unijunction Transistor;Pd max 25mW;lon 5uA max;fmax 200kHz	
99#	MEU21	9	PA	Si	R110c		Pt 300mW;lp 2.0uA max;Vf 1.5V max;Vo 6.0V min;tr 80ns max.	
100#	MEU22	9	PA	Si	R110c		Pt 300mW;lp 150nA;Vf 1.5V max;Vo 6.0V min;tr 80ns max.	
101#	MMBPU131	9	P	Si	X1566D	CE	Prog UJT;Pd 350mW;Derate 2.8mW/°C;IG±20mA max;ITRM 1A max;ITSM 1A max	
102	MPU131	9	P	Si	TO92	CE	Programmable;pd 375mW;lp 1.2uA;lv 18uA;IT 200mA;tr 40ns	
103	MPU132	9	P	Si	TO92	CE	Programmable;pd 375mW;lp 190nA;lv 18uA;IT 200mA;tr 40 ns	
104	MPU133	9	P	Si	TO92	CE	Programmable;pd 375mW;lp 80nA;lv 18uA;IT 200mA;tr 40ns	
105	MPU8027	9	P	Si	TO92	CF	Pd 375mW;lp 2.0uA max;Vt 1.8V max;Vf 50uA max;Vf 1.5V max;Vo 6.0V min;tr 80ns max.	
106	MPU8028	9	P	Si	TO92	CF	Pd 375mW;lp 150nA max;Vt 600mV max;Vf 50uA max;Vf 1.5V max;Vo 6.0V min;tr 80ns max.	
107#	MTU21	9	P-PLPS	Si	XXXXD	D	UNIUNION,Programmable;IP 2.0uAmax at Vs 10V/Rg 1.0MΩ;Voff 600mV max	
108#	MTU22	9	P-PLPS	Si	XXXXD	D	UNIUNION,Programmable;IP 15uAmax at Vs 10V/Rg 1.0MΩ;Voff 600mV max	
109	MU10	9	P-ANT	Si	TO10	CB	Pt 300mW;n 5.0uA;n .85;RBB 10kΩ;IB2(mod)50mA;lv 10mA;IA(11 Max);VEB1(sat) 2V typ.	
110	MU20							



# 15. MISCELLANOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	L C O A D E	DESCRIPTION
1	MU2646	9	PN-AN	SI	T092	CB	VB2B1 35V max;PD 300mW;N .56 min;.75 max;rBB 9.1kΩ max;IP 1.0uA,IV 8.0mA typ.
2	MU2646M	9	PN-AN	SI	T018	CH	VB2B1 35V max;PD 300mW max;N .56 min;.75 max;rBB 9.1kΩ max;IP 1.0uA,IV 4.0mA typ.
3	MU4891	9	PANT	SI	R196b	CB	Pt .30W;n .82 max;rBB 9.1kohms;lv 2.0mA;lp 5.0uA max;VEB1(sat)4V max.
4	MU4892	9	PANT	SI	R196b	CB	Pt .30W;n .69 max;rBB 9.1kohms;lv 2.0mA;lp 2.0uA max;VEB1(sat)4V max.
5	MU4893	9	PANT	SI	R196b	CB	Pt .30W;n .82 max;rBB 12kohms;lv 2.0mA;lp 2.0uA max;VEB1(sat)4V max.
6	MU4894	9	PANT	SI	R196b	CB	Pt .30W;n .86 max;rBB 12kohms;lv 2.0mA;lp 1.0uA max;VEB1(sat)4V max.
7	P2646	9		SI	T092	CH	RBB 4.7-9.1KΩ;Intr Standoff Ratio .56-.75;lv 4.0mA(Min);Max Ip 5.0uA
8	P2647	9		SI	T092	CH	RBB 4.7-9.1KΩ;Intr Standoff Ratio .68-.82;lv 4.0mA(Min);Max Ip 5.0uA
9#	TIS43	9	P	SI	T092	CD	Pt 360mW;n .820 max;lp 5.0uA max;rBB 9.1kΩ max;IEBO 10nA max.
10	W4891	9		SI	T092	CH	RBB 4.009.1KΩ;Intr Standoff Ratio .51-.69;lv 2.0mA(Min);Max Ip 5.0uA
11	W4892	9		SI	T092	CH	RBB 4.009.1KΩ;Intr Standoff Ratio .55-.82;lv 2.0mA(Min);Max Ip 2.0uA
12	W4893	9		SI	T092	CH	RBB 4.0-12.0KΩ;Intr Standoff Ratio .55-.82;lv 2.0mA(Min);Max Ip 2.0uA
13	W4894	9		SI	T092	CH	RBB 4.0-12.0KΩ;Intr Standoff Ratio .74-.86;lv 2.0mA(Min);Max Ip 1.0uA
14	2N941*	10	P-A	SI	T018	A	Voff-1.0mV max; loff-1.0n Amps.
15	2N942*	10	P-A	SI	T018	A	Voff-3.0mV max; loff-3.0n Amps.
16	2N943*	10	P-A	SI	T018	A	Voff-2.0mV max; loff-1.0n Amps; fab-1.0Mc min.
17	2N944*	10	P-A	SI	T018	A	Voff-3.0mV max; loff-1.5n Amps; fab-1.0Mc min.
18	2N945*	10	P-A	SI	T018	A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
19	2N946*	10	P-A	SI	T018	A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
20	2N1917*	10	P-A	SI	T05	A	Voff-1.0mV max; loff-1.0n Amps.
21	2N1918*	10	P-A	SI	T05	A	Voff-3.0mV max; loff-3.0n Amps.
22	2N1919*	10	P-A	SI	T05	A	Voff-2.0mV max; loff-1.0n Amps; fab-1.0Mc min.
23	2N1920*	10	P-A	SI	T05	A	Voff-3.0mV max; loff-1.5n Amps; fab-1.0Mc min.
24	2N1921*	10	P-A	SI	T05	A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
25	2N1922*	10	P-A	SI	T05	A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
26	2N2162*	10	P-PA	SI	T05	A	Voff-2.0mV max; rs-20 ohms; ft-14Mc min.
27	2N2163*	10	P-PA	SI	T05	A	Voff-2.0mV max; rs-20 ohms; ft-14Mc min.
28	2N2164*	10	P-PA	SI	T05	A	Voff-1.5mV max; rs-20 ohms; ft-24Mc min.
29	2N2165*	10	P-PA	SI	T05	A	Voff-3.0mV max; rs-20 ohms; ft-10Mc min.
30	2N2166*	10	P-PA	SI	T05	A	Voff-3.0mV max; rs-30 ohms; ft-10Mc min.
31	2N2167*	10	P-PA	SI	T05	A	Voff-2.5mV max; rs-20 ohms; ft-16Mc min.
32	2N2181	10	P	SI	T01		Pc-150mW;VCBO-25V max;VCEO-25V max;VEBO-25V max;Voff-4mV max.
33	2N2184	10	P	SI	T01		Matched Pair of 2N2183.
34	2N2185*	10	P	SI	R177	A	Voff 2.5mV max;ts 250ns max.
35	2N2186*	10	P	SI	R177	A	Voff 2.5mV max;ΔVoff 50uV max;ts 250ns max.
36	2N2187*	10	P	SI	R177	A	Voff 2.5mV max;ΔVoff 50uV max;ts 250ns max.
37	2N2274*	10	PA	SI	R177	A	Voff 3.5mV max;r(sat)17Ω max;ts 250ns max.
38	2N2275*	10	PA*	SI	R177	A	Voff 3.5mV max;r(sat)17Ω max;ts 250ns max;VBE(1-2)± 100uV max.
39	2N2276*	10	PA	SI	R177	A	Voff 2.25mV max;r(sat)17Ω max;ts 250ns max.
40	2N2277*	10	PA*	SI	R177	A	Voff 2.25mV max;r(sat)17Ω max;ts 250ns max;VBE(1-2)± 100uV max.
41	2N2278*	10	PA	SI	R177	A	Voff 2.25mV max;r(sat)18Ω max;ts 250ns max.
42	2N2279*	10	PA*	SI	R177	A	Voff 2.25mV max;r(sat)18Ω max;ts 250ns max;VBE(1-2)± 50uV max.
43	2N2280*	10	PA	SI	R177	A	Voff 2.0mV max;r(sat)18Ω max;ts 250ns max.
44	2N2281*	10	PA*	SI	R177	A	Voff 2.0mV max;r(sat)18Ω max;ts 250ns max;VBE(1-2)± 100uV max.
45	2N2330*	10	N	SI	T05	A	Voff-.75mV max;loff-1.0nA;ft-100Mc min.
46	2N2331*	10	N	SI	T018	A	Voff-.75mV max;loff-1.0nA;ft-100Mc min.
47	2N2432*	10	N	SI	T018	A	Pc-600mW at 25 deg.C Case;VEC(off)-50mV;Ccb-12pf;r(ON)-20 ohms
48	2N2432A*	10	N	SI	T018	A	Pc-600mW at 25 deg.C Case;ICES-10nA;hFE(INV)-3.0;VEC(ofs)-70mV max.
49	2N2569*	10	N-PE	SI	T018	A	Pc-300mW;Voff-50mV max;hFE-50 min;loff-2.0nA max.
50	2N2570*	10	N-PE	SI	T018	A	Pc-300mW;Voff-1.0mV max;hFE-50 min;loff-2.0nA max.
51	2N2872*	10	P	SI	T05	A	Voff-1.5mV max;Voff(1-2)-200uV max;hFE-15 min.
52	2N2944A	10	P	SI	T046	A	Pt-400mW;rec(on)-4.0ohms max;VEC(ofs)-30mV max.
53	JAN2N2944A*	10	PA	SI	T046	A	Voff-.30mV max;rec(on)-4.0Ω max;hFE(inv)-50 min;tr-100nsec.
54	2N2945A	10	P	SI	T046	A	Pt-400mW;rec(on)-6.0ohms max;VEC(ofs)-50mV max.
55	JAN2N2945A*	10	PA	SI	T046	A	Voff-.50mV max;rec(on)-6.0Ω max;hFE(inv)-30 min;tr-100nsec.
56	2N2946A	10	P	SI	T046	A	Pt-400mW;rec(on)-8.0Ω max;VEC(ofs)-80mV max.
57	JAN2N2946A*	10	PA	SI	T046	A	Voff-.80mV max;rec(on)-8.0Ω max;hFE(inv)-20 min;tr-100nsec.
58	2N3153	10	NA	SI	T018	A	hFE(inv) 2.0 min;r(on) 15Ω max;VCBO,VEBO,VECO 15V;Pt 300mW;ft 30MHz min.
59	2N3217*	10	P-E	SI	T046	A	Voff-1.0mV max; Rsat-30 ohms max. at IE-10mA;IB-1.0mA max.
60	2N3218*	10	P-E	SI	T046	A	Voff-2.0mV max; Rsat-50 ohms max. at IE-10mA;IB-1.0mA max.
61	2N3219*	10	P-E	SI	T046	A	Voff-3.0mV max; Rsat-80 ohms max. at IE-10mA;IB-1.0mA max.
62	2N3317*	10	P	SI	R177	A	Voff-1.75mV max. at IB-50mA;rs-18 ohms max. at IB-1mA;IE-10mA
63	2N3318*	10	P	SI	R177	A	Voff-1.5mV max. at IB-50mA;rs-18 ohms max. at IB-1mA;IE-10mA
64	2N3319*	10	P	SI	R177	A	Voff-1.5mV max. at IB-50mA;rs-18 ohms max. at IB-1mA;IE-10mA
65	2N3343*	10	PA	SI	T05	A	Voff-1.2mV max;hFC-4 min;R(at)-35 ohms max;Toff-2.5uSec max.
66	2N3344*	10	PA	SI	T05	A	Voff-1.2mV max;hFC-1.5 min;R(sat)-20 ohms max;Toff-2.5uSec max.
67	2N3345*	10	PA	SI	T05	A	Voff-3.0mV max;hFC-1.2 min;R(sat)-25 ohms max;Toff-2.5uSec max.
68	2N3346*	10	PA	SI	T05	A	Voff-1.2mV max;hFC-1.5 min;R(sat)-20 ohms max;Toff-2.5uSec max.
69	2N3401*	10	P	SI	T05	A	Voff-.01V max;hFE(inv)-1.85 min;R(sat)-50ohms.
70	2N3609*	10	P	SI	T077	PT	gfs 1/2-.80min-1.0max;VGST(1-2)-100mVmax;crss-2.0pf max.
71	2N3677	10	P	SI	T046	A	Voff-1.0mV;rs-8.0 ohms max;hFE/ at 1 Mc-5.0.
72	2N3840	10	P	SI	T046	A	Pc-400mW;BVCEO-50V;BVCEO-50V;BVEBO-50V;hFE-50 min;/IC-1.0mA
73	2N3841	10	P	SI	T018	A	Pc-300mW;BVCEO-100V;BVCEO-100V;BVEBO-80V;hFE-20 min;/IC-1.0mA
74	2N3842	10	P	SI	T018	A	Pc-300mW;BVCEO-120V;BVCEO-120V;BVEBO-120V;hFE-20 min;/IC-1.0mA
75	2N3910*	10	P	SI	T046	A	Voff-1.2mV max;rd-40ohms max;VCE(sat)-30V max;hFE(inv)-5.0 min.
76	2N3911*	10	P	SI	T046	A	Voff-.90mV max;rd-25ohms max;VCE(sat)-30V max;hFE(inv)-10 min.
77	2N3912*	10	P	SI	T046	A	Voff-.60mV max;rd-20ohms max;VCE(sat)-30V max;hFE(inv)-15 min.
78	2N3913*	10	P	SI	T018	A	Voff-1.2mV max;rd-40 ohms max;VCE(sat)-3V max;hFE(inv)-5.0 min.
79	2N3914*	10	P	SI	T018	A	Voff-.90mV max;rd-25 ohms max;VCE(sat)-3V max;hFE(inv)-10 min.
80	2N3915*	10	P	SI	T018	A	Voff-.60mV max;rd-20 ohms max;VCE(sat)-3V max;hFE(inv)-15 min.
81	2N3977*	10	P	SI	T046	A	Voff-1.25mV max;rd-20 ohms max;VCE(sat)-10mV max.
82	2N3978*	10	P	SI	T046	A	Voff-2.0mV max;rd-35 ohms max;VCE(sat)-15mV max.
83	2N3979*	10	P	SI	T046	A	Voff-3.0mV max;rd-45 ohms max;VCE(sat)-15mV max.
84	2N4980*	10	PA	SI	T046	A	Voff-1.2mV;rs(ON)-16 ohms max;hFE(INV) min-7;VECO-30V max.
85	2N4981*	10	PA	SI	T046	A	Voff-1.4mV;rs(ON)-18 ohms max;hFE(INV) min-6;VECO-50V max.
86	2N4982*	10	PA	SI	T046	A	Voff-1.6mV;rs(ON)-20 ohms max;hFE(INV) min-5;VECO-70V max.
87	2N5066*	10	NA	SI	T046	A	Pt-400mW;VCES-20V;Voff-1.0mV max;rs(ON)-8.0 ohms max.
88	2N5229*	10	P	SI	T046	A	Voff-.50mV;hFE(inv)-15;r(on)-8.0 ohms;ccb-5.0pf.
89	2N5230*	10	P	SI	T046	A	Voff-.50mV;hFE(inv)-15;r(on)-8.0 ohms;ccb-5.0pf.
90	2N5231*	10	P	SI	T046	A	Voff-.80mV;hFE(inv)-15;r(on)-10 ohms;ccb-5.0pf.
91	2S306*	10	P-A	SI	T05		Pc-50mW;Voff-1.0mV;IEO-10nA max;rd-200 ohms max.
92	2S307*	10	P-A	SI	T05		Pc-50mW;Voff-1.0mV;IEBX-10nA max;rd-20 ohms max.
93	2S326*	10	P-A	SI	T05		Pc-50mW;Voff-1.0mV;IEO-10nA max;rd-200 ohms max.
94	2S327*	10	P-A	SI	R177b		Pc-50mW;Voff-1.0mV;IEBX-10nA max;rd-20 ohms max.
95	3N62	10	NA	SI	T072	GD	Voff 200uV max;rs(on) 100Ω;BVE1E20 6V;IE1E20 .005uA;ton 250ns.
96	3N63	10	NA	SI	T072	GD	Voff 100uV max;rs(on) 100Ω;BVE1E20 6V;IE1E20 .005uA;ton 250ns.
97	3N64	10	NA	SI	T072	GD	Voff 50uV max;rs(on) 100Ω;BVETE20 8V;IE1E20 .005uA;ton 250ns.
98	3N65	10	NA	SI	T072	GD	Voff 200uV max;rs(on) 100Ω;BVE1E20 10V;IE1E20 .005uA;ton 20ns.
99	3N66	10	NA	SI	T072	GD	Voff 100uV max;rs(on) 100Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
100	3N67	10	NA	SI	T072	GD	Voff 50uV max;rs(on) 100Ω;BVETE20 10V;IE1E20 .005uA;ton 250ns.
101	3N68	10	NA	SI	T072	GD	Voff ±200uV at IB 2mA;rs 50Ω;RT 50mΩ;Pd 100mW max;ton 250ns;toff 250ns.
102	3N68A	10	NA	SI	T072	GD	BVE1E2S 10V min;Voff 20mV max;IE1E2S 5nA max;ton .25us;Toff .25us.
103	3N69	10	NA	SI	T072	GD	Voff 100uV max;rs(on) 50Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
104	3N70	10	NA	SI	T072	GD	Voff 50uV max;rs(on) 50Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
105	3N71*	10	N	SI	T072	GC	Voff 50uV max;hFE(inv)2.5 min;BVE1E2S 8V min;IE1E20 5nA max.
106	3N72	10	N	SI	T072	GC	Voff ±100uV at IB 2mA;RT 25mΩ;RE1E2 15Ω;hFE(inv) 2.5 min;ft 100MHz.
107	3N73	10	N	SI	T072	GC	Voff ±200uV at IB 2mA;RT 50mΩ;RE1E2 25Ω;hFE(inv) 1.5 min;ft 100MHz.
108	3N74*	10	NA	SI	T072	GC	Voff 50uV max;IE1E2S 2nA max;BVE1E2S 18V max;ΔVoff/ΔT 75uV/C.
109	JAN3N74*	10	N	SI	T072	GC	VETE2(ofs)-50uV max;re1e2(on)-10Ω min;Ce2b-5pf max.
110	3N75*	10	NA	SI	T072	GC	Voff 100uV max;IE1E2S 2nA max;BVE1E2S 18V max;ΔVoff/ΔT 125uV/C.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	L C E A D E	DESCRIPTION
1	JAN3N75*	10	N	Si	T072	GC	VE1E2(ofs)-100uV max;re1e2(on)-10Ω min;Ce2b-5pf max.
2	3N76*	10	NA	Si	T072	GC	Voff 200uV max;IE1E2S 2.0nA max;BVE1E2S 18V max;ΔVoff/ΔT 175uV/°C.
3	JAN3N76*	10	N	Si	T072	GC	VE1E2(ofs)-200uV max;re1e2(on)-10Ω min;Ce2b-5pf max.
4	3N77*	10	NA	Si	T072	GC	Voff 50uV max;IE1E2S 5.0nA max;BVE1E2S 12V max;ΔVoff/ΔT 75uV/°C.
5	3N78*	10	NA	Si	T072	GC	Voff 100uV max;IE1E2S 5.0nA max;BVE1E2S 12V max;ΔVoff/ΔT 125uV/°C.
6	3N79*	10	NA	Si	T072	GC	Voff 200uV max;IE1E2S 10nA max;BVE1E2S 12V max;ΔVoff/ΔT 175uV/°C.
7	3N87*	10	N	Si	T072	GC	Voff 50uV max;IE1E2S 20pA max;BVE1E2S 10V max;ΔVoff/ΔT 100uV/°C.
8	3N88*	10	N	Si	T072	GC	Voff 100uV max;IE1E2S 20pA max;BVE1E2S 10V max;ΔVoff/ΔT 100uV/°C.
9	3N90*	10	PA	Si	T072	GD	Voff 50uV max;BVE1E2O 50V;IE1E2O 1.0nA max;ΔVoff/ΔT 75uV/°C.
10	3N91*	10	PA	Si	T072	GD	Voff 100uV max;BVE1E2O 50V;IE1E2O 1.0nA max;ΔVoff/ΔT 125uV/°C.
11	3N92*	10	PA	Si	T072	GD	Voff 200uV max;BVE1E2O 50V;IE1E2O 1.0nA max;ΔVoff/ΔT 175uV/°C.
12	3N93*	10	PA	Si	T072	GD	Voff 50uV max;BVE1E2O 50V;IE1E2O 1.0nA max;ΔVoff/ΔT 75uV/°C.
13	JAN3N93*	10	P	Si	T072	GD	Voff 50uV max;RE1E2-50Ω max;tr-20nsec max;ts-250nsec max.
14	3N94*	10	PA	Si	T072	GD	Voff 100uV max;BVE1E2O 50V;IE1E2O 1.0nA max;ΔVoff/ΔT 125uV/°C.
15	3N95*	10	PA	Si	T072	GD	Voff 200uV max;BVE1E2O 50V;IE1E2O 1.0nA max;ΔVoff/ΔT 175uV/°C.
16	3N100	10	PA	Si	T072	GC	Pt. 30W;Voff 50uV max;IC 50mA;BVCO 20V;rs 50Ω max.
17	3N101	10	PA	Si	T072	GC	Pt. 30W;Voff 50uV max;IC 50mA;BVCO 30V;rs 50Ω max.
18	3N102	10	PA	Si	T072	GC	Pt. 30W;Voff 50uV max;IC 50mA;BVCO 40V;rs 50Ω max.
19	3N103	10	PA	Si	T072	GC	Pt. 30W;Voff 50uV max;IC 50mA;BVCO 50V;rs 50Ω max.
20	3N104	10	PA	Si	T072	GC	Pt. 30W;Voff 50uV max;IC 50mA;BVCO 60V;rs 50Ω max.
21	3N105	10	PA	Si	T072	GC	Pt. 30W;Voff 250uV max;IC 50mA;BVCO 20V;rs 100Ω max.
22	3N106	10	PA	Si	T072	GC	Pt. 30W;Voff 250uV max;IC 50mA;BVCO 40V;rs 100Ω max.
23	3N107	10	PA	Si	T072	GC	Pt. 30W;Voff 250uV max;IC 50mA;BVCO 60V;rs 100Ω max.
24	3N108	10	PA	Si	T072	GC	VE1B0 50V;IE1E2 1.0nA max;re1/e2(on) 50Ω max.
25	JAN3N108*	10	P	Si	T072	GC	Pt-600mW case;IE1E2-10nA max;VE1E2-30uV;re1e2(on)-50Ω max.
26	3N109	10	P	Si	T072	GC	VE1B0 50V;IE1E2 1.0nA max;re1/e2(on) 50Ω max.
27	3N110	10	P	Si	T072	GC	VE1B0 30V;IE1E2 50nA max;re1/e2(on) 50Ω max.
28	3N111	10	P	Si	T072	GC	VE1B0 30V;IE1E2 50nA max;re1/e2(on) 50Ω max.
29	3N114*	10	P	Si	T072	GD	Voff 50uV max;BVE1E2O 12V;IE1E2O 1.0nA max;ΔVoff/ΔT 75uV/°C.
30	3N115*	10	P	Si	T072	GD	Voff 100uV max;BVE1E2O 12V;IE1E2O 1.0nA max;ΔVoff/ΔT 125uV/°C.
31	3N116*	10	P	Si	T072	GD	Voff 200uV max;BVE1E2O 12V;IE1E2O 1.0nA max;ΔVoff/ΔT 175uV/°C.
32	3N117*	10	P	Si	T072	GD	Voff 50uV max;BVE1E2O 20V;IE1E2O 1.0nA max;ΔVoff/ΔT 75uV/°C.
33	3N118*	10	P	Si	T072	GD	Voff 100uV max;BVE1E2O 20V;IE1E2O 1.0nA max;ΔVoff/ΔT 125uV/°C.
34	3N119*	10	P	Si	T072	GD	Voff 200uV max;BVE1E2O 20V;IE1E2O 1.0nA max;ΔVoff/ΔT 175uV/°C.
35	3N120*	10	NA	Si	T072	GC	BVE1E2O 20V;Voff 10uV max;ΔVoff/ΔT 20uV/°C;(on)25Ω max.
36	3N121*	10	NA	Si	T072	GC	BVE1E2O 20V;Voff 10uV max;ΔVoff/ΔT 20uV/°C;(on)250Ω max.
37	3N123*	10	P	Si	T072	GD	BVE1E2O 25V;Voff 25mV max;IE1E2O 1.0nA max;ΔVoff/ΔT 150uV/°C.
38	JAN3N127*	10	N	Si	T072	GC	VE1E2 (OFS) 10uV max;RE1E2 (ON) 1.0Ω min;CE2B2pf max.
39	3N129*	10	PA	Si	T072	GC	VE1E2/AT 10uV max;rs(on) 15Ω max;V(BR)E1E2 10V;VE1E2 30uV.
40	3N130*	10	PA	Si	T072	GC	VE1E2/AT 10uV max;rs(on) 15Ω max;V(BR)E1E2 20V;VE1E2 30uV.
41	3N131*	10	PA	Si	T072	GC	VE1E2/AT 10uV max;rs(on) 15Ω max;V(BR)E1E2 30V;VE1E2 30uV.
42	3N132*	10	PA	Si	T072	GC	VE1E2/AT 10uV max;rs(on) 15Ω max;V(BR)E1E2 40V;VE1E2 30uV.
43	3N133*	10	PA	Si	T072	GC	VE1E2/AT 10uV max;rs(on) 15Ω max;V(BR)E1E2 50V;VE1E2 30uV.
44	3N134*	10	PA	Si	T072	GC	VE1E2/AT 25uV max;rs(on) 15Ω max;V(BR)E1E2 15V;VE1E2 100uV.
45	3N135*	10	PA	Si	T072	GC	VE1E2/AT 25uV max;rs(on) 15Ω max;V(BR)E1E2 30V;VE1E2 100uV.
46	3N136*	10	PA	Si	T072	GC	VE1E2/AT 25uV max;rs(on) 15Ω max;V(BR)E1E2 50V;VE1E2 100uV.
47	30	10	PA	Si	R199		Matched pair; ICBO-2.0uA; BVCEO-20V; BVEBO-12V.
48	40	10	PA	Si	R199b		Matched pair; ICBO-25nA; BVCEO-35V; BVCBO-40V.
49	50	10	PA	Si	R199d		Matched pair; ICBO-3.0uA; BVCEO-25V; BVCBO-25V.
50	60	10	PA	Si	R199a		Matched pair; ICBO-2.0uA; BVCEO-36V; BVEBO-12V.
51	70	10	PA	Si	R199c		Matched pair; ICBO-3.0nA; BVCEO-6.0V; BVEBO-10V.
52 #	BFV34*	10	P-PE	Si	S5a	P	Pt. 15W;hFE(inv)-6.0 min;VEC(ofs)-30mV;rec(on)-20 ohms.
53 #	BFV35*	10	P-PE	Si	S5a	P	Pt. 15W;hFE(inv)-4.0 min;VEC(ofs)-50mV;rec(on)-35 ohms.
54 #	BFV36*	10	P-PE	Si	S5a	P	Pt. 15W;hFE(inv)-3.0 min;VEC(ofs)-80mV;rec(on)-45 ohms.
55 #	BFV37*	10	N-PE	Si	S5a	P	Pt. 15W;hFE(inv)-2.0 min;VEC(ofs)-50mV;rec(on)-20 ohms.
56 #	BFV38*	10	N-PE	Si	S5a	P	Pt. 15W;hFE(inv)-3.0 min;VEC(ofs)-40mV;rec(on)-15 ohms.
57 #	BFV89*	10	N-PE	Si	W5a	B	Pt. 30W;hFE(inv)-2.0 min;VEC(ofs)-40mV;rec(on)-15 ohms.
58 #	BFV89A*	10	N-PE	Si	W5a	B	Pt. 30W;hFE(inv)-3.0 min;VEC(ofs)-70mV;rec(on)-15 ohms.
59 #	BSY89*	10	N-PE	Si	T018	A	Voff-1.0mV max;rs-20 ohms;cob-12pf;ft-40Mc min.
60	HA7804	10	P	Si	T05		Voff-3.0mV max; Rsat-25 ohms max; Tr-15 usec max.
61	HA7808*	10	PA	Si	T05		BVCBO-15V;ICBO-50nA;fab-1.0MHz;Cob-90pf;Voff-2.0mV;trr-15usec.
62	HA7808*	10	PA	Si	T05		BVCBO-15V;ICBO-50nA;fab-1.0MHz;Cob-70pf;Voff-1.5mV;trr-15usec.
63	HA7810	10	PA	Si	T05		Voff-1.5mV max; Rsat-30 ohms max; Tr-15 usec max.
64	HA7815	10	PA	Si	T05		Voff-1.5mV max; Rsat-25 ohms max; Tr-15 usec max.
65	LDS207*	10	N-PEΔ	Si	S5	P	Pt. 36W;hFE(INV)-20min;Voff-10mV max;rec(on)-4 ohms max.
66	MA3227	10	P	Si	R131		Matched; Voff-20mV; BVCBO,BVEBO,BVCEO-35V
67	MA7811	10	PA	Si	T05		Voff-1.5mV max; ΔVoff-100uV max; Rsat-30 ohms max; Tr-15 usec max.
68	MA7817	10	PA	Si	T05		Voff-1.5mV max; ΔVoff-50uV max; Rsat-25 ohms max; Tr-15 usec max.
69	ST5610	10	N-PE	Si	T072	GD	BVCBO-25V;BVEEO-18V;Voff-50uV;rs-50Ω;Ton and Toff-500ns.
70	ST5611	10	N-PE	Si	T072	GD	BVCBO-25V;BVEEO-18V;Voff-100uV max;rs-100Ω;Ton and Toff-500ns.
71	ST5612	10	N-PE	Si	T072	GD	BVCBO-25V;BVEEO-12V;Voff-50uV max;rs-50Ω;Ton and Toff-500ns.
72	ST5613	10	N-PE	Si	T072	GD	BVCBO-25V;BVEEO-12V;Voff-100uV max;rs-100Ω;Ton and Toff-500ns.
73	ST5614	10	N-PE	Si	T072	GD	BVCBO-15V;BVEEO-8.0V;Voff-150uV max;rs-150Ω;Ton and Toff-500ns.
74	ST5641	10	N-PE	Si	T018		Voff-50mV max;rd-25 ohms max;VECO-15V min.
75	ST81000*	10	P-PE	Si	T046	A	hFE(inverse)-75 min at VCE-6.0V;VEC(ofs)-80mV;rec(on)-3.0ohms.
76	ST70000*	10	N-PE*	Si	T079	RN	Voff/IB-10uV max;ΔVoff/TA-20uV max;ΔVoff/TA-10uV max.
77	ST70001*	10	N-PE*	Si	T079	RN	Voff/IB-25uV max;ΔVoff/TA-50uV max;ΔVoff/TA-25uV max.
78 #	uPA36A*	10	N-E	Si	R144	RD	Common Coll Dual;hFE1/hFE2 .80min;1.25 max;V(offs) 50uV max;(offs) 1.0nA max
79	2N826	11	N	GS	X171	A	Pt 10W max;VCB;VCE;VEB 30V max;hFE At VCE 5V,IC 1A 10k to 30k;f <sub>ae</sub> 7kHz min
80	2N998	11	N-PL	Si	T072		Pc-50W max;BVCBO-100V;hFE-1600 min/IC-10mA;BVCEO-80V;ICBO-0.10uA
81	2N999	11	N	Si	T072		Pc-50W; hFE-70000 max. pulsed at IC-100mA and VCE-10V
82	2N2641*	11	N	Si	R131c		Pt-6W;VCE(sat)-100ohms max;VBE-80V min;hFE-50 min.
83	2N2644*	11	N	Si	R131c		Pt-6W;VCE(sat)-100ohms max;VBE-80V min;hFE-100 min.
84	2N2785	11	N	Si	T072		Pc-50W; BVCBO-80V; hFE-2,000-20,000
85	2N2804*	11	P	Si	R131c	PA	Pt-50W;hFE-20-120 at IC-10mA;VCE-5V;VCE(SAT)-5V.
86	2N2807	11	P	Si	R131c	PA	Pt-50W;hFE-40-120 at IC-10mA;VCE-5V;VCE(sat)-5V.
87	2N2913*	11	N	Si	R131c		Pt-50W;ICBO-10uA at 150 deg.C;VBE(ON)-70V max;VCE(sat)-35V max.
88	2N2914*	11	N	Si	R131c		Pt-50W;ICBO-10uA at 150 deg.C;VBE(ON)-70V max;VCE(sat)-35V max.
89	2N3425	11	N	Si	R131c		Pt-4W;VCE1C2-200V;ton-50nsec max;toff-90nsec max.
90	2N3800*	11	P	Si	T071	PM	Pt-360mW;hFE-100 min. at IC-10uA;VCE(sat)-20V max.
91	2N3801*	11	P	Si	T071	PM	Pt-360mW;hFE-225 min. at IC-10uA;VCE(sat)-20V max.
92	2N3806*	11	P	Si	R131c	PA	Pt-600mW;hFE-100 min. at IC-10uA;VCE(sat)-20V max.
93	2N3807*	11	P	Si	R131c	PA	Pt-600mW;hFE-225 min. at IC-10uA;VCE(sat)-20V max.
94	2N3812*	11	P	Si	X22		Pt-35W;hFE-100 min. at IC-10uA, VCE-5.0V.
95	2N3813*	11	P	Si	X22		Pt-35W;hFE-225 min. at IC-10uA, VCE-5.0V.
96	2N4017*	11	P	Si	R131a	PR	Pt-800mW;hFE-60 min at VCE of 5.0V and IC of 1.0uA;IEBO-10nA max.
97	2N4018*	11	P	Si	R131a	PR	Pt-800mW;hFE-80 min at VCE of 5.0V and IC of 1.0uA;IEBO-10nA max.
98	2N4019*	11	P	Si	R131a	PR	Pt-800mW;hFE-180 min at VCE of 5.0V and IC of 1.0uA;IEBO-10nA max.
99	2N4939	11	P	Si	R131c	PA	Pt-60W;BVC1C2-200V max;hFE-50 min;BVCBO-50 max;IC-50mA max.
100	2N4942	11	P	Si	T089	PB	Pt-35W;BVCBO-50 max;hFE-50 min;ICBO-0.02uA max.
101	2N4955*	11	N	Si	R137		Pt-45W;hFE-4.5db at 10kohms.
102	2N5254*	11	P	Si	R137	PA	Pt-43W;hFE-50 min;VBCO-40V;VEBO-5.0V;ft-40M min.
103	2N5390	11	N	Si	T033	GN	Pt-1W;VCB1-120V max;VCE-80V max;IC-2A max;hFE-2000 min;ft-40Mc min
104	2N5793†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.
105	JAN2N5793†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.
106	2N5794†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.
107	JAN2N5794†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.
108	2N5795†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.
109	JAN2N5795†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.
110	2N5796†	11	N	Si	R131f		Uninitialized Dual;Pt 600mW(total);fT 1.0G max;IC 600mA;I(1C-2C)±1.0nA max.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG # Y200 s/a T0200 Ser.	LEO A D E	DESCRIPTION
1	JAN2N5796†	11	P	SI	R131f	PA	Unitized Dual;Pt 600mW(total);fT 1.0G max;lc 600mA;(TC-2C)±1.0nA max.
2	2N6502*	11	N	SI	R131f	PA	Pd 650mW(both sides);ton 35ns max;toff 60ns max;VCE(sat)0.5V.
3	2N6503*	11	N	SI	X22	PB	Pd 400mW(both sides);ton 35ns max;toff 60ns max;VCE(sat)0.5V.
4#	25C603*	11	N-PE	SI	R144a	QYØ	Bidirectional Switching;Pt 200mW(total);IEBO 1.0uA max;IE 50mA max
5#	25C1265*	11	N-E	SI	T139	PR	Pt 300mW(per unit);hFE 1/2 1.0 max;ΔVBE 8.0mV max;High Speed Switching
6#	25C1963	11	N-E	SI	S10	RR	Pc 270mW(2 Tr);VCBO 25V;IC 200mA(1 Tr);hFE 1/hFE 2 1.0 max;TC 10uV/°C typ
7#	25K58	11	N	SI	S10	QU	Dual 25K107 FET
8#	25K97	11	N	SI	S10	RS	Dual 25K43 FET;ΔVGS 70mVmax at VDS 10V,ID 1.0mA;Pt 210mW(2 FETS)
9	3N189*	11	PMOSA	SI	T099	QC	Pt 525mW;tr 30ns;td 15ns;toff 50ns.
10	3N191*	11	PMOSA	SI	T089	QC	Pt 525mW;tr 30ns;td 15ns;toff 50ns.
11#	BFV70	11	Ø	SI	T084		Pt. 4W;BVCEO-60V min;hFE-100 min;ft-200MHz min;Toff-40ns max.
12#	BFV71	11	Ø	SI	T084		Pt. 4W;BVCEO-60V min;hFE-100 min;ft-350MHz min;Toff-18ns max.
13#	BFV73	11	Ø	SI	T084		Pt. 4W;BVCEO-60V min;hFE-40 min;ft-350MHz min;Toff-18ns max.
14#	BFV75N	11	Ø	SI	T089		Pt. 400mW;BVCEO 60V min;hFE 40 min;ft 350MHz min;Toff 18ns max.
15#	BFV76	11	Ø	SI	T089		Pt. 4W;BVCEO-45V min;IC-30mA max;ft-30MHz min.
16#	BFV93A	11	Ø	SI	T089		Pt. 4W;BVCEO-15V min;VEC(off)-500uV;Rec(on)-20 ohms.
17#	BFV93A	11	Ø	SI	T084		VCBO-60V min;hFE-100 min;VCE(sat)-40V max.
18#	BFV93AN	11	Ø	SI	T084		VCBO 60V min;hFE 100 min;VCE(sat) 400mV max.
19#	BFX67	11	N	SI	T072		Pc-50W;hFE-7000 max. pulsed at IC-100mA and VCE-10V.
20#	C2366	11	N	SI	T071	PJ	IDSS 1/2 0.9-1.0 Ratio;VGS1/2 20mV;VGS1/2T 40uV/°C.
21#	CA3018	11	N	SI	L65		VCCEO-15V;VCBO-20V;hFE-70 at IC-1mA;ft-400MHz.
22	CA3036	11	N	SI	L65		Darlington Array;Pt-300mW;VCBO-30mA;hFE-82 typ at IC-1mA.
23	MA3228	11	P	SI	R131		Diff. Ampl. Matched; ΔhFE-20%; ΔVBE-10mV; BVCEO-90V
24	MA3229	11	P	SI	R131		Diff. Ampl. Matched; ΔhFE-20%; ΔVBE-15mV; BVCEO-60V
25	MA3230	11	P	SI	R131		Diff. Ampl. Matched; ΔhFE-40%; ΔVBE-20mV; BVCEO-35V
26	MA3231	11	P	SI	R131		Darlington Ampl.; hFE-100-1000; BVCEO-90V.
27	MA3232	11	P	SI	R131		Darlington Ampl.; hFE-100-1000; BVCEO-35V.
28	MA3233	11	P	SI	R131		Darlington Ampl.; hFE-1000-5000; BVCEO-60V.
29	MA3234	11	P	SI	R131		Darlington Ampl.; hFE-1000-5000; BVCEO-35V.
30	MD708*	11	N-AN*	SI	R131f	PA	Pd 600mW(both sides);ton 35ns max;toff 75ns max;ts 25ns max.
31	MD708F	11	N-AN*	SI	X22		Pd 400mW(both sides);ton 35ns max;toff 75ns max;ts 25ns max.
32	MD918*	11	N-ANØ	SI	T089	PA	Pd 600mW(both sides);VCEO 15Vdc;hFE 50 min at 3.0mA and 5.0V.
33	MD918E*	11	N-ANØ	SI	T089	PB	Pd 600mW(both sides);VCEO 15Vdc;hFE 50 min at 3.0mA and 5.0V.
34	MD2060F*	11	NAN	SI	T089	PB	Pd(both sides)400mW max;hFE 1/2 .80 min-1.0 max;VBE(1-2)5mVdc max;ΔVBE(1-2)8mVdc max
35	MD2218*	11	NANΔ	SI	R131c	PA	Pd 625mW;td 20us, tr 40us, ts 280us, tf 70us max values.
36	MD2218A*	11	NANΔ	SI	R131c	PA	Pd 625mW;td 15us, tr 30us, ts 250us, tf 60us max values.
37	MD2218AF*	11	NANΔ	SI	X22	PB	Pd 400mW;td 15us, tr 30us, ts 250us, tf 60us max values.
38	MD2218F*	11	NANΔ	SI	X22	PB	Pd 400mW;td 20us, tr 40us, ts 280us, tf 70us max values.
39	MD2219*	11	NANΔ	SI	R131c	PA	Pd 625mW;td 20us, tr 40us, ts 280us, tf 70us max values.
40	MD2219A*	11	NANΔ	SI	R131c	PA	Pd 625mW;td 15us, tr 30us, ts 250us, tf 60us max values.
41	MD2219AF*	11	NANΔ	SI	X22	PB	Pd 400mW;td 15us, tr 30us, ts 250us, tf 60us max values.
42	MD2219F*	11	NANΔ	SI	X22	PB	Pd 400mW;td 20us, tr 40us, ts 280us, tf 70us max values.
43	MD2369*	11	N-AN	SI	T089	PA	Pd 600mW(both sides);ton 15ns max;toff 20ns max;ts 13ns max.
44	MD2369F*	11	N-AN	SI	T089	PB	Pd 400mW(both sides);ton 15ns max;toff 20ns max;ts 13ns max.
45	MD2904*	11	PAN	SI	R131b	PA	Pd 625mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
46	MD2904A*	11	PAN	SI	R131b	PA	Pd 625mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
47	MD2904AF*	11	PAN	SI	X22	PB	Pd 400mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
48	MD2904F*	11	PAN	SI	X22	PB	Pd 400mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
49	MD2905*	11	PAN	SI	R131b	PA	Pd 625mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
50	MD2905A*	11	PAN	SI	R131b	PA	Pd 625mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
51	MD2905AF*	11	PAN	SI	X22	PB	Pd 400mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
52	MD2905F*	11	PAN	SI	X22	PB	Pd 400mW(ALL);tr 35ns;td 12ns;ts 100ns;tf 40ns.
53	MD3250*	11	P-AN	SI	R131f	PA	Pd 625mW(both sides);hFE 50 min;82 typ;150 max at VCE 5Vdc,IC 100uAdc.
54	MD3250F*	11	P-AN	SI	X22	PB	Pd 400mW(both sides);hFE 50 min;82 typ;150 max at VCE 5Vdc,IC 100uAdc.
55	MD3251*	11	P-AN	SI	R131f	PA	Pd 625mW(both sides);hFE 80 min;170 typ;300 max at VCE 5Vdc,IC 100uAdc.
56	MD3251F*	11	P-AN	SI	X22	PB	Pd 400mW(both sides);hFE 80 min;170 typ;300 max at VCE 5Vdc,IC 100uAdc.
57	MD3467*	11	P-AN	SI	R131f	PA	Pd 650mW(both sides);IEBO 100nAdc max;ft 150MHz min.
58	MD3467F†	11	P-AN	SI	X22	PB	Pd 400mW(both sides);IEBO 100nAdc max;ft 150MHz min.
59	MD3725†	11	N-AN	SI	R131f	PA	Pd 650mW(both sides);hFE 150 max at VCE 1.0Vdc,IC 100mAdc pulsed;Cib 65pF max.
60	MD3725F†	11	N-AN	SI	X22	PB	Pd 400mW(both sides);hFE 150 max at VCE 1.0Vdc,IC 100mAdc pulsed;Cib 65pF max.
61	MD3762†	11	P-AN	SI	R131f	PA	Pd 650mW(both sides);hFE 20 min at VCE 2.0Vdc,IC 1.0Adc pulsed;Cob 20pF max.
62	MD3762F†	11	P-AN	SI	X22	PB	Pd 400mW(both sides);hFE 20 min at VCE 2.0Vdc,IC 1.0Adc pulsed;Cob 20pF max.
63	MD7000*	11	N-AN	SI	T099	PA	Pd 625mW(both sides);VCE(Sat) 2.60 max.
64	MD7001*	11	P-AN	SI	T089	PA	Pd 650mW(both sides);VCE(Sat) 2.60 max.
65	MD7001F*	11	P-AN	SI	T089	PB	Pd 650mW(both sides);VCE(Sat) 2.60 max.
66	MD7002A*	11	NAN	SI	R131c	PA	Pt 625mW;hFE 1/2 .75 min;VBE(1-2) 25mVdc max.
67	MD7002B*	11	NAN	SI	R131c	PA	Pt 625mW;hFE 1/2 .85 min;VBE(1-2) 15mVdc max.
68	MD7004*	11	N-AN	SI	R131f	PA	Pd 600mW(both sides);hFE 30 min;VCE 2.0Vdc,IC 10mAdc;Cob 4.0pF max.
69	MD7004F*	11	N-AN	SI	X22	PB	Pd 400mW(both sides);hFE 30 min;VCE 2.0Vdc,IC 10mAdc;Cob 4.0pF max.
70	MD7005*	11	N-AN	SI	T089	PA	Pd 600mW(both sides);VCE(Sat) 400 max.
71	MD7005F*	11	N-AN	SI	T089	PB	Pd 400mW(both sides);VCE(Sat) 400 max.
72	MJ920*	11	P	SI	F26	KDØ	PDT 160W;VCEO(sus)60Vdc;ICEX 500uAdc;Cob 300pF.
73	MJ921*	11	P	SI	F26	KDØ	PDT 160W;VCEO(sus)80Vdc;ICEX 500uAdc;Cob 300pF.
74	MJ1200*	11	P	SI	F26	KDØ	PDT 160W;VCEO(sus)60Vdc;ICEX 500uAdc;Cob 200pF.
75	MJ1201*	11	P	SI	F26	KDØ	PDT 160W;VCEO(sus)80Vdc;ICEX 500uAdc;Cob 200pF.
76	MJ4200	11	N	SI	F26	KDØ	PDT 85W;VCEO(sus)60Vdc;ICEX 500uAdc;VBE(on) 2.8Vdc.
77	MJ4201	11	N	SI	F26	KDØ	PDT 85W;VCEO(sus)80Vdc;ICEX 500uAdc;VBE(on) 2.8Vdc.
78	MJ4210	11	P	SI	F26	KDØ	PDT 85W;VCEO(sus)60Vdc;ICEX 500uAdc;VBE(on) 2.8Vdc.
79	MJ4211	11	P	SI	F26	KDØ	PDT 85W;VCEO(sus)80Vdc;ICEX 500uAdc;VBE(on) 2.8Vdc.
80	SA2725*	11	N	SI	T078		Pt. 6W;Sat.Res.-300 ohms max;hFE-250 at IC-1.0mA.
81	SA2726*	11	N	SI	T078		Pt. 6W;Sat.Res.-300 ohms max;hFE-150 at IC-1.0mA.
82	SP618F	11	N	SI	T089		Pt-350mW(both sides);VCEO-15V;hFE-20min at 3.0mA,10V.
83	SP2218F	11	N	Δ	T089		Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
84	SP2219AF	11	N	Δ	T089		Pt-350mW(both sides);td-15ns;tr-30ns;ts-250ns;tf-60ns.
85	SP2219F	11	N	Δ	T089		Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
86	SP2222AF	11	N	Δ	T089		Pt-350mW(both sides);td-15ns;tr-30ns;ts-265ns;tf-60ns.
87	SP2222AQF	11	N	Δ	T086		Pt-500mW;td-15ns;tr-30ns;ts-265ns;tf-60ns.
88	SP2222F	11	N	Δ	T089		Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
89	SP2222QD	11	N	Δ	T018	AØ	Pt 800mW;VCEO 30V;hFE 50 min at Ic 1.0mA;VCE 10V.
90	SP2222QF	11	N	Δ	T086		Pt-500mW;td-20ns;tr-40ns;ts-280ns;tr-70ns.
91	SP2368AF	11	N	Δ	T089		Pt-350mW(both sides);ton-12ns;toff-18ns;ts-13ns.
92	SP2369AQD	11	NΔ	SI	T018	AØ	Pt 800mW;BVCEO 15V;ton 12ns;toff 18ns.
93	SP2369AQF	11	NΔ	SI	T018	AØ	Pt 500mW;VCEO 15V;ton 12ns;toff 18ns.
94	SP2369F	11	N	Δ	T089		Pt-350mW(both sides);ton-12ns;toff-18ns;ts-13ns.
95	SP2484F	11	N	SI	T089		Pt-350mW(both sides);VCEO-60V;hFE-100min at 10uA,5.0V.
96	SP2484QD	11	N	SI	T086		Pt 800mW;VCEO 60V;hFE 100 min at 10uA,5.0V.
97	SP2484QF	11	N	SI	T086		Pt-500mW;VCEO-60V;hFE-100min at 10uA, 5.0V.
98	SP2605QF	11	P	SI	T086		Pt-500mW;VCEO-45V;hFE-100min at 10uA, 5.0V.
99	SP2905AF	11	P	Δ	T089		Pt-350mW(both sides);td-10ns;tr-40ns;ts-180ns;tf-50ns.
100	SP2905AQF	11	P	Δ	T086		Pt-500mW;td-10ns;tr-40ns;ts-190ns;tf-50ns.
101	SP2905F	11	P	Δ	T089		Pt-350mW(both sides);td-10ns;tr-40ns;ts-180ns;tf-50ns.
102	SP2905QF	11	P	Δ	T086		Pt-500mW;td-10ns;tr-40ns;ts-190ns;tf-50ns.
103	SP2907AF	11	P	Δ	T089		Pt-350mW(both sides);td-10ns;tr-40ns;ts-80ns;tf-30ns.
104	SP2907AQD	11	PΔ	SI	T086		Pt 800mW;td 10ns;tr 40ns;ts 90ns;tf 30ns.
105	SP2907AQF	11	P	Δ	T086		Pt-500mW;td-10ns;tr-40ns;ts-90ns;tf-30ns.
106	SP2907F	11	P	Δ	T089		Pt-350mW(both sides);td-10ns;tr-40ns;ts-80ns;tf-30ns.
107	SP2907QF	11	P	Δ	T086		Pt-500mW;td-10ns;tr-40ns;ts-90ns;tf-30ns.
108	SP3019F	11	N	SI	T089		Pt-350mW(both sides);VCEO-80V;hFE-15min at 1.0A, 10V.
109	SP3019QD	11	N	SI	T089		Pt 800mW(both sides);VCEO 80V;hFE 15 min at 1.0A,10V.
110	SP3251AQD	11	PΔ	SI	T018	AØ	Pt 800mW;VCEO 60V;td 35ns;tr 35ns;ts 200ns;tf 60ns.

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MT	AWG #	Y200	L	C	DESCRIPTION
		U	S	A		s/a	E	O	
		S	T	T		TO200	A	D	
		E	R			Ser.	D	E	
1	SP3487F	11	PA	SI	T05	A0			Pt 350mW;BVCEO 40V;td 10nS;tr 30nS;ts 80nS;tf 30nS.
2	SP3487QD	11	PA	SI	T05	A0			Pt 800mW;BVCEO 40V;td 10nS;tr 30nS;ts 60nS;tf 30nS.
3	SP3487QF	11	PA	SI	T05	A0			Pt 500mW;BVCEO 40V;td 10nS;tr 30nS;ts 80nS;tf 30nS.
4	SP3724QD	11	N	SI	T0116				Quad Core Driver;Pt 800mW;ton 35nS;toff 60nS;hFE 10min at 1.0A,1.0V
5	SP3724QDB	11	N	SI	T0116				Quad Core Driver;Pt 2.0W;ton 35nS;toff 60nS;hFE 10min at 1.0A,1.0V
6	SP3724QF	11	N	SI	T088				Pt 500mW;ton-35nS;toff-80nS;hFE-10min at 1.0A, 1.0V.
7	SP3725F	11	N	SI	T089				Pt-350mW(both sides);ton-45nS;toff-75nS;hFE-30min at 500mA, 2.0V.
8	SP3725QD	11	N	SI	T0116				Quad Core Driver;Pt 800mW;ton 35nS;toff 60nS;hFE 10min at 1.0A,1.0V
9	SP3725QDB	11	N	SI	T0116				Quad Core Driver;Pt 2.0W;ton 35nS;toff 60nS;hFE 10min at 1.0A,1.0V
10	SP3725QF	11	N	SI	T088				Pt-500mW;ton-35nS;toff-80nS;hFE-10min at 1.0A, 1.0V.
11	TD102*	11	N-PLT	SI	R138				Pt 400mW;hFE 100 min.at VCE 5.0V and IC 10uA;ft 120MHz max;Vsat 20Ω max.
12	TD202*	11	N-PLT	SI	R138				Pt 400mW;hFE 100 min.at VCE 5.0V and IC 10uA;ft 120MHz max;Vsat 20Ω max.
13	TD228*	11	N	SI	R131c	PA			PT 400mW;hFE 100c 100mA;VCE 5.0V;BVCEO 45V;BVCEO 45V
14	TD229*	11	N	SI	R131c	PA			PT 400mW;hFE 225c 100mA;VCE 5.0V;BVCEO 45V;BVCEO 45V
15	TD236*	11	N	SI	R131c	PA			PT 400mW;hFE 55c 100mA;VCE 5.0V;BVCEO 45V;BVCEO 45V
16	TD239*	11	N	SI	R131c	PA			PT 400mW;hFE 110c 100mA;VCE 5.0V;BVCEO 45V;BVCEO 45V
17	TD244*	11	N	SI	R131c	PA			PT 400mW;hFE 1/2 40c;lc 150mA;VCE 10V;BVCEO 60V;BVCEO 30V
18	TD245*	11	N	SI	R131c	PA			PT 400mW;hFE 1/2 75c;lc 10mA;VCE 10V;BVCEO 60V;BVCEO 30V
19	TD248*	11	N	SI	R131c	PA			PT 400mW;hFE 1/2 40c;lc 150mA;VCE 10V;BVCEO 75V;BVCEO 40V
20	TD247*	11	N	SI	R131c	PA			PT 400mW;hFE 1/2 100c;lc 150mA;VCE 10V;BVCEO 75V;BVCEO 40V
21	TD248*	11	N	SI	T099	PA			PT 400mW;hFE 1/2 40c;lc 10mA;VCE 10V;BVCEO 40V;BVCEO 15V
22	TD402*	11	N-PLT	SI	R138	PN			Pt 400mW;hFE 100 min at VCE 5.0V and IC 10uA;ft 100MHz max;Vsat 20Ω max.
23	TD502*	11	N-PLT	SI	R138	PN			Pt 400mW;hFE 100 min at VCE 5.0V and IC 10uA;ft 100MHz max;Vsat 20Ω max.
24	TD511*	11	N	SI	R131c	PA			PT 400mW;hFE 20c 100mA;VCE 5.0V;BVCEO 25V;BVCEO 20V
25	TD514*	11	N	SI	R131c	PA			PT 400mW;hFE 40c 100mA;VCE 5.0V;BVCEO 25V;BVCEO 20V
26	TD519*	11	N	SI	R131b	PA			PT 400mW;hFE 40c;lc 150mA;VCE 10V;BVCEO 60V;BVCEO 40V
27	TD520*	11	N	SI	R131b	PA			PT 400mW;hFE 40c;lc 10mA;VCE 10V;BVCEO 60V;BVCEO 60V
28	TD521*	11	N	SI	R131b	PA			PT 400mW;hFE 100c;lc 150mA;VCE 10V;BVCEO 60V;BVCEO 40V
29	TD522*	11	N	SI	R131b	PA			PT 400mW;hFE 100c;lc 150mA;VCE 10V;BVCEO 60V;BVCEO 60V
30	TD523*	11	N	SI	R131c	PA			PT 400mW;hFE 150c;lc 600mA;VCE 5.0V;BVCEO 60V;BVCEO 80V
31	TD524*	11	N	SI	R131c	PA			PT 400mW;hFE 300c;lc 600mA;VCE 5.0V;BVCEO 60V;BVCEO 80V
32	TD2219*	11	N-PLT	SI	R138				Pt 400mW;hFE 35 min.at VCE 10V and IC 100uA;Vsat 2.6Ω max.
33	TD2905*	11	N-PLT	SI	R138	PN			Pt 400mW;hFE 35 min.at VCE 10V and IC 100uA;Vsat 2.6Ω max.
34	UC2139	11	N-PE0	SI	R120				FET;BVDS 30V;ID(on)-8.0mA;gm-750umhos.
35	UC2148	11	N-PE0	SI	R120				FET;BVDS 30V;ID(on)-15mA;gm-1000umhos.
36	UC2149	11	N-PE0	SI	R120				FET;BVDS 50V;ID(on)-2.0mA;gm-2000umhos.
37	UC2788*	11	N-MOS	SI	T099	PU			Pt-525mW;td-18n max;tr-38n max;toff-80n max;IG-10pA max;VSDS-30V min.
38	2N2451*	13	N	SI	T046	A			Rad. Res. Switch; Irradiation-10Kt nvt.
39	2N5107*	13	N	SI	T018	A			Post Rad. of 300T nvt;ICBO-100mA;hFE-8.0 at VCE-10V;IC-150mA
40	2N5144*	13	N	SI	T018	A0			Post Rad. of 300T NVT;tr-35nS;td-10nS;ts-35nS;tf-30nS;MAX;ft-250MHz min.
41	2N5145*	13	N	SI	T039	A0			Post Rad. of 300T NVT;tr-35nS;td-10nS;ts-35nS;tf-30nS;MAX;ft-250MHz min.
42	2N5200*	13	N	SI	T046	A0			Pd-1.2W;Post Rad. of 300T nvt;hFE-10 min;ICES-05uA max.
43	2N5201*	13	N	SI	T046	A0			Pd-1.2W;Post Rad. of 300T nvt;hFE-12 min;ICES-05uA max.
44	2N5236*	13	N	SI	T039	A0			Max. Rad. Level 300T NVT;hFE 10 min;VCE(sat) 1.4,all pulsed.
45	2N5276*	13	N	SI	T018	A0			Max. Rad. for ICBO-20uA max;hFE-20 min;VCE(sat)-1V max;all pulsed.
46	2N5292*	13	N	SI	T018	A0			Max. Rad. Level-300T nvt;hFE-10min;tr-12nS;tf-15nS.
47	2N5304*	13	N	SI	T061	A0			Max. Rad. Level 100T NVT;hFE 5.0 min;VCE(sat) 1.5V max;tr 100nS;ts 700nS;tf 100nS max
48	2N5399*	13	N	SI	T046	A0			Max. Rad.-1000T nvt;Post Rad. hFE-12 min;ICBO-10uA;tr-8nS;tf-16nS.
49	2N5417*	13	N	SI	T039	A0			Max. Rad.-1000T nvt;Post Rad. hFE-8 pulsed;tr-18nS;ICBO-10uA;tf-80nS.
50	2N5527*	13	N	SI	R179u	A0			Max. Rad. Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.
51	2N5528*	13	N	SI	T059	A0			Max. Rad. Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.
52	2N5529*	13	N	SI	T081	A0			Max. Rad. Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.
53	2N5530*	13	N	SI	T061	A0			Max. Rad. Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.
54	2N5531*	13	N	SI	R179u	A0			Max. Rad. Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.
55	2N5532*	13	N	SI	T059	A0			Max. Rad. Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.
56	2N5533*	13	N	SI	T081	A0			Max. Rad. Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.
57	2N5534*	13	N	SI	T061	A0			Max. Rad. Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.
58	2N5535*	13	N	SI	T081	A0			Max. Rad. Level-500T NVT;hFE-15 min.pulsed;ICBO-1mA;td-25nS;tf-300nS.
59	2N5536*	13	N	SI	T081	A0			Max. Rad. Level-500T NVT;hFE-15 min.pulsed;ICBO-1mA;td-25nS;tf-300nS.
60	2N5537*	13	N	SI	T081	A0			Max. Rad. Level-500T NVT;hFE-10 min.pulsed;ICBO-2mA;td-25nS;tf-300nS.
61	2N5538*	13	N	SI	T081	A0			Max. Rad. Level-500T NVT;hFE-10 min.pulsed;ICBO-2mA;td-25nS;tf-300nS.
62	2N5763*	13	N	SI	T018	A0			Pt 1.8W;Post Rad.500T NVT;ICBO 25n;tr 40nS max;td 10nS max;ts 200nS max;tf 50nS max.
63	2N5938*	13	N	SI	T126	A			Max. Rad. Level 100T NVT;hFE 10 min.
64	2N5939*	13	N	SI	T011	A			Max. Rad. Level 100T NVT;hFE 10 min.
65	2N5940*	13	N	SI	T011	A			Max. Rad. Level 100T NVT;hFE 10 min.
66	BR100A*	13	N	SI	T05	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE 5.0V;lc 3.0A
67	BR100B*	13	N	SI	T27	A0			Max. Rad. Level-500T nvt;Post Rad hFE-25;ICBO-1.0mA
68	BR100C*	13	N	SI	T059	A			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE 5.0V;lc 3.0A
69	BR100D*	13	N	SI	T080	A			Max. Rad. Level-500T nvt;Post Rad hFE-25;ICBO-1.0mA
70	BR100E*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE 5.0V;lc 3.0A
71	BR100F*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE 5.0V;lc 3.0A
72	BR101A*	13	N	SI	T05	A0			Rad 100T n/Sq Cm;Post Rad hFE 7.0 At VCE 5.0V;lc 3.0A
73	BR101B*	13	N	SI	T27	A0			Max. Rad. Level-500T nvt;Post Rad hFE-15;ICBO-1.0mA
74	BR101C*	13	N	SI	T059	A			Rad 100T n/Sq Cm;Post Rad hFE 7.0 At VCE 5.0V;lc 3.0A
75	BR101D*	13	N	SI	T080	A			Max. Rad. Level-500T nvt;Post Rad hFE-15;ICBO-1.0mA
76	BR101E*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 7.0 At VCE 5.0V;lc 3.0A
77	BR101F*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 7.0 At VCE 5.0V;lc 3.0A
78	BR200A*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE 5.0V;lc 5.0A
79	BR200B*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE 5.0V;lc 5.0A
80	BR201A*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 10 At VCE 5.0V;lc 5.0A
81	BR201B*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 10 At VCE 5.0V;lc 5.0A
82	BR300A*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE(s) 2.0V;lc 10A
83	BR300B*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 15 At VCE(s) 2.0V;lc 10A
84	BR301A*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 10 At VCE(s) 3.0V;lc 10A
85	BR301B*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 10 At VCE(s) 3.0V;lc 10A
86	BR400A*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 12 At VCE(s) 2.0V;lc 5.0A
87	BR400B*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 12 At VCE(s) 2.0V;lc 5.0A
88	BR401A*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 7.0 At VCE(s) 2.5V;lc 5.0A
89	BR401B*	13	N	SI	T081	A0			Rad 100T n/Sq Cm;Post Rad hFE 7.0 At VCE(s) 2.5V;lc 5.0A
90	PR1006*	13	N	SI	T27	A0			Post Rad hFE-15 at lc 3.0A;VCE 5.0V.
91	PR1007*	13	N	SI	T080	A0			Post Rad hFE-15 at lc 3.0A;VCE 5.0V.
92	PR1008*	13	N	SI	T27	A0			Post Rad hFE-7.0 at lc 3.0A;VCE 5.0V.
93	PR1009*	13	N	SI	T080	A0			Post Rad hFE-7.0 at lc 3.0A;VCE 5.0V.
94	PR1010*	13	N	SI	T081	A0			Post Rad hFE-15 at lc 10A;VCE 5.0V.
95	PR1011*	13	N	SI	T081	A0			Post Rad hFE-15 at lc 10A;VCE 5.0V.
96	PR1012*	13	N	SI	T081	A0			Post Rad hFE-10 at lc 10A;VCE 5.0V.
97	PR1013*	13	N	SI	T081	A0			Post Rad hFE-10 at lc 10A;VCE 5.0V.
98*	MMBTs 102	14	N	SI	Y236a	C			Temp Sensor;Thermal Time Constant-Liquid 400ms;Air 3s;Pd 350mW
99*	MMBTs 103	14	N	SI	Y236a	C			Temp Sensor;Thermal Time Constant-Liquid 400ms;Air 3s;Pd 350mW
100*	MMBTs 105	14	N	SI	Y236a	C			Temp Sensor;Thermal Time Constant-Liquid 400ms;Air 3s;Pd 350mW
101*	MPX50D	14	N	SI	W180	†			Diff X-ducer Pressure Sensor Element;Pmax 200kPa
102*	MPX200A	14	N	SI	W180	†			X-ducer Pressure Sensor Element;Pmax 400kPa;Absolute Pressure
103*	MPX200D	14	N	SI	W180	†			X-ducer Pressure Sensor Element;Pmax 400kPa;Diff Pressure
104	MTS102	14	N	SI	T082	A			Temperature Sensor;ΔVBE ±3.0mV;Temp Acc ±2.0°C;TC -2.25mV/°C

# 15. MISCELLANOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	1 CATEGORY	U S T R U C T U R E	M A T	DWG # Y200 s/a TO200 Ser.	L C O D E	DESCRIPTION
1	PT152	14	N-PL	Si	TO46	AØ	Press. 15psid nom;Tc ±150mV/C;hFE 10 nom;BVCEO 120V;tr 10us.
2	PT202	14	N-PL	Si	TO46	AØ	Press. 20psid nom;Tc ±150mV/C;hFE 10 nom;BVCEO 120V;tr 10us.
3	PT-H2	14	N-PL	Si	TO46	AØ	Press. 500psid nom;Tc ±150mV/C;hFE 10 nom;BVCEO 120V;tr 10us.
4	PT-L2	14	N-PL	Si	TO46	AØ	Press. 100psid nom;Tc ±150mV/C;hFE 10 nom;BVCEO 120V;tr 10us.
5	PT-M2	14	N-PL	Si	TO46	AØ	Press. 250psid nom;Tc ±150mV/C;hFE 10 nom;BVCEO 120V;tr 10us.
6	2C918	15	N	Si	C39ak		Sm-Signal Transistor Dice;BVCEO 15Vdc,hFE 20min at Ic 3mA/VCE 1V
7	2C2102	15	N	Si	C39am		Sm-Signal Transistor Dice;BVCEO 120Vdc,hFE 40min at Ic 150mA/VCE 10V
8	2C2222A	15	N	Si	C39an		Sm-Signal Transistor Dice;BVCEO 40Vdc,hFE 100min at Ic 150mA/VCE 10V
9	2C2369A	15	N	Si	C39ao		Sm-Signal Transistor Dice;BVCEO 40Vdc,hFE 40min at Ic 10mA/VCE 350mV
10	2C2484	15	N	Si	C39ap		Sm-Signal Transistor Dice;BVCEO 60Vdc,hFE 175min at Ic 100uA/VCE 5V
11	2C2857	15	N	Si	C39bw		RF Transistor Dice;fT 1.6GHz typ,NF 3.9dB max,BVEO 15Vdc
12	2C2894	15	P	Si	C39aq		Sm-Signal Transistor Dice;BVCEO 12Vdc,hFE 40min at 30mA/VCE 500m
13	2C2907A	15	P	Si	C39an		Sm-Signal Transistor Dice;BVCEO 60Vdc,hFE 100min at 150mA/VCE 10V
14	2C2946	15	P	Si	C39ar		Sm-Signal Transistor Dice;ICBO 10nA max,hFE 30min at Ic 1mA/VCE 500mV
15	2C3303	15	N	Si	C39as		Sm-Signal Transistor Dice;BVCEO 12Vdc,hFE 30min at Ic 300mA/VCE 500mV
16	2C3308	15	P	Si	C39ag		Sm-Signal Transistor Dice;BVCEO 25Vdc,hFE 25min at Ic 2mA/VCE 10V
17	2C3439	15	N	Si	C39at		Sm-Signal Transistor Dice;BVCEO 350Vdc,hFE 40min at Ic 20mA/VCE 10V
18	2C3468	15	P	Si	C39au		Sm-Signal Transistor Dice;BVCEO 50Vdc,hFE 25min at Ic 500mA/VCE 1V
19	2C3501	15	N	Si	C39av		Sm-Signal Transistor Dice;BVCEO 150 Vdc,hFE 100min at Ic 150mA/VCE 10V
20	2C3506	15	N	Si	C39aw		Sm-Signal Transistor Dice;BVCEO 40Vdc,hFE 50min at Ic 500mA/VCE 1V
21	2C3511	15	N	Si	C39ax		Sm-Signal Transistor Dice;BVCEO 15Vdc,hFE 30min at Ic 150mA/VCE 1V
22	2C3546	15	P	Si	C39ag		Sm-Signal Transistor Dice;BVCEO 12Vdc,ICBO 10nA
23	2C3553	15	N	Si	C39bx		RF Transistor Dice;Pout 2.5W,GPE 10dB min,Efficiency 50%
24	2C3635	15	P	Si	C39ag		Sm-Signal Transistor Dice;BVCEO 140Vdc,hFE 50min at Ic 50mA/VCE 10V
25	2C3724	15	N	Si	C39ay		Sm-Signal Transistor Dice;BVCEO 30Vdc,hFE 60min at Ic 100mA/VCE 1V
26	2C3762	15	P	Si	C39az		Sm-Signal Transistor Dice;BVCEO 40Vdc,hFE 35min at Ic 500mA/VCE 1V
27	2C3767	15	N	Si	C39a		Pwr Transistor Dice;BVCEO 80Vdc,I <sub>EB0</sub> 750uAdc,hFE 40 min
28	2C3796	15	N	Si	C39bo		FET Dice;MOSFET,BVDSX 25Vdc,I <sub>DSS</sub> 3mA max,VGS (off) 4Vdc max
29	2C3799	15	P	Si	C39ap		Sm-Signal Transistor Dice;BVCEO 60Vdc,hFE 300min at Ic 500uA/VCE 5V
30	2C3866	15	N	Si	C39by		RF Transistor Dice;BVCEO(sus) 30Vdc,hFE1 5 min at Ic 360mA/VCE 5V
31	2C3868	15	P	Si	C39a		Pwr Transistor Dice;BVCEO (sus) 80Vdc,hFE 35 min at Ic 500mA/VCE 1.0V
32	2C3960	15	N	Si	C39ax		RF Transistor Dice;fT 1.8GHz typ,C <sub>ib</sub> and C <sub>ob</sub> 2.5pf max,tr 1.7ns typ
33	2C4091	15	N	Si	C39as		FET Dice;Junction FET for Chopper Applications,V(BR)GSS 40Vdc
34	2C4117	15	N	Si	C39aq		FET Dice;Junction FET,V(BR)GSS 40Vdc,I <sub>DSS</sub> 90uA max
35	2C4220	15	N	Si	C39bp		FET Dice;Junction FET,V(BR)GSS 30Vdc,I <sub>DSS</sub> 3mA max
36	2C4236	15	P	Si	C39aw		Sm-Signal Transistor Dice;BVCEO 80Vdc,hFE 30min at Ic 250mA/VCE 1V
37	2C4239	15	N	Si	C39aw		Sm-Signal Transistor Dice;BVCEO 80Vdc,hFE 30min at Ic 250mA/VCE 1V
38	2C4240	15	N	Si	C39b		Pwr Transistor Dice;BVCEO (sus) 300Vdc,hFE 40 min at Ic 100mA/VCE 1.0V
39	2C4261	15	P	Si	C39ag		Sm-Signal Transistor Dice;BVCEO 15Vdc,hFE 30min at Ic 10mA/VCE 1V
40	2C4352	15	P	Si	C39bo		FET Dice;MOSFET,V(BR)I <sub>DSS</sub> 25Vdc,I <sub>DSS</sub> 10nA max
41	2C4405	15	P	Si	C39bc		Sm-Signal Transistor Dice;BVCEO 80Vdc,hFE 100min at Ic 150mA/VCE 1V
42	2C4416	15	N	Si	C39bq		FET Dice;Junction FET,V(BR)GSS 30Vdc,I <sub>DSS</sub> 15mA max
43	2C4427	15	N	Si	C39as		RF Transistor Dice;Pout 1W,Gpe 10dB min,Efficiency 50%
44	2C4900	15	P	Si	C39a		Pwr Transistor Dice;BVCEO (sus) 80 Vdc,ICEO 500uAmax,ICBO 100uA max
45	2C4920	15	P	Si	C39c		Pwr Transistor Dice;BVCEO (sus) 80Vdc,ICEO 500uAmax,ICBO 100uA max
46	2C4923	15	N	Si	C39c		Pwr Transistor Dice;BVCEO (sus) 80Vdc,ICEO 500uAmax,ICBO 100uA max
47	2C4957	15	P	Si	C39az		RF Transistor Dice;Gpe 17dB max,NF 3dB max,fT 1.2GHz max
48	2C5031	15	N	Si	C39ax		RF Transistor Dice;fT 1GHz min,NF 2.5dB max,Gpe 14dB min
49	2C5038	15	N	Si	C39d		Pwr Transistor Dice;BVCEO (sus) 9Vdc,hFE 20 min at Ic 10A/VCE 5V
50	2C5087	15	P	Si	C39bd		Sm-Signal Transistor Dice;BVCEO 50Vdc,hFE 250min at Ic 100uA/VCE 5V
51	2C5088	15	N	Si	C39bd		Sm-Signal Transistor Dice;BVCEO 30Vdc,hFE 300minat Ic 100uA/VCE 5V
52	2C5108	15	N	Si	C39bq		RF Transistor Dice;Pout 1W,Gain 5dB min,Efficiency 35%
53	2C5109	15	N	Si	C39by		RF Transistor Dice;NF 3dB typ,fT 1.2GHz min,BVCEO 20 Vdc
54	2C5160	15	P	Si	C39ar		RF Transistor Dice;GPE 8dB min,Pout 1W min,Compliment for 2NC3866
55	2C5179	15	N	Si	C39bw		RF Transistor Dice;fT 1.4GHz typ,r <sub>b</sub> C <sub>c</sub> 14ps max,NF 4.5 dB max
56	2C5192	15	N	Si	C39e		Pwr Transistor Dice;BVCEO(sus) 80Vdc,hFE 20min at Ic 1.5A/VCE 2V
57	2C5195	15	N	Si	C39e		Pwr Transistor Dice;BVCEO(sus) 80Vdc,hFE 20min at Ic 1.5A/VCE 2V
58	2C5208	15	P	Si	C39bd		Sm-Signal Transistor Dice;BVCEO 25Vdc,hFE 20min at Ic 2mA/VCE 10V
59	2C5339	15	N	Si	C39f		Pwr Transistor Dice;BVCEO(sus) 100Vdc,hFE 60min at Ic 500mA/VCE 2V
60	2C5345	15	P	Si	C39g		Pwr Transistor Dice;BVCEO(sus) 300Vdc,hFE 25min at Ic 500mA/VCE 5V
61	2C5401	15	P	Si	C39be		Sm-Signal Transistor Dice;BVCEO 150Vdc,hFE 60minat Ic 10mA/VCE 5V
62	2C5416	15	P	Si	C39at		Sm-Signal Transistor Dice;BVCEO 300Vdc,hFE 30minat Ic 50mA/VCE 10V
63	2C5462	15	P	Si	C39br		FET Dice;Junction FET,V <sub>cb</sub> r/GSS 40Vdc,I <sub>DSS</sub> 16mA max
64	2C5551	15	N	Si	C39as		Sm-Signal Transistor Dice;BVCEO 160Vdc,hFE 80minat Ic 10mA/VCE 5V
65	2C5583	15	P	Si	C39ar		RF Transistor Dice;fT 1.3 GHz max,BVCEO 3Vdc,HFE1 20min
66	2C5631	15	N	Si	C39h		Pwr Transistor Dice;BVCEO(sus) 140Vdc,hFE 15min at Ic 8A/VCE 2V
67	2C5641	15	N	Si	C39ca		RF Transistor Dice;Pout 7W,GPE 8.4dB min,Efficiency 60%
68	2C5642	15	N	Si	C39cb		RF Transistor Dice;Pout 20W,GPE 8.2dB min,Efficiency 60% min
69	2C5680	15	P	Si	C39aw		Sm-Signal Transistor Dice;BVCEO 120Vdc,hFE 40minat Ic 250mA/VCE 2V
70	2C5682	15	N	Si	C39aw		Sm-Signal Transistor Dice;BVCEO 120Vdc,hFE 40minat Ic 250mA/VCE 2V
71	2C5760	15	N	Si	C39i		Pwr Transistor Dice;BVCEO 140Vdc,hFE 15min at Ic 3A/VCE 2V
72	2C5836	15	N	Si	C39as		RF Transistor Dice;fT 2GHz min,r <sub>b</sub> C <sub>c</sub> 6ps typ,tr 320ps typ
73	2C5841	15	N	Si	C39cc		RF Transistor Dice;fT 2.2GHz min,C <sub>cb</sub> 1.5pf max,t <sub>d(on)</sub> 400ps,tr 180ps,t <sub>f</sub> 200ps
74	2C5884	15	P	Si	C39j		Pwr Transistor Disc;BVCEO(sus) 80Vdc,hFE 35min at Ic 3A/VCE 4V
75	2C5886	15	N	Si	C39j		Pwr Transistor Disc;BVCEO(sus) 80Vdc,hFE 35min at Ic 3A/VCE 4V
76	2C5944	15	N	Si	C39cd		RF Transistor Dice;Pout 2W,GPE 9dB min,Efficiency 60% min
77	2C5945	15	N	Si	C39ce		RF Transistor Dice;Pout 4W,GPE 8dB min, Efficiency 60% min
78	2C5946	15	N	Si	C39cf		RF Transistor Dice;Pout 10W,GPE 8dB min,Efficiency 60% min
79	2C5947	15	N	Si	C39cg		RF Transistor Dice;BVCEO 3Vdc,hFE 25 min at Ic 75mA/VCE 20V
80	2C5988	15	P	Si	C39k		Pwr Transistor Disc;BVCEO(sus) 80Vdc,hFE 40min at Ic 1.5A
81	2C5991	15	N	Si	C39k		Pwr Transistor Disc;BVCEO(sus) 80Vdc,hFE 40min at Ic 1.5A
82	2C6031	15	P	Si	C39h		Pwr Transistor Dice;BVCEO(sus) 140Vdc,hFE 15min at Ic 8A/VCE 2V
83	2C6036	15	P	Si	C39m		Pwr Transistor Disc;Complementary Darlington (2C6039),BVCEO(sus) 8Vdc
84	2C6039	15	N	Si	C39m		Pwr Transistor Disc;Complementary Darlington(2C6036),BVCEO(sus) 8Vdc
85	2C6042	15	P	Si	C39n		Pwr Transistor Disc;Complementary Darlington (2C6045),BVCEO(sus) 100V
86	2C6045	15	N	Si	C39n		Pwr Transistor Disc;Complementary Darlington (2C6042),BVCEO(sus) 100V
87	2C6052	15	P	Si	C39i		Pwr Transistor Dice;Complementary Darlington (2C6059),VCE0(sus) min
88	2C6056	15	N	Si	C39o		Pwr Transistor Dice;Darlington,BVCEO(sus) 80Vdc,hFE 750min at Ic 4A
89	2C6059	15	N	Si	C39i		Pwr Transistor Dice;Complementary Darlington (2C6052),VCE0(sus) 100Vdc min
90	2C6080	15	N	Si	C39ch		RF Transistor Dice;Pout 4W,GPE 12dB min,Efficiency 50% min
91	2C6081	15	N	Si	C39ci		RF Transistor Dice;Pout 15W,GPE 6.3dB min,Efficiency 60% min
92	2C6082	15	N	Si	C39cj		RF Transistor Dice;Pout 25W,GPE 6.2dB min,Efficiency 65% min
93	2C6094	15	P	Si	C39ch		RF Transistor Dice;Pout 4W,GPE 12dB min,Efficiency 50% min
94	2C6095	15	P	Si	C39ci		RF Transistor Dice;Pout 15W,GPE 6.3dB min,Efficiency 55% min
95	2C6096	15	P	Si	C39cj		RF Transistor Dice;Pout 30W,GPE 5.7dBmin,Efficiency 60% min
96	2C6193	15	P	Si	C39f		Pwr Transistor Dice;BVCEO(sus) 100Vdc,hFE 60min at Ic 500mA/VCE 2V
97	2C6228	15	P	Si	C39l		Pwr Transistor Dice;BVCEO 140Vdc,hFE 15min at Ic 3A/VCE 2V
98	2C6235	15	N	Si	C39p		Pwr Transistor Dice;VCE0(sus) 325Vdc min,hFE 25min at Ic 100mA/VCE 5V
99	2C6251	15	N	Si	C39q		Pwr Transistor Dice;BVCEO(sus) 350Vdc,hFE 6min at Ic 10A/VCE 3V
100	2C6277	15	N	Si	C39r		Pwr Transistor Dice;Complementary Transistor (2C6277) VCE0(sus) 120Vdc
101	2C6284	15	N	Si	C39s		Pwr Transistor Dice;Complementary Darlington (2C6287),BVCEO(sus) 100Vdc
102	2C6287	15	P	Si	C39s		Pwr Transistor Dice;Complementary Darlington (2C6284),BVCEO(sus) 100Vdc
103	2C6292	15	N	Si	C39b		Pwr Transistor Dice;Complementary Transistor (2C6107),BVCEO(sus) 70Vdc
104	2C6295	15	N	Si	C39u		Pwr Transistor Dice;Complementary Darlington (2C6297),BVCEO(sus) 80Vdc
105	2C6297	15	P	Si	C39u		Pwr Transistor Dice;Complementary Darlington (2C6295),BVCEO(sus) 80Vdc
106	2C6299	15	P	Si	C39o		Pwr Transistor Dice;Complementary Darlington (2C6301),BVCEO(sus) 80Vdc
107	2C6301	15	N	Si	C39o		Pwr Transistor Dice;Complementary Darlington (2C6299),BVCEO(sus) 80Vdc
108	2C6304	15	N	Si	C39ax		RF Transistor Dice;fT 1.4 GHz min,NF 4.5dB max,GPE 15dB min
109	2C6316	15	N	Si	C39t		Pwr Transistor Dice;Complementary Transistor (2C6318),BVCEO(sus) 80Vdc
110	2C6318	15	P	Si	C39t		Pwr Transistor Dice;Complementary Transistor (2C6316),BVCEO(sus) 80Vdc



# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	U	CATEGORY	M	DWG #	L	C	DESCRIPTION
		S	STRUC- TURE	A	Y200 s/a T0200 Ser.	E	O	
						D	D	
1	2C6341	15	N	Si	C39v			Pwr Transistor Dice:Complementary Transistor (2C6343),BVCEO(sus) 120Vdc
2	2C6379	15	P	Si	C39r			Pwr Transistor Dice:Complementary Transistor (2C6379) VCEO(sus) 120Vdc
3	2C6423	15	P	Si	C39b			Pwr Transistor Dice:BVCEO (sus) 300Vdc,hFE 40 min at Ic 100mA/VCE 1.0V
4	2C6438	15	P	Si	C39v			Pwr Transistor Dice:Complementary Transistor (2C6431),BVCEO(sus) 120Vdc
5	2C6488	15	N	Si	C39w			Pwr Transistor Dice:Complementary transistor (2C6491),BVCEO(sus) 80Vdc
6	2C6491	15	P	Si	C39w			Pwr Transistor Dice:Complementary transistor (2C6488),BVCEO(sus) 80Vdc
7	2C6543	15	N	Si	C39x			Pwr Transistor Dice:BVCEO(sus) 400Vdc,hFE 12min at Ic 1.5mA/VCE 2V
8	2C6545	15	N	Si	C39y			Pwr Transistor Dice:BVCEO(sus) 400Vdc,hFE 12min at Ic 2.5A/VCE 3V
9	2C6547	15	N	Si	C39r			Pwr Transistor Dice:VCEO(sus) 400Vdc,hFE 12min at Ic 5A/VCE 2V
10	2C6556	15	P	Si	C39z			Pwr Transistor Dice:BVCEO(sus) 100Vdc, hFE 80min at Ic 50mA/VCE 10V
11	2C6603	15	N	Si	C39ax			RF Transistor Dice:NF 2dB typ,MAG 17dB typ,RVCEO 15Vdc
12	2C6604	15	N	Si	C39bw			RF Transistor Dice:NF 2.5dB typ,MAG 16dB typ,BVCEO 15Vdc
13	3C128	15	N	Si	C39bs			FET Dice:MOSFET,BVDSX 20Vdc,IDSS 10mA max
14	3C169	15	N	Si	C39bo			FET Dice:MOSFET,V(BR)DSS 25Vdc,IDSS 10mA max
15	3C201	15	N	Si	C39bt			FET Dice:Dual Gate MOSFET,V(BR) DSX 25Vdc,IDSS 30mA max
16	3C211	15	N	Si	C39bu			FET Dice:Dual Gate MOSFET,V(BR) DSX 25Vdc,IDSS 40mA max
17	BFRC90	15	N	Si	C39bw			RF Transistor Dice:ft 5GHz typ,NF 2.4dB typ,Gmax 18 dB
18	BFRC91	15	N	Si	C39bw			RF Transistor Dice:ft 5GHz typ,NF 1.9 dB typ,Gmax 16dB
19	BFRC96	15	N	Si				BFRC96Z Chip
20	BUC205	15	N	Si	C39aa			Pwr Transistor Dice:VCEO(sus) 700Vdc min,ICES 1mA max,VEBO 5V min
21	BUC208	15	N	Si	C39ab			Pwr Transistor Dice:BVCEO(sus) 700Vdc,hFE 2.25min at Ic 4.5A/VCE 5V
22	DC2906A	15	P	Si			T	2N2906A Chip
23	DC2907A	15	P	Si			T	2N2907A Chip
24	DC3439	15	N	Si			T	2N3439 Chip
25	DC3440	15	N	Si			T	2N3440 Chip
26	DC4352	15	P	Si			DF	2N4352 Chip
27	DN918	15	N	Si				BVCEO 15Vmin,hFE 100 min at VCE 1V,Ic 3mA;ft 800MHz min
28	DN2219A	15	N	Si			T	BVCEO 50Vmin,hFE 40 min at VCE 10V,Ic 500mA
29	DN2222A	15	N	Si			T	BVCEO 50Vmin,hFE 75 min at VCE 10V,Ic 1mA
30	DN2484	15	N	Si			T	BVCEO 60Vmin,hFE 150-500 at VCE 5V,Ic 10uA;ft 100MHz min
31	DN3439	15	N	Si			T	BVCEO 400Vmin,hFE 30 min at VCE 10V,Ic 20mA;ft 50MHz min
32	DN9000	15	N	Si			T	BVCEO 400Vmin,hFE 30 min at VCE 10V,Ic 20mA
33	DN-1006-2	15	N	Si				Icar 500n Max;Icbo 10uA Max;hfe Min 20 at Ic 1.0mA,VCE 10V
34	DP2805	15	P	Si			T	BVCEO 40Vmin,hFE 100-300 at VCE 5V,Ic 10uA;ft 30MHz min
35	DP2907A	15	P	Si			T	BVCEO 60Vmin,hFE 125-300 at VCE 10V,Ic 150mA;ft 250MHz min
36	MFEC2010	15	N	Si	C39bn			FET Dice:Junction FET for Chopper Applications,V(BR)GSS 25Vdc
37	MFEC3002	15	N	Si	C39ax			FET Dice:Junction FET for Chopper Applications,BVDSX 15Vdc
38	MFEC3003	15	P	Si	C39bs			FET Dice:Junction FET for Chopper Applications,BVDSX 15Vdc
39	MJC10007	15	N	Si	C39ac			Pwr Transistor Dice:Darlington,BVCEO(sus) 400V,hFE 40min at Ic 2.5m
40	MJC10009	15	N	Si	C39ad			Pwr Transistor Dice:Darlington,BVCEO(sus) 500V,hFE 40min at Ic 5m
41	MJC10011	15	N	Si	C39a			Pwr Transistor Dice:Darlington,VCEO(sus) 700Vdc,IEBO 50mA
42	MJC10012	15	N	Si	C39ae			Pwr Transistor Dice:Darlington,BVCEO(sus) 400Vdc,hFE 100min at Ic 6A/VCE 6V
43	MJEC244	15	N	Si	C39af			Pwr Transistor Dice:Complementary Transistor (MJEC254),BVCEO 100Vdc
44	MJEC254	15	P	Si	C39af			Pwr Transistor Dice:Complementary Transistor (MJEC244),BVCEO 100Vdc
45	MJEC3302	15	N	Si	C39ag			Pwr Transistor Dice:Complementary Darlington (MJEC3312),BVCEO 80Vdc
46	MJEC3312	15	P	Si	C39ag			Pwr Transistor Dice:Complementary Darlington (MJEC3302),BVCEO 80Vdc
47	MJEC13009	15	N	Si	C39d		P	Pwr Transistor Dice:BVCEO(sus) 400Vdc,hFE 8min at Ic 5A/VCE 5V
48	MJEC15030	15	N	Si	C39ah			Pwr Transistor Dice:BVCEO(sus) 150Vdc,hFE 40min at Ic 100mA/VCE 2V
49	MJEC15031	15	P	Si	C39ah			Pwr Transistor Dice:BVCEO(sus) 150Vdc,hFE 40min at Ic 100mA/VCE 2V
50	MMC4049	15	P	Si	C39bz			RF Transistor Dice:ft 4GHz min,Ccb 1.25pF max,BVCEO 10Vdc
51	MMC4052	15	P	Si	C39bf			Sm-Signal Transistor Dice:BVCEO 30Vdc,hFE 20min at Ic 10mA/VCE 1V
52	MMC4209	15	P	Si	C39aq			Sm-Signal Transistor Dice:BVCEO 15Vdc,hFE 30min at Ic 50mA/VCE 1V
53	MMCF708	15	N	Si	C40			Flip Chip;Sw and Amp,BVCEO 15Vdc,ICBO 25nAmax;ft 300MHz min
54	MMCF929	15	N	Si	C40			Flip Chip;Sm-Signal Amp,BVCEO 45Vdc,ICBO 10nA max;ft 30MHz min
55	MMCF930	15	N	Si	C40			Flip Chip;Sm-Signal Amp,BVCEO 45Vdc,ICBO 10nA max;ft 30MHz min
56	MMCF2221	15	N	Si	C40			Flip Chip;Sw and Amp,BVCEO 30Vdc,ICBO 10nA max;ft 250MHz min
57	MMCF2221A	15	N	Si	C40			Flip Chip;Sw and Amp,BVCEA 40Vdc,ICBO 10nA max;ft 250 MHz min
58	MMCF2222	15	N	Si	C40			Flip Chip;Sw and Amp,BVCEO 30Vdc,ICBO 10nA max;ft 250MHz min
59	MMCF2222A	15	N	Si	C40			Flip Chip;Sw and Amp,BVCEO 40Vdc,ICBO 10nA max;ft 250MHz min
60	MMCF2369	15	N	Si	C40			Flip Chip;Sw and Amp,BVCEO 15Vdc,ICBO 400nA max;ft 500MHz min
61	MMCF2484	15	N	Si	C40			Flip Chip;Sm-Signal Amp,BVCEO 80Vdc,ICBO 10nAmax;ft 30MHz min
62	MMCF2857	15	N	Si	C40			Flip Chip;FR Sm-Signal,BVCEO 15Vdc,ICBO 10nA max;ft 1.0GHz min
63	MMCF2906	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 40Vdc,ICBO 20nAmax;ft 200MHz min
64	MMCF2906A	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 80Vdc,ICBO 10nA max;ft 200MHz min
65	MMCF2907	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 40Vdc,ICBO 20nA max;ft 200MHz min
66	MMCF2907A	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 80Vdc,IRBO 10nA max;ft 200MHz min
67	MMCF3250	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 40dc,ICBO 20nAmax;ft 250MHz min
68	MMCF3250A	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 60Vdc,ICBO 20nAmax;ft 250 MHz min
69	MMCF3251	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 40Vdc,ICBO 20nAmax;ft 300MHz min
70	MMCF3251A	15	P	Si	C40			Flip Chip;Sw and Amp,BVCEO 80Vdc,ICBO 20nAmax;ft 300MHz min
71	MMCF3798	15	P	Si	C40			Flip Chip;Sm-Signal Transistors,BVCEO 40Vdc,ICBO 10nA max;ft 100MHz min
72	MMCF3799	15	P	Si	C40			Flip Chip;Sm-Signal Transistors,BVCEO 40Vdc,ICBO10nA max;ft 100MHz min
73	MPSAC17	15	N	Si	C40			Flip Chip;FR Sm-Signal,BVCEO 12Vdc,ICBO 10nA max;ft 900MHz min
74	MPSAC05	15	N	Si	C39bg			Sm-Signal Transistor Dice:BVCEO 80Vdc,hFE 50min at Ic 100mA/VCE 1V
75	MPSAC13	15	N	Si	C39bg			Sm-Signal Transistor Dice:Darlington Presamp,BVCES 30Vdc,hfe 10k min
76	MPSAC17	15	N	Si	C39bd			Sm-Signal Transistor Dice:Chopper,BVEBO 12Vdc,hfe 200 min at Ic 5mA
77	MPSAC42	15	N	Si	C39bh			Sm-Signal Transistor Dice:BVCEO 300Vdc,hFE 40minat Ic 10mA/VCE 10V
78	MPSAC55	15	P	Si	C39bi			Sm-Signal Transistor Dice:BVCEO 60Vdc,hFE 50min at Ic 10mA/VCE 1V
79	MPSAC86	15	P	Si	C39bg			Sm-Signal Transistor Dice:Darlington Presamp,BVCES 30 Vdc,hFE 40k min
80	MPSAC92	15	P	Si	C39bh			Sm-Signal Transistor Dice:BVCEO 300Vdc,hFE 40minat Ic 10mA/VCE 10V
81	MPSC404	15	P	Si	C39bf			Sm-Signal Transistor Dice:Chopper,BVCEO 24V min,hFE 30min at Ic 12mA/150mV
82	MPSC389A	15	N	Si	C39ak			Sm-Signal Transistor Dice:BVCEO 45Vdc,hFE 100minat Ic 10mA/VCE 10V
83	MPSC6540	15	N	Si	C39bk			Sm-Signal Transistor Dice:BVCEO 30Vdc,hFE 25 min at Ic 2mA/VCE 10
84	MPSC6543	15	N	Si				Sm-Signal Transistor Dice:BVCEO 25Vdc,hFE 25min at Ic 4mA/VCE 10
85	MPSC6583	15	P	Si	C39az			Sm-Signal Transistor Dice:BVCEO 20Vdc,hFE 50min at Ic 350mA/VCE 1V
86	MPSHC05	15	N	Si	C39bm			Sm-Signal Transistor Dice:BVCEO 80Vdc,hFE 30min at Ic 1.5mA/VCE 10V
87	MPSHC08	15	N	Si	C39bk			Sm-Signal Transistor Dice:BVCEO 30Vdc,hFE 20min at Ic 3mA/VCE 10V
88	MPSHC17	15	N	Si	C39bk			Sm-Signal Transistor Dice:BVCEO 15Vdc,hFE 25min at Ic 5mA/VCE 10V
89	MPSHC24	15	N	Si	C39bk			Sm-Signal Transistor Dice:BVCEO 30Vdc,hFE 30min at Ic 8mA/VCE 10V
90	MPSHC55	15	P	Si	C39bm			Sm-Signal Transistor Dice:BVCEO 80Vdc,hFE 30min at Ic 1.5mA/VCE 10V
91	MPSHC81	15	P	Si	C39bi			Sm-Signal Transistor Dice:BVCEO 20Vdc,hFE 60min at Ic 5mA/VCE 10V
92	MPSUC01	15	N	Si	C39au			Sm-Signal Transistor Dice:BVCEO 30Vdc,hFE 60min at Ic 100mA/VCE 1V
93	MPSUC03	15	N	Si	C39av			Sm-Signal Transistor Dice:BVCEO 120Vdc,hFE 40minat Ic 10mA/VCE 10V
94	MPSUC05	15	N	Si	C39au			Sm-Signal Transistor Dice:BVCEO 80Vdc,hFE 60min at Ic 250mA/VCE 1V
95	MPSUC31	15	N	Si	C39bn			Sm-Signal Transistor Dice:BVCES 65Vdc,hFE 10 min at Ic 100mA/VCE 10V
96	MPSUC51	15	P	Si	C39bi			Sm-Signal Transistor Dice:BVCEO 30Vdc,hFE 60min at Ic 100mA/VCE 1V
97	MPSUC55	15	P	Si	C39bi			Sm-Signal Transistor Dice:BVCEO 80Vdc,hFE 50min at Ic 250mA/VCE 1V
98	MRFC314A	15	N	Si	C39ck			RF Transistor Dice:Pout 30W,GPE 10dB,Efficiency 50%
99	MRFC321	15	N	Si	C39cm			RF Transistor Dice:Pout 10W,GPE 12dB,Efficiency 50% min
100	MRFC323	15	N	Si	C39cm			RF Transistor Dice:Pout 20W,GPE 10dB,Efficiency 50% min
101	MRFC401	15	N	Si	C39cn			RF Transistor Dice:Pout 25W,GPE 13dB min,Efficiency 40%min
102	MRFC406	15	N	Si	C39co			RF Transistor Dice:Pout 20W,GPE 12dB min,Efficiency 45% min
103	MRFC478	15	N	Si	C39cq			RF Transistor Dice:Pout 3W,GPE 15dB,Efficiency 40% (SSB)
104	MRFC515	15	N	Si	C39cr			RF Transistor Dice:Pout 750mW min (AMP) 400W (OSC),ft 1.8GHz min
105	MRFC517	15	N	Si	C39cs			RF Transistor Dice:Nichrome Emitter Ballasting Resistors,ft 2.2 GHz min
106	MRFC559	15	N	Si	C39cr			RF Transistor Dice:Nichrome Emitter Ballasting Resistors,BVCEO 20Vdc
107	MRFC901	15	N	Si	C39ax			RF Transistor Dice:ft 4.5 GHz typ,NF 2dB typ,GPE 10dB min
108	MRFC911	15	N	Si	C39bw			RF Transistor Dice:Hihg Power Gain to 1.5 GHz,BVCEO 20Vdc
109	MRFC931	15	N	Si	C39ag		R	RF Transistor Dice:ft 3 GHz typ,BVCEO 5V,hFE 30min at Ic 250uA
110	MRFC8003	15	N	Si	C39bx			RF Transistor Dice:Pout 400mW,BVCEO 30Vdc,hFE 20min at Ic 100mA

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	M/DWG #	LEO	DESCRIPTION
		USE	TURE	AT	ODE	
				Y200		
				s/a		
				T0200		
				Ser.		
1	MRF8004	15	N	SI	C39aq	RF Transistor Dice;Pout 3.5W,BVCEO 30Vdc,hFE 10min at Ic 400mA
2	N826	15	NDE	SI		Ic 25mA;VCBO 35V;VCEO 25V;VEBO 5.0V;Pt 350mW;Ta 150°C;Similar to 2N2484
3	N827	15	NDE	SI		Ic 300mA;VCBO 35V;VCEO 25V;VEBO 5.0V;Pt 350mW;Ta 150°C;Similar to 2N2222
4	N828	15	NDE	SI		Ic 100mA;VCBO 20V;VCEO 15V;VEBO 4.0V;Pt 100mW;Ta 150°C;Similar to 2N2369
5	P824	15	PDE	SI		Ic 25mA;VCBO 35V;VCEO 25V;VEBO 5.0V;Pt 350mW;Ta 150°C;Similar to 2N804
6	P825	15	PDE	SI		Ic 300mA;VCBO 35V;VCEO 25V;VEBO 5.0V;Pt 350mW;Ta 150°C;Similar to 2N2904
7	TIPC47	15	N	SI		Pwr Transistor Dice;BVCEO(sus) 250Vdc,hFE 30min at Ic 300mA/VCE 10V
8	TIPC100	15	N	SI	C39aj	Pwr Transistor Dice;Complementary Darlington,BVCEO(sus) 60Vdc
9	TIPC102	15	N	SI	C39aj	Pwr Transistor Dice;Complementary Darlington,BVCEO(sus) 60Vdc
10	TIPC105	15	P	SI	C39aj	Pwr Transistor Dice;Complementary Darlington,BVCEO(sus) Vdc
11	TIPC106	15	P	SI	C39aj	Pwr Transistor Dice;Complementary Darlington,BVCEO(sus) 60Vdc
12	TIPC107	15	P	SI	C39aj	Pwr Transistor Dice;Complementary Darlington,BVCEO(sus) 60Vdc
13	UC310	15	N	SI	C39bv	FET Dice;Junction FET,B(BR)GSS 25 Vdc,IDSS 60mA max
14	DTS40651	16	N-Δ	SI	Y204a	BVCEO 600V;BVEBO 20V;Ic 15A;ICEO 250uA max;IEBO 50mA max
15	2N2654*	18	P	Ge	T012	VHF;Pd 100mW;Power Gain 20dB max at Freq 100MHz;VCBO 25V max;Cob 1.7pF max
16	2N2871*	18	P	Ge	T012	VHF;Pd 100mW;Power Gain 18dB max at Freq 100MHz;VCBO 25V max;Cob 2.5pF max
17	2N2983	18	P	Ge	T146	VHF;Class C;Po 500mW typ;Eff 40% min;Power Gain 5dB min
18	2N2984*	18	P	Ge	T146	VHF;Class C;Po 500mW typ;Eff 40% min;Power Gain 6dB min
19	2N2985*	18	P	Ge	T146	VHF;Class C;Po 500mW typ;Eff 40% min;Power Gain 5dB min
20	2N3309A*	18	N	SI	T039	MF-UHF;Pd 5.0W;Po 2.2W at VCE 25V;Freq 250MHz;Pin 400mW max;Cob 6.0pF at 15V
21	2N3374*	18	N	SI	T05	VHF;Class C;Power Gain 7.5dB min at VCE 28V;Ic 170mA;fo 130MHz;Pac Out 2.8W;Eff 53%
22	2N5215*	18	N	SI	T080	VHF-UHF;Po 10W;Pt 3.18W max;Freq 200MHz;Efficiency 85%
23	2N5834*	18	N	SI	T039	VHF;Class C;Power Gain 10dB min at VCC 28V;Ic 180mA;fin 175MHz;fout 175MHz;Po 2.5W
24	2SC1169*	18	N-PE	SI	F17	VHF;Class C;Po 2.5Wmin;Eff 60%min at 175MHz for Pin 250mW;Vcc 13.5V
25	2SC1251*	18	N-PE	SI	T136	CATV Wide Band Ampl;Pwr Gain 14dB min,NF 4.0dB max at 200MHz;Vce 15V;Ic 50mA
26	2SC1252*	18	N-PE	SI	T039	CATV Wide Band Ampl;Pwr Gain 15dB min,NF 4.0dB max at 200MHz;Vce 15V;Ic 50mA
27	2SC1253*	18	N-PE	SI	T039	CATV Wide Band Ampl;Pwr Gain 16dB min,NF 3.5dB typ at 200MHz;Vce 15V;Ic 50mA
28	2SC1511*	18	N-PE	SI	W55b	Pout 25W Typ At VCC 18V;f 275MHz;Pin 6.0W;Cob 80pf max
29	2SC1512*	18	N-PE	SI	W55b	Pout 37W Typ At VCC 18V;f 275MHz;Pin 10W;Cob 100pf max
30	2SC1763*	18	N-PE	SI	W52r	RF Hi Pwr;Po 40Wmin;Eff 40%min at 30MHz;Gain 16dBmin;Vcc 28V
31	2SC1764*	18	N-PE	SI	W52r	RF Hi Pwr;Po 80Wmin;Eff 40%min at 30MHz;Gain 14.5dBmin;Vcc 28V
32	2SC2020*	18	N	SI	Y220b	PC 12W;Pout 7.0W typ;f 27MHz;Eff 60% min;Cob 30pf max
33	2SC2180*	18	N-PE	SI	T151a	VHF Class C;Po 25Wmin;Eff 80%min at 175MHz for Pin 5.0W;Vcc 13.5V
34	2SC2382*	18	N-PE	SI	W52r	VHF Class C;Po 50Wmin;Eff 80%min at 175MHz for Pin 15W;Vcc 12.5V
35	2SC2395*	18	N-PE	SI	W52s	SSB Linear Pwr;Po 10Wmin;Eff 35%min at 28MHz for Pin 200mW;Vcc 12.5V
36	2SC2420*	18	N-PE	SI	T151	VHF Class C;Po 32Wmin;Eff 80%min at 175MHz for Pin 400mW;Vcc 13.5V
37	2SC2508*	18	N-PE	SI	W52s	VHF Class C;Po 27Wmin;Eff 80%min at 175MHz for Pin 4.2W;Vcc 12.5V
38	2SC2509*	18	N-PE	SI	Y220b	SSB Linear Pwr;Po 10Wmin;Eff 35%min at 28MHz for Pin 400mW;Vcc 12.5V
39	2SC2510*	18	N-PE	SI	W52r	SSB Linear Pwr;Po 150Wmin;Eff 35%min at 28MHz for Pin 7.0W;Vcc 28V
40	40953*	18	N-PE	SI	T039	Class C;Po 1.75W min;Power Gain 12.4db min;Efficiency 50% min;Vcc 15.5V
41	40975*	18	N-PE	SI	T039	Class C;Po 50mW min;Power Gain 10db min;Collector Current 60mA max;Vcc 12.5V
42	40976*	18	N-PE	SI	T039	Class C;Po 500mW min;Power Gain 10db min;Collector Current 140mA max;Vcc 12.5V
43	A15-12	18	N	SI	W52c	30-50MHz;Po 15W;Power Gain 10db;VDC 12.5V;EFF 60%;Pdiss 50W
44	A80-12	18	N	SI	W129	VHF;f 50MHz;Po 80W min;Vcc 12.5V;Eff 60%;BVces 36V;Ic 25A max;Pd 250W
45	A80-12G	18	N	SI	W129	VHF;f 50MHz;Po 80W min;Vcc 12.5V;Eff 60%;BVces 36V;Ic 26A max;Pd 275W
46	B1-12	18	N-D	SI	W166	VHF;f 175MHz;Po 1.0W;Power Gain 12dB;VDC 12.5V;Eff 70%;Pt 5.0W;DF 142mW/C
47	B8-12	18	N-D	SI		VHF;f 175MHz;Po 8.0W;Power Gain 10dB;VDC 12.5V;Eff 80%;Pt 25W;DF 142mW/C
48	B15-12	18	N-D	SI		VHF;f 175MHz;Po 15W;Power Gain 9.0dB;VDC 12.5V;Eff 80%;Pt 30W;DF 142mW/C
49	B30-12	18	N-D	SI		VHF;f 175MHz;Po 30W;Power Gain 8.5dB;VDC 12.5V;Eff 80%;Pt 65W;DF 142mW/C
50	B45-12	18	N-D	SI		VHF;f 175MHz;Po 45W;Power Gain 8.5dB;VDC 12.5V;Eff 80%;Pt 90W;DF 142mW/C
51	B70-28	18	N-D	SI		VHF;f 175MHz;Po 70W;Power Gain 8.5dB;VDC 28V;Eff 60%;Pt 140W;DF 833mW/C
52	BAM20	18	N-D	SI		VHF;f 150MHz;Po 20W Pk;Power Gain 11dB;VDC 27V;Eff 85%;Pt 20W;DF 142mW/C
53	BAM40	18	N-D	SI		VHF;f 150MHz;Po 40W Pk;Power Gain 10dB;VDC 27V;Eff 85%;Pt 50W;DF 285mW/C
54	BAM40SR	18	N-D	SI	T91	VHF;f 150MHz;Po 40W Pk;Power Gain 10dB;VDC 27V;Eff 70%;Pt 60W;DF 285mW/C
55	BAM80	18	N-D	SI	T91	VHF;f 150MHz;Po 80W Pk;Power Gain 9.0dB;VDC 27V;Eff 85%;Pt 85W;DF 500mW/C
56	BAM80SR	18	N-D	SI	T91	VHF;f 150MHz;Po 80W Pk;Power Gain 9.0dB;VDC 27V;Eff 70%;Pt 80W;DF 500mW/C
57	BAM100SR	18	N-D	SI	T92	VHF;f 150MHz;Po 100W Pk;HFE 10;VDC 27V;Pk;Eff 70%;Pt 100W
58	BAM120	18	N-D	SI	T92	VHF;f 150MHz;Po 120W Pk;Power Gain 7.8dB;VDC 27V;Eff 85%;Pt 140W;DF 833mW/C
59	BAM120SR	18	N-D	SI	T92	VHF;f 150MHz;Po 120W Pk;Power Gain 7.8dB;VDC 27V;Eff 70%;Pt 120W;DF 833mW/C
60	BF454	18	N	SI	R204	Hf;f 10.7MHz;Pt 220mW;VCEO 20V max;Ic 30mA max
61	BF442	18	N	SI	T039	Freq 175MHz;Po 2.0W;Gp 11dB;VCEO 18V;Ic 1.5A;Pd 6.7W
62	BF443	18	N	SI	T039	Freq 175MHz;Po 2.0W;Gp 12dB;VCEO 18V;Ic 3.7A;Pd 10W
63	BFS23A*	18	N	SI	T039	Freq 175MHz;Po 4.0W;Gp 8.0dB;VCEO 18V;Ic 2.2A;Pd 8.0W
64	BFS23A*	18	N	SI	T039	Freq 175MHz;Po 4.0W;Gp 10dB;VCEO 38V;Ic 1.5A;Pd 8.0W
65	BGY32	18	N	SI	X170	VHF;Po 23W;Freq Rng 68-88MHz;Voper 12.5V;Eff 40%
66	BGY35	18	N	SI	X170	VHF;Po 22;Freq Rng 80-108MHz;Voper 12.5V
67	BGY36	18	N	SI	X170	VHF;Po 22;Freq Rng 132-158MHz;Voper 12.5V
68	BGY36*	18	N	SI	X170	VHF;Po 19W;Freq Rng 148-174MHz;Voper 12.5V;Eff 40%
69	BLV11*	18	N	SI	W52t	VHF;Po 8W;Freq 175MHz;Voper 12.5V;Eff 75%
70	BLV20*	18	N	SI	W52t	VHF;Po 15W;Freq 175MHz;Voper 12.5V;Eff 87%
71	BLV21*	18	N	SI	W52t	VHF;Po 8W;Freq 175MHz;Voper 28V;Eff 65%
72	BLV21*	18	N	SI	W52t	VHF;Po 15W;Freq 175MHz;Voper 28V;Eff 65%
73	BLW29	18	N	SI	T152	Freq 175MHz;Po 14W;Gp 10dB;VCEO 18V;Ic 8.0A;Pd 45W
74	BLW31	18	N	SI	T152	Freq 175MHz;Po 28W;Gp 9.0dB;VCEO 18V;Ic 15A;Pd 70W
75	BLW60*	18	N	SI	T172k	Freq 175MHz;Po 45W;Gp 5.5dB;VCEO 18V;Ic 20A;Pd 65W
76	BLW60C	18	N	SI	T152	Freq 175MHz;Po 45W;Gp 6.0dB;VCEO 18V;Ic 20A;Pd 65W
77	BLW78	18	N	SI	W52n	Po 80W at 28MHz;Gp 13dB; VCEO 35V;Ic 20A;Pd 140W
78	BLW77	18	N	SI	W52n	Po 130W at 28MHz;Gp 12dB;Vcc 28V;Pt 160W;Vceo 35V;Ic 30Amax
79	BLW78	18	N	SI	W52n	Po 100W at 144MHz;Gp 6dB;Vcc 28V;Pt 125W;Vceo 35V;Ic 25A max
80	BLW83	18	N	SI	W52k	Freq 30MHz;Po 8.0W;Gp 18dB;VCEO 36V;Ic 6.0A;Pd 70W
81	BLW84	18	N	SI	W52k	Freq 175MHz;Po 25W;Gp 9.0dB;VCEO 38V;Ic 9.0A;Pd 70W
82	BLW85	18	N	SI	W52k	Freq 175MHz;Po 45W;Gp 8.0dB;VCEO 38V;Ic 20A;Pd 70W
83	BLW86	18	N	SI	W52k	Freq 175MHz;Po 45W;Gp 8.0dB;VCEO 38V;Ic 20A;Pd 65W
84	BLW87	18	N	SI	W52k	Freq 175MHz;Po 25W;Gp 8.0dB;VCEO 18V;Ic 10A;Pd 70W
85	BLW85*	18	N	SI	W52k	Freq 175MHz;Po 25W;Gp 8.0dB;VCEO 18V;Ic 10A;Pd 70W
86	BLX13*	18	N	SI	T172k	Freq 1.8-28MHz;Po 20-180W(P.E.P.);Gp 14dB;VCEO 53V;Ic 8.0A;Pd
87	BLX13C	18	N	SI	T152	Freq 28MHz;Po 25W;Gp 18dB; VCEO 36V;Ic 6.0A;Pd 82W
88	BLX14*	18	N	SI	T152	Freq 30MHz;Po 80W;Gp 18dB;VCEO 36V;Ic 12A;Pd 88W
89	BLX15*	18	N	SI	T152	Freq 30MHz;Po 50W;Gp 13dB;VCEO 53V;Ic 20A;Pd 195W
90	BLX39A	18	N	SI	T152	Freq 175MHz;Po 45W;Gp 8.0dB;VCEO 38V;Ic 20A;Pd 65W
91	BLY36*	18	N-PL	SI	T080	V.H.F. Class B;Freq 175MHz;Po 7.0W;Eff 77%;Gain 13db
92	BLY36*	18	N-PL	SI	T060	V.H.F. Class B;Freq 175MHz;Po 7.0W;Eff 77%;Gain 7.5db
93	BLY83*	18	N-PLT	SI	T84	V.H.F. Class B;Freq 175MHz;Po 7.0W;Eff 77%;Gain 13db
94	BLY84*	18	N-PLT	SI	T84	V.H.F. Class B;Freq 175MHz;Po 7.0W;Eff 77%;Gain 7.5db
95	BLY87A*	18	N	SI	T172m	Freq 175MHz;Po 8.0W;Gp 9.0dB;VCEO 18V;Ic 3.7A;Pd 17W
96	BLY87C	18	N	SI	T152	Freq 175MHz;Po 8.0W;Gp 9.0dB;VCEO 18V;Ic 3.7A;Pd 17W
97	BLY88A*	18	N	SI	T172m	Freq 175MHz;Po 15W;Gp 7.5dB;VCEO 18V;Ic 7.5A;Pd 32W
98	BLY88C	18	N	SI	T152	Freq 175MHz;Po 15W;Gp 8.0dB;VCEO 18V;Ic 7.5A;Pd 32W
99	BLY89A*	18	N	SI	T172k	Freq 175MHz;Po 25W;Gp 8.0dB;VCEO 18V;Ic 10A;Pd 70W
100	BLY89C	18	N	SI	T152	Freq 175MHz;Po 25W;Gp 8.0dB;VCEO 18V;Ic 12A;Pd 73W
101	BLY90*	18	N	SI	T94	Freq 175MHz;Po 50W;Gp 8.0dB;VCEO 18V;Ic 20A;Pd 130W
102	BLY91A*	18	N	SI	T172m	Freq 175MHz;Po 8.0W;Gp 1.2dB;VCEO 38V;Ic 2.2A;Pd 17W
103	BLY81C	18	N	SI	T152	Freq 175MHz;Po 8.0W;Gp 12dB;VCEO 38V;Ic 2.2A;Pd 18W
104	BLY82A*	18	N	SI	T172m	Freq 175MHz;Po 15W;Gp 10dB;VCEO 36V;Ic 4.5A;Pd 32W
105	BLY92C	18	N	SI	T152	Freq 175MHz;Po 15W;Gp 10dB;VCEO 38V;Ic 4.5A;Pd 32W
106	BLY83A*	18	N	SI	T172k	Freq 175MHz;Po 25W;Gp 8.0dB;VCEO 38V;Ic 8.0A;Pd 70W
107	BLY83C	18	N	SI	T152	Freq 175MHz;Po 25W;Gp 9.0dB;VCEO 38V;Ic 9.0A;Pd 70W
108	BLY84*	18	N	SI	T94	Freq 175MHz;Po 50W;Gp 7.0dB;VCEO 38V;Ic 12A;Pd 130W
109	BM15-12	18	N-D	SI		VHF;f 175MHz;Po 15W;Power Gain 10dB;VDC 12.5V;Eff 80%;Pt 35W;DF 200mW/C
110	BM30-12	18	N-D	SI		VHF;f 175MHz;Po 30W;Power Gain 8.0dB;VDC 12.5V;Eff 60%;Pt 65W;DF 370mW/C

# 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	PACKAGE	Y200 s/a TO200 Ser.	DESCRIPTION
1	BM45-12	18	N-D	Si		VHF;f 175MHz;Po 45W;Power Gain 8.5dB;VDC 12.5V;Eff 80%;Pt 115W;DF 666mW/C
2	BM80-12	18	N-D	Si		VHF;f 175MHz;Po 80W;Power Gain 6.0dB;VDC 12.5V;Eff 80%;Pt 160W;DF 909mW/C
3	BM100-28	18	N-D	Si		Pout 100W;Pin 20W max At Freq 175MHz;VCE 28V;Pd 270W;IC 20A max;hFE 20 min
4	CD3400	18	N	Si	W131	VHF;Class A;Po 7.5W min;Power Gain 11.2dB;BVces 45V;Ic 4.0A;Eff 33%;ft 1.3GHz
5	CD3401	18	N	Si	W131	VHF;Class A;Po 15W min;Power Gain 9.0dB;BVces 45V;Ic 8.0A;Eff 33%;ft 1.2GHz
6	CD3403	18	N	Si	W131	VHF;Class A;Po 30W min;Power Gain 7.0dB;BVces 45V;Ic 14A;Eff 30%;ft 1.0GHz
7	CD4070	18	N	Si	W655	VHF 175MHz;Po 70W;Power Gain 6db;VDC 12.5V;EFF 60%;Pdiss 150W
8	FTR128*	18	N-DPL	Si	T092	Pd 500mW;Power Gain 22dB min At 200MHz;VCBO 30V;RF Amp Mixer;NF 2.5dB Typ
9	HEPS3001-RT	18	N	Si	T039	VCBO 85V;VEBO 4.0V;Po 5.0W;Ic 1.0A max;hFE 10 min;Freq 175MHz
10	HEPS3004-RT	18	N	Si	T039	VCBO 80V;VEBO 3.0V;Po 3.5W;Ic 500mA max;hFE 10 min at 400mA;Freq 27MHz
11	HEPS3005-RT	18	N	Si	T81a	VCBO 36V;VEBO 4.0V;Po 2.0W;Ic 5.0A max;hFE 10 min;Freq 175MHz
12	HEPS3006-RT	18	N	Si	T81a	VCBO 36V;VEBO 4.0V;Po 10W;Ic 3.0A max;hFE 10 min;Freq 175MHz
13	HEPS3007-RT	18	N	Si	T775e	VCBO 38V;VEBO 4.0V;Po 25W;Ic 5.0A max;hFE 10 min;Freq 175MHz
14	HEPS3008-RT	18	N	Si	T775e	VCBO 55V;VEBO 4.0V;Po 1.5W;Ic 400mA max;hFE 10 min;Freq 150MHz
15	HEPS3036-RT	18	N	Si	W522q	VCBO 45V;VEBO 3.5V;Po 20W Peak;Ic 4.0A max;Freq 30MHz
16	HEPS3037-RT	18	N	Si	W522q	VCBO 40V;VEBO 4.0V;Po 65W Peak;Ic 10A max;Freq 30MHz
17	HEPS3038-RT	18	N	Si	T039	VCBO 36V;VEBO 4.0V;Po 2.0W;Ic 330mA max;Freq 150MHz
18	HEPS3039-RT	18	N	Si	T72t	VCBO 36V;VEBO 4.0V;Po 15W;Ic 2.5A max;Freq 150MHz
19	HEPS3040-RT	18	N	Si	T72t	VCBO 38V;VEBO 4.0V;Po 28W;Ic 4.0A max;Freq 150MHz
20	HEPS3041-RT	18	N	Si	T72t	VCBO 36V;VEBO 4.0V;Po 40W;Ic 6.0A max;Freq 150MHz
21	HEPS3042-RT	18	N	Si	T039	VCBO 80V;VEBO 3.0V;Po 500mW;Ic 500mA max;Freq 27MHz
22	HEPS3043-RT	18	N	Si	B18	VCBO 85V;VEBO 3.0V;Po 3.5W;Ic 500mA max;Freq 27MHz
23	HEPS3044-RT	18	N	Si	B16b	VCBO 80V;VEBO 3.0V;Po 4.0W;Ic 1.0A max;hFE 10 Typ at 400mA;f 27MHz
24	HEPS3045-RT	18	N	Si	B16b	VCBO 80V;VEBO 3.0V;Po 4.0W;Ic 1.0A max;hFE 10 Typ at 400mA;f 27MHz
25	HEPS3048-RT	18	N	Si	W126	VCBO 38V;VEBO 4.0V;Po 80W;Ic 20A max;hFE 35 Typ at 5.0A;f 150MHz
26	HEPS3052-RT	18	N	Si	W522q	VCBO 40V;VEBO 4.0V;Po 50W Peak;Ic 7.5A max;hFE 70 Typ at 1.0A;f 30MHz
27	HEPS3053-RT	18	N	Si	W522q	VCBO 45V;VEBO 4.0V;Po 80W Peak;Ic 20A max;hFE 70 Typ at 5.0A;f 30MHz
28	MRF228*	18	N	Si	R218f	Pd 5.0W;f 30MHz;Pout 1.5W;Power Gain 10dB min;Eff 55%
29	MRF340	18	N	Si	Y220b	VHF;Freq 136MHz;Po 8.0W;Gp 13dB min;VCEO 35V;Ic 1.0A;Pd 15W
30	MRF342	18	N	Si	Y220b	VHF;Freq 136MHz;Po 24W;Gp 11dB min;VCEO 35V;Ic 2.2A;Pd 55W
31	MRF428	18	N	Si	W522k	Freq 30MHz;Po 25Wpk;Gp 22dB min;VCEO 35V;Ic 3.0A;Pd 70W
32	MRF428A	18	N	Si	T93e	Freq 30MHz;Po 25Wpk;Gp 22dB min;VCEO 35V;Ic 3.0A;Pd 70W
33	MRF428A*	18	N	Si	T124	Po 150W;Eff 45%;Gpe 13dB;Series Equiv Zin 88-J0.80 at 30MHz;Vcc 50V;Icq 150mA
34	MRF458*	18	N	Si	W522p	Po 80W;Eff 50%;Gpe 12dB;Series Equiv Zin 1.05-J0.85 at 30MHz;Vcc 12.5V;Icq 100mA
35	MRF458A*	18	N	Si	T72t	Po 80W;Eff 50%;Gpe 12dB;Series Equiv Zin 1.05-J0.85 at 30MHz;Vcc 12.5V;Icq 100mA
36	MRF463*	18	N	Si	W522m	Pd 250W;f 30MHz;Pout 80W(PEP);Power Gain 15dB min;Eff 40%;IMD-32dB max
37	MRF464*	18	N	Si	W522p	Po 80W;Eff 40%;Gpe 15dB;Series Equiv Zin 1.4-j0.30 at 30MHz;Vcc 28V;Icq 40mA
38	MRF464A*	18	N	Si	T72t	Po 80W;Eff 40%;Gpe 15dB;Series Equiv Zin 1.4-j0.30 at 30MHz;Vcc 28V;Icq 40mA
39	MRF475*	18	N	Si	Y220b	SSB Lin Amp;Po 4W;Eff 40%;Gpe 10dB;Zin 4.5-j2.4 at 30MHz;Vcc 13.6V;Icq 20mA
40	MRF485	18	N	Si	Y220b	Freq 30MHz;Po 15Wpk;Gp 10dB min;VCEO 35V;Ic 1.0A;Pd 30W
41	MRF604*	18	N	Si	T046	Po 1.0W;Eff 50%;Gpe 10dB;Series Equiv Zin 7.5-J14 at 175MHz;Vcc 12.5V
42	MRF607*	18	N	Si	T039	Po 1.75W;Eff 50%;Gpe 11.5dB;Series Equiv Zin 6.0-J8.0 at 175MHz;Vcc 12.5V
43	MRF8003*	18	N	Si	T039	Po 500mW;Eff 50%;Gpe 10dB min at 27MHz;Vcc 12.5V
44	S10-12*	18	N	Si	W52c	Class A,AB/B or C;Po 10W min;Pin 300mW max at 30MHz;Eff 45%;Cob 100pF.
45	S10-28*	18	N	Si	W52c	HF Class A,AB or C;Po 10W min;Pin 500mW max at 30MHz;Cob 75pF max
46	S25-50	18	N	Si	W129	HF;f 2.30MHz;Po 25W;Pd 80;Gain 14db;Vce 50
47	S50-12	18	N	Si	W52d	Pout 50W;Pin 3.0W max At Freq 30MHz;VCE 12.5V;Pd 160W;hFE 10 min;IC 13A max
48	S50-28	18	N	Si	W52d	HF;Pout 50W min;Pin 1.0W max At Freq 30MHz;Eff 65% typ;Pt 220W;DF 1.2W/C
49	S80-12	18	N-D	Si	XXXXX	HF;f 30MHz;Po 80W;Power Gain 10.8dB;VDC 12.5V;Eff 80%;Pt 220W;DF 1.2W/C
50	S100-12	18	N	Si	XXXXX	Pout 100W;Pin 8.5W max At Freq 30MHz;Eff 65% typ;Pd 250W;hFE 20 min;IC 25A
51	S100-28	18	N	Si	W52d	HF;Pout 100W min;Pin 2.5W max At Freq 30MHz;Eff 65% typ;Pt 250W;BVCEs 70V
52	S100-50	18	N	Si	W52d	Pout 100W;Pin 1.75W max At Freq 30MHz;Eff 80% typ;Pd 150W;hFE 10 min;IC 10A max
53	S175-28	18	N	Si	W52d	Pout 175W;Pin 7.0W max At Freq 30MHz;Eff 65% typ;Pd 320W;hFE 20 min;IC 30A max
54	S175-50	18	N	Si	W52d	HF/VHF;Class A,AB,C;Pout 175W min;Pin 3.5W max;Eff 65% typ;Pt 270W
55	S200-50	18	N	Si	W129	HF;f 2.30MHz;Po 200W;Pd 320W;Gain 12db;Vce 50
56	SD1012-3	18	N-PE	Si	W52	VCBO 36V;Ic 1.8A;Pt 20W;Po 6.0W;Pg 9.0dB;Zin 4.3 J3.0;Zout 13 J7.5
57	SD1012-4	18	N-PE	Si	W54	VCBO 36V;Ic 1.0A;Pt 10W;Po 2.5W;Pg 5.0dB;Zin 2.5 J0.6;Zout 9.8 J3.1
58	SD1074	18	N-PE	Si	W52e	HF Comm;Po 40Wmin;Gp 10dBmin at 50MHz;12.5V;Pd 80W;Vcbo 36V
59	SD1076	18	N-PE	Si	W52e	HF Comm;Po 70Wmin;Gp 13.5dBmin at 30MHz;12.5V;Pd 220W;Vcbo 36V
60	SD1080-2	18	N-PE	Si	W54	VCBO 36V;Ic 7.0mA;Pt 5.0W;Po 750mW;Pg 8.0dB;Zin 3.8 J4.0;Zout 25 J22
61	SD1115-2	18	N-PE	Si	W68	VCBO 36V;Ic 1.0A;Pt 5.0W;Po 3.0W;Pg 10dB;fo 175MHz
62	SD1127	18	N-PE	Si	T039	VCBO 36V;Ic 640mA;Pt 8.0W;Po 4.0W;Pg 10dB;Zin 4.1 -J5.6;Zout 13.5 -J20
63	SD1143-1	18	N-PE	Si	W52	VCBO 36V;Ic 2.0A;Pt 37W;Po 10W;Pg 10dB;Zin 1.24 J2.88;Zout 5.32 J6.15
64	SD1189	18	N-PE	Si	T72r	VCBO 36V;Ic 8.0A;Pt 80W;Po 40W;Pg 6.0dB;Zin 0.85 J0.3;Zout 1.73 J1.52
65	SD1212-7	18	N-PE	Si	Y202a	VCBO 36V;Ic 600mA;Pt 9.6W;Po 6.0W;Pg 10dB;Zin 3.9 J1.3;Zout 17.8 J5.6
66	SD1214-6	18	N-PE	Si	Y202a	VCBO 36V;Ic 2.0A;Pt 15W;Po 14W;Pg 11dB;Zin 2.4 J0.8;Zout 6.1 J2.6
67	SD1219-5	18	N-E	Si	T72h	VHF;Po 50W at 138MHz;28V;Power Gain 10dB;BVces 65V;Ic 6.5Amax
68	SD1229-1	18	N-PE	Si	W52	VCBO 36V;Ic 4.0A;Pt 65W;Po 25W;Pg 5.0dB;Zin 1.0 J1.83;Zout 2.89 J4.14
69	SD1278	18	N-E	Si	T72h	VHF;Po 40W at 175MHz;12.5V;Power Gain 6.0dB;BVces 36V;Ic 6.0Amax
70	SD1405	18	N-PE	Si	W52j	VCBO 36V;Ic 15A;Pt 270W;Po 60W;Pg 13dB;Zin 0.7 J7.5;Zout 1.2 J1.0
71	SD1416	18	N-PE	Si	W55	VCBO 36V;Ic 20A;Pt 220W;Po 70W;Pg 6.7dB;Zin .58 J4.4;Zout .72 J4.4
72	SD1438	18	N-PE	Si	W52	VCBO 65V;Ic 9.0A;Pt 103W;Po 80W;Pg 6.7dB;Zin 1.3 J1.7;Zout 3.8 J4.4
73	SD1438-2	18	N-PE	Si	W52	VHF Comm;Po 100Wmin;Gp 7.0dBmin;Zin .90 j1.1;Zcl 3.4 j2.9 at 138MHz;28V;Pd 103W
74	SD1446	18	N-PE	Si	W52	VCBO 36V;Ic 12A;Pt 183W;Po 70W;Pg 10dB;Zin 0.8 J0.9;Zout 1.2 J0.6
75	SD1477	18	N-PE	Si	W55	VHF Comm;Po 100Wmin;Gp 6.0dBmin;Zin 1.5-j9.0;Zcl .50-j1.0 at 175MHz;12V;Pd 270W
76	SD1487	18	N-PE	Si	W55	HF Comm;Po 100Wmin;Gp 10dBmin at 30MHz;12.5V;Pd 290W;Vcbo 36V
77#	SRF402	18	N-PL	Si	T039	Po 3.0Wmin;Pin 300mW;Eff 60% min at 175MHz;Vcc 12.5V;Cob 12pf
78#	SRF404	18	N-PL	Si	T039	Po 3.0Wmin;Pin 300mW;Eff 60% min at 175MHz;Vcc 12.5V;Cob 15pf
79#	SRF405	18	N-PL	Si	T039	Po 3.0Wmin;Pin 300mW;Eff 50% min at 175MHz;Vcc 28V;Cob 12pf
80#	ZTB3-12	18	N-PL	Si	T162	Pout 3.0Wmin at 175MHz;Vcc 12.5;150-175MHz Range;Cob 15pf max;Eff 60%min
81#	ZTB3-28	18	N-PL	Si	T162	Pout 3.0Wmin at 175MHz;Vcc 28V;Gain 13dBmin;Cob 12pf max;Eff 50%min
82#	ZTB3-28FL	18	N-PL	Si	W159	Pout 3.0Wmin at 175MHz;Vcc 28V;Gain 13dBmin;Cob 12pf max;Eff 50%min
83#	ZTB12-12	18	N-PL	Si	T162	Pout 12Wmin at 175MHz;Vcc 12.5;150-175MHz Range;Cob 35pf max;Pin 2.5Wmax
84#	ZTB12-28	18	N-PL	Si	T162	Pout 12Wmin at 175MHz;Vcc 28V;Gain 10.8dBmin;Cob 25pf max;Eff 50%min
85#	ZTB12-28FL	18	N-PL	Si	W159	Pout 12Wmin at 175MHz;Vcc 28V;Gain 10.8dBmin;Cob 25pf max;Eff 50%min
86#	ZTB25-12	18	N-PL	Si	T162	Pout 25Wmin at 175MHz;Vcc 12.5;150-175MHz Range;Cob 55pf max;Pin 8.0Wmax
87#	ZTB25-28	18	N-PL	Si	T162	Pout 25Wmin at 175MHz;Vcc 28V;Gain 8.5dBmin;Cob 50pf max;Eff 50%min
88#	ZTB25-28FL	18	N-PL	Si	W159	Pout 25Wmin at 175MHz;Vcc 28V;Gain 8.5dBmin;Cob 50pf max;Eff 50%min
89#	ZTB70-28FL	18	N-PL	Si	W52v	Pout 70Wmin at 175MHz;Vcc 28V;Pin 20Wmax;Cob 250pf max;Eff 50%min
90#	BZW20	19	N	Si	Y236	Transistor w/integrated base emitter resistance and a Z diode

# 15A. TYPES WITH U.S. MILITARY SPECIFICATIONS

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	MIL-S-	TYPE No.	MFRS	MIL-S-	TYPE No.	MFRS	MIL-S-	TYPE No.	MFRS	MIL-S-	TYPE No.	MFRS	MIL-S-
2N358A	AMR ASI CEI CEN CRI CSR ESE ETC GPD GTC HSE HTN IDI NJS SPE SST STC STI UPI WAB		2N1304 (cont.)	CEI CEN CRI CSR DIT ESE ETC GPD GTC HTN IDC IDI NASG NJS SEI SLD SPE SST STC STI STR TIC UPI UTS WAB AMR CRI CSR ESE ETC GPD HSE HTN IDI LTE NJS SPE SST STC STI STR UPI WAB		2N43A	GPD	6B AMEND 2	2N467	GPD	49C AMEND 1	2N702	none	153B AMEND 1
						2N44A	GPD	6B AMEND 2	2N489A	†GESY	EL 75B AMEND 1	2N703	MOTA	EL 153B AMEND 1
						2N78A	none	90A USAF	2N490A	†GESY	75B AMEND 1	2N705	GPD MOTA	EL 86A AMEND 1
						2N117	none	2B	2N491A	†GESY	75B AMEND 1	2N706	†none	120C AMEND 3
						2N118	none	2B	2N492A	†GESY	75B AMEND 1	2N708	FSC MOTA RTN	312B AMEND 1
						2N119	none	30A USAF	2N493A	†GESY	75B AMEND 1	2N718A	†FSC 1MOTA	181C AMEND 5
						2N123	none	9B 24D AMEND 1	2N494A	†GESY	75B AMEND 1	2N720A	ΔFSC ΔMOTA ΔRTN ΔTII	182C
						2N128	none	11C 13B AMEND 2	2N497	RTN	74E AMEND 3	2N744	†FSC RTN	273A NAVY
						2N158	GPD STC	40B 110C	2N498	RTN	74E AMEND 3	2N757A	RTN	218A
2N398A	AMR CEN CRI CSR ESE ETC GPD HSE HTN IDI LTE NJS SPE SST STC STI STR UPI WAB		2N2273	CEI CEN CRI CSR DIT ESE ETC GPD GTC HTN IDC IDI NASG NJS SEI SLD SPE SST STC STI STR TIC UPI UTS WAB AMR CRI CSR ESE ETC GPD HSE HTN IDI LTE NJS SPE SST STC STI STR UPI WAB		2N220	none	1A AMEND 1	2N499	MOTA	72C AMEND 3	2N760A	†none	218A
						2N240	none	25B	2N499A	MOTA	EL 72C AMEND 2	2N869A	RTN	283B AMEND 1
						2N297A	GPD STC	36C	2N501A	none	62B AMEND 2	2N910	†RTN	274B AMEND 1
						2N326	GPD	40B	2N502A	MOTA	112C AMEND 2	2N911	†RTN	274B AMEND 1
						2N328A	RTN	110C	2N502B	MOTA	112C AMEND 2	2N912	†RTN	274B AMEND 1
						2N329A	TCY	110C	2N526	GESY	60E	2N914	†FSC 1MOTA	EL 373A AMEND 1
						2N331	none	4D	2N537	none	100A AMEND 1	2N916	FSC MOTA RTN	271A AMEND 4
						2N333	TCY	37D	2N539	GPD	SigC 38C	2N918	ΔFSC ΔMOTA ΔRTN	NAVY 301A AMEND 3
						2N333A	TCY	37D	2N539A	STC GPD STC	38C	2N929	†FSC 1MOTA 1RTN	253B AMEND 1
						2N335	TCY	37D	2N545	none	84A AMEND 1	2N930	†FSC 1MOTA 1RTN	253B AMEND 1
						2N335A	TCY	37D	2N559	†none	NAVY 152C AMEND 3	2N962	†FSC 1MOTA RTN GPD	258A AMEND 3
						2N336	TCY	37D	2N560	SSI	73B 46B EL	2N964	GPD MOTA	NAVY 258A AMEND 3
						2N336A	TCY	37D	2N574	none	46B EL	2N987	APX	NAVY 267 AMEND 2
						2N337	TCY	69E	2N575	none	46B EL	2N1008B	none	EL 196A AMEND 2
						2N338	TCY	69E	2N575A	none	46B EL	2N1011	GPD	EL 67A EL
						2N338A	TCY	69E	2N598	none	197C AMEND 2	2N1016B	SPC	102A
						2N341	TCY	31C	2N598	none	197C AMEND 2	2N1016C	SPC	102A
						2N342	TCY	16E	2N599	GPD	166C AMEND 3	2N1018D	GPD	102A
						2N342A	TCY	16E	2N599	none	166C AMEND 3	2N1021A	STC	217B
						2N343	GPD	63D	2N600	none	NAVY 197C AMEND 2	2N1022A	GPD STC	217B
						2N358A	GPD	27E AMEND 2	2N604	none	NAVY 197C AMEND 2	2N1025	GPD STC	78C 78C 89D
						2N384	none	27E AMEND 2	2N604	none	NAVY 197C AMEND 2	2N1039	GPD STC	89D
						2N388	GPD	65B	2N656	RTN	74E AMEND 3	2N1041	GPD STC	137C
						2N389	STC	173A	2N657	RTN	74E AMEND 3	2N1042	GPD STC	137C
						2N393	none	77C AMEND 2	2N658	RTN	74E AMEND 3	2N1044	GPD STC	137C
						2N396A	GPD	64D	2N658	RTN	74E AMEND 3	2N1045	GPD STC	137C
						2N398A	GPD	174B	2N659	GPD	58D	2N1046	GPD STC	137C
						2N404	GPD	20C AMEND 1	2N695	none	135A NAVY 99E AMEND 1	2N1047A	none	88 AMEND 2
						2N404A	GPD	20C AMEND 1	2N696	FSC RTN	99E AMEND 1	2N1048A	SPC	NAVY 176B
						2N416	none	56B EL	2N697	FSC RTN	99E AMEND 1	2N1049A	SPC STC SPC STC	176B
						2N417	none	56B EL	2N700A	SSI	123A EL			176B
						2N422	none	66B AMEND 1						176B
						2N424	STC	NAVY 173A 41B						176B
						2N425	GPD	AMEND 1						176B
						2N426	GPD	41B AMEND 1						176B
						2N427	GPD	41B AMEND 1						176B
						2N428	GPD	44D AMEND 1						176B
						2N456B	GPD	217B						176B
						2N457B	STC GPD	217B						176B
						2N458B	STC GPD	217B						176B
						2N461	STC GPD	45A AMEND 3						176B
						2N463	GPD	USAF 70A AMEND 1						176B
						2N464	GPD	NAVY 49C AMEND 1						176B
						2N465	GPD	EL 49C AMEND 1						176B
						2N466	GPD	EL 51E						176B

# 15A. TYPES WITH U.S. MILITARY SPECIFICATIONS

IN TYPE NUMBER  
SEQUENCE

TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/
2N1050A 2(cont.)	SPC STC	176B	2N1480	RCA SPC STC	207C EL	2N1853	none	171B NAVY	2N2432A	TCY ΔTII	313A AMEND 2	2N2907A	ΔFSC ΔMOTA RTN ΔTII	291B 0 AMEND 4
2N1051	none	216A NAVY	2N1481	RCA SPC STC	207C EL	2N1854	none	172B AMEND 1	2N2481	†FSC †MOTA	USAF 268C AMEND 1	2N2911	none	381A USAF
2N1072	none	163 AMEND 2	2N1482	RCA SPC STC	207C EL	2N1890	†FSC †RTN	NAVY 225D AMEND 1	2N2484	†RTN ΔFSC RTN ΔTII	376A 0 AMEND 1	2N2919	ΔFSC RTN	355A AMEND 3
2N1094	none	SigC 161 AMEND 1	2N1483	†SEN †SPC †STC	180D AMEND 1	2N1893	†FSC †RTN	182C	2N2497	†none	USAF 378A AMEND 3	2N2920	ΔFSC ΔRTN	355A 0 AMEND 3
2N1118	TCY	SigC 138C	2N1484	†SEN †SPC †STC	180D AMEND 1	2N2015	AMR CRI	248A EL	2N2498	†none	USAF 378A AMEND 3	2N2944A	TCY ΔTII	382 AMEND 3
2N1119	TCY	139B AMEND 1	2N1485	†SEN †SPC †STC	180D AMEND 1	2N2015	ESE HTN NJS SPC SPE SSI STC	248A AMEND 1	2N2499	†none	USAF 378A AMEND 3	2N2945A	ΔRTN TCY ΔTII	382 0 AMEND 3
2N1120	GPD	68A AMEND 1	2N1486	†SEN †SPC †STC	180D AMEND 1	2N2015	248A AMEND 1	EL	2N2500	†none	USAF 378A AMEND 3	2N2946A	ΔRTN TCY ΔTII	382 0 AMEND 3
2N1131	FSC RTN	177C AMEND 4	2N1487	RCA SPC STC	208B	2N2016	AMR CRI ESE SPC SPE SSI STC	248A EL	2N2528	none	NAVY 89D	2N2946A	ΔRTN TCY ΔTII	382 0 AMEND 3
2N1132	FSC MOTA RTN MOTA	177C AMEND 4	2N1488	RCA SPC STC	208B	2N2016	248A AMEND 1	EL	2N2553	GPD STC	NAVY 89D	2N2996	none	382 AMEND 3
2N1142	none	87A AMEND 1	2N1489	RCA SPC STC	208B	2N2016	248A AMEND 1	EL	2N2555	GPD STC	89D	2N2997	none	382 AMEND 3
2N1157A	none	46B EL	2N1490	RCA SPC STC	208B	2N2016	248A AMEND 1	EL	2N2557	GPD STC	89D	2N2997	none	382 AMEND 3
2N1165	GPD STC	178B AMEND 4	2N1493	none	247 AMEND 3	2N2034	none	381A USAF 270C	2N2559	GPD STC	89D	2N2997	none	382 AMEND 3
2N1173	none	NAVY 215 AMEND 2	2N1499A	none	170A	2N2060	†FSC ΔMOTA ΔRTN	0	2N2604	Δnone RTN	354B AMEND 2	2N3013	†FSC †MOTA	NAVY 287B 0 AMEND 1
2N1174	none	NAVY 215 AMEND 2	2N1500 2N1553A	none GPD STC	125C 331A AMEND 2	2N2079A 2N2084 2N2150 2N2151	none	340 213C 277C	2N2605	Δnone RTN	354B AMEND 2	2N3019	ΔMOTA ΔRTN	391A AMEND 2
2N1183	GPD STC	NAVY 143B AMEND 2	2N1554A	GPD STC	331A AMEND 2	2N2218	GPD STC	277C	2N2606	†none Tnone MOTA SIX	292A 294A 295A	2N3055	†RCA †SEN SODI †SPC ΔRTN	407A
2N1183A	GPD STC	EL 143B AMEND 2	2N1555A	GPD STC	331A AMEND 2	2N2218A	GPD STC	251F AMEND 4	2N2607	†none Tnone MOTA SIX	296A 0	2N3057A	none	391A AMEND 2
2N1183B	GPD STC	EL 143B AMEND 2	2N1556A	GPD STC	331A AMEND 2	2N2219	GPD STC	251E AMEND 4	2N2608	†none Tnone MOTA SIX	303 AMEND 3	2N3127	MOTA	346 AMEND 1
2N1184	GPD STC	EL 143B AMEND 2	2N1557A	GPD STC	331A AMEND 2	2N2219A	GPD STC	251E AMEND 4	2N2609	†none	NAVY 316A AMEND 5	2N3250A	ΔMOTA RTN	EL 323A AMEND 5
2N1184A	GPD STC	EL 143B AMEND 2	2N1558A	GPD STC	330A AMEND 5	2N2221	GPD STC	251E AMEND 4	2N2631	†none	USAF 316A AMEND 5	2N3251A	ΔMOTA RTN	USAF 323A 0 AMEND 5
2N1184B	GPD STC	EL 143B AMEND 2	2N1559A	GPD STC	330A AMEND 5	2N2221A	GPD STC	255F	2N2639	†none	USAF 302A 415 AMEND 2	2N3253	MOTA	USAF 347 AMEND 3
2N1195	MOTA	71D AMEND 1	2N1560A	GPD STC	330A AMEND 5	2N2222	GPD STC	255F	2N2642	†none	USAF 415 AMEND 2	2N3253S	MOTA	NAVY 347 AMEND 3
2N1197	none	165 SigC	2N1613	ΔFSC ΔMOTA ΔRTN ΔTII	181C AMEND 5	2N2222A	GPD STC	255F	2N2708 2N2812	none Tnone	USAF 302A 415 AMEND 2	2N3253S	MOTA	NAVY 347 AMEND 3
2N1224	none	189B AMEND 1	2N1646	none	223B USAF	2N2273	GPD MOTA	244B AMEND 3	2N2708 2N2812	none Tnone	USAF 415 AMEND 2	2N3253S	MOTA	NAVY 347 AMEND 3
2N1225	none	189B AMEND 1	2N1651	GPD	219A AMEND 6	2N2273	GPD MOTA	EL	2N2814	Δnone	USAF 415 AMEND 2	2N3253S	MOTA	NAVY 347 AMEND 3
2N1234	TCY	179A AMEND 1	2N1652	GPD	219A AMEND 6	2N2369A	ΔFSC ΔMOTA RTN	317D 0 AMEND 3	2N2814	Δnone	USAF 415 AMEND 2	2N3253S	MOTA	NAVY 347 AMEND 3
2N1302	GPD	128C	2N1653	GPD	219A AMEND 6	2N2377	TCY	288 AMEND 2	2N2834	none	USAF 310 AMEND 5	2N3329	†none	NAVY 378A USAF
2N1303	GPD	128C	2N1711	†FSC †RTN	225D AMEND 1	2N2378	TCY	289 AMEND 2	2N2834	none	USAF 310 AMEND 5	2N3330	†MOTA	USAF 378A USAF
2N1304	GPD	128C	2N1714	TII	263A AMEND 2	2N2378	TCY	EL	2N2858	none	USAF 310 AMEND 5	2N3331	†none	USAF 378A USAF
2N1305	GPD	128C	2N1715	TII	263A AMEND 2	2N2378	TCY	EL	2N2859	none	USAF 310 AMEND 5	2N3332	†none	USAF 378A USAF
2N1306	GPD	128C	2N1716	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3333	†none	USAF 378A USAF
2N1307	GPD	128C	2N1717	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	USAF 341B 0 AMEND 5
2N1308	GPD	128C	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1309	GPD	128C	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1310	none	136A NAVY	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1358	GPD STC	122C AMEND 1	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1411	none	133A AMEND 2	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1412	GPD STC	EL 76C AMEND 3	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1412A	GPD STC	NAVY 76C AMEND 3	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1450M	none	NAVY 222B USAF	2N1718	TII	263A AMEND 2	2N2378	TCY	EL	2N2876	none	USAF 310 AMEND 5	2N3335	Δnone	AMEND 5
2N1469	TCY	78C	2N1722	†SPC †TII †SPC †TII	262F	2N2432	TCY ΔTII	313A 0 AMEND 2	2N2907	ΔFSC ΔMOTA ΔRTN ΔTII	291B AMEND 4	2N3441	†FSC †RCA SODI ΔSTC †FSC †RCA SODI ΔSTC †RCA	369 0 AMEND 1
2N1479	RCA SPC STC	207C EL	2N1724	†SPC †TII †SPC †TII	262F	2N2432	TCY ΔTII	313A 0 AMEND 2	2N2907	ΔFSC ΔMOTA ΔRTN ΔTII	291B AMEND 4	2N3441	†FSC †RCA SODI ΔSTC †FSC †RCA SODI ΔSTC †RCA	369 0 AMEND 1





# 15A. TYPES WITH U.S. MILITARY SPECIFICATIONS

IN TYPE NUMBER  
SEQUENCE

TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/
2N5241	†SPC STC	414A Ø AMEND 2	2N5666	†none SODI UNI	455 Ø AMEND 3	2N6052	ΔMOTA	501 AMEND 2	2N6353	†none UNI	472 Ø AMEND 4			
2N5250	†none SODI	380A Ø AMEND 5	2N5667	†none SODI UNI	455 Ø AMEND 3	2N6058	ΔMOTA	502 USAF AMEND 3	2N6365	none	471 EL AMEND 1			
2N5251	†none SODI	380A AMEND 5	2N5671	ΔRCA STC	488 Ø AMEND 4	2N6059	ΔMOTA	502 AMEND 3	2N6365A	none	471 AMEND 1			
2N5302	†FSC ΔMOTA RCA ΔSTC	456A Ø AMEND 2	2N5672	ΔRCA STC	488 AMEND 4	2N6060	†none	502 USAF AMEND 3	2N6378	Δnone	515 EL EL			
2N5303	†FSC ΔMOTA RCA ΔSTC	456A Ø AMEND 2	2N5683	ΔMOTA	466 AMEND 3	2N6061	†none	457A Ø EL	2N6379	Δnone	515 EL EL			
2N5415	†none SODI	485 USAF	2N5684	ΔMOTA	466 AMEND 3	2N6062	†none	457A Ø EL	2N6383	ΔRCA	523 AMEND 2			
2N5416	†none SODI	485 Ø USAF	2N5685	ΔMOTA ΔSTC	464 Ø AMEND 5	2N6063	†none	458A Ø EL	2N6384	ΔRCA	523 AMEND 2			
2N5431	†MOTA	425 AMEND 1	2N5686	ΔMOTA ΔSTC	464 Ø AMEND 5	2N6211	ΔRCA	461 USAF	2N6385	ΔRCA	523 AMEND 2			
2N5545	Δnone CEN CRI ESE NJS NSC SIX SLD SOD SPE WAB	430 Ø AMEND 1	2N5745	ΔMOTA	433A Ø AMEND 3	2N6212	ΔRCA	461 USAF	2N6437	Δnone	508 EL EL			
2N5545	ΔSOD	430 Ø AMEND 1	2N5745	ΔMOTA	433A Ø AMEND 3	2N6213	ΔRCA	461 Ø USAF	2N6438	Δnone	508 EL EL			
2N5546	Δnone CEN CRI NJS NSC SIX SLD SOD SPE WAB	430 Ø AMEND 1	2N5793	Δnone CRI MOTA RTN SCA STI	495 USAF 495 Ø USAF	2N6224	ΔSTC	510 USAF	2N6546	Δnone RCA	525 USAF 525 USAF			
2N5546	ΔSOD	430 Ø AMEND 1	2N5793	ΔMOTA ΔRTN	495 USAF 495 Ø USAF	2N6227	ΔSTC	514 EL EL	2N6547	Δnone	527 AMEND 2			
2N5546	ΔSOD	430 Ø AMEND 1	2N5794	ΔMOTA ΔRTN	495 USAF 496 Ø USAF	2N6277	ΔSTC	514 EL EL	2N6648	Δnone	527 AMEND 2			
2N5547	Δnone CEN CRI NJS NSC SIX SLD SOD SPE WAB	430 Ø AMEND 1	2N5794	ΔMOTA ΔRTN	495 USAF 496 Ø USAF	2N6283	ΔMOTA RCA ΔSTC	504 AMEND 1	2N6649	Δnone	527 AMEND 2			
2N5547	ΔSOD	430 Ø AMEND 1	2N5794	ΔMOTA ΔRTN	495 USAF 496 Ø USAF	2N6284	ΔMOTA RCA ΔSTC	504 AMEND 1	2N6650	Δnone	527 AMEND 2			
2N5547	ΔSOD	430 Ø AMEND 1	2N5795	ΔMOTA RTN	496 USAF	2N6286	ΔMOTA	505 AMEND 1	3N35	TCY	80E			
2N5547	ΔSOD	430 Ø AMEND 1	2N5795	ΔMOTA RTN	496 USAF	2N6287	ΔMOTA	505 AMEND 1	3N74	†none	390 USAF			
2N5547	ΔSOD	430 Ø AMEND 1	2N5796	ΔMOTA RTN	496 USAF	2N6306	ΔMOTA ΔRCA ΔSOD	505 AMEND 2	3N75	†none	390 USAF			
2N5547	ΔSOD	430 Ø AMEND 1	2N5796	ΔMOTA RTN	496 USAF	2N6306	ΔMOTA ΔRCA ΔSOD	505 AMEND 2	3N76	†none	390 USAF			
2N5547	ΔSOD	430 Ø AMEND 1	2N5838	†none	487 Ø AMEND 1	2N6308	ΔMOTA ΔRCA ΔSOD	498 AMEND 2	3N93	none	363 AMEND 2			
2N5547	ΔSOD	430 Ø AMEND 1	2N5839	†none	487 Ø AMEND 1	2N6308	ΔMOTA ΔRCA ΔSOD	498 AMEND 2	3N108	none	NAVY 361			
2N5547	ΔSOD	430 Ø AMEND 1	2N5840	†none	487 Ø AMEND 1	2N6308	ΔMOTA ΔRCA ΔSOD	498 AMEND 2	3N127	†none	NAVY 390			
2N5581	†MOTA	423 AMEND 4	2N5926	†PTI	447 Ø AMEND 2	2N6338	†STC	509 EL	3N201	Δnone	531 AMEND 1			
2N5582	†MOTA	423 Ø AMEND 4	2N5926	†PTI	447 Ø AMEND 2	2N6341	†STC	509 EL	3N202	Δnone	531 AMEND 1			
2N5660	Δnone UNI	454 Ø AMEND 4	2N5927	†PTI	440 Ø AMEND 4	2N6350	†none CRI STC STI UNI	472 Ø AMEND 4	3N203	Δnone	531 AMEND 1			
2N5661	Δnone UNI	454 Ø AMEND 4	2N5957	†none	451 EL	2N6350	†none CRI STC STI UNI	472 Ø AMEND 4	3N204	Δnone	524			
2N5662	Δnone UNI	454 Ø AMEND 4	2N5958	†none	450A EL	2N6351	†none CRI ESE STC STI UNI	472 Ø AMEND 4						
2N5663	Δnone UNI	454 Ø AMEND 4	2N5959	†none	451A EL	2N6351	†none CRI ESE STC STI UNI	472 Ø AMEND 4						
2N5663	Δnone UNI	454 Ø AMEND 4	2N5960	†none	450A EL	2N6352	†none DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5664	†none SODI UNI	455 Ø AMEND 3	2N5966	†none	462A Ø EL	2N6352	†none DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5664	†none SODI UNI	455 Ø AMEND 3	2N5967	†none	459A EL	2N6352	†none DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5665	†none SODI UNI	455 Ø AMEND 3	2N5968	†none	462A Ø EL	2N6352	†none DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5665	†none SODI UNI	455 Ø AMEND 3	2N5969	†none	459A Ø EL	2N6353	†none CRI DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5665	†none SODI UNI	455 Ø AMEND 3	2N6032	Δnone RCA	528 USAF	2N6353	†none CRI DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5665	†none SODI UNI	455 Ø AMEND 3	2N6033	Δnone RCA	528 USAF	2N6353	†none CRI DIT STC STI SWT UNI	472 Ø AMEND 4						
2N5665	†none SODI UNI	455 Ø AMEND 3	2N6051	ΔMOTA	501 AMEND 2	2N6353	†none CRI DIT STC STI SWT UNI	472 Ø AMEND 4						

**MILITARY DOCUMENTS**

Department of Defense, Index of Specifications  
and Standards.

Device Manufacturers Qualifications on test  
Reference Letter.

**MIL-S-19500F** Military Specification, General  
Specifications for Semiconductor Devices,  
dated 15 December 1977, Amendment 2,  
dated 9 June 1980.

**MIL-STD-701K** Military Standard, List of  
Standard Semiconductor Devices, dated  
26 May 1976.

**QPL-19500-78** Qualified Products List of Products  
Qualified under Military Specification  
MIL-S-19500, dated 18 August 1980.

# REPLACEMENT TRANSISTORS

Direct Replacement Transistors .....	449
Suggested Replacement Transistors .....	480

The following two sections contain listings of Transistors recommended as replacements for original types. These Transistors are selected from manufacturers' replacement guides; therefore, the publisher cannot assume responsibility for the accuracy of the recommended substitutes.

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N1487	2N5877	MOTA	TIP41	MOTA								
2	2N1488	2N5878	MOTA										
3	2N1489	2N5877	MOTA										
4	2N1490	2N5878	MOTA										
5	2N1702	2N5877	MOTA										
6	2N2193	2N1613	RCA	PTC144	MAL								
7	2N2194	2N699	RCA	PTC144	MAL								
8	2N2195	2N697	RCA	PTC144	MAL								
9	2N2195A	2N697	RCA	PTC144	MAL								
10	2N2217	2N697	RCA										
11	2N2218	2N697	RCA										
12	2N2243	2N1893	RCA	PTC144	MAL								
13	2N2243A	2N1893	RCA	PTC144	MAL								
14	2N2270S	2N2270	RCA	PTC144	MAL								
15	2N2297	2N1613	RCA	PTC144	MAL								
16	2N2297S	2N1613	RCA	PTC144	MAL								
17	2N2303	40315	RCA	PTC127	MAL								
18	2N2330	40814	RCA	PTC144	MAL								
19	2N2410	2N3053	RCA										
20	2N2537	40635	RCA										
21	2N2538	2N1711	RCA										
22	2N2800	40406	RCA	PTC141	MAL								
23	2N2801	40815	RCA										
24	2N2846	2N697	RCA										
25	2N2848	2N697	RCA	PTC144	MAL								
26	2N2863	2N5321	RCA										
27	2N2864	2N3053	RCA										
28	2N2868	2N3053	RCA	PTC144	MAL								
29	2N2951	41502	RCA										
30	2N2958	2N697	RCA										
31	2N2959	2N1711	RCA										
32	2N2987	2N5681	MOTA										
33	2N2988	2N5681	MOTA										
34	2N2989	2N5681	MOTA										
35	2N2990	2N5681	MOTA										
36	2N3016	2N5337	MOTA										
37	2N3020	2N1893	RCA	2N4305	TRWS	2N3020	MOTA						
38	2N3021	2N3789	MOTA										
39	2N3022	2N4902	RCA	2N3789	MOTA								
40	2N3023	2N4902	RCA	2N3789	MOTA								
41	2N3024	2N4904	RCA	2N3791	MOTA								
42	2N3025	2N4905	RCA	2N3791	MOTA								
43	2N3026	2N4905	RCA	2N3791	MOTA								
44	2N3036	2N5320	RCA										
45	2N3055H	2N3055A	MOTA										
46	2N3055SD	2N3055A	MOTA										
47	2N3055UB	2N3055A	MOTA										
48	2N3077	2N6249	RCA	2N3076	MOTA								
49	2N3079	2N6511	RCA	2N5838	MOTA								
50	2N3080	2N6670	RCA	2N6542	MOTA								
51	2N3108	2N2102	RCA	PTC125	MAL								
52	2N3109	2N1711	RCA	PTC125	MAL								
53	2N3110	2N3053	RCA	PTC125	MAL	2N3110	MOTA						
54	2N3114	F257	RCA										
55	2N3133	40634	RCA	PTC127	MAL								
56	2N3134	2N4037	RCA	PTC127	MAL								
57	2N3171	2N6254	RCA	PTC172	MAL	2N3789	MOTA						
58	2N3172	2N6246	RCA	PTC172	MAL	2N3789	MOTA						
59	2N3173	2N6247	RCA	PTC172	MAL	2N3790	MOTA						
60	2N3174	2N6248	RCA	PTC172	MAL	2N6226	MOTA						
61	2N3183	2N6246	RCA	PTC172	MAL	2N3789	MOTA						
62	2N3184	2N6246	RCA	PTC172	MAL	2N3789	MOTA						
63	2N3185	2N6247	RCA	PTC172	MAL	2N3790	MOTA						
64	2N3186	2N6248	RCA	PTC172	MAL	2N6226	MOTA						
65	2N3195	2N6246	RCA	PTC172	MAL	2N3789	MOTA						
66	2N3196	2N6246	RCA	PTC172	MAL	2N3789	MOTA						
67	2N3197	2N6247	RCA	PTC172	MAL	2N3790	MOTA						
68	2N3198	2N6248	RCA	PTC172	MAL	2N6226	MOTA						
69	2N3202	2N3719	MOTA										
70	2N3203	2N3720	MOTA										
71	2N3204	2N6303	MOTA										
72	2N3226	2N6253	RCA	PTC129A	MAL								
73	2N3232	2N5877	MOTA										
74	2N3233	2N3442	RCA	2N5632	MOTA								
75	2N3234	2N3055	RCA	2N5760	MOTA								
76	2N3235	2N3055	RCA	PTC140	MAL	2N3055	MOTA						
77	2N3236	2N6254	RCA	PTC173	MAL	2N5632	MOTA						
78	2N3237	2N5302	RCA	PTC173	MAL	2N5302	MOTA						
79	2N3238	2N5882	RCA	2N5882	MOTA								
80	2N3239	2N5882	RCA	PTC173	MAL								
81	2N3240	2N5882	RCA	2N5882	MOTA								
82	2N3244	2N5323	RCA	2N3244	MOTA								
83	2N3245	2N5323	RCA	2N3245	MOTA								
84	2N3288	2N3287	MOTA										
85	2N3289	2N3287	MOTA										
86	2N3290	2N3287	MOTA										
87	2N3293	2N3287	MOTA										
88	2N3418	2N5320	RCA	2N4307	TRWS	2N4877	MOTA	2N5336	MOTA				
89	2N3419	2N5336	MOTA										
90	2N3420	2N4877	MOTA	2N5336	MOTA								
91	2N3421	2N5336	MOTA										
92	2N3444	2N5321	RCA	PTCV144	MAL								
93	2N3445	2N6471	RCA	PTC140	MAL	2N3447	MOTA						
94	2N3446	2N6472	RCA	PTC173	MAL	2N3448	MOTA						
95	2N3447	2N6471	RCA	PTC140	MAL	2N3447	MOTA						
96	2N3448	2N6472	RCA	PTC173	MAL	2N3448	MOTA						
97	2N3464	2N3053	RCA	2N5334	GSE								
98	2N3570	2N5032	MOTA										
99	2N3597	2N3266	RCA										
100	2N3598	2N3266	RCA										
101	2N3599	2N3265	RCA										
102	2N3680	2N4234	MOTA										
103	2N3681	2N4235	MOTA										
104	2N3665	2N1893	RCA	2N5335	GSE								
105	2N3667	2N5881	MOTA										
106	2N3712	2N3440	RCA										
107	2N3713	2N3715	RCA	PTC173	MAL	2N3713	MOTA						
108	2N3714	2N3716	RCA	PTC173	MAL	2N3714	MOTA						
109	2N3719	2N5323	RCA										
110	2N3720	2N5322	RCA	2N3720	MOTA								



# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column												
	TYPE NO. TO BE REPLACED	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N3738	2N3584	RCA	PTC104	MAL	2N3738	MOTA						
2	2N3739	2N3585	RCA	PTC104	MAL	2N3739	MOTA						
3	2N3740	2N5955	RCA	PTC113	MAL	2N3740	MOTA						
4	2N3741	2N5954	RCA	PTC113	MAL	2N3741	MOTA						
5	2N3742	2N3439	RCA										
6	2N3743	2N5416	RCA										
7	2N3786	2N3879	RCA	PTC112	MAL	2N3786	MOTA						
8	2N3787	2N6372	RCA	PTC148	MAL	2N3787	MOTA						
9	2N3788	2N5840	RCA	PTC129A	MAL	MJ3030	MOTA	2N6542	MOTA				
10	2N3789	2N3791	RCA	PTC149	MAL	2N3789	MOTA						
11	2N3790	2N3792	RCA	PTC172	MAL	2N3790	MOTA						
12	2N3863	2N3055	RCA	PTC140	MAL	2N3715	MOTA						
13	2N3884	2N3442	RCA	PTC118	MAL	2N5632	MOTA						
14	2N3865	2N6262	RCA	PTC118	MAL	2N5634	MOTA						
15	2N3878	2N5427	MOTA	2N5428	MOTA								
16	2N3879	2N5429	MOTA	2N5430	MOTA								
17	2N3902	2N6308	RCA	SVT7533	TRWS	2N3902	MOTA						
18	2N3998	2N5347	MOTA										
19	2N3999	2N5347	MOTA										
20	2N4000	2N5320	RCA	PTC144	MAL	2N5336	MOTA	2N5337	MOTA				
21	2N4001	2N5339	MOTA										
22	2N4002	2N3285	RCA	2N5331	TRWS	2N6274	MOTA						
23	2N4003	2N6274	MOTA										
24	2N4004	2N3263	RCA										
25	2N4030	2N4036	RCA										
26	2N4040	2N5636	MOTA										
27	2N4041	2N5635	MOTA										
28	2N4054	RCP113C	RCA										
29	2N4055	RCP113B	RCA										
30	2N4056	RCP113B	RCA										
31	2N4057	RCP113B	RCA										
32	2N4070	2N6306	RCA	2N6306	MOTA								
33	2N4071	2N6306	RCA	2N6306	MOTA								
34	2N4089	2N6187	MOTA										
35	2N4111	2N4914	RCA	PTC906	MAL	2N3715	MOTA						
36	2N4113	2N4915	RCA	PTC906	MAL	2N3716	MOTA						
37	2N4127	2N6081	MOTA										
38	2N4128	2N6082	MOTA										
39	2N4130	2N3055	RCA										
40	2N4210	2N3266	RCA										
41	2N4211	2N3265	RCA										
42	2N4231	2N6374	RCA	2N4231A	MOTA								
43	2N4232	2N6373	RCA	PTC169	MAL	2N4232A	MOTA						
44	2N4233	2N6372	RCA	PTC148	MAL	2N4233A	MOTA						
45	2N4234	2N5783	RCA	PTC142	MAL	2N4234	MOTA						
46	2N4235	2N5782	RCA	2N4235	MOTA								
47	2N4236	2N5781	RCA	2N4236	MOTA								
48	2N4237	2N5786	RCA	PTC144	MAL	2N4237	MOTA						
49	2N4238	2N5785	RCA	PTC144	MAL	2N4238	MOTA						
50	2N4239	2N5784	RCA	PTC144	MAL	2N4239	MOTA						
51	2N4296	2N3738	MOTA										
52	2N4297	2N3738	MOTA										
53	2N4298	2N6235	MOTA										
54	2N4299	2N6235	MOTA										
55	2N4300	2N5336	MOTA	2N5337	MOTA								
56	2N4301	2N5337	MOTA										
57	2N4305	2N5337	MOTA										
58	2N4307	2N5337	MOTA										
59	2N4309	2N5339	MOTA										
60	2N4311	2N5337	MOTA										
61	2N4314	2N3868	MOTA										
62	2N4347	2N5759	MOTA	2N4347	MOTA								
63	2N4348	2N5630	MOTA										
64	2N4387	2N4898	MOTA										
65	2N4388	2N5955	RCA	2N4898	MOTA								
66	2N4404	2N1893	RCA										
67	2N4405	2N2405	RCA										
68	2N4438	2N3439	RCA										
69	2N4877	2N5337	MOTA										
70	2N4890	2N4037	RCA										
71	2N4898	2N5956	RCA	PTC113	MAL	2N4898	MOTA						
72	2N4899	2N5955	RCA	PTC113	MAL	2N4899	MOTA						
73	2N4900	2N5954	RCA	PTC113	MAL	2N4900	MOTA						
74	2N4901	2N6226	MOTA										
75	2N4902	2N6226	MOTA										
76	2N4903	2N6226	MOTA										
77	2N4904	2N6226	MOTA										
78	2N4905	2N6226	MOTA										
79	2N4906	2N6226	MOTA										
80	2N4907	2N6246	RCA	PTC149	MAL	2N3791	MOTA						
81	2N4908	2N6246	RCA	PTC149	MAL	2N3791	MOTA						
82	2N4909	2N6247	RCA	PTC172	MAL	2N3792	MOTA						
83	2N4910	2N6260	RCA	PTC112	MAL	2N3054	MOTA						
84	2N4911	2N3054	RCA	PTC112	MAL	2N3054	MOTA						
85	2N4912	2N6261	RCA	PTC104	MAL	2N4912	MOTA						
86	2N4913	2N5758	MOTA										
87	2N4914	2N5758	MOTA										
88	2N4915	2N5758	MOTA										
89	2N4926	2N3440	RCA										
90	2N4927	2N3440	RCA										
91	2N4928	BFT28	RCA										
92	2N4929	BFT28A	RCA	2N4929	MOTA								
93	2N4931	2N5416	RCA	2N4931	MOTA								
94	2N4998	2N5347	MOTA										
95	2N5000	2N5347	MOTA										
96	2N5001	2N6187	MOTA										
97	2N5002	2N5347	MOTA										
98	2N5003	2N6187	MOTA										
99	2N5004	2N5347	MOTA										
100	2N5005	2N6187	MOTA										
101	2N5038	2N6338	MOTA										
102	2N5039	2N6338	MOTA	2N5039	MOTA								
103	2N5050	2N3584	RCA	2N5050	MOTA								
104	2N5051	2N3584	RCA	2N5051	MOTA								
105	2N5052	2N3584	RCA	2N5052	MOTA								
106	2N5053	2N6305	MOTA										
107	2N5054	2N6304	MOTA										
108	2N5058	2N3439	RCA	PTC117	MAL								
109	2N5059	2N3440	RCA	PTC107	MAL								
110	2N5067	2N5758	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N5088	2N5758	MOTA										
2	2N5089	2N5758	MOTA										
3	2N5083	2N5347	MOTA										
4	2N5084	2N5347	MOTA										
5	2N5085	2N5347	MOTA										
6	2N5147	2N6190	MOTA	2N6191	MOTA								
7	2N5148	2N5336	MOTA	2N5337	MOTA								
8	2N5149	2N6190	MOTA	2N6191	MOTA								
9	2N5150	2N5336	MOTA	2N5337	MOTA								
10	2N5151	2N6190	MOTA	2N6191	MOTA								
11	2N5152	2N5336	MOTA	2N5337	MOTA								
12	2N5153	2N6191	MOTA										
13	2N5154	2N5337	MOTA										
14	2N5157	2N5840	RCA	2N6545	MOTA								
15	2N5202	2N5427	MOTA										
16	2N5239	2N6306	MOTA										
17	2N5240	2N6544	MOTA										
18	2N5241	2N6513	RCA	PTC129A	MAL	SVT7533		TRWS2N3902	MOTA				
19	2N5264	2N6510	RCA	2N6249	MOTA								
20	2N5284	2N5347	MOTA										
21	2N5285	2N5347	MOTA										
22	2N5286	2N6188	MOTA	2N6189	MOTA								
23	2N5287	2N6189	MOTA										
24	2N5293	2N6123	MOTA										
25	2N5294	2N6123	RCA										
26	2N5295	2N6121	MOTA										
27	2N5296	2N5298	RCA	2N6121	MOTA								
28	2N5297	2N6122	MOTA										
29	2N5298	2N6122	RCA	PTC167	MAL								
30	2N5305	BDY29	RCA										
31	2N5331	2N3265	RCA										
32	2N5333	2N6303	MOTA										
33	2N5334	2N4877	MOTA										
34	2N5335	2N5336	MOTA	2N5337	MOTA								
35	2N5336	2N5337	MOTA										
36	2N5338	2N5339	MOTA										
37	2N5344	2N6211	RCA	2N5344	MOTA								
38	2N5345	2N6212	RCA	2N5345	MOTA								
39	2N5404	2N6190	MOTA	2N6191	MOTA								
40	2N5405	2N6192	MOTA										
41	2N5406	2N6191	MOTA										
42	2N5407	2N6193	MOTA										
43	2N5421	2N4427	MOTA										
44	2N5422	MRF606	MOTA										
45	2N5423	2N3926	MOTA										
46	2N5424	2N3927	MOTA										
47	2N5427	2N6372	RCA	2N5428	MOTA								
48	2N5429	2N6465	RCA	2N5430	MOTA								
49	2N5460	MRF454	MOTA										
50	2N5466	2N6671	RCA	2N6545	MOTA								
51	2N5467	2N6671	RCA	2N6545	MOTA								
52	2N5490	2N6290	MOTA										
53	2N5491	2N6290	MOTA										
54	2N5492	2N6292	MOTA										
55	2N5493	2N6292	MOTA										
56	2N5494	2N6290	MOTA										
57	2N5495	2N6290	MOTA										
58	2N5496	2N6292	MOTA										
59	2N5497	2N6292	MOTA										
60	2N5508	2N5428	MOTA										
61	2N5539	2N3265	RCA	2N6379	MOTA								
62	2N5559	2N5633	MOTA										
63	2N5560	2N3265	RCA										
64	2N5575	2N5685	MOTA										
65	2N5578	2N5685	MOTA										
66	2N5598	2N5428	MOTA										
67	2N5600	2N6500	RCA	PTC104	MAL	2N5428		MOTA	2N5427	MOTA			
68	2N5602	2N3879	RCA	PTC104	MAL	2N5428		MOTA					
69	2N5604	2N6500	RCA	PTC104	MAL	2N5429		MOTA	2N5430	MOTA			
70	2N5606	2N3879	RCA	2N5428	MOTA								
71	2N5608	2N3879	RCA										
72	2N5610	2N6500	RCA	2N5428	MOTA								
73	2N5612	2N6500	RCA	2N5430	MOTA								
74	2N5614	2N5039	RCA	2N3448	MOTA								
75	2N5616	2N5038	RCA	2N3448	MOTA								
76	2N5618	2N5038	RCA	2N3448	MOTA								
77	2N5620	2N6496	RCA										
78	2N5622	2N5039	RCA										
79	2N5624	2N5038	RCA										
80	2N5626	2N5038	RCA										
81	2N5628	2N6496	RCA										
82	2N5629	2N4348	RCA	PTC173	MAL	2N5629		MOTA					
83	2N5630	2N4348	RCA	PTC173	MAL	2N5630		MOTA					
84	2N5631	RCA3773	RCA	2N5631	MOTA								
85	2N5632	RCA8638E	RCA	PTC173	MAL	2N5632		MOTA					
86	2N5633	RCA8638D	RCA	PTC173	MAL	2N5633		MOTA					
87	2N5634	MJ15003	RCA	2N5634	MOTA								
88	2N5651	2N6235	MOTA										
89	2N5660	2N6077	RCA	2N6233	MOTA								
90	2N5661	2N6079	RCA										
91	2N5664	2N6077	RCA	2N6233	MOTA								
92	2N5665	2N6079	RCA	2N6235	MOTA								
93	2N5671	2N6338	MOTA										
94	2N5672	2N3265	RCA	2N5672	TRWS	2N6339		MOTA					
95	2N5678	2N3265	RCA	2N6378	MOTA								
96	2N5687	2N4427	MOTA										
97	2N5689	2N5847	MOTA										
98	2N5690	2N5848	MOTA										
99	2N5697	MRF515	MOTA										
100	2N5698	2N5944	MOTA										
101	2N5707	MRF401	MOTA										
102	2N5708	2N5941	MOTA										
103	2N5710	2N4073	MOTA										
104	2N5711	2N5641	MOTA										
105	2N5712	2N5642	MOTA										
106	2N5713	2N5642	MOTA										
107	2N5714	2N5643	MOTA										
108	2N5729	2N5336	MOTA	2N5337	MOTA								
109	2N5730	2N5347	MOTA										
110	2N5732	2N5671	RCA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N5733	2N3265	RCA	2N6274	MOTA								
2	2N5734	2N5671	RCA	2N6338	MOTA								
3	2N5737	2N6246	RCA	PTC149	MAL	2N5878	MOTA						
4	2N5738	2N6248	RCA	PTC172	MAL	2N6229	MOTA						
5	2N5739	2N5878	RCA	PTC168	MAL	2N5878	MOTA						
6	2N5740	2N6229	MOTA										
7	2N5741	2N5883	MOTA										
8	2N5742	2N6029	MOTA										
9	2N5743	2N5883	MOTA										
10	2N5744	MJ4502	MOTA										
11	2N5758	2N3442	RCA	2N5758	MOTA								
12	2N5759	2N3442	RCA	2N5759	MOTA								
13	2N5789	2N3442	RCA										
14	2N5773	MRF5174	MOTA										
15	2N5774	2N5636	MOTA										
16	2N5775	MRF5177	MOTA										
17	2N5804	2N6306	MOTA										
18	2N5805	2N6542	MOTA										
19	2N5834	2N3553	MOTA										
20	2N5861	2N5321	RCA	2N4307	TRWS								
21	2N5864	40634	RCA										
22	2N5865	40634	RCA	PTC141	MAL								
23	2N5867	2N6246	RCA	PTC149	MAL	BDX92	PHIN						
24	2N5868	2N6247	RCA	PTC172	MAL	2N3790	MOTA	BDX94	PHIN				
25	2N5869	2N3713	MOTA										
26	2N5870	2N3714	MOTA										
27	2N5871	2N3789	MOTA										
28	2N5872	2N3790	MOTA										
29	2N5873	2N3713	MOTA										
30	2N5874	2N3714	MOTA										
31	2N5913	MRF807	MOTA										
32	2N5914	2N5944	MOTA										
33	2N5915	2N5946	MOTA										
34	2N5916	MRF5177	MOTA										
35	2N5929	2N5671	RCA	2N6338	MOTA								
36	2N5930	2N5672	RCA	2N6338	MOTA								
37	2N5931	2N6341	MOTA										
38	2N5932	2N5671	RCA	2N6338	MOTA								
39	2N5933	2N5672	RCA	2N6338	MOTA								
40	2N5935	2N6341	MOTA										
41	2N5936	2N6338	MOTA										
42	2N5937	2N6341	MOTA										
43	2N5942	MRF463	MOTA										
44	2N5954	2N6318	MOTA										
45	2N5955	2N6317	MOTA										
46	2N5956	2N6317	MOTA										
47	2N5966	2N3265	RCA										
48	2N5968	2N3265	RCA										
49	2N5970	2N6472	RCA	PTC140	MAL	2N5882	MOTA						
50	2N5971	2N6472	RCA	PTC140	MAL	2N5882	MOTA						
51	2N5972	2N6472	RCA	MJ15003	MOTA								
52	2N5980	2N6489	MOTA										
53	2N5981	MJE2955	MOTA										
54	2N5983	MJE3055	MOTA										
55	2N5984	MJE3055	MOTA										
56	2N5992	MRF232	MOTA										
57	2N5993	MRF234	MOTA										
58	2N5994	2N5643	MOTA										
59	2N5995	MRF212	MOTA										
60	2N5996	2N6081	MOTA										
61	2N6021	2N6126	MOTA										
62	2N6022	2N6126	MOTA										
63	2N6023	2N6124	MOTA										
64	2N6024	2N6124	MOTA										
65	2N6025	2N6125	MOTA										
66	2N6026	2N6125	MOTA										
67	2N6029	RC9118E	RCA	PTC172	MAL	2N6029	MOTA						
68	2N6030	RC9118D	RCA	PTC172	MAL	2N6030	MOTA						
69	2N6031	2N6609	RCA	2N6031	MOTA								
70	2N6032	2N6275	MOTA										
71	2N6033	2N6277	MOTA										
72	2N6046	2N3266	RCA										
73	2N6047	2N3265	RCA										
74	2N6048	2N3265	RCA										
75	2N6049	2N5955	RCA	PTC168	MAL	2N6049	MOTA						
76	2N6050	2N6649	RCA	2N6050	MOTA								
77	2N6051	2N6650	RCA	2N6051	MOTA								
78	2N6053	2N6649	RCA	2N6053	MOTA								
79	2N6054	2N6650	RCA	2N6054	MOTA								
80	2N6057	2N6384	RCA	PMD10K60	LAM	2N6057	MOTA						
81	2N6058	2N6385	RCA	PMD10K60	LAM	2N6058	MOTA						
82	2N6062	2N3265	RCA										
83	2N6063	2N3265	RCA										
84	2N6079	2N6235	MOTA										
85	2N6093	MRF464	MOTA										
86	2N6098	2N6487	MOTA										
87	2N6099	2N6487	MOTA										
88	2N6100	2N6488	MOTA	2N6487	MOTA								
89	2N6101	2N6488	MOTA										
90	2N6102	2N6488	MOTA	2N6488	MOTA								
91	2N6103	2N6488	MOTA										
92	2N6106	2N6107	MOTA										
93	2N6108	2N6109	MOTA										
94	2N6110	2N6111	MOTA										
95	2N6121	2N6290	RCA	PTC167	MAL	BD947	PHIN	2N6121	MOTA				
96	2N6122	2N6292	RCA	PTC167	MAL	BD949	PHIN	2N6122	MOTA				
97	2N6123	RC318	RCA	PTC167	MAL	BD951	PHIN	2N6123	MOTA				
98	2N6124	2N6109	RCA	PTC166	MAL	2N6124	MOTA						
99	2N6125	2N6107	RCA	PTC166	MAL	2N6125	MOTA						
100	2N6128	RC328	RCA	PTC168	MAL	2N6128	MOTA						
101	2N6129	2N6290	RCA	PTC169	MAL	2N6290	MOTA						
102	2N6130	2N6292	RCA	PTC169	MAL	2N6292	MOTA	2N6130	MOTA				
103	2N6131	2N6292	RCA	PTC169	MAL	TIP31B	MOTA	2N6131	MOTA				
104	2N6132	2N6109	RCA	PTC168	MAL	2N6109	MOTA	2N6132	MOTA				
105	2N6133	2N6107	RCA	PTC168	MAL	2N6107	MOTA	2N6133	MOTA				
106	2N6134	RC328	RCA	PTC168	MAL	TIP32B	MOTA	2N6134	MOTA				
107	2N6135	MRF511	RCA										
108	2N6197	2N3553	MOTA										
109	2N6198	2N5841	MOTA										
110	2N6199	2N5642	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column

LINE No.	TYPE NO. TO BE REPLACED	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N8200	2N5643	MOTA										
2	2N6201	2N6166	MOTA										
3	2N6202	MRF5174	MOTA										
4	2N6203	MRF5175	MOTA										
5	2N6204	2N5637	MOTA										
6	2N6205	MRF5177	MOTA										
7	2N6226	2N6248	RCA	PTC172	MAL	2N6226	MOTA						
8	2N6229	2N6248	RCA	PTC172	MAL	2N6229	MOTA						
9	2N6230	RCA9116D	RCA	PTC172	MAL	2N6230	MOTA						
10	2N6231	MJ15004	RCA	2N6231	MOTA								
11	2N6233	2N3583	RCA	2N6233	MOTA								
12	2N6234	2N3584	RCA	2N6234	MOTA								
13	2N6235	2N3585	RCA	2N6235	MOTA								
14	2N6246	2N5879	MOTA										
15	2N6247	2N5880	MOTA										
16	2N6248	2N3265	RCA	PTC172	MAL	MJ15016	MOTA						
17	2N6253	2N5877	MOTA										
18	2N6254	2N5878	MOTA										
19	2N6258	2N5686	MOTA										
20	2N6259	2N5631	MOTA										
21	2N6260	2N4231A	MOTA										
22	2N6261	2N4233A	MOTA										
23	2N6262	2N5760	MOTA										
24	2N6263	2N5050	MOTA										
25	2N6264	2N5051	MOTA										
26	2N6270	2N5671	RCA	2N6338	MOTA								
27	2N6271	2N5672	RCA	2N6338	MOTA								
28	2N6272	2N3265	RCA	2N6338	MOTA								
29	2N6273	2N3265	RCA	2N6338	MOTA								
30	2N6289	2N6288	MOTA										
31	2N6291	2N6290	MOTA										
32	2N6293	2N6292	MOTA										
33	2N6294	2N6534	RCA	2N6294	MOTA								
34	2N6295	2N6534	RCA	2N6295	MOTA								
35	2N6300	2N6534	RCA	2N6300	MOTA								
36	2N6301	2N6534	RCA	2N6301	MOTA								
37	2N6302	RCA3773	RCA	2N5630	MOTA								
38	2N6312	2N6308	RCA	PTC168	MAL	2N6312	MOTA						
39	2N6313	2N5955	RCA	PTC168	MAL	2N6313	MOTA						
40	2N6314	2N5954	RCA	PTC168	MAL	2N6314	MOTA						
41	2N6322	MJ10015	MOTA										
42	2N6323	MJ10015	MOTA										
43	2N6324	MJ10015	MOTA										
44	2N6325	MJ10015	MOTA										
45	2N6326	2N6203	MOTA	2N6326	MOTA								
46	2N6327	2N5886	MOTA	2N6327	MOTA								
47	2N6329	2N4399	MOTA										
48	2N6330	2N5884	MOTA										
49	2N6338	2N5672	RCA	2N6338	MOTA								
50	2N6339	2N5672	RCA	2N5672	TRWS	2N6339	MOTA						
51	2N6354	2N6339	MOTA										
52	2N6355	2N6057	MOTA										
53	2N6356	2N6057	MOTA										
54	2N6357	2N6058	MOTA										
55	2N6358	2N6058	MOTA										
56	2N6359	2N4348	RCA	2N5885	MOTA								
57	2N6360	2N4348	RCA	PTC173	MAL	2N5629	MOTA						
58	2N6361	MRF325	MOTA										
59	2N6362	2N6439	MOTA										
60	2N6367	MRF433	MOTA										
61	2N6368	MRF460	MOTA										
62	2N6371	2N6569	MOTA										
63	2N6372	2N6316	MOTA										
64	2N6373	2N6315	MOTA										
65	2N6374	2N6315	MOTA										
66	2N6380	2N6377	MOTA										
67	2N6381	2N6378	MOTA										
68	2N6382	2N6379	MOTA										
69	2N6407	RCP700C	RCA	MJE172	MOTA								
70	2N6408	RCP701B	RCA	MJE181	MOTA	2N6408	MOTA						
71	2N6409	RCP701C	RCA	MJE182	MOTA	2N6409	MOTA						
72	2N6410	MJE200	MOTA										
73	2N6411	MJE210	MOTA										
74	2N6412	RCP701A	RCA	MJE180	MOTA								
75	2N6413	RCP701B	RCA	MJE181	MOTA								
76	2N6414	RCP700A	RCA	MJE170	MOTA								
77	2N6415	RCP700B	RCA	MJE171	MOTA	RCP701C	RCA						
78	2N6416	MJE243	MOTA										
79	2N6417	RCP701D	RCA	MJE243	MOTA								
80	2N6418	RCP700C	RCA	MJE251	MOTA								
81	2N6419	RCP700D	RCA	MJE253	MOTA								
82	2N6420	2N6211	RCA	2N6420	MOTA								
83	2N6421	2N6212	RCA	2N6421	MOTA								
84	2N6422	2N6212	RCA	2N6422	MOTA								
85	2N6423	2N6212	RCA	2N6423	MOTA								
86	2N6424	2N6211	RCA	2N6424	MOTA								
87	2N6425	2N6212	RCA	2N6425	MOTA								
88	2N6436	2N5671	RCA	2N6436	MOTA								
89	2N6437	2N5672	RCA	2N6437	MOTA								
90	2N6438	2N5672	RCA	2N6438	MOTA								
91	2N6455	MRF406	MOTA										
92	2N6456	MRF406	MOTA										
93	2N6457	MRF460	MOTA										
94	2N6458	MRF460	MOTA										
95	2N6459	MRF454	MOTA										
96	2N6461	2N3439	RCA										
97	2N6466	MJE247	MOTA										
98	2N6467	2N6420	MOTA	MJ3237	MOTA								
99	2N6468	2N6420	MOTA	MJ3237	MOTA								
100	2N6469	2N5879	MOTA										
101	2N6470	2N5881	MOTA										
102	2N6471	2N5881	MOTA										
103	2N6472	2N5882	MOTA										
104	2N6473	TIP31C	MOTA	FT317	MOTA								
105	2N6474	FT3117A	MOTA										
106	2N6475	TIP32C	MOTA	FT317	MOTA								
107	2N6476	FT417A	MOTA										
108	2N6477	FT317A	MOTA										
109	2N6478	FT317B	MOTA										
110	2N6492	2N6055	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N8493	2N8058	MOTA										
2	2N6494	2N6056	MOTA										
3	2N6496	2N6339	MOTA										
4	2N8500	2N5428	MOTA	2N5430	MOTA								
5	2N6510	2N6306	MOTA										
6	2N6511	2N6306	MOTA										
7	2N8512	2N8544	MOTA										
8	2N6513	2N6545	MOTA										
9	2N6514	2N6544	MOTA										
10	2N8530	TIP101	MOTA										
11	2N6531	TIP102	MOTA										
12	2N6532	TIP103	MOTA	TIP102	MOTA								
13	2N8534	2N8577	MOTA	2N8301	MOTA								
14	2N6535	2N6578	MOTA	TIP102	MOTA								
15	2N6536	2N6578	MOTA	TIP102	MOTA								
16	2N8537	2N8578	MOTA										
17	2N6542	2N6670	RCA	2N6542	TRWS	BUX82	PHIN	2N6542	MOTA				
18	2N6543	2N6671	RCA	2N6543	TRWS	BUX83	PHIN	2N6543	MOTA				
19	2N8544	2N6870	RCA	2N8544	TRWS	BUX80	PHIN						
20	2N6545	2N6671	RCA	2N6545	TRWS	BUX81	PHIN						
21	2N6551	RCP701B	RCA	2N6551	MOTA								
22	2N8552	RCP701C	RCA	2N8552	MOTA								
23	2N6553	RCP701D	RCA	2N6553	MOTA								
24	2N6554	RCP700B	RCA	2N6554	MOTA								
25	2N8555	RCP700C	RCA	2N8555	MOTA								
26	2N6556	RCP700D	RCA	2N6556	MOTA								
27	2N6557	RCP111B	RCA	2N6557	MOTA								
28	2N8558	RCP111C	RCA	2N8558	MOTA								
29	2N6559	RCP111D	RCA	2N6559	MOTA								
30	2N8569	2N3055	RCA	PTC140	MAL	2N6569	MOTA						
31	2N8573	2N8546	MOTA										
32	2N6574	2N6546	MOTA										
33	2N6575	2N6547	MOTA										
34	2N8582	2N8308	MOTA										
35	2N6583	2N6545	MOTA										
36	2N6648	MJ2500	MOTA	MJ13334	MOTA								
37	2N8649	MJ2500	MOTA	2N8649	MOTA								
38	2N6650	MJ2501	MOTA	2N6650	MOTA								
39	2SA483	2N6420	MOTA										
40	2SA489	2N6107	RCA	2N6128	MOTA								
41	2SA490	2N6109	RCA	PTC166	MAL	2N6125	MOTA						
42	2SA496	2N4918	MOTA										
43	2SA503	2N4314	RCA										
44	2SA504	2N4037	RCA										
45	2SA505	2N4919	MOTA										
46	2SA512	2N4314	RCA										
47	2SA560	2N4314	RCA										
48	2SA566	2N4920	MOTA										
49	2SA597	2N4037	RCA	PTC142	MAL								
50	2SA613	2N4899	MOTA										
51	2SA614	2N4900	MOTA										
52	2SA616	2N3741	MOTA										
53	2SA623	D41E1	MOTA										
54	2SA624	D41E5	MOTA										
55	2SA626	2N8228	MOTA										
56	2SA627	2N6226	MOTA										
57	2SA633	D41E1	MOTA										
58	2SA634	D41E5	MOTA										
59	2SA635	D41D7	MOTA										
60	2SA636	2N6556	MOTA										
61	2SA645	D41D10	MOTA										
62	2SA646	2N6556	MOTA										
63	2SA647	2N6556	MOTA										
64	2SA648	2N8230	MOTA										
65	2SA652	2N6420	MOTA										
66	2SA653	2N6420	MOTA										
67	2SA656	2N8228	MOTA										
68	2SA657	2N6226	MOTA										
69	2SA658	2N6226	MOTA										
70	2SA663	2N8228	MOTA										
71	2SA670	2N6125	MOTA										
72	2SA671	2N6125	MOTA										
73	2SA679	MJ15016	MOTA										
74	2SA680	2N5880	MOTA										
75	2SA681	MJE253	MOTA										
76	2SA682	MJE253	MOTA										
77	2SA698	MDS60	MOTA										
78	2SA699	D41E5	MOTA										
79	2SA700	TIP30	MOTA										
80	2SA703	D41E1	MOTA										
81	2SA706	MPSU55	MOTA										
82	2SA714	2N8228	MOTA										
83	2SA715	MJE170	MOTA										
84	2SA738	MJE170	MOTA										
85	2SA739	MJ8502	MOTA										
86	2SA755	2N6125	MOTA										
87	2SA756	2N6226	MOTA										
88	2SA757	2N8227	MOTA										
89	2SA758	2N6228	MOTA										
90	2SA762	2N6211	MOTA										
91	2SA764	2N8317	MOTA										
92	2SA765	2N8318	MOTA										
93	2SA766	2N6420	MOTA										
94	2SA768	2N6125	MOTA										
95	2SA769	2N6126	MOTA										
96	2SA770	2N6109	MOTA										
97	2SA771	2N6107	MOTA										
98	2SA775	TIP30C	MOTA										
99	2SA779	2N4918	MOTA										
100	2SA780	2N4919	MOTA										
101	2SA794	MJE253	MOTA										
102	2SA795	MJE253	MOTA										
103	2SA800	2N4957	MOTA										
104	2SA807	2N3789	MOTA										
105	2SA808	2N3790	MOTA										
106	2SA814	2N6476	RCA	TIP30C	MOTA								
107	2SA815	2N6475	RCA	TIP30C	MOTA								
108	2SA816	TIP30B	MOTA										
109	2SA818	MPSU80	MOTA										
110	2SA835	MPSU80	MOTA										



# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SA837	2N6226	MOTA										
2	2SA839	TIP32C	MOTA										
3	2SA843	MJE15031	MOTA										
4	2SA861	MPSU51	MOTA										
5	2SA877	2N5876	MOTA										
6	2SA878	2N6230	MOTA										
7	2SA882	2N6231	MOTA										
8	2SA887	D41E7	MOTA										
9	2SA897	MPSU55	MOTA										
10	2SA898	MJE350	MOTA										
11	2SA899	MJE350	MOTA										
12	2SA900	MJE210	MOTA										
13	2SA907	MJ15016	MOTA										
14	2SA908	MJ15002	MOTA										
15	2SA909	MJ15023	MOTA										
16	2SA922	2N4918	MOTA										
17	2SA939	MJE350	MOTA										
18	2SA940	MJE15031	MOTA										
19	2SA949	MJE15031	MOTA										
20	2SA957	MJE15031	MOTA										
21	2SA958	MJE15031	MOTA										
22	2SA962	MPSU55	MOTA										
23	2SA963	MJE171	MOTA										
24	2SA965	MJE15029	MOTA										
25	2SA966	TIP32	MOTA										
26	2SA968	MJE15031	MOTA										
27	2SA969	MJE3238	MOTA										
28	2SA971	2N6609	MOTA										
29	2SA980	2N6229	MOTA										
30	2SA981	2N6230	MOTA										
31	2SA982	2N6231	MOTA										
32	2SA1001	2N6438	MOTA										
33	2SA1002	2N6438	MOTA										
34	2SA1003	2N6438	MOTA										
35	2SA1007	2N6231	MOTA										
36	2SA1008	TIP32C	MOTA										
37	2SA1010	TIP42C	MOTA										
38	2SA1011	MJE1503	MOTA										
39	2SA1012	TIP42A	MOTA										
40	2SA1041	2N6438	MOTA										
41	2SA1042	2N6436	MOTA										
42	2SA1043	2N6438	MOTA										
43	2SA1044	2N6436	MOTA										
44	2SA1045	2N6052	MOTA										
45	2SA1046	2N6052	MOTA										
46	2SA1063	2N6228	MOTA										
47	2SA1064	2N6231	MOTA										
48	2SA1065	2N6231	MOTA										
49	2SA1067	2N6230	MOTA										
50	2SA1068	2N6231	MOTA										
51	2SA1069	TIP421B	MOTA										
52	2SA1110	MJE350	MOTA										
53	2SA1111	MJE15031	MOTA										
54	2SA1112	MJE15031	MOTA										
55	2SB502	2N3741	MOTA										
56	2SB502A	2N5954	RCA										
57	2SB503	2N3741	MOTA										
58	2SB503A	2N5955	RCA										
59	2SB506	2N6228	MOTA										
60	2SB507	2N6125	MOTA										
61	2SB509	2N6126	MOTA										
62	2SB511	TIP32	MOTA										
63	2SB513	2N6126	MOTA										
64	2SB514	TIP32	MOTA										
65	2SB515	TIP32A	MOTA										
66	2SB518	2N6226	MOTA										
67	2SB519	2N6227	MOTA										
68	2SB520	2N6228	MOTA										
69	2SB521	TIP42A	MOTA										
70	2SB522	TIP42A	MOTA										
71	2SB523	2N5193	MOTA										
72	2SB524	2N5194	MOTA										
73	2SB526	2N4920	MOTA										
74	2SB527	2N4920	MOTA										
75	2SB528	2N4920	MOTA										
76	2SB529	2N5193	MOTA										
77	2SB530	2N6248	RCA	PTC172	MAL	2N6230	MOTA						
78	2SB531	2N6247	RCA	PTC172	MAL	2N6226	MOTA						
79	2SB532	2N6226	MOTA										
80	2SB536	2N6226	MOTA										
81	2SB537	2N6226	MOTA										
82	2SB539	2N6231	MOTA										
83	2SB541	2N6230	MOTA										
84	2SB546	MJE15031	MOTA										
85	2SB547	MJE15031	MOTA										
86	2SB548	2N4920	MOTA										
87	2SB549	2N4920	MOTA										
88	2SB552	MJ15023	MOTA										
89	2SB554	MJ15023	MOTA										
90	2SB555	MJ15012	MOTA										
91	2SB556	MJ15012	MOTA										
92	2SB557	2N6230	MOTA										
93	2SB558	2N6248	RCA	PTC172	MAL	2N6229	MOTA						
94	2SB559	2N4918	MOTA										
95	2SB565	2N6125	MOTA										
96	2SB566	2N6126	MOTA										
97	2SB567	MJE15031	MOTA										
98	2SB568	MJE15031	MOTA										
99	2SB569	MJE3310	MOTA										
100	2SB570	MJE3311	MOTA										
101	2SB571	MJE3312	MOTA										
102	2SB572	2N6126	MOTA	2N5193	MOTA								
103	2SB573	2N5194	MOTA										
104	2SB574	2N5195	MOTA										
105	2SB575	2N5193	MOTA										
106	2SB576	2N5194	MOTA										
107	2SB577	2N5195	MOTA										
108	2SB578	MJE2955	MOTA										
109	2SB579	2N5975	MOTA										
110	2SB580	2N5976	MOTA										

## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SB581	2N5978	MOTA										
2	2SB582	MJE6040	MOTA										
3	2SB583	MJE6041	MOTA										
4	2SB584	MJE6042	MOTA										
5	2SB585	2N6053	MOTA										
6	2SB586	2N6054	MOTA										
7	2SB587	2N6050	MOTA										
8	2SB588	2N6051	MOTA										
9	2SB589	2N6052	MOTA										
10	2SB595	2N6475	RCA	PTC168	MAL	TIP42C	MOTA						
11	2SB596	2N6107	RCA	PTC166	MAL	2N6126	MOTA						
12	2SB600	MJ15012	MOTA										
13	2SB604	2N6128	MOTA										
14	2SB628	MJE15031	MOTA										
15	2SB630	MJE15031	MOTA										
16	2SB631	2N4920	MOTA										
17	2SB632	2N4918	MOTA										
18	2SB633	TIP42C	MOTA										
19	2SB648	MJE350	MOTA										
20	2SB649	MJE350	MOTA										
21	2SB653	2N6227	MOTA										
22	2SB654	2N6227	MOTA										
23	2SB655	MJ15002	MOTA										
24	2SB656	MJ15002	MOTA										
25	2SB668	TIP32A	MOTA										
26	2SB669	TIP32B	MOTA										
27	2SB673	2N6042	MOTA										
28	2SB674	2N6041	MOTA										
29	2SB675	2N6040	MOTA										
30	2SB676	TIP127	MOTA										
31	2SB677	TIP125	MOTA										
32	2SB679	TIP117	MOTA										
33	2SB681	MJ15002	MOTA										
34	2SB689	TIP42C	MOTA										
35	2SB690	TIP42C	MOTA										
36	2SB691	MJE4352	MOTA										
37	2SB692	MJE4352	MOTA										
38	2SB693	2N6287	MOTA										
39	2SB694	MJ11015	MOTA										
40	2SB695	MJE4352	MOTA										
41	2SB696	2N6231	MOTA										
42	2SB697	MJ15002	MOTA										
43	2SB707	2N6107	MOTA										
44	2SB708	2N6107	MOTA										
45	2SB711	2N6041	MOTA										
46	2SB712	2N6042	MOTA										
47	2SB713	MJE4352	MOTA										
48	2SB717	MJE350	MOTA										
49	2SB718	MJE350	MOTA										
50	2SB719	MJE1503	MOTA										
51	2SB720	MJE15031	MOTA										
52	2SB722	MJ15002	MOTA										
53	2SB723	MJ15023	MOTA										
54	2SB724	TIP32A	MOTA										
55	2SB727	MJE15029	MOTA										
56	2SB743	MJE170	MOTA										
57	2SB744	MJE172	MOTA										
58	2SB750	TIP115	MOTA										
59	2SB751	MJE703T	MOTA										
60	2SB753	TIP42C	MOTA										
61	2SB754	2N6109	MOTA										
62	2SB772	MJE170	MOTA										
63	2SC41	MJ410	MOTA										
64	2SC42	MJ410	MOTA										
65	2SC42A	MJ410	MOTA										
66	2SC43	2N4347	MOTA										
67	2SC44	2N4347	MOTA										
68	2SC101	2N5050	MOTA										
69	2SC161	2N3447	MOTA										
70	2SC240	2N4347	MOTA										
71	2SC241	2N3447	MOTA										
72	2SC242	2N4347	MOTA										
73	2SC243	MJ410	MOTA										
74	2SC244	2N3447	MOTA										
75	2SC245	2N4347	MOTA										
76	2SC248	MJ410	MOTA										
77	2SC270	MJ411	MOTA										
78	2SC319	2N4427	MOTA										
79	2SC320	MRF60	MOTA										
80	2SC407	MJ15011	MOTA										
81	2SC408	MJ15011	MOTA										
82	2SC409	2N6249	MOTA										
83	2SC410	2N6249	MOTA										
84	2SC411	2N6546	MOTA										
85	2SC412	2N6546	MOTA										
86	2SC431	2N6341	MOTA										
87	2SC432	2N6341	MOTA										
88	2SC433	MJ15022	MOTA										
89	2SC434	MJ15022	MOTA										
90	2SC435	MJ10000	MOTA										
91	2SC438	MJ10000	MOTA										
92	2SC481	2N699	RCA	PTC158	MAL								
93	2SC482	2N1613	RCA	PTC123	MAL								
94	2SC483	2N3583	MOTA										
95	2SC485	2N1893	RCA										
96	2SC487	2N3583	MOTA										
97	2SC488	2N6233	MOTA										
98	2SC489	2N3441	MOTA										
99	2SC490	2N3766	MOTA										
100	2SC491	2N5050	MOTA										
101	2SC492	2N4347	MOTA										
102	2SC493	2N4347	MOTA										
103	2SC494	2N3447	MOTA										
104	2SC495	2N4923	MOTA										
105	2SC496	2N4921	MOTA										
106	2SC504	2N1711	RCA	PTC125	MAL								
107	2SC508	2N6233	MOTA										
108	2SC512	2N699	RCA										
109	2SC515	2N3739	MOTA										
110	2SC518	2N3448	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
		The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
1	2SC518A	2N3448	MOTA										
2	2SC519	2N5759	MOTA										
3	2SC519A	2N5760	MOTA										
4	2SC520	2N3448	MOTA										
5	2SC520A	2N3448	MOTA										
6	2SC521	2N3447	MOTA										
7	2SC521A	2N3448	MOTA										
8	2SC558	BUX17A	RCA	PTC129A	MAL	MJ3029	MOTA						
9	2SC560	2N2405	RCA										
10	2SC567	2N5031	MOTA										
11	2SC568	2N5031	MOTA										
12	2SC571	2N4427	MOTA										
13	2SC572	2N3926	MOTA										
14	2SC573	2N3927	MOTA										
15	2SC582	2N3739	MOTA										
16	2SC585	2N3632	MOTA										
17	2SC586	MJ410	MOTA										
18	2SC597	2N3553	MOTA										
19	2SC598	2N3926	MOTA										
20	2SC600	2N3927	MOTA										
21	2SC628	MRF225	MOTA										
22	2SC637	2N3926	MOTA										
23	2SC638	2N3927	MOTA										
24	2SC642	BU204	MOTA										
25	2SC643	BU204	MOTA										
26	2SC646	2N3447	MOTA										
27	2SC647	2N3448	MOTA										
28	2SC652	2N5943	MOTA										
29	2SC664	2N5758	MOTA										
30	2SC665	2N5760	MOTA										
31	2SC675	2N6306	MOTA										
32	2SC676	2N6306	MOTA										
33	2SC677	2N6306	MOTA										
34	2SC678	2N6306	MOTA										
35	2SC679	2N3585	MOTA										
36	2SC680	2N5052	MOTA										
37	2SC681	MJ15011	MOTA										
38	2SC685	2N3739	MOTA										
39	2SC687	MJ410	MOTA										
40	2SC736	2N4347	MOTA										
41	2SC758	2N6307	MOTA										
42	2SC759	2N6306	MOTA										
43	2SC760	2N6306	MOTA										
44	2SC768	2N3055	MOTA										
45	2SC769	2N5633	MOTA										
46	2SC770	MJ15011	MOTA										
47	2SC771	MJ15011	MOTA										
48	2SC779	2N3584	RCA	PTC104	MAL	2N3739	MOTA						
49	2SC782	2N3585	RCA	PTC104	MAL	2N3739	MOTA						
50	2SC782A	2N3585	RCA										
51	2SC783	2N3583	RCA	2N3738	MOTA								
52	2SC789	2N6292	RCA	PCT167	MAL	2N6123	MOTA						
53	2SC790	2N6290	RCA	PCT167	MAL	TIP31A	MOTA						
54	2SC791	2N5050	MOTA										
55	2SC792	BUX16B	RCA	PCT129A	MAL	2N5840	MOTA						
56	2SC793	2N5758	MOTA										
57	2SC794	2N5758	MOTA										
58	2SC795	2N5739	MOTA										
59	2SC806	MJ431	MOTA										
60	2SC807	MJ413	MOTA										
61	2SC808	MJ411	MOTA										
62	2SC821	2N4427	MOTA										
63	2SC822	MRF607	MOTA										
64	2SC825	2N3585	MOTA										
65	2SC833	2N6235	MOTA										
66	2SC840	2N5050	MOTA										
67	2SC840A	2N5051	MOTA										
68	2SC861	MJ3029	MOTA										
69	2SC862	MJ3030	MOTA										
70	2SC867	2N3739	MOTA										
71	2SC884	2N5050	MOTA										
72	2SC885	2N6307	MOTA										
73	2SC886	2N6306	MOTA										
74	2SC887	MJ410	MOTA										
75	2SC888	MJ410	MOTA										
76	2SC889	MJ410	MOTA										
77	2SC891	2N5645	MOTA										
78	2SC892	2N5646	MOTA										
79	2SC895	2N3441	MOTA										
80	2SC897	2N5760	MOTA										
81	2SC898	2N5760	MOTA										
82	2SC901	2N6306	MOTA										
83	2SC901A	2N6306	MOTA										
84	2SC902	2N5634	MOTA										
85	2SC931	MJE205	MOTA										
86	2SC932	2N5977	MOTA										
87	2SC935	2N5840	MOTA										
88	2SC936	BU204	MOTA										
89	2SC937	BU204	MOTA										
90	2SC939	MJ15001	MOTA										
91	2SC940	2N6249	MOTA										
92	2SC961	2N5759	MOTA										
93	2SC962	2N5759	MOTA										
94	2SC981	2N5430	MOTA										N
95	2SC988	2N6304	MOTA										
96	2SC999	BU205	MOTA										
97	2SC1004	BU204	MOTA										
98	2SC1004A	BU205	MOTA										
99	2SC1005	BU207	MOTA										
100	2SC1013	MDS28	MOTA										
101	2SC1014	MDS27	MOTA										
102	2SC1025	2N6233	MOTA										
103	2SC1030	2N5760	MOTA										
104	2SC1031	2N3585	MOTA										
105	2SC1034	BU204	MOTA										
106	2SC1043	MRF511	MOTA										
107	2SC1044	2N6304	MOTA										
108	2SC1046	BU207	MOTA										
109	2SC1050	MJ411	MOTA										
110	2SC1051	2N5760	MOTA										

## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SC1055	2N5430	MOTA										
2	2SC1055	2N3739	MOTA										
3	2SC1080	TIP31A	MOTA										
4	2SC1061	TIP31A	MOTA										
5	2SC1078	BU204	MOTA										
6	2SC1079	MJ15001	MOTA										
7	2SC1080	MJ15001	MOTA										
8	2SC1081	2N5646	MOTA										
9	2SC1086	BU207	MOTA										
10	2SC1088	NJE3439	MOTA										
11	2SC1089	MJE3439	MOTA										
12	2SC1096	MDS26	MOTA										
13	2SC1098	2N6552	MOTA										
14	2SC1099	BU207	MOTA										
15	2SC1100	BU207	MOTA										
16	2SC1101	BU204	MOTA										
17	2SC1102	2N3739	MOTA										
18	2SC1104	2N3585	MOTA										
19	2SC1105	2N3739	MOTA										
20	2SC1106	2N5840	MOTA										
21	2SC1107	2N6123	MOTA										
22	2SC1108	2N6123	MOTA										
23	2SC1109	2N6123	MOTA										
24	2SC1110	2N6123	MOTA										
25	2SC1111	2N5634	MOTA										
26	2SC1112	2N5634	MOTA										
27	2SC1113	MJ3247	MOTA										
28	2SC1114	2N6542	MOTA										
29	2SC1115	2N5634	MOTA										
30	2SC1116	MJ15011	MOTA										
31	2SC1124	MPSU04	MOTA										
32	2SC1125	MPSU10	MOTA										
33	2SC1130	2N6543	MOTA										
34	2SC1131	2N6542	MOTA										
35	2SC1132	BU207	MOTA										
36	2SC1140	2N6547	MOTA										
37	2SC1141	2N6546	MOTA										
38	2SC1142	MJ13015	MOTA										
39	2SC1143	MJ13014	MOTA										
40	2SC1151	BU204	MOTA										
41	2SC1152	2N5840	MOTA										
42	2SC1153	BU204	MOTA										
43	2SC1154	MJ12003	MOTA										
44	2SC1155	D40D13	MOTA										
45	2SC1156	2N6543	MOTA										
46	2SC1157	2N6553	MOTA										
47	2SC1160	2N3738	MOTA										
48	2SC1161	2N3738	MOTA										
49	2SC1162	MJE1180	MOTA										
50	2SC1167	BU204	MOTA										
51	2SC1168	2N3739	MOTA										
52	2SC1170	BU207	MOTA										
53	2SC1170A	BU208	MOTA										
54	2SC1171	BU204	MOTA										
55	2SC1172	BU208	MOTA										
56	2SC1173	2N6288	RCA	TIP31		MOTA							
57	2SC1174	MJ12003	MOTA										
58	2SC1184	BUX204	MOTA										
59	2SC1185	2N5840	MOTA										
60	2SC1195	BUX16	RCA	PTC129A		MAL	2N5838		MOTA				
61	2SC1224	2N6591	MOTA										
62	2SC1226	2N6548	MOTA										
63	2SC1227	MJ10006	MOTA										
64	2SC1228	SDT13305	MOTA										
65	2SC1229	MJ10006	MOTA										
66	2SC1237	TIP31B	MOTA										
67	2SC1243	D40K3	MOTA										
68	2SC1252	MRF517	MOTA										
69	2SC1253	2N5109	MOTA										
70	2SC1254	2N6304	MOTA										
71	2SC1256	2N6255	MOTA										
72	2SC1257	2N5590	MOTA										
73	2SC1258	2N6081	MOTA										
74	2SC1260	2N6304	MOTA										
75	2SC1275	2N5031	MOTA										
76	2SC1282	2N5840	MOTA										
77	2SC1295	BU204	MOTA										
78	2SC1304	2N3739	MOTA										
79	2SC1309	BU207	MOTA										
80	2SC1316	MJ4381	MOTA										
81	2SC1322	2N6250	MOTA										
82	2SC1326	MJ12005	MOTA										
83	2SC1329	MPSU01	MOTA										
84	2SC1336	2N6249	MOTA										
85	2SC1341	2N6249	MOTA										
86	2SC1343	MJ15011	MOTA										
87	2SC1347	TIP47	MOTA										
88	2SC1348	TIP47	MOTA										
89	2SC1358	BU208	MOTA										
90	2SC1367	BU204	MOTA										
91	2SC1381	MJE182	MOTA										
92	2SC1382	MJE182	MOTA										
93	2SC1391	2N3739	MOTA										
94	2SC1402	2N5634	MOTA										
95	2SC1403	2N5634	MOTA										
96	2SC1409	TIP47	MOTA										
97	2SC1410	TIP47	MOTA										
98	2SC1413	BU207	MOTA										
99	2SC1418	TIP31	MOTA										
100	2SC1419	TIP31	MOTA										
101	2SC1429	MPSU01	MOTA										
102	2SC1431	2N5050	MOTA										
103	2SC1433	MJ411	MOTA										
104	2SC1434	2N6546	MOTA										
105	2SC1436	2N6249	MOTA										
106	2SC1440	MJ15001	MOTA										
107	2SC1441	2N6249	MOTA										
108	2SC1444	2N5428	MOTA										
109	2SC1445	2N5430	MOTA										
110	2SC1447	TIP47	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column													
	TYPE NO. TO BE REPLACED	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	
1	2SC1448	TIP47	MOTA											
2	2SC1448A	TA8863	RCA											
3	2SC1449	MJE180	MOTA											
4	2SC1450	2N3583	MOTA											
5	2SC1454	MJ411	MOTA											
6	2SC1456	2N3739	MOTA											
7	2SC1463	2N6543	MOTA											
8	2SC1466	2N3585	MOTA											
9	2SC1467	MJ4381	MOTA											
10	2SC1468	SDT13304	MOTA											
11	2SC1469	SDT13305	MOTA											
12	2SC1477	MJ10006	MOTA											
13	2SC1501	MJE3439	MOTA											
14	2SC1504	MJ4381	MOTA											
15	2SC1505	TIP48	MOTA											
16	2SC1506	TIP48	MOTA											
17	2SC1507	TIP48	MOTA											
18	2SC1514	MJEB439	MOTA											
19	2SC1516	MJE3300	MOTA											
20	2SC1517	2N4922	MOTA											
21	2SC1519	2N6557	MOTA											
22	2SC1520	2N6557	MOTA											
23	2SC1521	2N6557	MOTA											
24	2SC1576	BUX16	RCA	SDT13304	MOTA									
25	2SC1577	SDT13305	MOTA											
26	2SC1578	MJ10014	MOTA											
27	2SC1579	MJ10013	MOTA											
28	2SC1580	MJ10014	MOTA											
29	2SC1584	2N6249	MOTA											
30	2SC1585	2N6249	MOTA											
31	2SC1586	2N6250	MOTA											
32	2SC1600	MRF905	MOTA											
33	2SC1603	2N5944	MOTA											
34	2SC1604	MRF628	MOTA											
35	2SC1605A	MRF226	MOTA											
36	2SC1609	2N6340	MOTA											
37	2SC1610	2N6341	MOTA											
38	2SC1617	MJ411	MOTA											
39	2SC1618	2N5758	MOTA											
40	2SC1619	2N5758	MOTA											
41	2SC1628	MPSU04	MOTA											
42	2SC1629	MJ1001	MOTA											
43	2SC1630	MPSU04	MOTA											
44	2SC1664	2N6300	MOTA											
45	2SC1667	2N5758	MOTA											
46	2SC1669	TIP47	MOTA											
47	2SC1672	2N6341	MOTA											
48	2SC1683	TIP47	MOTA											
49	2SC1689	2W5643	MOTA											
50	2SC1722	TIP48	MOTA											
51	2SC1723	TIP48	MOTA											
52	2SC1728	MPSU07	MOTA											
53	2SC1729	MRF226	MOTA											
54	2SC1749	MJE340	MOTA											
55	2SC1755	MJE2380T	MOTA											
56	2SC1756	MJE2360T	MOTA											
57	2SC1757	MJE2360T	MOTA											
58	2SC1760	MPSU07	MOTA											
59	2SC1761	MPSU01	MOTA											
60	2SC1768	MJ3041	MOTA											
61	2SC1777	2N5882	MOTA											
62	2SC1782	MJ15001	MOTA											
63	2SC1783	2N6249	MOTA							15				
64	2SC1784	MJ15001	MOTA											
65	2SC1785	2N6249	MOTA											
66	2SC1786	2N6250	MOTA											
67	2SC1818	2N6340	MOTA											
68	2SC1819	MJE2361T	MOTA											
69	2SC1826	TIP41B	MOTA											
70	2SC1827	TIP41C	MOTA											
71	2SC1829	MJ3041	MOTA											
72	2SC1830	2N6578	MOTA											
73	2SC1831	2N6056	MOTA											
74	2SC1832	MJ10009	MOTA											
75	2SC1846	MJE180	MOTA											
76	2SC1847	MJE181	MOTA											
77	2SC1848	D40E7	MOTA											
78	2SC1866	2N5760	MOTA											
79	2SC1868	SDT13304	MOTA											
80	2SC1869	2N5634	MOTA											
81	2SC1870	2N6546	MOTA											
82	2SC1875	MJ12003	MOTA											
83	2SC1880	TIP112	MOTA											
84	2SC1881	TIP110	MOTA											
85	2SC1883	TIP122	MOTA											
86	2SC1884	2M6301	MOTA											
87	2SC1891	BU204	MOTA											
88	2SC1892	BU205	MOTA											
89	2SC1894	BU208	MOTA											
90	2SC1895	MJ12005	MOTA											
91	2SC1896	MJ12005	MOTA											
92	2SC1903	MJE341	MOTA											
93	2SC1904	MJE341	MOTA											
94	2SC1905	MJE2381T	MOTA											
95	2SC1909	MJE1909	MOTA											
96	2SC1922	MJ12003	MOTA											
97	2SC1929	TIP48	MOTA											
98	2SC1942	MJ12003	MOTA											
99	2SC1969	MRF475	MOTA											
100	2SC1983	TIP111	MOTA											
101	2SC1984	TIP112	MOTA											
102	2SC1985	TIP11B	MOTA											
103	2SC1986	TIP11C	MOTA											
104	2SC1988	MRF904	MOTA											
105	2SC2024	2N4923	MOTA											
106	2SC2027	MJ12005	MOTA											
107	2SC2040	MRF511	MOTA											
108	2SC2068	D40N4	MOTA											
109	2SC2071	MJE3440	MOTA											
110	2SC2073	TIP47	MOTA											



## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	1	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO. TO BE REPLACED	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.
1	2SC2080	MJE180	MOTA										
2	2SC2085	MJE2361T	MOTA										
3	2SC2121	MJ411	MOTA										
4	2SC2122	MJ431	MOTA										
5	2SC2123	MJ10014	MOTA										
6	2SC2126	MJ4380	MOTA										
7	2SC2127	2N6249	MOTA										
8	2SC2128	MJ10015	MOTA										
9	2SC2138	SDT13304	MOTA										
10	2SC2139	SDT13305	MOTA										
11	2SC2140	SDT13304	MOTA										
12	2SC2147	MJ10015	MOTA										
13	2SC2148	SDT13305	MOTA										
14	2SC2151	MJ10014	MOTA										
15	2SC2159	MJ10015	MOTA										
16	2SC2168	MJE15030	MOTA										
17	2SC2189	MJ15001	MOTA										
18	2SC2190	2N6545	MOTA										
19	2SC2191	2N6547	MOTA										
20	2SC2198	2N6301	MOTA										
21	2SC2199	MJ11018	MOTA										
22	2SC2208	MJE181	MOTA										
23	2SC2220	MJ10016	MOTA										
24	2SC2229	TIP47	MOTA										
25	2SC2230	TIP47	MOTA										
26	2SC2233	2N6497	MOTA										
27	2SC2235	TIP47	MOTA										
28	2SC2236	TIP31	MOTA										
29	2SC2238	TIP47	MOTA										
30	2SC2239	2N5052	MOTA										
31	2SC2242	MJE2361T	MOTA										
32	2SC2243	2N6543	MOTA										
33	2SC2244	2N6545	MOTA										
34	2SC2245	SDT13304	MOTA										
35	2SC2246	2N6547	MOTA										
36	2SC2247	2N6543	MOTA										
37	2SC2248	2N6545	MOTA										
38	2SC2249	MJ10015	MOTA										
39	2SC2250	MJ10016	MOTA										
40	2SC2256	2N6249	MOTA										
41	2SC2260	2N6249	MOTA										
42	2SC2261	2N6249	MOTA										
43	2SC2262	2N6249	MOTA										
44	2SC2270	2N5194	MOTA										
45	2SC2278	MJE3439	MOTA										
46	2SC2292	SDT13305	MOTA										
47	2SC2293	SDT13305	MOTA										
48	2SC2298	MJE270	MOTA										
49	2SC2311	2N4922	MOTA										
50	2SC2321	2N5634	MOTA										
51	2SC2322	MJ15015	MOTA										
52	2SC2323	MJ15001	MOTA										
53	2SC2324	2N6038	MOTA										
54	2SC2331	MJE13004	MOTA										
55	2SC2333	MJE13005	MOTA										
56	2SC2334	MJE15030	MOTA										
57	2SC2335	MJE13007	MOTA										
58	2SC2337	2N5634	MOTA										
59	2SC2344	TIP47	MOTA										
60	2SC2354	2N3739	MOTA										
61	2SC2356	SDT13305	MOTA										
62	2SC2357	MJ12010	MOTA										
63	2SC2442	MJ10016	MOTA										
64	2SC2443	MJ10016	MOTA										
65	2SC2448	SDT13305	MOTA										
66	2SC2449	SDT13305	MOTA										
67	2SC2450	SDT13305	MOTA										
68	2SC2451	SDT13305	MOTA										
69	2SC2452	SDT13305	MOTA										
70	2SC2453	SDT13305	MOTA										
71	2SC2482	MJE2361T	MOTA										
72	2SC2487	2N5634	MOTA										
73	2SC2488	2N5634	MOTA										
74	2SC2489	2N5634	MOTA										
75	2SC2492	2N5633	MOTA										
76	2SC2493	2N5634	MOTA										
77	2SC2500	TIP31	MOTA										
78	2SC2516	2N6497	MOTA										
79	2SC2536	2N6499	MOTA										
80	2SC2541	SDT13305	MOTA										
81	2SC2562	TIP42A	MOTA										
82	2SC2568	2N5760	MOTA										
83	2SC2590	MJE341	MOTA										
84	2SD102	2N6261	RCA										
85	2SD129	2N6372	RCA										
86	2SD130	2N3054	RCA										
87	2SD234	RCA3054	RCA										
88	2SD235	RCA3054	RCA	PTC110	MAL								
89	2SD369	2N3055	RCA	PTC173	MAL								
90	2SD371	2N6254	RCA	PTC129A	MAL								
91	2SD404C	2N6288	RCA										
92	2SD424	2N6262	RCA										
93	2SD425	2N3442	RCA	PTC118	MAL								
94	2SD427	2N4347	RCA	PTC118	MAL								
95	2SD428	2N4348	RCA	PTC129A	MAL								
96	2SD523	2N6384	RCA										
97	2SD524	2N6385	RCA										
98	2SD526	2N6292	RCA	PTC167	MAL								
99	2SD552	BUX17A	RCA										
100	3TX820	2N5944	MOTA										
101	3TX821	2N5944	MOTA										
102	3TX822	2N5945	MOTA										
103	3TX820	2N5944	MOTA										
104	3TX822	2N5944	MOTA										
105	73T2	40392	RCA										
106	74T2	40628	RCA										
107	100T2	2N4347	RCA										
108	104T2	2N6253	RCA										
109	108T2	2N5039	RCA										
110	109T2	2N6354	RCA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE NO.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	182T2A	BUX16	RCA										
2	182T2B	BUX16	RCA										
3	182T2C	BUX16	RCA										
4	183T2A	BUX16	RCA										
5	183T2B	BUX16	RCA										
6	183T2C	BUX16	RCA										
7	184T2A	BUX16	RCA										
8	184T2B	BUX16	RCA										
9	184T2C	BUX16	RCA										
10	185T2A	BUX16A	RCA										
11	185T2B	BUX16A	RCA										
12	185T2C	BUX16A	RCA										
13	40081	MRF8003	MOTA										
14	40082	MRF8004	MOTA										
15	40240	MRF501	MOTA										
16	40250	2N3054	RCA	PTC112	MAL								
17	40251	2N3055	RCA										
18	40279	2N3375	MOTA										
19	40280	2N4427	MOTA										
20	40281	2N392	MOTA										
21	40282	2N3927	MOTA										
22	40290	2N3553	MOTA										
23	40291	2N3632	MOTA										
24	40310	2N4231A	MOTA										
25	40312	2N4232A	MOTA										
26	40313	2N4240	MOTA										
27	40316	2N4231A	MOTA										
28	40318	2N4240	MOTA										
29	40322	2N4240	MOTA										
30	40324	2N4231A	MOTA										
31	40325	2N6569	MOTA										
32	40328	2N4240	MOTA										
33	40340	2N5071	MOTA										
34	40341	2N3950	MOTA										
35	40363	2N5877	MOTA										
36	40364	2N4233A	MOTA										
37	40369	2N5877	MOTA										
38	40372	2N3054	MOTA										
39	40373	2N3441	MOTA										
40	40374	2N3583	MOTA										
41	40375	2N5428	MOTA										
42	40411	MJ802	MOTA										
43	40513	MJE3055T	MOTA										
44	40514	MJE3055T	MOTA										
45	40542	2N5978	MOTA										
46	40543	2N5978	MOTA										
47	40608	2N5943	MOTA										
48	40613	TIP31	MOTA										
49	40618	TIP31	MOTA										
50	40621	TIP31	MOTA										
51	40622	TIP31	MOTA										
52	40624	TIP41A	MOTA										
53	40627	TIP41A	MOTA										
54	40629	TIP31	MOTA										
55	40630	TIP31	MOTA										
56	40631	TIP31A	MOTA										
57	40632	TIP41A	MOTA										
58	40636	2N5878	MOTA										
59	40829	2N6316	MOTA										
60	40830	2N6315	MOTA										
61	40831	2N6315	MOTA										
62	40850	2N4240	MOTA										
63	40852	2N6543	MOTA										
64	40853	2N6546	MOTA										
65	40854	2N6546	MOTA										
66	40871	TIP41C	MOTA										
67	40872	TIP42C	MOTA										
68	40873	TIP41B	MOTA										
69	40874	TIP41B	MOTA										
70	40875	TIP41C	MOTA										
71	40876	TIP41A	MOTA										
72	40885	MPSU10	MOTA										
73	40886	MPSU10	MOTA										
74	40887	2N6559	MOTA										
75	40910	2N4231A	MOTA										
76	40912	2N4233A	MOTA										
77	40913	2N5050	MOTA										
78	40915	2N5031	MOTA										
79	40934	MRF616	MOTA										
80	40936	2N5070	MOTA										
81	40940	MRF5175	MOTA										
82	40953	MRF207	MOTA										
83	40954	MRF208	MOTA										
84	40955	MRF238	MOTA										
85	40964	MRF515	MOTA										
86	40965	MRF515	MOTA										
87	40967	2N5944	MOTA										
88	40968	2N5946	MOTA										
89	40970	MRF644	MOTA										
90	40971	MRF646	MOTA										
91	40972	MRF607	MOTA										
92	40973	2N6081	MOTA										
93	40974	2N6082	MOTA										
94	40975	2N3553	MOTA										
95	40976	2N3553	MOTA										
96	40977	2N5642	MOTA										
97	41008	MRF628	MOTA										
98	41008A	2N5944	MOTA										
99	41009	MRF616	MOTA										
100	41009A	2N5944	MOTA										
101	41010	2N5946	MOTA										
102	41012	2N5038	MOTA										
103	41013	2N5039	MOTA										
104	41024	2N5108	MOTA										
105	41025	MRF321	MOTA										
106	41026	MRF323	MOTA										
107	41027	MRF321	MOTA										
108	41028	MRF323	MOTA										
109	41038	MRF905	MOTA										
110	41500	TIP29	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	41501	TIP30	MOTA										
2	41504	TIP31	MOTA										
3	41508	2N6543	MOTA										
4	43104	2N5631	MOTA										
5	80091	MRF511	MOTA										
6	80099	MRF525	MOTA										
7	80187	MRF511	MOTA										
8	80231	MRF511	MOTA										
9	A3-12	MRF403	MOTA										
10	A25-12	2N5848	MOTA										
11	AT50	BFR90	MOTA										
12	AT51	BFR90	MOTA										
13	AT52	BFR60	MOTA										
14	AT2645	MRF902	MOTA										
15	AT2715	MRF912	MOTA										
16	B3-12	2N6080	MOTA										
17	B8-12	MRF212	MOTA										
18	B12-12	2N6081	MOTA										
19	B15-12	2N6081	MOTA										
20	B25-12	2N6082	MOTA										
21	B25-28	MRF314	MOTA										
22	B30-12	2N6083	MOTA										
23	B40-12	2N6084	MOTA										
24	B40-28	MRF315	MOTA										
25	BAM20	MRF314	MOTA										
26	BC119	2N697	RCA	PTC125	MAL								
27	BC120	2N697	RCA	PTC125	MAL								
28	BC138	40408	RCA	PTC127	MAL	2N2804	PHIN						
29	BC140	2N5321	RCA										
30	BC141	2N5320	RCA	PTC125	MAL								
31	BC142	40360	RCA	2N2218A	PHIN								
32	BC143	40595	RCA	PT127	MAL	2N2905A	PHIN						
33	BC144	40594	RCA	PT125	MAL	2N2218A	PHIN						
34	BC160	2N5323	RCA										
35	BC161	2N5322	RCA										
36	BC300	2N1893	RCA	BD139	PHIN								
37	BC301	2N699	RCA	BD139	PHIN								
38	BC302	2N2270	RCA	BSX59	PHIN								
39	BC303	2N4314	RCA	BD140	PHIN								
40	BC304	2N4037	RCA	BC640	PHIN								
41	BC310	2N1893	RCA										
42	BC311	2N4314	RCA										
43	BC323	2N5320	RCA										
44	BC324	2N5320	RCA										
45	BC429	2N2270	RCA										
46	BC430	2N2270	RCA										
47	BC440	2N5321	RCA	BC635	PHIN								
48	BC441	2N5320	RCA	BC637	PHIN								
49	BC460	2N5323	RCA										
50	BC461	2N5322	RCA										
51	BCW44	40360	RCA										
52	BCW45	40362	RCA										
53	BCW77-16	2N1711	RCA										
54	BCW78-16	2N1711	RCA										
55	BCW79-16	2N4037	RCA										
56	BCW80-16	2N4037	RCA										
57	BCY40	2N4037	RCA										
58	BCY54	2N4036	RCA										
59	BD115	BF258	RCA										
60	BD116	2N3055	RCA	PTC906	MAL								
61	BD141	2N4347	RCA	PTC118	MAL								
62	BD144	BUX18C	RCA	PTC129A	MAL								
63	BD148	BDY71	RCA										
64	BD149	BDY71	RCA										
65	BD160	2N6510	RCA										
66	BD162	40250	RCA										
67	BD163	2N6260	RCA										
68	BD215	2N3584	RCA										
69	BD216	2N3585	RCA										
70	BD301	BD243	RCA	PTC169	MAL	BD201	PHIN						
71	BD302	BD244	RCA	PTC168	MAL	BD202	PHIN						
72	BD303	BD243A	RCA	PTC169	MAL	BD203	PHIN						
73	BD304	BD244A	RCA	PTC168	MAL	BD204	PHIN						
74	BD311	2N6471	RCA	PTC173	MAL								
75	BD312	2N6246	RCA	PTC149	MAL								
76	BD313	2N6472	RCA	PTC173	MAL								
77	BD314	2N6247	RCA	PTC172	MAL								
78	BD315	2N6472	RCA										
79	BD316	2N6247	RCA	PTC172	MAL								
80	BD317	2N6472	RCA										
81	BD318	2N6248	RCA	PTC172	MAL								
82	BD515	RCP701A	RCA										
83	BD516	RCP700A	RCA										
84	BD517	RCP701B	RCA										
85	BD518	RCP701C	RCA										
86	BD519	RCP701C	RCA										
87	BD520	RCP700C	RCA										
88	BD525	RCP701B	RCA	PTC197	MAL								
89	BD526	RCP700B	RCA	PTC198	MAL								
90	BD527	RCP701C	RCA	PTC197	MAL								
91	BD528	RCP700C	RCA	PTC198	MAL								
92	BD529	RCP701D	RCA	PTC197	MAL								
93	BD530	RCP700D	RCA	PTC198	MAL								
94	BD633	40979	RCA	PTC167	MAL								
95	BD634	40980	RCA	PTC166	MAL								
96	BD635	40871	RCA	PTC167	MAL								
97	BD636	40872	RCA	PTC166	MAL								
98	BD637	40871	RCA	PTC169	MAL								
99	BD638	40872	RCA	PTC168	MAL								
100	BD643	BDX33	RCA	BD645	PHIN								
101	BD644	BDX34	RCA	BD646	PHIN								
102	BD645	BDX33A	RCA										
103	BD646	BDX34A	RCA										
104	BD647	BDX33B	RCA										
105	BD648	BDX34A	RCA										
106	BD661	2N6486	RCA										
107	BD662	2N6489	RCA										
108	BD663	2N6486	RCA										
109	BD663B	2N6486	RCA	PTC169	MAL								
110	BD664	2N6489	RCA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BD705	2N6486	RCA	BDV91	PHIN								
2	BD706	2N6489	RCA	BDV92	PHIN								
3	BD707	2N6487	RCA	BDV91	PHIN								
4	BD708	2N6490	RCA	BDV92	PHIN								
5	BD709	2N6488	RCA	BDV93	PHIN								
6	BD710	2N6491	RCA	BDV94	PHIN								
7	BDX14	2N3054	RCA										
8	BDX16	BUX66	RCA										
9	BDX27	2N3879	RCA										
10	BDX28	2N3879	RCA										
11	BDX30	2N6500	RCA										
12	BDX53	BDX33	RCA	BD645	PHIN								
13	BDX53A	BDX33A	RCA	BD645	PHIN								
14	BDX53B	BDX33B	RCA	BD647	PHIN								
15	BDX53C	BDX33C	RCA	BD649	PHIN								
16	BDX54	BDX34	RCA	BD646	PHIN								
17	BDX54A	BDX34A	RCA	BD646	PHIN								
18	BDX54B	BDX34B	RCA	BD648	PHIN								
19	BDX54C	BDX34C	RCA	BD650	PHIN								
20	BDX60	2N6254	RCA										
21	BDX61	2N3055	RCA										
22	BDX62	RCA8350A	RCA										
23	BDX62A	RCA8350B	RCA										
24	BDX63	2N6384	RCA										
25	BDX63A	2N6385	RCA										
26	BDX64	BDX84A	RCA										
27	BDX64A	BDX84B	RCA										
28	BDX64B	BDX84C	RCA										
29	BDX65	BDX83A	RCA										
30	BDX65A	BDX83B	RCA										
31	BDX65B	BDX83C	RCA										
32	BDX77	BD243B	RCA										
33	BDX78	BD244B	RCA										
34	BDY10	2B6253	RCA	PTC173	MAL								
35	BDY12	BUX16	RCA	PTC112	MAL								
36	BDY13	BUX16	RCA	PTC112	MAL								
37	BDY15	BUX16	RCA										
38	BDY17	BUX16	RCA	PTC140	MAL								
39	BDY20	BUX16	RCA										
40	BDY25A	BUX16	RCA										
41	BDY25B	BUX16	RCA										
42	BDY25C	BUX16	RCA										
43	BDY26A	BUX16	RCA										
44	BDY26B	BUX16	RCA										
45	BDY27A	BUX16	RCA										
46	BDY27B	BUX16	RCA										
47	BDY27C	BUX16	RCA										
48	BDY28A	BUX16A	RCA										
49	BDY28B	BUX16A	RCA										
50	BDY28C	BUX16A	RCA										
51	BDY38	2N6253	RCA	PTC140	MAL								
52	BDY39	2N3055	RCA	PTC140	MAL								
53	BDY55	2N5039	RCA	PTC140	MAL								
54	BDY56	2N5038	RCA										
55	BDY57	41012	RCA										
56	BDY58	41013	RCA										
57	BDY73	2N3055	RCA	PTC140	MAL								
58	BDY74	2N4347	RCA	PTC118	MAL								
59	BDY76	2N3772	RCA	PTC173	MAL								
60	BDY77	2N3773	RCA										
61	BDY78	2N6373	RCA	PTC112	MAL								
62	BDY79	2N3583	RCA										
63	BDY80A	2N5296	RCA										
64	BDY81A	2N5298	RCA										
65	BDY82A	2N6111	RCA										
66	BDY83A	2N6109	RCA										
67	BDY91	2N5038	RCA										
68	BDY92	2N5039	RCA										
69	BDY93	BU126	RCA	PTC129A	MAL								
70	BDY94	BU126	RCA										
71	BDY95	BU126	RCA	PTC118	MAL								
72	BDY96	2N6513	RCA										
73	BDY97	2N6512	RCA	PTC118	MAL								
74	BDY98	2N6511	RCA	PTC118	MAL								
75	BDY99	2N6511	RCA	PTC118	MAL								
76	BF111	2N3440	RCA										
77	BF157	BF257	RCA										
78	BF174	BF257	RCA										
79	BF177	40360	RCA	PTC144	MAL								
80	BF178	40412	RCA	BF336	PHIN	BF337							
81	BF179	BF257	RCA	BF337	PHIN	BF338							
82	BF179A	BF257	RCA										
83	BF179B	BF258	RCA										
84	BF179C	BF258	RCA										
85	BF305	BF257	RCA	BF337	PHIN								
86	BF322	40317	RCA	2N2221	PHIN								
87	BF323	40319	RCA	PTC127	MAL	2N2903A							
88	BF336	BF258	RCA										
89	BF337	BF258	RCA										
90	BF338	BF258	RCA										
91	BF355	2N3440	RCA	PTC117	MAL								
92	BF380	RCP113A	RCA										
93	BF381	RCP113B	RCA										
94	BF382	RCP113C	RCA										
95	BF390	BF259	RCA										
96	BFR19	2N1613	RCA	PTC125	MAL								
97	BFR20	2N1711	RCA	PTC125	MAL								
98	BFR21	2N1893	RCA										
99	BFR22	2N2102	RCA	PTC144	MAL								
100	BFR23	2N4036	RCA										
101	BFR24	2N4037	RCA	PTC141	MAL								
102	BFR56	2N5321	RCA										
103	BFR57	BF257	RCA	BF336	PHIN								
104	BFR58	BF258	RCA	BF337	PHIN								
105	BFR59	BF259	RCA	BF338	PHIN								
106	BFR63	MRF511	MOTA										
107	BFR64	MRF511	MOTA										
108	BFR65	MRF511	MOTA										
109	BFR77	2N1893	RCA	PTC144	MAL								
110	BFR78	2N2405	RCA	PTC144	MAL								

## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BFR82	MMBR920	MOTA										
2	BFR93	MMBR930	MOTA										
3	BFR94	MRF511	MOTA										
4	BFS22A	2N3924	MOTA										
5	BFS90	40987	RCA										
6	BFS90A	40987	RCA										
7	BFS91	40999	RCA										
8	BFS91A	40999	RCA	PTC127		MAL							
9	BFS92	2N4036	RCA	PTC141		MAL							
10	BFS93	2N4314	RCA	PTC141		MAL							
11	BFS94	2N4037	RCA	PTC141		MAL							
12	BFS95	2N4037	RCA	PTC141		MAL							
13	BFT25	MMBR931	MOTA										
14	BFT32	40635	RCA										
15	BFT34	2N2405	RCA										
16	BFT35	2N4314	RCA										
17	BFT44	BF259	RCA										
18	BFT45	BF258	RCA										
19	BFT60	2N4037	RCA	PTC141		MAL							
20	BFT61	2N4037	RCA	PTC141		MAL							
21	BFT62	40815	RCA	PTC141		MAL							
22	BFT80	40815	RCA	PTC141		MAL							
23	BFW16A	MRF517	MOTA										
24	BFW17A	MRF517	MOTA										
25	BFW24	2N2102	RCA										
26	BFW25	2N1711	RCA										
27	BFW26	2N697	RCA										
28	BFW33	2N1893	RCA	PTC125		MAL							
29	BFW44	BFT19	RCA										
30	BFW45	BF257	RCA										
31	BFW46	2N3924	MOTA										
32	BFW47	2N3553	MOTA										
33	BFX17	2N3053	RCA										
34	BFX29	2N4036	RCA	PTC127		MAL							
35	BFX30	2N4036	RCA	PTC127		MAL							
36	BFX39	2N4036	RCA	PTC141		MAL							
37	BFX68	2N21711	RCA	PTC125		MAL	2N1711		PHIN				
38	BFX68A	2N1711	RCA										
39	BFX69	2N697	RCA	PTC125		MAL	2N1613		PHIN				
40	BFX69A	2N1613	RCA	PTC125		MAL							
41	BFX74	2N4037	RCA	PTC123		MAL							
42	BFX74A	2N4314	RCA	PTC127		MAL							
43	BFX85	2N2405	RCA	PTC144		MAL	BSW66		PHIN				
44	BFX86	2N1711	RCA	PTC144		MAL	BFY50		PHIN				
45	BFX87	2N4036	RCA	PTC127		MAL							
46	BFX88	2N4037	RCA	PTC127		MAL							
47	BFX91	BFT28B	RCA										
48	BFX98	BF257	RCA	PTC117		MAL	BSW68		PHIN				
49	BFY10	40814	RCA	PTC123		MAL	BFY50		PHIN				
50	BFY11	40814	RCA	PTC123		MAL	BFY50		PHIN				
51	BFY17	40317	RCA	PTC136		MAL	2N2218		PHIN				
52	BFY33	2N697	RCA	PTC144		MAL	BFY51		PHIN				
53	BFY34	2N697	RCA	PTC144		MAL	2N1613		PHIN				
54	BFY40	40320	RCA	PTC144		MAL	2N2218		PHIN				
55	BFY43	BF257	RCA	PTC117		MAL	BSW68		PHIN				
56	BFY44	2N2102	RCA	BFS23A		PHIN							
57	BFY45	40408	RCA	BSW66		PHIN							
58	BFY46	2N1711	RCA	2N1711		PHIN							
59	BFY50	2N697	RCA	PTC144		MAL							
60	BFY51	2N697	RCA	PTC144		MAL							
61	BFY52	2N3053	RCA	PTC144		MAL							
62	BFY55	2N697	RCA	PTC136		MAL	2N2297		PHIN				
63	BFY56	2N699	RCA	PTC125		MAL	BSX61		PHIN				
64	BFY57	BF257	RCA	PTC117		MAL	BSW67		PHIN				
65	BFY67	2N3053	RCA	PTC144		MAL	2N1613		PHIN				
66	BFY67A	2N1613	RCA	PTC144		MAL							
67	BFY68	2N1711	RCA	2N1711		PHIN							
68	BFY70	2N3053	RCA	BFS23A		PHIN							
69	BFY94	40594	RCA										
70	BLW64	MRF208	MOTA										
71	BLW75	MRF226	MOTA										
72	BLX13	MRF426A	MOTA										
73	BLX14	MRF464A	MOTA										
74	BLX15	MRF428A	MOTA										
75	BLX66	MRF616	MOTA										
76	BLX67	2N5944	MOTA										
77	BLX68	2N5945	MOTA										
78	BLX92	MRF5174	MOTA										
79	BLX93	MRF32	MOTA										
80	BLX94A	MRF5177A	MOTA										
81	BLY57	2N3926	MOTA										
82	BLY58	2N3927	MOTA										
83	BLY59	2N3375	MOTA										
84	BLY60	2N3632	MOTA										
85	BLY87A	MRF212	MOTA										
86	BLY88A	2N6081	MOTA										
87	BLY89A	2N6082	MOTA										
88	BLY91A	2N584	MOTA										
89	BLY92A	2N5843	MOTA										
90	BLY93A	2N5843	MOTA										
91	BM15-12	MRF215	MOTA										
92	BM30-12	MRF216	MOTA										
93	BM45-12	MRF243	MOTA										
94	BM70-12	MRF245 M	MOTA										
95	BM80-12	MRF245	MOTA										
96	BM80-28	MRF316	MOTA										
97	BM100-28	MRF317	MOTA										
98	BNSP5192	2N6123	MOTA										
99	BSS15	2N5320	RCA										
100	BSS16	2N5321	RCA										
101	BSS17	2N5322	RCA										
102	BSS18	2N5323	RCA										
103	BSS30	2N2102	RCA	PTC144		MAL							
104	BSS32	2N2405	RCA	PTC144		MAL							
105	BSS45	2N5320	RCA										
106	BSS48	2N5322	RCA										
107	BSS48	2N3440	RCA										
108	BSS49	2N3439	RCA										
109	BSV15	2N4037	RCA	PTC141		MAL							
110	BSV15-6	2N4037	RCA	PTC141		MAL							



# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column													
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BSV15-10	2N4037	RCA	PTC141	MAL										
2	BSV16	2N4314	RCA	PTC141	MAL										
3	BSV16-6	2N4314	RCA	PTC141	MAL										
4	BSV16-10	2N4314	RCA	PTC141	MAL										
5	BSV17	2N5322	RCA	PTC141	MAL										
6	BSV69	2N5321	RCA	PTC141	MAL	BSX59	PHIN								
7	BSV77	2N5321	RCA												
8	BSV84	2N1893	RCA	PTC144	MAL										
9	BSW23	2N4037	RCA	PTC127	MAL	2N2904	PHIN								
10	BSW39	2N1893	RCA	PTC127	MAL										
11	BSX22	2N5321	RCA	BSX60	PHIN										
12	BSX23	2N5320	RCA	BFX34	PHIN	BSV64	PHIN								
13	BSX40	2N4037	RCA	PTC127	MAL	2N2904	PHIN								
14	BSX45	2N3053	RCA	PTC144	MAL										
15	BSX46	2N2102	RCA	PTC144	MAL										
16	BSX47	2N1893	RCA	PTC144	MAL										
17	BSX59	2N5321	RCA												
18	BSX60	2N5321	RCA												
19	BSX61	2N5321	RCA												
20	BSX72	2N3053	RCA												
21	BSX95	2N1613	RCA	PTC125	MAL	2N1711	PHIN								
22	BSX96	2N1711	RCA	PTC125	MAL	2N1711	PHIN								
23	BSY25	2N697	RCA	PTC123	MAL	2N2218	PHIN								
24	BSY44	2N699	RCA	PTC144	MAL										
25	BSY45	2N1893	RCA	PTC125	MAL										
26	BSY46	2N699	RCA	PTC125	MAL										
27	BSY51	2N697	RCA	PTC125	MAL	2N2218	PHIN								
28	BSY52	2N1711	RCA	2N1711	PHIN	2N1711	PHIN								
29	BSY53	2N697	RCA	PTC144	MAL	2N1613	PHIN								
30	BSY54	2N1711	RCA												
31	BSY55	2N1893	RCA	PTC125	MAL	BSW67	PHIN								
32	BSY68	2N2405	RCA	BSX21	PHIN										
33	BSY71	2N1711	RCA	2N2219A	PHIN										
34	BSY81	2N697	RCA	PTC144	MAL	BFY52	PHIN								
35	BSY82	2N1711	RCA	2N2219	PHIN										
36	BSY83	2N697	RCA	PTC144	MAL	PHIN									
37	BSY84	2N1711	RCA	2N2219A	PHIN										
38	BSY85	2N1893	RCA	PTC144	MAL	BSV64	PHIN								
39	BSY87	2N2102	RCA	PTC125	MAL	BSW67	PHIN								
40	BSY91	2N697	RCA	PTC125	MAL	BSX60	PHIN								
41	BSY92	2N1711	RCA	PTC125	MAL	2N2219A	PHIN								
42	BU102	BUX18B	RCA	PTC129A	MAL	BUX82	PHIN								
43	BU105	BU205	MOTA												
44	BU108	BU208	MOTA												
45	BU111	2N6512	RCA	PTC129A	MAL	BU126	PHIN								
46	BU114	2N6510	RCA	PTC129A	MAL										
47	BU121	BUX18	RCA												
48	BU129	BUX18C	RCA												
49	BU134	BU126	RCA	BU326	PHIN										
50	BU135	2N6510	RCA	BU133	PHIN										
51	BU136	2N6510	RCA	BU326	PHIN										
52	BU180	MJE5471	MOTA												
53	BU180A	MJE5742	MOTA												
54	BU310	BUX17	RCA	PTC129A	MAL										
55	BU311	BUX17	RCA	PTC129A	MAL										
56	BU312	BUX17	RCA	PTC129A	MAL										
57	BU409	TA8863J	RCA												
58	BUX26	2N6510	RCA	BU326	PHIN										
59	BUX27	BUX18C	RCA	BU326	PHIN										
60	BUX39	2N5038	RCA												
61	BUX40	2N6354	RCA												
62	BUX41	BUX17A	RCA												
63	BUX42	BUX17B	RCA	PTC118	MAL										
64	BUX43	BUX17C	RCA	BUX80	PHIN										
65	BUX44	BUX18C	RCA	BUX80	PHIN										
66	BUX84	TA8863A	RCA	MJE13005	MOTA										
67	BUX86	MJE13003	MOTA												
68	BUY35	2N6511	RCA	PTC129A	MAL										
69	BUY43	BDY71	RCA												
70	BUY46	2N3054	RCA												
71	BUY55	2N5239	RCA	PTC118	MAL										
72	BUY56	2N5239	RCA	PTC118	MAL										
73	BUY66	BU126	RCA												
74	BUY67	BU126	RCA												
75	BUY69B	BU126	RCA	SVT75511	TRWS	BUX80	PHIN								
76	BUY69C	BU126	RCA	SVT7554	TRWS	BUX80	PHIN								
77	BUY70B	BU126	RCA	BUX80	PHIN										
78	BUY70C	BU126	RCA	BUX80	PHIN										
79	BUY72	2N5239	RCA	PTC118	MAL										
80	BUY74	BUX18A	RCA												
81	BUY75	BUX18C	RCA												
82	BUY76	BU126	RCA												
83	BUY77	BUX18A	RCA	BUX82	PHIN										
84	BUY78	BUX18C	RCA	BUX82	PHIN										
85	BUY79	BUX126	RCA	BUX82	PHIN										
86	C1-12	MRF616	MOTA												
87	C1-12Z	2N5944	MOTA												
88	C1/2-12	MRF626	MOTA												
89	C2M60-28R	2N6439	MOTA												
90	C2M70-28R	MRF327	MOTA												
91	C3-12	2N5645	MOTA												
92	C3-28	MRF5175	MOTA												
93	C5-12	2N5945	MOTA												
94	C10-12A	2N5946	MOTA												
95	C12-12	2N5646	MOTA												
96	C12-28	MRF321	MOTA												
97	C25-12	2N6136	MOTA												
98	C25-28	MRF323	MOTA												
99	CA636	MHW1842	MOTA												
100	CA801	MHW590	MOTA												
101	CA804	MHW590	MOTA												
102	CA860	MHW590	MOTA												
103	CA870	MHW590	MOTA												
104	CA2100	MHW1171	MOTA												
105	CA2200	MHW1172	MOTA												
106	CA2600	MHW1342	MOTA												
107	CD1802	MRF226	MOTA												
108	CD2088	MRF209	MOTA												
109	CD2089	MRF323	MOTA												
110	CD5918	MRF321	MOTA												

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LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	CD5819A	MRF323	MOTA										
2	CD5944	2N5944	MOTA										
3	CD5945	2N5945	MOTA										
4	CD5946	2N5946	MOTA										
5	CD7012	MRF454	MOTA										
6	CM10-12A	MRF6411	MOTA										
7	CM20-12A	MRF644	MOTA										
8	CM25-28	MRF325	MOTA										
9	CM30-12A	MRF646	MOTA										
10	CM45-12A	MRF646	MOTA										
11	CM45-28	MRF326	MOTA										
12	CM50-12A	MRF648	MOTA										
13	CM60-12A	MRF648	MOTA										
14	CM80-28	MRF327	MOTA										
15	CM80-28R	MRF327	MOTA										
16	CTC14	MRF464A	MOTA										
17	CTC15	MRF428A	MOTA										
18	D40D1	RCP707	RCA	D40D1	MOTA								
19	D40D2	RCP707	RCA	D40D2	MOTA								
20	D40D3	RCP707	RCA	D40D3	MOTA								
21	D40D4	RCP707	RCA	D40D4	MOTA								
22	D40D5	RCP707	RCA	D40D5	MOTA								
23	D40D6	RCP701B	RCA										
24	D40D7	RCP701B	RCA	D40D7	MOTA								
25	D40D8	RCP701B	RCA	D40D8	MOTA								
26	D40D10	RCP701C	RCA	D40D10	MOTA								
27	D40D11	RCP701C	RCA	D40D11	MOTA								
28	D40D13	RCP701C	RCA	D40D13	MOTA								
29	D40E1	RCP705	RCA	D40E1	MOTA								
30	D40E5	RCP701B	RCA	D40E5	MOTA								
31	D40E7	RCP701C	RCA	D40E7	MOTA								
32	D40N1	RCP113B	RCA	D40N1	MOTA								
33	D40N2	RCP111B	RCA	D40N2	MOTA								
34	D40N3	RCP113C	RCA	D40N3	MOTA								
35	D40N4	RCP111C	RCA	D40N4	MOTA								
36	D40N5	RCP111C	RCA										
37	D41D1	RCP706	RCA	D41D1	MOTA								
38	D41D2	RCP706B	RCA	D41D2	MOTA								
39	D41D4	RCP706B	RCA	D41D4	MOTA								
40	D41D5	RCP700B	RCA	D41D5	MOTA								
41	D41D6	RCP700B	RCA										
42	D41D7	RCP700B	RCA	D41D7	MOTA								
43	D41D8	RCP700B	RCA	D41D8	MOTA								
44	D41D10	RCP700C	RCA	D41D10	MOTA								
45	D41D11	RCP700C	RCA	D41D11	MOTA								
46	D41D13	RCP700C	RCA	D41D13	MOTA								
47	D41E1	RCP704	RCA	D41E1	MOTA								
48	D41E5	RCP700B	RCA	D41E5	MOTA								
49	D41E7	RCP700C	RCA	D41E7	MOTA								
50	D42C12	RCP701C	RCA										
51	D43C12	RCP700C	RCA	PTC111	MAL								
52	D44C1	2N6288	RCA	MJE180	MOTA								
53	D44C2	2N6288	RCA	MJE180	MOTA								
54	D44C3	2N6288	RCA	MJE180	MOTA								
55	D44C4	2N6290	RCA	MJE181	MOTA								
56	D44C5	2N6290	RCA	MJE181	MOTA								
57	D44C6	2N6290	RCA	MJE181	MOTA								
58	D44C7	2N6292	RCA	MJE181	MOTA								
59	D44C8	2N6292	RCA	MJE181	MOTA								
60	D44C9	2N6292	RCA	MJE181	MOTA								
61	D44C10	2N6292	RCA	MJE182	MOTA								
62	D44C11	2N6292	RCA	MJE182	MOTA								
63	D44C12	BD239B	RCA	MJE182	MOTA								
64	D44D1	2N6386	MOTA										
65	D44D2	2N6386	MOTA										
66	D44D3	2N6043	MOTA										
67	D44D4	2N6043	MOTA										
68	D44D5	2N6044	MOTA										
69	D44D6	2N6044	MOTA										
70	D44E1	2N6386	RCA	2N6386	MOTA								
71	D44E2	2N6387	RCA	2N6387	MOTA								
72	D44E3	2N6388	RCA	2N6388	MOTA								
73	D44H1	2N6288	RCA	D44H10	MOTA								
74	D44H2	2N6288	RCA	D44H11	MOTA								
75	D44H4	2N6290	RCA	D44H10	MOTA								
76	D44H5	2N6290	RCA	D44H11	MOTA								
77	D44H7	2N6292	RCA	D44H10	MOTA								
78	D44H8	2N6292	RCA	D44H11	MOTA								
79	D44H10	2N6292	RCA	PTC110	MAL	D44H10							
80	D44H11	2N6292	RCA	PTC111	MAL	D44H11							
81	D44R1	TA8863B	RCA	TIP47	MOTA								
82	D44R2	TA8863B	RCA	TIP47	MOTA								
83	D44R3	TA8863B	RCA	TIP48	MOTA								
84	D44R4	TA8863B	RCA	TIP48	MOTA								
85	D44R5	TA8863F	RCA	TIP47	MOTA								
86	D44R6	TA8863F	RCA	TIP48	MOTA								
87	D45C1	2N6111	RCA	MJE170	MOTA								
88	D45C2	2N6111	RCA	MJE170	MOTA								
89	D45C3	2N6111	RCA	MJE170	MOTA								
90	D45C4	2N6109	RCA	MJE171	MOTA								
91	D45C5	2N6109	RCA	MJE171	MOTA								
92	D45C6	2N6109	RCA	MJE171	MOTA								
93	D45C7	2N6107	RCA	MJE171	MOTA								
94	D45C8	2N6107	RCA	MJE171	MOTA								
95	D45C9	2N6107	RCA	MJE171	MOTA								
96	D45C10	2N6107	RCA	MJE172	MOTA								
97	D45C11	2N6107	RCA	MJE172	MOTA								
98	D45C12	BD240B	RCA	MJE172	MOTA								
99	D45E1	2N6666	RCA	TIP125	MOTA								
100	D45E2	2N6667	RCA	TIP125	MOTA								
101	D45E3	2N6668	RCA	TIP126	MOTA								
102	D45H1	2N6111	RCA	D45H10	MOTA								
103	D45H2	2N6111	RCA	D45H11	MOTA								
104	D45H4	2N6109	RCA	D45H10	MOTA								
105	D45H5	2N6109	RCA	D45H11	MOTA								
106	D45H7	2N6107	RCA	D45H10	MOTA								
107	D45H8	2N6107	RCA	D45H11	MOTA								
108	D45H9	D45H11	MOTA										
109	D45H10	2N6107	RCA	D45H10	MOTA								
110	D45H11	2N6107	RCA	D45H11	MOTA								

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LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	D45H12	D45H11	MOTA										
2	D56W1	BU208	MOTA										
3	D56W2	BU208	MOTA										
4	D56W3	BU207	MOTA										
5	D56W4	BU207	MOTA										
6	DM10-12BA	MRF840	MOTA										
7	DM15-12BA	MRF842	MOTA										
8	DM20-12BA	MRF842	MOTA										
9	DM30-12BA	MRF844	MOTA										
10	DM40-12BA	MRF848	MOTA										
11	DTS310	2N6306	MOTA										
12	DTS311	2N6306	MOTA										
13	DTS401	2N3902	MOTA										
14	DTS402	2N3902	MOTA										
15	DTS403	2N6308	MOTA										
16	DTS409	2N6308	MOTA										
17	DTS410	RCA410	RCA	PTC118	MAL	MJ410	MOTA						
18	DTS411	RCA411	RCA	PTC118	MAL	MJ411	MOTA						
19	DTS413	RCA413	RCA	PTC118	MAL	MJ413	MOTA						
20	DTS423	RCA423	RCA	PTC118									
21	DTS424	2N6308	MOTA										
22	DTS425	2N6545	MOTA										
23	DTS430	2N6307	MOTA										
24	DTS431	RCA431	RCA	PTC118	MAL	MJ431	MOTA						
25	DTS515	2N6306	MOTA										
26	DTS516	2N6306	MOTA										
27	DTS517	2N6306	MOTA										
28	DTS518	2N6307	MOTA										
29	DTS519	2N6308	MOTA										
30	DTS660	2N6233	MOTA										
31	DTS663	2N6235	MOTA										
32	DTS665	2N6235	MOTA										
33	DTS701	BU204	MOTA										
34	DTS702	BU205	MOTA										
35	DTS712	BU207	MOTA										
36	DTS714	BU208	MOTA										
37	DTS801	BU205	MOTA										
38	DTS802	BU2077	MOTA										
39	DTS804	BU208	MOTA										
40	DTS812	BU207	MOTA										
41	DTS814	BU208	MOTA										
42	DTS1010	2N6056	MOTA										
43	DTS1020	MJ3001	MOTA										
44	DTS4010	MJ3041	MOTA										
45	DTS4025	MJ3041	MOTA										
46	DTS4026	MJ10012	MOTA										
47	DTS4039	MJ10000	MOTA										
48	DTS4040	MJ10000	MOTA										
49	DTS4041	MJ10000	MOTA										
50	DTS4045	MJ10000	MOTA										
51	DTS4059	MJ10000	MOTA										
52	DTS4060	MJ10001	MOTA										
53	DTS4061	MJ10000	MOTA										
54	DTS4065	MJ10001	MOTA										
55	ESM113	2N6384	RCA	BDX63	PHIN								
56	ESM114	2N6385	RCA	BDX63A	PHIN								
57	ESM159	RCA8350A	RCA	BDX61	PHIN								
58	ESM160	RCA8350B	RCA	BDX62A	PHIN								
59	ESM213	2N6387	RCA										
60	ESM214	2N6388	RCA										
61	ESM217	2N6387	RCA	BD645	PHIN								
62	ESM218	2N6388	RCA	BD647	PHIN								
63	ESM259	RCA8203A	RCA										
64	ESM260	RCA8203B	RCA										
65	ESM261	RCA8203A	RCA	BD646	PHIN								
66	FT47	TIP47	MOTA										
67	FT49	TIP49	MOTA										
68	FT317	MJE15028	MOTA										
69	FT317A	MJE15028	MOTA										
70	FT317B	MJE15030	MOTA										
71	FT359	MJ10012	MOTA										
72	FT401	MJ411	MOTA										
73	FT402	MJ413	MOTA										
74	FT410	RCA410	RCA	PTC118	MAL	MJ410	MOTA						
75	FT411	RCA411	RCA	PTC118	MAL	MJ411	MOTA						
76	FT413	RCA413	RCA	MJ413	MOTA								
77	FT417	MJE15029	MOTA										
78	FT417A	MJE15029	MOTA										
79	FT417B	MJE15031	MOTA										
80	FT423	RCA423	RCA	MJ423	MOTA								
81	FT430	2N6307	MOTA										
82	FT431	RCA431	RCA	MJ431	MOTA								
83	FT2955	MJE2955T	MOTA										
84	FT3055	MJE3055T	MOTA										
85	GE5080	MJ10000	MOTA										
86	GE5081	MJ10000	MOTA										
87	GE5082	MJ10001	MOTA										
88	GE6080	MJ10004	MOTA										
89	GE6081	MJ10004	MOTA										
90	GE6082	MJ10005	MOTA										
91	IR401	2N3902	MOTA										
92	IR402	2N3902	MOTA										
93	IR403	2N6308	MOTA										
94	IR409	2N6308	MOTA										
95	IR410	MJ410	MOTA										
96	IR411	MJ411	MOTA										
97	IR413	MJ413	MOTA										
98	IR423	MJ423	MOTA										
99	IR424	2N6308	MOTA										
100	IR425	2N6545	MOTA										
101	IR430	2N6307	MOTA										
102	IR431	MJ431	MOTA										
103	IR515	2N6250	MOTA										
104	IR516	2N6250	MOTA										
105	IR517	2N6251	MOTA										
106	IR518	2N6546	MOTA										
107	IR519	2N6547	MOTA										
108	IR640	MJ3000	MOTA										
109	IR641	MJ3001	MOTA										
110	IR642	2N6578	MOTA										

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		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	IR845	MJ2500	MOTA										
2	IR846	MJ2501	MOTA										
3	IR847	2N6052	MOTA										
4	IR860	MJ410	MOTA										
5	IR863	MJ423	MOTA										
6	IR865	2N5157	MOTA	MJ12003	MOTA								
7	IR701	BU204	MOTA										
8	IR801	BU205	MOTA										
9	IR802	MJ802	MOTA										
10	IR900	MJ900	MOTA										
11	IR901	MJ901	MOTA										
12	IR1000	MJ1000	MOTA										
13	IR1001	MJ1001	MOTA										
14	IR1010	2N6056	MOTA										
15	IR1020	MJ3001	MOTA										
16	IR2500	MJ2500	MOTA										
17	IR2501	MJ2501	MOTA										
18	IR3000	MJ3000	MOTA										
19	IR3001	MJ3001	MOTA										
20	IR3771	MJ3771	MOTA										
21	IR3772	MJ3772	MOTA										
22	IR3773	MJ3773	MOTA										
23	IR4039	MJ10000	MOTA										
24	IR4040	MJ10000	MOTA										
25	IR4041	MJ10000	MOTA										
26	IR4045	MJ10000	MOTA										
27	IR4050	MJ10000	MOTA										
28	IR4055	MJ10000	MOTA										
29	IR4059	MJ10000	MOTA										
30	IR4060	MJ10001	MOTA										
31	IR4061	MJ10000	MOTA										
32	IR4065	MJ10001	MOTA										
33	IR4502	MJ4502	MOTA										
34	IR5000	MJ10000	MOTA										
35	IR5001	MJ10000	MOTA										
36	IR5002	MJ10001	MOTA										
37	IR5060	MJ10000	MOTA										
38	IR5061	MJ10000	MOTA										
39	IR5062	MJ10001	MOTA										
40	IR5252	MJ10003	MOTA										
41	IR5261	MJ10002	MOTA										
42	IR6000	MJ10004	MOTA										
43	IR6001	MJ10004	MOTA										
44	IR6002	MJ10005	MOTA										
45	IR6060	MJ10004	MOTA										
46	IR6061	MJ10004	MOTA										
47	IR6062	MJ10005	MOTA										
48	IR6251	MJ10006	MOTA										
49	IR6252	MJ10007	MOTA										
50	IR6302	2N5630	MOTA										
51	JO1006	MRF315	MOTA										
52	JO2000	MRF5177A	MOTA										
53	JO2005	MRF5177A	MOTA										
54	JO2007A	2N6439	MOTA										
55	JO2009	MRF325	MOTA										
56	JO2015	MRF327	MOTA										
57	JO3025	MRF644	MOTA										
58	JO3030	MRF646	MOTA										
59	JO3040	MRF646	MOTA										
60	JO3055	MRF648	MOTA										
61	JO4020	MRF215	MOTA										
62	JO4030	MRF216	MOTA										
63	JO4040	MRF216	MOTA										
64	JO4070	MRF245	MOTA										
65	KDT410	MJ410	MOTA										
66	KDT411	MJ411	MOTA										
67	KDT413	MJ413	MOTA										
68	KDT423	MJ423	MOTA										
69	KDT430	2N6307	MOTA										
70	KDT431	MJ431	MOTA										
71	KDT515	2N6306	MOTA										
72	KDT516	2N6306	MOTA										
73	KDT517	2N6306	MOTA										
74	KDT518	2N6307	MOTA										
75	KDT519	2N6308	MOTA										
76	KP3948	2N6274	MOTA										
77	KP3948	2N6274	MOTA										
78	LT1001	MRF517	MOTA										
79	LT2001	MRF511	MOTA										
80	MJ105	MJ205	MOTA	BU205	MOTA								
81	MJ400	2N3585	MOTA	RCA 2N3739	MOTA								
82	MJ410	RCA4410	RCA	PTC129A	MAL	MJ410	MOTA						
83	MJ411	RCA4411	RCA	PTC129A	MAL	MJ411	MOTA						
84	MJ413	RCA4413	RCA	BUX80	PHIN	MJ413	MOTA						
85	MJ420	BF258	RCA	PTC117	MAL	MM420	MOTA						
86	MJ421	MM421	MOTA										
87	MJ423	RCA423	RCA	BUX80	PHIN	MJ423	MOTA						
88	MJ424	BUX18C	RCA	PTC129A	MAL	2N6308	MOTA						
89	MJ425	BUX18C	RCA	PTC129A	MAL	2N6545	MOTA	BUX82	PHIN				
90	MJ431	RCA4431	RCA	MJ431	MOTA								
91	MJ450	2N6246	RCA	PTC149	MAL	2N4398	MOTA						
92	MJ480	2N6470	RCA	PTC140	MAL	2N3713	MOTA						
93	MJ481	2N6471	RCA	PTC140	MAL	2N3713	MOTA						
94	MJ490	2N6246	RCA	PTC149	MAL	2N3789	MOTA						
95	MJ491	2N6246	RCA	PTC149	MAL	2N3789	MOTA						
96	MJ701	MJ12002	MOTA										
97	MJ702	MJ12002	MOTA										
98	MJ704	MJ12002	MOTA										
99	MJ721	MJ12002	MOTA										
100	MJ723	MJ12002	MOTA										
101	MJ802	RCS258	RCA	PTC173	MAL							N	Y
102	MJ804	MJ12004	MOTA										
103	MJ900	RCA8350A	RCA	PTC169	MAL	BDX62	PHIN	MJ900	MOTA				
104	MJ901	RCA8350B	RCA	BDX62A	PHIN	MJ901	MOTA						
105	MJ920	RCA8350A	RCA	2N6298	MOTA								
106	MJ921	RCA8350B	RCA	2N6299	MOTA								
107	MJ1000	RCA1000	RCA	PMD12K60	LAM	BDX63	PHIN	MJ1000	MOTA				
108	MJ1001	RCA1001	RCA	PMD12K80	LAM	BDX63A	PHIN	MJ1001	MOTA				
109	MJ1200	2N6384	RCA	2N6300	MOTA								
110	MJ1201	2N6385	RCA	2N6301	MOTA								

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	MJ1800	2N5838	RCA	PTC140	MAL	MJ3028	MOTA						
2	MJ2249	2N3879	RCA	PTC112	MAL	2N3766	MOTA						
3	MJ2250	2N3879	RCA	PTC104	MAL	2N3767	MOTA						
4	MJ2251	2N3584	RCA	PTC104	MAL	2N3738	MOTA						
5	MJ2252	2N3585	RCA	PTC104	MAL	2N3739	MOTA						
6	MJ2253	2N5955	RCA	PTC113	MAL	2N3740	MOTA						
7	MJ2254	2N5954	RCA	PTC113	MAL	2N3741	MOTA						
8	MJ2267	2N6246	RCA	PTC149	MAL	2N6594	MOTA						
9	MJ2268	2N6246	RCA	PTC149	MAL	MJ2955	MOTA						
10	MJ2801	2N8371	RCA	PTC140	MAL	2N6589	MOTA						
11	MJ2802	2N5881	MOTA										
12	MJ2840	2N3055	RCA	PTC173	MAL	2N5877	MOTA						
13	MJ2841	2N8254	RCA	PTC173	MAL	2N5878	MOTA						
14	MJ2901	2N6246	RCA	PTC149	MAL	2N6594	MOTA						
15	MJ2940	2N6246	RCA	PTC149	MAL	2N5875	MOTA						
16	MJ2941	2N8247	RCA	PTC172	MAL	2N5876	MOTA						
17	MJ3000	2N6384	RCA	PMD10K60	LAM	MJ3000	MOTA						
18	MJ3010	BUX16B	RCA	PTC129A	MAL	2N6542	MOTA						
19	MJ3011	BUX16B	RCA	PTC129A	MAL	2N6542	MOTA						
20	MJ3012	2N6542	MOTA										
21	MJ3026	2N5839	RCA	PTC129A	MAL	MJ3029	MOTA						
22	MJ3027	2N5840	RCA	PTC129A	MAL	MJ3028	MOTA						
23	MJ3028	2N5840	RCA	PTC129A	MAL	MJ3029	MOTA						
24	MJ3030	BUX18C	RCA	MJ3030	MOTA								
25	MJ3055	2N3055	MOTA										
26	MJ3101	2N3878	RCA	PTC112	MAL	2N3766	MOTA						
27	MJ3201	BUX67A	RCA	PTC104	MAL	2N3738	MOTA						
28	MJ3202	2N3739	MOTA										
29	MJ3260	2N5838	MOTA										
30	MJ3430	2N5840	RCA	2N8307	MOTA								
31	MJ3480	BU208	MOTA										
32	MJ3520	MJ3000	MOTA										
33	MJ3521	MJ3001	MOTA										
34	MJ3583	2N6420	MOTA										
35	MJ3584	2N6212	RCA	2N6421	MOTA								
36	MJ3585	2N6212	RCA	2N6422	MOTA								
37	MJ3701	2N5958	RCA	PTC113	MAL	2N4898	MOTA						
38	MJ3702	2N4898	MOTA										
39	MJ3703	2N4899	MOTA										
40	MJ3704	2N4900	MOTA										
41	MJ3738	2N6424	MOTA										
42	MJ3739	2N6425	MOTA										
43	MJ3760	BU126	RCA	MJ3030	MOTA								
44	MJ3761	BU126	RCA	MJ3030	MOTA								
45	MJ3771	2N3771	RCA	PTC175	MAL	2N3771	MOTA						
46	MJ3772	2N3772	RCA	PTC173	MAL	2N3772	MOTA						
47	MJ3773	2N3773	RCA	2N3773	MOTA								
48	MJ3801	MJ3001	MOTA										
49	MJ3802	MJ3001	MOTA										
50	MJ4000	2N6384	RCA	2N6055	MOTA								
51	MJ4001	2N6385	RCA	2N6056	MOTA								
52	MJ4010	2N6053	MOTA										
53	MJ4011	2N6054	MOTA										
54	MJ4104	2N4231A	MOTA										
55	MJ4240	2N6212	RCA	2N6423	MOTA								
56	MJ4502	2N6248	RCA	PTC174	MAL	MJ4502	MOTA						
57	MJ4648	MJ4647	MOTA										
58	MJ5038	2N5038	MOTA										
59	MJ5039	2N5039	MOTA										
60	MJ5415	2N5415	RCA										
61	MJ5416	2N5416	RCA										
62	MJ5600	2N3772	RCA										
63	MJ5601	2N6258	RCA										
64	MJ5602	2N3773	RCA										
65	MJ5603	2N3773	RCA										
66	MJ6000	2N3772	RCA										
67	MJ6001	2N6258	RCA										
68	MJ6002	2N3773	RCA										
69	MJ6003	2N6258	RCA										
70	MJ6004	2N6258	RCA										
71	MJ6257	2N6257	MOTA										
72	MJ6302	2N3773	RCA	2N5630	MOTA								
73	MJ6701	2N6186	MOTA										
74	MJ7000	2N3265	RCA	2N6338	MOTA								
75	MJ7160	2N6544	MOTA										
76	MJ7161	2N6545	MOTA										
77	MJ8020	MJ12004	MOTA										
78	MJ8101	2N6190	MOTA										
79	MJ8400	MJ12004	MOTA										
80	MJ9000	MJ3030	MOTA										
81	MJ13010	2N6547	MOTA										
82	MJE33	TIP41	MOTA										
83	MJE33A	TIP41A	MOTA										
84	MJE33B	TIP41B	MOTA										
85	MJE33C	TIP41C	MOTA										
86	MJE34	TIP42	MOTA										
87	MJE34A	TIP42A	MOTA										
88	MJE34B	TIP42B	MOTA										
89	MJE34C	TIP42C	MOTA										
90	MJE41	TIP41	MOTA										
91	MJE41A	TIP41A	MOTA										
92	MJE41B	TIP41B	MOTA										
93	MJE41C	TIP41C	MOTA										
94	MJE42	TIP42	MOTA										
95	MJE42A	TIP42A	MOTA										
96	MJE42B	TIP42B	MOTA										
97	MJE42C	TIP42C	MOTA										
98	MJE47	TIP47	MOTA										
99	MJE48	TIP48	MOTA										
100	MJE49	TIP49	MOTA										
101	MJE51	TIP51T	MOTA										
102	MJE52	TIP52T	MOTA										
103	MJE53	TIP53T	MOTA										
104	MJE101	2N5974	MOTA										
105	MJE102	2N5975	MOTA										
106	MJE103	2N5976	MOTA										
107	MJE104	2N5976	MOTA										
108	MJE105K	TIP42A	MOTA										
109	MJE201	2N5977	MOTA										
110	MJE202	2N5978	MOTA										



## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column													
	TYPE NO. TO BE REPLACED	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	
1	MJE203	2N5978	MOTA											
2	MJE204	2N5979	MOTA											
3	MJE205K	TIP41A	MOTA											
4	MJE220	MJE181	MOTA											
5	MJE221	MJE181	MOTA											
6	MJE222	MJE181	MOTA											
7	MJE223	MJE182	MOTA											
8	MJE224	MJE182	MOTA											
9	MJE225	MJE182	MOTA											
10	MJE230	MJE171	MOTA											
11	MJE231	MJE171	MOTA											
12	MJE232	MJE171	MOTA											
13	MJE233	MJE172	MOTA											
14	MJE234	MJE172	MOTA											
15	MJE235	MJE172	MOTA											
16	MJE240	MJE182	MOTA											
17	MJE241	MJE182	MOTA											
18	MJE242	MJE182	MOTA											
19	MJE244	MJE243	MOTA											
20	MJE250	MJE172	MOTA											
21	MJE251	MJE172	MOTA											
22	MJE252	MJE172	MOTA											
23	MJE254	MJE253	MOTA											
24	MJE340K	TIP48	MOTA											
25	MJE341K	TIP47	MOTA											
26	MJE344K	TIP47	MOTA											
27	MJE345	MJE3439	MOTA											
28	MJE370K	TIP32	MOTA											
29	MJE371K	TIP32	MOTA											
30	MJE482	2N5190	MOTA											
31	MJE483	2N5191	MOTA											
32	MJE484	2N5192	MOTA											
33	MJE492	2N5193	MOTA											
34	MJE493	2N5194	MOTA											
35	MJE494	2N5195	MOTA											
36	MJE520K	TIP31	MOTA											
37	MJE521K	TIP31	MOTA											
38	MJE710	2N4918	MOTA											
39	MJE711	2N4919	MOTA											
40	MJE712	2N4920	MOTA											
41	MJE720	2N4921	MOTA											
42	MJE721	2N4922	MOTA											
43	MJE722	2N4923	MOTA											
44	MJE2010	TIP42	MOTA											
45	MJE2011	TIP42A	MOTA											
46	MJE2020	TIP41	MOTA											
47	MJE2021	TIP41A	MOTA											
48	MJE2050	MJE200	MOTA											
49	MJE2055	MJE3055	MOTA											
50	MJE2090	TIP125	MOTA											
51	MJE2091	TIP125	MOTA											
52	MJE2092	TIP126	MOTA											
53	MJE2093	TIP126	MOTA											
54	MJE2100	TIP120	MOTA											
55	MJE2101	TIP120	MOTA											
56	MJE2102	TIP121	MOTA											
57	MJE2103	TIP121	MOTA											
58	MJE2150	MJE210	MOTA											
59	MJE2160	TIP48	MOTA											
60	MJE2360	MJE2360T	MOTA											
61	MJE2361	MJE2361T	MOTA											
62	MJE2370	TIP32	MOTA											
63	MJE2371	TIP32A	MOTA											
64	MJE2480	TIP31	MOTA											
65	MJE2481	TIP31A	MOTA											
66	MJE2482	TIP41	MOTA											
67	MJE2483	TIP41A	MOTA											
68	MJE2490	TIP32	MOTA											
69	MJE2491	TIP32A	MOTA											
70	MJE2520	TIP31	MOTA											
71	MJE2801K	MJE2801T	MOTA											
72	MJE2901K	MJE2901T	MOTA											
73	MJE2955K	MJE2955T	MOTA											
74	MJE3055K	MJE3055T	MOTA											
75	MJE3738	TIP47	MOTA											
76	MJE4918	TIP30	MOTA											
77	MJE4919	TIP30A	MOTA											
78	MJE4920	TIP30B	MOTA											
79	MJE4921	TIP29	MOTA											
80	MJE4922	TIP29A	MOTA											
81	MJE4923	TIP29B	MOTA											
82	MJE5190	2N6121	MOTA											
83	MJE5191	2N6122	MOTA											
84	MJE5192	2N6123	MOTA											
85	MJE5193	2N6124	MOTA											
86	MJE5194	2N6125	MOTA											
87	MJE5195	2N6126	MOTA											
88	MJE5655	TIP47	MOTA											
89	MJE5656	TIP48	MOTA											
90	MJE5657	TIP49	MOTA											
91	MJE5960	2N6489	MOTA											
92	MJE5974	TIP42	MOTA											
93	MJE5975	TIP42A	MOTA											
94	MJE5976	TIP42B	MOTA											
95	MJE5977	TIP41	MOTA											
96	MJE5978	TIP41A	MOTA											
97	MJE5979	TIP41B	MOTA											
98	MJE5981	2N6490	MOTA											
99	MJE5982	2N6487	MOTA											
100	MJE5983	2N6486	MOTA											
101	MJE5984	2N6487	MOTA											
102	MJE5985	2N6488	MOTA											
103	MM1510	2N5851	MOTA											
104	MM1511	2N5852	MOTA											
105	MM1549	2N5635	MOTA											
106	MM1550	2N5636	MOTA											
107	MM1551	2N5637	MOTA											
108	MM1557	2N5641	MOTA											
109	MM1558	2N5642	MOTA											
110	MM1559	2N5643	MOTA											

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	MM1581	2N6166	MOTA										
2	MM1601	2N5589	MOTA										
3	MM1602	2N5590	MOTA										
4	MM1603	2N5591	MOTA										
5	MM1605	2N5841	MOTA										
6	MM1606	2N5842	MOTA										
7	MM1607	2N5842	MOTA										
8	MM1608	2N5846	MOTA										
9	MM1612	2N6255	MOTA										
10	MM1618	2N5847	MOTA										
11	MM1620	2N5849	MOTA										
12	MM1622	2N5849	MOTA										
13	MM1632	2N5941	MOTA										
14	MM1633	2N5942	MOTA										
15	MM1646	2N5849	MOTA										
16	MM1660	2N5644	MOTA										
17	MM1661	2N5645	MOTA										
18	MM1662	2N5646	MOTA										
19	MM1665	2N6136	MOTA										
20	MM1666	2N6082	MOTA										
21	MM1667	2N6083	MOTA										
22	MM1668	2N6084	MOTA										
23	MM1669	2N6084	MOTA										
24	MM1680	2N6080	MOTA										
25	MM1681	2N6081	MOTA										
26	MM1713	2N4072	MOTA										
27	MM1943	2N4072	MOTA										
28	MM1945	2N4072	MOTA										
29	MM4020	2N6094	MOTA										
30	MM4021	2N6095	MOTA										
31	MM4022	2N6096	MOTA										
32	MM4023	2N6097	MOTA										
33	MM4500	2N5583	MOTA										
34	MM5177	MRF5177	MOTA										
35	MM8002	2N5943	MOTA										
36	MM8003	MRF511	MOTA										
37	MM8004	MRF8004	MOTA										
38	MM8006	2N5031	MOTA										
39	MM8007	2N5032	MOTA										
40	MM8012	2N5947	MOTA										
41	MM8020	2N5836	MOTA										
42	MM8021	2N5837	MOTA										
43	MPSU11	MPSU10	MOTA										
44	MPSU12	MPSU45	MOTA										
45	MPSU47	MPSE31	MOTA										
46	MRF201	2N6255	MOTA										
47	MRF305	MRF325	MOTA										
48	MRF306	2N6439	MOTA										
49	MRF415	2N6366	MOTA										
50	MRF416	2N6367	MOTA										
51	MRF417	MRF6368	MOTA										
52	MRF418	MRF460	MOTA										
53	MRF419	2N6370	MOTA										
54	MRF420	MRF454	MOTA										
55	MRF451	MRF453	MOTA										
56	MRF452	MRF453	MOTA										
57	MRF601	2N6256	MOTA										
58	MRF602	2N6136	MOTA										
59	MRF605	2N6439	MOTA										
60	MRF618	MRF641	MOTA										
61	MRF619	MRF644	MOTA										
62	MRF620	MRF644	MOTA										
63	MRF621	MRF646	MOTA										
64	MV20	MHW602	MOTA										
65	MV30	MHW603	MOTA										
66	MX7.5	MHW709	MOTA										
67	NE02107	MRF902	MOTA										
68	NE02112	MRF904	MOTA										
69	NE22120	MRF5	MOTA										
70	NE32707	MRF902	MOTA										
71	NE32712	MRF904	MOTA										
72	NE32733	MMBR901	MOTA										
73	NE41607	MRF962	MOTA										
74	NE41610	MRF965	MOTA										
75	NE41707	MRF902	MOTA										
76	NE41712	MRF904	MOTA										
77	NE41733	MMBR901	MOTA										
78	NE57510	MRF905	MOTA										
79	NE59312	2N4957	MOTA									N	Y
80	NE59333	MMBR4957	MOTA										
81	NE64310	MRF905	MOTA										
82	NE66912	2N6304	MOTA										
83	NE73412	2N5031	MOTA										
84	NE73433	MMBR503	MOTA										
85	NE74014	2N5109	MOTA										
86	NE74114	MRF517	MOTA										
87	NE02133	MMBR90	MOTA										
88	NSD102	RCP701B	RCA	MDS23	MOTA	MDS27	MOTA						
89	NSD103	RCP701B	RCA	MDS23	MOTA	MDS27	MOTA						
90	NSD104	RCP701C	RCA	2N6552	MOTA								
91	NSD105	RCP701C	RCA	2N6552	MOTA								
92	NSD106	RCP701D	RCA	2N6553	MOTA								
93	NSD123	2N6591	MOTA										
94	NSD127	2N6591	MOTA										
95	NSD128	2N6592	MOTA										
96	NSD129	2N6593	MOTA										
97	NSD130	2N6557	MOTA										
98	NSD131	RCP113B	RCA										
99	NSD132	RCP111B	RCA	2N6557	MOTA								
100	NSD133	RCP113C	RCA	2N6558	MOTA								
101	NSD134	RCP111C	RCA	2N6558	MOTA								
102	NSD135	RCP111D	RCA	2N6559	MOTA								
103	NSD151	2N6549	MOTA										
104	NSD152	2N6548	MOTA										
105	NSD202	RCP700B	RCA	MDS73	MOTA	MDS77	MOTA						
106	NSD203	RCP700B	RCA	MDS73	MOTA	MDS77	MOTA						
107	NSD204	RCP700C	RCA	2N6555	MOTA								
108	NSD205	RCP700C	RCA	2N6555	MOTA								
109	NSD206	RCP700D	RCA	2N6556	MOTA								
110	NSD457	2N6591	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	NSD458	2N6593	MOTA										
2	NSD459	2N6558	MOTA										
3	NSP41	TIP41	MOTA										
4	NSP41A	TIP41A	MOTA										
5	NSP41B	TIP41B	MOTA										
6	NSP42C	TIP42C	MOTA										
7	NSP105	TIP42A	MOTA										
8	NSP205	TIP41A	MOTA										
9	NSP370	TIP32	MOTA										
10	NSP371	TIP32	MOTA										
11	NSP520	TIP31	MOTA										
12	NSP521	TIP31	MOTA										
13	NSP575	TIP29A	MOTA										
14	NSP576	TIP30A	MOTA										
15	NSP577	TIP29A	MOTA										
16	NSP578	TIP30A	MOTA										
17	NSP579	TIP29B	MOTA										
18	NSP580	TIP30B	MOTA										
19	NSP581	TIP29C	MOTA										
20	NSP582	TIP30C	MOTA										
21	NSP585	TIP29A	MOTA										
22	NSP586	TIP30A	MOTA										
23	NSP587	TIP29A	MOTA										
24	NSP588	TIP30A	MOTA										
25	NSP589	TIP29B	MOTA										
26	NSP590	TIP30B	MOTA										
27	NSP595	TIP31A	MOTA										
28	NSP596	TIP32A	MOTA										
29	NSP597	TIP31A	MOTA										
30	NSP598	TIP32A	MOTA										
31	NSP599	TIP31B	MOTA										
32	NSP600	TIP32B	MOTA										
33	NSP695	TIP120	MOTA										
34	NSP695A	TIP100	MOTA										
35	NSP696	TIP125	MOTA										
36	NSP696A	TIP105	MOTA										N
37	NSP697	TIP120	MOTA										
38	NSP697A	TIP100	MOTA										
39	NSP698	TIP125	MOTA										
40	NSP698A	TIP105	MOTA										
41	NSP699	TIP121	MOTA										
42	NSP699A	TIP101	MOTA										
43	NSP700	TIP126	MOTA										
44	NSP700A	TIP106	MOTA										
45	NSP701	TIP122	MOTA										
46	NSP702	TIP127	MOTA										
47	NSP2010	TIP42	MOTA										
48	NSP2011	TIP42A	MOTA										
49	NSP2021	TIP41A	MOTA										
50	NSP2090	TIP125	MOTA										
51	NSP2091	TIP125	MOTA										
52	NSP2092	TIP126	MOTA										
53	NSP2093	TIP126	MOTA										
54	NSP2100	TIP120	MOTA										
55	NSP2101	TIP120	MOTA										
56	NSP2102	TIP121	MOTA										
57	NSP2103	TIP121	MOTA										
58	NSP2370	TIP32	MOTA										
59	NSP2480	TIP31	MOTA										
60	NSP2481	TIP31A	MOTA										
61	NSP2490	TIP32	MOTA										
62	NSP2491	TIP32A	MOTA										
63	NSP2520	TIP31	MOTA										
64	NSP2955	MJE2955T	MOTA										
65	NSP3054	TIP31A	MOTA										
66	NSP3055	MJE3055T	MOTA										
67	NSP4918	TIP30	MOTA										
68	NSP4919	TIP30A	MOTA										
69	NSP4920	TIP30B	MOTA										
70	NSP4921	TIP29	MOTA										
71	NSP4922	TIP29A	MOTA										
72	NSP4923	TIP29B	MOTA										
73	NSP5190	2N6121	MOTA										
74	NSP5191	2N6122	MOTA										
75	NSP5192	2N6123	MOTA										
76	NSP5193	2N6124	MOTA										
77	NSP5194	2N6125	MOTA										
78	NSP5195	2N6126	MOTA										
79	NSP5974	TIP42	MOTA										
80	NSP5975	TIP42A	MOTA										
81	NSP5976	TIP42B	MOTA										
82	NSP5977	TIP41	MOTA										
83	NSP5978	TIP41A	MOTA										
84	NSP5979	TIP41B	MOTA										
85	NSP5980	2N6489	MOTA										
86	NSP5981	2N6490	MOTA										
87	NSP5982	2N6491	MOTA										
88	NSP5983	2N6486	MOTA										
89	NSP5984	2N6487	MOTA										
90	NSP5985	2N6488	MOTA										
91	PH0403H	MRF5175	MOTA										
92	PH0412H	MRF321	MOTA										
93	PH0425H	MRF325	MOTA										
94	PH0450D	2N6439	MOTA										
95	PH0450H	2N6439	MOTA										
96	PH0506H	MRF321	MOTA										
97	PH0525H	MRF325	MOTA										
98	PH0550H	2N6439	MOTA										
99	PM28K380	MJ13015	MOTA										
100	PM29K380	2N6543	MOTA										
101	PMD10K40	2N6057	MOTA										
102	PMD10K60	2N6057	MOTA										
103	PMD10K80	2N6058	MOTA										
104	PMD10K100	2N6059	MOTA										
105	PMD11K40	2N6050	MOTA										
106	PMD11K60	2N6050	MOTA										
107	PMD11K80	2N6051	MOTA										
108	PMD11K100	2N6052	MOTA										
109	PMD12K40	MJ1000	MOTA										
110	PMD12K60	MJ1000	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	PMD12K80	MJ1001	MOTA										
2	PMD12K100	2N6059	MOTA										
3	PMD13K40	MJ900	MOTA										
4	PMD13K60	MJ900	MOTA										
5	PMD13K80	MJ901	MOTA										
6	PMD13K100	2N6052	MOTA										
7	PMD16K40	2N6282	MOTA										
8	PMD16K60	2N6282	MOTA										
9	PMD16K80	2N6283	MOTA										
10	PMD16K100	2N6284	MOTA										
11	PMD17K40	2N6285	MOTA										
12	PMD17K60	2N6285	MOTA										
13	PMD17K80	2N6286	MOTA										
14	PMD17K100	2N6287	MOTA										
15	PMD20K120	2N6578	MOTA										
16	PMD1600K	2N6282	MOTA										
17	PMD1601K	2N6282	MOTA										
18	PMD1602K	2N6283	MOTA										
19	PMD1603K	2N6284	MOTA										
20	PMD1701K	2N6285	MOTA										
21	PMD1702K	2N6286	MOTA										
22	PMD1703K	2N6287	MOTA										
23	PT3501	MRF230	MOTA										
24	PT3570	2N5947	MOTA										
25	PT3571	2N5943	MOTA										
26	PT3571A	2N5943	MOTA										
27	PT4570	2N5947	MOTA										
28	PT4572A	2N5947	MOTA										
29	PT4574	MRF511	MOTA										
30	PT4578	MRF517	MOTA										
31	PT4579	2N5943	MOTA										
32	PT5701	MRF402	MOTA										
33	PT8551	2N3553	MOTA										
34	PT8717	MRF231	MOTA										
35	PT8769	MRF233	MOTA										
36	PT8809	2N5944	MOTA										
37	PT8810	2N5945	MOTA										
38	PT8811	2N5946	MOTA										
39	PT8828	MRF212	MOTA										
40	PT8837	2N6081	MOTA										
41	PT8838	2N6084	MOTA										
42	PT9700	MRF5174	MOTA										
43	PT9701	MRF5175	MOTA										
44	PT9702	MRF323	MOTA										
45	PT9703	MRF321	MOTA										
46	PT9731	MRF314	MOTA										
47	PT9732	2N5641	MOTA										
48	PT9733	MRF315	MOTA										
49	PT9734	MRF314	MOTA										
50	PT9776	MRF455	MOTA										
51	PT9776A	MRF455A	MOTA										
52	PT9784	MRF455	MOTA										
53	PT9784A	MRF455A	MOTA										
54	PT9785	MRF421	MOTA										
55	PT9787	2N6370	MOTA										
56	PT9788A	MRF401	MOTA										
57	PT9790	MRF428	MOTA										
58	PT9790A	MRF428A	MOTA										
59	PT9795	MRF433	MOTA										
60	PT9796	MRF449	MOTA										
61	PT9796A	MRF449A	MOTA										
62	PT9797	MRF450	MOTA										
63	PT9797A	MRF450A	MOTA										
64	R47M10	MHW709	MOTA										
65	R47M13	MHW710	MOTA										
66	R47M15	MHW710	MOTA										
67	RCA1B01	2N6288	MOTA	2N5878	MOTA								
68	RCA1B05	MJ15024	MOTA										
69	RCA1B06	MJ15003	MOTA										
70	RCA1B09	MJ15024	MOTA										
71	RCA1C03	TIP31C	MOTA	FT317	MOTA								
72	RCA1C04	TIP32C	MOTA	FT317	MOTA								
73	RCA1C05	2N6315	MOTA	2N6130	MOTA								
74	RCA1C06	2N6317	MOTA	2N6133	MOTA								
75	RCA1C10	TIP41	MOTA	2N6292	MOTA								
76	RCA1C11	TIP42	MOTA	2N6107	MOTA								
77	RCA1C12	FT317A	MOTA										
78	RCA1C13	FT317A	MOTA										
79	RCA1C14	2N6315	MOTA	2N6290	MOTA								
80	RCA1C15	2N6388	MOTA										
81	RCA1C16	2N6668	MOTA										
82	RCA1E02	2N3583	MOTA										
83	RCA1E03	2N6420	MOTA										
84	RCA29	TIP29	MOTA										
85	RCA29A	TIP29A	MOTA										
86	RCA29B	TIP29B	MOTA										
87	RCA29C	TIP29C	MOTA										
88	RCA30	TIP30	MOTA										
89	RCA30A	TIP30A	MOTA										
90	RCA30B	TIP30B	MOTA										
91	RCA30C	TIP30C	MOTA										
92	RCA31	TIP31	MOTA										
93	RCA31A	TIP31A	MOTA										
94	RCA31B	TIP31B	MOTA										
95	RCA31C	TIP31C	MOTA										
96	RCA32	TIP32	MOTA										
97	RCA32A	TIP32A	MOTA										
98	RCA32B	TIP32B	MOTA										
99	RCA32C	TIP32C	MOTA										
100	RCA41	TIP41	MOTA										
101	RCA41A	TIP41A	MOTA										
102	RCA41B	TIP41B	MOTA										
103	RCA41C	TIP41C	MOTA										
104	RCA42	TIP42	MOTA										
105	RCA42A	TIP42A	MOTA										
106	RCA42B	TIP42B	MOTA										
107	RCA42C	TIP42C	MOTA										
108	RCA120	TIP120	MOTA										
109	RCA121	TIP121	MOTA										
110	RCA122	TIP122	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	RCA125	TIP125	MOTA										
2	RCA128	TIP128	MOTA										
3	RCA410	MJ410	MOTA										
4	RCA411	MJ411	MOTA										
5	RCA413	MJ413	MOTA										
6	RCA423	MJ423	MOTA										
7	RCA431	MJ431	MOTA										
8	RCA1000	MJ1000	MOTA										
9	RCA1001	MJ1001	MOTA										
10	RCA3054	TIP31A	MOTA	2N6122	MOTA								
11	RCA3055	MJE3055	MOTA	2N6487	MOTA								
12	RCA3441	FT317B	MOTA										
13	RCA6283	FT317B	MOTA										
14	RCA8203	TIP125	MOTA	2N6666	MOTA								
15	RCA8203A	2N6667	MOTA										
16	RCA8203B	TIP127	MOTA	2N6668	MOTA								
17	RCA8350	2N6050	MOTA	2N6648	MOTA								
18	RCA8350A	2N6050	MOTA	2N6649	MOTA								
19	RCA8350B	2N8051	MOTA	2N8850	MOTA								
20	RCP111A	2N8557	MOTA										
21	RCP111B	2N8557	MOTA										
22	RCP111C	2N8558	MOTA										
23	RCP111D	2N8559	MOTA										
24	RCP113A	2N8557	MOTA										
25	RCP113B	2N8557	MOTA										
26	RCP113C	2N8558	MOTA										
27	RCP113D	2N8559	MOTA										
28	RCP115	2N8591	MOTA										
29	RCP115B	2N8557	MOTA										
30	RCP117	2N8591	MOTA										
31	RCP117B	2N8557	MOTA										
32	RCP131A	2N8592	MOTA										
33	RCP131B	2N8593	MOTA										
34	RCP131C	2N8558	MOTA										
35	RCP131D	2N8559	MOTA										
36	RCP133A	2N8592	MOTA										
37	RCP133B	2N8593	MOTA										
38	RCP133C	2N8558	MOTA										
39	RCP133D	2N8559	MOTA										
40	RCP135	2N8553	MOTA										
41	RCP135B	2N8557	MOTA										
42	RCP137	2N8553	MOTA										
43	RCP137B	2N8557	MOTA										
44	RCP700A	2N8554	MOTA										
45	RCP700B	2N8554	MOTA										
46	RCP700C	2N8555	MOTA										
47	RCP700D	2N8556	MOTA										
48	RCP701A	2N8551	MOTA										
49	RCP701B	2N8551	MOTA										
50	RCP701C	2N8552	MOTA										
51	RCP701D	2N8553	MOTA										
52	RCP702A	2N8554	MOTA										
53	RCP702B	2N8554	MOTA										
54	RCP702C	2N8555	MOTA										
55	RCP702D	2N8556	MOTA										
56	RCP703A	2N8551	MOTA										
57	RCP703B	2N8551	MOTA										
58	RCP703C	2N8552	MOTA										
59	RCP703D	2N8553	MOTA										
60	RCP704	2N8554	MOTA										
61	RCP704B	2N8554	MOTA										
62	RCP705	2N8551	MOTA										
63	RCP705B	2N8551	MOTA										
64	RCP706	2N8554	MOTA										
65	RCP706B	2N8554	MOTA										
66	RCP707	2N8551	MOTA										
67	RCP707B	2N8551	MOTA										
68	RCS29	2N4231A	MOTA										
69	RCS29A	2N4232A	MOTA										
70	RCS29B	2N4233A	MOTA										
71	RCS30	2N6312	MOTA										
72	RCS30A	2N6313	MOTA										
73	RCS30B	2N6314	MOTA										
74	RCS30C	2N6420	MOTA										
75	RCS31	2N6431A	MOTA										
76	RCS31A	2N6432A	MOTA										
77	RCS31B	2N6433A	MOTA										
78	RCS32	2N6312	MOTA										
79	RCS32A	2N6313	MOTA										
80	RCS32B	2N6314	MOTA										
81	RCS32C	2N6421	MOTA										
82	RCS258	2N5885	MOTA										
83	RCS579	2N6306	MOTA										
84	RF1003	MRF221	MOTA										
85	RF1004	MRF223	MOTA										
86	RF2081	MRF216	MOTA										
87	RF2123	MRF238	MOTA										
88	RF2127	MRF245	MOTA										
89	RF2135	MRF223	MOTA										
90	RF2142	2N6367	MOTA										
91	RF2144	MRF224	MOTA										
92	RF2146	MRF476	MOTA										
93	RF2147	MRF475	MOTA										
94	S10-12	MRF433	MOTA										
95	S10-28	2N6370	MOTA										
96	S15-50	MRF427	MOTA										
97	S50-12	MRF450	MOTA										
98	S50-28	MRF464	MOTA										
99	S80-12	MRF454	MOTA										
100	S100-12	MRF421	MOTA										
101	S100-28	MRF422	MOTA										
102	S100-50	MRF428	MOTA										
103	SD1005	MRF511	MOTA										
104	SD1006	2N5943	MOTA										
105	SD1012	2N5590	MOTA										
106	SD1014	MRF233	MOTA										
107	SD1019-5	2N6166	MOTA										
108	SD1020	MRF402	MOTA										
109	SD1020-6	MRF313A	MOTA										
110	SD1020-7	MRF313	MOTA										



## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	SD1074	MRF453	MOTA										
2	SD1076	MRF454	MOTA										
3	SD1077	MRF8004	MOTA										
4	SD1080	MRF207	MOTA										
5	SD1080-2	MRF628	MOTA										
6	SD1080-4	MRF604	MOTA										
7	SD1080-6	MRF627	MOTA										
8	SD1080-7	MRF626	MOTA										
9	SD1087	MRF641	MOTA										
10	SD1088	MRF644	MOTA										
11	SD1089	MRF646	MOTA										
12	SD1115-4	MRF607	MOTA										
13	SD1124	MRF245	MOTA										
14	SD1127	MRF237	MOTA										
15	SD1131	MRF629	MOTA										
16	SD1133	MRF212	MOTA										
17	SD1134	2N5944	MOTA										
18	SD1134-1	MRF225	MOTA										
19	SD1135	2N5945	MOTA										
20	SD1136	2N5946	MOTA										
21	SD1143	MRF212	MOTA										
22	SD1147	MRF5175	MOTA										
23	SD1148	MRF321	MOTA										
24	SD1149	MRF323	MOTA										
25	SD1166	MRF403	MOTA										
26	SD1167	2N5847	MOTA										
27	SD1168	2N5848	MOTA										
28	SD1169	2N5849	MOTA										
29	SD1174	2N6255	MOTA										
30	SD1200	2N3866	MOTA										
31	SD1216	2N5591	MOTA										
32	SD1218	MRF209	MOTA										
33	SD1229	2N6083	MOTA										
34	SD1229-1	MRF222	MOTA										
35	SD1232	MRF517	MOTA										
36	SD1262	MRF226	MOTA										
37	SD1288	MRF453A	MOTA										
38	SD1289	MRF453	MOTA										
39	SD1290	2N5849	MOTA										
40	SD1295	MRF421	MOTA										
41	SD1299	MRF326	MOTA										
42	SD1300	BFY90	MOTA										
43	SD1303	2N3839	MOTA										
44	SD1308	MFR905	MOTA										
45	SD1347-7	MRF402	MOTA										
46	SDM6000	MJ10012	MOTA										
47	SDM6001	MJ10012	MOTA										
48	SDM6002	MJ10012	MOTA										
49	SDM6003	MJ10012	MOTA										
50	SDM20301	MJ4033	MOTA										
51	SDM20302	MJ4033	MOTA										
52	SDM20303	MJ4034	MOTA										
53	SDM20304	MJ4035	MOTA										
54	SDM20311	MJ4033	MOTA										
55	SDM20312	MJ4033	MOTA										
56	SDM20313	MJ4034	MOTA										
57	SDM20314	MJ4035	MOTA										
58	SDM20321	MJ4033	MOTA										
59	SDM20322	MJ4033	MOTA										
60	SDM20323	MJ4034	MOTA										
61	SDM20324	MJ4035	MOTA										
62	SDM21301	MJ4030	MOTA										
63	SDM21302	MJ4030	MOTA										
64	SDM21303	MJ4031	MOTA										
65	SDM21304	MJ4032	MOTA										
66	SDM21311	MJ4030	MOTA										
67	SDM21312	MJ4030	MOTA										
68	SDM21313	MJ4031	MOTA										
69	SDM21314	MJ4032	MOTA										
70	SDN1010	2N6056	MOTA										
71	SDN1020	MJ3001	MOTA										
72	SDN4040	MJ10000	MOTA										
73	SDN4045	MJ10000	MOTA										
74	SDN6000	MJ10000	MOTA										
75	SDN6001	MJ10000	MOTA										
76	SDN6002	MJ10001	MOTA										
77	SDN6060	MJ10000	MOTA										
78	SDN6061	MJ10000	MOTA										
79	SDN6062	MJ10000	MOTA										
80	SDN6251	MJ10002	MOTA										
81	SDN6252	MJ10002	MOTA										
82	SDN6253	MJ10003	MOTA										
83	SDT7A01	2N5428	MOTA										
84	SDT7A02	2N5428	MOTA										
85	SDT7A03	2N5428	MOTA										
86	SDT7A07	2N5427	MOTA										
87	SDT7A08	2N5427	MOTA										
88	SDT7A09	2N5427	MOTA										
89	SDT401	2N6543	MOTA										
90	SDT402	2N6543	MOTA										
91	SDT410	MJ410	MOTA										
92	SDT411	RCA411	RCA	PTC129A	MAL								
93	SDT413	MJ413	MOTA										
94	SDT423	RCA423	RCA	PTC129A	MAL								
95	SDT424	2N6308	MOTA										
96	SDT425	2N6545	MOTA										
97	SDT430	2N6307	MOTA										
98	SDT431	MJ431	MOTA										
99	SDT520	2N6306	MOTA										
100	SDT521	2N6306	MOTA										
101	SDT522	2N6306	MOTA										
102	SDT525	2N6306	MOTA										
103	SDT526	2N6306	MOTA										
104	SDT527	2N6306	MOTA										
105	SDT530	2N6306	MOTA										
106	SDT531	2N6306	MOTA										
107	SDT532	2N6306	MOTA										
108	SDT535	2N6306	MOTA										
109	SDT536	2N6307	MOTA										
110	SDT537	2N6307	MOTA										

## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	SDT540	2N6307	MOTA										
2	SDT541	2N6307	MOTA										
3	SDT542	2N6307	MOTA										
4	SDT545	2N6308	MOTA										
5	SDT546	2N6308	MOTA										
6	SDT547	2N6308	MOTA										
7	SDT550	2N6308	MOTA										
8	SDT551	2N6308	MOTA										
9	SDT552	2N6308	MOTA										
10	SDT1050	2N5838	MOTA										
11	SDT1051	2N5840	MOTA										
12	SDT1052	2N5843	MOTA										
13	SDT1053	2N5843	MOTA										
14	SDT1054	2N5843	MOTA										
15	SDT1055	2N5838	MOTA										
16	SDT1056	2N3902	MOTA										
17	SDT1060	2N5838	MOTA										
18	SDT1061	2N3902	MOTA										
19	SDT1301	2N6235	MOTA										
20	SDT1302	2N6235	MOTA										
21	SDT1303	2N6235	MOTA										
22	SDT1304	2N6235	MOTA										
23	SDT3125	MJ6701	MOTA	2N6186	MOTA								
24	SDT3126	MJ6701	MOTA	2N6186	MOTA								
25	SDT3321	MJ8100	MOTA										
26	SDT3322	MJ8100	MOTA										
27	SDT3323	2N6190	MOTA										
28	SDT3324	2N6192	MOTA										
29	SDT3325	MJ8100ΩΩ	MOTA										
30	SDT3326	MJ8100ΩΩ	MOTA										
31	SDT3327	2N6190	MOTA										
32	SDT3328	2N6192	MOTA										
33	SDT3421	2N4877	MOTA										
34	SDT3422	2N4877	MOTA										
35	SDT3423	2N5336	MOTA										
36	SDT3424	2N5338	MOTA										
37	SDT3425	2N4877	MOTA										
38	SDT3426	2N4877	MOTA										
39	SDT3427	2N5336	MOTA										
40	SDT3428	2N5338	MOTA										
41	SDT3501	2N3719	MOTA										
42	SDT3502	2N3720	MOTA										
43	SDT3503	2N6303	MOTA										
44	SDT3504	2N6192	MOTA										
45	SDT3505	2N3867	MOTA										
46	SDT3506	2N3868	MOTA										
47	SDT3507	2N6303	MOTA										
48	SDT3508	2N6193	MOTA										
49	SDT3775	2N6867	MOTA										
50	SDT3776	2N3868	MOTA										
51	SDT3777	2N6303	MOTA										
52	SDT3778	2N3867	MOTA										
53	SDT4451	2N4877	MOTA										
54	SDT4452	2N5336	MOTA										
55	SDT4453	2N4877	MOTA										
56	SDT4454	2N5336	MOTA										
57	SDT4455	2N5337	MOTA										
58	SDT4456	2N5337	MOTA										
59	SDT4483	2N4877	MOTA										
60	SDT4901	2N3583	MOTA										
61	SDT4902	2N6233	MOTA										
62	SDT4903	2N6234	MOTA										
63	SDT4904	2N3585	MOTA										
64	SDT4905	2N3585	MOTA										
65	SDT5101	TIP41A	MOTA										
66	SDT5102	TIP41A	MOTA										
67	SDT5103	TIP41A	MOTA										
68	SDT5111	TIP41A	MOTA										
69	SDT5112	TIP41A	MOTA										
70	SDT5113	TIP42A	MOTA										
71	SDT5501	2N5537	MOTA										
72	SDT5502	2N5537	MOTA										
73	SDT5503	2N5537	MOTA										
74	SDT5504	2N5539	MOTA										
75	SDT5506	2N4877	MOTA										
76	SDT5507	2N4877	MOTA										
77	SDT5508	2N5336	MOTA										
78	SDT5509	2N5338	MOTA										
79	SDT5511	2N5337	MOTA										
80	SDT5512	2N5337	MOTA										
81	SDT5513	2N5337	MOTA										
82	SDT5514	2N5339	MOTA										
83	SDT5901	2N3766	MOTA										
84	SDT5902	2N3766	MOTA										
85	SDT5903	2N3787	MOTA										
86	SDT5904	2N5050	MOTA										
87	SDT5905	2N5050	MOTA										
88	SDT5906	2N3786	MOTA										
89	SDT5907	2N3766	MOTA										
90	SDT5908	2N3787	MOTA										
91	SDT5909	2N5050	MOTA										
92	SDT5910	2N5050	MOTA										
93	SDT5911	2N5427	MOTA										
94	SDT5912	2N5427	MOTA										
95	SDT5914	2N5429	MOTA										
96	SDT5951	2N5051	MOTA										
97	SDT5952	2N3583	MOTA										
98	SDT5953	2N5052	MOTA										
99	SDT5954	2N5051	MOTA										
100	SDT5955	2N3583	MOTA										
101	SDT5956	2N5052	MOTA										
102	SDT6901	2N6078	RCA	2N5050	MOTA								
103	SDT6902	2N6078	RCA	2N5051	MOTA								
104	SDT6903	2N6078	RCA	2N5052	MOTA								
105	SDT6904	2N6078	RCA	2N5052	MOTA								
106	SDT6905	2N6078	RCA										
107	SDT6906	2N6078	RCA										
108	SDT6907	2N6078	RCA										
109	SDT6908	2N6078	RCA										
110	SDT7201	2N6306	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	SDT7202	2N6306	MOTA										
2	SDT7203	2N6306	MOTA										
3	SDT7204	2N6307	MOTA										
4	SDT7205	2N6308	MOTA										
5	SDT7206	2N6341	MOTA										
6	SDT7207	2N6306	MOTA										
7	SDT7208	2N6306	MOTA										
8	SDT7209	2N6307	MOTA										
9	SDT7601	2N5039	RCA										
10	SDT7602	2N5039	RCA										
11	SDT7603	2N5038	RCA	2N6338	MOTA								
12	SDT7604	2N6496	RCA	2N6339	MOTA								
13	SDT7605	2N6249	RCA	2N6341	MOTA								
14	SDT7607	2N5039	RCA										
15	SDT7608	2N5039	RCA										
16	SDT7609	2N5038	RCA	2N6338	MOTA								
17	SDT7610	2N6354	RCA	2N6339	MOTA								
18	SDT7611	2N6341	MOTA										
19	SDT7612	2N6249	MOTA										
20	SDT7731	2N6470	RCA	2N5881	MOTA								
21	SDT7732	2N6471	RCA	2N5881	MOTA								
22	SDT7733	2N6472	RCA	2N5882	MOTA								
23	SDT7734	2N5629	MOTA										
24	SDT7735	2N5630	MOTA										
25	SDT7736	2N5631	MOTA										
26	SDT8002	2N3266	RCA										
27	SDT8003	2N3265	RCA										
28	SDT8012	2N3266	RCA										
29	SDT8013	2N3265	RCA										
30	SDT8015	2N3266	RCA										
31	SDT8016	2N3265	RCA										
32	SDT8105	2N3264	RCA										
33	SDT8106	2N3263	RCA										
34	SDT8112	2N3264	RCA										
35	SDT8113	2N3263	RCA										
36	SDT8301	2N3266	RCA										
37	SDT8302	2N3265	RCA										
38	SDT8303	2N3266	RCA										
39	SDT8304	2N3265	RCA										
40	SDT9201	2N3055	RCA	2N6569	MOTA								
41	SDT9202	2N6254	RCA	2N5878	MOTA								
42	SDT9203	2N4348	RCA	2N5632	MOTA								
43	SDT9204	2N4348	RCA	2N5633	MOTA								
44	SDT9205	2N3055	RCA	2N6569	MOTA								
45	SDT9206	2N3055	RCA	2N3055	MOTA								
46	SDT9207	2N6254	RCA	2N5878	MOTA								
47	SDT9208	2N4348	RCA	2N5632	MOTA								
48	SDT9209	2N4348	RCA	2N5633	MOTA								
49	SDT9210	2N6253	RCA	2N6569	MOTA								
50	SDT9301	2N5067	MOTA	2N4231A	MOTA								
51	SDT9302	2N5068	MOTA	2N4232A	MOTA								
52	SDT9303	2N5069	MOTA	2N4233A	MOTA								
53	SDT9304	2N5067	MOTA	2N4231A	MOTA								
54	SDT9305	2N5068	MOTA	2N4232A	MOTA								
55	SDT9306	2N5069	MOTA	2N4233A	MOTA								
56	SDT9307	2N3713	MOTA										
57	SDT9308	2N3715	MOTA										
58	SDT9309	2N3716	MOTA										
59	SDT9701	2N6258	RCA	PTC173	MAL	2N5303	MOTA						
60	SDT9702	2N4348	RCA	PTC173	MAL	2N5629	MOTA						
61	SDT9703	2N4348	RCA	2N5630	MOTA								
62	SDT9704	2N6254	RCA	PTC173	MAL	2N5882	MOTA						
63	SDT9705	2N4348	RCA	PTC173	MAL	2N5629	MOTA						
64	SDT9706	2N4348	RCA	2N5330	MOTA								
65	SDT9707	2N3055	RCA	PTC173	MAL	2N3055	MOTA						
66	SDT9801	2N6254	RCA										
67	SDT9802	2N6254	RCA										
68	SDT9803	2N6254	RCA										
69	SDT9804	2N3773	RCA										
70	SDT12301	MJ5039	MOTA	2N5039	MOTA								
71	SDT12302	MJ7260	MOTA										
72	SDT12303	MJ7260	MOTA										
73	SDT13301	2N6546	MOTA										
74	SDT13302	2N6547	MOTA										
75	SDT13303	2N6547	MOTA										
76	SE9300	RCA120	RCA	SE9300	MOTA								
77	SE9301	RCA121	RCA	SE9301	MOTA								
78	SE9302	RCA122	RCA	SE9302	MOTA								
79	SE9303	2N6384	RCA	MJ3000	MOTA	SE9303	MOTA						
80	SE9304	2N6385	RCA	MJ3001	MOTA	SE9304	MOTA						
81	SE9305	2N6059	MOTA										
82	SE9306	MJ4033	MOTA										
83	SE9307	MJ4034	MOTA										
84	SE9308	MJ4035	MOTA										
85	SE9331	2N3739	MOTA										
86	SE9403	MJ2500	MOTA	SE9403	MOTA								
87	SE9404	MJ2501	MOTA	SE9404	MOTA								
88	SE9405	2N6052	MOTA	SE9405	MOTA								
89	SE9406	MJ4030	MOTA										
90	SE9407	MJ4031	MOTA										
91	SE9408	MJ4032	MOTA										
92	SPC410	RCA410	RCA	PTC129A	MAL								
93	SPC411	RCA411	RCA	PTC129A	MAL								
94	SPC413	RCA413	RCA	PTC129A	MAL								
95	SPC423	RCA423	RCA	PTC129A	MAL								
96	SPC431	RCA431	RCA										
97	STS410	RCA410	RCA	PTC129A	MAL								
98	STS411	RCA411	RCA	PTC129A	MAL								
99	STS413	RCA413	RCA	PTC129A	MAL								
100	STS423	RCA423	RCA	PTC129A	MAL								
101	STS431	RCA431	RCA										
102	SV7056	2N6558	MOTA										
103	SVT2505	2N5838	MOTA										
104	SVT3005	2N6542	MOTA										
105	SVT3505	2N5840	MOTA										
106	SVT4003	2N5157	MOTA	2N6545	MOTA								
107	SVT4005	2N6543	MOTA										
108	SVT4505	2N6543	MOTA										
109	SVT8000	MJ10004	MOTA										
110	SVT8001	MJ10004	MOTA										

# 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	SVT6002	MJT0005	MOTA										
2	SVT6060	MJ10004	MOTA										
3	SVT6061	MJ10004	MOTA										
4	SVT6062	MJ10005	MOTA										
5	SVT6251	MJ10006	MOTA										
6	SVT6252	MJ10006	MOTA										
7	SVT6253	MJ10007	MOTA										
8	SVT20010	2N6306	MOTA										
9	SVT25010	2N6306	MOTA										
10	SVT30010	2N6307	MOTA										
11	T1482	40311	RCA	PTC123	MAL								
12	T1484	2N697	RCA	PTC123	MAL	BFY55	PHIN	2N2297	PHIN				
13	T1492	40407	RCA	PTC123	MAL								
14	T1493	02N1613	RCA	PTC123	MAL								
15	TIP29	BD239	RCA	PTC167	MAL	TIP29	MOTA						
16	TIP29A	BD239A	RCA	PTC167	MAL	TIP29A	MOTA						
17	TIP29B	BD239B	RCA	PTC167	MAL	TIP29B	MOTA						
18	TIP29C	BD239C	RCA	PTC169	MAL	TIP29C	MOTA						
19	TIP30	BD240	RCA	PTC166	MAL	TIP30	MOTA						
20	TIP30A	BD240A	RCA	PTC166	MAL	TIP30A	MOTA						
21	TIP30B	BD240B	RCA	PTC166	MAL	TIP30B	MOTA						
22	TIP30C	BD240C	RCA	PTC168	MAL	TIP30C	MOTA						
23	TIP31	BD241	RCA	PTC167	MAL	TIP31	MOTA						
24	TIP31A	BD241A	RCA	PTC167	MAL	TIP31A	MOTA						
25	TIP31B	BD241B	RCA	PTC167	MAL	TIP31B	MOTA						
26	TIP31C	BD241C	RCA	PTC169	MAL	TIP31C	MOTA						
27	TIP32	BD242	RCA	PTC166	MAL	TIP32	MOTA						
28	TIP32A	BD242A	RCA	PTC166	MAL	TIP32A	MOTA						
29	TIP32B	BD242B	RCA	PTC166	MAL	TIP32B	MOTA						
30	TIP32C	BD242C	RCA	PTC168	MAL	TIP32C	MOTA						
31	TIP33	TIP41	MOTA										
32	TIP33A	TIP41A	MOTA										
33	TIP33B	TIP41B	MOTA										
34	TIP34	TIP42	MOTA										
35	TIP34A	TIP42A	MOTA										
36	TIP34B	TIP42B	MOTA										
37	TIP35D	2N6339	MOTA										
38	TIP35E	2N6340	MOTA										
39	TIP41	BD243	RCA	PTC167	MAL	BD201	PHIN	TIP41	MOTA				
40	TIP41A	BD243A	RCA	PTC167	MAL	TIP41A	MOTA						
41	TIP41B	BD243B	RCA	PTC167	MAL	TIP41B	MOTA						
42	TIP41C	BD243C	RCA	PTC169	MAL	TIP41C	MOTA						
43	TIP42	BD244	RCA	PTC166	MAL	BD202	PHIN	TIP40	MOTA				
44	TIP42A	BD244A	RCA	PTC166	MAL	TIP42A	MOTA						
45	TIP42B	BD244B	RCA	PTC166	MAL	TIP42B	MOTA						
46	TIP42C	BD244C	RCA	PTC168	MAL	TIP42C	MOTA						
47	TIP63	TIP48	MOTA										
48	TIP64	TIP49	MOTA										
49	TIP73	2N6486	MOTA										
50	TIP73A	2N6487	MOTA										
51	TIP73B	2N6488	MOTA										
52	TIP74	2N6489	MOTA										
53	TIP74A	2N6490	MOTA										
54	TIP74B	2N649	MOTA										
55	TIP75A	MJE13004	MOTA										
56	TIP75B	MJE13004	MOTA										
57	TIP75C	MJE13005	MOTA										
58	TIP100	TIP100	MOTA										
59	TIP101	TIP101	MOTA										
60	TIP102	TIP102	MOTA										
61	TIP105	TIP105	MOTA										
62	TIP106	TIP106	MOTA										
63	TIP107	TIP107	MOTA										
64	TIP110	BDX33A	RCA	TIP110	MOTA								
65	TIP111	BDX33B	RCA	TIP111	MOTA								
66	TIP112	BDX33C	RCA	TIP112	MOTA								
67	TIP115	BDX34A	RCA	TIP115	MOTA								
68	TIP116	BDX34B	RCA	BD680	PHIN	TIP116	MOTA						
69	TIP117	BDX34C	RCA	BD682	PHIN	TIP117	MOTA						
70	TIP120	BDX33A	RCA	BD645	PHIN	TIP120	MOTA						
71	TIP121	BDX33B	RCA	BD647	PHIN	TIP121	MOTA						
72	TIP122	BDX33C	RCA	BD649	PHIN	TIP122	MOTA						
73	TIP125	BDX34A	RCA	BD646	PHIN	TIP125	MOTA						
74	TIP126	BDX34B	RCA	BD648	PHIN	TIP126	MOTA						
75	TIP127	BDX34C	RCA	BD650	PHIN	TIP127	MOTA						
76	TIP140	TIP140	MOTA										
77	TIP141	TIP141	MOTA										
78	TIP142	TIP142	MOTA										
79	TIP145	TIP145	MOTA										
80	TIP146	TIP146	MOTA										
81	TIP147	TIP147	MOTA										
82	TIP501	2N4877	MOTA										
83	TIP502	2N4877	MOTA										
84	TIP503	2N5050	MOTA										
85	TIP504	2N5051	MOTA										
86	TIP505	2N5050	MOTA										
87	TIP506	2N5051	MOTA										
88	TIP507	2N6211	MOTA										
89	TIP508	2N6211	MOTA										
90	TIP509	MJ4247	MOTA										
91	TIP510	MJ4248	MOTA										
92	TIP511	MJ4247	MOTA										
93	TIP512	MJ4248	MOTA										
94	TIP513	MJ15012	MOTA										
95	TIP514	MJ3238	MOTA										
96	TIP515	2N6339	MOTA										
97	TIP516	2N6341	MOTA										
98	TIP517	2N6339	MOTA										
99	TIP518	2N6341	MOTA										
100	TIP519	MJ4238	MOTA										
101	TIP520	MJ4238	MOTA										
102	TIP521	2N6211	MOTA										
103	TIP522	2N6211	MOTA										
104	TIP523	MJ15012	MOTA										
105	TIP524	2N6497	MOTA										
106	TIP525	MJ15011	MOTA	SVT2505C									
107	TIP526	MJ15011	MOTA										
108	TIP527	MJ15012	MOTA										
109	TIP528	MJ15012	MOTA										
110	TIP529	2N6542	MOTA										

## 16. DIRECT REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Claimed By The Manufacturer To Replace The Type Number In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	TIP530	2N6235	MOTA										
2	TIP531	2N6250	RCA	2N6576	TRWS	2N6546	MOTA						
3	TIP533	2N6546	MOTA										
4	TIP534	2N6457	MOTA										
5	TIP535	BUX17A	RCA	2N6544	MOTA	BUX80	PHIN	2N6544	MOTA				N
6	TIP536	2N6235	MOTA	2N6544	MOTA								
7	TIP537	2N6545	MOTA										
8	TIP538	2N6250	RCA	2N6676	TRWS	2N6249	MOTA	2N6249	MOTA				
9	TIP539	2N6250	RCA	2N6677	TRWS	2N6546	MOTA	2N6549	MOTA				
10	TIP540	2N6547	MOTA										
11	TIP542	2N6347	MOTA										
12	TIP543	2N6347	MOTA										
13	TIP544	2N6248	RCA	PTC172	MAL	2N6226	MOTA						
14	TIP545	2N6227	MOTA										
15	TIP546	2N6228	MOTA										
16	TIP555	2N6307	MOTA										
17	TIP556	2N6545	MOTA										
18	TIP558	2N544	MOTA										
19	TIP559	2N6544	MOTA										
20	TIP560	2N6545	MOTA										
21	TIP561	2N6545	MOTA										
22	TIP564	MJ13014	MOTA										
23	TIP565	MJ13015	MOTA										
24	TIP575	MJ410	MOTA										
25	TIP575A	MJ3029	MOTA										
26	TIP575B	2N6542	MOTA										
27	TIP575C	2N6543	MOTA										
28	TIP600	2N6384	MOTA										
29	TIP601	2N6385	MOTA										
30	TIP602	2N6059	MOTA										
31	TIP605	2N6649	MOTA										
32	TIP606	2N6650	MOTA										
33	TIP607	2N6052	MOTA										
34	TIP620	2N6055	MOTA										
35	TIP621	2N6056	MOTA										
36	TIP622	2N6578	MOTA										
37	TIP625	2N6053	MOTA										
38	TIP626	2N6054	MOTA										
39	TIP627	2N6052	MOTA										
40	TIP640	2N6384	RCA	MJ3000	MOTA								
41	TIP641	2N6385	RCA	MJ3001	MOTA								
42	TIP642	2N6385	RCA	2N6578	MOTA								
43	TIP645	2N6666	RCA	MJ2500	MOTA								
44	TIP646	2N6667	RCA	MJ2501	MOTA								
45	TIP647	2N6668	RCA	2N6052	MOTA								
46	TIP660	MJ10002	MOTA										
47	TIP661	MJ10002	MOTA										
48	TIP662	MJ10012	MOTA										
49	TIP663	MJ10004	MOTA										
50	TIP664	MJ10004	MOTA										
51	TIP665	MJ10005	MOTA										
52	TIP666	MJ10006	MOTA										
53	TIP667	MJ10006	MOTA										
54	TIP668	MJ10007	MOTA										
55	TIP3054	RCA3054	RCA										
56	TIP8350	2N6648	MOTA										
57	TIP8350A	2N6649	MOTA										
58	TIP8350B	2N6650	MOTA										
59	TF312	BFR96	MOTA										
60	TF390	BFV92A	MOTA										
61	TF393	BFR91	MOTA										
62	TF491	BFR91	MOTA										
63	TS2218	2N1613	RCA	PTC144	MAL								
64	TS2219	2N1711	RCA	PTC144	MAL								
65	TS2904	40406	RCA	PTC127	MAL								
66	UMT1008	MJ13014	MOTA										
67	UMT1009	MJ13015	MOTA										
68	UMT1203	MJE13004	MOTA										
69	UMT1204	MJE13005	MOTA										
70	V020	MRF905	MOTA										
71	V912	MRF902	MOTA										



# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N243	BFY55	PHIN	2N2297	PHIN								
2	2N244	BFY50	PHIN										
3	2N268	BDX96	PHIN										
4	2N332	BFY50	PHIN										
5	2N333	BFY50	PHIN										
6	2N334	BFY50	PHIN										
7	2N335	BC107	PHIN	BC547	PHIN								
8	2N336	BC107	PHIN	BC547	PHIN								
9	2N337	BC107	PHIN	BC547	PHIN								
10	2N338	BFY50	PHIN										
11	2N341	BF338	PHIN										
12	2N342	BFY50	PHIN										
13	2N343	BFY50	PHIN										
14	2N418	BD954	PHIN										
15	2N420	BDX96	PHIN										
16	2N456	BDX96	PHIN										
17	2N457	BDX96	PHIN										
18	2N458	BDX96	PHIN										
19	2N470	BC107	PHIN	BC547	PHIN								
20	2N471	BC107	PHIN	BC547	PHIN								
21	2N472	BFY55	PHIN	2N2297	PHIN								
22	2N473	BC109	PHIN	BC549	PHIN								
23	2N474	BFY50	PHIN										
24	2N475	BFY50	PHIN										
25	2N476	BFY50	PHIN										
26	2N477	BFY50	PHIN										
27	2N478	BFY50	PHIN										
28	2N479	BFY50	PHIN										
29	2N480	BFY50	PHIN										
30	2N497	BFY51	PHIN	2N497	TII								
31	2N498	BFY51	PHIN	2N498	TII								
32	2N547	BSW67	PHIN										
33	2N548	BSW67	PHIN										
34	2N549	BSW67	PHIN										
35	2N619	BFY50	PHIN										
36	2N620	BFY50	PHIN										
37	2N621	BFY50	PHIN										
38	2N656	2N2102	RCA	2N4238	GSE	2N656	TII	BFY51	PHIN				
39	2N696	2N1613	PHIN	BFX69	SGAI								
40	2N697	2N1711	PHIN	2N1613	SGAI								
41	2N702	BC107	PHIN	BC547	PHIN								
42	2N703	BC107	PHIN	BC547	PHIN								
43	2N705	BCY72	PHIN										
44	2N706	BSX19	PHIN	BSX26	SGAI	MPS706	SPR						
45	2N707A	BFY50	PHIN										
46	2N709	BSX20	PHIN	2N709	SGAI								
47	2N717	BC107	PHIN	BC547	PHIN	2N2221A	PHIN						
48	2N718	2N2221A	PHIN										
49	2N719	2N1613	PHIN	2N3020	PHIN								
50	2N720	2N2221	PHIN	2N3020	PHIN								
51	2N726	BCY72	PHIN										
52	2N727	BCY72	PHIN										
53	2N728	BSX20	PHIN										
54	2N730	2N2218	PHIN										
55	2N731	2N2221A	PHIN										
56	2N733	2N2221A	PHIN										
57	2N735	2N2221A	PHIN	2N2483SGAI	SGAI								
58	2N736	2N2221A	PHIN	BFR18	SGAI								
59	2N739	2N2221A	PHIN										
60	2N740	2N2221A	PHIN	2N3020	PHIN								
61	2N742	2N2218	PHIN										
62	2N743	BSX19	PHIN	BSX19	SGAI								
63	2N744	BSX20	PHIN	BSX20	SGAI								
64	2N749	BSX50	PHIN										
65	2N752	2N3553	PHIN										
66	2N753	BSX20	PHIN	2N2369A	SGAI								
67	2N754	BFY50	PHIN	2N1893	SGAI								
68	2N755	2N2218	PHIN										
69	2N756	BFY50	PHIN										
70	2N757	BFY50	PHIN										
71	2N758	BFY50	PHIN										
72	2N759	2N2222	PHIN										
73	2N760	BC547B	PHIN	2N2483	PHIN								
74	2N760A	2N2483	PHIN	BFY76	SGAI								
75	2N760B	2N2483	PHIN										
76	2N780	BC107A	PHIN	BC547A	PHIN	2N930	SGAI						
77	2N783	2N2368	PHIN										
78	2N784	2N2368	PHIN	BSX20	SGAI								
79	2N799	2N2368	PHIN										
80	2N834	BCY56	PHIN	BSX20	SGAI								
81	2N839	BFY50	PHIN										
82	2N840	BFY50	PHIN										
83	2N841	BFY50	PHIN										
84	2N844	BSX19	PHIN										
85	2N848	BSX19	PHIN										
86	2N850	BSX20	PHIN										
87	2N851	BSX19	PHIN										
88	2N909	2N2483	PHIN										
89	2N915	2N2221A	PHIN										
90	2N916	BCY56	PHIN										
91	2N919	BSX19	PHIN	BSX20	PHIN								
92	2N920	BSX19	PHIN										
93	2N927	BSX21	PHIN										
94	2N928	BSX21	PHIN										
95	2N943	BFY50	PHIN										
96	2N944	BFY50	PHIN										
97	2N946	BFY50	PHIN										
98	2N946	BFY50	PHIN										
99	2N956	2N1711	PHIN	2N956	SGAI								
100	2N1007	BDX92	PHIN										
101	2N1132	2N4037	RCA	PTC141	MAL	2N2904	SGAI						
102	2N1132A	2N4037	RCA	PTC127	MAL								
103	2N1136	BDX92	PHIN										
104	2N1137	BDX92	PHIN										
105	2N1149	BF185	PHIN	BF495	PHIN								
106	2N1159	BF495	PHIN										
107	2N1160	BF496	PHIN										
108	2N1168	BF492	PHIN										
109	2N1200	BC108	PHIN	BC548	PHIN								
110	2N1208	BDX911	PHIN	2N3715	TII								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N1209	BDX911	PHIN	2N1724	TII								
2	2N1212	BDX911	PHIN	2N1724	TII								
3	2N1241	BSW67	PHIN										
4	2N1252	2N2218	PHIN										
5	2N1253	2N2218	PHIN										
6	2N1261	BDX96	PHIN										
7	2N1262	BDX96	PHIN										
8	2N1263	BDX96	PHIN										
9	2N1276	BF198	PHIN										
10	2N1277	BF198	PHIN										
11	2N1291	BDX92	PHIN										
12	2N1293	BDX92	PHIN										
13	2N1295	BDX96	PHIN										
14	2N1314	BD934	PHIN										
15	2N1315	BDX92	PHIN										
16	2N1340	2N1613	PHIN										
17	2N1359	BD936	PHIN										
18	2N1362	BD938	PHIN										
19	2N1364	BD940	PHIN										
20	2N1386	2N2219	PHIN										
21	2N1387	2N2219	PHIN										
22	2N1388	2N2219	PHIN										
23	2N1418	BC107	PHIN	BC547	PHIN								
24	2N1420	2N1711	RCA	PTC123	MAL	2N2219	SGAI	BFY50	PHIN				
25	2N1479	BFX34	PHIN	BSV64	PHIN	TI486	TII						
26	2N1480	BFX34	PHIN	BSV64	PHIN	TI486	TII						
27	2N1481	BFX34	PHIN	BSV64	PHIN	TI486	TII						
28	2N1482	BFX34	PHIN	BSV64	PHIN	TI486	TII						
29	2N1483	TIP41	MOTA	BD935	PHIN								
30	2N1484	TIP41A	MOTA	BD937	PHIN								
31	2N1485	TIP41	MOTA										
32	2N1486	TIP41A	MOTA										
33	2N1491	MRF531	MOTA	2N2222	PHIN								
34	2N1492	2N2222	PHIN										
35	2N1495	AC128	PHIN	AC188	PHIN								
36	2N1501	BDX96	PHIN										
37	2N1502	BDX92	PHIN										
38	2N1505	2N2218A	PHIN										
39	2N1506	2N2218A	PHIN										
40	2N1507	2N1711	RCA	2N2219	PHIN	2N2219	SGAI						
41	2N1528	2N2218A	PHIN										
42	2N1536	BDX96	PHIN										
43	2N1540	BDX92	PHIN										
44	2N1545	BDX96	PHIN										
45	2N1546	BDX96	PHIN										
46	2N1564	2N1711	PHIN										
47	2N1565	40360	RCA	PTC123	MAL	2N1613	PHIN						
48	2N1565A	40360	RCA										
49	2N1566	2N1711	PHIN										
50	2N1572	2N1613	PHIN										
51	2N1573	40409	RCA	2N1893	SGAI								
52	2N1574	40409	RCA	PTC125	MAL	2N1893	SGAI	2N1613	PHIN				
53	2N1613S	2N1613	RCA	PTC123	MAL	2N3020	SGAI	2N1711	PHIN				
54	2N1615	2N1711	PHIN										
55	2N1616	BD949	PHIN	2N1724	TII								
56	2N1617	BD951	PHIN	BDY91	PHIN	2N1724	TII						
57	2N1618	BD953	PHIN	BDY90	PHIN	2N1724	TII						
58	2N1620	BD953	PHIN	2N1724	PHIN								
59	2N1644	2N2218	PHIN										
60	2N1647	BD937	PHIN	2N2150	TII								
61	2N1648	BD941	PHIN	2N2150	TII								
62	2N1649	BD937	PHIN	2N2150	TII								
63	2N1650	BD941	PHIN	2N2151	TII								
64	2N1666	BDX94	PHIN										
65	2N1667	BDX92	PHIN										
66	2N1668	BDX92	PHIN										
67	2N1669	BDX96	PHIN										
68	2N1700	BFY50	PHIN										
69	2N1704	2N2218	PHIN										
70	2N1711S	2N1711	RCA	PTC144	MAL								
71	2N1714	2N1480	RCA	PTC144	MAL	BSX21	PHIN						
72	2N1718	BFS23A	PHIN	2N1718	TII								
73	2N1719	BFS23A	PHIN	2N1719	TII								
74	2N1720	2N3632	PHIN	2N1720	TII								
75	2N1725	BD955	PHIN	2N1725	TII								
76	2N1760	BDX92	PHIN										
77	2N1761	BDX96	PHIN										
78	2N1837	BF115	PHIN	BF494	PHIN								
79	2N1838	BF115	PHIN	BF494	PHIN								
80	2N1839	BF115	PHIN	BF494	PHIN								
81	2N1840	BF115	PHIN	BF494	PHIN								
82	2N1889	2N699	RCA	PTC125	MAL	BSW66	PHIN						
83	2N1890	BSW66	PHIN	BSY55	SGAI								
84	2N1893S	2N1893	RCA										
85	2N1972	2N2219	PHIN										
86	2N1973	2N3020	PHIN	2N1893	PHIN								
87	2N1974	40360	RCA	PTC125	MAL	2N1893	PHIN	2N3020	PHIN				
88	2N1975	40360	RCA	PTC125	MAL	BSX21	PHIN						
89	2N1984	40360	RCA	PTC144	MAL	2N2218	SGAI	BFY50	PHIN	BFY55	PHIN		
90	2N1985	40360	RCA	PTC144	MAL	2N1613	SGAI	BFY55	PHIN	2N2218	PHIN		
91	2N1986	2N3053	RCA	PTC123	MAL	2N2218	SGAI	BFY50	PHIN	BFY55	PHIN		
92	2N1987	2N697	RCA	PTC123	MAL	BFX69	SGAI	BFY50	PHIN	BFY55	PHIN		
93	2N1988	2N1711	PHIN	2N3020	PHIN								
94	2N1989	BFY50	PHIN	2N3020	PHIN								
95	2N1990	BF257	RCA	PTC144	MAL	2N1893	SGAI	BSX21	PHIN				
96	2N1990S	BF257	RCA	PTC123	MAL								
97	2N1991	2N2904	PHIN	2N2905	PHIN	2N2904	SGAI						
98	2N2034	2N5784	RCA	2N4238	GSE								
99	2N2036	BD937	PHIN										
100	2N2049	2N1711	RCA	PTC125	MAL	BFY52	SGAI	2N1711	PHIN				
101	2N2061	BD934	PHIN										
102	2N2062	BD934	PHIN										
103	2N2063	BD934	PHIN										
104	2N2064	BD934	PHIN										
105	2N2065	BD938	PHIN										
106	2N2066	BD938	PHIN										
107	2N2068	BDY96	PHIN										
108	2N2102	BFY55	PHIN	2N2297	PHIN	2N3020	SGAI	2N4036	MEHK				
109	2N2102S	2N2102	RCA	PTC125	MAL								
110	2N2104	2N2905A	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N2106	2N2218	PHIN	2N497	TII								
2	2N2107	2N2218	PHIN	2N656	TII								
3	2N2108	2N2219	PHIN	2N656	TII								
4	2N2192	2N1711	RCA	2N2219A	PHIN								
5	2N2193	BSX59	PHIN	BSX45	SGAI								
6	2N2194	2N2218A	PHIN										
7	2N2195	2N1711	PHIN	2N2218	SGAI								
8	2N2196	BSW66	PHIN	2N2987	TII								
9	2N2197	BD131	PHIN	2N2987	TIII								
10	2N2205	2N2218	PHIN										
11	2N2217	2N2218	PHIN	2N2218	SGAI								
12	2N2220	2N2221	PHIN										
13	2N2243	BSW67	PHIN										
14	2N2256	BC108	PHIN	BC548	PHIN								
15	2N2257	BC108	PHIN	BC548	PHIN								
16	2N2303	BFS23A	PHIN										
17	2N2315	2N2222	PHIN										
18	2N2369A	BSX20	PHIN	2N2369A	SGAI	MPS2369ASPR	SPR						
19	2N2387	BCY56	PHIN										
20	2N2389	2N1613	PHIN										
21	2N2390	2N1711	PHIN										
22	2N2393	2N2905A	PHIN										
23	2N2394	2N2904	PHIN										
24	2N2395	2N2221A	PHIN										
25	2N2396	2N2221A	PHIN										
26	2N2410	BSX60	PHIN	BSX32	SGAI								
27	2N2411	BC178	PHIN	BC558	PHIN								
28	2N2412	BC558	PHIN	BSX20	SGAI								
29	2N2453	BCY87	PHIN	2N2453	INL								
30	2N2475	2N2369A	PHIN	2N709	SGAI								
31	2N2477	BSX60	PHIN	2N3725	SGAI								
32	2N2501	2N2369	PHIN										
33	2N2537	2N2219	PHIN										
34	2N2538	2N2219	PHIN										
35	2N2539	2N2222	PHIN										
36	2N2540	2N222	PHIN										
37	2N2586	2N2484	PHIN	BFR17	SGAI								
38	2N2604	BCY20	PHIN										
39	2N2605	BCY71	PHIN										
40	2N2631	2N3553	MOTA										
41	2N2693	BCY56	PHIN	BCY59	SGAI								
42	2N2694	BCY56	PHIN	BCY59	SGAI								
43	2N2695	BCY72	PHIN										
44	2N2696	BCY72	PHIN										
45	2N2711	BC548A	PHIN	BCY58	SGAI	MPS2711	SPR						
46	2N2712	BC548A	PHIN	BCY58	SGAI	MPS2712	SPR						
47	2N2713	BC548A	PHIN	MPS2713	SPR								
48	2N2714	BC548A	PHIN	BCY59	SGAI	MPS2714	SPR						
49	2N2715	BC548A	PHIN										
50	2N2716	BC548A	PHIN										
51	2N2717	BC548A	PHIN										
52	2N2726	BC148	PHIN	BC548	PHIN								
53	2N2787	2N2218	PHIN										
54	2N2790	2N2218	PHIN										
55	2N2835	BD436	PHIN	BSS26	SGAI								
56	2N2836	BD936	PHIN										
57	2N2837	2N2904	PHIN										
58	2N2845	2N2222	PHIN										
59	2N2876	2N3375	MOTA										
60	2N2926	BC548B	PHIN	MPS2926	SPR								
61	2N2947	2N5641	MOTA										
62	2N3035	BCY56	PHIN										
63	2N3036	BD139	PHIN	2N1893	SGAI								
64	2N3037	BD139	PHIN										
65	2N3038	BD139	PHIN										
66	2N3054	BD131	PHIN	TIP31A	TII	2N3054SODI	SODI						
67	2N3058	BD179	PHIN	BC559	PHIN	TP3115	SPR						
68	2N3076	2N6249	MOTA	TIP539	TII								
69	2N3079	2N5838	MOTA	TIP535	TII								
70	2N3080	2N6542	MOTA	TIP536	TII								
71	2N3110	BSX20	PHIN	2N3110	SGAI								
72	2N3118	2N3553	MOTA	2N2219	PHIN								
73	2N3119	MRF531	MOTA										
74	2N3122	2N5321	RCA	PTC125	MAL								
75	2N3123	2N2219	PHIN										
76	2N3131	BSX19	PHIN										
77	2N3133	2N2905	PHIN	TP3135	SPR								
78	2N3134	2N2905	PHIN	TP3136	SPR								
79	2N3137	BFW16A	PHIN										
80	2N3202	2N5783	RCA	2N3719	MOTA	2N3719	TII						
81	2N3203	2N5781	RCA	2N3720	MOTA	2N3720	TII						
82	2N3208	2N5783	RCA										
83	2N3210	BSX19	PHIN										
84	2N3224	2N5415	RCA	PTC1411	MAL								
85	2N3225	2N5415	RCA	PTC1411	MAL								
86	2N3241	BFY52	PHIN										
87	2N3248	2N2905	PHIN										
88	2N3250	2N2905	PHIN	2N3250	SGAI								
89	2N3251	2N2905	PHIN	2N3251	SGAI								
90	2N3253	BSX59	PHIN	BSX32	SGAI								
91	2N3261	2N2221A	PHIN	BSX20	SGAI								
92	2N3287	BC547	PHIN										
93	2N3292	2N697	RCA	PTC132	MAL	BC547	PHIN						
94	2N3294	BC547	PHIN										
95	2N3296	2N5641	MOTA										
96	2N3299	2N2218	PHIN	2N2218	SGAI								
97	2N3300	2N1711	RCA	2N2219	SGAI	BSX60	PHIN						
98	2N3301	2N2222	PHIN	2N2221	SGAI								
99	2N3302	2N2222	PHIN	2N2222	SGAI								
100	2N3309	2N3866	PHIN	2N2218	SGAI								
101	2N3309A	2N3553	MOTA										
102	2N3327	2N3375	PHIN										
103	2N3338	BSX19	PHIN										
104	2N3391	BC548B	PHIN	MPS3391	SPR								
105	2N3392	BC548A	PHIN	MPS3392	SPR								
106	2N3393	BC548A	PHIN	MPS3393	SPR								
107	2N3394	BC548A	PHIN	MPS3394	SPR								
108	2N3395	BC548B	PHIN	MPS3395	SPR								
109	2N3396	BC548A	PHIN	MPS3396	SPR								
110	2N3397	BC548A	PHIN	MPS3397	SPR								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N3398	BC548A	PHIN	MPS3398	SPR								
2	2N3402	BC338	PHIN										
3	2N3403	BC338	PHIN										
4	2N3404	BC337	PHIN										
5	2N3405	BC337	PHIN										
6	2N3414	BC338	PHIN	MPS3414	SPR								
7	2N3415	BC338	PHIN	MPS3415	SPR								
8	2N3416	BC337	PHIN	MPS3416	SPR								
9	2N3417	BC337	PHIN	MPS3417	SPR								
10	2N3440	BD115	PHIN	2N3440S	SGAI	TP3440	SPR	2N3440	SODI				
11	2N3444	BSX61	PHIN										
12	2N3450	BFY50	PHIN										
13	2N3467	2N4037PH	PHIN	TP3567	SPR								
14	2N3468	2N4032	PHIN	TP3568	SPR								
15	2N3478	2N5179	MOTA										
16	2N3485	BCY70	PHIN	2N2906	SGAI								
17	2N3486	BCY71	PHIN	2N2907	SGAI								
18	2N3493	BF198	PHIN										
19	2N3499	BFY51	PHIN										
20	2N3502	2N2905	PHIN	2N2905A	SGAI								
21	2N3503	2N2905A	PHIN	2N2905A	SGAI								
22	2N3504	BCY71	PHIN	2N2907A	SGAI								
23	2N3505	BCY71	PHIN	2N2907A	SGAI								
24	2N3554	BSX60	PHIN										
25	2N3563	2N918	PHIN										
26	2N3565	BC107A	PHIN	BC547A	PHIN	BFR16	SGAI						
27	2N3568	BC337	PHIN	BFY56A	SGAI								
28	2N3569	BC637	PHIN	BFY56	SGAI	TP3569	SPR						
29	2N3571	2N5032	MOTA	PTC133	MAL								
30	2N3572	2N5032	MOTA	PTC132	MAL								
31	2N3600	2N5179	MOTA	PTC132	MAL								
32	2N3605	BSX60	PHIN										
33	2N3606	2N2369	PHIN										
34	2N3607	BC548A	PHIN										
35	2N3615	BDX96	PHIN										
36	2N3616	BDX96	PHIN										
37	2N3617	BDX92	PHIN										
38	2N3618	BDX96	PHIN										
39	2N3621	BLX15	PHIN										
40	2N3622	BLX15	PHIN										
41	2N3625	BLX15	PHIN										
42	2N3626	BLX15	PHIN										
43	2N3638	2N2904	PHIN	2N2905	SGAI	TP3638	SPR						
44	2N3640	BCY72	PHIN	MPS3640	SPR								
45	2N3642	BC337	PHIN	2N2218A	SGAI	TP3642	SPR						
46	2N3643	2N2218	PHIN	2N2219	SGAI	TP3643	SPR						
47	2N3644	BC327	PHIN	2N2905	SGAI	TP3644	SPR						
48	2N3645	2N2905A	PHIN	2N2905A	SGAI	TP3645	SPR						
49	2N3646	BSX20	PHIN	BSX26	SGAI								
50	2N3662	2N918	PHIN										
51	2N3663	BFY90	PHIN										
52	2N3672	2N699	RCA	PTC127	MAL								
53	2N3691	BC548A	PHIN										
54	2N3692	BC548A	PHIN										
55	2N3693	BC547A	PHIN	MPS3693	SPR								
56	2N3694	BC547A	PHIN	MPS3694	SPR								
57	2N3702	BC557	PHIN	2N3704	MEHK	MPS3702	SPR						
58	2N3703	BC557	PHIN	2N3706	MEHK	MPS3703	SPR						
59	2N3704	BC557	PHIN	2N3702	MEHK	MPS3704	SPR						
60	2N3705	BC557	PHIN	2N3702	MEHK	MPS3705	SPR						
61	2N3706	BC338	PHIN	2N3703	MEHK	MPS3706	SPR						
62	2N3707	BC547B	PHIN	2N4058	MISI	MPS3707	SPR						
63	2N3708	BC547B	PHIN	2N4059	MISI	MPS3708	SPR						
64	2N3709	BC547B	PHIN	2N4080	MISI	MPS3709	SPR						
65	2N3710	BC547B	PHIN	2N4061	MISI	MPS3710	SPR						
66	2N3711	BC547B	PHIN	2N4062	MISI	MPS3711	SPR						
67	2N3712	BD115	PHIN	BF257	SGAI								
68	2N3713	BDV93	PHIN	2N3713	TII								
69	2N3715	BDV93	PHIN	2N3715	TII								
70	2N3716	BDV95	PHIN	2N3716	TII								
71	2N3724	BSX60	PHIN	TP4013	SPR								
72	2N3725	BSX59	PHIN	2N3725	SGAI	TP414	SPR						
73	2N3733	2N3632	MOTA										
74	2N3734	BSX60	PHIN	2N4307	TRWS								
75	2N3735	BSX59	PHIN	2N4305	TRWS								
76	2N3741	BD140	PHIN	2N3741	TII								
77	2N3766	BD139	PHIN	2N3766	TII								
78	2N3767	BD139	PHIN	2N3767	TII								
79	2N3774	2N5783	RCA			2N3719	TII						
80	2N3775	2N5781	RCA			2N3775	TII						
81	2N3778	2N5783	RCA			2N3778	TII						
82	2N3779	2N5781	RCA			2N3779	TII						
83	2N3782	2N5783	RCA			2N3782	TII						
84	2N3789	BDV92	PHIN	2N3789	TII	2N3789	SODI						
85	2N3790	BDV94	PHIN	2N3790	TII								
86	2N3791	BDV94	PHIN	2N3791	TII								
87	2N3792	BDV94	PHIN	2N3792	TII								
88	2N3793	BC337	PHIN	BC107	SGAI								
89	2N3794	BC337	PHIN	BC108	SGAI								
90	2N3795	2N5415	RCA										
91	2N3798	2N2905A	PHIN										
92	2N3818	2N3632	MOTA										
93	2N3825	BC547	PHIN	BC109	SGAI								
94	2N3829	BCY71	PHIN	BSX36	SGAI								
95	2N3830	BFX34	PHIN	BSV64	PHIN								
96	2N3831	BSX59	PHIN										
97	2N3832	BSX20	PHIN										
98	2N3839	BFY90	PHIN										
99	2N3854	BC547A	PHIN										
100	2N3855	BC107	PHIN	BC547	PHIN								
101	2N3856	BC109	PHIN	BC549	PHIN								
102	2N3860	BC548A	PHIN										
103	2N3877	BF337	PHIN										
104	2N3880	2N5032	MOTA										
105	2N3902	BUX82	PHIN	2N3902	TII								
106	2N3903	BC548A	PHIN	2N2222	SGAI	2N3905	MISI						
107	2N3904	2N2222A	PHIN	2N2221	SGAI	2N3906	MISI						
108	2N3905	2N2907A	PHIN	2N2906	SGAI	2N3903	MISI						
109	2N3906	2N2907A	PHIN	2N2907	SGAI	2N3904	MISI						
110	2N3914	2N2906	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N3925	2N5589	MOTA										
2	2N3945	2N2102	RCA	PTC144	MAL	2N5334	GSE	BD139	PHIN				
3	2N3961	2N5641	MOTA										
4	2N3982	2N2907A	PHIN	2N3962	SGAI								
5	2N3983	2N2906A	PHIN	2N3965	SGAI								
6	2N3984	BCY71	PHIN	2N3964	SGAI								
7	2N3996	2N5347	MOTA										
8	2N3997	2N5347	MOTA										
9	2N4012	2N3632	PHIN										
10	2N4013	2N2222	PHIN	BSS26	SGAI	TP4013	SPR						
11	2N4014	2N2222	PHIN	BSS26	SGAI	TP4014	SPR						
12	2N4026	BD138	PHIN	3N163	INL								
13	2N4037	BD138	PHIN	2N4036	SGAI	2N3053	MEHK						
14	2N4046	2N2219A	PHIN	BSX32	SGAI								
15	2N4047	BSX59	PHIN	2N3725	SGAI								
16	2N4058	BCY72	PHIN	BC177	SGAI	2N3707	MISI						
17	2N4059	BC558B	PHIN	BC178	SGAI	2N3708	MISI						
18	2N4060	BC558B	PHIN	BC177	SGAI	2N3709	MISI						
19	2N4061	BC558A	PHIN	BC177	SGAI	2N3710	MISI						
20	2N4062	BC558B	PHIN	BC178	SGAI	2N3711	MISI						
21	2N4063	MJE3439	MOTA										
22	2N4064	MJE3440	MOTA										
23	2N4072	2N2368	PHIN										
24	2N4077	BD433	PHIN										
25	2N4078	BD434	PHIN										
26	2N4115	MJE5347	MOTA										
27	2N4116	MJE5347	MOTA										
28	2N4122	2N2905	PHIN										
29	2N4123	BC547	PHIN										
30	2N4124	BC548	PHIN										
31	2N4125	BC558	PHIN										
32	2N4126	BCY70	PHIN										
33	2N4130	MRF463	MOTA	BDV93	PHIN								
34	2N4143	2N2905A	PHIN										
35	2N4148	BD557A	PHIN										
36	2N4192	MRF531	MOTA										
37	2N4193	MRF531	MOTA										
38	2N4238	BFY50	PHIN	TIP29A	TII	2N4235	MEHK						
39	2N4241	BDX96	PHIN										
40	2N4249	BC556	PHIN	BC177	SGAI	MPS4249	SPR						
41	2N4250	BC557	PHIN	BC178	SGAI	MPS4250	SPR						
42	2N4254	BF495	PHIN										
43	2N4255	BF495	PHIN										
44	2N4264	BC548A	PHIN	BC108	SGAI								
45	2N4265	BC548A	PHIN	BC107	SGAI								
46	2N4275	BSX20	PHIN	MPS4275	SPR								
47	2N4284	BC557A	PHIN										
48	2N4285	BC557A	PHIN										
49	2N4286	BC557A	PHIN	BC107	SGAI								
50	2N4287	BC557A	PHIN	BC107	SGAI								
51	2N4288	BC557A	PHIN	BC178	SGAI								
52	2N4289	BC327	PHIN	BC177	SGAI								
53	2N4290	BC327-16	PHIN	BC179	SGAI								
54	2N4291	BC327-16	PHIN	BC179	SGAI								
55	2N4292	2N918	PHIN	BC109	SGAI								
56	2N4293	2N918	PHIN	BC109	SGAI								
57	2N4400	BC337	PHIN	2N4402	MEHK								
58	2N4401	BC337	PHIN	2N4403	MEHK								
59	2N4402	BC327	PHIN	2N2906	SGAI	2N4400	MEHK						
60	2N4403	BC327	PHIN	2N2907	SGAI	2N4401	MEHK						
61	2N4412	2N2905A	PHIN	TP4413	SPR								
62	2N4424	BC337	PHIN										
63	2N4425	BC337	PHIN										
64	2N4428	2N3866	PHIN										
65	2N4429	BLX92A	PHIN										
66	2N4430	BLX93A	PHIN										
67	2N4431	BLX93A	PHIN										
68	2N4433	BF115	PHIN	BF494	PHIN								
69	2N4434	BF184	PHIN	BF494	PHIN								
70	2N4435	BF185	PHIN	BF495	PHIN								
71	2N4875	BFW16A	PHIN										
72	2N4876	BFW16A	PHIN										
73	2N4907	BDX92	PHIN	2N3789	TII								
74	2N4908	BDV92	PHIN	2N3789	TII								
75	2N4909	BDV94	PHIN	2N3790	TII								
76	2N4910	BD135	PHIN	2N3632	PHIN	2N4910	TII						
77	2N4911	BD137	PHIN	2N3632	PHIN	2N4911	TII						
78	2N4912	BD139	PHIN	2N4912	TII								
79	2N4916	2N2905	PHIN										
80	2N4918	BD240	RCA	PTC162	MAL	TIP30	TII	2N4918	MOTA	BD132	PHIN		
81	2N4919	BD240A	RCA	PTC162	MAL	TIP30A	TII	2N4919	MOTA	BD138	PHIN		
82	2N4920	BD240B	RCA	PTC164	MAL	TIP30B	TII	2N4920	MOTA	BD140	PHIN		
83	2N4921	BD239	RCA	PTC163	MAL	TIP29	TII	2N4921	MOTA	BD131	PHIN		
84	2N4922	BD239A	RCA	PTC163	MAL	TIP29A	TII	2N4922	MOTA	BD137	PHIN		
85	2N4923	BD239B	RCA	PTC165	MAL	TIP29B	TII	2N4923	MOTA	BD139	PHIN		
86	2N4932	2N3926	MOTA										
87	2N4933	2N3927	MOTA	BLY93A	PHIN								
88	2N4951	BC337	PHIN										
89	2N4952	BC337	PHIN										
90	2N4953	BC337	PHIN										
91	2N4954	BC338	PHIN										
92	2N4967	BDX91	PHIN										
93	2N4968	BDX91	PHIN										
94	2N4969	BDX93	PHIN										
95	2N4970	BLX13	PHIN										
96	2N4971	BLY93A	PHIN										
97	2N4972	BLY90	PHIN										
98	2N5034	MJE3055	MOTA										
99	2N5035	MJE3055	MOTA										
100	2N5036	MJE3055	MOTA										
101	2N5037	2N3055	MOTA	TIP33A	TII								
102	2N5086	BC557	PHIN	BCY79	SGAI								
103	2N5088	BC547A	PHIN	BCY59	SGAI								
104	2N5089	BC549C	PHIN	BCY59	SGAI								
105	2N5090	2N3375	PHIN										
106	2N5091	2N5416	RCA										
107	2N5092	2N3439	RCA										
108	2N5102	2N5071	MOTA										
109	2N5110	2N5783	RCA										
110	2N5139	BC558	PHIN										



# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N5142	2N2905	PHIN	TP5142	SPR								
2	2N5157	2N6545	MOTA	BUX83	PHIN								
3	2N5172	BC548A	PHIN	MPS5172	SPR	SVT7534	TRWS						
4	2N5178	BLX95	PHIN										
5	2N5179	BFX89	PHIN	2N918	PHIN								
6	2N5180	2N5179	MOTA	PTC132	MAL								
7	2N5190	BD241	RCA	PTC163	MAL	TIP31	TII	2N5190	MOTA	BD947	PHIN		
8	2N5191	BD241A	RCA	PTC163	MAL	TIP31A	TII	2N5191	MOTA	BD949	PHIN		
9	2N5192	BD241B	RCA			TIP31B	TII	2N5192	MOTA	BD951	PHIN		
10	2N5193	BD242	RCA	PTC163	MAL	TIP32	TII	2N5193	MOTA	BD948	PHIN		
11	2N5194	BD242A	RCA	PTC162	MAL	TIP32A	TII	2N5194	MOTA	BD950	PHIN		
12	2N5195	BD242B	RCA	2N5195	MOTA	TIP32B	TII	BD952	PHIN				
13	2N5210	BC547B	PHIN	BC107	SGAI								
14	2N5213	BD131	PHIN										
15	2N5219	BC547A	PHIN	BC108	SGAI								
16	2N5223	BC549	PHIN										
17	2N5239	BUX82	PHIN	2N5239	SODI								
18	2N5240	BDY97	PHIN	BUX82	PHIN	2N5240	SODI						
19	2N5241	BUX82	PHIN	2N5241	TII								
20	2N5262	MRF531	MOTA	BFX34	PHIN	BSV64	PHIN						
21	2N5279	2N3439	RCA			TIP48	TII						
22	2N5280	2N4036	RCA										
23	2N5281	2N5415	RCA										
24	2N5282	2N5416	RCA										
25	2N5284	BDY90	PHIN										
26	2N5288	BDY90	PHIN	2N6128	TII								
27	2N5293	BD951	PHIN	TIP31B	TII	2N5293	SODI						
28	2N5294	BD951	PHIN	TIP31B	TII	2N5294	SODI						
29	2N5295	BD949	PHIN	TIP31	TII	2N5295	SODI						
30	2N5296	BD949	PHIN	TIP31	TII	2N5296	SODI						
31	2N5297	BD951	PHIN	TIP31A	TII	2N5297	SODI						
32	2N5298	BD951	PHIN	TIP31A	TII	2N5298	SODI						
33	2N5322	2N4036	PHIN	2N5322	SGAI	2N5322	TII						
34	2N5323	2N4036	PHIN	2N5323	SGAI	2N5323	TII						
35	2N5326	2N5347	MOTA										
36	2N5354	BC328	PHIN										
37	2N5355	BC328	PHIN										
38	2N5356	BC328	PHIN										
39	2N5365	BC327	PHIN										
40	2N5366	BC327	PHIN										
41	2N5367	BC327	PHIN										
42	2N5369	2N2222	PHIN	2N5373	MEHK								
43	2N5384	2N6187	MOTA										
44	2N5408	2N6187	MOTA										
45	2N5409	2N6188	MOTA	2N6189	MOTA								
46	2N5410	2N6187	MOTA										
47	2N5411	2N6189	MOTA										
48	2N5447	BC328	PHIN	2N5449	MEHK								
49	2N5448	2N2907	PHIN	2N5450	MEHK								
50	2N5449	2N2222	PHIN	2N5447	MEHK								
51	2N5451	2N2222	PHIN										
52	2N5477	2N5347	MOTA										
53	2N5478	2N5347	MOTA										
54	2N5479	2N5349	MOTA										
55	2N5480	2N5349	MOTA										
56	2N5490	BD203	PHIN	TIP41	TII	2N5490	SODI						
57	2N5491	BD203	PHIN	TIP41	TII	2N5491	SODI						
58	2N5492	BDX77	PHIN	TIP41A	TII	2N5492	SODI						
59	2N5493	BDX77	PHIN	TIP41A	TII	2N5493	SODI						
60	2N5494	BD203	PHIN	TIP41	TII	2N5494	SODI						
61	2N5495	BD203	PHIN	TIP41	TII	2N5495	SODI						
62	2N5496	BDX77	PHIN	TIP41B	TII	2N5496	SODI						
63	2N5497	BDX77	PHIN	TIP41B	TII	2N5497	SODI						
64	2N5539	2N6379	MOTA	2N4002	TII								
65	2N5550	BF337	PHIN	BC394	SGAI								
66	2N5551	BF337	PHIN	BC394	SGAI								
67	2N5589	BLY87A	PHIN										
68	2N5590	BLY88A	PHIN										
69	2N5591	BLY89A	PHIN										
70	2N5635	2N3632	PHIN										
71	2N5636	BLV21	PHIN										
72	2N5641	BLY91A	PHIN										
73	2N5642	BLY92A	PHIN										
74	2N5643	BLY93A	PHIN										
75	2N5644	BLX67	PHIN										
76	2N5645	BLX68	PHIN										
77	2N5646	BLX94A	PHIN										
78	2N5655	2N6175	RCA	PTC124	MAL	TIP63	TII	2N5655	MOTA	BF338	PHIN		
79	2N5655 # also	BUX86	PHIN										
80	2N5656	2N6176	RCA	PTC124	MAL	TIP63	TII	2N5656	MOTA	BUX86	PHIN		
81	2N5657	2N6177	RCA	PTC124	MAL	TIP64	TII	2N5657	MOTA	BUX86	PHIN		
82	2N5678	2N6381	MOTA										
83	2N5685	2N5578	RCA	2N5685	MOTA								
84	2N5686	2N5578	RCA	2N5686	MOTA								
85	2N5688	MRF475	MOTA	BLY87A	PHIN								
86	2N5691	2N5849	MOTA	BLY89A	PHIN								
87	2N5699	2N5847	MOTA	BLX67	PHIN								
88	2N5700	BLX68	PHIN										
89	2N5701	BLX69A	PHIN										
90	2N5702	BFS22A	PHIN										
91	2N5704	BLY88A	PHIN										
92	2N5705	BLY89A	PHIN										
93	2N5706	BLY89A	PHIN										
94	2N5709	BLX15	PHIN										
95	2N5733	2N6274	MOTA										
96	2N5776	BLX95	PHIN										
97	2N5804	BUX82	PHIN	SVT7533	TRWS	TIP558	TII	SVT7533	TRWS				
98	2N5805	BUX82	PHIN	SVT7533	TRWS	TIP559	TII	SVT7533	TRWS				
99	2N5838	BUX82	PHIN	SVT7523	TRWS	2N5838	TII	SVT7523	TRWS				
100	2N5839	BUX82	PHIN	SVT7523	TRWS	2N5839	TII	SVT7523	TRWS				
101	2N5840	BUX82	PHIN	SVT7523	TRWS	2N5840	TII	SVT7523	TRWS				
102	2N5846	BUX82	PHIN	SVT7523	TRWS	2N5840	TII	SVT7523	TRWS				
103	2N5847	MRF231	MOTA										
104	2N5848	BLY87A	PHIN										
105	2N5849	2N5849	MOTA	BLY88A	PHIN								
106	2N5862	BLY94	PHIN										
107	2N5869	BDX91	PHIN										
108	2N5870	BDX93	PHIN										
109	2N5915	BLX68	PHIN										
110	2N5916	BLX91A	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N5817	MRF5174	MOTA	BLX91A	PHIN								
2	2N5818	MRF321	MOTA	BLX93A	PHIN								
3	2N5819A	MRF323	MOTA										
4	2N5822	BLV20	PHIN										
5	2N5835	2N8032	RCA	2N8341	MOTA								
6	2N5836	2N8033	RCA	2N8338	MOTA								
7	2N5841	BLX14	PHIN										
8	2N5842	BLX15	PHIN										
9	2N5874	2N8489	RCA	PTC164	MAL	TIP42A	TII	2N5974	MOTA				
10	2N5875	2N8490	RCA	PTC164	MAL	TIP42B	TII	2N5975	MOTA				
11	2N5876	2N8491	RCA	PTC164	MAL	TIP42C	TII	2N5976	MOTA				
12	2N5877	2N8486	RCA	PTC165	MAL	TIP41A	TII	2N5977	MOTA				
13	2N5878	2N8487	RCA	PTC185	MAL	TIP41B	TII	2N5978	MOTA				
14	2N5879	2N8488	RCA	PTC185	MAL	TIP41C	TII	2N5979	MOTA				
15	2N5880	2N8489	RCA	PTC164	MAL	TIP74A	TII	2N8489	MOTA	MJE2955	MOTA		
16	2N5881	2N8490	RCA	PTC164	MAL	TIP74B	TII	MJE2955	MOTA				
17	2N5882	2N8491	RCA	PTC164	MAL	TIP74C	TII	2N8491	MOTA	2N5988	MOTA		
18	2N5883	2N8486	RCA	PTC165	MAL	TIP73A	TII	MJE3055	MOTA				
19	2N5884	2N8487	RCA	PTC185	MAL	TIP73B	TII	MJE3055	MOTA				
20	2N5885	2N8488	RCA	PTC165	MAL	TIP73C	TII	2N8488	MOTA	2N5991	MOTA		
21	2N5886	2N8489	RCA	TIP74A	TII								
22	2N5887	2N8490	RCA	TIP74B	TII								
23	2N5888	2N8491	RCA	TIP74C	TII								
24	2N5889	2N8486	RCA	TIP73A	TII								
25	2N5890	2N8487	RCA	TIP73B	TII								
26	2N5891	2N8488	RCA	TIP73C	TII								
27	2N5892	BLY93A	PHIN										
28	2N5893	BLY88A	PHIN										
29	2N5894	BLY94	PHIN										
30	2N5895	BLY87A	PHIN										
31	2N5896	BLY88A	PHIN										
32	2N8034	2N8666	RCA	TIP125	TII	2N8034	MOTA	BD676	PHIN				
33	2N8035	RCA125	RCA	TIP125	TII	2N8035	MOTA	BD678	PHIN				
34	2N8036	RCA126	RCA	TIP126	TII	2N8036	MOTA	BD680	PHIN				
35	2N8037	2N8386	RCA	TIP120	TII	2N8037	MOTA	BD675	PHIN				
36	2N8038	RCA120	RCA	TIP120	TII	2N8038	MOTA	BD677	PHIN				
37	2N8039	RCA121	RCA	TIP121	TII	2N8039	MOTA	BD679	PHIN				
38	2N8040	RCA125	RCA	TIP105	TII	2N8040	MOTA						
39	2N8041	RCA126	RCA	TIP106	TII	2N8041	MOTA						
40	2N8042	RCA126	RCA	TIP107	TII	2N8042	MOTA						
41	2N8043	RCA120	RCA	TIP100	TII	2N8043	MOTA						
42	2N8044	RCA121	RCA	TIP101	TII	2N8044	MOTA						
43	2N8045	2N8531	RCA	TIP102	TII	2N8045	MOTA						
44	2N8050	BDX64	PHIN	2N8050	TII								
45	2N8051	BDX64A	PHIN	2N8051	TII								
46	2N8052	BDX64B	PHIN										
47	2N8053	BDX62	PHIN										
48	2N8054	BDX62A	PHIN										
49	2N8055	BDX63	PHIN										
50	2N8056	BDX63A	PHIN										
51	2N8057	BDX65	PHIN										
52	2N8058	BDX65A	PHIN										
53	2N8059	BDX65B	PHIN										
54	2N8080	BLX67	PHIN										
55	2N8081	BLX88A	PHIN										
56	2N8082	BLX89A	PHIN										
57	2N8083	BLX89A	PHIN										
58	2N8084	BLW80	PHIN										
59	2N8098	BDT93	PHIN	2N8098	SODI								
60	2N8099	BDT93	PHIN	2N8099	SODI								
61	2N8100	BDT93	PHIN	TIP73B	TII	2N8100	SODI						
62	2N8101	BDT93	PHIN	TIP73B	TII	2N8101	SODI						
63	2N8104	MRF5177	MOTA										
64	2N8105	MRF5177A	MOTA										
65	2N8106	BDX78	PHIN	TIP42B	TII								
66	2N8107	BDX78	PHIN	TIP42B	TII								
67	2N8108	BD204	PHIN	TIP42B	TII								
68	2N8109	BD204	PHIN	TIP42B	TII								
69	2N8110	BD202	PHIN	TIP42B	TII								
70	2N8111	BD202	PHIN	TIP42B	TII								
71	2N8136	BLW31	PHIN										
72	2N8175	2N5856	MOTA	MPSU10	MOTA	TIP47	TII						
73	2N8176	2N5856	MOTA	MPSU10	MOTA	TIP48	TII						
74	2N8177	2N5857	MOTA	2N6559	MOTA	TIP49	TII						
75	2N8178	MJE182	MOTA	MPSU06	MOTA	TIP31C	TII						
76	2N8179	MJE181	MOTA	MPSU05	MOTA	TIP31B	TII	PTC110	MAL				
77	2N8180	MJE172	MOTA	MPSU56	MOTA	TIP32C	TII						
78	2N8181	MJE171	MOTA	MPSU55	MOTA	TIP32B	TII	PTC111	MAL				
79	2N8197	BLY91A	PHIN										
80	2N8198	BLY92A	PHIN										
81	2N8199	BLY93A	PHIN										
82	2N8200	BLY94	PHIN										
83	2N8201	BLY94	PHIN										
84	2N8202	BLX92A	PHIN										
85	2N8203	BLX93A	PHIN										
86	2N8205	BLX95	PHIN										
87	2N8206	BLX92A	PHIN										
88	2N8207	BLX93A	PHIN										
89	2N8226	BLX96	PHIN	TIP544	TII								
90	2N8242	MJ13015	MOTA										
91	2N8243	MJ13334	MOTA										
92	2N8244	MJ13333	MOTA										
93	2N8245	MJ13334	MOTA										
94	2N8253	2N3055H	MOTA	2N5877	MOTA	PTC140	MAL	2N8253	SODI	2N3055	WESY		
95	2N8278	2N8274	MOTA										
96	2N8279	2N8275	MOTA										
97	2N8280	2N8276	MOTA										
98	2N8281	2N8277	MOTA										
99	2N8282	2N8277	MOTA										
100	2N8283	BLX67	PHIN										
101	2N8284	BLX67A	PHIN										
102	2N8285	BLX67B	PHIN										
103	2N8286	BLX68	PHIN										
104	2N8287	BLX88A	PHIN										
105	2N8288	BLX68B	PHIN										
106	2N8289	BD201	PHIN	TIP41	TII	2N8111	MEHK						
107	2N8290	BD203	PHIN	TIP41	TII	2N8106	MEHK						
108	2N8293	BDX77	PHIN	TIP41A	TII	2N8109	MEHK						
109	2N8296	RCA8350A	RCA	2N8288	MOTA	2N8110	MEHK						
110	2N8297	RCA8350B	RCA	TIP126	TII								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	1   TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2N6298	RCAR350A	RCA	TIP105	TII								
2	2N6299	RCAR350B	RCA	TIP106	TII								
3	2N6306	BUX80	PHIN	SVT7534	TRWS	2N6306	TII	2N6306	SODI	2N6306	SODI		
4	2N6307	BUX80	PHIN	SVT7530	TRWS	2N6307	TII	2N6307	SODI	2N6307	SODI		
5	2N6308	BUX80	PHIN	SVT7531	TRWS	TIP563	TII	2N6308	SODI	2N63085	SODI		
6	2N6328	2N6338	MOTA	2N6328	MOTA	PTC175	MAL						
7	2N6331	2N6436	MOTA	2N6331	MOTA	PTC174	MAL						
8	2N6366	MRF475	MOTA	MR231	MOTA								
9	2N6383	BDX65	PHIN	TIP640	TII								
10	2N6384	BDX65	PHIN	TIP640	TII								
11	2N6385	BDX65A	PHIN	TIP641	TII								
12	2N6406	RCP700B	RCA	TIP32B	TII	MJE171	MOTA						
13	2N6407	RCP700C	RCA	TIP32C	TII	MJE172	MOTA						
14	2N6408	RCP701B	RCA	TIP31B	TII	MJE181	MOTA	2N6408	MOTA				
15	2N6409	RCP701C	RCA	TIP31C	TII	MJE182	MOTA	2N6409	MOTA				
16	2N6412	RCP701A	RCA	TIP41A	TII	MJE180	MOTA						
17	2N6413	RCP701B	RCA	TIP41B	TII	MJE181	MOTA						
18	2N6414	RCP700A	RCA	TIP42A	TII	MJE170	MOTA						
19	2N6415	RCP700B	RCA	TIP42B	TII	MJE171	MOTA	RCP701C	RCA				
20	2N6417	RCP701D	RCA	TIP31C	TII	MJE243	MOTA						
21	2N6418	RCP700C	RCA	TIP32B	TII	MJE251	MOTA						
22	2N6419	RCP700D	RCA	TIP32C	TII	MJE253	MOTA						
23	2N6465	TIP41C	MOTA	MJ3247	MOTA	PTC148	MAL						
24	2N6469	BDX92	PHIN	2N6469	TII								
25	2N6470	BDX91	PHIN	2N6470	TII								
26	2N6471	BDX93	PHIN	2N6471	TII								
27	2N6472	BDX95	PHIN	2N6472	TII								
28	2N6510	BUX80	PHIN	SVT7523	TRWS	TIP558	TII	SVT7523	TRWS				
29	2N6511	BUX80	PHIN	SVT7573	TRWS	TIP558	TII						
30	2N6512	BUX80	PHIN	SVT7573	TRWS	TIP559	TII	SVT7573	TRWS				
31	2N6513	BUX80	PHIN	SVT7573	TRWS	TIP560	TII	SVT7573	TRWS				
32	2N6514	BUX80	PHIN	SVT7533	TRWS	TIP559	TII	SVT7533	TRWS				
33	2N6576	BDX65	PHIN	TIP40	TII								
34	2N6577	BDX65B	PHIN	TIP42	TII								
35	2N6578	BDX65C	PHIN	TIP42	TII								
36	2N6579	MJ13014	MOTA	BUX80	PHIN	TIP564	TII	IR6544	INR				
37	2N6580	MJ13015	MOTA	BUX80	PHIN	TIP565	TII	IR6545	INR				
38	2N6581	MJ13334	MOTA	BUX81	PHIN	2N6581	TRWS						
39	2N6582	BUX80	PHIN	2N6582	TRWS	TIP564	TII	2N6582	TRWS				
40	2N6583	BUX80	PHIN	2N6583	TRWS	TIP565	TII	2N6583	TRWS				
41	2N6584	MJ13334	MOTA	BUX81	PHIN	2N6584	TRWS						
42	2N6585	BUX80	PHIN	2N6585	TRWS	2N6585	TRWS						
43	2N6586	BUX80	PHIN	2N6586	TRWS	2N6586	TRWS						
44	2N6587	BUX81	PHIN	2N6587	TRWS	2N6587	TRWS						
45	2N6588	BUX80	PHIN	2N6588	TRWS	2N6588	TRWS						
46	2N6589	BUX80	PHIN	2N6589	TRWS	2N6589	TRWS						
47	2N6590	BUX81	PHIN	2N6590	TRWS	2N6590	TRWS						
48	2N6653	MJ13332	MOTA	SVT7573	TRWS								
49	2N6654	MJ13332	MOTA	SVT7574	TRWS								
50	2N6655	MJ13333	MOTA	SVT7575	TRWS								
51	2N6671	2N6544	MOTA	2N6671	TRWS	IR6542	INR	2N6671	SODI				
52	2N6672	2N6545	MOTA	2N6672	TRWS	IR6542	INR	2N6672	SODI				
53	2N6673	2N6545	MOTA	2N6673	TRWS	TR6543	INR	2N6673	SODI				
54	2N6674	MJ13014	MOTA	IR6544	INR	2N6674	SODI						
55	2N6675	MJ13015	MOTA	IR6545	INR	2N6675	SODI						
56	2N6676	MJ13332	MOTA	IR6546	INR	2N6676	SODI						
57	2N6677	MJ13332	MOTA	IR6546	INR	2N6677	SODI						
58	2N6678	MJ13333	MOTA	IR6547	INR	2N6678	SODI						
59	2SA480	BC558	PHIN										
60	2SA493	BC560	PHIN										
61	2SA495	BC557	PHIN										
62	2SA509	BC557	PHIN										
63	2SA527	BC234	PHIN										
64	2SA530H	BC557	PHIN										
65	2SA539	BC327	PHIN	2SC815	MEHK								
66	2SA547	BC236	PHIN										
67	2SA550	BC159	PHIN	BC559	PHIN								
68	2SA561	BC327	PHIN										
69	2SA564	BC558B	PHIN										
70	2SA565	BC327	PHIN										
71	2SA566	BC238	PHIN										
72	2SA578	BC177	PHIN	BC557	PHIN								
73	2SA666	BC549	PHIN										
74	2SA671	BC438	PHIN	2SC1061	MEHK								
75	2SA672	BC557	PHIN										
76	2SA673	BC327	PHIN										
77	2SA677	BC328	PHIN										
78	2SA678	BC327	PHIN										
79	2SA683	BC327	PHIN										
80	2SA704	BC328	PHIN										
81	2SA705	BC327	PHIN										
82	2SA711	2N5583	MOTA										
83	2SA715	BC234	PHIN										
84	2SA719	BC328	PHIN	2SC1317	MEHK								
85	2SA730	BC328	PHIN	2SC1346	MEHK								
86	2SA749	BSS68	PHIN										
87	2SA814	BD942	PHIN										
88	2SA815	BD940	PHIN										
89	2SA816	BD140	PHIN	2SC1626	MEHK								
90	2SA817	BC640	PHIN	2SC1627	MEHK								
91	2SA837	BD952	PHIN										
92	2SA838	BF936	PHIN										
93	2SA841	BC556A	PHIN										
94	2SA842	BC557A	PHIN										
95	2SA844	BC556A	PHIN										
96	2SA845AH	BF423	PHIN										
97	2SA845H	BF423	PHIN										
98	2SA851	BC557B	PHIN										
99	2SA852	BC557B	PHIN										
100	2SA853	BC557B	PHIN										
101	2SA857	BF423	PHIN										
102	2SA861	BD234	PHIN										
103	2SA876HA	2N2906A	PHIN										
104	2SA876HB	2N2907A	PHIN										
105	2SA876HP	2N2907A	PHIN										
106	2SA879	BF870	PHIN										
107	2SA883	2N2907	PHIN										
108	2SA885	BD135	PHIN										
109	2SA886	BD229	PHIN										
110	2SA887	BD238	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SA888	BC558B	PHIN										
2	2SA889	BC557B	PHIN										
3	2SA890	2N2905	PHIN	2SC1851	MEHK								
4	2SA891	2N2905A	PHIN	2SC1852	MEHK								
5	2SA896	BF423	PHIN										
6	2SA897	BD236	PHIN										
7	2SA898	BF870	PHIN										
8	2SA899	BC557B	PHIN										
9	2SA906	BC557B	PHIN										
10	2SA912	BFT45	PHIN										
11	2SA917	BF423	PHIN										
12	2SA924	BC558	PHIN										
13	2SA927	BC327-16	PHIN										
14	2SA931	BF423	PHIN										
15	2SA932	BF423	PHIN										
16	2SA950	2N2905	PHIN	2SC2120	MEHK								
17	2SB19	BD434	PHIN										
18	2SB20	BD434	PHIN										
19	2SB122	BDX96	PHIN										
20	2SB123	BDX92	PHIN										
21	2SB124	BDX96	PHIN										
22	2SB125	BDX92	PHIN										
23	2SB126	BD434	PHIN										
24	2SB128	BDX96	PHIN										
25	2SB129	BDX96	PHIN										
26	2SB140	BDX92	PHIN										
27	2SB141	BDX96	PHIN										
28	2SB147	BDX96	PHIN										
29	2SB148	BDX96	PHIN										
30	2SB149	BDX92	PHIN										
31	2SB228	BDX96	PHIN										
32	2SB229	BDX96	PHIN										
33	2SB232	BDX96	PHIN										
34	2SB242	BD434	PHIN										
35	2SB246	BD434	PHIN										
36	2SB247	BD434	PHIN										
37	2SB248	AC128	PHIN	AC188	PHIN								
38	2SB249	BDX96	PHIN										
39	2SB252A	BDX96	PHIN										
40	2SB253	BDX96	PHIN										
41	2SB282	BDX96	PHIN										
42	2SB283	BDX92	PHIN										
43	2SB284	BDX92	PHIN										
44	2SB285	BDX96	PHIN										
45	2SB303	BC179	PHIN	BC559	PHIN								
46	2SB337	BDX92	PHIN										
47	2SB339	BDX96	PHIN										
48	2SB340	BDX96	PHIN										
49	2SB341	BDX96	PHIN										
50	2SB367	BD434	PHIN										
51	2SB368	BD434	PHIN										
52	2SB382	BC179	PHIN	BC559	PHIN								
53	2SB383	BC179	PHIN	BC559	PHIN								
54	2SB424	BDX96	PHIN										
55	2SB425	BDX96	PHIN										
56	2SB426	BDX92	PHIN										
57	2SB462	BDX96	PHIN										
58	2SB465	BDX96	PHIN										
59	2SB471	BDX92	PHIN										
60	2SB472	BDX96	PHIN										
61	2SB473	BD434	PHIN										
62	2SB474	BD132	PHIN										
63	2SB481	BD434	PHIN										
64	2SB492	BD434	PHIN										
65	2SB493	BDX92	PHIN										
66	2SB512A	BD238	PHIN	2SD365A	MEHK								
67	2SB513A	BD238	PHIN	2SD366A	MEHK								
68	2SC16	BC108	PHIN	BC548	PHIN								
69	2SC17	BC108	PHIN	BC548	PHIN								
70	2SC23C	BD137	PHIN										
71	2SC27	2N2218	PHIN										
72	2SC29	2N1613	PHIN										
73	2SC33	2N1613	PHIN										
74	2SC39A	BC108	PHIN	BC548	PHIN								
75	2SC40	BF115	PHIN	BF494	PHIN								
76	2SC53	BF115	PHIN	BF494	PHIN								
77	2SC55	BSX20	PHIN										
78	2SC56	BSX19	PHIN										
79	2SC70	BF338	PHIN										
80	2SC80	BC108	PHIN	BC548	PHIN								
81	2SC99	BC108	PHIN	BC548	PHIN								
82	2SC100	2N1613	PHIN										
83	2SC108	2N1711	PHIN										
84	2SC120	2N1711	PHIN										
85	2SC121	2N1711	PHIN										
86	2SC122	2N2389	PHIN										
87	2SC835	2N3632	MOTA										
88	2SC836	2N3632	MOTA										
89	2SC851	2N4428	MOTA										
90	2SC852	MRF515	MOTA										
91	2SC823	2N5943	MOTA										
92	2SC824	2N5943	MOTA										
93	2SC831	2N3927	MOTA										
94	2SC852	2N5943	MOTA										
95	2SC890	MRF515	MOTA										
96	2SC888A	MRF904	MOTA										
97	2SC990	2N5546	MOTA										
98	2SC1090	BFR90	MOTA										
99	2SC1119	MRF902	MOTA										
100	2SC1251	MRF511	MOTA										
101	2SC1259	2N6083	MOTA										
102	2SC1297	2N6082	MOTA										
103	2SC1298	2N6084	MOTA										
104	2SC1308	MJE1909	MOTA	PTC186	MAL								
105	2SC1329	MRF234	MOTA										
106	2SC1338	MRF902	MOTA										
107	2SC1342	BF494	PHIN										
108	2SC1346	BC338	PHIN	2SA730	MEHK								
109	2SC1347	BC337	PHIN	2SA731									
110	2SC1359	BF494	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SC1380	BF199	PHIN										
2	2SC1365	MRF517	MOTA										
3	2SC1366	MRF517	MOTA										
4	2SC1398	BD235	PHIN										
5	2SC1606	MRF327	MOTA	PTC143									
6	2SC1678	MJE1909	MOTA	PTC186	MAL								
7	2SC1804	MRF321	MOTA										
8	2SC1805	MRF323	MOTA										
9	2SC1806	MRF5177A	MOTA										
10	2SC1807	BFY90	MOTA										
11	2SC1808	2N5944	MOTA										
12	2SC1816	MJE1909	MOTA										
13	2SC1946	MRF222	MOTA										
14	2SC1947	2N3924	MOTA										
15	2SC1949	MRF962	MOTA										
16	2SC1966	2N5944	MOTA										
17	2SC1967	2N5945	MOTA										
18	2SC1968	MRF641	MOTA										
19	2SC2078	MJE1909	MOTA										
20	2SC2092	MJE1909	MOTA										
21	2SC2132	MRF646	MOTA										
22	2SC2166	MJE1909	MOTA										
23	2SC2358	MJ12010	MOTA										
24	2SC2359	MJ4381	MOTA										
25	2SC2366	MJ10016	MOTA										
26	2SC2371	MJE3439	MOTA										
27	2SC2373	MJE13006	MOTA										
28	2SC2388	2N6543	MOTA										
29	2SC2397	MJE3055T	MOTA										
30	2SC2402	2N6546	MOTA										
31	2SC2403	MJ10015	MOTA										
32	2SC2428	2N6249	MOTA										
33	2SC2429	2N6547	MOTA										
34	2SC2430	2N5633	MOTA										
35	2SC2431	MJ15015	MOTA										
36	2SC2432	2N5882	MOTA										
37	2SC2433	MJ11016	MOTA										
38	2SC2434	2N6327	MOTA										
39	2SC2435	2N6059	MOTA										
40	2SC2436	2N6059	MOTA										
41	2SD12	2N5758	MOTA										
42	2SD15	2N5758	MOTA										
43	2SD16	2N5758	MOTA										
44	2SD17	2N5760	MOTA										
45	2SD18	MJ15011	MOTA										
46	2SD24	2N3739	MOTA										
47	2SD26	2N5758	MOTA										
48	2SD26A	2N5758	MOTA										
49	2SD26B	2N5758	MOTA										
50	2SD26C	2N5760	MOTA										
51	2SD28	2N3767	MOTA										
52	2SD28	BD237	PHIN										
53	2SD041	2N3716	MOTA										
54	2SD45	2N5760	MOTA	PTC129A	MAL								
55	2SD46	2N5760	MOTA	PTC118	MAL								
56	2SD47	2N5758	MOTA	PTC129A	MAL								
57	2SD49	2N5750	MOTA										
58	2SD50	2N5758	MOTA	PTC173	MAL								
59	2SD51	2N5758	MOTA	PTC140	MAL								
60	2SD52	2N5758	MOTA	PTC173	MAL								
61	2SD53	2N5759	MOTA										
62	2SD55	2N6328	MOTA	PTC173	MAL								
63	2SD56	2N3738	MOTA										
64	2SD57	2N3766	MOTA										
65	2SD58	2N3766	MOTA										
66	2SD60	2N5760	MOTA										
67	2SD67	2N5759	MOTA										
68	2SD68	2N5758	MOTA										
69	2SD69	2N5760	MOTA										
70	2SD70	2N3766	MOTA	PTC906	MAL								
71	2SD71	2N5050	MOTA	PTC906	MAL								
72	2SD73	2N5758	MOTA	PTC140	MAL								
73	2SD74	2N5760	MOTA	PTC118	MAL								
74	2SD80	2N5758	MOTA	PTC173	MAL								
75	2SD81	2N5758	MOTA	PTC173	MAL								
76	2SD82	2N5758	MOTA	PTC173	MAL								
77	2SD83	BDY90	PHIN										
78	2SD84	MJ15011	MOTA										
79	2SD88	2N5758	MOTA										
80	2SD90	2N3766	MOTA	PTC906	MAL								
81	2SD91	2N3766	MOTA	PTC906	MAL								
82	2SD92	2N3583	MOTA	PTC906	MAL								
83	2SD93	2N5051	MOTA										
84	2SD94	2N5052	MOTA										
85	2SD102	2N3583	MOTA										
86	2SD103	2N5050	MOTA										
87	2SD107	2N6056	MOTA										
88	2SD108	2N6056	MOTA										
89	2SD110	2N5634	MOTA	PTC118	MAL								
90	2SD111	2N5632	MOTA	PTC118	MAL								
91	2SD113	MJ802	MOTA										
92	2SD114	2N5686	MOTA										
93	2SD116	2N5758	MOTA										
94	2SD117	2N5760	MOTA										
95	2SD118	2N5760	MOTA										
96	2SD119	2N5758	MOTA										
97	2SD120	BD235	PHIN										
98	2SD124	2N5758	MOTA	PTC173	MAL								
99	2SD124A	2N5758	MOTA	PTC173	MAL								
100	2SD125	2N5758	MOTA	PTC173	MAL								
101	2SD125A	2N5758	MOTA	PTC173	MAL								
102	2SD126	2N5760	MOTA										
103	2SD129	2N3767	MOTA										
104	2SD130	BD235	PHIN										
105	2SD131	2N5758	MOTA										
106	2SD132	2N6338	MOTA										
107	2SD138	2N3738	MOTA										
108	2SD139	2N3739	MOTA										
109	2SD141	2N3766	MOTA	PTC906	MAL								
110	2SD142	2N3766	MOTA	PTC906	MAL								



# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SD143	2N3632	PHIN										
2	2SD144	2N3767	MOTA	PTC906		MAL							
3	2SD146	2N3632	PHIN										
4	2SD147	2N3632	PHIN										
5	2SD148	2N4912	MOTA										
6	2SD150	BD131	PHIN										
7	2SD151	2N5632	MOTA	PTC173		MAL							
8	2SD152	2N3583	MOTA	PTC118		MAL							
9	2SD154	2N3767	MOTA	PTC906		MAL							
10	2SD155	2N3767	MOTA	PTC112		MAL							
11	2SD156	2N3738	MOTA										
12	2SD157	BU126	PHIN										
13	2SD158	2N3738	MOTA										
14	2SD159	2N3739	MOTA										
15	2SD161	2N5633	MOTA										
16	2SD163	2N3715	MOTA	PTC173		MAL							
17	2SD164	2N5632	MOTA	PTC173		MAL							
18	2SD165	2N5634	MOTA										
19	2SD166	MJ15011	MOTA										
20	2SD168	2N6385	MOTA										
21	2SD171	2N6543	MOTA										
22	2SD172	2N5677	MOTA	PTC140		MAL							
23	2SD173	2N5632	MOTA	PTC140		MAL							
24	2SD174	2N5677	MOTA	PTC129A		MAL							
25	2SD175	2N5632	MOTA	PTC129A		MAL							
26	2SD176	2N5632	MOTA										
27	2SD177	2N5634	MOTA										
28	2SD180	2N5758	MOTA	PTC140		MAL							
29	2SD181	MJ15001	MOTA										
30	2SD186	2N5758	MOTA	PTC140		MAL							
31	2SD189	2N5758	MOTA	PTC129A		MAL							
32	2SD189A	2N5758	MOTA	PTC129A		MAL							
33	2SD193	BU115	PHIN										
34	2SD199	BU205	MOTA	PTC146		MAL							
35	2SD200	BU205	PHIN										
36	2SD201	2N5758	MOTA	PTC140		MAL							
37	2SD202	2N5759	MOTA	PTC140		MAL							
38	2SD203	2N5760	MOTA	PTC118		MAL							
39	2SD206	2N5777	MOTA										
40	2SD228A	BD235	PHIN										
41	2SD234	BD437	PHIN	2SB434		MEHK							
42	2SD235	TIP31A	MOTA	PTC110		MAL							
43	2SD256	2N3766	MOTA	PTC112		MAL							
44	2SD257	2N3767	MOTA	PTC112		MAL							
45	2SD258	MJ3247	MOTA	PTC104		MAL							
46	2SD259	MJ3248	MOTA										
47	2SD260	2N5758	MOTA										
48	2SD261	BD337	PHIN	2SA643		MEHK							
49	2SD262	2N6546	MOTA										
50	2SD265	2N6545	MOTA										
51	2SD266	2N6545	MOTA										
52	2SD271	MJ4401	MOTA										
53	2SD272	MJ4401	MOTA										
54	2SD273	2N6545	MOTA										
55	2SD274	2N6545	MOTA										
56	2SD283	MJ3247	MOTA										
57	2SD284	MJ3247	MOTA										
58	2SD285	MJ3247	MOTA										
59	2SD286	MJ15011	MOTA										
60	2SD287	MJ15011	MOTA	PTC118		MAL							
61	2SD288	TIP31B	MOTA	PTC167		MAL							
62	2SD289	TIP31B	MOTA	PTC167		MAL							
63	2SD290	2N5428	MOTA										
64	2SD291	2N3767	MOTA										
65	2SD292	BD235	PHIN										
66	2SD293	2N6547	MOTA										
67	2SD294	2N6547	MOTA										
68	2SD295	MJ13335	MOTA										
69	2SD296	MJ13335	MOTA										
70	2SD297	MJ3248	MOTA										
71	2SD299	MJ12004	MOTA	PTC146		MAL							
72	2SD300	BU208A	PHIN										
73	2SD301	2N6385	MOTA	PTC108		MAL							
74	2SD310	2N6547	MOTA										
75	2SD311	2N6547	MOTA										
76	2SD312	2N6543	MOTA	PTC129A		MAL							
77	2SD313	TIP31A	MOTA	PTC167		MAL							
78	2SD314	TIP31A	MOTA	PTC167		MAL							
79	2SD315	2N3766	MOTA	PTC169		MAL							
80	2SD316	2N3716	MOTA										
81	2SD317	TIP31A	MOTA										
82	2SD317A	BD237	PHIN										
83	2SD318	TIP31A	MOTA										
84	2SD318A	BD237	PHIN										
85	2SD319	2N5633	MOTA	PTC175		MAL							
86	2SD320	2N5840	MOTA	PTC129A		MAL							
87	2SD321	2N6306	MOTA										
88	2SD322	MJ4247	MOTA	PTC118		MAL							
89	2SD323	MJ4248	MOTA	PTC118		MAL							
90	2SD324	MJ3749	MOTA	PTC110		MAL							
91	2SD325	TIP31	MOTA										
92	2SD326	2N3739	MOTA										
93	2SD330	TIP31A	MOTA										
94	2SD331	TIP31A	MOTA	PTC167		MAL							
95	2SD334	2N5759	MOTA	PTC140		MAL							
96	2SD335	2N5758	MOTA										
97	2SD338	2N5758	MOTA	PTC173		MAL							
98	2SD339	2N5758	MOTA	PTC173		MAL							
99	2SD340	MJ15015	MOTA										
100	2SD341	MJ15015	MOTA										
101	2SD342	TIP31B	MOTA										
102	2SD343	TIP31B	MOTA										
103	2SD345	TIP31B	MOTA										
104	2SD346	TIP41A	MOTA										
105	2SD347	TIP41A	MOTA										
106	2SD348	MJ12005	MOTA										
107	2SD350	MJ12004	MOTA										
108	2SD351	2N6545	MOTA	PTC129A		MAL							
109	2SD353	2N5838	MOTA	PTC129A		MAL							
110	2SD356	2N4923	MOTA										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SD357	2N4923	MOTA										
2	2SD358	2N4923	MOTA										
3	2SD359	2N5190	MOTA	PTC110	MAL								
4	2SD360	2N5190	MOTA	PTC110	MAL								
5	2SD361	2N5191	MOTA	PTC110	MAL								
6	2SD363	MJ10015	MOTA										
7	2SD364	MJ10016	MOTA										
8	2SD365	TIP31A	MOTA	PTC167	MAL								
9	2SD366	TIP31A	MOTA	PTC167	MAL								
10	2SD368	MJ12005	MOTA										
11	2SD369	2N3716	MOTA										
12	2SD371	2N5758	MOTA										
13	2SD372	MJ10015	MOTA										
14	2SD373	MJ10015	MOTA										
15	2SD374	MJ10016	MOTA										
16	2SD375	MJ13330	MOTA										
17	2SD376	MJ13331	MOTA										
18	2SD377	MJ13334	MOTA										
19	2SD379	2N5758	MOTA	PTC140	MAL								
20	2SD380	MJ12005	MOTA										
21	2SD381	MJE15030	MOTA										
22	2SD383	MJ411	MOTA										
23	2SD384	2N6301	MOTA										
24	2SD385	2N6301	MOTA										
25	2SD386	MJE13004	MOTA										
26	2SD387	MJE13004	MOTA										
27	2SD388	MJ4247	MOTA	PTC118	MAL								
28	2SD389	TIP31A	MOTA										
29	2SD390	TIP31A	MOTA										
30	2SD393	SDT13305	MOTA										
31	2SD394	SDT13305	MOTA										
32	2SD395	SDT13305	MOTA										
33	2SD396	2N6547	MOTA										
34	2SD401	TIP47	MOTA										
35	2SD402	TIP47	MOTA										
36	2SD404	TIP120	MOTA										
37	2SD414	MJE341	MOTA										
38	2SD415	MJE341	MOTA										
39	2SD416	MJ12005	MOTA										
40	2SD417	2N6306	MOTA	PTC129A	MAL								
41	2SD418	MJ12005	MOTA										
42	2SD422	MJ4380	MOTA										
43	2SD423	MJ4380	MOTA										
44	2SD424	MJ15001	MOTA										
45	2SD425	2N5634	MOTA										
46	2SD426	2N5633	MOTA										
47	2SD427	2N5759	MOTA										
48	2SD428	2N5758	MOTA										
49	2SD429	2N6547	MOTA										
50	2SD430	2N5759	MOTA										
51	2SD431	2N5633	MOTA										
52	2SD432	2N5634	MOTA										
53	2SD433	MJ15011	MOTA										
54	2SD434	MJ13330	MOTA										
55	2SD435	MJ13332	MOTA										
56	2SD436	MJ13333	MOTA										
57	2SD437	SDT13305	MOTA										
58	2SD457	MJ10015	MOTA										
59	2SD458	SDT13305	MOTA										
60	2SD459	TIP121	MOTA										
61	2SD460	TIP122	MOTA										
62	2SD461	MJ411	MOTA										
63	2SD463	2N6056	MOTA										
64	2SD464	2N6056	MOTA										
65	2SD475	2N6122	MOTA	PTC163	MAL								
66	2SD476	2N6123	MOTA	PTC163	MAL								
67	2SD478	TIP47	MOTA										
68	2SD479	2N6037	MOTA										
69	2SD480	2N6038	MOTA										
70	2SD481	2N6039	MOTA										
71	2SD482	2N5655	MOTA										
72	2SD483	2N5656	MOTA										
73	2SD484	2N5657	MOTA										
74	2SD485	2N5190	MOTA										
75	2SD486	2N5191	MOTA										
76	2SD487	2N5192	MOTA										
77	2SD488	2N4921	MOTA										
78	2SD489	2N4922	MOTA										
79	2SD480	2N5923	MOTA										
80	2SD491	MJE30555	MOTA										
81	2SD492	2M3055	MOTA										
82	2SD493	2N5977	MOTA										
83	2SD494	2N5978	MOTA										
84	2SD495	2N5979	MOTA										
85	2SD496	MJE6043	MOTA										
86	2SD497	MJE6044	MOTA										
87	2SD498	MJE6045	MOTA										
88	2SD499	MJE3055	MOTA										
89	2SD500	MJE3055	MOTA										
90	2SD501	MJE5991	MOTA										
91	2SD503	MJE6058	MOTA										
92	2SD504	MJE6057	MOTA										
93	2SD505	MJE6058	MOTA										
94	2SD506	MJE6058	MOTA										
95	2SD507	MJE6058	MOTA										
96	2SD517	MJ12003	MOTA	PTC148	MAL								
97	2SD518	MJ4380	MOTA										
98	2SD519	MJ13015	MOTA										
99	2SD520	MJE6055	MOTA										
100	2SD521	2N5632	MOTA										
101	2SD523	2N6056	MOTA										
102	2SD524	2N6056	MOTA										
103	2SD525	TIP41C	MOTA										
104	2SD526	TIP41B	MOTA										
105	2SD531	TIP41C	MOTA										
106	2SD533	MJ423	MOTA										
107	2SD538	SDT13305	MOTA										
108	2SD539	MJ13015	MOTA										
109	2SD544	TIP41C	MOTA	PTC140	MAL								
110	2SD552	2N6250	MOTA										
110	2SD553	TIP41B	MOTA										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SD554	2N3584	MOTA										
2	2SD555	MJ13015	MOTA										
3	2SD558	MPSU07	MOTA										
4	2SD570	2N6123	MOTA	PTC169	MAL								
5	2SD573	MJ10014	MOTA										
6	2SD574	MJ10016	MOTA										
7	2SD577	MJ12004	MOTA	PTC146	MAL								
8	2SD582	MJ10013	MOTA										
9	2SD589	MJ12005	MOTA										
10	2SD597	2N5758	MOTA	PTC118	MAL								
11	2SD598	2N5759	MOTA	PTC118	MAL								
12	2SD600	2N4923	MOTA										
13	2SD604	MJ3041	MOTA										
14	2SD605	MJ3042	MOTA										
15	2SD606	MJ10014	MOTA										
16	2SD608	TIP47	MOTA										
17	2SD610	TIP47	MOTA										
18	2SD612	MJE520	MOTA										
19	2SD613	TIP41C	MOTA										
20	2SD622	MJ4381	MOTA										
21	2SD626	MJ10012	MOTA										
22	2SD627	MJ12004	MOTA										
23	2SD628	2N6059	MOTA										
24	2SD629	2N6059	MOTA										
25	2SD630	2N5302	MOTA										
26	2SD631	2N5302	MOTA										
27	2SD632	2N5840	MOTA										
28	2SD633	TIP122	MOTA										
29	2SD634	TIP121	MOTA										
30	2SD635	TIP120	MOTA										
31	2SD640	2N6545	MOTA										
32	2SD642	MJ10016	MOTA										
33	2SD643	MJ10015	MOTA										
34	2SD644	MJ10016	MOTA										
35	2SD645	MJ10016	MOTA										
36	2SD646	MJ10016	MOTA										
37	2SD649	MJ12004	MOTA										
38	2SD650	MJ3042	MOTA										
39	2SD663	MJ3042	MOTA										
40	2SD665	2N6249	MOTA										
41	2SD668	MJE344	MOTA										
42	2SD669	MJE344	MOTA										
43	2SD670	2N6578	MOTA										
44	2SD672	2N5840	MOTA										
45	2SD673	2N5759	MOTA										
46	2SD674	2N5759	MOTA										
47	2SD675	2N5760	MOTA										
48	2SD676	2N5760	MOTA										
49	2SD677	2N6543	MOTA										
50	2SD678	TIP110	MOTA										
51	2SD679	TIP111	MOTA										
52	2SD686	TIP122	MOTA										
53	2SD687	MJE800T	MOTA										
54	2SD689	TIP112	MOTA										
55	2SD690	2M5428	MOTA										
56	2SD691	2M6301	MOTA										
57	2SD692	2N6056	MOTA										
58	2SD693	MJ10012	MOTA										
59	2SD694	MJ10015	MOTA										
60	2SD695	MJ10015	MOTA										
61	2SD696	MJ10015	MOTA										
62	2SD702	MJ10015	MOTA										
63	2SD703	MJ10016	MOTA										
64	2SD705	MJ10012	MOTA										
65	2SD706	MJ10013	MOTA										
66	2SD707	MJ10013	MOTA										
67	2SD708	MJ10013	MOTA										
68	2SD709	MJ3041	MOTA										
69	2SD710	MJ10004	MOTA										
70	2SD716	TIP41C	MOTA										
71	2SD717	D44H10	MOTA										
72	2SD718	MJE15028	MOTA										
73	2SD721	2N6045	MOTA										
74	2SD722	2N6045	MOTA										
75	2SD723	TIP31C	MOTA										
76	2SD724	MJE13004	MOTA										
77	2SD725	MJ12005	MOTA										
78	2SD726	TIP31C	MOTA										
79	2SD727	2N4347	MOTA										
80	2SD728	2N5760	MOTA										
81	2SD729	2N6284	MOTA										
82	2SD731	2N6306	MOTA										
83	2SD732	2N6306	MOTA										
84	2SD733	MJ5001	MOTA										
85	2SD748	2N5838	MOTA										
86	2SD749	2N6543	MOTA										
87	2SD751	MJ423	MOTA										
88	2SD752	MJ15001	MOTA										
89	2SD753	2N6249	MOTA										
90	2SD757	MJE3440	MOTA										
91	2SD758	MJE3440	MOTA										
92	2SD759	TIP47	MOTA										
93	2SD760	TIP47	MOTA										
94	2SD761	TIP47	MOTA										
95	2SD762	TIP31A	MOTA										
96	2SD764	MJ12002	MOTA										
97	2SD765	MJ12003	MOTA										
98	2SD766	2N3739	MOTA										
99	2SD768	2N6045	MOTA										
100	2SD793	MJE180	MOTA										
101	2SD794	MJE182	MOTA										
102	2SD797	MJE802	MOTA										
103	2SD800	MJE802	MOTA										
104	2SD801	2N5840	MOTA										
105	2SD802	2N6545	MOTA										
106	2SD803	2N6545	MOTA										
107	2SD805	2N6059	MOTA										
108	2SD811	MJ10016	MOTA										
109	2SD823	MJ12010	MOTA										
110	2SD836	TIP110	MOTA										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	2SD837	TIP120	MOTA										
2	2SD839	MJE800T	MOTA										
3	2SD840	MJE802T	MOTA										
4	2SD843	MJE15028	MOTA										
5	2SD844	2N6293	MOTA										
6	2SD867	2N5633	MOTA										
7	2SD872	2N6499	MOTA										
8	2SD873	2N3773	MOTA										
9	2SD877	2N3441	MOTA										
10	2SD878	2N3055	MOTA										
11	2SD880	TIP31A	MOTA										
12	2SD882	MJE180	MOTA										
13	2SD903	MJE12005	MOTA										
14	2SD950	MJ12004	MOTA										
15	2SD951	MJ12004	MOTA										
16	2SD952	MJ12004											
17	2SD953	MJ12004											
18	3N34	BC109	PHIN	BC549	PHIN								
19	3N35	BC108	PHIN	BC548	PHIN								
20	3N83	BRY39	PHIN										
21	3N84	BRY39	PHIN										
22	3N87	BC107	PHIN	BC547	PHIN								
23	3N88	BC107	PHIN	BC547	PHIN								
24	29A	BDX92	PHIN										
25	35821B	MRF902B	MOTA										
26	35821E	MRF902	MOTA										
27	35822B	MRF902B	MOTA										
28	35822E	MRF902	MOTA										
29	35824A	MRF904	MOTA										
30	35825B	MRF902B	MOTA										
31	35825E	MRF902	MOTA										
32	40080	MRF8003	MOTA	PTC123	MAL								
33	40235	BC108A	PHIN	BC548A	PHIN								
34	40305	2N3553	PHIN										
35	40307	2N3632	PHIN										
36	40312	BD131	PHIN	40312	SODI								
37	40360	BD140	PHIN										
38	40361	BD139	PHIN										
39	40362	BD140	PHIN	40362	SODI								
40	40406	BD138	PHIN										
41	40408	BD139	PHIN										
42	40409	BD139	PHIN										
43	40410	BD140	PHIN										
44	40446	MRF8004	MOTA										
45	40513	2N5984	MOTA										
46	40514	2N5984	MOTA										
47	40542	2N5978	MOTA										
48	40543	2N5978	MOTA										
49	40581	MRF8004	MOTA	PTC158	MAL								
50	40582	MRF8004	MOTA	PTC176	MAL								
51	40637A	2N4072	MOTA	PTC125	MAL								
52	40665	2N3375	MOTA										
53	40666	2N3632	MOTA										
54	40885	2N5655	MOTA										
55	40886	2N5656	MOTA										
56	40887	2N5657	MOTA										
57	40893	2N5946	MOTA										
58	40894	2N5179	MOTA	PTC126	MAL								
59	40895	2N5179	MOTA	PTC126	MAL								
60	40896	2N5179	MOTA	PTC126	MAL								
61	40897	2N5179	MOTA	PTC126	MAL								
62	40941	MRF313	MOTA										
63	41505	2N5655	MOTA										
64	A3-28	2N5641	MOTA										
65	A25-28	MRF314	MOTA										
66	AD50	BDX92	PHIN										
67	AD131	BDX96	PHIN	PTC105A	MAL								
68	AD132	BDX96	PHIN	PTC105A	MAL								
69	AD136	BDX96	PHIN										
70	AD138	BDX92	PHIN	PTC901	MAL								
71	AD138-50	BDX96	PHIN	PTC105A	MAL								
72	AD142	BDX96	PHIN	PTC105A	MAL								
73	AD143	BDX92	PHIN	PTC105A	MAL								
74	AD145	BDX92	PHIN	PTC105A	MAL								
75	AD148	BD434	PHIN	PTC120A	MAL								
76	AD152	BD434	PHIN	PTC120A	MAL								
77	AD155	BD434	PHIN	PTC120A	MAL								
78	AD156	BD433	PHIN										
79	AD157	BD434	PHIN										
80	AD159	BDX92	PHIN										
81	AD160	BDX92	PHIN										
82	AD161	BD433	PHIN	BD435	PHIN	BD329	PHIN						
83	AD162	BD434	PHIN	BD436	PHIN	BD330	PHIN	PTC120A	MAL				
84	AD163	BDX96	PHIN	PTC105A	MAL								
85	AD164	BD434	PHIN										
86	AD165	BD433	PHIN										
87	AD166	BDX96	PHIN	PTC138	MAL								
88	AD167	BDX96	PHIN	PTC138	MAL								
89	AD169	BD434	PHIN	PTC120A	MAL								
90	ADY22	BDX96	PHIN										
91	ADY25	BDX96	PHIN										
92	ADY28	BDX96	PHIN										
93	AL100	BDX96	PHIN										
94	AL102	BDX96	PHIN										
95	AL103	BDX96	PHIN	PTC122	MAL								
96	ASZ1015	BDX96	PHIN										
97	ASZ1016	BDX92	PHIN										
98	ASZ1017	BDX92	PHIN										
99	ASZ1018	BDX96	PHIN										
100	AT004	MRF904	MOTA										
101	AT25	MRF901	MOTA										
102	AT25A	MRF901	MOTA										
103	AT25B	MRF901	MOTA										
104	AT1425	BFR90	MOTA										
105	AT2625	MRF902	MOTA										
106	AT2645A	MRF902	MOTA										
107	AUY19	BDX92	PHIN	PTC105A	MAL								
108	AUY20	BDX96	PHIN	PTC105A	MAL								
109	AUY21	BDX96	PHIN	PTC105A	MAL								
110	AUY22	BDX96	PHIN	PTC105A	MAL								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	AUY28	BDX96	PHIN	PTC105A	MAL								
2	AUY29	BDX92	PHIN	PTC901	MAL								
3	AUY30	BDX96	PHIN	PTC105A	MAL								
4	AUY31	BDX92	PHIN	PTC105A	MAL								
5	AUY32	BDX92	PHIN	PTC105A	MAL								
6	AUY33	BDX92	PHIN	PTC105A	MAL								
7	AUY34	BDX96	PHIN	PTC105A	MAL								
8	AUY35	BDX92	PHIN										
9	AUY37	BDX96	PHIN										
10	AUY38	BDX96	PHIN										
11	B1-12	2N4427	MOTA										
12	B2-8Z	2N6080	MOTA										
13	B5-8Z	2N6081	MOTA										
14	B12-28	MRF314	MOTA										
15	B45-12	2N6084	MOTA										
16	BAM80	MAF316	MOTA										
17	BAM120	MRF317	MOTA										
18	BC26	BC179	PHIN	BC559	PHIN								
19	BC100	BD115	PHIN	BF259	SGAI	PTC117	MAL						
20	BC107	BC547	PHIN	BC177	MISI								
21	BC107A	BC547A	PHIN	BC177A	MISI	TP107A	SPR						
22	BC107B	BC547B	PHIN	BC177B	PHIN	BC177B	MISI	TP107B	SPR				
23	BC108	BC548	PHIN	BC178	MISI	PTC136	MAL						
24	BC113	BC548B	PHIN	BFR16	SGAI								
25	BC116	BCY70	PHIN	BC160	SGAI	PTC127	MAL						
26	BC125	BC337	PHIN	BC337	SGAI	PTC123	MAL						
27	BC129	BC547	PHIN	BC107	SGAI	PTC136	MAL						
28	BC130	BC548	PHIN	BC108	SGAI	PTC136	MAL						
29	BC131	BC109	PHIN	BC549	PHIN	BC108	SGAI	PTC136	MAL				
30	BC134	BC547	PHIN	BC107	SGAI								
31	BC135	BC547B	PHIN	BC107	SGAI	PTC132	MAL						
32	BC136	BC547A	PHIN	BC140	SGAI	PTC170	MAL						
33	BC137	BC327	PHIN	BC139	SGAI	PTC123	MAL						
34	BC138	2N2219	PHIN	BC140	SGAI	PTC125	MAL						
35	BC153	BC557A	PHIN	BC177	SGAI	PTC127	MAL						
36	BC155	BC146-01	PHIN	PTC101	MAL								
37	BC156	BC146-01	PHIN										
38	BC167	BC547	PHIN	BC107	SGAI								
39	BC168	BC548	PHIN	BC108	SGAI	PTC139	MAL						
40	BC169	BC549	PHIN	BC109	SGAI	PTC139	MAL						
41	BC170	BC548	PHIN	BC108	SGAI	PTC101	MAL						
42	BC171	BC547	PHIN	BC107	SGAI	PTC121	MAL						
43	BC172	BC548	PHIN	BC108	SGAI	PTC139	MAL						
44	BC173	BC549	PHIN	BC109	SGAI	PTC139	MAL						
45	BC174A	2N2219A	PHIN										
46	BC174B	2N2219A	PHIN										
47	BC180	BC547	PHIN										
48	BC181	BC557	PHIN	BC177	SGAI	PTC103	MAL						
49	BC182	BC546	PHIN	BC107	SGAI								
50	BC183	BC547	PHIN	BC107	SGAI								
51	BC184	BC549B	PHIN	BC107	SGAI								
52	BC185	2N2219	PHIN	BC301	SGAI								
53	BC186	BC177	PHIN	BC557	PHIN	PTC127	MAL						
54	BC187	BC177	PHIN	BC557	PHIN	PTC127	MAL						
55	BC190A	BC107A	PHIN	BC547A	PHIN								
56	BC190B	BC107B	PHIN	BC547B	PHIN								
57	BC192	BC328	PHIN	BC298	SGAI	PTC127	MAL						
58	BC194	BC337	PHIN										
59	BC196	BC200-01	PHIN										
60	BC197	BC146-01	PHIN										
61	BC198	BC146-01	PHIN										
62	BC201	BC200-01	PHIN	PTC103	MAL								
63	BC202	BC200-01	PHIN	PTC103	MAL								
64	BC203	BC200-01	PHIN	PTC103	MAL								
65	BC204	BC557	PHIN	BC177	SGAI								
66	BC205	BC558	PHIN	BC178	SGAI	PTC103	MAL						
67	BC206	BC559	PHIN	BC179	SGAI	PTC103	MAL						
68	BC207	BC547	PHIN	BC107	SGAI	PTC103	MAL						
69	BC208	BC548	PHIN	BC549	PHIN	BC108	SGAI	PTC139	MAL				
70	BC209	BC549	PHIN	BC109	PHIN								
71	BC210	2N2222	PHIN	BC337	SGAI	PTC136	MAL						
72	BC211	BSX61	PHIN	BC141	SGAI	BC313	MISI	BC313	MEHK	PTC144	MAL		
73	BC212	BC556	PHIN	BC177	SGAI	PTC103	MAL						
74	BC213	BC557	PHIN	BC178	SGAI	PTC103	MAL						
75	BC214	BC559	PHIN	BC179	SGAI	PTC103	MAL						
76	BC215	BC327	PHIN	BC297	SGAI								
77	BC216	BC107A	PHIN	BC547A	PHIN	BC298	SGAI						
78	BC220	BC547A	PHIN	BC107	SGAI	PTC101	MAL						
79	BC221	BC328	PHIN	BC298	SGAI	PTC131	MAL						
80	BC222	BC337	PHIN	BC378	SGAI								
81	BC224	BC558B	PHIN	BC478	SGAI	PTC103	MAL						
82	BC225	BC557	PHIN	BC478	SGAI	PTC103	MAL						
83	BC231	BC327	PHIN	BC297	SGAI	BC232	MEHK						
84	BC232	BC337	PHIN	BC377	SGAI	BC231	MEHK						
85	BC237	BC547	PHIN	BC107	SGAI	BC307	MISI	PTC121	MAL				
86	BC238	BC548	PHIN	BC108	SGAI	BC308	MISI	PTC101	MAL				
87	BC239	BC549	PHIN	BC109	SGAI	BC309	MISI	PTC121	MAL				
88	BC250A	BC559	PHIN	PTC131	MAL								
89	BC250B	BC559A	PHIN	PTC103	MAL								
90	BC250C	BC559B	PHIN										
91	BC251A	BC557	PHIN										
92	BC252A	BC558	PHIN	PTC103	MAL								
93	BC252B	BC558A	PHIN										
94	BC252C	BC558B	PHIN										
95	BC253A	BC559	PHIN	PTC103	MAL								
96	BC253B	BC559A	PHIN										
97	BC253C	BC559B	PHIN										
98	BC254	BC556	PHIN	BC394	SGAI	PTC123	MAL						
99	BC255	BC337	PHIN	BC394	SGAI	PTC170	MAL						
100	BC256	BC556	PHIN	BC477	SGAI	BC174	MISI						
101	BC257	BC557	PHIN	BC177	SGAI								
102	BC260	BC178	PHIN	BC558	PHIN	BC179	SGAI						
103	BC261	BC177	PHIN	BC557	PHIN	BC177	SGAI	PTC127	MAL				
104	BC262A	BC178A	PHIN	BC558A	PHIN	PTC127	MAL						
105	BC262B	BC178B	PHIN	BC558B	PHIN	PTC127	MAL						
106	BC263A	BC179A	PHIN	BC559A	PHIN	PTC127	MAL						
107	BC263B	BC179B	PHIN	BC559B	PHIN	PTC127	MAL						
108	BC266	BC177	PHIN	BC557	PHIN	BC477	SGAI	BC190	MISI				
109	BC267	BC337	PHIN	BC107	SGAI								
110	BC268	BC338	PHIN	BC108	SGAI								



# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BC269	BC338	PHIN	BC109	SGAI								
2	BC270	BC338	PHIN	BC109	SGAI								
3	BC271	BC338	PHIN	BC378	SGAI	PTC126	MAL						
4	BC272	BC337	PHIN	BC377	SGAI								
5	BC280	BC107	PHIN	BC547	PHIN	BFR16	SGAI						
6	BC281A	BC177	PHIN	BC557	PHIN								
7	BC281B	BC177	PHIN	BC557	PHIN								
8	BC281C	BC337	PHIN										
9	BC282	2N2483	PHIN	BC377	SGAI	PTC123	MAL						
10	BC283	2N2906	PHIN	BC297	SGAI	PTC123	MAL						
11	BC284	BC107	PHIN	BC547	PHIN	BC378	SGAI	PTC123	MAL				
12	BC285	BD115	PHIN	BC394	SGAI	PTC117	MAL	PTC117	MAL				
13	BC286	BD139	PHIN	BC301	SGAI	BC287	MEHK	PTC144	MAL				
14	BC287	BD138	PHIN	BC303	SGAI	BC286	MEHK						
15	BC288	BFY55	PHIN	2N2297	PHIN								
16	BC289	BC107	PHIN	BC547	PHIN								
17	BC290A	BC107B	PHIN	BC547B	PHIN								
18	BC291A	BC107A	PHIN	BC547A	PHIN	PTC127	MAL						
19	BC291B	BC107B	PHIN	BC547B	PHIN								
20	BC292A	BC107A	PHIN	BC547A	PHIN	PTC127	MAL						
21	BC292B	BC107B	PHIN										
22	BC293	BFX34	PHIN										
23	BC294	BC638	PHIN	BC160	SGAI								
24	BC295	BC548	PHIN	BC108	SGAI	PTC101	MAL						
25	BC297	BC327	PHIN	BC297	SGAI	BC377	MEHK						
26	BC298	BC328	PHIN	BC378	MEHK								
27	BC307	BC557	PHIN	BC177	SGAI	BC237	MISI	PTC103	MAL				
28	BC308	BC558	PHIN	BC178	SGAI	BC238	MISI	PTC131	MAL				
29	BC309	BC559	PHIN	BC179	SGAI	BC239	MISI	PTC103	MAL				
30	BC312	BC639	PHIN	BF258	SGAI								
31	BC315	BC557	PHIN	BC177	SGAI	PTC103	MAL						
32	BC317	BC547	PHIN	BC107	SGAI	PTC121	MAL						
33	BC318	BC548	PHIN	BC108	SGAI	PTC101	MAL						
34	BC319	BC549	PHIN	BC109	SGAI	PTC101	MAL						
35	BC321	BC558	PHIN	BC178	SGAI	PTC103	MAL						
36	BC322B	BC558B	PHIN										
37	BC322C	BC558B	PHIN										
38	BC325	BC640	PHIN	PTC127	MAL								
39	BC326	BC640	PHIN	PTC127	MAL								
40	BC329	BC637	PHIN	BFY76	SGAI								
41	BC330	BC547	PHIN	BC107	SGAI								
42	BC331	BC637	PHIN	BFY76	SGAI								
43	BC332	BC547	PHIN	BC107	SGAI								
44	BC333	BC548	PHIN	BC108	SGAI								
45	BC334	BC558	PHIN	BC178	SGAI								
46	BC335	BC549	PHIN	BC109	SGAI								
47	BC336	BC559	PHIN	BC179	SGAI								
48	BC340-6	2N2218A	PHIN	PTC123	MAL								
49	BC340-10	2N2218A	PHIN	PTC125	MAL								
50	BC340-16	2N2219A	PHIN										
51	BC342	BC639	PHIN	BC141	SGAI	BC343	MEHK						
52	BC343	BC640	PHIN	BC181	SGAI	BC342	MEHK						
53	BC344	BC639	PHIN	BC300	SGAI	BC345	MEHK						
54	BC345	BC640	PHIN	BC303	SGAI	BC344	MEHK						
55	BC347	BC547	PHIN	BC107	SGAI								
56	BC348	BC548	PHIN	BC108	SGAI								
57	BC349	BC549	PHIN	BC109	SGAI								
58	BC350	BC557	PHIN	BC177	SGAI	PTC103	MAL						
59	BC351	BC558	PHIN	BC178	SGAI	PTC103	MAL						
60	BC352	BC558	PHIN	BC179	SGAI	PTC103	MAL						
61	BC354	BC558	PHIN	BC478	SGAI								
62	BC355	BC558	PHIN	BC478	SGAI								
63	BC357	BC559	PHIN	BC479	SGAI								
64	BC358	BC548	PHIN	BC109	SGAI								
65	BC360-6	2N2904	PHIN	PTC127	MAL								
66	BC360-10	2N2905	PHIN										
67	BC360-18	2N2905	PHIN										
68	BC361-6	2N2904A	PHIN	PTC127	MAL								
69	BC361-10	2N2905A	PHIN										
70	BC381	BC328	PHIN	BC177	SGAI	PTC103	MAL						
71	BC382	BC547	PHIN	BC107	SGAI	PTC123	MAL						
72	BC383	BC548	PHIN	BC108	SGAI	PTC123	MAL						
73	BC384	BC550	PHIN	BC108	SGAI	PTC123	MAL						
74	BC389	BC547	PHIN										
75	BC390	BC549	PHIN										
76	BC391	BC549	PHIN										
77	BC395	BC639	PHIN	BC141	SGAI	PTC170	MAL						
78	BC396	BC640	PHIN	BC181	SGAI	PTC171	MAL						
79	BC397	2N2904A	PHIN										
80	BC398	2N2218A	PHIN										
81	BC400	BC640	PHIN	BC477	SGAI	PTC171	MAL						
82	BC404	BC640	PHIN										
83	BC405	BC638	PHIN	PTC103	MAL								
84	BC407	BC547	PHIN	BC107	SGAI	PTC121	MAL						
85	BC408	BC548	PHIN	BC108	SGAI	PTC132	MAL						
86	BC409	BC549	PHIN	BC109	SGAI	PTC132	MAL						
87	BC413	BC550	PHIN	BC415	MISI	PTC121	MAL						
88	BC414	BC550	PHIN	BC416	MISI	PTC121	MAL						
89	BC415	BC580	PHIN	BC413	MISI	PTC103	MAL						
90	BC416	BC580	PHIN	BC414	MISI	PTC103	MAL						
91	BC417	BC557	PHIN	BC177	SGAI								
92	BC418	BC558	PHIN	BC178	SGAI								
93	BC419	BC559	PHIN	BC179	SGAI	PTC103	MAL						
94	BC425	BC337	PHIN										
95	BC427	BC327	PHIN										
96	BC437	BC547	PHIN	BC107	SGAI								
97	BC438	BC548	PHIN	BC108	SGAI								
98	BC439	BC549	PHIN	BC109	SGAI								
99	BC467	BC547	PHIN	BC107	SGAI								
100	BC468	BC548	PHIN	BC108	SGAI								
101	BC469	BC549	PHIN	BC109	SGAI								
102	BC477	BC640	PHIN	BC477	SGAI	PTC127	MAL						
103	BC478	BC557	PHIN	BC478	SGAI	PTC127	MAL						
104	BC479	BC557	PHIN	BC479	SGAI	PTC127	MAL						
105	BC507	BC639	PHIN										
106	BC508	BC637	PHIN										
107	BC509	BC637	PHIN										
108	BC512	BC327	PHIN	BC177	SGAI	PTC103	MAL						
109	BC513	BC328	PHIN	BC178	SGAI	PTC103	MAL						
110	BC514	BC328	PHIN	BC179	SGAI	PTC103	MAL						

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BC582	BC337	PHIN	BC107	SGAI								
2	BC583A	BC548A	PHIN										
3	BC584	BC549	PHIN	BC109	SGAI								
4	BCW34	2N2222A	PHIN	BCW35	MEHK								
5	BCW35	2N2907A	PHIN	BCW34	MEHK								
6	BCW36	2N2222A	PHIN	BCW37	MEHK								
7	BCW37	2N2907A	PHIN	BCW38	MEHK								
8	BCW46	BC546	PHIN										
9	BCW47	BC547	PHIN										
10	BCW48	BC548	PHIN										
11	BCW49	BC549	PHIN										
12	BCW56	BC556	PHIN										
13	BCW57	BC557	PHIN										
14	BCW58	BC558	PHIN										
15	BCW59	BC559	PHIN										
16	BCW85	2N2907A	PHIN										
17	BCW86	2N2907A	PHIN										
18	BCW90	BC337	PHIN	BCW92	MISI	BCW92	MEHK						
19	BCW94	2N2222A	PHIN	BCW96	MISI	BCW96	MEHK						
20	BCW96	2N2907A	PHIN	BCW94	MISI	BCW94	MEHK						
21	BCY14	BFY51	PHIN										
22	BCY16	BFY51	PHIN										
23	BCY38	BCY33A	PHIN										
24	BCY39	BCY31A	PHIN										
25	BCY40	BCY34A	PHIN										
26	BCY50	BCY57	PHIN										
27	BCY51	BCY56	PHIN										
28	BCY54	BCY32A	PHIN										
29	BCY66	BCY59	PHIN	BCY59	SGAI								
30	BCY67	BCY71	PHIN	BCY79	SGAI								
31	BCY69	BCY57	PHIN	BCY58	SGAI								
32	BCY86A	BC107B	PHIN										
33	BCY86B	BCY59	PHIN										
34	BCY90	BCY34A	PHIN										
35	BCY91	BCY34A	PHIN										
36	BCY92	BCY34A	PHIN										
37	BCY93	BCY30A	PHIN										
38	BCY94	BCY31A	PHIN										
39	BCY95	BCY32A	PHIN										
40	BCZ10	BCY33A	PHIN										
41	BCZ11	BCY34A	PHIN										
42	BCZ12	BCY31A	PHIN										
43	BCZ13	BCY33A	PHIN										
44	BCZ14	BCY34A	PHIN										
45	BD106	BD131	PHIN										
46	BD107	BD131	PHIN										
47	BD109	BD131	PHIN										
48	BD111	BD131	PHIN										
49	BD124	BD131	PHIN	PTC112	MAL								
50	BD127	BD232	PHIN	PTC124	MAL								
51	BD128	BD232	PHIN	PTC124	MAL								
52	BD129	BD232	PHIN	PTC124	MAL								
53	BD150	BD115	PHIN										
54	BD151	BD234	PHIN										
55	BD152	BD234	PHIN										
56	BD153	BD236	PHIN										
57	BD154	BD233	PHIN										
58	BD155	BD233	PHIN										
59	BD156	BD233	PHIN										
60	BD157	BD232	PHIN	PTC124	MAL								
61	BD158	BD232	PHIN	PTC124	MAL								
62	BD159	BUX86	PHIN	PTC124	MAL								
63	BD161	BD235	PHIN										
64	BD162	BD233	PHIN										
65	BD163	BD233	PHIN										
66	BD165	BD233	PHIN										
67	BD166	BD234	PHIN	PTC163	MAL								
68	BD167	BD235	PHIN	PTC162	MAL								
69	BD168	BD236	PHIN	PTC163	MAL								
70	BD169	BD237	PHIN	PTC162	MAL								
71	BD170	BD238	PHIN	PTC165	MAL								
72	BD171	BD238	PHIN	PTC164	MAL								
73	BD172	BD237	PHIN	PTC124	MAL								
74	BD173	BD238	PHIN	PTC124	MAL								
75	BD175	BD235	PHIN	PTC163	MAL								
76	BD176	BD236	PHIN	PTC162	MAL								
77	BD177	BD235	PHIN	PTC162	MAL								
78	BD178	BD236	PHIN	PTC162	MAL								
79	BD179	BD237	PHIN	PTC165	MAL								
80	BD180	BD238	PHIN	PTC164	MAL								
81	BD185	BD239	RCA	PTC163	MAL	BD435	PHIN						
82	BD186	BD240	RCA	PTC162	MAL	BD436	PHIN						
83	BD187	BD239	RCA	PTC163	MAL	BD437	PHIN						
84	BD188	BD240	RCA	PTC163	MAL	BD438	PHIN						
85	BD189	BD238A	RCA	PTC163	MAL								
86	BD190	BD240A	RCA	PTC162	MAL								
87	BD192	2N6260	RCA										
88	BD195	BD243	RCA										
89	BD196	BD244	RCA	BD201	PHIN								
90	BD197	BD243A	RCA	PTC165	MAL	BD202	PHIN						
91	BD198	BD244A	RCA	PTC165	MAL	BD201	PHIN						
92	BD199	BD243B	RCA	BD202	PHIN								
93	BD200	BD244B	RCA	PTC165	MAL	BD203	PHIN						
94	BD201	BD243	RCA	BD204	PHIN								
95	BD202	BD244	RCA	PTC169	MAL								
96	BD203	BD243A	RCA	PTC168	MAL								
97	BD204	BD244A	RCA	PTC169	MAL								
98	BD205	2N6486	RCA	PTC168	MAL								
99	BD206	2N6489	RCA	PTC165	MAL	BD201	PHIN						
100	BD207	2N6487	RCA	PTC164	MAL	BD202	PHIN						
101	BD208	2N6490	RCA	PTC165	MAL	BD203	PHIN						
102	BD213-45	2N6486	RCA	BD204	PHIN								
103	BD213-80	2N6487	RCA	PTC169	MAL								
104	BD213-80	2N6489	RCA	PTC168	MAL								
105	BD214-45	2N6489	RCA	PTC169	MAL								
106	BD214-80	2N6489	RCA	PTC168	MAL								
107	BD214-80	2N6490	RCA	PTC168	MAL								
108	BD215	2N6491	RCA	PTC168	MAL								
109	BD216	BD232	PHIN										
110	BD239	BD933	PHIN	PTC167	MAL								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column													
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BD239A	BD935	PHIN	PTC167	MAL										
2	BD239B	BD937	PHIN	PTC167	MAL										
3	BD239C	BD939	PHIN	PTC169	MAL										
4	BD240	BD934	PHIN	PTC166	MAL										
5	BD240A	BD936	PHIN	PTC166	MAL										
6	BD240B	BD937	PHIN	PTC166	MAL										
7	BD240C	BD940	PHIN	PTC168	MAL										
8	BD241	BD947	PHIN	PTC167	MAL										
9	BD241A	BD949	PHIN	PTC167	MAL										
10	BD241B	BD951	PHIN	PTC167	MAL										
11	BD241C	BD953	PHIN	PTC169	MAL										
12	BD242	BD948	PHIN	PTC166	MAL										
13	BD242A	BD950	PHIN	PTC166	MAL										
14	BD242B	BD952	PHIN	PTC166	MAL										
15	BD243	BD201	PHIN	PTC167	MAL										
16	BD243A	BD203	PHIN	PTC167	MAL										
17	BD243B	BDX77	PHIN	PTC167	MAL										
18	BD244	BD202	PHIN	PTC166	MAL										
19	BD245	2N6486	RCA	PTC165	MAL	BDV91	PHIN								
20	BD245A	2N6487	RCA	PTC165	MAL	BDV91	PHIN								
21	BD245B	2N6488	RCA	PTC165	MAL	BDV93	PHIN								
22	BD246	2N6489	RCA	PTC164	MAL	BDV92	PHIN								
23	BD246A	2N6490	RCA	PTC164	MAL	BDV92	PHIN								
24	BD246B	2N6491	RCA	PTC164	MAL	BDV94	PHIN								
25	BD246C	BDV96	PHIN	PTC164	MAL										
26	BD253	BU326	PHIN	2N6579	TRWS	BD253	TII								
27	BD253A	BU326	PHIN	2N6581	TRWS	BD253A	TII								
28	BD253B	BU326	PHIN	SVT7530	TRWS	BD253B	TII								
29	BD253C	BU326A	PHIN	BD253C	TII										
30	BD291	BD243	RCA	PTC167	MAL										
31	BD292	BD244	RCA	PTC166	MAL										
32	BD293	BD243A	RCA	PTC167	MAL										
33	BD294	BD244A	RCA	PTC166	MAL										
34	BD307A	BD228	PHIN	PTC110	MAL										
35	BD361A	BD223	PHIN												
36	BD362A	BD234	PHIN												
37	BD375	BD239	RCA	BD226	PHIN										
38	BD376	BD240	RCA	BD227	PHIN										
39	BD377	BD239A	RCA	BD228	PHIN										
40	BD378	BD240A	RCA	BD229	PHIN										
41	BD379	BD239B	RCA	BD230	PHIN										
42	BD380	BD240B	RCA	BD231	PHIN										
43	BD401	BD201	PHIN												
44	BD402	BD202	PHIN												
45	BD403	BD203	PHIN												
46	BD404	BD204	PHIN												
47	BD410	RCP111D	RCA												
48	BD533	BD947	PHIN	PTC167	MAL										
49	BD534	BD948	PHIN	PTC166	MAL										
50	BD535	BD949	PHIN	PTC167	MAL										
51	BD536	BD950	PHIN	PTC166	MAL										
52	BD537	BD951	PHIN	PTC167	MAL										
53	BD538	BD952	PHIN	PTC166	MAL										
54	BD545	BDV91	PHIN												
55	BD545A	BDV91	PHIN												
56	BD545B	BDV93	PHIN												
57	BD545C	BDV95	PHIN												
58	BD546	BDV92	PHIN												
59	BD546A	BDV92	PHIN												
60	BD546B	BDV94	PHIN												
61	BD546C	BDV96	PHIN												
62	BD561	BD437	PHIN	PTC163	MAL										
63	BD562	BD438	PHIN	PTC162	MAL										
64	BD566	BD646	PHIN												
65	BD566A	BD648	PHIN												
66	BD567	BD645	PHIN												
67	BD567A	BD647	PHIN												
68	BD575	BD241	RCA	PTC167	MAL										
69	BD576	BD242	RCA	PTC166	MAL										
70	BD577	BD241A	RCA	PTC167	MAL										
71	BD578	BD242A	RCA	PTC166	MAL										
72	BD579	BD241B	RCA	PTC167	MAL										
73	BD580	BD242B	RCA	PTC166	MAL										
74	BD582	BD242C	RCA	PTC168	MAL										
75	BD585	BD241	RCA	PTC167	MAL										
76	BD586	BD242	RCA	PTC166	MAL										
77	BD587	BD241A	RCA	PTC167	MAL										
78	BD588	BD242A	RCA	PTC167	MAL										
79	BD589	BD241B	RCA	PTC167	MAL										
80	BD590	BD242B	RCA	PTC166	MAL										
81	BD591	BD241C	RCA	PTC167	MAL										
82	BD592	BD242C	RCA	PTC168	MAL										
83	BD595	BD243	RCA	PTC169	MAL	BDX77	PHIN								
84	BD596	BD244	RCA	PTC168	MAL	BDX78	PHIN								
85	BD597	BD243A	RCA	PTC169	MAL	BDX77	PHIN								
86	BD598	BD244A	RCA	PTC168	MAL	BDX78	PHIN								
87	BD599	BD243B	RCA	PTC169	MAL	BDX77	PHIN								
88	BD600	BD244B	RCA	PTC168	MAL	BDX78	PHIN								
89	BD601	BD243C	RCA	PTC169	MAL										
90	BD602	BD244C	RCA	PTC169	MAL										
91	BD605	2N6486	RCA	PTC169	MAL										
92	BD606	2N6489	RCA	PTC168	MAL										
93	BD607	2N6487	RCA	PTC169	MAL										
94	BD608	2N6490	RCA	PTC168	MAL										
95	BD609	2N6488	RCA	PTC169	MAL										
96	BD610	2N6491	RCA	PTC168	MAL										
97	BD695	BDX33	RCA												
98	BD695A	BDX33	RCA	BD645	PHIN										
99	BD696	BDX34	RCA												
100	BD696A	BDX34	RCA	BD646	PHIN										
101	BD697	BDX33A	RCA	BD645	PHIN										
102	BD697A	BDX33A	RCA	BD645	PHIN										
103	BD698	BDX34A	RCA	BD646	PHIN										
104	BD698A	BDX34A	RCA	BD646	PHIN										
105	BD699	BDX33B	RCA	BD647	PHIN										
106	BD699A	BDX33B	RCA	BD647	PHIN										
107	BD700	BDX34B	RCA	BD648	PHIN										
108	BD700A	BDX34B	RCA	BD648	PHIN										
109	BD701	BDX33C	RCA	BD649	PHIN										
110	BD702	BDX34C	RCA	BD650	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BD712	BDV98	PHIN										
2	BD775	BD675	PHIN	PTC167	MAL								
3	BD776	BD676	PHIN	PTC166	MAL								
4	BD777	BD677	PHIN	PTC167	MAL								
5	BD778	BD678	PHIN	PTC166	MAL								
6	BD779	BD679	PHIN	PTC167	MAL								
7	BD780	BD680	PHIN	PTC166	MAL								
8	BD785	BD226	PHIN										
9	BD786	BD227	PHIN										
10	BD787	BD228	PHIN										
11	BD788	BD229	PHIN										
12	BD789	BD230	PHIN										
13	BD790	BD231	PHIN										
14	BD805	BDT91	PHIN										
15	BD806	BDT92	PHIN										
16	BD807	BDT93	PHIN										
17	BD808	BDT94	PHIN										
18	BD809	BDT93	PHIN										
19	BD810	BDT94	PHIN										
20	BD905	BDT91	PHIN										
21	BD906	BDT92	PHIN										
22	BD907	BDT91	PHIN										
23	BD908	BDT92	PHIN										
24	BD909	BDT93	PHIN										
25	BD910	BDT94	PHIN										
26	BD911	BDT95	PHIN										
27	BD912	BDT96	PHIN										
28	BDW73	BD645	PHIN										
29	BDW73A	BD645	PHIN										
30	BDW73B	BD647	PHIN										
31	BDW73C	BD649	PHIN										
32	BDW73D	BD651	PHIN										
33	BDW74	BD646	PHIN										
34	BDW74A	BD648	PHIN										
35	BDW74B	BD648	PHIN										
36	BDW74C	BD650	PHIN										
37	BDW74D	BD652	PHIN										
38	BDW83	BDV65	PHIN										
39	BDW83A	BDV65	PHIN										
40	BDW83B	BDV65A	PHIN										
41	BDW83C	BDV65B	PHIN										
42	BDW84	BDV64	PHIN										
43	BDW84A	BDV64	PHIN										
44	BDW84B	BDV64A	PHIN										
45	BDW84C	BDV64B	PHIN										
46	BDX32	BV209A	PHIN										
47	BDX33	BD645	PHIN										
48	BDX33A	BD645	PHIN										
49	BDX33B	BD647	PHIN										
50	BDX33C	BD649	PHIN										
51	BDX33D	BD651	PHIN										
52	BDX34	BD646	PHIN										
53	BDX34A	BD646	PHIN										
54	BDX34B	BD648	PHIN										
55	BDX34C	BD650	PHIN										
56	BDY12	BD131	PHIN										
57	BDY13	BD131	PHIN										
58	BDY15	BD131	PHIN										
59	BDY16	BD131	PHIN										
60	BDY34	BD131	PHIN										
61	BDY42	BU133	PHIN										
62	BDY43	BU126	PHIN										
63	BDY44	BUX82	PHIN										
64	BDY45	BU133	PHIN										
65	BDY46	BU126	PHIN										
66	BDY47	BUX82	PHIN										
67	BDY50	BDY92	PHIN										
68	BDY51	BDY92	PHIN										
69	BDY53	BDY92	PHIN										
70	BF118	BF338	PHIN										
71	BF119	BF337	PHIN										
72	BF121	BF196	PHIN	BF198	PHIN								
73	BF123	BF197	PHIN	BF199	PHIN								
74	BF125	BF197	PHIN	BF199	PHIN								
75	BF127	BF197	PHIN	BF199	PHIN								
76	BF131	BF182	PHIN										
77	BF133	BF183	PHIN										
78	BF134	BF200	PHIN										
79	BF137	BF257	RCA										
80	BF152	BF183	PHIN										
81	BF153	BF495	PHIN	PTC132	MAL								
82	BF154	BF196	PHIN	BF198	PHIN	PTC136	MAL						
83	BF155	BF180	PHIN	PTC132	MAL								
84	BF160	BF495	PHIN	PTC132	MAL								
85	BF181	BF183	PHIN	PTC132	MAL								
86	BF182	BF200	PHIN	BF167	SGAI								
87	BF183	BF196	PHIN	BF198	PHIN	BF167	SGAI						
88	BF184	BF198	PHIN	BF198	PHIN	BF167	SGAI						
89	BF185	BF185	PHIN	BF495	PHIN	PTC121	MAL						
90	BF186	BF200	PHIN	PTC132	MAL								
91	BF189	BF115	PHIN	BF494	PHIN	PTC126	MAL						
92	BF186	BF337	PHIN										
93	BF189	BF115	PHIN	BF494	PHIN	PTC132	MAL						
94	BF191	BF198	PHIN	BF198	PHIN								
95	BF206	2N918	PHIN	PTC132	MAL								
96	BF214	BF115	PHIN	BF494	PHIN	BF288	SGAI	PTC132	MAL				
97	BF215	BF115	PHIN	BF494	PHIN	BF271	SGAI	PTC132	MAL				
98	BF222	BF115	PHIN	BF494	PHIN	PTC132	MAL						
99	BF223	BF197	PHIN	BF199	PHIN	PTC133	MAL						
100	BF230	BF195	PHIN	BF495	PHIN	PTC132	MAL						
101	BF233	BF495	PHIN										
102	BF234	BF494	PHIN	PTC101	MAL								
103	BF235	BF495	PHIN	PTC101	MAL								
104	BF237	BF115	PHIN	BF494	PHIN	PTC123	MAL						
105	BF238	BF115	PHIN	BF494	PHIN	PTC123	MAL						
106	BF248	2N2221	PHIN	2N2222	SGAI	PTC136	MAL						
107	BF249	2N2906A	PHIN	2N2907	SGAI								
108	BF251	BF199	PHIN	PTC132	MAL								
109	BF257	BF336	PHIN	BF257	SGAI								
110	BF258	BF337	PHIN	BF258	SGAI								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column													
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BF259	BF338	PHIN	BF259	SGAI										
2	BF260	BF200	PHIN	BF167	SGAI	PTC132	MAL	PTC132	MAL						
3	BF261	BF196	PHIN	BF198	PHIN										
4	BF268	BFY90	PHIN												
5	BF272	2N2906	PHIN												
6	BF273	BF241	PHIN	PTC132	MAL										
7	BF294	BD115	PHIN	BF257	SGAI										
8	BF297	BF336	PHIN	BF257	SGAI										
9	BF302	BF198	PHIN	BF288	SGAI	PTC132	MAL								
10	BF303	BF199	PHIN	BF287	SGAI										
11	BF304	BF196	PHIN	BF198	PHIN	BF288	SGAI	PTC134	MAL	PTC134	MAL				
12	BF306	BF196	PHIN	BF198	PHIN	BF173	SGAI	PTC121	MAL						
13	BF310	BF181	PHIN	BF173	SGAI	PTC133	MAL								
14	BF311	BF197	PHIN	BF199	PHIN	BF173	SGAI	PTC133	MAL						
15	BF314	BF200	PHIN	PTC133	MAL										
16	BF334	BF240	PHIN	PTC132	MAL										
17	BF335	BF241	PHIN	PTC132	MAL										
18	BF341	2N2904	PHIN	PTC103	MAL										
19	BF342	BF450	PHIN	PTC103	MAL										
20	BF343	BF451	PHIN	PTC103	MAL										
21	BF357	BFY90	PHIN	PTC103	MAL										
22	BF366	BF198	PHIN	PTC101	MAL										
23	BF367	BF198	PHIN	BF167	SGAI	PTC101	MAL								
24	BF384	BF183	PHIN	PTC132	MAL										
25	BF385	BF181	PHIN	PTC132	MAL										
26	BF394	BF240	PHIN	PTC101	MAL										
27	BF395	BF241	PHIN	PTC101	MAL										
28	BF456	BF336	PHIN	BF457	SGAI										
29	BFR18	BFY55	PHIN	2N2297	PHIN	BFR18	SGAI								
30	BFR19	BFY55	PHIN	2N2297	PHIN	BFX69	SGAI								
31	BFR49	MRF902	MOTA												
32	BFR53	MMBR920	MOTA												
33	BFR95	MRF517	MOTA												
34	BFS17	MMBR5179	MOTA												
35	BFS52	2N2904	PHIN												
36	BFS53	2N2905	PHIN												
37	BFS64A	2N2907A	PHIN												
38	BFS64B	2N2906	PHIN												
39	BFS65A	BSX20	PHIN												
40	BFT33	40409	RCA												
41	BFT36	40410	RCA												
42	BFT39	40409	RCA												
43	BFT40	40628	RCA	BSS16	SGAI										
44	BFT41	40628	RCA	2N5321	SGAI										
45	BFV10	2N2221	PHIN												
46	BFV11	2N2222	PHIN												
47	BFV12	2N2222A	PHIN												
48	BFV20	2N2906	PHIN												
49	BFV21	2N2907	PHIN												
50	BFV22	2N2907A	PHIN												
51	BFV23	2N2904	PHIN	2N2905	PHIN	BSX23	SGAI								
52	BFV24	2N2904	PHIN	2N2905	PHIN										
53	BFV63	2N2222A	PHIN												
54	BFV64	2N2907	PHIN	2N2907	SGAI										
55	BFV67	BSX20	PHIN	2N709	SGAI										
56	BFV69	2N918	PHIN												
57	BFV82	BSX19	PHIN												
58	BFV83	BSX19	PHIN												
59	BFV85	2N2222	PHIN												
60	BFV86	2N2907	PHIN												
61	BFV87	2N2368	PHIN												
62	BFV88	BSX60	PHIN												
63	BFW31	2N2905A	PHIN	2N2905	SGAI										
64	BFW32	2N2222	PHIN	2N2219	SGAI										
65	BFW47	2N3553	PHIN												
66	BFW69	2N3553	PHIN												
67	BFW71	BFW16A	PHIN												
68	BFW73	BFW16A	PHIN												
69	BFW74	BFW17A	PHIN												
70	BFW75	BFW17A	PHIN												
71	BFW76	BFW17A	PHIN												
72	BFW77	BFW16A	PHIN												
73	BFW78	BFW17A	PHIN												
74	BFX12	2N2905A	PHIN	BFX48	SGAI										
75	BFX13	2N2905A	PHIN	BFX48	SGAI										
76	BFX18	BSX19	PHIN												
77	BFX19	BSX19	PHIN												
78	BFX20	BF183	PHIN												
79	BFX21	BF180	PHIN												
80	BFX29	2N2905A	PHIN	2N2904A	SGAI										
81	BFX30	2N2905A	PHIN												
82	BFX33	2N2218	PHIN												
83	BFX37	2N2907A	PHIN	BFX37	SGAI										
84	BFX38	2N2905A	PHIN	BFX38	SGAI										
85	BFX39	2N2904	PHIN	BFX39	SGAI										
86	BFX41	2N2904A	PHIN	BFX41	SGAI										
87	BFX43	BFX89	PHIN	2N2369	SGAI										
88	BFX44	BSX20	PHIN	2N2369A	SGAI										
89	BFX48	2N2905	PHIN	BFX48	SGAI										
90	BFX55	BFY55	PHIN	2N2297	PHIN										
91	BFX59	BFX89	PHIN												
92	BFX61	BFY55	PHIN	2N2297	PHIN										
93	BFX62	BFY90	PHIN												
94	BFX87	2N2904A	PHIN	2N2905A	SGAI										
95	BFX88	2N2904	PHIN	2N2905	SGAI										
96	BFX94	2N2221	PHIN	2N2221	SGAI										
97	BFX95	2N2222	PHIN	2N2221A	SGAI										
98	BFX96	2N2218	PHIN	2N2218	SGAI										
99	BFX97	2N2219	PHIN	2N2219	SGAI										
100	BFY12	BFY51	PHIN												
101	BFY13	BFY50	PHIN												
102	BFY15	BFY52	PHIN												
103	BFY18	BSW41A	PHIN												
104	BFY19	BCY56	PHIN												
105	BFY27	2N2222A	PHIN												
106	BFY37	BCY57	PHIN												
107	BFY38	BSX21	PHIN												
108	BFY39	BSW41A	PHIN												
109	BFY41	2N2218A	PHIN	BF257	SGAI										
110	BFY53	BFY55	PHIN	2N2297	PHIN	BFX69	SGAI								



# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BFY56A	BSW66	PHIN	BFY56A	SGAI								
2	BFY63	2N2218	PHIN										
3	BFY64	2N2905	PHIN	2N2905	SGAI								
4	BFY65	2N3020	PHIN	BF257	SGAI								
5	BFY66	2N918	PHIN										
6	BFY72	2N2219	PHIN										
7	BFY74	2N1711	PHIN										
8	BFY75	2N2222A	PHIN										
9	BFY76	2N2484	PHIN										
10	BFY77	2N2484	PHIN										
11	BFY78	BSX19	PHIN										
12	BFY79	2N1613	PHIN										
13	BFY80	BSX21	PHIN										
14	BFY85	BCY87	PHIN										
15	BFY86	BCY87	PHIN										
16	BFY88	BFW17A	PHIN										
17	BFY91	BCY87	PHIN										
18	BFY99	BCY89	PHIN										
19	BGY22	MHW401	MOTA	BFS22A	PHIN								
20	BGY22A	MHW401	MOTA										
21	BGY23	MHW709	MOTA										
22	BGY23A	MHW709	MOTA										
23	BGY450	MHW595	MOTA										
24	BLW60	MRF449A	MOTA										
25	BLX65	MRF629	MOTA										
26	BLX69A	2N6136	MOTA										
27	BLX91	MRF313A	MOTA										
28	BLX95	MRF326	MOTA										
29	BLX96	MRF321	MOTA										
30	BLX97	MRF321	MOTA										
31	BLX98	MRF323	MOTA										
32	BLY15	2N3632	PHIN										
33	BLY20	2N3375	PHIN										
34	BLY22	2N3632	PHIN										
35	BLY53A	2N5946	MOTA										
36	BLY57	2N3926	PHIN										
37	BLY58	2N3927	PHIN										
38	BLY59	2N3375	PHIN										
39	BLY60	2N3632	PHIN										
40	BLY61	2N3866	PHIN										
41	BLY62	2N3927	PHIN										
42	BLY63	BLY88A	PHIN										
43	BLY74	2N3632	PHIN										
44	BLY87	BLY87A	PHIN										
45	BLY88	BLY88A	PHIN										
46	BLY91	BLY91A	PHIN										
47	BLY92	BLY92A	PHIN										
48	BLY93	BLY93A	PHIN										
49	BRY20	BRY39	PHIN										
50	BSS10	BSX20	PHIN										
51	BSS11	2N2369A	PHIN	BSX20	SGAI								
52	BSS12	BSX20	PHIN	BSX28	SGAI								
53	BSS14	BFX34	PHIN	BSV64	PHIN								
54	BSS19	BSS38	PHIN										
55	BSS20	BSS38	PHIN										
56	BSS26	2N2222	PHIN	BSS26	SGAI								
57	BSV95	BSX59	PHIN	2N3725	SGAI								
58	BSW10	2N2218A	PHIN										
59	BSW19	BCY71	PHIN	2N2906	SGAI								
60	BSW21	BCY72	PHIN	BCY78	SGAI	BSX51	MISI						
61	BSW22	BC177	PHIN	BC557	PHIN	BCY78	SGAI	BSX52	MISI				
62	BSW24	2N2906	PHIN	2N2904A	SGAI								
63	BSW26	BSX59	PHIN	BSS26	SGAI								
64	BSW27	BSX59	PHIN	2N3725	SGAI								
65	BSW28	BSX59	PHIN	BSX32	SGAI								
66	BSW29	BSX60	PHIN	BSX32	SGAI								
67	BSW36	2N2907A	PHIN										
68	BSW37	2N2894	PHIN	2N2894	SGAI								
69	BSW50	2N2218	PHIN										
70	BSW51	2N2218	PHIN	2N2218	SGAI								
71	BSW52	2N2219	PHIN	2N2219	SGAI								
72	BSW53	2N2218A	PHIN	2N2218A	SGAI								
73	BSW54	2N2219A	PHIN	2N2219A	SGAI								
74	BSW60	2N2221	PHIN										
75	BSW61	2N2221	PHIN	2N2221	PHIN								
76	BSW62	2N2222	PHIN	2N2222	SGAI								
77	BSW64	2N2222A	PHIN	2N2222A	SGAI								
78	BSW72	2N2908	PHIN	2N2908	SGAI								
79	BSW73	2N2907	PHIN	2N2907	SGAI								
80	BSW74	2N2906	PHIN	2N2906A	SGAI								
81	BSW75	2N2907	PHIN	2N2222	PHIN	2N2907A	SGAI						
82	BSW82	2N2221	PHIN	2N2221	SGAI								
83	BSW83	2N2222	PHIN	2N2222	SGAI								
84	BSW84	2N2221A	PHIN	2N2221	SGAI								
85	BSW85	2N2222A	PHIN	2N2222A	SGAI								
86	BSW88	BC147	PHIN	BC547	PHIN								
87	BSW89	BSX19	PHIN										
88	BSW91	BSX20	PHIN										
89	BSW93	BSX61	PHIN										
90	BSW94	2N2894	PHIN										
91	BSX24	BSW41A	PHIN	2N2221	SGAI								
92	BSX25	BSW41A	PHIN	2N2222	SGAI								
93	BSX28	2N2369	PHIN	BSX26	SGAI								
94	BSX27	BSX20	PHIN	BSX27	SGAI								
95	BSX28	BSX20	PHIN	BSX28	SGAI								
96	BSX30	BSX60	PHIN	BSX32	SGAI								
97	BSX32	2N2218A	PHIN										
98	BSX33	2N2218A	PHIN	BSX33	SGAI								
99	BSX35	BSX20	PHIN										
100	BSX38	2N2907	PHIN	BSX36	SGAI								
101	BSX38	2N2222	PHIN										
102	BSX39	BSX20	PHIN	BSX39	SGAI								
103	BSX41	2N2908	PHIN										
104	BSX44	BSX20	PHIN	2N709	SGAI								
105	BSX48	2N2221	PHIN	BSS26	SGAI								
106	BSX49	2N2222A	PHIN	BSS26	SGAI								
107	BSX51	2N2222	PHIN	BCY58	SGAI	BSW21	MISI						
108	BSX52	2N2222	PHIN	BCY59	SGAI	BSW22	MISI						
109	BSX53	2N2222	PHIN	BCY58	SGAI								
110	BSX54	2N2222	PHIN	BCY59	SGAI								

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	BSX62	BSX59	PHIN										
2	BSX63	BFY50	PHIN										
3	BSX66	2N2368	PHIN										
4	BSX71	BSX21	PHIN										
5	BSX72	2N2219	PHIN										
6	BSX74	2N2219	PHIN										
7	BSX75	BSW41A	PHIN										
8	BSX78	2N2222	PHIN	BSX20		SGAI							
9	BSX79A	BCY59VII	PHIN										
10	BSX79B	BCY59IX	PHIN										
11	BSX87	BSX20	PHIN	BSX22		SGAI							
12	BSX88	BSX19	PHIN	BSX39		SGAI							
13	BSX89	BSX19	PHIN	BSX19		SGAI							
14	BSX90	BSX19	PHIN	BSX20		SGAI							
15	BSX91	BSX20	PHIN	2N2369A		SGAI							
16	BSX92	2N2368	PHIN	2N2369		SGAI							
17	BSX93	2N2369	PHIN	BSX93		SGAI							
18	BSX94	BSX20	PHIN										
19	BSX97	2N2218	PHIN	2N2221		SGAI							
20	BSY10	2N1613	PHIN	2N2218A		SGAI							
21	BSY17	BSX19	PHIN	BSX19		SGAI							
22	BSY18	BSX20	PHIN	BSX20		SGAI							
23	BSY19	BSX20	PHIN	BSX26		SGAI							
24	BSY20	BSX19	PHIN	BSX20		SGAI							
25	BSY21	BSX20	PHIN	BSX26		SGAI							
26	BSY22	BSX20	PHIN	BCY29		SGAI							
27	BSY23	BSX20	PHIN	BSX19		SGAI							
28	BSY25	2N2218	PHIN										
29	BSY26	BSX19	PHIN	BSW67		PHIN							
30	BSY54	2N1711	PHIN	BSY54		SGAI							
31	BSY58	2N2218	PHIN	BSX32		SGAI							
32	BSY62	BSX20	PHIN										
33	BSY63	BSX20	PHIN	BSX93		SGAI							
34	BSY70	BSX19	PHIN	BSX39		SGAI							
35	BSY72	BCY57	PHIN	BCY58		SGAI							
36	BSY73	BCY57	PHIN	BCY58		SGAI							
37	BSY74	BCY57	PHIN	BCY59		SGAI							
38	BSY75	2N2221	PHIN										
39	BSY76	2N2222	PHIN										
40	BSY77	BSY64	PHIN										
41	BSY78	BSX21	PHIN	2N2222		SGAI							
42	BSY79	BF337	PHIN										
43	BSY80	BCY57	PHIN										
44	BSY88	BSV64	PHIN	2N3107		SGAI							
45	BSY90	2N2219	PHIN										
46	BSY93	2N2222	PHIN										
47	BSY95	BSX20	PHIN	BSX19		SGAI							
48	BSY96	2N2369	PHIN										
49	BU100A	BUX80	PHIN										
50	BU104	BUX82	PHIN										
51	BU105	BU206	PHIN										
52	BU109	BU326	PHIN										
53	BU111	BU126	PHIN										
54	BU113	BU126	PHIN										
55	BU120	BU326	PHIN										
56	BU126	MJ3030	MOTA	SVT7530		TRWS							
57	BU141	BUX80	PHIN										
58	BU222	BUX82	PHIN										
59	BU222A	BUX83	PHIN										
60	BU223	BUX80	PHIN										
61	BU223A	BUX81	PHIN										
62	BU526	BU326A	PHIN										
63	BUW24	BUX80	PHIN										
64	BUW25	BUX80	PHIN										
65	BUW26	BUX81	PHIN										
66	BUX14	BUX80	PHIN										
67	BUX16	BUX82	PHIN										
68	BUX18	BUX80	PHIN										
69	BUX18A	BUX80	PHIN										
70	BUX18B	BUX80	PHIN										
71	BUX18C	BUX80	PHIN										
72	BUX46	BUX82	PHIN										
73	BUX47	BUX80	PHIN										
74	BUX80	2N6547	MOTA	SVT7551		TRWS							
75	BUX81	MJ13335	MOTA										
76	BUX82	2N6545	MOTA	SVT7541		TRWS							
77	BUX83	2N6545	MOTA										
78	BUX85	MJE13005	MOTA										
79	BUX87	MJE13003	MOTA										
80	BUX97	BUX82	PHIN										
81	BUX97A	BUX82	PHIN										
82	BUX97B	BUX83	PHIN										
83	BUY63	BLY88A	PHIN										
84	BUY69A	BUX81	PHIN	BUY69A		TII							
85	BUY70A	BUX81	PHIN	BUY70A		TII							
86	BUY77	BUX82	PHIN										
87	BUY78	BUX82	PHIN										
88	BUY79	BUX82	PHIN										
89	C1-28	MRF313	MOTA										
90	C2-8Z	2N5945	MOTA										
91	C2M50-28R	2N6439	MOTA										
92	C2M100-28	MRF327	MOTA										
93	C5-8Z	2N5946	MOTA										
94	C40-28	MRF326	MOTA										
95	C50-28	2N6439	MOTA										
96	CA100	MHW1171	MOTA										
97	CA200	MHW1172	MOTA										
98	CA416	MHW1182	MOTA										
99	CA601BU	MHW1342	MOTA										
100	CD1752	MRF317	MOTA										
101	CD1979	MRF321	MOTA										
102	CD2035	MRF5175	MOTA										
103	CD2087	MRF5175	MOTA										
104	CD2514	2N6081	MOTA										
105	CD2545	MRF450	MOTA										
106	CD2810	MRF321	MOTA										
107	CD3400	MRF315	MOTA										
108	CD3401	MRF316	MOTA										
109	CD3403	MRF317	MOTA										
110	CD3550	MRF315	MOTA										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	CD6105	MRF5177A	MOTA										
2	CD6105A	MRF5177A	MOTA										
3	CDT1311	BDX96	PHIN										
4	CDT1313	BDX96	PHIN										
5	CK790	BCY33A	PHIN										
6	CV5439	BC178	PHIN	BC558	PHIN								
7	CV5447	BC177	PHIN	BC557	PHIN								
8	CV5712	BC177	PHIN	BC557	PHIN								
9	CV5848	BCY34A	PHIN										
10	CV5876	BDX96	PHIN										
11	CV7005	BC177	PHIN	BC557	PHIN								
12	CV7008	BC179	PHIN	BC559	PHIN								
13	CV7043	BCY33A	PHIN										
14	CV7044	BCY34A	PHIN										
15	CV7083	BDX96	PHIN										
16	CV7085	BDX96	PHIN										
17	CV7086	BDX96	PHIN										
18	CV7117	BCY31A	PHIN										
19	CV7338	BCY70	PHIN										
20	CV7347	BCY34A	PHIN										
21	CV7363	BCY34A	PHIN										
22	CV8340	BDX92	PHIN										
23	CV8342	BDX96	PHIN										
24	CV8356	BDX92	PHIN										
25	D1-12B	MRF817	MOTA										
26	D1-12E	MRF817	MOTA										
27	D1/2-12	MRF816	MOTA										
28	D2-12B	MRF817	MOTA										
29	D40P1	2N6175	RCA	TIP47	TII	D40P1	MOTA						
30	D40P3	2N6175	RCA	TIP47	TII	D40P3	MOTA						
31	D40P5	2N6175	RCA	TIP47	TII	D40P5	MOTA						
32	D42C1	2N6288	RCA	TIP31	TII	MDS26	MOTA						
33	D42C2	2N6288	RCA	TIP31	TII	MDS26	MOTA						
34	D42C3	2N6288	RCA	TIP31	TII	MDS26	MOTA						
35	D42C4	2N6290	RCA	TIP31	TII	MDS27	MOTA						
36	D42C5	2N6290	RCA	TIP31	TII	MDS27	MOTA						
37	D42C6	2N6290	RCA	TIP31	TII	MDS27	MOTA						
38	D42C7	2N6292	RCA	TIP31A	TII	MDS27	MOTA						
39	D42C8	2N6292	RCA	TIP31A	TII	MDS27	MOTA						
40	D42C9	2N6292	RCA										
41	D42C10	2N6292	RCA										
42	D42C11	2N6292	RCA										
43	D43C1	2N6111	RCA	MDS76	MOTA								
44	D43C2	2N6111	RCA	MDS76	MOTA								
45	D43C3	2N6111	RCA	MDS76	MOTA								
46	D43C4	2N6109	RCA	MDS77	MOTA								
47	D43C5	2N6109	RCA	MDS77	MOTA								
48	D43C6	2N6109	RCA	PTC111	MAL	MDS77	MOTA						
49	D43C7	2N6107	RCA	MDS77	MOTA								
50	D43C8	2N6107	RCA	TIP32A	TII	MDS77	MOTA						
51	D43C9	2N6107	RCA	TIP32A	TII	MDS77	MOTA						
52	D43C10	2N6107	RCA	TIP32B	TII								
53	D43C11	2N6107	RCA	TIP32B	TII								
54	D44C1	MJE180	MOTA	TIP31	TII								
55	D44C2	MJE180	MOTA	TIP31	TII								
56	D44C3	MJE180	MOTA	TIP31	TII								
57	D44C4	MJE181	MOTA	TIP31	TII								
58	D44C5	MJE181	MOTA	TIP31	TII								
59	D44C6	MJE181	MOTA	TIP31	TII								
60	D44C7	MJE181	MOTA	TIP31A	TII								
61	D44C8	MJE181	MOTA	TIP31A	TII								
62	D44C9	MJE181	MOTA	TIP31A	TII								
63	D44C10	MJE182	MOTA	TIP31B	TII								
64	D44C11	MJE182	MOTA	TIP31B	TII								
65	D44C12	MJE182	MOTA	TIP31B	TII								
66	D44E1	2N6386	MOTA	TIP100	TII								
67	D44E2	2N6387	MOTA	TIP100	TII								
68	D44E3	2N6388	MOTA	TIP101	TII								
69	D44R1	2N3584	MOTA	TIP47	MOTA								
70	D44R2	2N3584	MOTA	TIP47	MOTA								
71	D44R3	2N3585	MOTA	TIP48	MOTA								
72	D44R4	2N3585	MOTA	TIP48	MOTA								
73	D44R5	2N3584	MOTA	TIP47	MOTA	TIP47	TII						
74	D44R6	2N3585	MOTA	TIP48	MOTA	TIP48	TII						
75	D45C1	MJE170	MOTA	TIP32	TII								
76	D45C2	MJE170	MOTA	TIP32	TII								
77	D45C3	MJE170	MOTA	TIP32	TII								
78	D45C4	MJE171	MOTA	TIP32	TII								
79	D45C5	MJE171	MOTA	TIP32	TII								
80	D45C6	MJE171	MOTA	TIP32	TII								
81	D45C7	MJE171	MOTA	TIP32A	TII								
82	D45C8	MJE171	MOTA	TIP32A	TII								
83	D45C9	MJE171	MOTA	TIP32A	TII								
84	D45C10	MJE172	MOTA	TIP32B	TII								
85	D45C11	MJE172	MOTA	TIP32B	TII								
86	D45C12	MJE172	MOTA	TIP32B	TII								
87	D45E1	TIP125	MOTA	TIP105	TII								
88	D45E2	TIP125	MOTA	TIP105	TII								
89	D45E3	TIP126	MOTA	TIP106	TII								
90	DFY6310	2N5347	MOTA										
91	DM3-7BA	MRF840	MOTA										
92	DM5-12BA	MRF840	MOTA										
93	DM45-12BA	MRF846	MOTA										
94	DTS4066	MJ10000	MOTA										
95	DTS4067	MJ10000	MOTA										
96	DTS4074	MJ10004	MOTA	IR6001	INR								
97	DTS4075	MJ10004	MOTA	IR6002	INR								
98	ESM117	BDX65	PHIN										
99	ESM118	BDX65A	PHIN										
100	ESM181	BDX64	PHIN										
101	ESM182	BDX64A	PHIN										
102	ESM262	BD648	PHIN										
103	ESM1503	BU208A	PHIN										
104	GD242A	BD434	PHIN										
105	GD242B	BD434	PHIN										
106	GD242C	BD434	PHIN										
107	GD242D	BD434	PHIN										
108	IR401	BUX82	PHIN	SVT7533	TRWS	2N3902	TII						
109	IR402	BUX82	PHIN	SVT7533	TRWS	2N3902	TII						
110	IR403	BUX82	PHIN	SVT7533	TRWS	TIP561	TII						

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	IR409	BUX82	PHIN	SVT7543	TRWS	TIP561	TII						
2	IR410	BUX82	PHIN	SVT7533	TRWS	DTS410	TII						
3	IR411	BUX82	PHIN	SVT7543	TRWS	DTS411	TII						
4	IR413	BUX82	PHIN	SVT7543	TRWS	TIP561	TII						
5	IR423	BUX82	PHIN	SVT7543	TRWS	TIP561	TII						
6	IR424	BUX83	PHIN	SVT7543	TRWS								
7	IR425	BUX83	PHIN	SVT7544	TRWS								
8	IR430	BUX82	PHIN	SVT7543	TRWS	TIP561	TII						
9	IR431	BUX82	PHIN	SVT7543	TRWS	TIP561	TII						
10	JO1008	MRF317	MOTA										
11	JO2018	MRF327	MOTA										
12	JO2401	MRF328	MOTA										
13	LT5093	BUX86	PHIN	PTC105A	MAL								
14	MC140	BD135	PHIN										
15	MC150	BD136	PHIN										
16	MC800	BD135	PHIN	PTC904	MAL								
17	MC810	BD137	PHIN	PTC904	MAL								
18	MC900	BD136	PHIN										
19	MC910	BD138	PHIN										
20	MEU22	BDY99	PHIN										
21	MHT4515	2N3553	PHIN										
22	MJ430	2N4231	MOTA										
23	MJ440	2N4237	MOTA										
24	MJ920	2N6298	MOTA	PTC143	MAL								
25	MJ921	2N6298	MOTA										
26	MJ1200	2N6300	MOTA										
27	MJ1201	2N6301	MOTA										
28	MJ2500	2N6649	RCA	PMD11K80	LAM	MJ2500	MOTA	BDX64	PHIN				
29	MJ2501	2N6650	RCA	PMD11K80	LAM	MJ2501	MOTA	BDX64A	PHIN				
30	MJ3000	BDX65	PHIN	MJ3000	TII								
31	MJ3001	BDX65A	PHIN	MJ3001	TII								
32	MJ3030	BU132	PHIN	TIP560									
33	MJ3022	2N3585	RCA	PTC104	MAL	2N3739	MOTA						
34	MJ3583	2N6211	RCA	2N6420	MOTA								
35	MJ4010	2N6649	RCA	2N6053	MOTA								
36	MJ4011	2N6650	RCA	2N6054	MOTA								
37	MJ4030	BDX66	PHIN	MJ4030	TII								
38	MJ4031	BDX66A	PHIN	MJ4031	TII								
39	MJ4032	BDX66B	PHIN	MJ4032	TII								
40	MJ4033	BDX66	PHIN	MJ4033	TII								
41	MJ4034	BDX67A	PHIN	MJ4034	TII								
42	MJ4035	BDX67B	PHIN	MJ4035	TII								
43	MJ4200	2N6294	MOTA										
44	MJ4201	2N6295	MOTA										
45	MJ4210	2N6298	MOTA										
46	MJ4211	2N6297	MOTA										
47	MJ7000	2N6338	MOTA										
48	MJ7260	2N6546	MOTA										
49	MJ7261	2N6547	MOTA										
50	MJE29	BD239	RCA	PTC167	MAL	TIP29	MOTA						
51	MJE29A	BD239A	RCA	PTC167	MAL	TIP29A	MOTA						
52	MJE29B	BD239B	RCA	PTC167	MAL	TIP29B	MOTA						
53	MJE29C	BD239C	RCA	PTC169	MAL	TIP29C	MOTA						
54	MJE30	BD240	RCA	PTC166	MAL	TIP30	MOTA						
55	MJE30A	BD240A	RCA	PTC166	MALL	TIP30A	MOTA						
56	MJE30B	BD240B	RCA	PTC166	MAL	TIP30B	MOTA						
57	MJE30C	BD240C	RCA	PTC168	MAL	TIP30C	MOTA						
58	MJE31	BD241	RCA	PTC167	MAL	TIP31	MOTA						
59	MJE31A	BD241A	RCA	PTC167	MAL	TIP31A	MOTA						
60	MJE31B	BD241B	RCA	PTC167	MAL	TIP31B	MOTA						
61	MJE31C	BD241C	RCA	PTC169	MAL	TIP31C	MOTA						
62	MJE32	BD242	RCA	PTC166	MAL	TIP32	MOTA						
63	MJE32A	BD242A	RCA	PTC166	MAL	TIP32A	MOTA						
64	MJE32B	BD242B	RCA	PTC166	MAL	TIP32B	MOTA						
65	MJE32C	BD242C	RCA	PTC168	MAL	TIP32C	MOTA						
66	MJE32	2N6486	RCA	PTC169	MAL	TIP41	MOTA						
67	MJE33A	2N6487	RCA	PTC169	MAL	TIP41A	MOTA						
68	MJE33B	2N6488	RCA	PTC169	MAL	TIP41B	MOTA						
69	MJE34	2N6489	RCA	PTC168	MAL	TIP42	MOTA						
70	MJE34A	2N6480	RCA	PTC168	MAL	TIP42A	MOTA						
71	MJE34B	2N6491	RCA	PTC168	MAL	TIP42B	MOTA						
72	MJE41	BD243	RCA	PTC167	MAL	TIP41	MOTA						
73	MJE41A	BD243A	RCA	PTC167	MAL	TIP41A	MOTA						
74	MJE41B	BD243B	RCA	PTC167	MAL	TIP41B	MOTA						
75	MJE41C	BD243C	RCA	PTC169	MAL	TIP41C	MOTA						
76	MJE42	BD244	RCA	PTC166	MAL	TIP42	MOTA						
77	MJE42A	BD244A	RCA	PTC166	MAL	TIP42A	MOTA						
78	MJE42B	BD244C	RCA	PTC166	MAL	TIP42B	MOTA						
79	MJE42C	BD244C	RCA	PTC168	MAL	TIP42C	MOTA						
80	MJE47	TA8883C	RCA	TIP47	MOTA	TIP47	MOTA						
81	MJE48	TA8883B	RCA	TIP48	MOTA	TIP48	MOTA						
82	MJE49	TA8883A	RCA	TIP49	MOTA	TIP49	MOTA						
83	MJE101	BD132	PHIN										
84	MJE105	BD278A	RCA	PTC164	MAL	TIP42A	TII	MJE105	MOTA	BD132	PHIN		
85	MJE105K	BD278A	RCA	PTC167	MAL	TIP41A	TII	TIP42A	MOTA				
86	MJE200	BD131	PHIN	TIP41	TII								
87	MJE201	BD131	PHIN	TIP42	TII								
88	MJE205	2N6290	RCA	PTC165	MAL	TIP41A	TII	MJE205	MOTA	BD131	PHIN		
89	MJE205K	BD277	RCA	PTC167	MAL	TIP41A	TII	TIP41A	MOTA				
90	MJE210	BD132	PHIN										
91	MJE340	BD232	PHIN	TIP48	TII								
92	MJE340K	TA8883B	RCA	TIP48	TII	TIP48	MOTA						
93	MJE341	BD232	PHIN	TIP47	TII								
94	MJE341K	TA8883J	RCA	TIP47	TII	TIP47	MOTA						
95	MJE344	BD232	PHIN	TIP47	TII								
96	MJE344K	TA8885J	RCA	TIP47	TII	TIP47	MOTA						
97	MJE370	RCA30	RCA	TIP32	TII	MJE370	MOTA						
98	MJE370K	BD242	RCA	PTC166	MAL	TIP32	TII	TIP32	MOTA				
99	MJE371	RCA30	RCA	PTC162	MAL	TIP32	TII	2N5193	MOTA				
100	MJE520	RCA29	RCA	PTC163	MAL	TIP31	TII	MJE520	MOTA	BD233	PHIN		
101	MJE520K	BD241	RCA	PTC167	MAL	TIP31	TII	TIP31	MOTA				
102	MJE521	RCA29	RCA	PTC163	MAL	TIP31	TII	2N5190	MOTA				
103	MJE700	RCA125	RCA	TIP115	TII	MJE700	MOTA	BD678	PHIN				
104	MJE701	RCA125	RCA	TIP115	TII	MJE701	MOTA	BD678	PHIN				
105	MJE702	RCA126	RCA	TIP116	TII	MJE702	MOTA	BD680	PHIN				
106	MJE703	RCA126	RCA	TIP116	TII	MJE703	MOTA	BD680	PHIN				
107	MJE800	2N6387	RCA	TIP110	TII	MJE800	MOTA	BD677	PHIN				
108	MJE801	2N6387	RCA	TIP110	TII	MJE801	MOTA	BD677	PHIN				
109	MJE802	2N6388	RCA	TIP111	TII	MJE802	MOTA	BD5679	PHIN				
110	MJE803	2N6388	RCA	TIP111	TII	MJE803	MOTA	BD679	PHIN				

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	MJE1090	2N8867	RCA	TIP125	TII	MJE8040	MOTA						
2	MJE1091	2N8867	RCA	TIP125	TII	MJE8040	MOTA						
3	MJE1092	2N8867	RCA	TIP126	TII	MJE8041	MOTA						
4	MJE1093	2N8867	RCA	TIP126	TII	MJE8041	MOTA						
5	MJE1100	2N6387	RCA	TIP120	TII	MJE8043	MOTA						
6	MJE2102	2N6388	RCA	TIP121	MOTA								
7	MJE2103	2N6388	RCA	TIP121	MOTA								
8	MJE2160	TA8836B	RCA	TIP48	MOTA								
9	MJE2360	TA8836E	RCA	MJE2360T	MOTA								
10	MJE2361	TA8833A	RCA	MJE2361T	MOTA								
11	MJE2370	2N6109	RCA	PTC166	MAL	TIP32	MOTA						
12	MJE2371	2N6107	RCA	PTC166	MAL	TIP32A	MOTA						
13	MJE2380	2N6290	RCA	TIP31	MOTA								
14	MJE2481	2N6292	RCA	TIP31A	MOTA								
15	MJE2482	2N6290	RCA	2N6121	MOTA								
16	MJE2483	2N6292	RCA	2N6122	MOTA								
17	MJE2490	2N6109	RCA	PTC166	MAL	TIP32	MOTA						
18	MJE2491	2N6107	RCA	PTC166	MAL	TIP32A	MOTA						
19	MJE2520	2N6290	RCA	PTC167	MAL	TIP31	MOTA						
20	MJE2521	2N6292	RCA	PTC167	MAL								
21	MJE2522	2N6290	RCA	PTC167	MAL								
22	MJE2523	2N6292	RCA	PTC167	MAL								
23	MJE2821	2N6290	RCA	PTC165	MAL	2N6569	MOTA	MJE2801	MOTA				
24	MJE2801K	2N6487	RCA	PTC169	MAL	MJE2801T	MOTA						
25	MJE2801K	2N6807	RCA	PTC164	MAL	2N6594	MOTA	MJE2901	MOTA				
26	MJE2801K	2N6490	RCA	PTC168	MAL	MJE2901T	MOTA						
27	MJE2954	RCA3054	RCA										
28	MJE2955	2N8490	RCA	PTC164	MAL	MJE2955	MOTA						
29	MJE2955K	2N6490	RCA	PTC168	MAL	MJE2955T	MOTA						
30	MJE3055	RCA3055	RCA	PTC165	MAL	2N3055	MOTA	MJE3055	MOTA				
31	MJE3055K	RCA3055	RCA	PTC169	MAL	MJE3055T	MOTA						
32	MJE3300	BD675	PHIN	TIP120	TII								
33	MJE3301	BD677	PHIN	TIP120	TII								
34	MJE3302	BD679	PHIN	TIP121	TII								
35	MJE3310	BD676	PHIN	TIP125	TII								
36	MJE3311	BD678	PHIN	TIP125	TII								
37	MJE3312	BD680	PHIN	TIP126	TII								
38	MJE3370	MJE370	MOTA	TIP32	TII								
39	MJE3371	2N5193	MOTA	TIP32	TII								
40	MJE3439	RCP111D	RCA	MJE3439	MOTA								
41	MJE3520	MJE520	MOTA	TIP31	TII								
42	MJE3740	2N5190	MOTA	TIP31	TII								
43	MJE3741	2N6107	RCA	PTC166	MAL								
44	MJE3741	2N6107	RCA	PTC166	MAL								
45	MJE4818	BD240	RCA	PTC166	MAL	TIP30	MOTA						
46	MJE4819	BD240A	RCA	PTC166	MAL	TIP30A	MOTA						
47	MJE4820	BD240B	RCA	PTC166	MAL	TIP30B	MOTA						
48	MJE4821	BD239	RCA	PTC167	MAL	TIP29	MOTA						
49	MJE4822	BD239A	RCA	PTC167	MAL	TIP29A	MOTA						
50	MJE4823	BD239B	RCA	PTC167	MAL	TIP29B	MOTA						
51	MJE6555	TA8833J	RCA	TIP47	MOTA								
52	MJE6555	TA8833F	RCA	TIP48	MOTA								
53	MJE6577	TA8833E	RCA	TIP49	MOTA								
54	MJE6574	2N6488	RCA	PTC166	MAL	TIP42	MOTA						
55	MJE6575	2N6490	RCA	PTC166	MAL	TIP42A	MOTA						
56	MJE6576	2N6491	RCA	PTC166	MAL	TIP42B	MOTA						
57	MJE6577	2N6488	RCA	PTC167	MAL	TIP41	MOTA						
58	MJE6578	2N6487	RCA	PTC167	MAL	TIP41A	MOTA						
59	MJE6579	2N6488	RCA	PTC167	MAL	TIP41B	MOTA						
60	MJE6580	2N6490	RCA	PTC168	MAL	2N6489	MOTA	BD202	PHIN				
61	MJE6581	2N6490	RCA	PTC168	MAL	2N6490	MOTA	BD204	PHIN				
62	MJE6582	2N6491	RCA	PTC168	MAL	2N6491	MOTA	BDX78	PHIN				
63	MJE6583	2N6486	RCA	PTC169	MAL	2N6486	MOTA	BD201	PHIN				
64	MJE6584	2N6487	RCA	PTC169	MAL	2N6487	MOTA	BD203	PHIN				
65	MJE6585	2N6488	RCA	PTC169	MAL	2N6488	MOTA	BDX77	PHIN				
66	MJE8040	RCA125	RCA	MJE8040	MOTA								
67	MJE8041	RCA126	RCA	MJE8041	MOTA								
68	MJE8042	RCA126	RCA	MJE8042	MOTA								
69	MJE8043	2N6387	RCA	MJE8043	MOTA								
70	MJE8044	2N6830	RCA	MJE8044	MOTA								
71	MJE8045	RCA122	RCA	MJE8045	MOTA								
72	MJE13002	BUX84	PHIN										
73	MJE13003	BUX84	PHIN										
74	MJE13004	BU426	PHIN										
75	MJE13005	BU426A	PHIN										
76	MM439	2N4869	MOTA										
77	MM1500	MRF905	MOTA										
78	MM1500A	MRF905	MOTA										
79	MM1501	MRF905	MOTA										
80	MM1501A	MRF905	MOTA										
81	MM1557	BLY91A	PHIN										
82	MM1558	BLY92A	PHIN										
83	MM1559	BLY93A	PHIN										
84	MM1601	BLY87A	PHIN										
85	MM3005	40635	RCA										
86	MM4000	BFT28	RCA	PTC141	MAL								
87	MM4001	BFT28A	RCA										
88	MM4002	BFT28B	RCA										
89	MM4003	BFT28C	RCA										
90	MM5005	40634	RCA										
91	MM8008	MRF905	MOTA										
92	MM8010	MRF905	MOTA										
93	MM8011	MRF905	MOTA										
94	MM8023	2N5843	MOTA										
95	MMR8-4	BDX96	PHIN										
96	MMR8-6	BDX96	PHIN										
97	MPC900	MC1563	MOTA	2N6050	MOTA								
98	MPC1000	MC1726	MOTA	2N6077	MOTA								
99	MPS6513	BC547	PHIN	PTC101	MAL								
100	MPS6514	BC548	PHIN	PTC121	MAL								
101	MPS6520	BC547A	PHIN										
102	MPS6521	BC542B	PHIN										
103	MPS6522	BC557A	PHIN										
104	MPS6523	BC557B	PHIN										
105	MPS6530	2N2221A	PHIN	MPS6533	MEHK								
106	MPS6531	2N2222A	PHIN	MPS6534	MEHK								
107	MPS6532	2N2221	PHIN	MPS6535	MEHK								
108	MPS6533	BC327	PHIN	PTC103	MAL	MPS6530	MEHK						
109	MPS6534	BC327	PHIN	PTC103	MAL	MPS6531	MEHK						
110	MPS6535	BC327	PHIN	PTC103	MAL	MPS6532	MEHK						



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		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	MPS8562	BSV15-6	PHIN	PTC103	MAL	MPS6560	MEHK								
2	MPS8563	BSV15-6	PHIN	PTC103	MAL	MPS6561	MEHK								
3	MPS8565	2N2221A	PHIN												
4	MPS8566	2N2222A	PHIN												
5	MPS8580	BC558	PHIN	PTC103	MAL										
6	MPSU01	RCP705	RCA	PTC197	MAL	MPSU01	MOTA	BD137	PHIN						
7	MPSU02	RCP701B	RCA	PTC197	MAL	MPSU02	MOTA								
8	MPSU05	RCP701B	RCA	PTC197	MAL	MPSU05	MOTA	BD137	PHIN						
9	MPSU06	RCP701C	RCA	PTC197	MAL	MPSU06	MOTA	BD139	PHIN						
10	MPSU07	RCP701D	RCA	MPSU07	MOTA										
11	MPSU10	RCP111D	RCA	MPSU10	MOTA										
12	MPSU51	RCP704	RCA	MPSU51	MOTA	BD138	PHIN								
13	MPSU52	RCP700A	RCA	PTC198	MAL	MPSU52	MOTA								
14	MPSU55	RCP700B	RCA	PTC198	MAL	MPSU55	MOTA	BD236	PHIN						
15	MPSU56	RCP700C	RCA	PTC198	MAL	MPSU56	MOTA	BD238	PHIN						
16	MPSU57	RCP7000	RCA	PTC198	MAL	MPSU57	MOTA								
17	MRF203	MRF245	MOTA												
18	MRF504	MRF511	MOTA												
19	MRF518	MRF517	MOTA												
20	MRF5175	MRF321	MOTA												
21	MRF5176	MRF323	MOTA												
22	MRF5178	2N6438	MOTA												
23	MX15	MHW401	MOTA												
24	NE0801	MRF838	MOTA												
25	NE0803	MRF840	MOTA												
26	NE0810	MRF840	MOTA												
27	NE02108	MRF902	MOTA												
28	NE02135	MRF901	MOTA												
29	NE22154	MRF511	MOTA												
30	NE32708	MRF902	MOTA												
31	NE32730	MRF901	MOTA												
32	NE41603	MRF982	MOTA												
33	NE41703	MRF902	MOTA												
34	NE41708	MRF902	MOTA												
35	NE41735	MRF901	MOTA												
36	NE41735	MRF901	MOTA												
37	NE71112	2N5583	MOTA												
38	NE73435	BFR90	MOTA												
39	NE74020	MRF511	MOTA												
40	NE74054	MRF511	MOTA												
41	NE74113	MRF517	MOTA												
42	NS662	BC177	PHIN	BC557	PHIN										
43	PH0401H	BCY31A	PHIN												
44	PH0406H	MRF5174	MOTA												
45	PH0501H	MRF5175	MOTA												
46	PH0503H	MRF5175	MOTA												
47	PH8193	MRF905	MOTA												
48	PM28K380	MJJ13015	MOTA												
49	PM27K380	2N6543	MOTA												
50	PT1558	2N3553	PHIN												
51	PT3503	MRF222	MOTA												
52	PT3537	2N5644	MOTA												
53	PT4537	2N6080	MOTA												
54	PT4544	MRF212	MOTA												
55	PT4555	MRF234	MOTA												
56	PT4556	MRF450A	MOTA												
57	PT5695	MRF233	MOTA												
58	PT8549	2N6081	MOTA												
59	PT8740	MRF629	MOTA												
60	PT8825	2N6136	MOTA												
61	PT9704	MRF5177A	MOTA												
62	PT9704A	MRF5177A	MOTA												
63	PT9730	2N5641	MOTA												
64	PT9780	MRF464	MOTA												
65	PT9780A	MRF464A	MOTA												
66	PT9782	MRF317	MOTA												
67	PT9782A	MRF317	MOTA												
68	PT9783	2N5941	MOTA												
69	PT9783A	MRF400	MOTA												
70	PT9787A	2N6370	MOTA												
71	PT9788	2N5941	MOTA												
72	PT9795A	2N6081	MOTA												
73	RCA1C07	2N6488	MOTA	PTC169	MAL	MJE3055T	MOTA								
74	RCA1C08	2N6491	MOTA	PTC168	MAL	MJE2955T	MOTA								
75	RCA1C09	2N6488	MOTA	PTC169	MAL	MJE3055T	MOTA								
76	RCA8766	MJ10002	MOTA												
77	RCA8766A	MJ10002	MOTA												
78	RCA8766B	MJ10003	MOTA												
79	RCA8766C	MJ10003	MOTA												
80	RCA8766D	MJ10003	MOTA												
81	RCA8766E	MJ10003	MOTA												
82	RCA8767	2N6546	MOTA	SDT14305	SODI										
83	RCA8767A	2N6547	MOTA												
84	RCA8767B	2N6547	MOTA												
85	RCA9113	2N6546	MOTA	SVT7553	TRWS	SDT9113	SODI								
86	RCA9113A	2N6547	MOTA	SVT7553	TRWS										
87	RCA9113B	2N6547	MOTA	SVT7554	TRWS										
88	RCS242	2N3055H	MOTA	2N3055A	MOTA	PTC140	MAL								
89	RCS258	2N3772	MOTA	PTC175	MAL	RCS258	SODI								
90	RCS559	2N6211	MOTA												
91	RCS560	2N6211	MOTA												
92	RCS564	2N6249	MOTA												
93	RCS579	2N6306	MOTA												
94	RF2092	MRF460	MOTA												
95	RF2125	MRF450	MOTA												
96	RF2143	MRF454	MOTA												
97	S175-28	MRF422	MOTA												
98	S175-50	MRF428	MOTA												
99	SD1019	MRF317	MOTA												
100	SD1068	MRF230	MOTA												
101	SD1069	2N5847	MOTA												
102	SD1095	MRF840	MOTA												
103	SD1096	MRF842	MOTA												
104	SD1098	MRF844	MOTA												
105	SD1099	MRF846	MOTA												
106	SD1133-1	MRF212	MOTA												
107	SD1177	2N5589	MOTA												
108	SD1219	MRF316	MOTA												
109	SD1242-5	2N5641	MOTA												
110	SD1244-6	2N5642	MOTA												

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		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	SDT1256	2N5589	MOTA										
2	SD6408	2N5347	MOTA										
3	SDT1057	2N6545	MOTA										
4	SDT1058	2N6545	MOTA										
5	SDT1059	2N6545	MOTA										
6	SDT1062	2N6545	MOTA										
7	SDT1063	2N6545	MOTA										
8	SDT1064	2N6545	MOTA										
9	SDT3401	2N5347	MOTA										
10	SDT3402	2N5347	MOTA										
11	SDT3403	2N5347	MOTA										
12	SDT3404	2N5349	MOTA										
13	SDT3405	2N5347	MOTA										
14	SDT3406	2N5347	MOTA										
15	SDT3407	2N5347	MOTA										
16	SDT3408	2N5349	MOTA										
17	SDT6308	2N5347	MOTA										
18	SDT6309	2N5347	MOTA										
19	SDT6310	2N5347	MOTA										
20	SDT6311	2N5347	MOTA										
21	SDT6312	2N5347	MOTA										
22	SDT6313	2N5347	MOTA										
23	SDT6314	2N5347	MOTA										
24	SDT6315	2N5347	MOTA										
25	SDT6316	2N5347	MOTA										
26	SDT6408	2N5347	MOTA										
27	SDT6409	2N5347	MOTA										
28	SDT6410	2N5347	MOTA										
29	SDT6411	2N5347	MOTA										
30	SDT6412	2N5347	MOTA										
31	SDT6413	2N5347	MOTA										
32	SDT6414	2N5347	MOTA	SDT6414	TII								
33	SDT6415	2N5347	MOTA	SDT6415	TII								
34	SDT6416	2N5347	MOTA										
35	SDT12302	2N5347	MOTA										
36	SDT12303	2N5347	MOTA										
37	SDT12305	2N5347	MOTA										
38	SDT12306	2N5347	MOTA										
39	SDT12307	2N5347	MOTA										
40	SDT13304	MJ13334	MOTA	SVT7535	TRWS								
41	SDT13305	MJ13335	MOTA										
42	SDTB01	2N5346	MOTA										
43	SDTB02	2N5346	MOTA										
44	SDTB03	2N5348	MOTA										
45	SDTB05	2N5346	MOTA										
46	SDTB06	2N5346	MOTA										
47	SDTB07	2N5346	MOTA										
48	SF167	BF198	PHIN										
49	SF173	BF199	PHIN										
50	SF180	BF180	PHIN										
51	SF194	BF494	PHIN										
52	SF194B	BF494	PHIN										
53	SF195	BF495	PHIN										
54	SF195C	BF495	PHIN										
55	SF195D	BF495	PHIN										
56	SF196	BF498	PHIN										
57	SF197	BF199	PHIN										
58	SF294	BF494	PHIN										
59	SF294B	BF494	PHIN										
60	SF295	BF495	PHIN										
61	SF295C	BF495	PHIN										
62	SF295D	BF495	PHIN										
63	SFC115	BC547A	PHIN										
64	SFC115C	BC547A	PHIN										
65	SFC115D	BC547A	PHIN										
66	SFC115E	BC547A	PHIN										
67	SK3024	BD137	PHIN	BD139	PHIN								
68	SK3041	BD945	PHIN										
69	SK3054	BDU93	PHIN										
70	SVT350.3	2N6545	MOTA										
71	SVT450.3	2N6545	MOTA										
72	TF77-60	BDX96	PHIN										
73	TF78-30	BD434	PHIN										
74	TF78-60	BD434	PHIN										
75	TF80-60	BDX96	PHIN										
76	TF80-80	BDX96	PHIN										
77	TI486	BD230	PHIN										
78	TI487	BD230	PHIN										
79	TI3027	BDX92	PHIN										
80	TI3028	BDX96	PHIN										
81	TI3031	BDX96	PHIN										
82	TIP29A	BD137	PHIN	TIP30	MEHK								
83	TIP30	BD138	PHIN	TIP29	MEHK								
84	TIP31	BD131	PHIN										
85	TIP32	BD132	PHIN										
86	TIP33	2N6486	RCA	PTC169	MAL	TIP41	MOTA	BDV91	PHIN				
87	TIP33A	2N6487	RCA	PTC169	MAL	TIP41A	MOTA	BDV91	PHIN				
88	TIP33B	2N6488	RCA	PTC169	MAL	TIP41B	MOTA	BVD93	PHIN				
89	TIP33C	TIP41C	MOTA	BDV95	PHIN	PTC169	MAL						
90	TIP34	2N6489	RCA	PTC168	MAL	TIP42	MOTA	BDV92	PHIN				
91	TIP34A	2N6490	RCA	PTC168	MAL	TIP42A	MOTA	BDV92	PHIN				
92	TIP34B	2N6491	RCA	PTC168	MAL	TIP42B	MOTA	BDV94	PHIN				
93	TIP34C	TIP42C	MOTA	PTC168	MAL	BDV96	PHIN						
94	TIP35	2N5301	MOTA	TIP35	MOTA								
95	TIP35A	2N5885	MOTA	TIP35A	MOTA								
96	TIP35B	2N5886	MOTA	TIP35B	MOTA								
97	TIP35C	MJ802	MOTA										
98	TIP36	2N4398	MOTA										
99	TIP36A	2N5883	MOTA										
100	TIP36B	2N5884	MOTA										
101	TIP36C	MJ4502	MOTA										
102	TIP41A	BD203	PHIN										
103	TIP41B	BDX77	PHIN										
104	TIP42A	BD204	PHIN										
105	TIP42B	BDX78	PHIN										
106	TIP45	B5X19	PHIN										
107	TIP47	BUX84	PHIN										
108	TIP48	BUX84	PHIN										
109	TIP49	BUX84	PHIN										
110	TIP50	BUX84	PHIN										

# 17. SUGGESTED REPLACEMENT TRANSISTORS

LINE No.	TYPE NO. TO BE REPLACED	The Following Type Numbers Are Suggested By The Manufacturer As Their Nearest Replacement To The Type In The Left Column											
		TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.	TYPE NO.	MFR.
1	TIP51	2N6306	MOTA	BU426	PHIN								
2	TIP52	2N6307	MOTA	BU426	PHIN								
3	TIP53	2N6308	MOTA	BU426	PHIN								
4	TIP54	2N6545	MOTA	BU426A	PHIN								
5	TIP55A	2N6546	MOTA										
6	TIP56A	2N6307	MOTA										
7	TIP57A	2N6308	MOTA										
8	TIP58A	2N6544	MOTA										
9	TIP61	TIP29	MOTA	PTC193	MAL								
10	TIP61A	TIP29A	MOTA										
11	TIP61B	TIP29B	MOTA										
12	TIP61C	TIP29C	MOTA										
13	TIP62A	TIP30A	MOTA	PTC162	MAL								
14	TIP62B	TIP30B	MOTA	PTC164	MAL								
15	TIP62C	TIP30C	MOTA	PTC164	MAL								
16	TIP69	BU205	MOTA										
17	TIP70	BU205	MOTA										
18	TIP71	BU205	MOTA										
19	TIP72	BU205	MOTA										
20	TIP75	MJE13005	MOTA										
21	TIP130	BD645	PHIN										
22	TIP131	BD647	PHIN										
23	TIP132	BD649	PHIN										
24	TIP135	BD646	PHIN										
25	TIP136	BD648	PHIN										
26	TIP137	BD650	PHIN										
27	TIP140	2N6387	RCA	2N6057	MOTA	BDX67	PHIN						
28	TIP141	2N6530	RCA	2N6058	MOTA	BDX67A	PHIN						
29	TIP142	2N6531	RCA	2N6059	MOTA	BDX67B	PHIN						
30	TIP145	2N6666	RCA	2N6050	MOTA								
31	TIP145A	BDX66	PHIN										
32	TIP146	2N6667	RCA	2N6051	MOTA								
33	TIP146A	BDX66A	PHIN										
34	TIP147	2N6668	RCA	2N6052	MOTA								
35	TIP147A	BDX66BB	PHIN										
36	TIP150	MJE13006	MOTA										
37	TIP151	MJE13007	MOTA										
38	TIP152	MJE13007	MOTA										
39	TIP160	MJ10002	MOTA										
40	TIP161	MJ10002	MOTA										
41	TIP162	MJ10012	MOTA										
42	TIP303	2N6544	MOTA										
43	TIP304	2N6544	MOTA										
44	TIP305	2N6545	MOTA										
45	TIP306	2N6545	MOTA										
46	TIP309	BU208	MOTA										
47	TIP310	BU208	MOTA										
48	TIP531	2N6546	MOTA	2N6576	TRWS								
49	TIP532	2N6547	MOTA	2N6577	TRWS								
50	TIP536	BUX80	PHIN										
51	TIP537	BUX80	PHIN										
52	TIP550	BU205	MOTA	PTC129A	MAL								
53	TIP551	BU205	MOTA	PTC129A	MAL								
54	TIP552	BU207	MOTA	PTC129A	MAL								
55	TIP553	BU208	MOTA	PTC146	MAL								
56	TIP554	2N6306	MOTA	BUX82	PHIN	PTC129A	MAL						
57	TIP555	BUX82	PHIN										
58	TIP556	BUX82	PHIN										
59	TIP558	BUX80	PHIN										
60	TIP559	BUX80	PHIN										
61	TIP560	BUX80	PHIN										
62	TIP561	BUX80	PHIN										
63	TIP562	2N6546	MOTA	BUX80	PHIN								
64	TIP563	2N6547	MOTA	BUX80	PHIN								
65	TIP575	BUX82	PHIN	SVT7523	TRWS								
66	TIP575A	BUX82	PHIN	SVT7520	TRWS								
67	TIP575B	BUX82	PHIN	SVT7524	TRWS								
68	TIP575C	BUX82	PHIN	SVT7525	TRWS								
69	TIP620	BUX63	PHIN										
70	TIP621	BUX63A	PHIN										
71	TIP2955	MJE2955	MOTA										
72	TIP3055	MJE3055	MOTA										
73	TIP5530	2N6099	RCA										
74	TIS18	BC548A	PHIN										
75	TN53	2N2219A	PHIN										
76	T2581	BC327	PHIN										
77	T2582	BC327	PHIN										
78	V996	MRF902	MOTA										
79	WT5100	MJ13015	MOTA										
80	WT5200	2N6547	MOTA										
81	ZT1613	ZN1613	PHIN										
82	ZT1708	BSX19	PHIN										
83	ZTX107	BC546A	PHIN										
84	ZTX108	BC547A	PHIN										
85	ZTX109	BC547B	PHIN										
86	ZTX300	BC338	PHIN										
87	ZTX301	BC337	PHIN										
88	ZTX302	BC337	PHIN										
89	ZTX303	BC332	PHIN										
90	ZTX311	BSX19	PHIN										
91	ZTX342	BSS38	PHIN										
92	ZTX500	BC3287	PHIN										
93	ZTX501	BC327	PHIN										
94	ZTX502	BC327	PHIN										
95	ZTX503	BC327	PHIN										

# 18. OUTLINE DRAWINGS

## THE PREFIX LETTERS OF THE OUTLINE DRAWING NUMBERS INDICATE THE FOLLOWING:

- B — MOUNTING TAB
- C — CHIP
- F — MOUNTING FLANGE
- O — OVAL
- R — ROUND
- S — SQUARE
- T — STUD (THREADED)
- TO — JEDEC TYPE
- W — MICROWAVE, STRIPLINE, COAXIAL (NO STUD)
- X — MISCELLANEOUS (Configuration including phototransistor)

**Y200/TO200** — JEDEC '200' Family & Military Outlines  
(See explanation under NOTES)

**ZA** — DRAWING REFERENCE INFORMATION

## NOTES

These outline drawings are intended as a guide for the user. They should not be used for construction purposes without first checking with the appropriate manufacturer.

These drawings are referenced in the Technical Section of this D.A.T.A.-BOOK in accordance with information supplied by the manufacturers.

The DO and TO drawings have been reproduced from JEDEC Registration Data Files with the permission of the National Electrical Manufacturer's Association — Electronic Industries Association. JEDEC designations are assigned only to outlines submitted by the JC-11 Committee on Mechanical Standardization. The procedure of assigning and announcing the JEDEC designations constitutes registration.

The TO200 Series (TO 200 and higher) are JEDEC-registered outlines, and are referenced in the technical sections with the prefix TO replaced by Y. Suffices such as AA, AB or MA, MB following the TO Series number indicate dimensional variations of the basic outline. For commercial outlines, the suffices start with AA replaced by a; for military outlines, the suffices start with MA replaced by a. JEDEC type numbers which have letter S suffices indicate a device that is manufactured with leads shorter than specified in the registered data of the device, but not shorter than 12.7 mm (.5 inch). The suffix letter S need not be marked on individual devices.

All drawings are in inches except where noted.

### B1

THIS PORTION OF LEADS FREE OF FLAMMABLE MATERIAL

0.018 3 LEADS  
0.012

0.210 0.030 MIN (2 PLACES)  
0.110 0.090  
0.040 MIN

CASE TEMPERATURE MEASUREMENT POINT

0.161 DIA  
0.040  
RAD (2 PLACES)

### B2

0.362 0.386  
0.150 0.166  
0.018  
0.063  
0.099  
0.276 0.292  
0.79  
0.264 0.268  
0.307 0.323  
0.039  
0.059  
1.12  
1.18  
1.08  
0.43  
490 MIN  
0.024 0.026  
0.099 0.099

### B3

THIS PORTION OF LEADS FREE OF FLAMMABLE MATERIAL

0.018 3 LEADS  
0.012

0.210 0.030 MIN (2 PLACES)  
0.110 0.090  
0.040 MIN

CASE TEMPERATURE MEASUREMENT POINT

0.161 DIA  
0.040  
RAD (2 PLACES)

### F

C A D DIA. THRU  
E  
L  
I  
J  
F  
H  
J

	A	B	C	D	E	F	G	H	J	K	M	N
B5	.495	.635	.245	.138	.185	.105	.595	.043	.166	.125	.075	.032
	.505	.645	.255	.148	.195	.115	.645	.049		.135	.085	.034
B5a	.330	.460		.118			.655					
B5b	.520	.658		.148			.630					
B5c	.324	.442		.125	.145	.106	.629	.027	.090	.118	.066	
		MAX					MIN			MAX		

N M K  
HEATSINK CONTACT AREA (BOTTOM) TYP.

DOTTED CIRCLES FOR B5c ONLY.

### B6

0.225 0.305  
0.145 0.155  
0.140 0.150  
0.095 0.095  
0.115 DIA THRU  
0.118  
0.425 0.435  
0.020 0.020  
0.020 0.020  
0.093 TYP  
0.015 0.025  
0.025 0.025  
0.025 0.025  
HEAT SINK CONTACT AREA (BOTTOM) TYP.

### B7

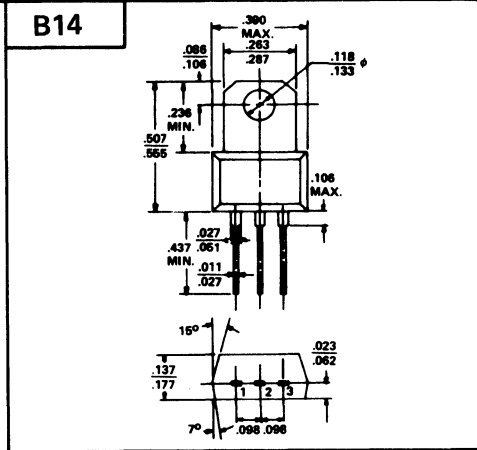
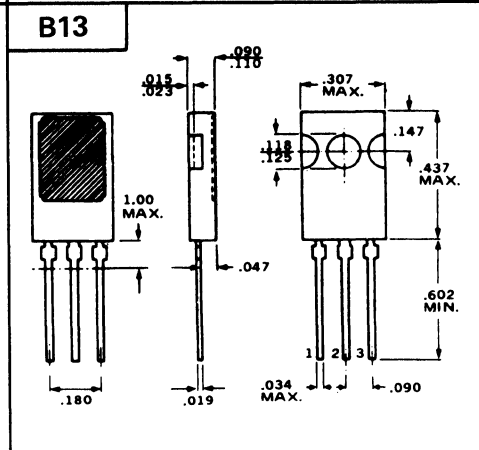
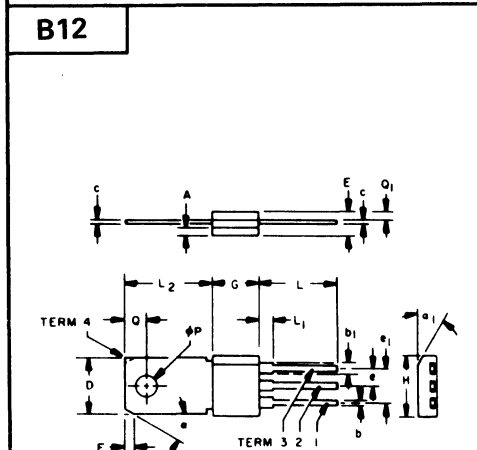
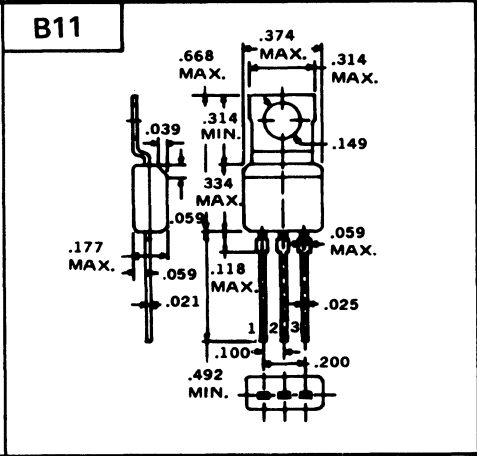
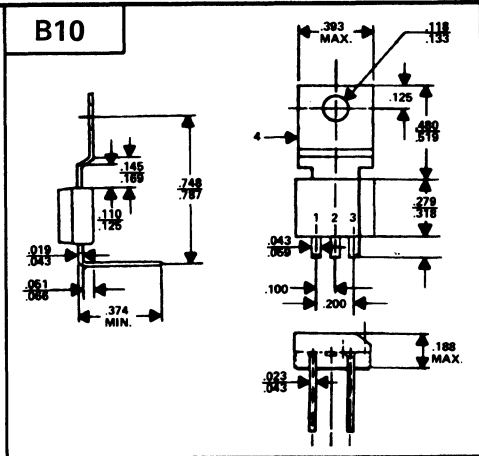
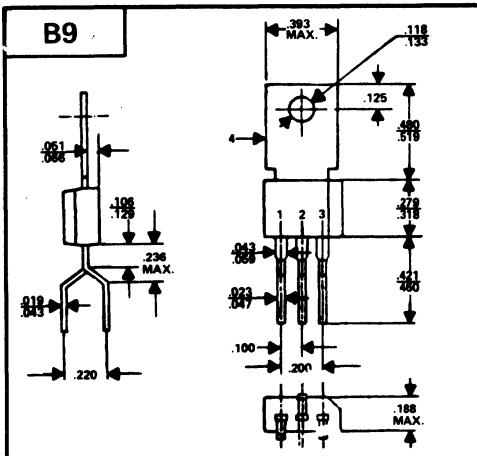
A B C D E F G H J K M N P Q R S  
H  
K  
S  
R  
J  
Q  
P

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S
B7	.314	.027	.114	.141	.145	.472	.059	.029	.090	.051	.500	.047	.110	.019	.029	.019
	MAX	.035	.118	.150	.150	MAX	MAX				MIN	MAX	MAX			
E7a	.334		.118	.133		.452	.118		.090	.043	.594	.047		.019	.029	
	MAX			.157		MAX	MAX				MIN					
B7b	.314		.125	.145		.433	.106	.039	.090	.062	.629		.118		.027	.027
	MAX					MAX	MAX				MAX		MAX			

### B8

0.417  
0.133 0.148  
0.118  
0.610 MAX  
0.236  
0.236 MAX  
0.100  
0.200  
0.102 MAX  
0.188 MAX  
0.118  
0.220  
0.023 MAX

# 18. OUTLINE DRAWINGS



**B15**

NOTE: DOTTED PORTION FOR S AND T DIMENSIONS ONLY.  
J-CHAMFER

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	-	0.05	-	1.270	1
b	0.023	0.029	0.584	0.738	
b <sub>1</sub>	0.046	0.065	1.143	1.397	1
c	0.018	0.026	0.457	0.660	
D	0.305	0.325	7.747	8.255	
E	0.130	0.150	3.302	3.810	
e	0.095	0.105	2.413	2.667	
e <sub>1</sub>	0.190	0.210	4.826	5.334	
F	-	0.08	-	2.032	1
G	0.230	0.250	5.842	6.350	
H	0.330	0.370	8.382	9.398	
L	0.400	0.450	10.16	11.43	
L <sub>1</sub>	-	0.100	-	2.54	1,2
L <sub>2</sub>	0.540	0.590	13.71	14.73	
o <sub>P</sub>	0.123	0.127	3.124	3.225	
Q	0.120	0.130	3.048	3.302	
Q <sub>1</sub>	0.038	0.050	0.990	1.270	
a	-	36°	-	36°	1
a <sub>1</sub>	-	50°	-	50°	1

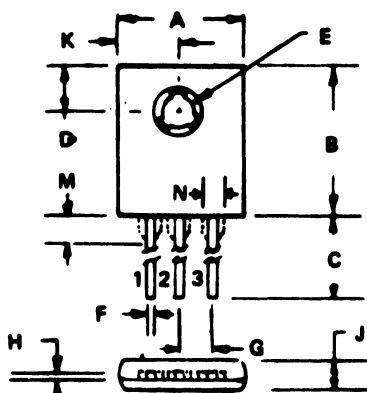
NOTES:  
 1. Package contour optional within dimensions specified.  
 2. Lead dimensions uncontrolled in this zone.  
 3. Chamfer on tab optional.  
 4. Controlling dimensions: inch.

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T
B15	.360	.115	.470	.280	.470	.245	.122	.050	.065	.095	.095	.047	.017	.095	.175		
B15a	.400	.135	.530	.320	.600	.255	.128	.070	.075x45*	.105	.105	.053	.023	.105	.185		
B15b	.360	.115	.480	.285	.400	.240	.123		.065	.095	.095	.024	.019	.095	.170	.050	
B15c	.400	.135	.520	.315	.420	.260	.127		.075x45*	.105	.105	.028	.026	.105	.190	.060	
B15d	.390	.145	.520	.330	.500		.140			.095	.095	.024	.019	.095	.165	.067	.070
B15e	.400	.155	.550	.340	MIN		.150			.105	.105	.028	.026	.105	.175	.077	.080
B15f	.360	.115	.480	.285	.400	.240	.123		.065	.095	.095	.023	.010	.095	.120	.050	
B15g	.400	.135	.520	.320	.520	.260	.127		.075x45*	.105	.105	.029	.026	.105	.190	.060	
B15h	.385	.153	.582	.346	.452		.126	.099		.114	.114	.035	.019	.105	.169		
B15i	.402	.178	.599	.363	.493		.130	MAX		.123	.123	.044	.024	.105	.185		



# 18. OUTLINE DRAWINGS

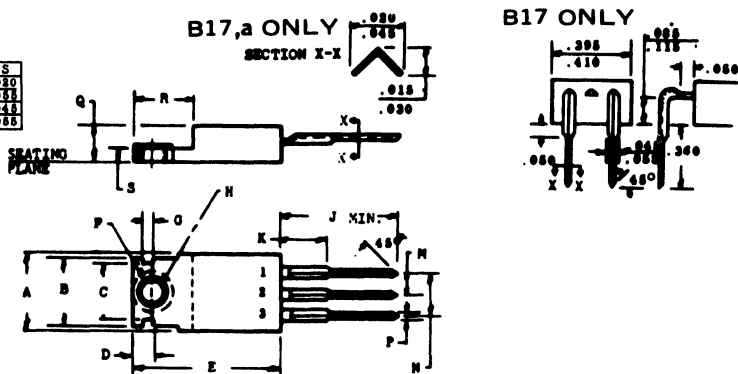
B16



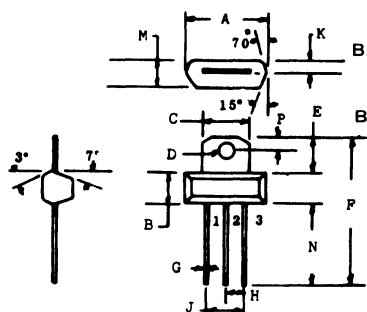
	A	B	C	D	E	F	G	H	J	K	M	N
B16	.170	.390	.598	.144	.118	.035	.090	.017	.070	.180		
B16a	.430	.480	.480	.180	.128	.048	.168	.030	.180		.128	
B16b	.370	.450	.450	.198	.148	.048	TYP	.034	.180			MAX
B16c	.498	.438	.408	.148	.118	.020	.093	.018	.098	.148	.088	
B16d	.498	.438	.408	.168	.118	.028	.098	.028	.108	.158	.098	
B16e	.498	.438	.408	.188	.148	.048	.168	.032	.128	.248	.108	
B16f	.490	.390	.498	.180	.118	.028	.080	.018	.070	.180		
B16g	.394	.428	.494	.088	.114	.020	.092	.014	.094	.144	.088	
B16h	.308	.438	.444	.094	.118	.028	T.P.	.024	.108	.158	.094	
B16i	.488	.498	.588	.188	.127	.042	.168	.029	.122	.188	.128	YES
B16j	.518	.487	.448	.194	.137	.048	TYP	.033	.149	.198	MAX	
B16k	.488	.498	5.338	.177	.126	.024	.033	.114	.238	.094	.088	
B16l	.514	.688	MIN	.207	.147		TYP	.144	.284	.123	.083	
B16m	.398	.428	.408	.277	.118	.020	.091	.018	.098	.148	.088	VARIATION
B16n	.308	.438	.458		.118	.028	.097	.028	.108	.158	.098	
B16o	.480	.618	.598	.180	.128	.041		.027	.120			
B16p	.430	.468	.458	.228	.165	.081		.037	.160			
B16q	.338	.472	.511	.148	.128	.028	.090	.019	.110		.029	
B16r	.318	.394	.582	.098	.078			.018	.118			
B16s	.318	.421	.551	.148	.118	.031	.088	.019	.108			

B17

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S
B17,a	.398	.388	.300	.100	.578	.141	.040	.118	.900	.280	.028	.190	.048	.180	.338	.030
B17b	.410	.388	.320	.120	.600	.148	.080	.121	MIN	MAX	.108	.210	.088	.190	.358	.038
B17c	.380	.368	.300	.140	.580		.090	.141	.840	.180	.090	.180	.028	.140	.048	
B17d	.420	.388	.320	.160	.620		TYP	.148	MIN	.180	.110	.210	.038	.180	.058	



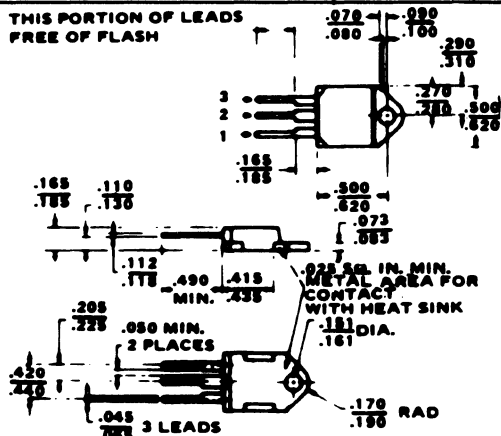
B18



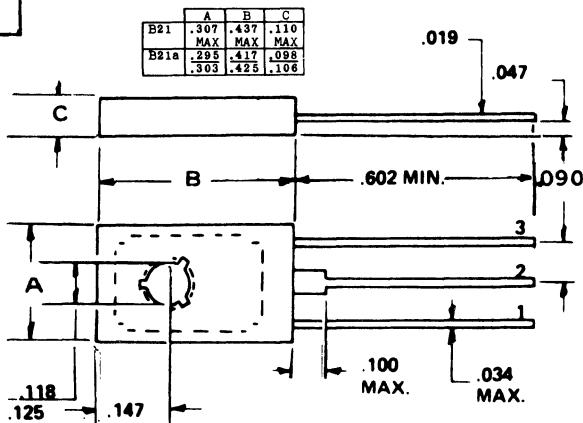
B18c - B18b WITH LEADS FORMED TO T05 CONFIGURATION.  
 B18d - B18b WITH TAB FORMED FOR FLAT MOUNTING.

	A	B	C	D	E	F	G	H	J	K	M	N	P
B18	.360	.213	.260	.125		.985	.018	.095	.190	.045	.165	.475	.095
B18a	.375	.223	.285	.131		1.00	.018	.105	.210	.055	.165	.500	.105
B18b		.213	.260	.125		.985							.095
B18c		.223	.285	.131		1.005							.105
B18d	.358	.212	.259	.124	.279	.984	.014	.099	.199	.042	.153	.492	.094
B18e	.374	.224	.285	.131	MIN	1.023	N.C.M.	N.C.M.	N.C.M.	.055	.165	MIN	.106
B18f			.285	.131		1.005						MIN	.105

B19



B21



# 18. OUTLINE DRAWINGS

**B22**

CASE TEMP. REFERENCE POINT

	A	B	C	D	E	F	G	H	J	K	M	N
B22	.390	.110	.240	.141	.328	.500	.095	.190	.160	.040	.085	.029
	.420	.120	.260	.145	.355		.105	.210	.190	.060	.115	.035
B22a	.395	.110	.250	.141	.340	.500	.095	.190	.170	.050	.085	.029
	.405	.120	.260	.145	.350		.105	.210	.190	.060	.115	.035

**B23**

SEATING PLANE

	A
B23	.035
B23a	.085
B23b	.095

**B24**

RECTANGULAR METAL SLUG

TAB

\* TAB TO BE SHEARED THROUGH AND SET INWARD AS SHOWN.  
B24a ONLY NOTE \*

**B25**

TERMINAL No 3

INDEX MARK AREA

TERMINAL No 4

TERMINAL No 2

TERMINAL No 1

	A	B	C	D	E	F	G	H	J	K	M	N	P
B25	.657	.420	.190	.145	.090	.165	.235	.155	.140	.004	.225	.062	.058
	.667	.440	.210	.165	.096	.180	.265	.165	.165	.010	.250	.077	.063

**B26**

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S
B26	.453	.299		.059	.591	.512	.354	.031	.059	.146	.189	.106	.059	.110	.039	.248
B26a	.409	.314	.374	.059	.602	.472	.216	.029	.051	.141	MAX	MAX	MAX		MAX	.255
					MIN	MIN										MIN
B26b	.432				.688	.472	.275	.027	.043	.133	.169	.090	.039		.023	.236
					MAX	MIN	MIN		.066	.149	.188	.114	.059			MIN
B26c	.393				.602	.472	.331	.019	.047	.143	.181	.047	.074		.019	
	.409				MIN	MIN	.031	.059	.151	.196	.062	.082			.031	

**B28**

CASE TEMPERATURE MEASUREMENT POINT

**B29**

**B32**

SEATING PLANE

BEFORE LEAD FINISH

# 18. OUTLINE DRAWINGS

### B33

	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
B33	.984	.926	.374	.246	.351	.492	.137	.492	.177	.051	.027	.099	.099	.037	.177	.088	.102	.055	.688
	MAX		.413	MIN	.259		.145	MIN	.216		.035			MIN	.216	.082	.118	.082	

### B34

① ⑦

### B36

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
B36	.393	.118	.043	.024	.193	.400	.024	.053	.024	.098	.189	.433	.492	.280	.480	.126	.236	.098
	MAX	.134	.059	.047	.209	MAX		.065	.043		MAX	MIN	MIN	.319	.520		MAX	.138

### B37

1 2 3

### B38

INCH (MM)

### B39

1 2 3 4 5

### B40

INCH (MM)

### B41

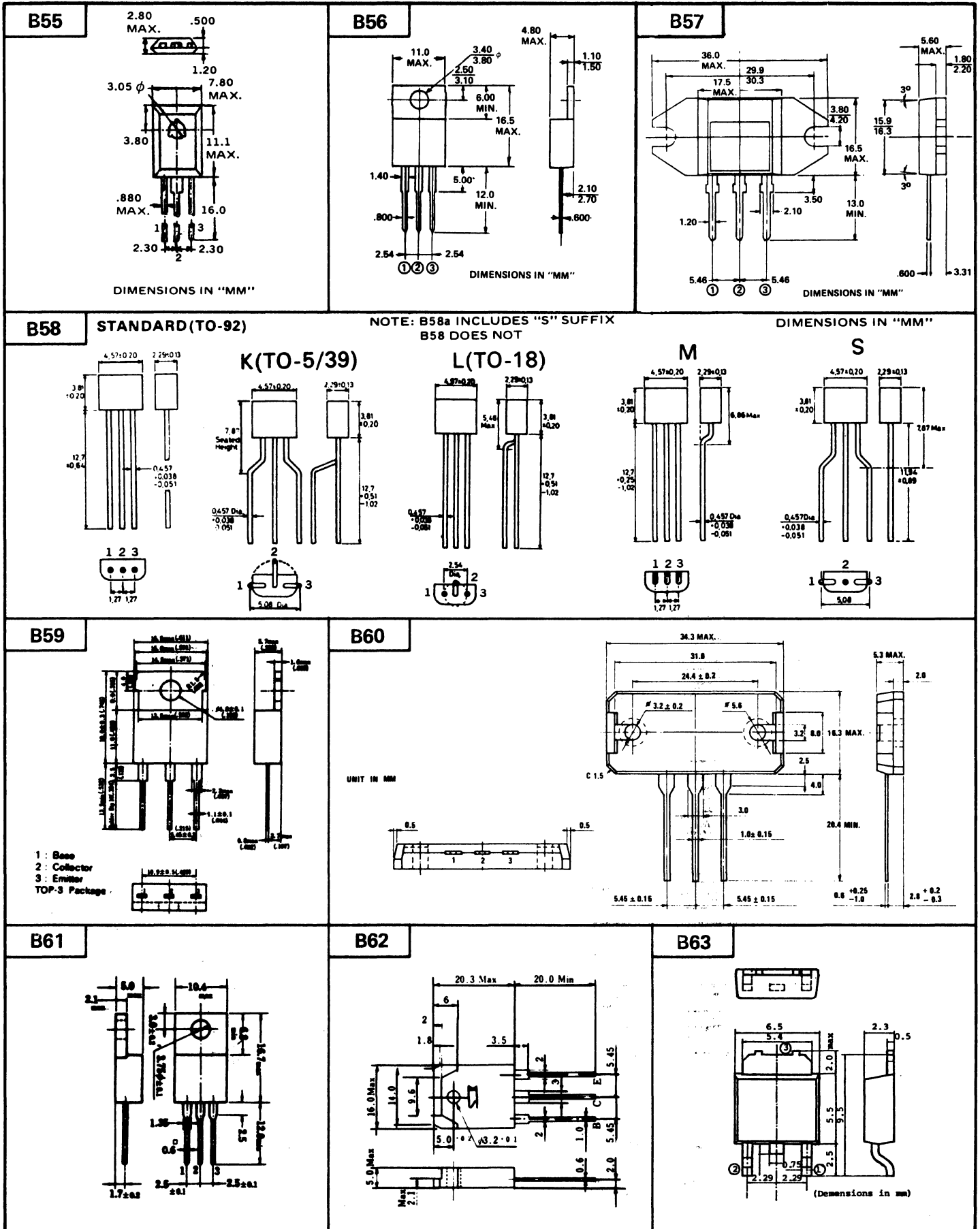
INCH (MM)

### B42

	A	B	C	D	E
B42	.400	.670	.150	.140	.500
B42a	.400	.835	.135	.127	.420



# 18. OUTLINE DRAWINGS

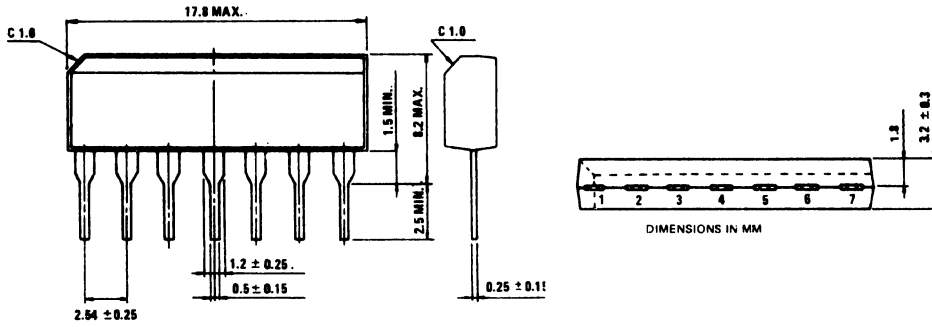




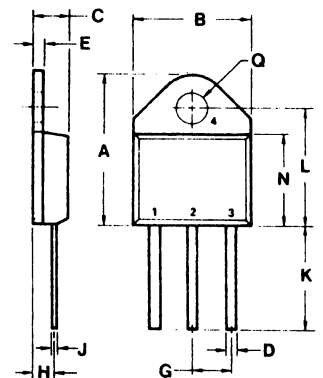


# 18. OUTLINE DRAWINGS

**B71**



**B72**

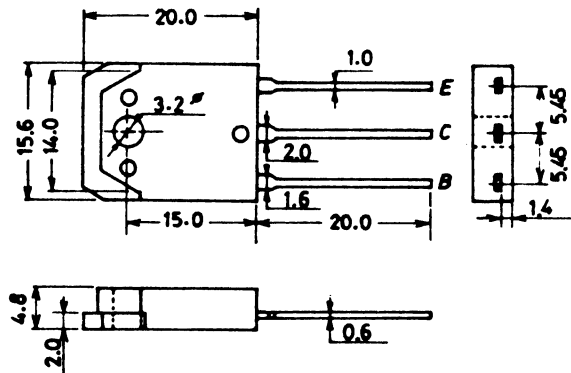


STYLE 1:  
 1. BASE  
 2. COLLECTOR  
 3. EMITTER  
 4. COLLECTOR

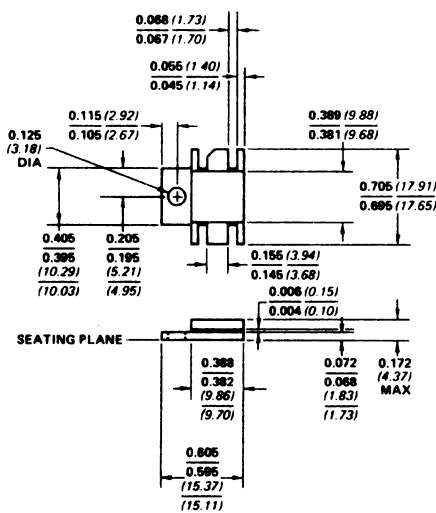
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	20.32	21.08	0.800	0.830
B	15.49	15.90	0.610	0.626
C	4.19	5.08	0.165	0.200
D	1.02	1.65	0.040	0.065
E	1.35	1.65	0.053	0.065
G	5.21	5.72	0.205	0.225
H	2.41	3.20	0.095	0.126
J	0.38	0.64	0.015	0.025
K	12.70	15.49	0.500	0.610
L	15.88	16.51	0.625	0.650
N	12.19	12.70	0.480	0.500
Q	3.94	4.19	0.155	0.165

CASE 340-01  
 TO-218AC

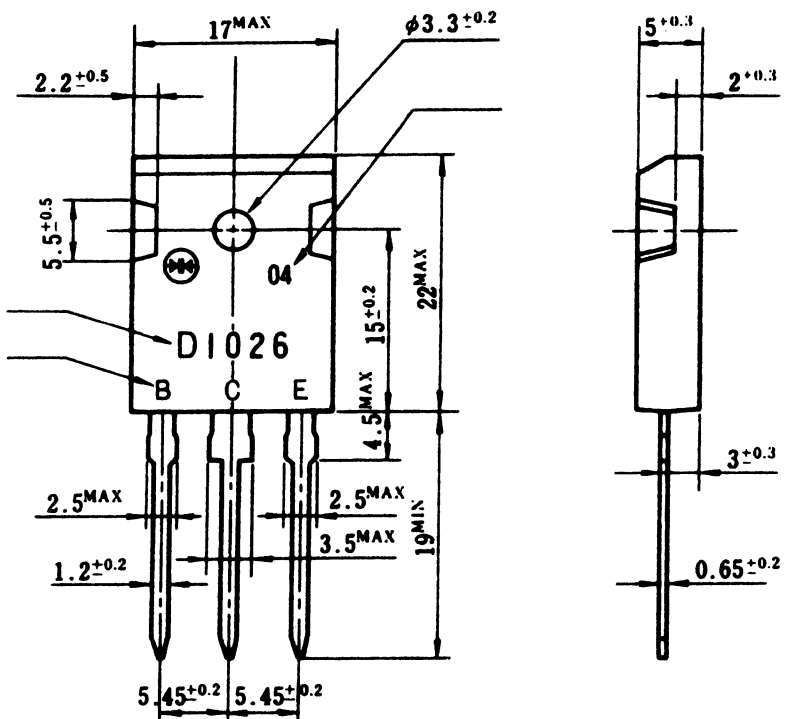
**B73**



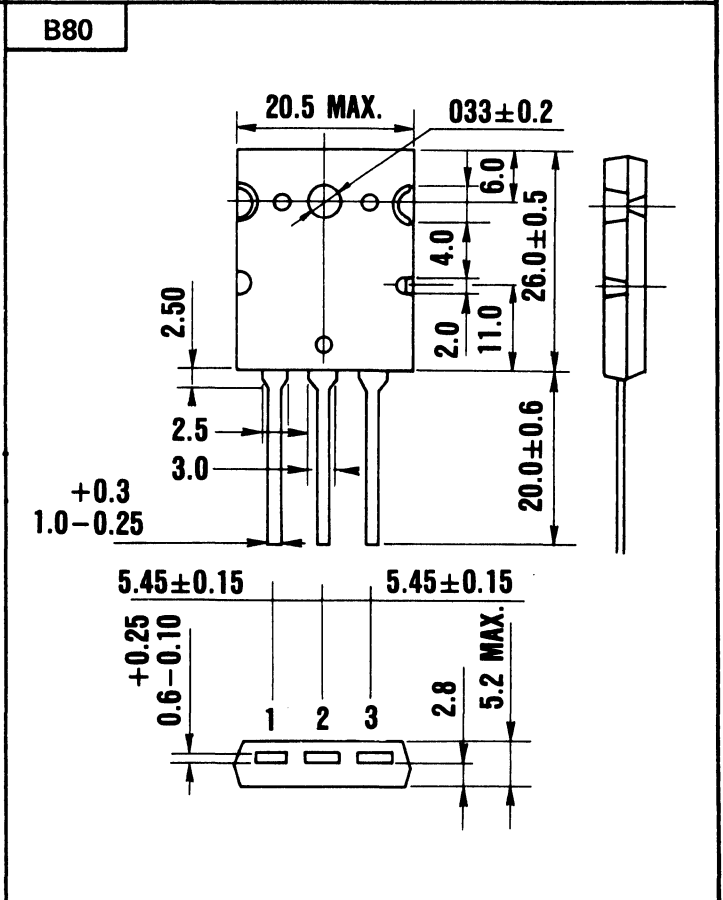
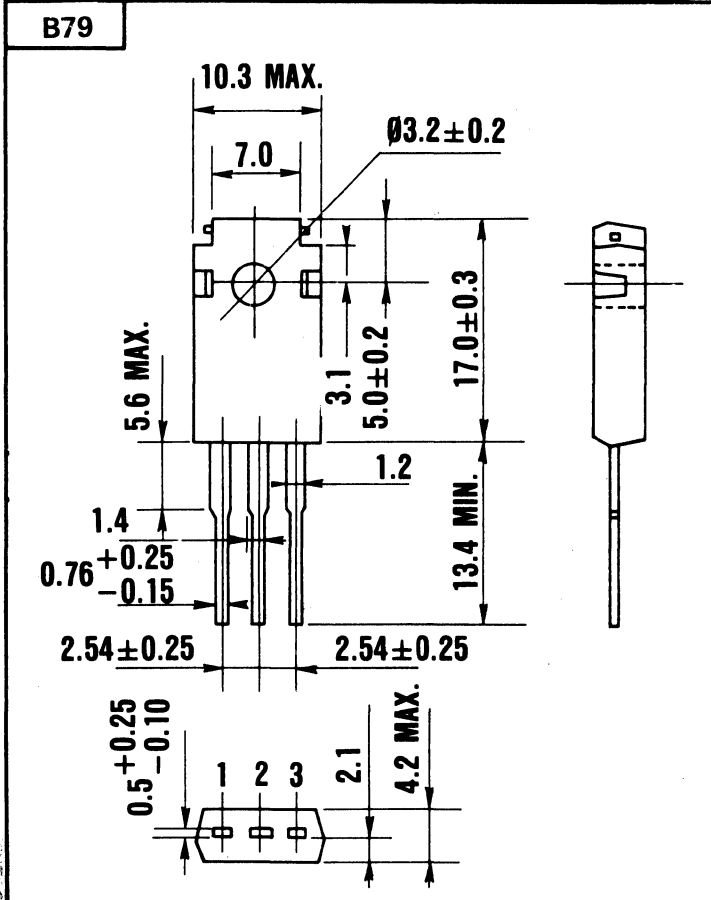
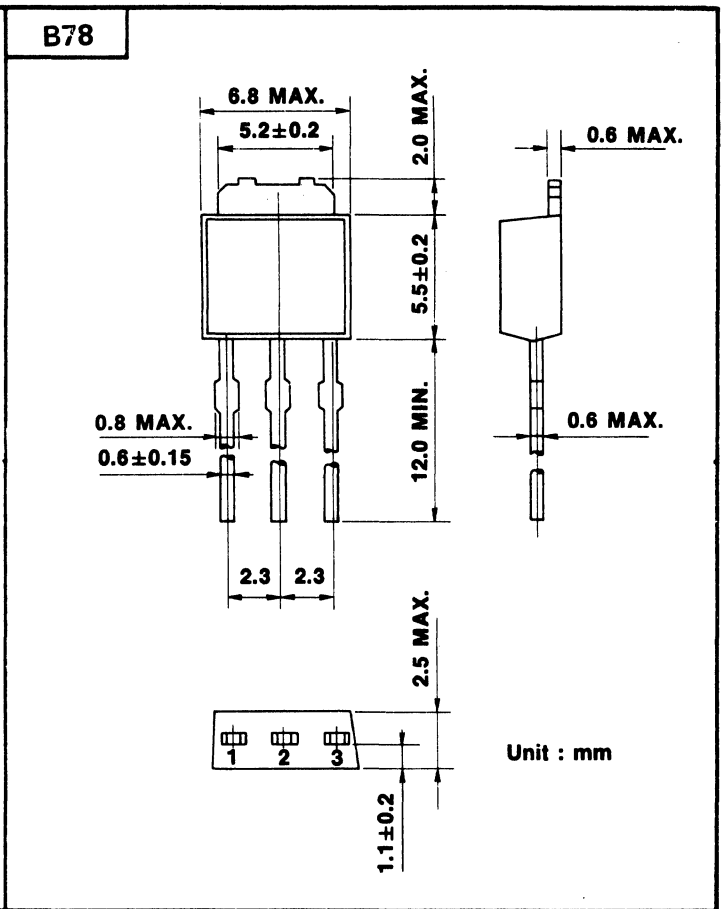
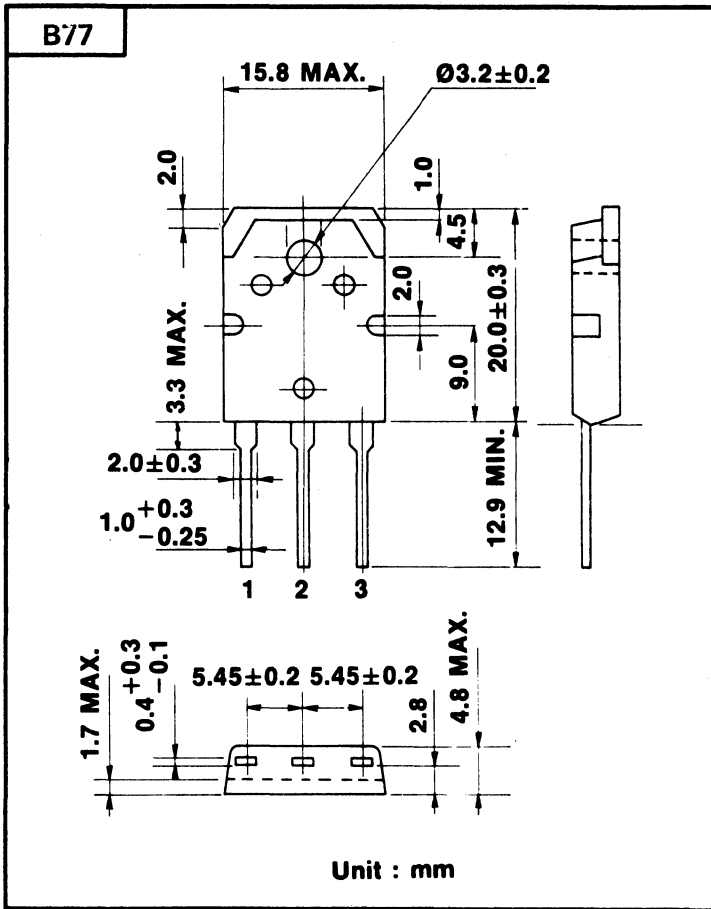
**B74**



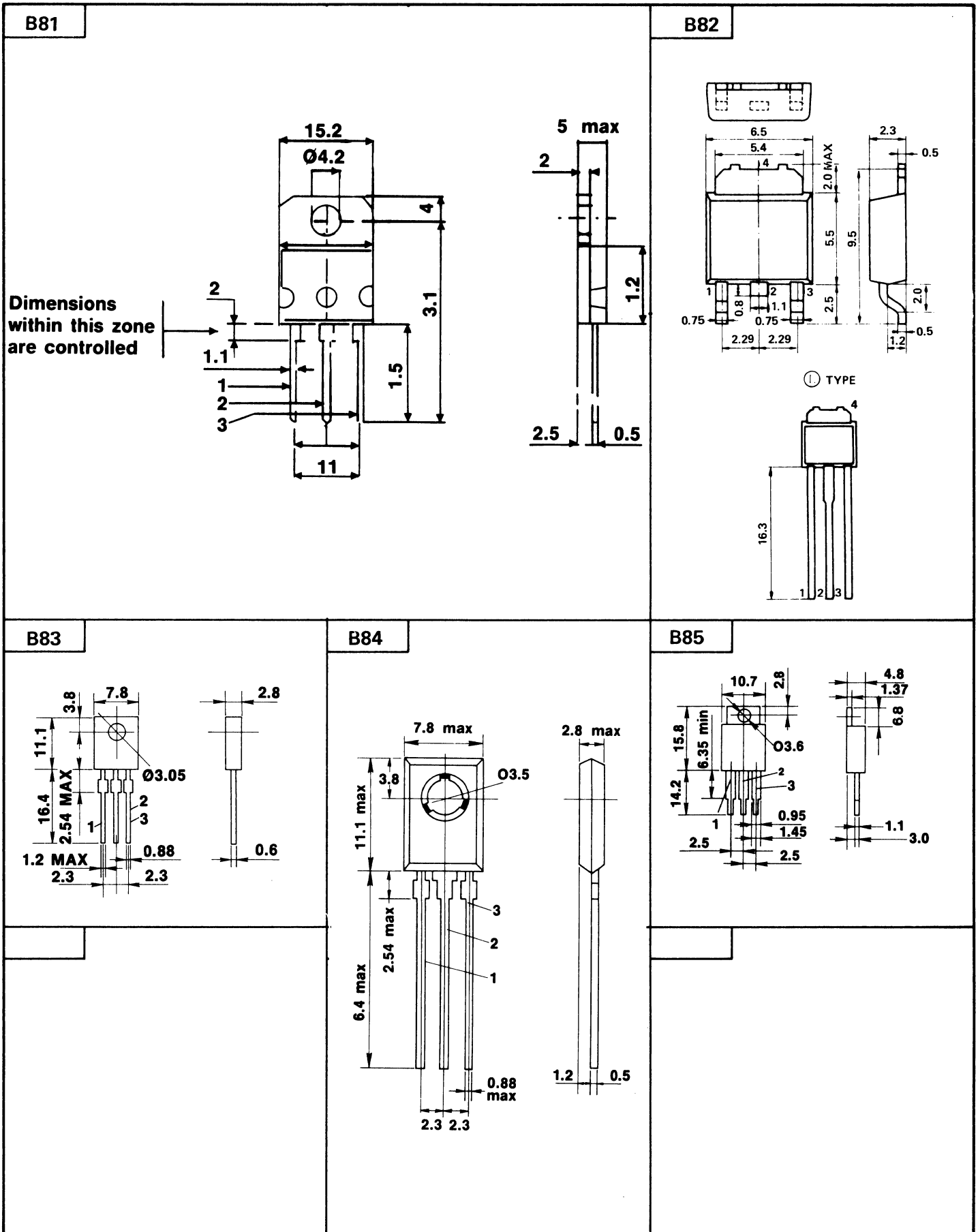
**B76**



# 18. OUTLINE DRAWINGS

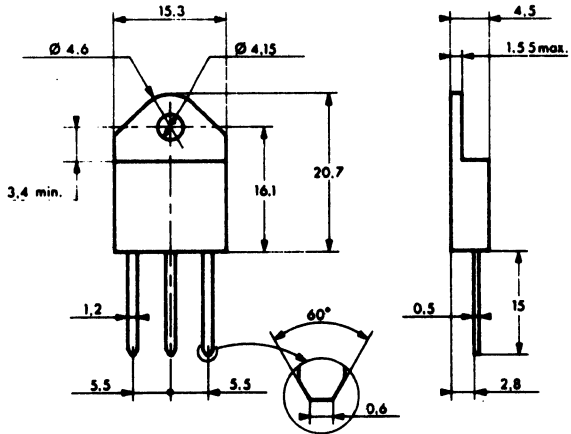


# 18. OUTLINE DRAWINGS

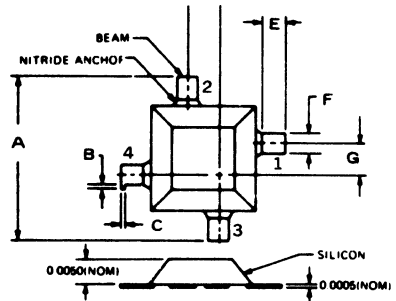


# 18. OUTLINE DRAWINGS

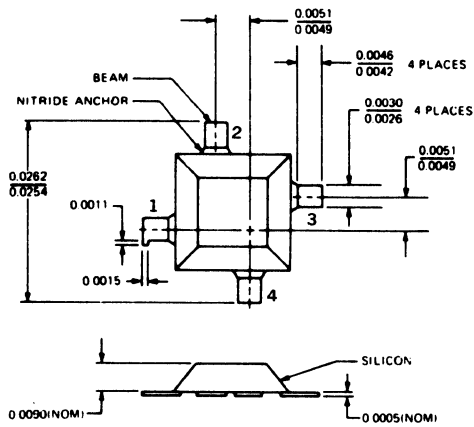
B86



C14

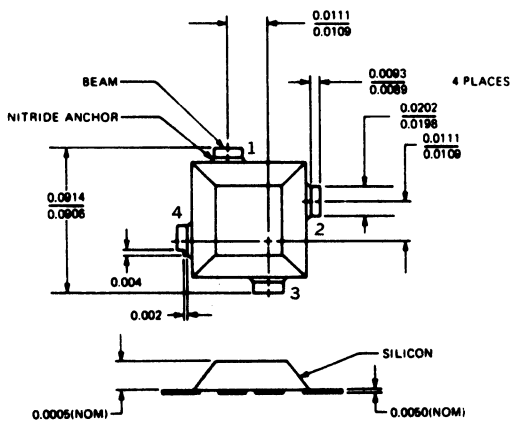


C15

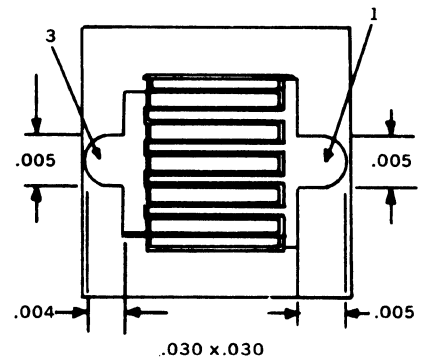


	A	B	C	D	E	F	G
C14	.0314 .0306	.0015	.002	.0059 .0061	.0044 .0048	.0036 .0040	.0059 .0061
C14a	.0254 .0262	.0011	.0015	.0049 .0051	.0042 .0046	.0026 .0030	.0049 .0051
C14b	.0406 .0414	.0015	.002	.0115 .0125	.0044 .0048	.0098 .0110	.0110 .0115

C16



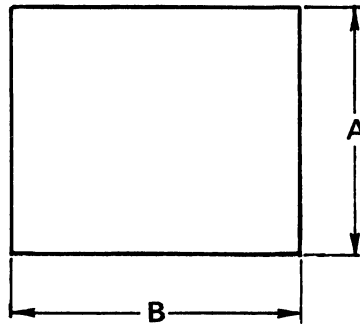
C17





# 18. OUTLINE DRAWINGS

C39



Suffix	A	B	Die Thickness
C39a	60	60	10 ± 2
C39b	100	100	10 ± 2
C39c	62	62	10 ± 2
C39d	190	190	10 ± 2
C39e	89	69	10 ± 2
C39f	112	112	10 ± 2
C39g	98	82	10 ± 2
C39h	210	184	10 ± 2
C39i	156	156	10 ± 2
C39j	192	192	10 ± 2
C39k	142	142	10 ± 2
C39m	72	90	10 ± 2
C39n	108	108	10 ± 2
C39o	114	114	10 ± 2
C39p	145	145	10 ± 2
C39q	202	202	10 ± 2

Suffix	A	B	Die Thickness
C39r	230	230	10 ± 2
C39s	200	200	10 ± 2
C39t	132	132	10 ± 2
C39u	86	86	10 ± 2
C39v	170	170	10 ± 2
C39w	130	130	10 ± 2
C39x	132	132	10 ± 2
C39y	160	160	10 ± 2
C39z	34	34	10 ± 2
C39ea	120	131	10 ± 2
C39eb	187	193	10 ± 2
C39ec	140	167	10 ± 2
C39ed	205	200	10 ± 2
C39ee	180	206	10 ± 2
C39ef	46	52	10 ± 2
C39eg	50	60	10 ± 2

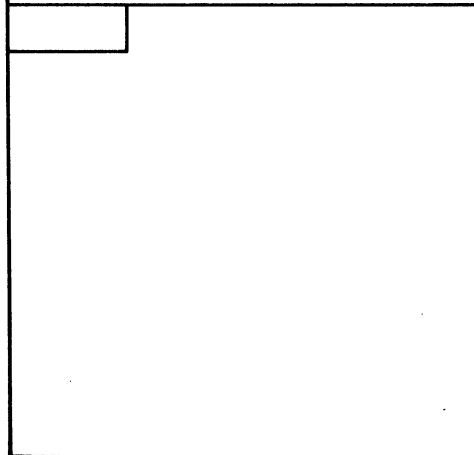
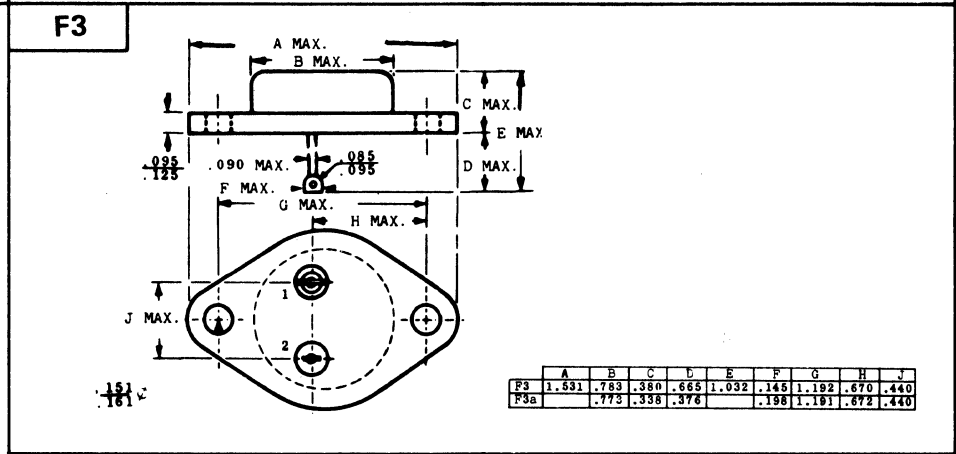
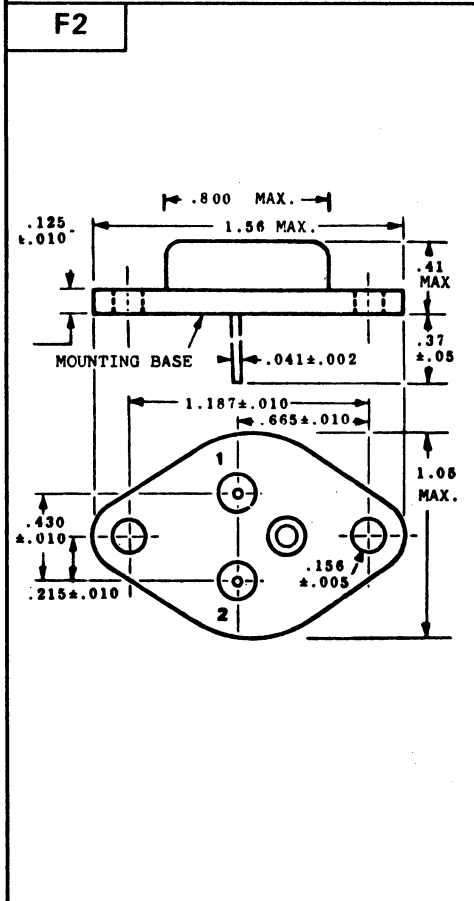
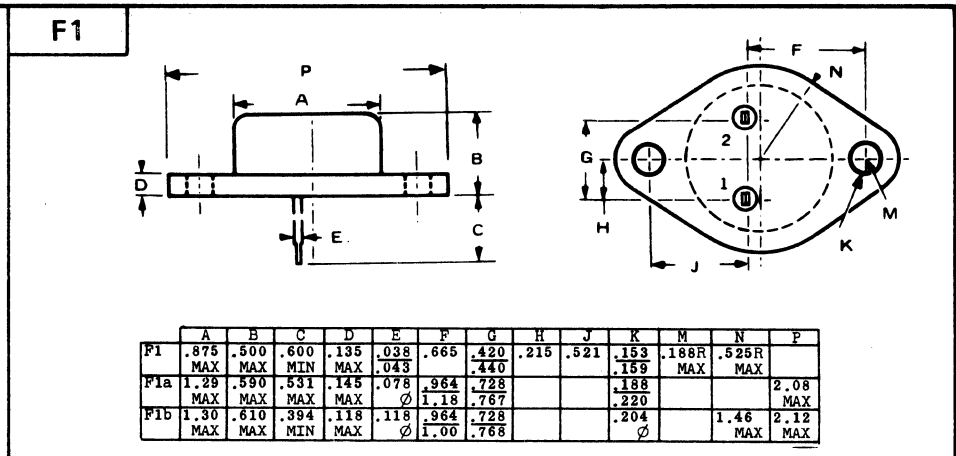
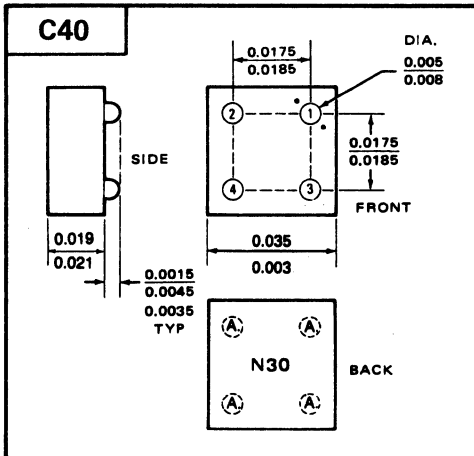
Suffix	A	B	Die Thickness
C39eq	12	17	6 ± 2
C39er	14	18	6 ± 2
C39es	15	17	6 ± 2
C39et	19	19	6 ± 2
C39eu	21	25	6 ± 2
C39ev	17	18	6 ± 2
C39ew	14	16	6 ± 2
C39ex	30	30	6 ± 2
C39ey	15	22	6 ± 2
C39ez	12	22	6 ± 2
C39ca	25	36	6 ± 2
C39cb	40	60	6 ± 2
C39cc	10	12	6 ± 2
C39cd	32	40	6 ± 2
C39ce	32	69	6 ± 2
C39cf	32	98	6 ± 2

Suffix	A	B	Die Thickness
C39ey	24	24	6 ± 2
C39ez	20	29	6 ± 2
C39ea	12	16	6 ± 2
C39eb	10	18	6 ± 2
C39ec	24	30	6 ± 2
C39ed	18	18	6 ± 2
C39ee	21	21	6 ± 2
C39ef	21	20	6 ± 2
C39eg	25	25	6 ± 2
C39eh	34	31	6 ± 2
C39ei	31	31	6 ± 2
C39ek	11	13	6 ± 2
C39em	11	18	6 ± 2
C39en	35	35	6 ± 2
C39eo	17	17	6 ± 2
C39ep	13	16	6 ± 2

Suffix	A	B	Die Thickness
C39eh	110	120	10 ± 2
C39ei	70	70	10 ± 2
C39ej	120	120	10 ± 2
C39ek	11	16	6 ± 2
C39em	27	24	6 ± 2
C39en	20	24	6 ± 2
C39eo	12	18	6 ± 2
C39ep	16	20	6 ± 2
C39eq	10	15	6 ± 2
C39er	15	20	6 ± 2
C39es	20	20	6 ± 2
C39et	45	45	6 ± 2
C39eu	26	26	6 ± 2
C39ev	36	36	6 ± 2
C39ew	60	60	6 ± 2
C39ex	15	15	6 ± 2

Suffix	A	B	Die Thickness
C39cg	17	16	6 ± 2
C39ch	28	27	6 ± 2
C39ci	60	65	6 ± 2
C39cj	60	98	6 ± 2
C39ck	35	165	6 ± 2
C39cm	35	115	6 ± 2
C39cn	50	110	6 ± 2
C39co	66	118	6 ± 2
C39cp	70	90	6 ± 2
C39cq	40	40	6 ± 2
C39cr	13	17	
C39cs	13	19	
C39ct	25	35	

# 18. OUTLINE DRAWINGS



# 18. OUTLINE DRAWINGS

**F5**

	A	B	C	D	E	F	G	H	J
F5	.480	.500	.480	.040	1.008	.430	.072	1.184	1.848
	MAX	MAX	MAX		MAX				MAX
F5a	.512	.523	.527	.035	.783	.338		.908	1.840
	MAX	MAX	MAX		MAX				MAX
F5b	.500	.574	.433	.040		.435		1.18	1.80
	MAX	MAX	MAX						MAX
F5c	.508	.395	.383	.038	.975	.314	.089	.944	1.33
	MAX	MAX	MIN		MAX				MAX
F5d	.570	.514	.393	.038	.708	.193		.321	1.35
	MAX	MAX	MAX		MAX	.303		.341	MAX

**F6**

	A	B	C	D	E	F	G	H	J	K
F6	.570	1.22	.949	.322	.785	.355		.295	.040	.180
	MAX	MAX	MAX	MAX	MAX	MAX		MAX	MAX	MAX
F6a	.590	1.22	.949	.322	.785	.355		.295	.040	.180
	MAX	MAX	MAX	MAX	MAX	MAX		MAX	MAX	MAX
F6b	.580	1.30	.949	.322	.785	.355		.295	.040	.180
	MAX	MAX	MAX	MAX	MAX	MAX		MAX	MAX	MAX
F6c	.575			.440		.312	.655	.250		.160
						MAX	MAX	MAX		
F6d	.570	1.27	.953	.193	.708	.393	.571	.314	.040	.160
			MAX	MAX			MAX	MAX		
F6e	.787	1.57	1.195	.438	1.023	.433	.658	.394	.040	.160
						MIN	MAX	MAX		
F6f	1.280	2.08	1.702	.760	1.417	.460	.972	.590	.040	.160
							MAX	MAX		
F6g	.570	1.22	.897	.328	.728	.354	.507	.255	.040	.180
			MAX	MAX		MAX	MAX	MAX		
F6h	.787	1.53	1.17	.425	1.02	.437	.661	.374	.040	.160
		MAX	MAX	MAX	MAX	MAX	MAX	MAX		
F6j	.500	1.25	.962	.210	.700	.360	.580	.340	.040	.180
	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX		
F6k	.787	1.57	1.18	.420	1.04	.354	.655	.394	.040	.151
	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX		MAX
F6m	.551		.913	.243		.335	.524	.295		.185
F6n	.500		.962	.210		.360	.590	.340		.152
						MIN	MIN			
F6p	.75		1.197	.440		.312	.675	.450		.161
						MIN	MIN			
F6q	.610		.950	.315		.380	.532	.295		.158
						MIN	MIN			
F6r	.575		1.177	.420		.312	.655	.250	.057	.151
	MAX		1.197	.440		MAX	MAX	.328	.083	.181

**F7**

**F8**

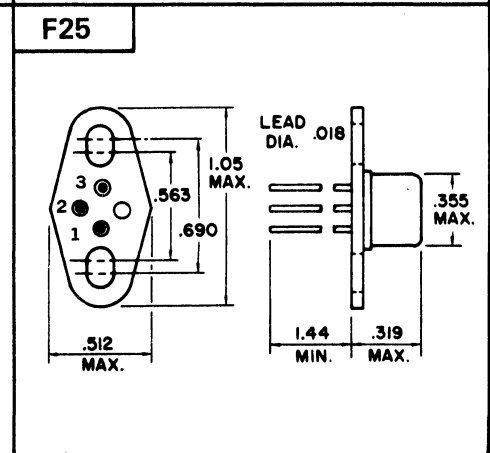
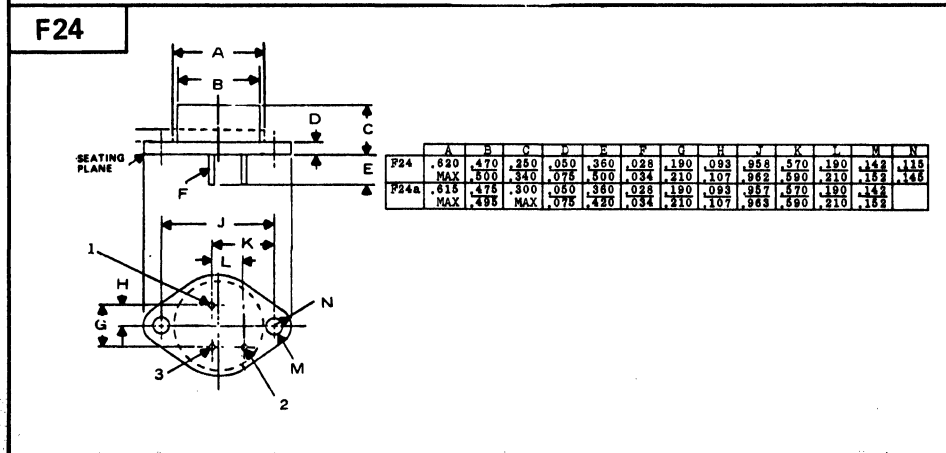
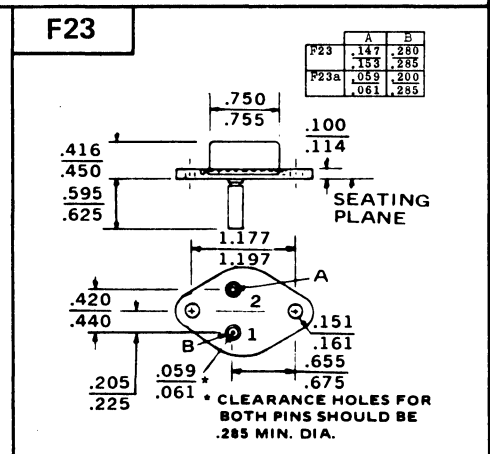
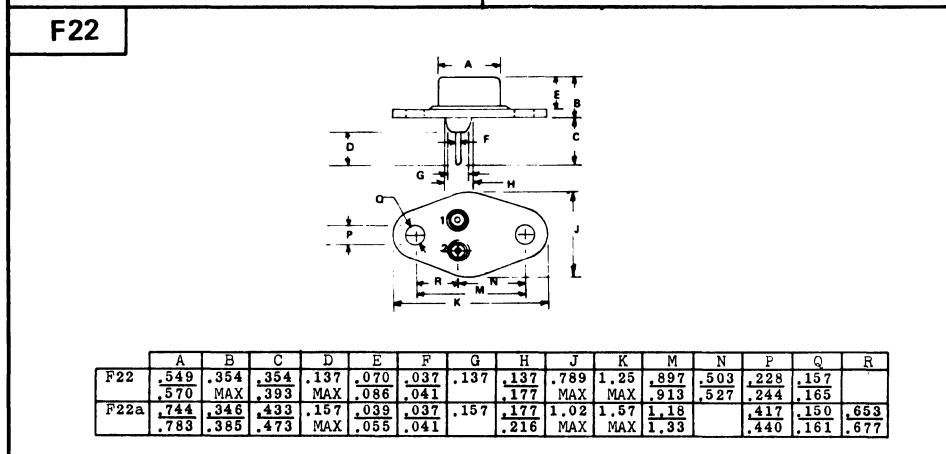
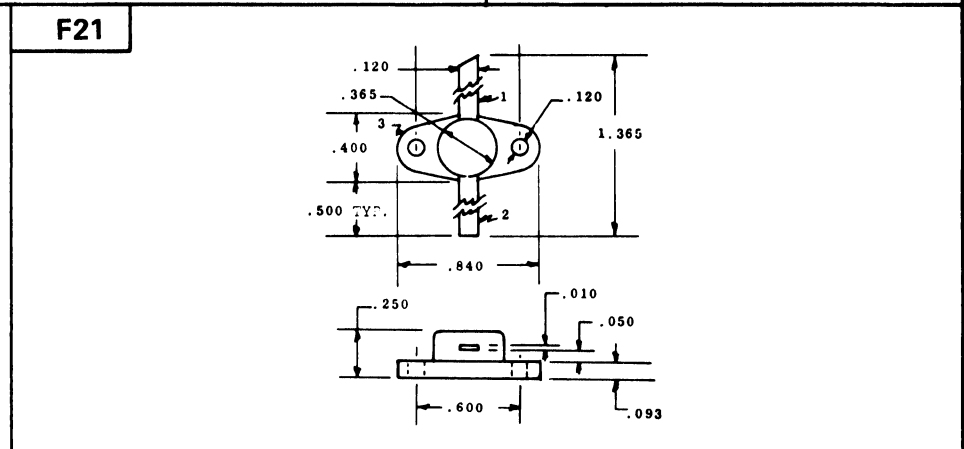
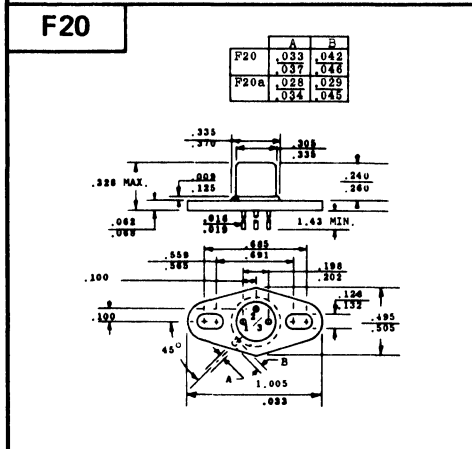
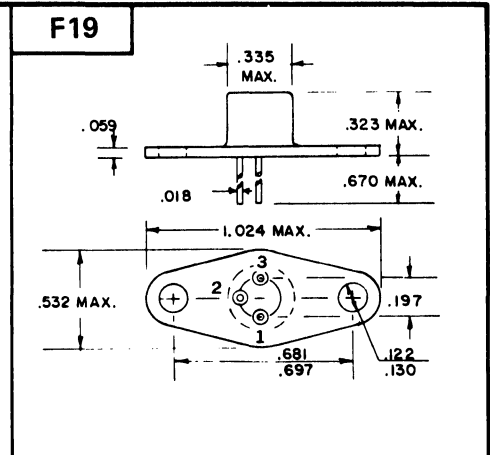
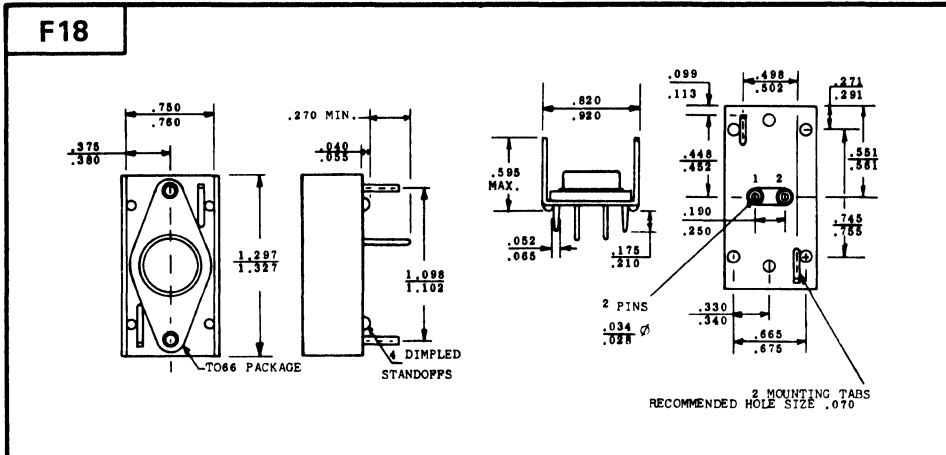
NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the base seat. Between .250 and end of lead a max. of .021 is held.

**F9**

	A	B	C	D	E	F	G	H	J
F9	1.18	.380	.360	.071	.562	.800	.157	.506	.225
			MIN			MIN	MIN	MIN	MIN
F9a	1.23	.318	.394	.076	.562	.800	.157	.506	.225
						MAX	MAX	MAX	MAX
F9b	1.23	.380	.354	.106	.574	.810	.157	.506	.225
	MAX	MAX	MIN		MAX	MAX	MAX	MAX	MAX
F9c	1.18	.375	.400	.150	.500	1.18	.157	.506	.225
	MAX	MAX	MAX		MAX	MAX	MAX	MAX	MAX
F9d	1.23	.318	.473	.076	.562	1.20	.157	.506	.225
	MAX	MAX	MAX		MAX	MAX	MAX	MAX	MAX



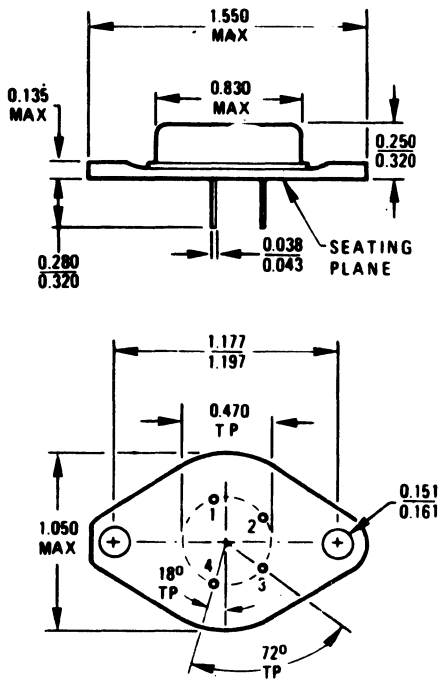
# 18. OUTLINE DRAWINGS



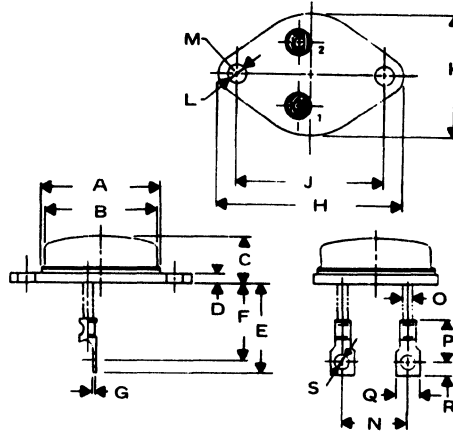


# 18. OUTLINE DRAWINGS

F26

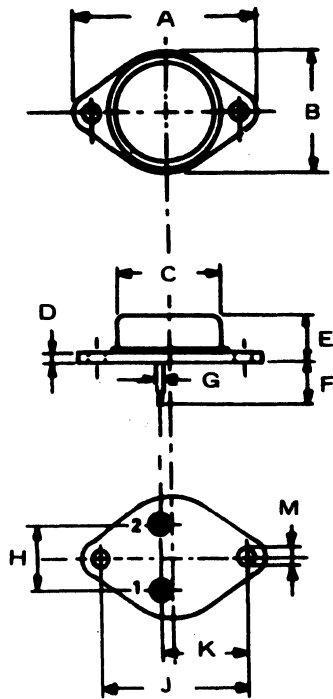


F27



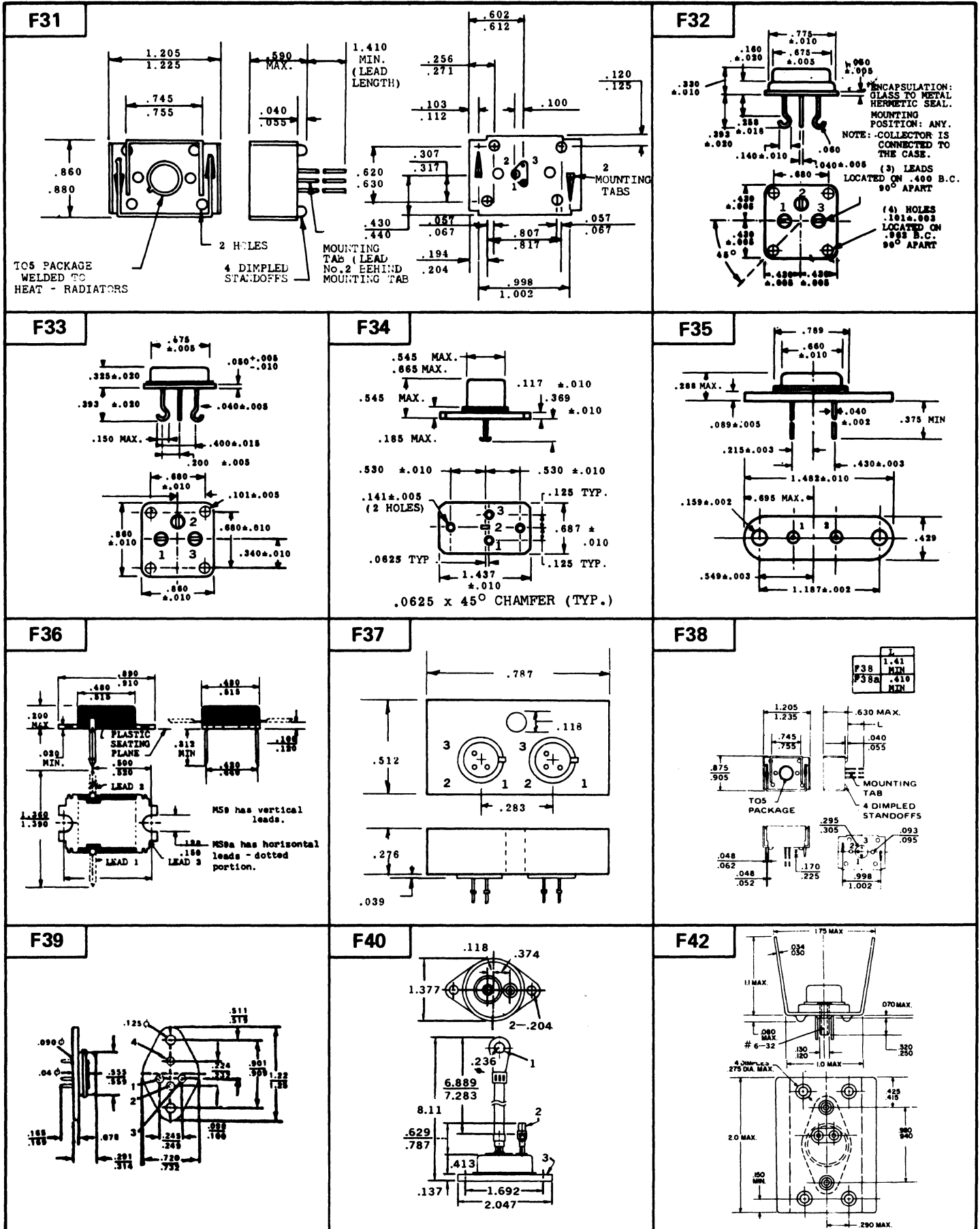
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S
F27	1.35	1.27	.590	.098	.999	.848	.036	2.08	1.69	1.41	.198	.304	.748	.118	.488	.275	.147	.167
	MAX	MAX	MAX	.114	1.11	.984	.043	2.12	1.72	1.45	.212					.389	.155	.178
F27a	1.45	1.25	.610	.137	.847		.039	2.32	1.79	1.53	.194		.492	.078		.188		.078
	MAX	MAX	MAX	MAX	.555		MAX	MAX	1.83	MAX	.214		.531			MAX		

F29



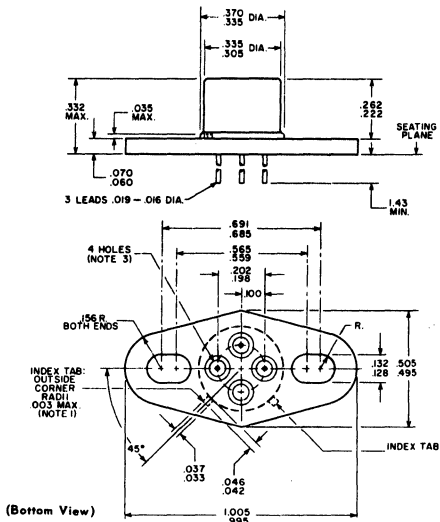
	A	B	C	D	E	F	G	H	J	K	M
F29	2.08	1.41	1.18	.118	.531	.413	.090	.740	1.68	.984	.200
	MAX	MAX	MAX	MAX	MAX	.492		.755	1.70		.208
F29a	2.086	1.417	1.299	.102	.590	.444	.078	.736	1.681	.972	
	MAX	MAX	MAX	.114	MAX	.460		.759	1.704	.996	

# 18. OUTLINE DRAWINGS

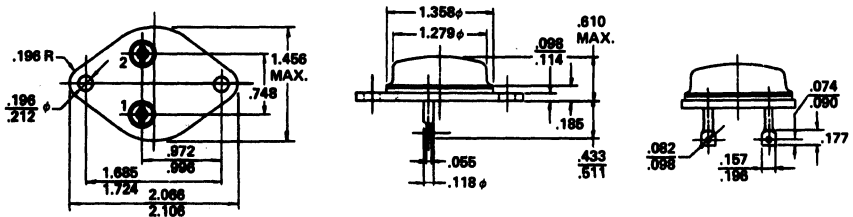


# 18. OUTLINE DRAWINGS

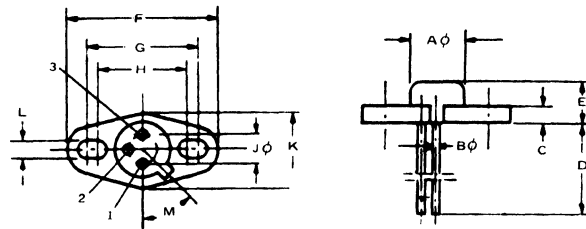
F43



F44

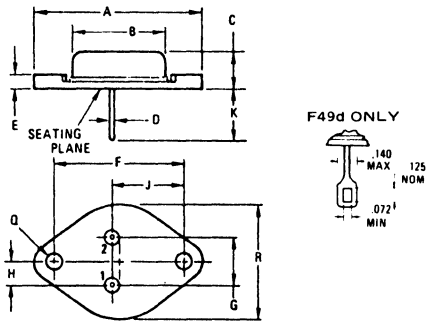


F47



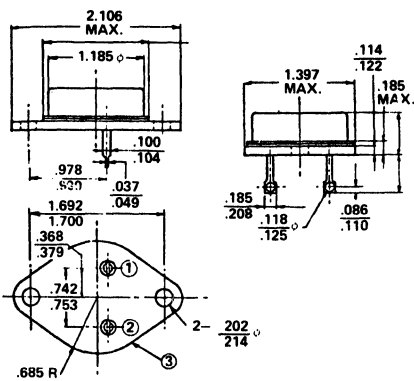
F47	A	B	C	D	E	F	G	H	J	K	L	M
	.334	.017	.125	.748	.259	1.023	.685	.559	.199	.511	.122	.45
	MAX		MAX	MIN	MAX	MAX	.692	.568		MAX	.125	

F49



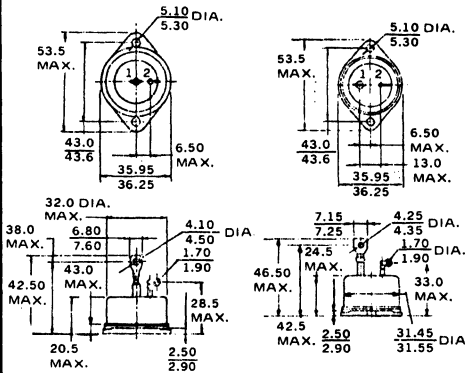
	A	B	C	D	E	F	G	H	J	K	Q	R
F49	1.550	.875	.250	.038	.135	1.177	.420	.205	.655	.440	.151	1.050
	MAX	MAX	.450	.043	MAX	1.197	.440	.225	.675	.480	.161	MAX
F49a	1.550	.830	.250	.039	.135	1.177	.420	.210	.655	.440	.151	1.050
	MAX	MAX	.300	.043	MAX	1.197	.440	.220	.675	.480	.161	MAX
F49b	1.510	.760	.250	.057	.135	1.177	.420	.205	.655	.440	.151	.980
	MAX	MAX	.300	.063	MAX	1.197	.440	.225	.675	.480	.161	1.050
F49c	1.550	.830	.360	.060	.135	1.177	.420	.205	.655	.610	.151	1.050
	MAX	MAX	MAX	.065	MAX	1.197	.440	.225	.675	.710	.161	MAX
F49d	1.550	.830	.360		.135	1.177	.420	.205	.655	.610	.151	1.050
	MAX	MAX	MAX		MAX	1.197	.440	.225	.675	.710	.161	MAX
F49e	1.575	.830	.308	.038	.144	1.173	.420	.205	.655	.440	.151	1.050
	MAX	MAX	.326	.043	MAX	1.197	.440	.225	.675	.480	.161	MAX

F50

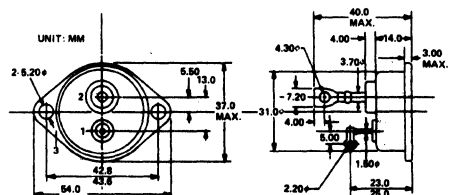


F51

DIMENSIONS IN MM

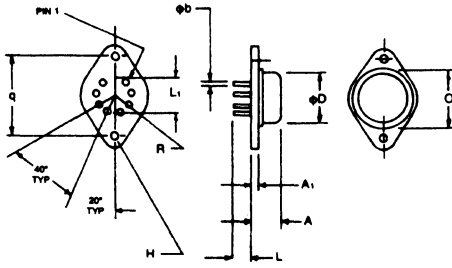


F52



# 18. OUTLINE DRAWINGS

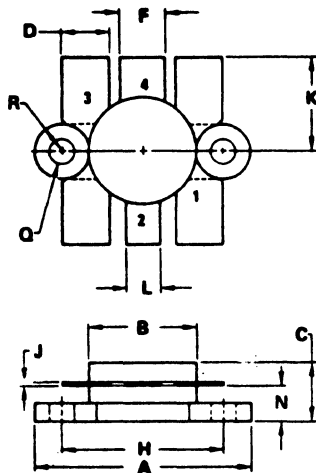
F54



NOTES  
 1 DIMENSIONING & TOLERANCING PER ANSI Y14.5-1973  
 2 8 LEADS  
 3 TWO HOLES  
 4 AT BOTH ENDS  
 5 CONTROLLING DIMENSIONS INCH

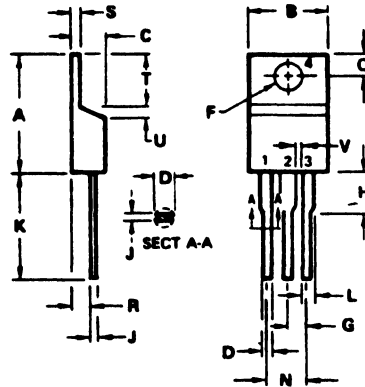
DIMENSION	DIMENSIONS				UNIT
	INCHES		MILLIMETERS		
	MIN.	MAX.	MIN.	MAX.	
A1	0.085	0.100	2.159	2.54	
φb	0.039	0.042	0.991	1.067	2
φD		0.760		19.30	
L1		0.500		12.7	Diab.
q	1.177	1.187	29.90	30.15	
R		0.500		12.7	Rad.
H	0.154	0.159	3.91	4.04	Rad 3
A	0.250	0.450	6.950	11.40	
O		0.875		22.23	Diab.
L	0.220	0.280	5.508	7.112	2

F55



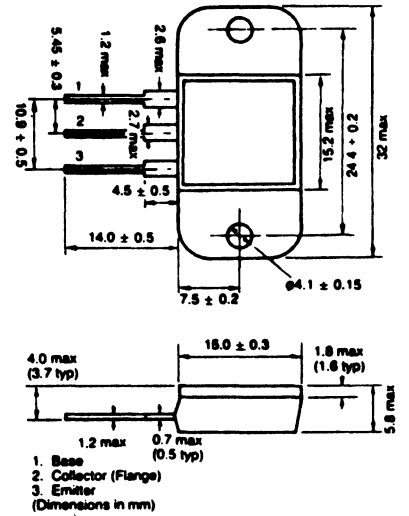
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.38	25.15	0.960	0.990
B	12.45	12.95	0.490	0.510
C	5.97	7.62	0.235	0.300
D	5.33	5.59	0.210	0.220
F	5.08	5.33	0.200	0.210
H	18.29	18.54	0.720	0.730
J	0.10	0.15	0.004	0.006
K	10.29	-	0.405	-
L	3.81	4.06	0.150	0.160
N	3.81	4.32	0.150	0.170
Q	2.92	3.30	0.115	0.130
R	3.05	3.30	0.120	0.130

F56

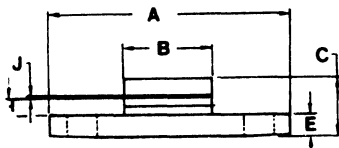
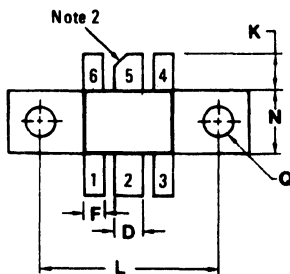


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	15.11	16.75	0.595	0.620
B	8.85	10.29	0.380	0.405
C	4.06	4.82	0.160	0.190
D	0.64	0.89	0.025	0.035
F	3.61	3.73	0.142	0.147
G	2.41	2.67	0.095	0.105
H	2.79	3.30	0.110	0.130
J	0.36	0.56	0.014	0.022
K	12.70	14.27	0.500	0.562
L	1.14	1.27	0.045	0.050
N	4.83	5.33	0.190	0.210
Q	2.54	3.04	0.100	0.120
R	2.04	2.79	0.080	0.110
S	1.14	1.39	0.045	0.055
T	5.97	6.48	0.235	0.255
U	0.76	1.27	0.030	0.050
V	1.14	-	0.045	-

F57



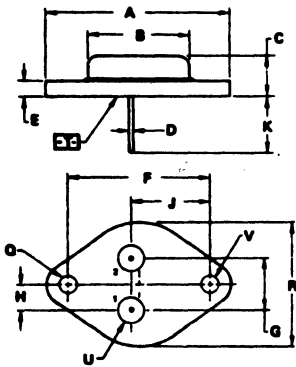
F58



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.51	25.02	0.965	0.985
B	8.76	9.02	0.345	0.355
C	5.72	6.48	0.225	0.255
D	2.92	3.18	0.115	0.125
E	2.29	2.54	0.090	0.100
F	1.78	2.03	0.070	0.080
H	1.65	1.90	0.065	0.075
J	0.10	0.15	0.004	0.006
K	2.29	2.79	0.090	0.110
L	18.42	BSC	0.725	BSC
N	5.72	5.97	0.225	0.235
Q	3.05	3.30	0.120	0.130

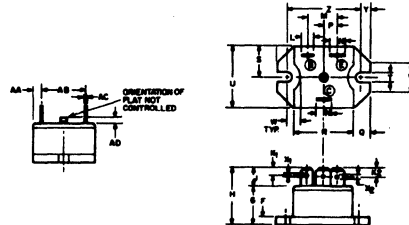
# 18. OUTLINE DRAWINGS

F59



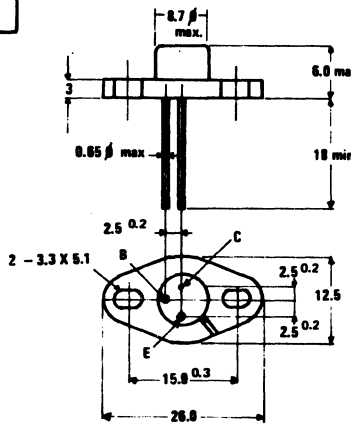
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	33.37	-	1.550
B	-	21.08	-	0.830
C	6.35	7.62	0.250	0.300
D	6.97	1.05	0.038	0.043
E	-	3.43	-	0.135
F	30.15	BSC	1.187	BSC
G	10.97	BSC	0.430	BSC
H	5.46	BSC	0.215	BSC
J	16.89	BSC	0.665	BSC
K	11.18	12.19	0.440	0.480
L	3.81	4.19	0.150	0.165
R	-	26.67	-	1.050
U	4.83	5.33	0.190	0.210
V	3.81	4.19	0.150	0.165

F60

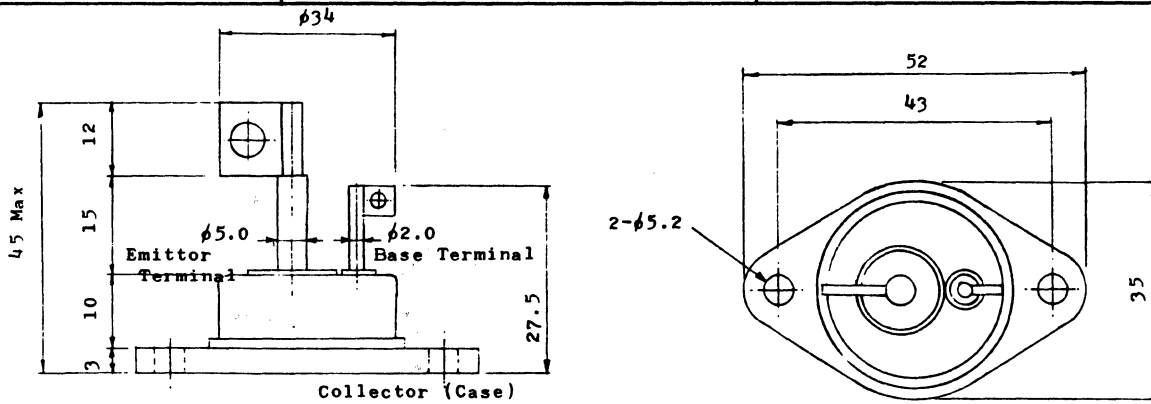


S	INCHES		METRIC		S	INCHES		METRIC	
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX
A	1.50	1.50	38.22	38.22	E	4.85	5.10	12.27	12.95
F	1.20	1.32	30.4	33.5	T	1.50	1.70	38.1	43.2
G	6.03	6.45	153.6	164.0	U	3.88	1.0	28.0	25.80
H	9.40	9.80	238.7	241.0	V	4.50	REF	11.43	REF
J	30.7	-	7.80	-	W	1.80	-	4.57	-
K	1.20	1.32	30.4	33.5	X	0.50	0.58	1.27	1.47
L	1.71	1.84	43.4	46.4	Y	0.65	0.73	1.63	1.85
M	1.84	1.92	46.7	48.8	Z	1.57	1.77	39.8	45.0
N	4.64	4.84	117.8	123.0	AA	1.30	1.82	33.0	46.0
P	2.47	2.58	62.7	64.8	AB	1.30	1.65	33.0	43.0
Q	2.10	2.30	53.3	58.4	AC	0.31	0.35	7.8	9.0
R	2.75	REF	70.0	REF	AD	1.00	REF	25.4	REF

F61

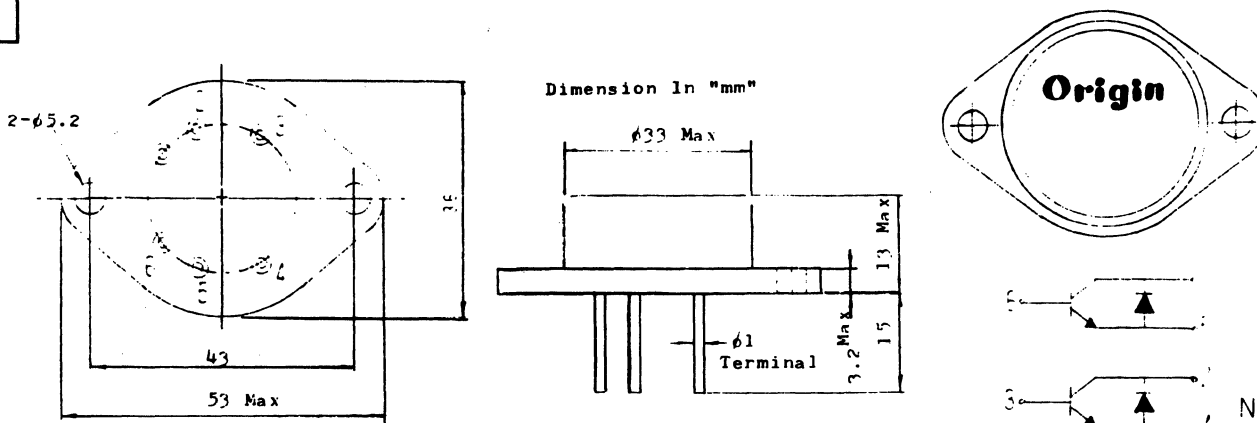


F62



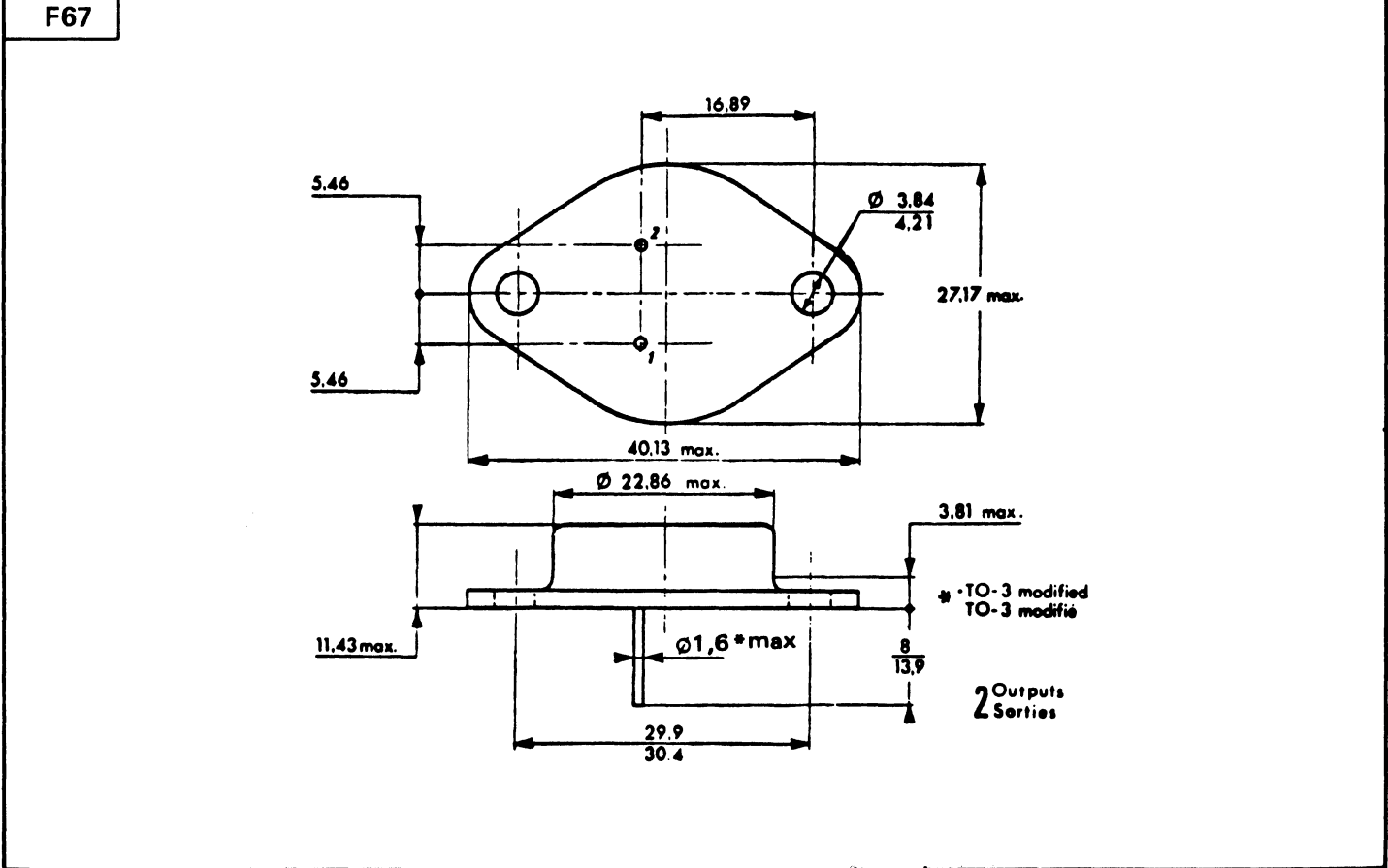
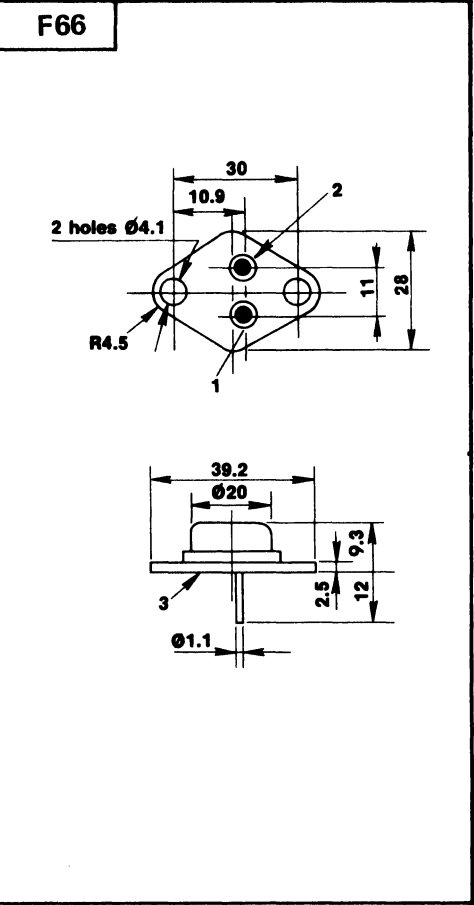
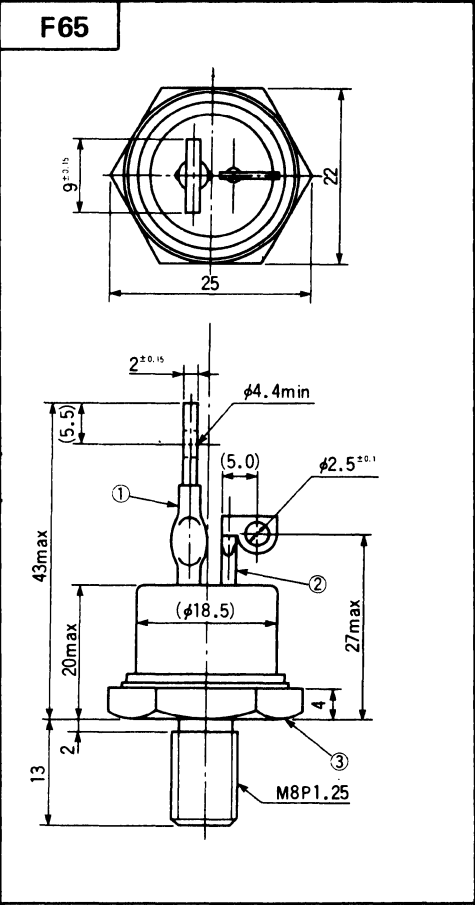
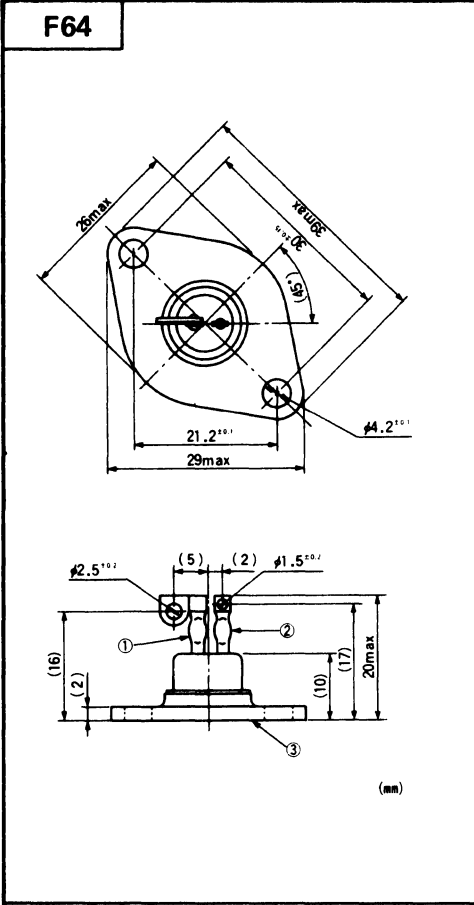
Dimension In "mm"

F63





# 18. OUTLINE DRAWINGS



# 18. OUTLINE DRAWINGS

**O1**

**O3**

	A	B	C	D	E	F	G	H
O3	.420 MAX	.390 MAX	.310 MAX	1.400 MAX	.150 MAX	.045 MAX	.230 MAX	
O3a	.420 MAX	.390 MAX	.480 MAX	1.500 MIN	.280 MAX	.080 MAX		.018
O3b	.496 MAX	.382 MAX	.385 MAX	1.532 MAX	.300 MAX	.053 MAX	.202 MAX	.016
O3c	.490 MAX	.382 MAX	.385 MAX	1.437 MAX	.300 MAX	.058 MAX	.202 MAX	.016
O3d	.385 MAX	.380 MAX	.340 MAX	1.437 MIN	.195 MAX	.043 MAX	.187 MAX	.016
O3e	.405 MAX	.370 MAX	.380 MAX	1.562 MAX	.215 MAX	.053 MAX	.197 MAX	.019
O3f	.405 MAX	.370 MAX	.315 MAX	1.440 MAX	.215 MAX	.053 MAX	.197 MAX	.018
O3f	.405 MAX	.365 MAX	.310 MAX	1.500 MIN	.215 MAX	.058 MAX	.202 MAX	.019
O3g	.405 MAX	.360 MAX	.295 MAX	1.438 MAX	.215 MAX	.043 MAX	.187 MAX	.019
O3h		.325 MAX	.455 MAX	.185 MAX		.048 MAX	.137 MAX	
O3j		.300 MAX	.670 MAX	.185 MAX		.048 MAX	.137 MAX	.151

**O5**

**O14**

**O16**

**O17**

	A
O17	1.00 MIN
O17a	1.50 MIN



# 18. OUTLINE DRAWINGS

**R38**

LEAD CONFIGURATION				
1	2	3	4	OUTLINE
R38	E	B	C	GRD CASE TO72
R38a	E1	B	C	E2 TO72

**R45**

NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the cap or base seat. Between .250 and 1.125 or 1.430 a max. of .021 is held.

**R46**

NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the base seat. Between .250 and end of lead a max. .021 is held.  
NOTE 2: Do not attempt to insert a #2-56 stud in excess of .045.

**R50**

**R52**

	A	B	C	D	E	F	G	H	J
R52	.100	.335	1.50	.305	.009	.029	.028	.016	.200
R52a	.100	.370		.335	.128	.045	.034	.019	
R52b	.100	.325	.385	.305	.009	.029	.028	.016	.200
R52b	.100	.370		.335	.128	.045	.034	.019	
R52c	.260	.342	.492	.311	.047	.031	.031	.017	.200
R52c	.260	.386		.334					

**R61**

**R67**

NOTE: THE LEAD DIA. APPLIES TO THE ZONE BETWEEN .050 & .250 FROM THE BASE OF THE SEAT. BETWEEN .250 AND END OF LEAD A MAX. OF .021 DIA. IS HELD. OUTSIDE OF THESE ZONES THE LEAD DIA. IS NOT CONTROLLED.

	A	B	C	D	E
R67	.135	.205	.185	.260	.075
R67a	.178	.238	.195	.210	.039
R67b	.110	.165		.170	.075
R67b	.155	.205		.265	

**R70**

**R74**

COLLECTOR CONNECTED TO CASE

**R90**

	A	B	C	D	E	F	G	H
R90	.190	.350	.500	.017	.012	.100	.041	.039
R90a	.220	.365	.521	.017	.011	.102	.055	.035
R90b	.334	.259	.748	.018	.015	.196	.031	.039

**R92**

	A	B	C
R92	.230	.210	.50 MIN.
R92a	.209	.170	
R92b	.240	.240	1.5 MAX.

# 18. OUTLINE DRAWINGS

**R97**

Leads electrically isolated from case

	A	B	C	D	E	F
R97	.330	.250	.200	.100	.400	
R97a	.215	.250	.115	.100	.050	.400
R97b	.210	.200		.100	.050	.500
R97c	.215	.200		.100	.050	
R97d	.215	.250		.100	.050	.400
R97e	.320	.220		.200	.100	.400

**R101**

1 EMITTER

3 COLLECTOR

**R103**

SEATING PLANE

RED DOT INDICATES COLLECTOR

4 LEADS .016 .018

LEAD NO. 4 (SHIELD) .177 SHORTER ON R103A ONLY.

90°

45°

INDENT BETWEEN SHIELD AND EMITTER

	A	B	C	D
R103	.240	.410	1.50	.100
R103a	.250	.330	.500	.100

**R108**

COLOR DOT

**R109**

ORIENTATION RANDOM

.020 MAX. (GLASS EXTENSION)

**R110**

LEAD NO. 1

LEAD NO. 2

LEAD NO. 3

	A	B	C	D	E	F
R110	.185	.100	.100	.140	.400	.016
R110a	.215		.120	.250		.022
R110b	.300	.200	.100	.160	.400	.016
R110c	.330		.120	.280		.022
R110d	.280	.100		.250	.500	.016
R110e	.310	.100		.200	.490	.020
R110f	MAX			MAX	.510	MAX
R110g	.320	.200		.280	.500	.020
R110h	.315	.150	.105	.280	MIN	MAX
R110i	MAX		.115	MAX	.400	.022

**R119**

HEAT SINK

INSULATION

3 LEADS

**R120**

60°

**R122**

SEATING PLANE

T.P.

**R124**

PLAT

	A	B	C	D	E	F	G	PLAT
R124	.185	.100	.100	.050	.100	.016	.400	.070
R124b	.215	.120				.022	MIN	.050
R124c	.330	.105	.200	.100	.250	.016	.400	.050
R124d	.325		.200	.100	.240	.016	.500	
R124e	.193		.100	.050	.240	.016	.500	
R124f	.222				MAX	.019		
R124g	.185	.100	.100	.050	.140	.016	.400	.070
R124h	.215	.120			.250	.022	MIN	.050

**R127**

COLORED DOT

	A	B	C	D	E
R127	.193	.197	.472	.016	.051
R127a	.200	.175	.500	.018	.050

**R128**

EMITTER

BASE

COLLECTOR



# 18. OUTLINE DRAWINGS

**R131**

	A	B	C	D	E
R131	.240 .260	1.50	.305 .335	.335 .370	.200
R131a	.150 .180	1.50	.305 .335	.335 .370	.200
R131b	.150 .280		.305 .335	.335 .370	.200
R131c	.140 .260	.500	.305 .335	.335 .370	.200
R131d	.140 .260	.150	.305 .335	.335 .370	.200
R131e	.170 .210	.500	.178 .195	.209 .230	.100
R131f	.150 .180	.500	.305 .335	.335 .370	.200
R131h	.177 .197	.492	.334 .335	.370 MAX	.199 MAX
R131j	.118 .150	.500	.175 .195	.209 .230	.100

**R133**

SAME AS T05 WITH EXCEPTION

**R135**

	A	B	C	D	E	F	G	H	J	KENS
R135	.040 MAX	.060 .085	.500 MIN	.036 .046	.028 .048	.202 .238	.178 .195	.012 .019		AS SHOWN
R135a	.018 MAX	.270 MAX	1.50 MAX	.043 MAX	.043 MAX	.209 .230	.178 .185	.012 .019		AS SHOWN
R135b	.018 MAX	.270 MAX	1.50 MIN	.043 MAX	.043 MAX	.209 .230	.178 .195	.012 .019		FLAT TOP GLASS LENS
R135c	.025 MAX	.320 MAX	.600 MIN	.036 MAX		.201 .225	.178 .190	.016 .019	.030 .080	AS SHOWN
R135d	.040 MAX	.060 .080	.500 MIN	.043 MAX	.028 .043	.230 .265	.180 .190	.019 .019	.080	

**R137**

**R138**

**R139**

**R143**

**R144**

	A	B	C	D	E	F	G
R144	.288 MAX	.195 MAX	.007 MIN	.500 MAX	.100 MAX	.039 MAX	.040
R144a	.225 MAX	.194 MAX	.007 MAX	.492 MAX	.099 MAX	.037 MAX	.041

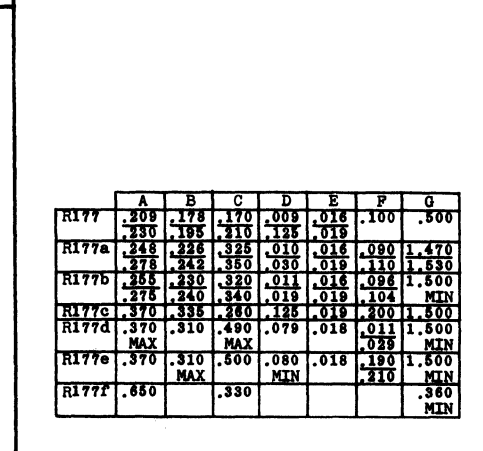
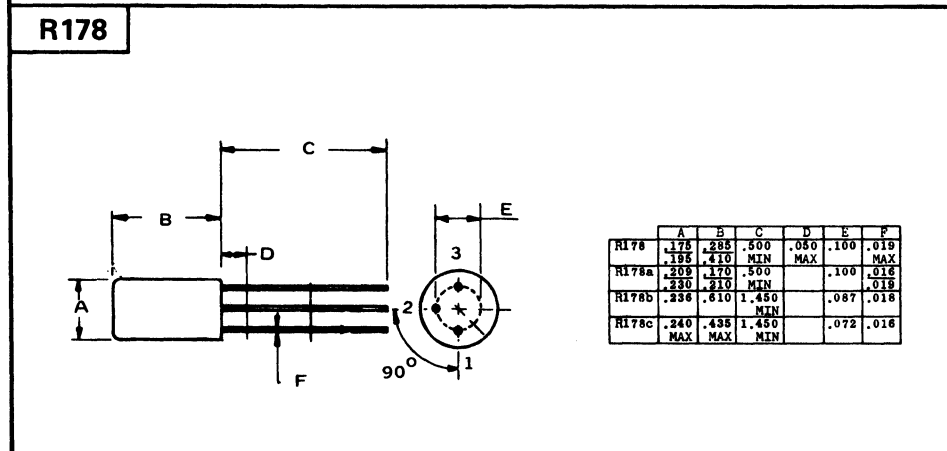
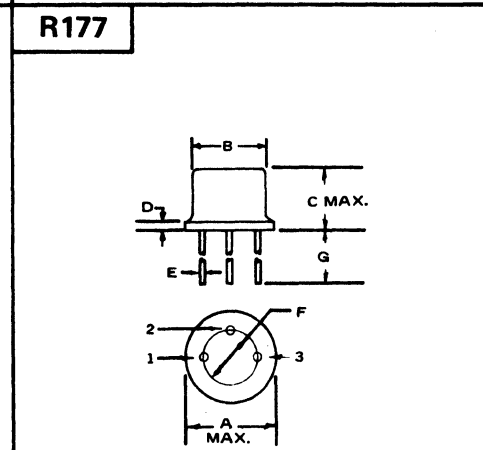
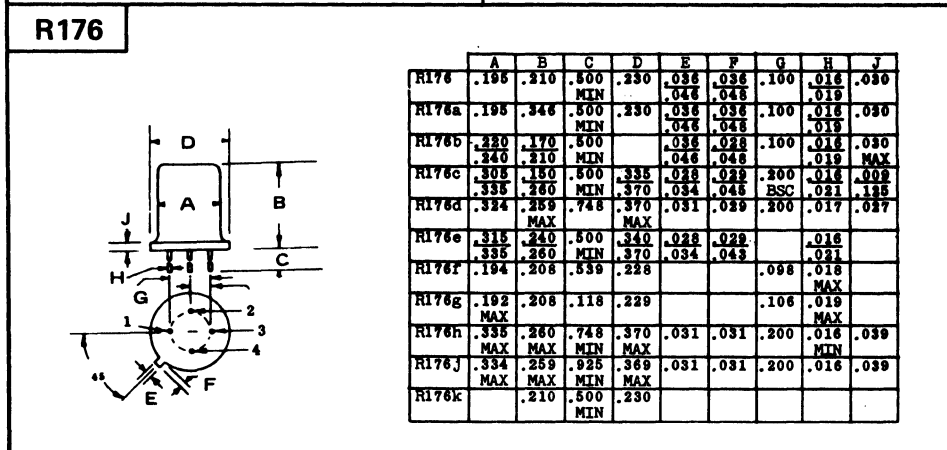
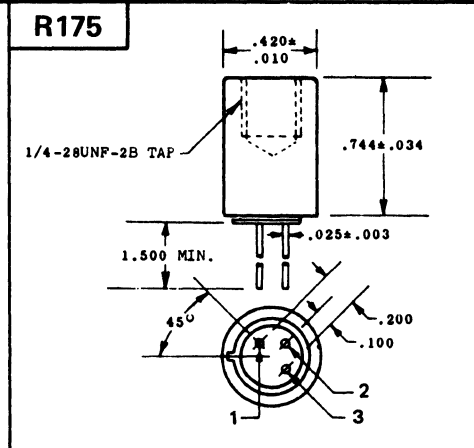
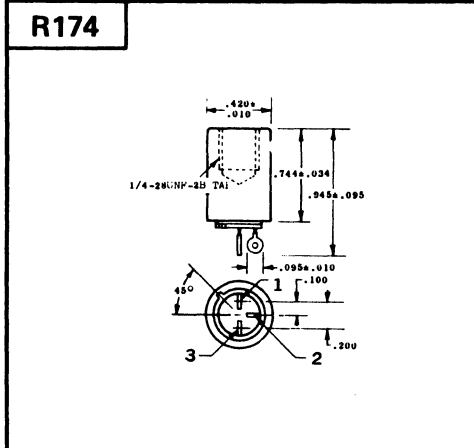
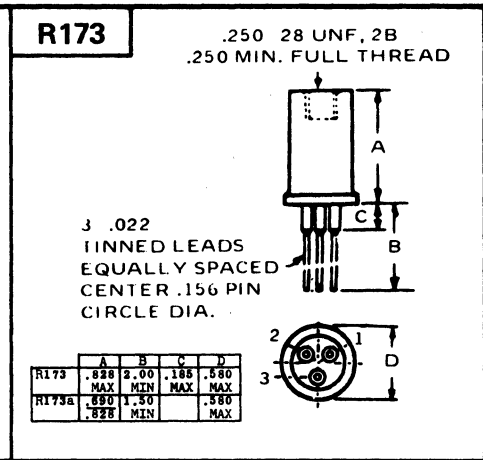
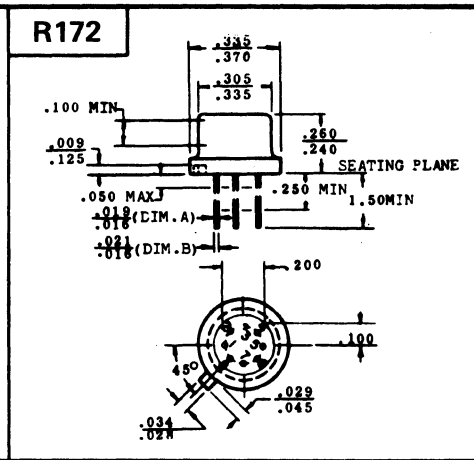
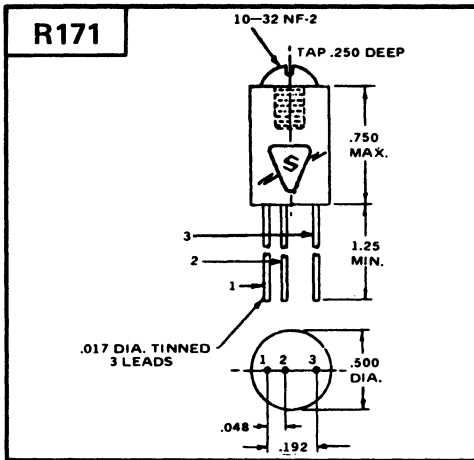
**R145**

**R146**

# 18. OUTLINE DRAWINGS

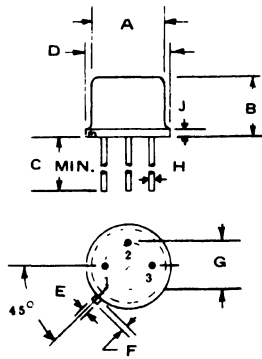
<p><b>R148</b></p> <table border="1"> <tr> <td></td> <td>A</td> <td>B</td> <td>C</td> <td>D</td> <td>E</td> </tr> <tr> <td>R148</td> <td>.120</td> <td>.160</td> <td>.060</td> <td>.500</td> <td>.016</td> </tr> <tr> <td></td> <td>.240</td> <td>.310</td> <td>MIN</td> <td>MIN</td> <td>.031</td> </tr> <tr> <td>R148a</td> <td>.200</td> <td>.210</td> <td></td> <td>.480</td> <td>.030</td> </tr> <tr> <td></td> <td>MAX</td> <td></td> <td></td> <td>.310</td> <td>MAX</td> </tr> </table>		A	B	C	D	E	R148	.120	.160	.060	.500	.016		.240	.310	MIN	MIN	.031	R148a	.200	.210		.480	.030		MAX			.310	MAX	<p><b>R151</b></p>	<p><b>R155</b></p>
	A	B	C	D	E																											
R148	.120	.160	.060	.500	.016																											
	.240	.310	MIN	MIN	.031																											
R148a	.200	.210		.480	.030																											
	MAX			.310	MAX																											
<p><b>R156</b></p>	<p><b>R157</b></p>	<p><b>R158</b></p>																														
<p><b>R163</b></p>	<p><b>R166</b></p>	<p><b>R167</b></p>																														
<p><b>R168</b></p> <table border="1"> <tr> <td></td> <td>A</td> </tr> <tr> <td>R168</td> <td>.280</td> </tr> <tr> <td>R168a</td> <td>.250</td> </tr> </table>		A	R168	.280	R168a	.250	<p><b>R169</b></p> <p>NOTE 1. THE SPECIFIED LEAD DIA. APPLIES IN THE ZONE BETWEEN .060 AND .250 FROM THE SEATING PLANE. FROM .250 TO THE END OF THE LEAD A MAX. DIA. OF .021 IS HELD. OUTSIDE OF THESE ZONES, THE LEAD DIA. IS NOT CONTROLLED.</p> <p>NOTE 2. LEADS HAVING A MAX. DIA. OF .019 AT A GAUGING PLANE OF .064-.001-.000 BELOW SEATING PLANE SHALL BE WITHIN .007 OF THEIR TRUE POSITION (LOCATION) RELATIVE TO A MAX. WIDTH OF TAB.</p> <p>NOTE 3. MEASURED FROM ACTUAL MAX. DIA.</p> <p>NOTE 4. THIS ZONE IS CONTROLLED FOR AUTOMATIC HANDLING. THE VARIATION IN ACTUAL DIA. WITHIN THE ZONE SHALL NOT EXCEED .010.</p>																									
	A																															
R168	.280																															
R168a	.250																															

# 18. OUTLINE DRAWINGS



# 18. OUTLINE DRAWINGS

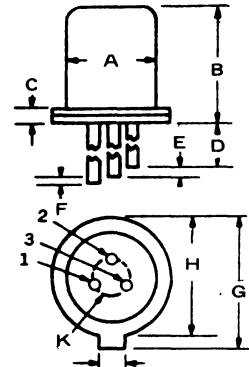
R179



NOTE: R179t = LOCATOR TAB IS OPTIONAL

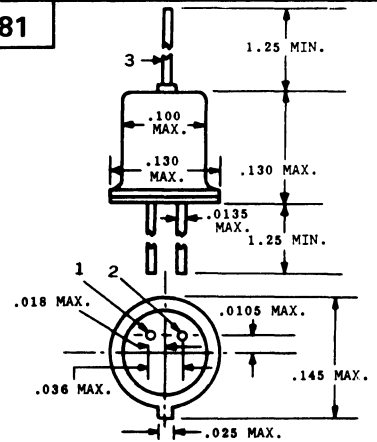
	A	B	C	D	E	F	G	H	J
R179	.175 .195	.285 .410	.500 MIN	.209 .230	.036 .046	.020 .046	.100	.019 .021	.040 MAX
R179a	.178 .196	.100	.500 MIN	.210 .230	.036 .046	.028 .046	.100	.018 .019	.030 MAX
R179b	.181 .193	.065 .085	1.500 MIN	.210 .230	.041 .035	.042	.100		
R179c	.185 MAX	.315 MAX	.710 MAX	.224 MAX	.039 MAX	.035	.066	.017	.016
R179d	.220 .240	.170 .210	.500 MIN		.036 .046	.028 .046	.100	.016 .019	.030 MAX
R179e	.275 .335	.200 .260	.500	.335 .370	.028 .034	.029 .045	.200		
R179f	.275 .335	.200 .260	1.500	.290 .370	.028 .034	.029 .045			
R179g	.290 .335	.200 .260	1.500	.290 .370	.028 .033	.029 MIN			
R179h	.305 .335	.090 .120	.500 MIN	.335 .370	.028 .034	.029 .045	.200	.016 .019	.009 .050
R179j	.305 .335	.090 .120	1.500 MIN	.335 .370	.028 .034	.029 .045	.200	.016 .019	.009 .050
R179k	.305 .335	.090 .220	1.500 MIN	.335 .370	.028 .034	.029 .045	.200	.016 .019	.008 .125
R179m	.305 .335	.150 .260	1.500	.335 .370	.028 .034	.029 .045	.200		
R179n	.305 .335	.160 .180	.500	.335 .370	.028 .034	.029 .045	.200		
R179p	.305 .335	.240 .260	.300 MIN	.335 .370	.028 .034	.029 .045	.200	.016 .019	.009 .125
R179q	.305 .335	.240 .260	1.500	.335 .370	.028 .034	.029 .045	.200		
R179r	.305 .335	.240 .260	1.500	.335 .370	.028 .034	.029 .045	.200	.016 .019	.009 .125
R179s	.305 .335	.240 .260	1.500 .750	.340 .370	.028 .034	.035	.200		
R179t	.305 .335	.240 .260	1.500 .750	.335 .370	.028 .034	.029 .045	.141		
R179u	.305 .335	.240 .270	1.500	.335 .370	.028 .034	.029 .045	.200		
R179w	.318 .335	.240 .270	1.500 MIN	.340 .360	.028 .036	.041 MAX	.168 .205	.021 .026	
R179x	.330	.259	1.000	.335 .370	.028 .034	.029 .045	.200		
R179y	.334 MAX	.133 MAX	.500 MIN	.370 MAX	.034 MAX	.039 MAX	.200 MAX		
R179z	.181 .187	.192 .204	.527 MIN	.196 .216			.100	.017	
R179aa	.175 .196	.208 MAX	.500 MIN	.275 MAX	.036 .046	.028 .046	.100	.015 .019	.030 MAX

R180

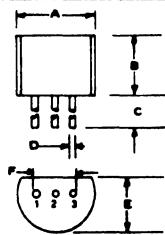


	A	B	C	D	E	F	G	H	J	K
R180	.100 MAX	.130 MAX	.015 MAX	1.25 MIN	.094 MAX	.094 .156	.145 MAX	.130 MAX	.025 MAX	.038 MAX
R180a	.085 .100	.155 .180	.015 MAX	1.25 MIN	0.0 MAX	0.0 MAX	.140 MAX	.125 MAX	.025 MAX	.035 MAX

R181

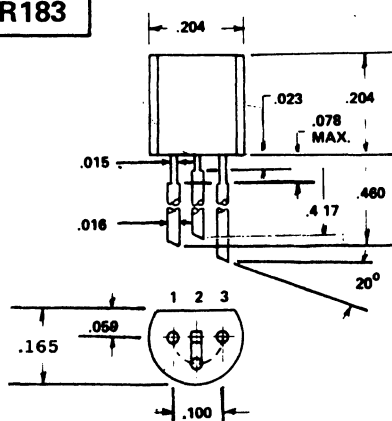


R182

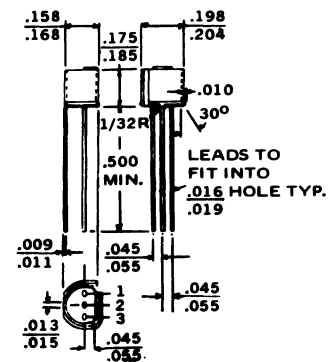


	A	B	C	D	E	F
R182	.200 MAX	.200 MAX	.511 MIN	.025 MAX	.161 MAX	
R182a	.240 MAX	.339 MAX	.512 MAX	.026 MAX		.100
R182b	.204 MAX	.216 MAX	.551 MIN	.019 MAX	.165 MAX	.099
R182c	.192 MAX	.196 MAX	.393 MIN	.019 MAX	.149 MAX	.098
R182d	.240	.338	.500 MIN			
R182e	.221	.242	.500			

R183



R184



# 18. OUTLINE DRAWINGS

### R185

### R186

### R187

### R188

### R189

	A	B	C	D	E	F	G	H	J	K
R189	.500	.204	.098	.019	.011	.165	.062	.188	.100	.023
	MIN	MAX	MAX	MAX	MIN	MAX		MAX		MAX
R189a	.500	.204	.098	.019	.014	.165	.062	.188	.100	.025
	MIN	MAX	MAX	MAX	MIN	MAX		MAX		MAX
R189b	.551	.217	.098		.020	.165		.205	.100	
	MIN	MAX	MAX			MAX		MAX		

### R190

MILLIMETERS		INCHES		
DIM	MIN	MAX	MIN	MAX
A	5.03	5.18	0.198	0.204
B	4.01	4.27	0.158	0.168
C	4.44	4.70	0.175	0.185
D	0.41	0.48	0.016	0.019
E	0.25	0.38	0.010	0.015
F	1.14	1.40	0.045	0.055
G	1.40	1.65	0.055	0.065
H	0.23	0.28	0.009	0.011
J	12.70		0.500	
L	0.33	0.38	0.013	0.015

### R191

### R192

### R193

### R195

	A	B	C	D	E	F	G
R195	.070	.070	.590	.010	.003	.059	
	MAX	MAX	MAX		MIN	MAX	
R195a	.198	.228	.500	.021	.100	.019	.157
R195b	.236	.330	.490	.017	.059	.015	.200
		.340	MIN	.023		.017	
R195c	.204	.334	.397	.019	.030		.165
	MAX	MAX	MIN	MAX			MAX
R195d	.192	.198	.383	.019	.049	.015	.149
	MAX	MAX	MIN				MAX
R195e	.070	.070	.590	.010	.003	.020	
	MAX	MAX	MAX		MIN		
R195f	.198	.228	.500	.021	.030	.019	.157
R195g	.070	.070	.472	.011		.009	.059
	MAX	MAX	MIN			MAX	MAX
R195h	.200	.323	.413	.024	.050	.024	.161
	MAX	MAX	MAX	MAX		MAX	MAX

# 18. OUTLINE DRAWINGS

**R197**

**R196**

	A	B	C	D	E	F	G	H
R196	.200	.180	.160	.095	.095	.500	.095	.045
R196a,	.200	.180	.160	.085	.095	MIN	.105	.085
b		.210		.085	.105	.500	.105	.085
R196d		.175		.045	.085	.500	.095	.045
		.185		.085	.095	MIN	.105	.085
R196e	.221	.241	.170	.080		.500	.095	.045
						MIN	.105	.085
R196f	.175	.170	.125		.080	.450	.095	.045
	.205	.210	.165		.105	MIN	.105	.085
R196g	.175	.170	.125	.045	.080	.500	.095	.045
	.205	.210	.165	.085	.115	MIN	.105	.085
R196h	.204	.204	.161	.059		.531	.098	
R196j	.205	.210				.500	MIN	

**R198**

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q
R198	.678	.520	.407	.158	.127	.187	.122	.156	.263	.500	.075	.017	.100	.050
R198a	.725	.551	.374	.167	.125			.116	.177	.295	.187		.016	.100

**R199**

	A	B
R199	.160	.380
R199a	.250	.500
R199b	.440	.700
R199c	.313	.125
R199d	.450	1.25

**R201**

**R202**

	A	B	C	D	E	F	G
R202	.200	.490	.020	.050	.210	.100	
	MAX	.510					
R202a	.173	.098	.401	.016		.209	.092
	MIN	MIN	.021		MAX		.107

**R203**

	A	B	C	D	E
R203	.195	.150	.180	.015	.155
	.205	.170	.190		.165
R203a	.175	.135	.170	.050	.125
	.205	.170	.210	MAX	.165
R203b	.205	.205	.079	.165	MAX
	MAX	MAX	MAX	MAX	MAX
R203c	.200	.150	.177	.062	.149
		.165	.188		.169
R203d	.200	.156	.179	.062	.151
		.166	.190		.190
R203e	.175	.135	.170	.050	.125
	.205	MIN	.210		.165

**R204**

	A	B	C	D	E	F	G	H	J
R204	.197	.197	.157	.087	.492	.059	.098	.020	.048
R204a	.175	.170	.125	.050	.506		.095	.018	.050
	.205	.210	.165				.105	.018	
R204b	.174	.178	.134	.098	.492		.093	.017	
	.185	.181	.148	MAX	.570		.103		
R204c	.196	.196	.157	.098	.547			.015	
	.212	.212	.173	MAX	.562				
R204d	.188	.204	.165		.500		.100	.017	
	MAX	MAX	MAX		MIN				
R204e	.175	.170	.125	.118	.499	.044	.094	.016	.049
	.204	.209	.164	MAX	MIN	.055	.105	.021	TYP

**R205**

	A	B	C	D	E	F	G	H	J
R205	.72	.374	.747	.018	.050	.304	.126	.295	.551
	MAX	MAX	MAX	MIN	MIN	MAX	MAX	MAX	MAX
R205a	.74	.395	.551	.019	.049	.303	.149	.307	.177
	MAX	MAX	MAX	MIN	MIN	MAX	MAX	MAX	MAX

**R206**



# 18. OUTLINE DRAWINGS

**R207**

	A	B	C
R207	.170	.175	.090
R207a	.210	.205	.110
R207b	.180	.165	.095
R207c	.210	.205	.105
R207d	.180	.165	.045
R207e	.210	.205	.080

**R209**

Unit : mm (inch)

**R210**

Suffix	A	B	C	D	F	K	L	N	P	Q	R	S
R210	.175	.125	.175		.018	.593	.045				.095	.080
		.205	.165	.185	.019		.055				.105	.105
R210a	.175	.125	.170	.016	.016	.500	.045	.050	.250	.135	.095	.080
		.205	.165	.210	.021	MIN	.055	MAX	MIN	MIN	.105	.105
R210b	.175	.125	.175	.016	.016	.500	.045				.088	.080
		.205	.165	.185	.021	MIN	.055				.105	.110
R210c	.117	.149	.228	.023		.393	.053			.177	.106	.106
	MAX	MAX	MAX	MAX		MIN				MAX		
R210d	.175	.125	.290	.018		.500	.050			.135	.100	.080
		.205	.165	.310	.024	MIN				MIN		.115

**R211**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.32	5.33	0.170	0.210
B	4.44	5.21	0.175	0.205
C	3.18	4.19	0.125	0.165
D	0.41	0.56	0.016	0.022
F	0.41	0.48	0.016	0.019
G	1.14	1.40	0.045	0.055
H	-	2.54	-	0.100
J	2.41	2.67	0.095	0.105
K	12.70	-	0.500	-
L	6.35	-	0.250	-
N	2.03	2.92	0.080	0.115
P	2.92	-	0.115	-
R	3.43	-	0.135	-
S	0.36	0.41	0.014	0.016

**R212**

**R213**

**R214**

	A	B	C	D	E	F	G
R214	.354	.393	.039	.499	.017	.238	.100
	MAX	MAX	MAX	MIN	MAX	MAX	MAX
R214a	.343	.049	.039	.499	.017	.238	.100
	MAX	MAX	MAX	MIN	MAX	MAX	MAX

**R216**

Suffix	A	B	C	D	E	F	G	H	J
R216	269	234	184	748	.039	.016	.300	.031	.031
	MAX	MAX	MAX	MIN	MAX				
R216a	269	234	188	748	.021	.017	.300	.031	.031
	MAX	MAX	MAX	MIN	MAX				
R216b	242	311	269	492	.047	.017	.199	.031	.031
	MAX	MAX	MAX	MIN	MAX				
R216c	229	194	208	531		.019	.098	.039	.039
						MAX			
R216d	229	187	208	539		.019	.098	.039	.039
						MAX			
R216e	270	224	229	748		.017	.199	.031	.031
	MAX	MAX	MAX	MIN					
R216f	265	315	185	500	.017	.016	.190	.029	.029
	MAX	MAX	MAX	MIN	MAX				
R216g	270	316	263	500	.013	.018	.200		
	MAX	MAX	MAX	MIN	MAX				
R216h	260	314	220	500		.019	.200	.037	.031
	MAX	MAX	MAX	MIN					
R216i	240	324	226	1,490	.013	.016	.196	.029	.029
	MAX	MAX	MAX	MIN	MAX				
R216j	260	324	255	1,510	.017	.019	.206	.036	.026
	MAX	MAX	MAX	MIN	MAX				
R216k	270		260	500					
	MAX		MAX	MIN					
R216m	220		210	500					
	MAX		MAX	MIN					
R216n	270	334	259	531		.019	.196	.029	.029

# 18. OUTLINE DRAWINGS

**R217**

**R218**

R218	A	B	C	D	E	F	G	H
R218a								

**R219**

**R221**

R221	A	B	C	D	E	F	G
R221a							

**R222**

**R224**

**R225**

**R227**

**R229**

**R230**

**R231**

**R232**



# 18. OUTLINE DRAWINGS

**R247**

1 : Gate(Case)  
2 : Source  
3 : Drain

**R248**

	1	2	3
3SM39	Drain	Gate 2	Gate 1
3SM49			
3SM49MC			

**R249**

A	B	C	D	E	F	G
S3	.197	.256	.216	.018	.492	.050

**R250**

A	B	C	D	E	F	G
S3	.197	.256	.216	.018	.492	.050

**S1**

A	B	C	D	E	F	
S5	.043	.033	.078	.015	.009	.013
S5a	.084	.057	.114	.031	.0135	.0135

**S3**

A	B	C	D	E	F	G
S3	.197	.256	.216	.018	.492	.050

**S4**

A	B	C	D	E	F	
S5	.043	.033	.078	.015	.009	.013
S5a	.084	.057	.114	.031	.0135	.0135

**S5**

A	B	C	D	E	F	
S5	.043	.033	.078	.015	.009	.013
S5a	.084	.057	.114	.031	.0135	.0135

**S6**

A	B	C	D	E	F	
S5	.043	.033	.078	.015	.009	.013
S5a	.084	.057	.114	.031	.0135	.0135

**S7**

A	B	C	
S7	.032	.032	.015
S7a	.027	.027	.012
S7b	.033	.033	.013

**S8**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	
S8	.017	.091	.216	.137	.239	.021	.000	.018	.050	.100	.085				
S8a	.031	.025	.216	.137	.239	.021	.000	.018	.050	.100	.085				
S8b	.030	.023	.173	.070	.143	.020	.000	.017	.050	.100	.085				
S8c	.030	.023	.173	.070	.143	.020	.000	.017	.050	.100	.085				

**S9**

A	B	C	D	E	F	G	H	J	K
S9	.189	.168	.364	.025	.100	.091	.039	.028	.025
S9a	.189	.168	.364	.025	.100	.091	.039	.028	.025
S9b	.275	.324	.478	.018	.133	.157	.047	.078	.017
S9c	.275	.324	.478	.018	.133	.157	.047	.078	.017

# 18. OUTLINE DRAWINGS

**S10**

Dimensions: .338 MAX., .258 MAX., .065 MAX., .098, .098, .084 MAX., .082, .110, .017, .027, .019, .035, .190, .157 MIN., .041, .063, .019, .027, 30°

**S14**

	A	B	C	D	E	F	G	H
S14	.098	.098	.039	.173	.173	.499	.006	.023
S14a	.080	.102		.171	.139	.405	.018	.018
S14b	.085	.100		.172	.142	.474	.015	.015
				.187	.157	.525	.019	.019

**S15**

Dimensions: .040 REF, .008, .012, .090 ± .002, .040 REF, .075 ± .003, gold plated areas

**S16**

PIN 1 IDENTIFICATION

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
S16	.400	.245	.090	.092	.040	.125	.020	.125	.015	.100	.030	.065	.300	.310	.009	.030		
S16a	.371	.210	NOM	NOM	TYPE	.135	MIN	MIN	MIN	.081	TYPE	.069	.280	.290	.015	MAX		
S16b	.390	.230				.100	.020	.100	.015	.110		.085	.310	.310	.018		.300	9°

**S17**

Dimensions: O 7897 MAX, SEATING PLANE, O 200 MAX, O 165, O 100, O 0201 MIN, O 0232, O 0190, O 329 MAX, 15° MAX, O 0141, O 0076

**S18**

Dimensions: .007, .101, .016 MIN., .015 MIN., .008, .005, .014, .016, .009, .010, .025, .042, .043, .117, .028, .027, .028, .008, .010, .046 MAX., .047 MAX., .027, .025, .034, .025

**S19**

Dimensions: .472 MIN. 3 PLCS., .162 MAX., .073, .076, .040, .036, .010 MIN., .019, .024, .071, .025 MAX., .020 MAX., .005, .010, .051, .058, .131, .040 MAX., .030, .015, .162 MAX., 4 PLCS., 1/16

**S20**

Dimensions: .010, .082, .108 MAX., .025, .010, .010, .026, .077, .023, .008, .010, 2 PLCS., .023, 4 INSERT - HELI-COIL 3085 - 2 CN 0184, .472 MIN. 2 PLCS., .010 MIN., .028, .077, .008, .010, 2 PLCS., .004, .031, .127 MAX., 1.000

**S21**

Dimensions: .767 (19.50) MAX., .263 (6.70) (11.80) MAX., .464 (11.80) MAX., .324 (8.50) MAX., .023 (.600) MAX., .047 (1.20), .100 (2.54), .009 (.250), .039 (.100), .610 MAX., .110 (2.80)

**S22**

Dimensions: 0.140 (3.56), 0.210 (5.33), 0.240 (6.09), 0.490 MIN (12.45), 1, 2, 3, IN (MM)

**S23**

INSERT - MS 21209 FI-15 Or EQUIV. 4 PLACES

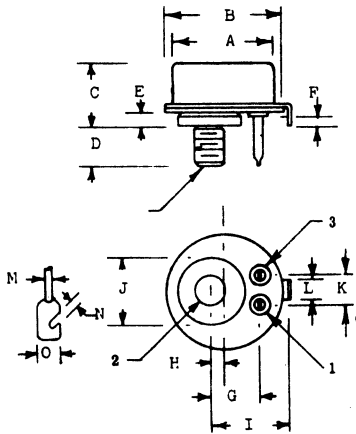
Dimensions: .203 ± .005, 3, 2.594 ± .005, 3/4, 1/4, .375 ± .010, EM, 1.10 ± .01, 0.65, .255 DIA., .005, .015, 2 HOLES 0.203 DIA. COLLECTOR CONNECTED TO MOUNTING BASE, 2.2, 7.4 ± .01, 1/4, 3/4





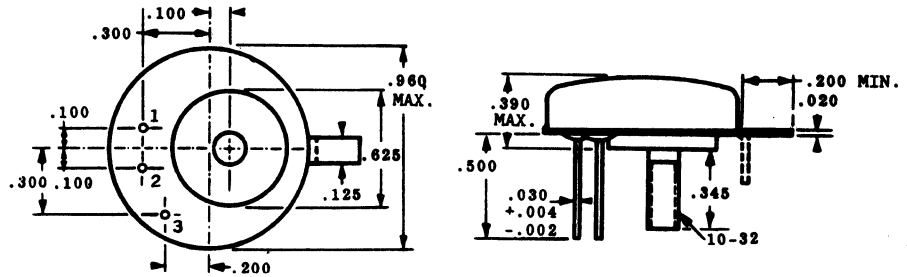
# 18. OUTLINE DRAWINGS

T1



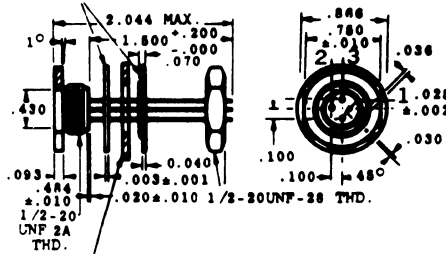
	T1	T1b	T1c
A	1.046	1.130 MAX.	1.000-1.125
B	1.281	1.280-1.240	1.240-1.280
C	.546 MAX.	.560 MAX.	.500-.560
D	.582	.580-.550	.550-.580
E	.125	.140 MAX.	.110-.140
F	.020	.190-.130	
G	.500	.520-.480	.480-.520
H	.156	.170-.140	.140-.170
I	.828	.850-.810	.810-.850
J	.750	.770-.730	.730-.770
K	.375	.360-.400	.360-.400
L	.156	.170-.140	.140-.170
M	.060±.005	.055-.083	.045-.065
N	.055 hole	.055-.075	.050-.070
O		.110-.166	.090-.110

T4



T6

ELECTRICAL ISOLATION WASHERS OPTIONAL  
 .890±.010 x .508 ID SHOULDER DIA. .588

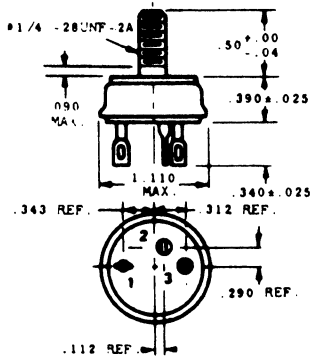


WHEN ASSEMBLY IS MOUNTED DIRECT TO CHASSIS  
 THE CHASSIS HOLE SHALL BE 1/8 DIAMETER.

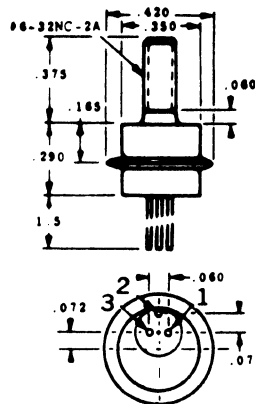
IF ISOLATION WASHERS ARE USED THE CHASSIS  
 HOLE SHALL BE 9/16 DIAMETER.

UNLESS OTHERWISE NOTED  
 ALL DIMENSIONS WILL BE ±.005

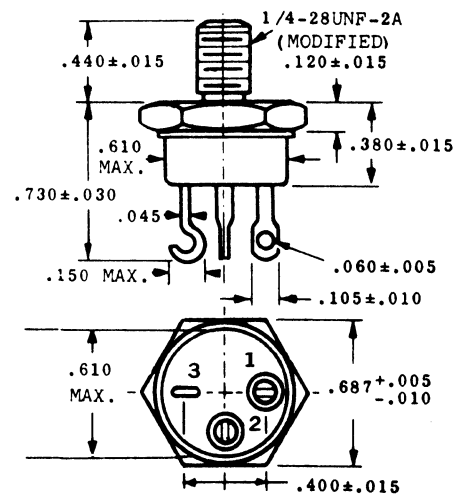
T7



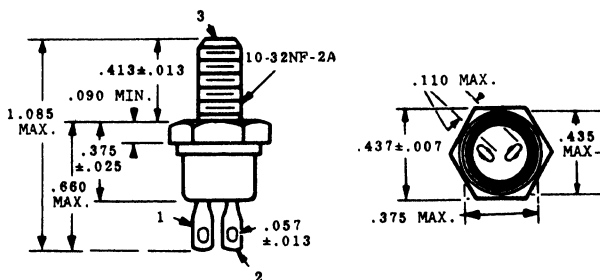
T9



T10



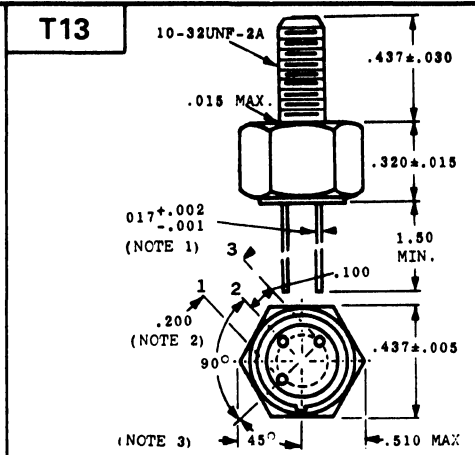
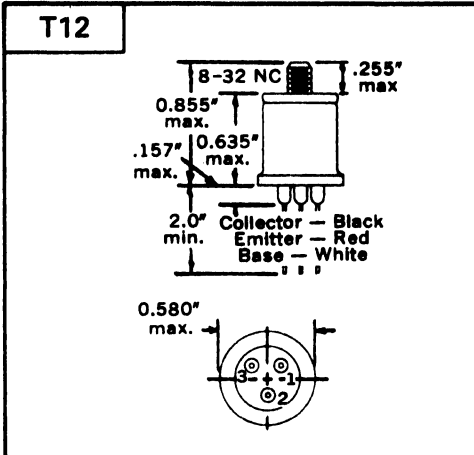
T11



NOTES:

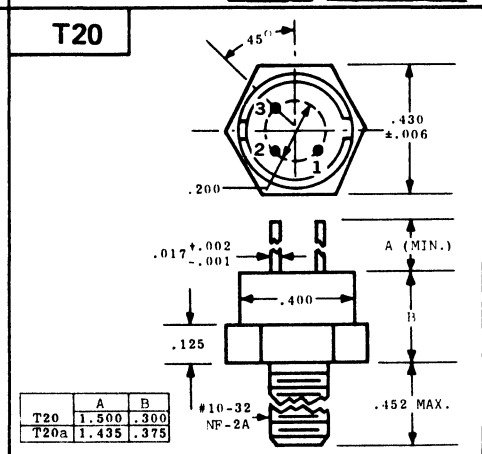
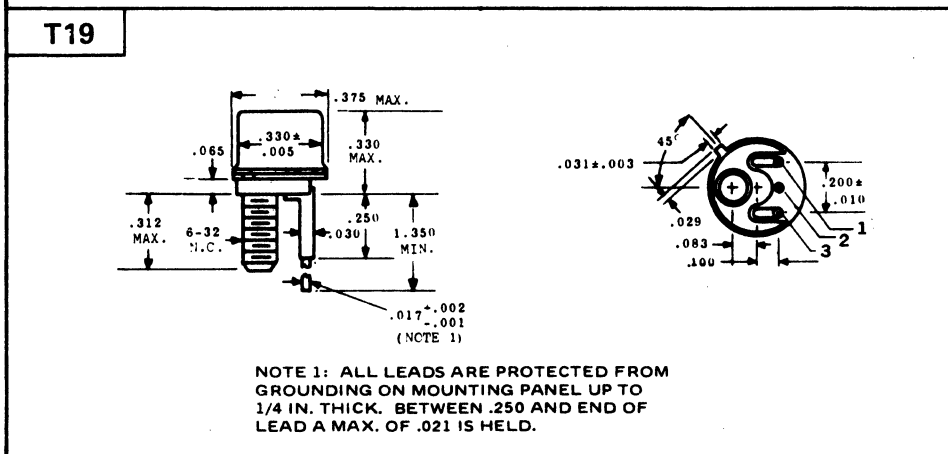
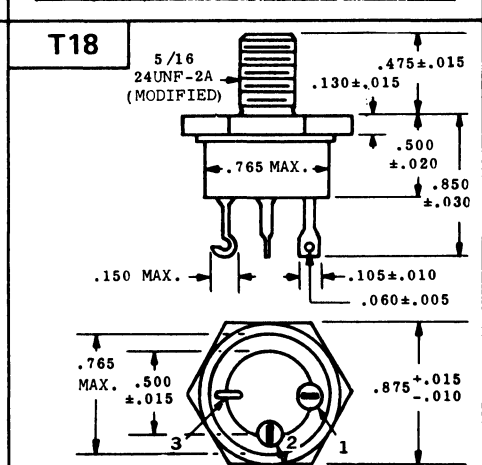
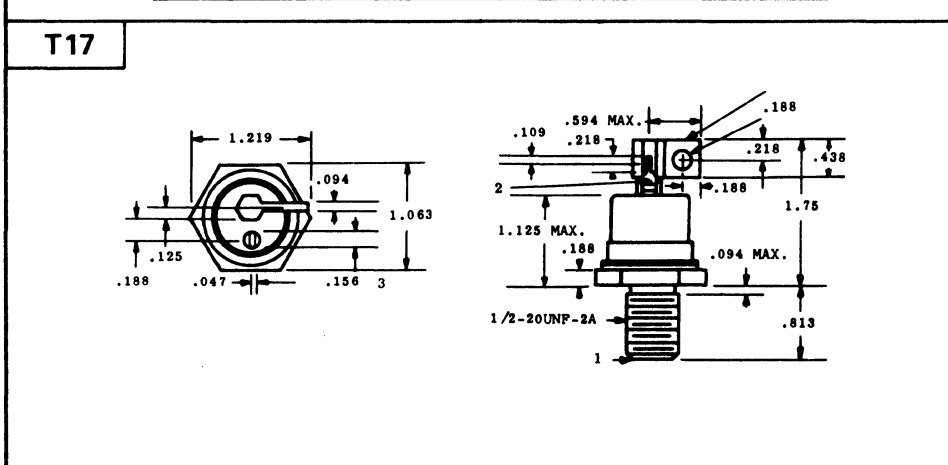
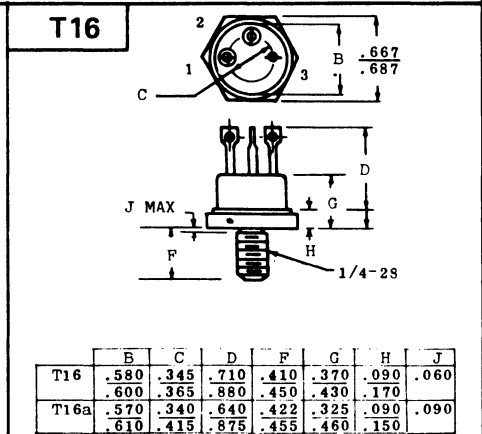
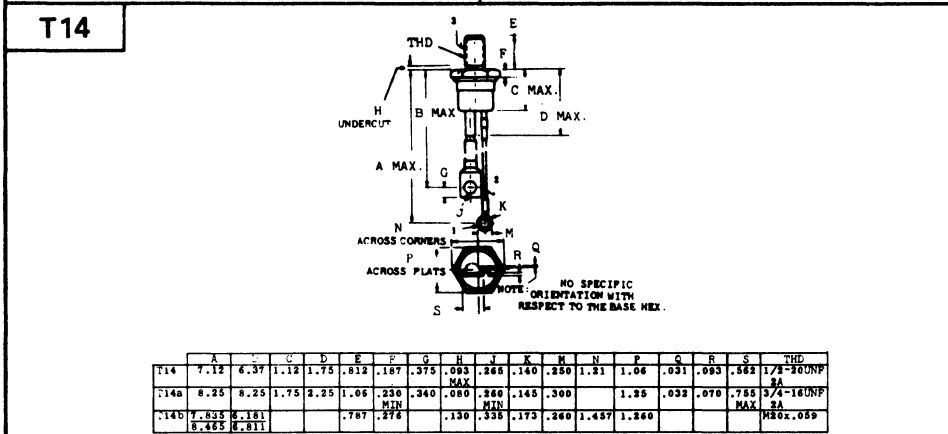
- DO NOT APPLY MORE THAN 15 LB.-IN. OF TORQUE TO HEX. OR TO NUT.
- BOTTOM EDGE OF HEX. (LOWER SIDE) WILL BE CHAMFERED AS SHOWN.
- COMPLETE THREADS TO EXTEND TO WITHIN 2 1/2 THREADS OF HEX.

# 18. OUTLINE DRAWINGS



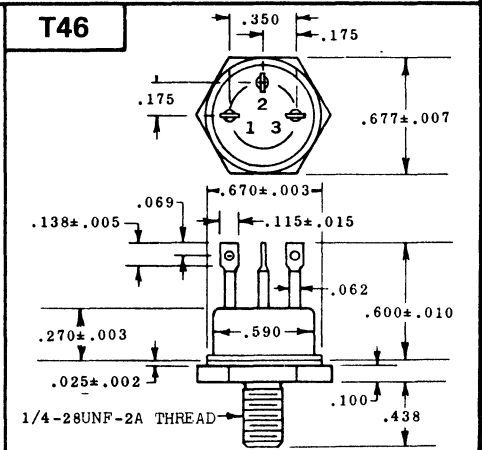
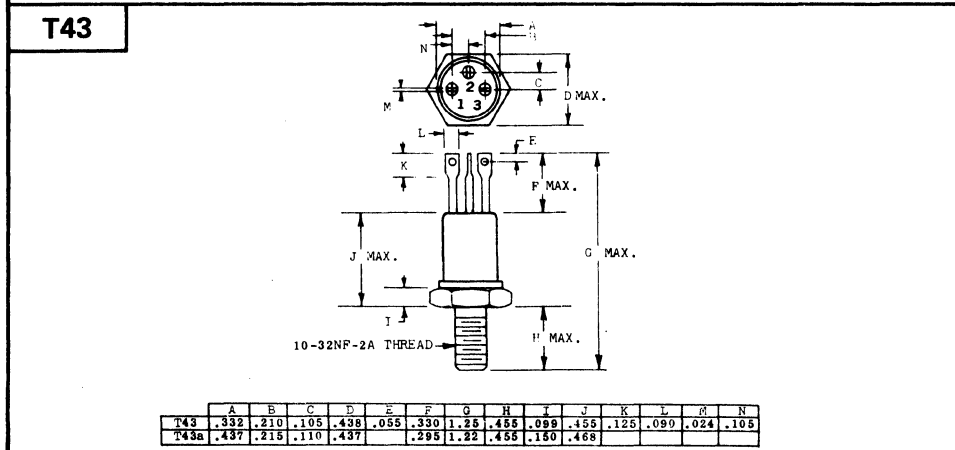
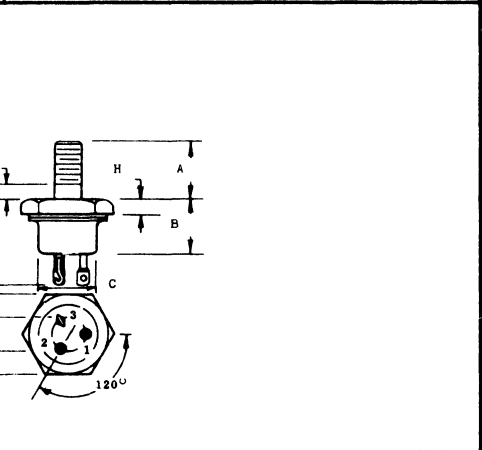
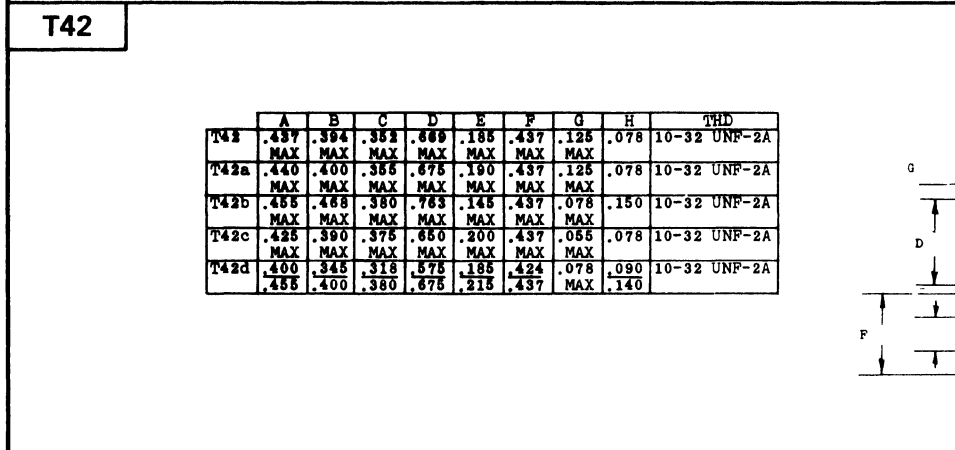
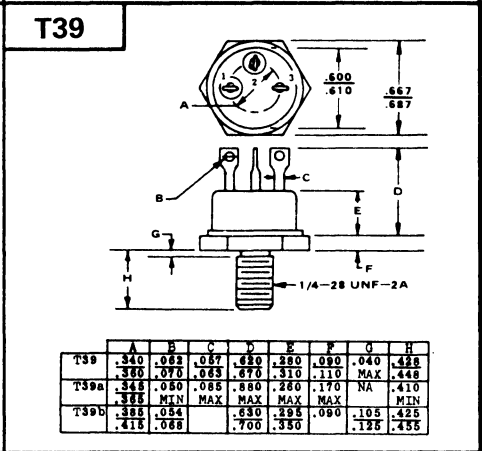
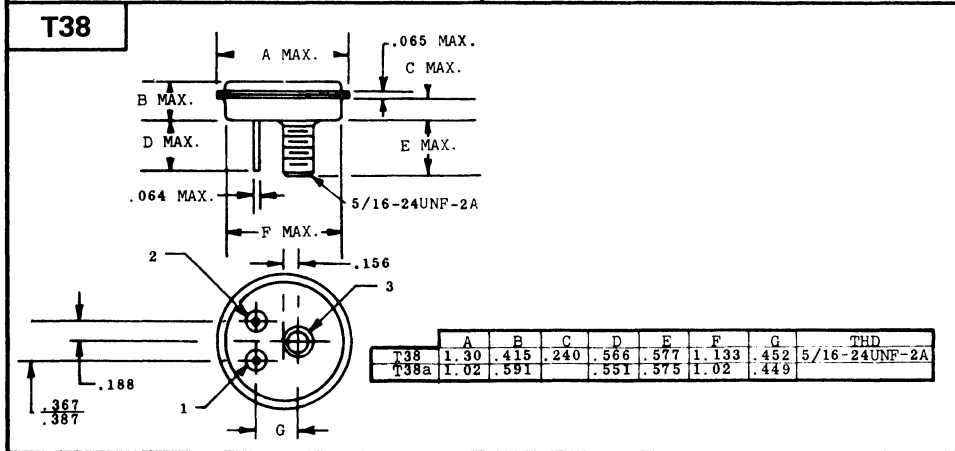
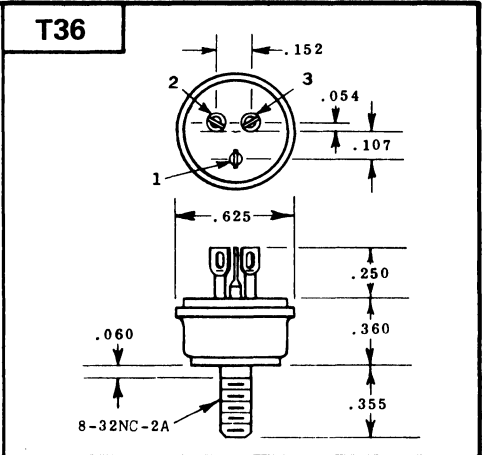
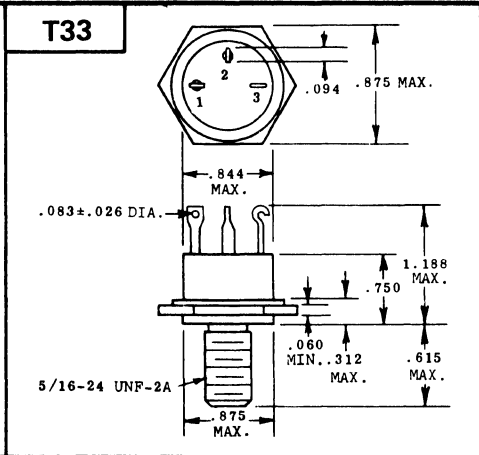
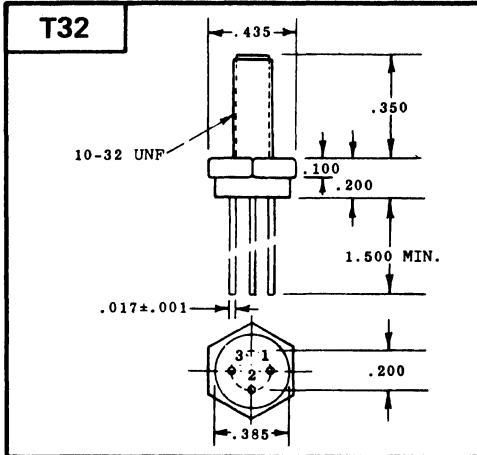
**NOTES FOR T-13:**

1. The specified lead diameter applies in a zone between .050 and .250 from the base seat. Between .250 and 1.5 a maximum of .021 diameter is held. Outside of these zones the lead diameter is not controlled.
2. Leads having maximum diameter (.019) measured in gaging plane .054<sup>+0.001</sup>-.000 below base seat of the device shall be within .007 of their true location relative to the maximum diameter (.510) circumscribing the hex.
3. The position of the leads in relation to the hex flats is not controlled.





# 18. OUTLINE DRAWINGS



# 18. OUTLINE DRAWINGS

**T47**

#10-32 HF -2A

**T49**

1/8 -20 UNF-2A

	A	B	C	D	E	F	G	H	J	K	M	N	P
T49	.584	.335	.312	.903	1.067	.640	.890	.880	.530	.213	.433	.700	.810
T49a	.254	.317	.910	1.062									

**T50**

5/16-24UNF-2A

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R
T50	.605	.875			.766				.541		.148				
T50a	.340	.865	.170	.640	.422	.610	.370	.047	.048	.325	.270	.090	.220	.090	
	.415	.686	.213	.875	.455	.687	.610	.072	.077	.460			.150	.249	

**T52**

1/4-28 UNF-2A

**T53**

10-32NF-2A

	A	B	C	D	E	F	G	H	J	THD
T53	.669	.115	.348	.394	.437	.078	.437	.190	90°	10-32NF-2A
T53e	.570	.090	.318	.320	.400	.078	.423	.180		10-32UNF-2A
T53f	.768	.158	.380	.468	.455		.438	.215		10-32UNF-2A
	.575	.090	.318	.345	.400	.078	.424	.180		10-32UNF-2A
	.675	.140	.380	.400	.455		.437	.215		

**T55**

10-32 UNF-2A

**T56**

SEATING PLANE

**T58**

1/4-28 UNF 2A

# 18. OUTLINE DRAWINGS

**T59**

	A	B	C	D	E	F	G	H	J	K	M	N	P	THREAD
T59a	.169	.655	.500	.165	.375			.060	.030	.015	.055	.030	.450	8-32UNC-2B
T59b	.118	.655	.500	.165	.375			.060	.030	.015	.055	.030	.450	8-32UNC-2B
T59c	.145	.655	.500	.165	.375			.060	.030	.015	.055	.030	.450	8-32UNC-2B
T59d	.118	.787	.394	.280	.394	.378	.276	.079	.079	.003	.063	.118	.400	M4
T59e		.641	.484	.167	.394	.378			.033	.016	.075	.033	.250	M5
T59f	.145	.615	.355	.160	.365	.365	.250	.060	.223	.008	.070	.223	.375	8-32UNC-2A
T59g	.145	.670	.385	.155	.365		.250	.060	.030	.015	.055	.290	.250	8-32UNC-2A
T59h	.137	.700			.396		.295	.078	.031	.020	.125	.031	.275	8-32
T59j	.145	.645	.550	.145	.355		.240	.060	.030	.014	.055		.500	8-32UNC-2A
T59k	.115		.382	.285	.278			.060		.140	.060	.028	.550	8-32UNC-2A
T59m	.118	.827	.394		.394	.378	.291	.102	.070	.004		.110	.315	M4

**T60**

#56 (.0465) DRILL  
 .122  
 .750  
 .375  
 .395 DIA.  
 .235  
 2  
 3  
 #8-32UNC-2A (THREAD LENGTH TO BE A MAXIMUM)  
 .040 MAX.  
 .010R MAX.  
 +.001 DIA.  
 .324-.000  
 C' BORE 45°  
 CHAMFER TO .342 DIA.

**T62**

	A	B	C	D	E	F	G	H	J	K
T62	.420	.380	.250	.375	.005	.765	.440	.190	.100	10-32
T62a	.435									
T62a	.660	.425	.380	.600	.007	.850	.440	.260	.150	1/4-28
T62b	.700									
T62b	.431	.350	.250	.407	.006	.725	.440	.190	.110	10-32UNF-2A

**T63**

A MAX.  
 3/12 MAX.  
 B MAX.  
 D  
 E MAX.  
 NO.10-32UNF-2A THD.  
 1  
 2  
 3  
 990  
 1.005  
 .335 R  
 .355

	A	B	C	D	E	F	G
T63	1.250	.520	.375	.610	.185		
			.500	.710			

**T65**

.028  
 .037  
 45°  
 3  
 2  
 B  
 .375  
 .385  
 .450  
 .550  
 .150  
 .160  
 8-32 UNC-2B THD  
 .490  
 .510  
 .360 DIA.  
 .056  
 .064  
 .121  
 .129

**T66**

A  
 B  
 C  
 D  
 E  
 F  
 G MAX.  
 H  
 J  
 K  
 L  
 M  
 N  
 P  
 Q  
 R  
 THD  
 .875  
 .25  
 .4  
 1  
 2  
 3  
 4

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	THD
T66	.165	.015	.055	.515	.145	.015	.020	.060	.285	.250	.060	.375	.500	.030	.290	.118	8-32UNC2A
T66a	.220	.003	.106	.512	.118	.007			.323	.275	.079	.433	.075	.079	.118		M4

**T67**

INDEX  
 D  
 L  
 F  
 I  
 G  
 H  
 J  
 K  
 M  
 N  
 P  
 Q  
 R  
 S  
 T  
 U  
 V  
 W  
 X  
 Y  
 Z  
 PAD  
 PIN  
 N

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
T67	.315	.075	.015	.469	.337	.085	.089	.140	.031	.855	.360	.145		10-32UNF-2A
T67a	.334	.085	MAX	.490	.345		.105	.150	.033	.734	.390			1/4-28UNF-2A
T67a	.380	.089	.015	.650	.360	.085	.111	.213	.020	.765	.420	.235	.135	1/4-28UNF-2A
T67b	.315	.088	MAX	.660	.360	.085	.131	.233	.025	.860	.420	.250	.150	
T67b	.295	.114	.015	.650	.360	.085	.111	.213	.020	.716	.420	.235	.135	1/4-28UNF-2A (MOD)
T67c	.325	.133	MAX	.660	.360	.085	.131	.233	.025	.785	.460	.250	.150	
T67c	.378			.660	.370		.216			.818	.440	.249	.141	M6

**T68**

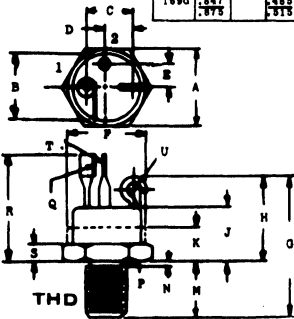
.360 MAX.  
 .212 MAX.  
 .110 MAX.  
 .110  
 MAX.  
 .433  
 .045" MAX.  
 .161 MAX.  
 .133-.48 MAX.  
 .320 MAX.  
 .078 MAX.  
 .453 MAX.  
 M5



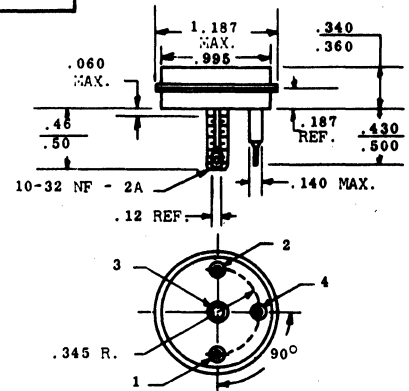
# 18. OUTLINE DRAWINGS

**T69**

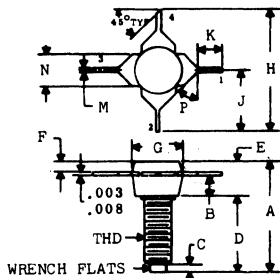
	A	B	C	D	E	F	G	H	J	K	N	P	Q	R	S	T	THD	
T69	.04	.883	.321	.313	.381	.215	1.42	1.540	.689	.378	.761	.186	.425	.180	1.35	.090	.234	1/2-20UNF-2
T69a	.02	.912	.309	.301	.369	.201	1.41	1.531	.677	MAX	.751	.180	.415	.170	.73	.079	.221	1/2-20UNF-2A
T69b	.02	.890		.324	.397		1.42	1.55	.720		.763	.186		1.35	1.65	.084	.243	1/2-20UNF-2
T69c	.02	.910		.324	.397		1.42	1.55	.720		.763	.186		1.35	1.65	.079	.221	1/2-20UNF-2
T69d	.04	.875	.315	.307	.375	.215	1.41	1.540	.689	.300	.740	.185	.420	.178	.090	.234	5/16-24UNF-2A	
T69e	.02	.912	.309	.301	.369	.201	1.41	1.531	.677	MAX	.751	.180	.415	.170	.73	.079	.221	5/16-24UNF-2A



**T70**

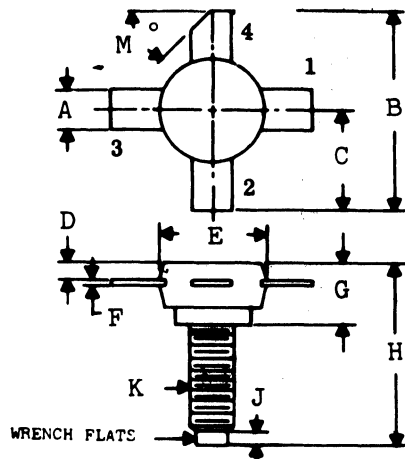


**T71**



	A	B	C	D	E	F	G	H	J	K	M	N	P	THD
T71	.675		.120	.360	.195	.065	.365	1.055	.520	.180	.025	.220		8-32N.C.2A
T71a	.695		.130	.350	.215	.085	.385	1.065	.540		.035	TYP		8-32UNC
T71b	.697	.066	.137	.393	.149	.065	.396	1.106	.335		.030	.220		8-32N.C.3A
T71c	.710		.100	.465	.245	.080	.365	1.055	.520	.220	.025	.215	38°	8-32N.C.3A
	.750		.130	.475	.275	.100	.385	1.065	.540	.230	.035	.225		8-32N.C.3A
	.710		.100	.465	.245	.080	.365	1.055	.524	.175	.025	.215	45°	8-32N.C.3A
	.750		.130	.475	.275	.100	.385	1.065	.524	.185	.035	.225		8-32N.C.3A

**T72**

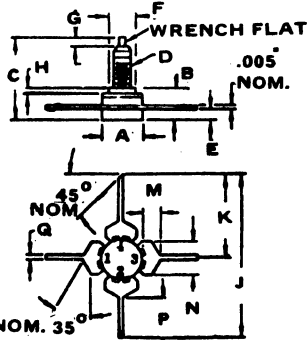


Suffix	A	B	C	D	E	F	G	H	J	K	M
T72	.220	1.055	.520	.065	.465	.003	.240	.710	.120	8-32N.C.2A	45°
	.230	1.065	.540	.085	.485	.008	.260	.730	.130		
T72b	.120		.358		.220	.008	.200	.305	.145	6-32	30°
	.125		.378		.240			MAX			
T72c	.146	.984	.571	.102	.375	.005	.228	.687	.134	8-32UNC	
		1.142			MAX	MAX					
T72d	.223			.045	.355	.006	.155	.595	.130	8-32UNC-2A	45°
	MAX			TYP	.375	TYP	.185	.635			
T72e	.225			.104	.490	.008	.260	.700	.120	8-32UNC-2A	45°
	MAX			TYP	.510	TYP	.280	.750			
T72f	.078	.866			.275	.003	.242	.774	.118	JSOM3	45°
T72g	.220	1.095			.365	.004	.205	.630		8-32UNC2ATHD	45°
	.230	MIN			.385	.008	.225	.750			
T72h	.220	1.055	.520	.080	.365	.004	.245	.710	.100	8-32NC3A	45°
	.230	1.065	.540	.100	.385	.007	.275	.750	.130		
T72k	.138	1.00		.113	.370	.005	.207	.624		10-32UNF	
	.154	1.04			.378		.227	.684			
T72m	.146	.984		.108	.382	.005	.228	.687	.141	8-32UNC	
		MIN			MAX	MAX	MAX	MAX			
T72n	.221	1.04		.085	.370	.004	.250		.100	8-32UNC-2A	45°
	.229	1.05		.095	.390	.006	.275		.130		
T72p	.220				.565	.005			.100		45°
	.230				.585	NOM			.130		
T72q	.220	1.055	.520	.073	.365	.005	.245	.710	.100	8-32UNC-2A	45°
	.230	1.065	.530	.077	.385		.275	.750	.130		
T72r	.220	1.055	.520	.080	.490	.005	.245	.835	.110	10-32NC-3A	45°
	.230	1.065	.530	.100	.510		.275	.845	.120		
T72a	.228	1.06		.104	.377	.005	.267	.748	.129	M4	
T72t		1.055	.520		.500		.250	.840		8-32NC-3A	
		1.065	.530								
T72u	.217	1.11		.106	.387	.004	.284	.707		10-32UNF	
	.233			.126		.006	MAX	.738			
T72x	.220	1.08			.495	.004	.300	.870		10-32UNF-2a	
	.230	1.12			.505	.006	MAX	.880			



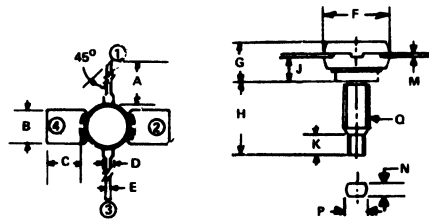
# 18. OUTLINE DRAWINGS

T81



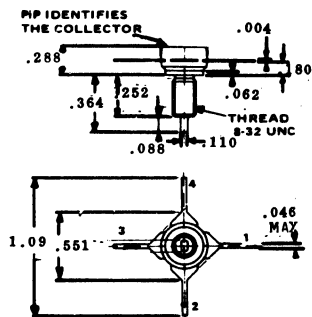
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q
T81	.275	.178	.810	A-32N*27	.058	.344	.115	.060	.05	.325	.160	.221	.225	.073		
T81	MIN	.178	MIN		.058	.344	MIN			.325	MIN	.160	.221	.073		
T81	MAX	.178	MAX		.058	.344	MAX			.325	MAX	.160	.221	.073		
T81	MIN	.178	MIN	A-32N*27	.058	.344	MIN			.325	MIN	.160	.221	.073		
T81	MAX	.178	MAX		.058	.344	MAX			.325	MAX	.160	.221	.073		

T83

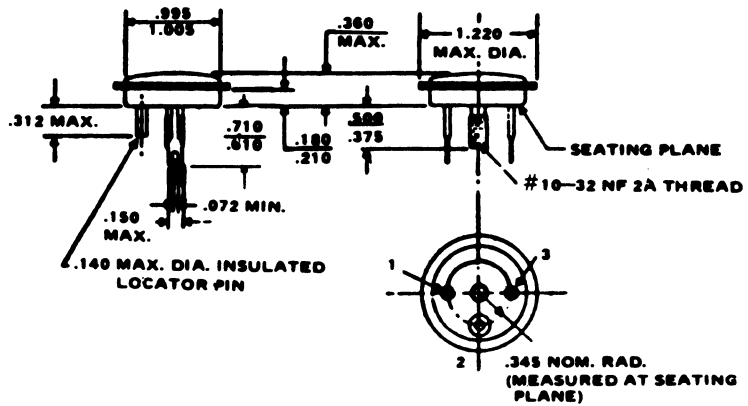


	A	B	C	D	E	F	G	H	J	K	M	N	P	Q
T83	.516	.311	.240	.077	.031	.374	.200	.421	.112	.118	.009	.063	.110	M4
T83a	MIN	.311	.240	.077	.031	MAX	.230	.445	.124		.013			
T83b		.307		.051	.031	.365	.216	.378	.094	.118	.006	.059	.106	M4
T83b		.322		.060	.047	.401	MAX	.362	.011		.010			
T83c		.347		.115	.095	.374	.399	.767	.219	.177	.088	.177		M6
T83c		.361		.121	.101	MAX		.239	.239		.014			
T83c		.307		.078	.059	.433	.244	.708	.106	.137	.007			M4
T83c		.322												

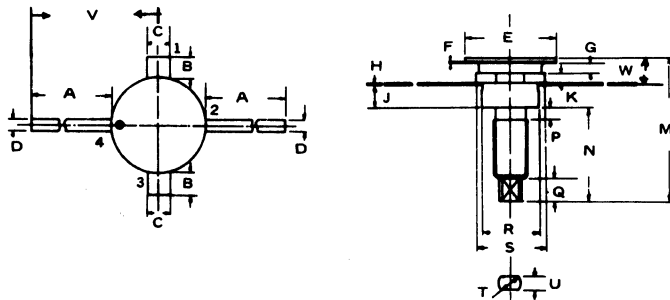
T84



T85

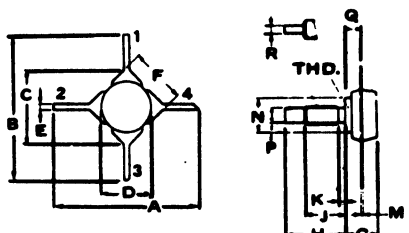


T88



	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	THREAD	REMARKS
T88	.393	.059	.174	.325	.334	.007	.030	.003	.022	.047	.070	.322	.030	.000	.300	.244	.072	.022					
T88	MIN	.059	.174	.325	.334				MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX
T88	MAX	.059	.174	.325	.334				MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX
T88	MIN	.059	.174	.325	.334				MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX
T88	MAX	.059	.174	.325	.334				MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX

T89

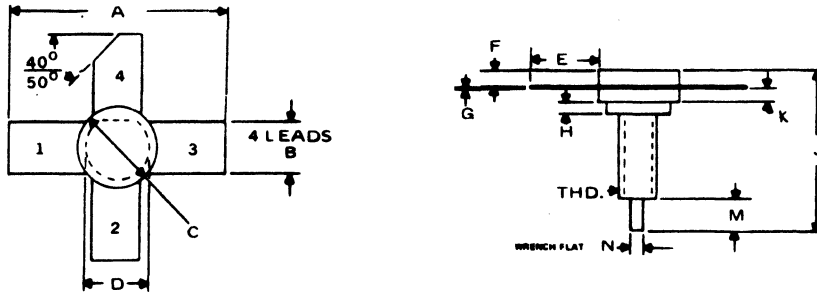


	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	THD
T89	.984	.984	.551	.381	.043	.417	.225	.440	.314	.062	.003	.281	.110	.118	.059	8-32UNC
T89a	MIN	MIN		MAX		MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	
T89a	1.08		.381	.378	.023		.185	.492	.358	.048	.003	.378	.086	.127	.072	8-32UNC
T89a			.406		.040		.209	.532	MAX	MAX	.008		.109	.148	.075	



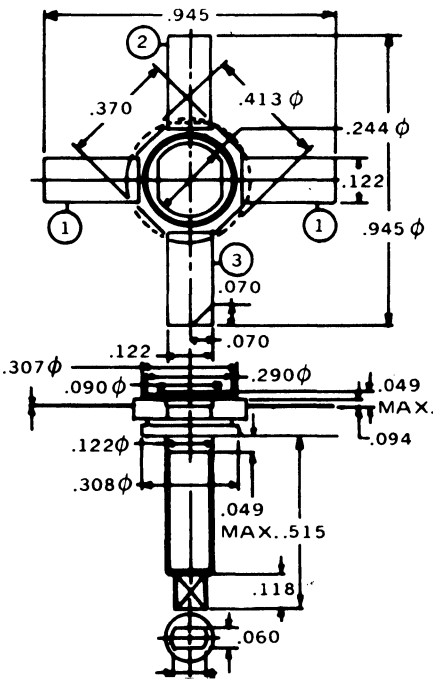
# 18. OUTLINE DRAWINGS

**T111**

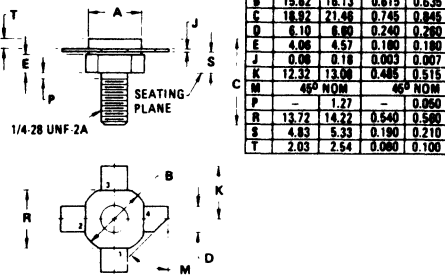


	A	B	C	D	E	F	G	H	J	K	M	N	THD
T111	1.055 1.065	.221 .229	.370 .380	.300 .380	.300 .350	.085 .095	.004 .008	.070 .080	.710 .750	.088 .094	.100 .130	.055 .065	8-32UNC-3A
T111a	1.000	.225		.225 NOM		.095	.005 NOM		.845 NOM		.115 NOM		8-32UNC-2A
T111b	1.000	.225	.300			.100	.005 NOM		.845 NOM		.115 NOM		8-32UNC-2A

**T121**

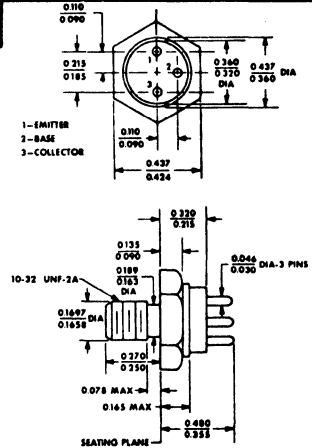


**T124**

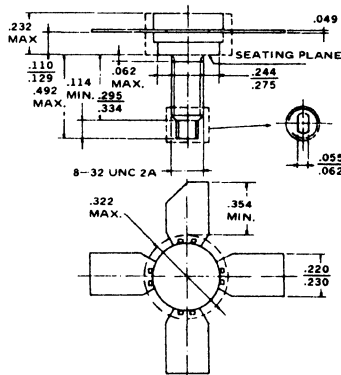


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	12.45	12.95	0.490	0.510
B	15.82	16.13	0.615	0.635
C	16.92	21.46	0.745	0.845
D	6.10	6.80	0.240	0.280
E	4.06	4.57	0.160	0.180
J	0.08	0.16	0.003	0.007
K	12.32	13.00	0.485	0.515
M	49° NOM		46° NOM	
P		1.27		0.050
R	13.72	14.22	0.540	0.560
S	4.83	5.33	0.190	0.210
T	2.03	2.54	0.080	0.100

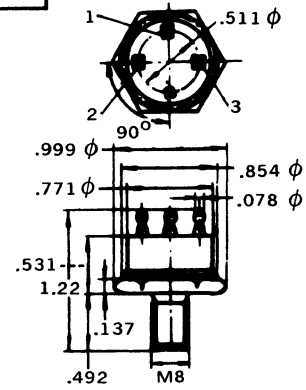
**T126**



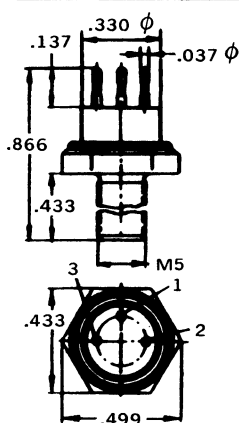
**T132**



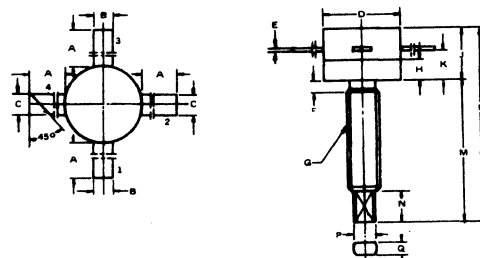
**T133**



**T135**

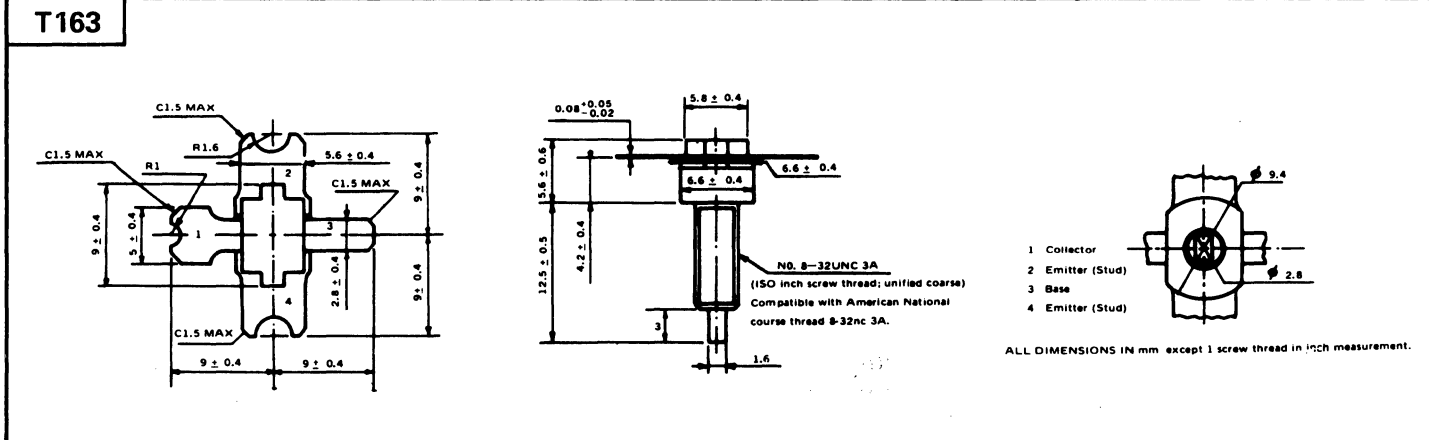
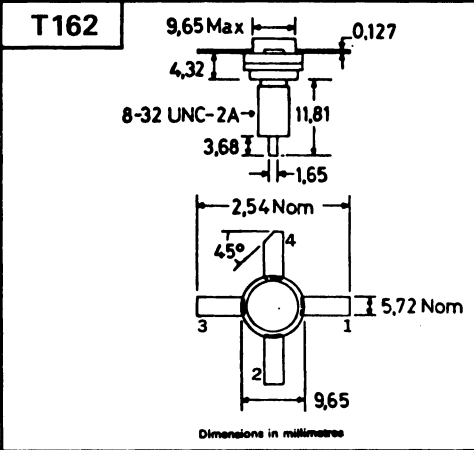
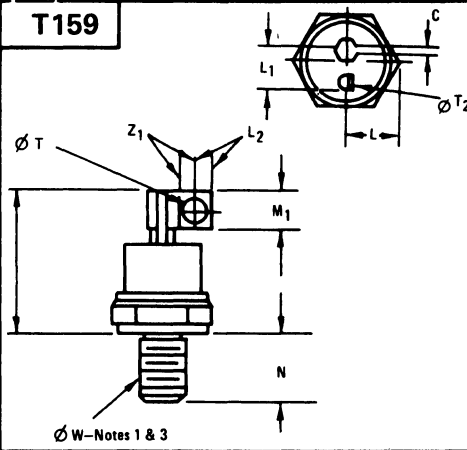
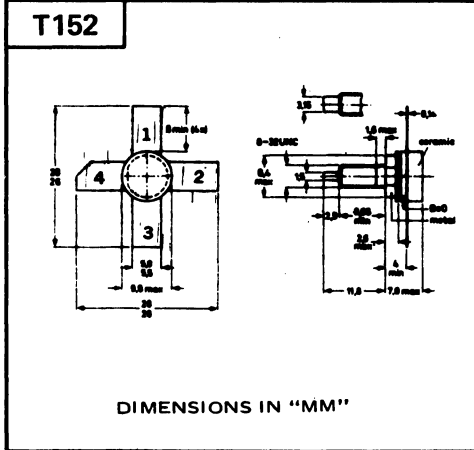
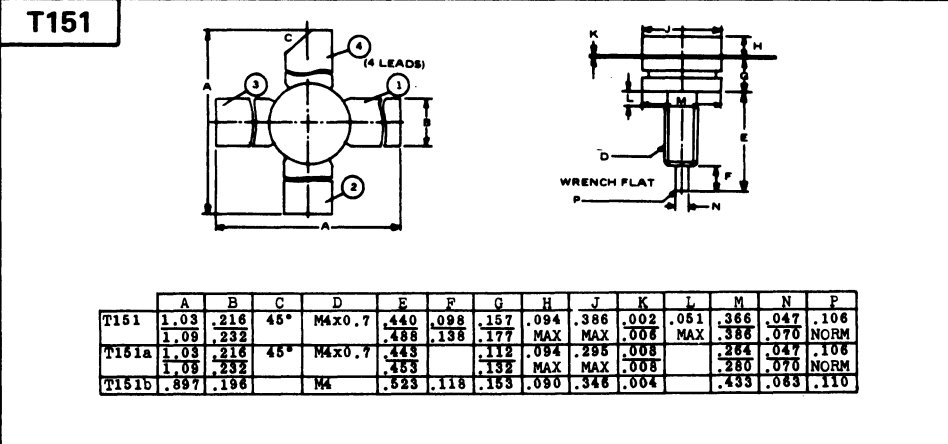
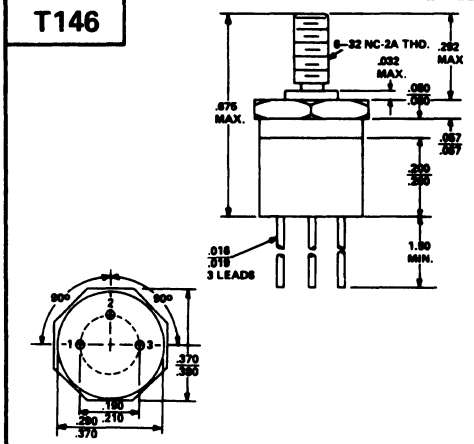
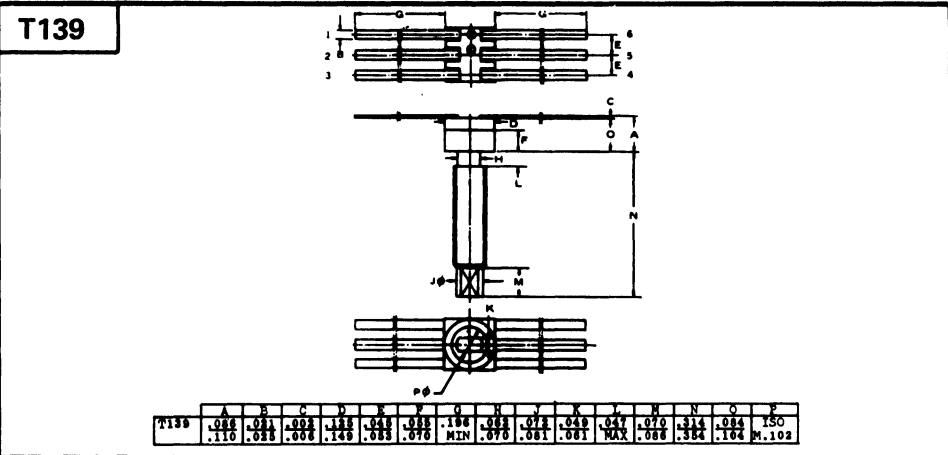
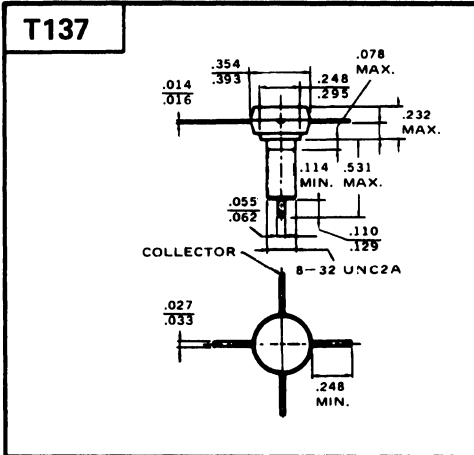


**T136**



T136	.196 MIN	.070 MAX	.070 MAX	.298 MAX	.004 MAX	.039 MAX	M5	.078	J 220 MAX	K 108 MAX	L .744 MAX	M .511	N .118	P .078	Q .055
T136a	.196 MIN	.088 MAX	.088 MAX	.298 MAX	.004 MAX	.039 MAX	M5	.078	J 193 MAX	K 129	L .744 MAX	M .508 MAX	N .118	P .078	Q .055

# 18. OUTLINE DRAWINGS





# 18. OUTLINE DRAWINGS

**T164**

SEATING PLANE  
8-32 UNC 2A  
WRENCH FLAT

STYLE 1:  
PIN 1. EMITTER  
2. BASE  
3. EMITTER  
4. COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.08	5.59	0.200	0.220
C	13.97	16.26	0.550	0.640
D	1.40	1.65	0.055	0.065
E	1.02	1.27	0.040	0.050
F	0.64	0.89	0.025	0.035
J	0.08	0.18	0.003	0.007
K	11.05	-	0.435	-
L	1.40	1.65	0.055	0.065
M	45° NOM		45° NOM	
P	-	1.27	-	0.050
S	1.40	1.65	0.055	0.065
T	1.40	1.78	0.055	0.070
U	2.79	3.81	0.110	0.150
V	2.41	2.92	0.095	0.115

**T165**

2 TYP2 (RADI 1)  
VIEW OF HARDWARE TYP2

MAT'L: STEEL, CAD PLATED  
10° TYP 45° TYP

VIEW OF B1 & B2 TERMINALS  
REF TERMINALS MEET NEMA  
STD DC 2

S	INCHES		METRIC		S	INCHES		METRIC	
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX
A	1.785	1.815	4.533	4.610	U	1.10	1.30	2.80	3.30
B	6.15	6.85	15.62	17.40	V	1.410	1.430	3.580	3.632
C	11.48	11.98	29.15	30.43	W	1.75	2.05	4.44	5.20
D	1.215	1.270	3.086	3.236	X	6.10	6.30	15.50	16.00
E	-	1.470	-	3.734	Y	1.99	2.21	5.05	5.61
F	2.45	-	6.20	-	Z	1.90	2.30	4.82	5.84
G	3.35	-	8.50	-	AA	1.47	REF.	1.21	REF.
H	1.170	1.190	2.971	3.023	AB	3.12	REF.	7.90	REF.
J	2.95	3.25	7.50	8.26	AC	MS (MED. FIT)	MS (MED. FIT)		
K	5.18	REF.	13.60	REF.	AD	1.84	1.92	4.67	4.90
L	2.60	2.90	6.60	7.37	AE	0.31	0.34	7.8	7.6
N	1.50	REF.	3.81	REF.	AF	1.19	1.32	3.02	3.35
P	0.7	REF.	1.80	REF.	AG	0.50	0.60	1.27	1.52
Q	1.70	REF.	4.30	REF.	AH	0.65	0.75	1.65	1.90
R	3.00	3.20	7.60	8.13	AJ	2.04	2.11	5.18	5.36
S	3.70	3.90	9.40	9.90	AK	3.65	3.85	9.27	9.80
T	9.85	10.15	25.00	25.80					

**T166**

SEATING PLANE  
WRENCH FLAT

10-32NF-2A

**T167**

Base  
Emitter  
Collector  
Seating Plane

ØT

Seating Plane  
Collector

ØW - Notes 1 & 3

**T168**

Marking  
Seating Plane  
Collector  
Base  
Emitter

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	12.45	12.95	0.490	0.510
B	10.54	10.80	0.416	0.425
C	19.68	22.73	0.775	0.895
D	5.46	5.97	0.215	0.235
E	1.83	-	0.072	-
J	0.08	0.18	0.003	0.007
K	12.45	-	0.490	-
L	1.65	1.90	0.065	0.075
M	45° NOM		45° NOM	
P	-	1.27	-	0.050
R	9.73	10.06	0.383	0.396
S	3.84	4.50	0.151	0.177
T	2.11	2.54	0.083	0.100
U	2.49	3.35	0.098	0.132

**T169**

2  
9 min (4x)  
28.2  
25.4  
3.05  
5.9  
5.5  
7.6 max  
28.2  
25.4  
1.52  
0.17  
0.11  
8-32UNC  
1.98 max  
ceramic  
BeO metal  
3.2  
2.8  
5.6 max

Dimensions in mm

# 18. OUTLINE DRAWINGS

**T170**

Dimensions in mm (inches)  
Mounting force 1.7 - 2.1 Kg  
Weight: 900 grams

**T171**

Dimensions in mm (inches)

**T172**

Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A2	1.80	45.72		
C	.160	.180	4.06	4.57
L		.812	20.62	
L1		.64	16.26	
L2	.155	3.94		
M1	.350	.450	8.88	11.42
N	1.040	1.077	24.89	27.89
ØT1	.193	.203	4.90	5.16
ØT2	.145	.160	3.68	4.06
Z1	.22	5.59		
ØW	1/2-20 UNF 3A			

Creep and Strike Distance  
D60T-.17 in. min. (4.3mm).  
(In accordance with NEMA standards.)  
Finish-Nickel Plate  
Approx. Weight-4.9 oz. (140 g).  
1. Complete threads to extend to within 2½ threads of seating plane.  
2. Angular orientation of terminals is undefined.  
3. Pitch diameter of 1/2-20 UNF 3A (COATED) threads (ASA B1.1-1960).

**T173**

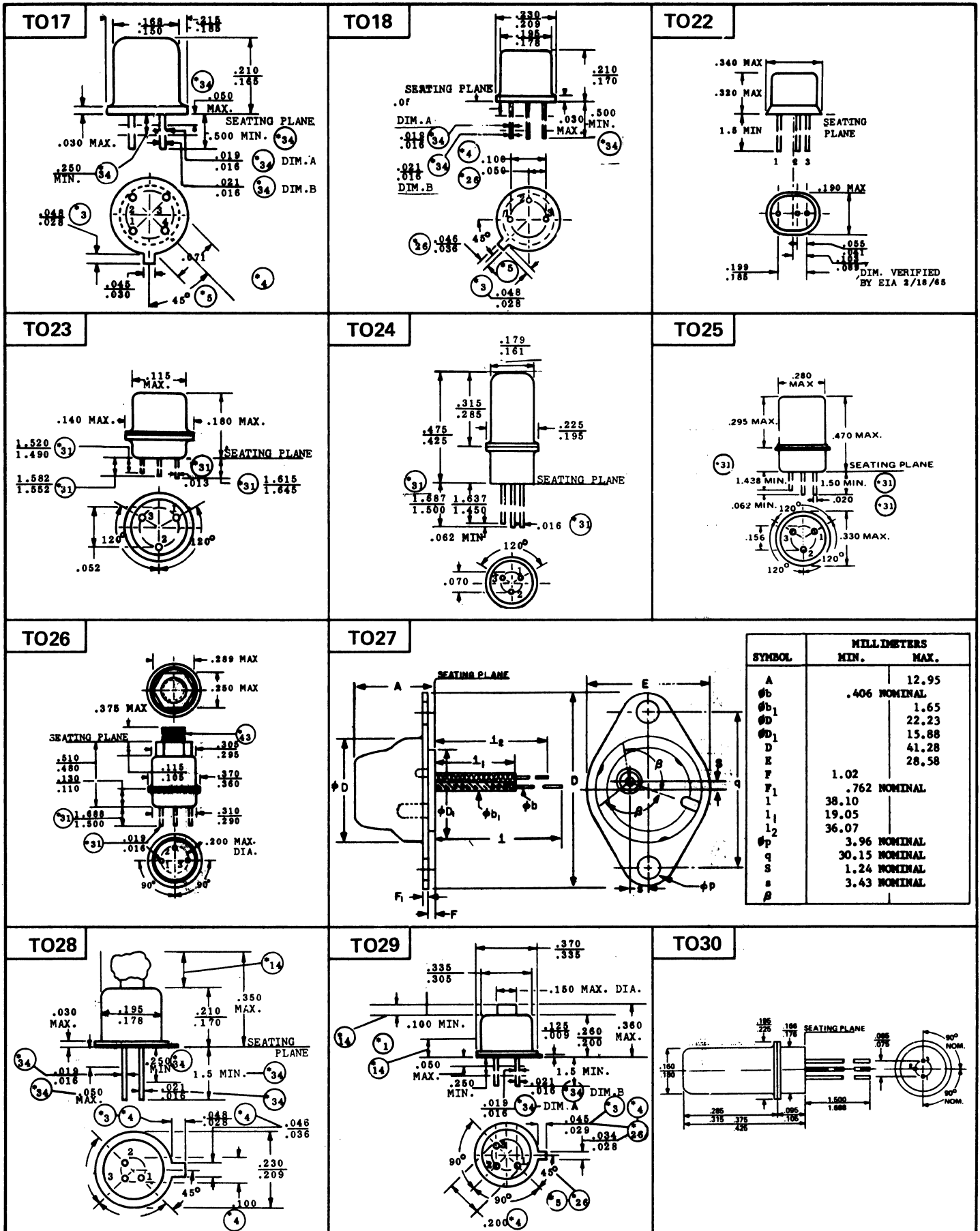
**T174**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	7.06	7.26	0.278	0.286
B	6.20	6.50	0.244	0.256
C	15.24	16.51	0.600	0.650
D	0.66	0.86	0.026	0.034
E	1.40	1.65	0.055	0.065
F	1.52	-	0.060	-
J	0.10	0.15	0.004	0.006
K	11.17	-	0.440	-
M	45° NOM		45° NOM	
P	-	1.27	-	0.050
S	2.74	3.35	0.108	0.132
T	1.40	1.78	0.055	0.070
U	2.92	3.68	0.115	0.145

**T175**

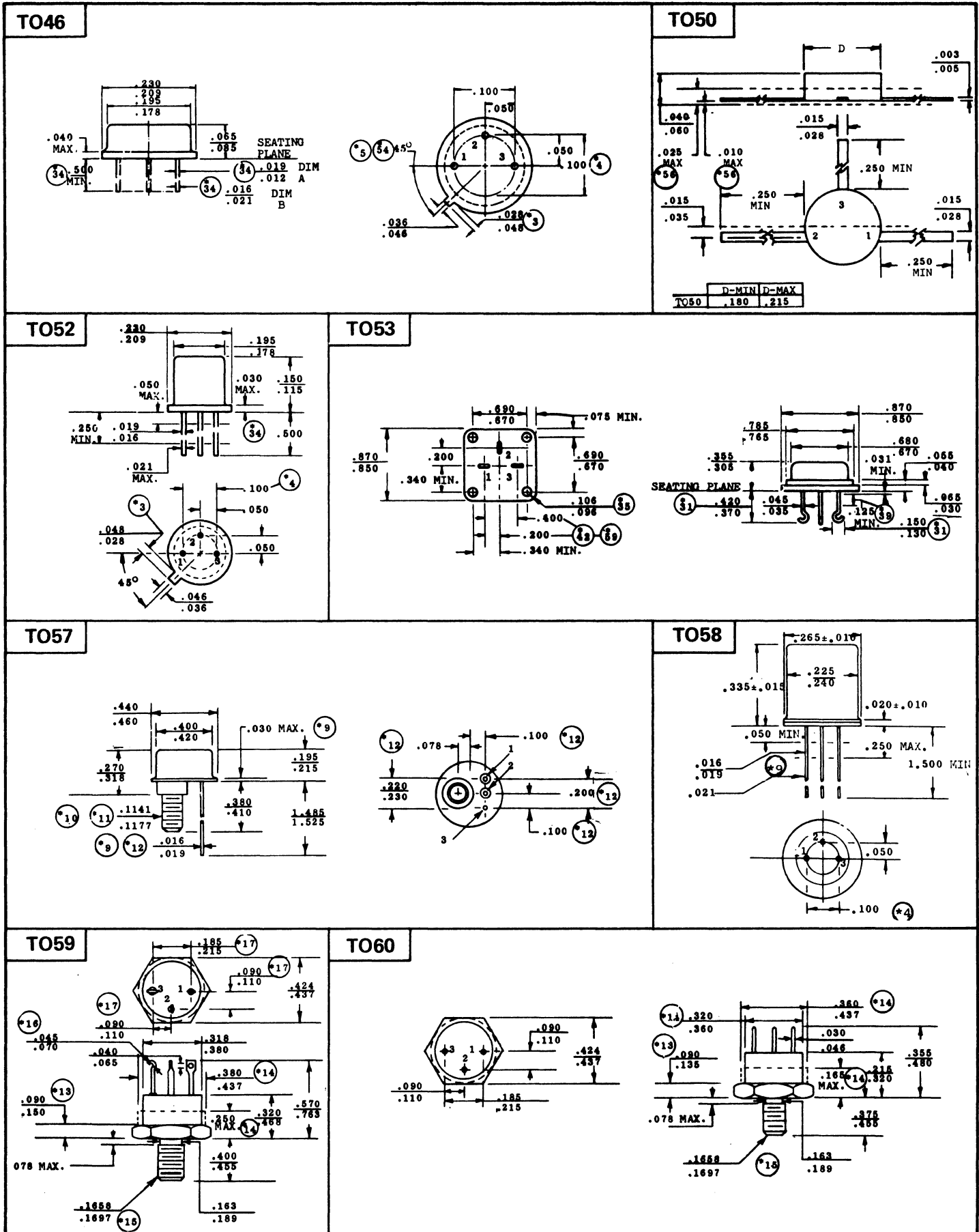


# 18. OUTLINE DRAWINGS





# 18. OUTLINE DRAWINGS







# 18. OUTLINE DRAWINGS

### TO79

### TO81

### TO82

### TO83

### TO84

### TO86

### TO89

### TO93

### TO92

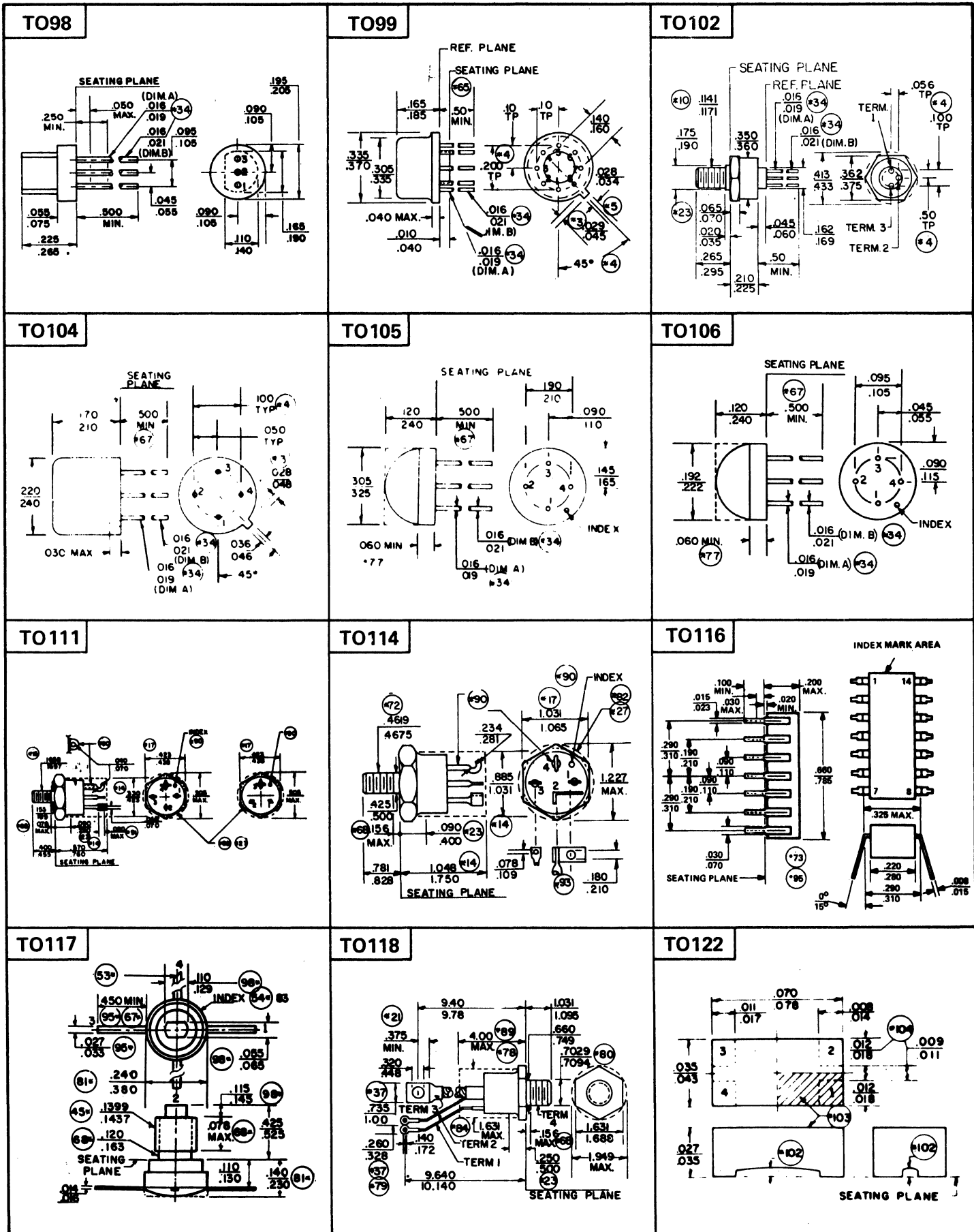
MILLIMETER DIMENSIONS ARE DERIVED FROM ORIGINAL INCH DIMENSIONS

SYMBOL	INCHES		MILLIMETERS		NOTES	ISSUE
	MIN.	MAX.	MIN.	MAX.		
ØD	-	1.443	-	36.85	-	A RELEASE NO. 5072
ØD <sub>1</sub>	-	1.212	-	30.78	1	
E	1.212	1.250	30.79	31.75	-	B RELEASE NO. 5072A
F	.230	1.000	5.9	25.4	5	
J	-	3.625	-	92.07	1,7	
M	.530	.755	13.5	19.1	2	
ØM	.660	.749	16.77	19.02	3	
M <sub>1</sub>	.215	.300	5.47	7.62	2,8	
N	1.047	1.077	26.80	27.35	-	
N <sub>1</sub>	-	.156	-	3.96	3	
O	7.350	8.100	186.7	205.7	-	
O <sub>1</sub>	7.350	8.100	186.7	205.7	-	
ØT	.260	.350	6.61	8.89	-	
ØT <sub>1</sub>	.140	.155	3.56	3.93	-	
ØW	.7029	.7094	17.854	18.018	4	
Z	.340	-	8.64	-	6	

NOTES:

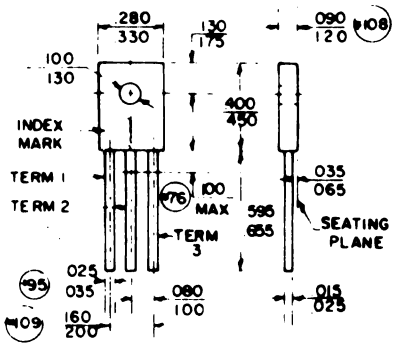
1. The body of the device with exception of the hexagon, thread, and flexible lead extensions lies within ØD<sub>1</sub> and Length J.
2. Angular orientation of these terminals with respect to hexagon portion is undefined. Square or radius on end of terminals is optional.
3. Length of incomplete or undercut threads of ØM.
4. Pitch diameter of ¼-18UNF-2A (coated) threads (ASA B1.1-1960).
5. A chamfer (or undercut) on one or both ends of hexagon portion is optional.
6. Minimum flat.
7. Seated height with lead bent at right angles.
8. Flexible leads for terminals 1 and 2 are identified by color coding for specific applications.

# 18. OUTLINE DRAWINGS

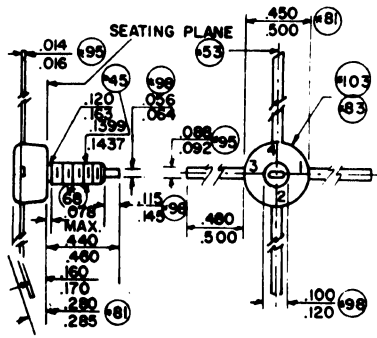


# 18. OUTLINE DRAWINGS

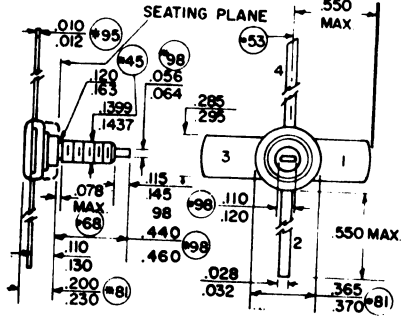
TO126



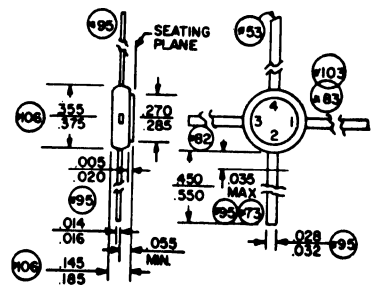
TO128



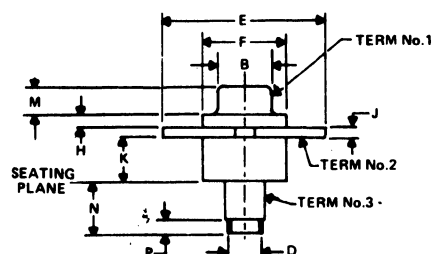
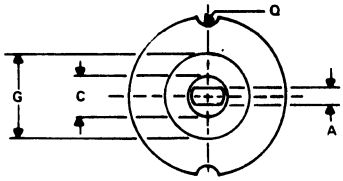
TO129



TO131



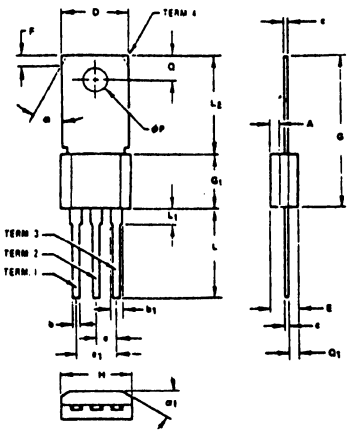
Y201/T0201



NOTES:  
1. REFER TO RULES FOR DIMENSIONING SEMICONDUCTOR PRODUCT OUTLINES INCLUDED IN PUBLICATION No.76.

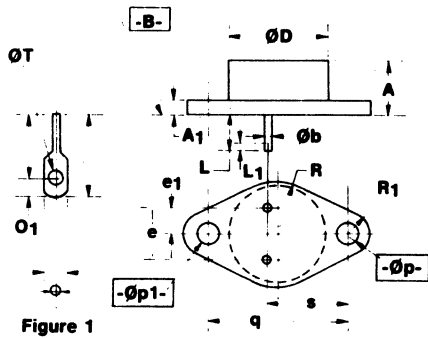
	A	B	C	D	E	F	G	H	J	K	M	N	P	Q
Y201A/	.043	.165	.115	.090	.495	.245	.245	.046	.025	.145	.095	.165	.040	.027
T0201AA	.055	.175	.125	.110	.505	.255	.255	.060	.035	.175	.115	.195	.060	.033

Y202/T0202



# 18. OUTLINE DRAWINGS

Y204/TO204

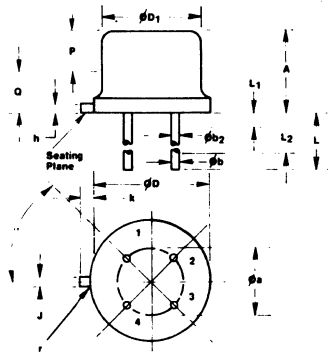


NOTES:

1. Refer to applicable symbol list.
2. Dimensioning and tolerancing per ANSI Y14.5, 1973.
3. Two leads.
4. Square or radius on end of terminal optional.
5. Two holes.
6. Both ends.
7. Figure 1 lead configuration applicable.
8. Datum surface -B- is seating plane.
9. Dimensions  $-\phi p-$  &  $-\phi p_1-$  are datums.
10. Positional tolerance for  $\phi D$ :  
 $\phi \pm 0.25 (M) B \phi p_1 (M) \phi R (M)$
11. Controlling dimension: Millimeters

SYMBOL	VARIATIONS (ALL DIMENSIONS SHOWN IN MILLIMETERS)												SYMBOL	AE		NOTE
	AA		NOTE	AB		NOTE	AC		NOTE	AD		NOTE				
	MIN.	MAX.		MIN.	MAX.		MIN.	MAX.		MIN.	MAX.					
A	6.4	11.4		6.4	11.4		6.4	7.6		6.4	11.4		A	6.4	11.4	
A <sub>1</sub>	-	3.42		-	3.42		1.53	3.42		1.53	3.42		A <sub>1</sub>	1.53	3.42	
b	-	-		3.18	5.33		-	-		-	-		b	-	-	
Øb	.966	1.092	3	-	-		.991	.092	3	1.22	1.35	3	Øb	1.45	1.60	3
ØD	-	22.22		-	22.22		-	21.08		-	22.22		ØD	-	22.22	
e	10.67	11.17		10.67	11.17		10.67	11.17		10.67	11.17		e	10.67	11.17	
e <sub>1</sub>	5.21	5.21		5.21	5.71		5.21	5.71		5.21	5.71		e <sub>1</sub>	5.21	5.71	
L	7.93	-	3	14.3	17.2	3	11.18	12.19	3	8.13	10.67	3	L	11.18	12.19	
L <sub>1</sub>	-	-		-	-		-	1.27		-	-		L <sub>1</sub>	-	-	
O	-	-		12.70	14.75		-	-		-	-		O	-	-	
O <sub>1</sub>	-	-		1.83	4.31	4	-	-		-	-		O <sub>1</sub>	-	-	
Øp	3.84	4.08	5.9	3.84	4.08	5.9	3.84	4.08	5.9	3.84	4.08	5.9	Øp	3.84	4.08	5.9
Øp <sub>1</sub>	3.84	4.08	5.9	3.84	4.08	5.9	3.84	4.08	5.9	3.84	4.08	5.9	Øp <sub>1</sub>	3.84	4.08	5.9
q	-	30.15 BSC		-	30.15 BSC		-	30.15 BSC		-	30.15 BSC		q	-	30.15 BSC	
R	-	13.33		-	13.33		12.58	13.33		12.58	13.33		R	12.58	13.33	
R <sub>1</sub>	-	4.77	6	-	4.77	4	3.33	4.77	6	3.33	4.77	6	R <sub>1</sub>	3.33	4.77	6
s	16.64	17.14		16.64	17.14		16.64	17.14		16.64	17.14		s	16.64	17.14	
ØT	-	-		1.83	3.04		-	-		-	-		ØT	-	-	
NOTE	1,2,8,9,10,11			1,2,7,8,9,10,11			1,2,8,9,10,11			1,2,8,9,10,11			NOTE: 1,2,8,9,10,11			

Y205/TO205



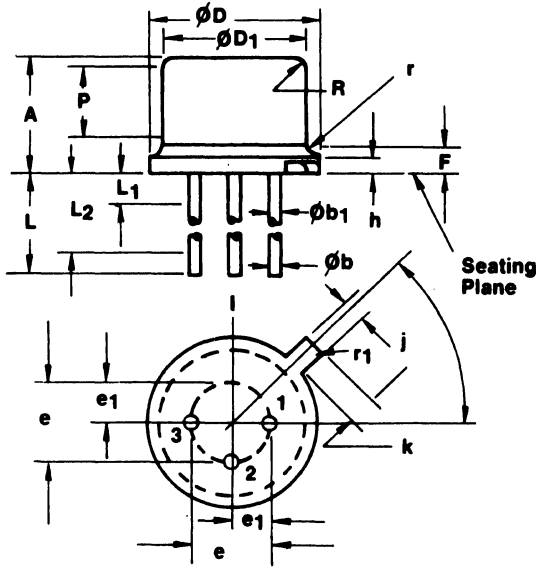
NOTES:

1. Refer to applicable symbol list.
2. Dimensioning and tolerancing per ANSI Y14.5, 1973.
3. Lead number 4 omitted from this outline.
4. Beyond r maximum, j must be held for a minimum length of .279.
5. Dimension k measured from ØD maximum.
6. ØD<sub>1</sub> shall not vary more than .254 in zone P. This zone controlled for automatic handling.
7. Details of outline in this zone optional.
8. Leads at gauge plane 1.372-1.387 below seating plane shall be within .178 radius of positional tolerance at MMC relative to tab at MMC. Device may be measured by direct methods or by gauge and gauging procedure described on gauge drawing GS-1.
9. Øb<sub>2</sub> applies between L<sub>1</sub> and L<sub>2</sub>. Øb applies between L<sub>2</sub> and L minimum. Diameter is uncontrolled in L<sub>1</sub> and beyond minimum.
10. Controlling dimensions: Inch.

SYMBOL	VARIATIONS (ALL DIMENSIONS SHOWN IN MILLIMETERS)												SYMBOL	AE		NOTE
	AA		NOTE	AB		NOTE	AC		NOTE	AD		NOTE				
	MIN.	MAX.		MIN.	MAX.		MIN.	MAX.		MIN.	MAX.					
A	6.10	6.60		6.10	6.60		6.10	6.60		6.10	6.60		A	6.10	6.60	
Øa	-	5.08 BSC	8	-	5.08 BSC	8	-	5.08 BSC	8	-	5.08 BSC	8	Øa	-	5.08 BSC	8
Øb	.41	.53	9	.41	.53	9	.41	.53	9	.41	.53	9	Øb	.41	.53	9
Øb <sub>2</sub>	.41	.48	9	.41	.48	9	.41	.48	9	.41	.48	9	Øb <sub>2</sub>	.41	.48	9
ØD	8.51	9.39		8.51	9.39		8.51	9.39		8.51	9.39		ØD	8.51	9.39	
ØD <sub>1</sub>	7.75	8.50		7.75	8.50		7.75	8.50		7.75	8.50		ØD <sub>1</sub>	7.75	8.50	
h	.23	1.04		.23	1.04		.23	1.04		.23	1.04		h	.23	1.04	
j	.72	.86	4	.72	.86	4	.72	.86	4	.72	.86	4	j	.72	.86	4
k	.74	1.14	4.5	.74	1.14	4.5	.74	1.14	4.5	.74	1.14	4.5	k	.74	1.14	4.5
L	38.10	44.45	9	12.70	19.05	9	38.10	44.45	9	12.70	19.05	9	L	38.10	44.45	9
L <sub>1</sub>	-	1.27	9	-	1.27	9	-	1.27	9	-	1.27	9	L <sub>1</sub>	-	1.27	9
L <sub>2</sub>	6.35	-	9	6.35	-	9	6.35	-	9	6.35	-	9	L <sub>2</sub>	6.35	-	9
P	2.54	-	6	2.54	-	6	2.54	-	6	2.54	-	6	P	2.54	-	6
Q	-	1.27	7	-	1.27	7	-	1.27	7	-	1.27	7	Q	-	1.27	7
r	-	.25		-	.25		-	.25		-	.25		r	-	.25	
∠	-	45° BSC	8	-	45° BSC	8	-	45° BSC	8	-	45° BSC	8	∠	-	45° BSC	8
NOTE	1,2,3,10			1,2,10			1,2,10			1,2,3,10			NOTE: 1,2,3,10			

# 18. OUTLINE DRAWINGS

Y206/TO206



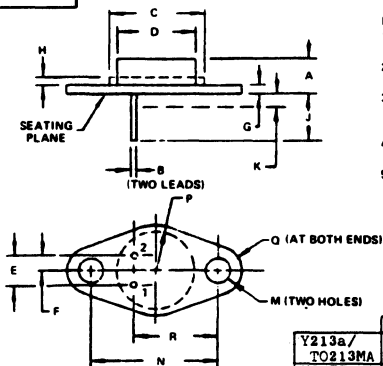
SYM BO L	VARIATIONS (ALL DIMENSIONS SHOWN IN MILLIMETERS)											
	AE		N O T E	AF		N O T E	AG		N O T E			
	MIN.	MAX.		MIN.	MAX.		MIN.	MAX.				
A	4.32	5.33		4.32	5.33		8.13	8.89				
$\phi b$		53	3	41	53	3		53	3			
$\phi b_1$	41	48	3	41	48	3	41	48	3			
$\phi D$	5.31	5.84		5.31	5.84		6.48	6.98				
$\phi D_1$	4.63	4.87		4.53	4.95		5.72	6.09				
e	2.54	BSC	4	2.54	BSC	4	2.54	BSC	4			
e1	1.27	BSC	4	1.27	BSC	4	1.27	BSC	4			
F		58			76		26	76				
h	13	.38										
j	92	1.16		92	1.16							
k	77	1.16	5	72	1.21	5						
L	12.70	15.87	3	12.70		3	38.10		3			
L1		50	3		1.27	3	1.27		3			
L2	6.35		3	6.35		3		6.35	3			
P	3.18		6									
R	26											
r		25										
r1		17										
$\angle$	45	BSC		45	BSC							
NOTE	1.2.9			1.2.7.9			1.2.8.9					

NOTES:

1. Refer to applicable symbol list.
2. Dimensioning and tolerancing per ansi Y14.5, 1973.
3.  $\phi b$  applies between L1 and L2.  $\phi b$  applies between L2 and L. Diameter is uncontrolled in L1 and beyond L minimum.
4. Leads having a maximum diameter of .482 measured in gauging plane 1.732-1.397 below the reference plane of the device shall be located at position tolerance within .356 diameter relative to maximum with tab. Device may be measured by direct methods or by gauge and gauging procedures described on gauge drawing G8-2.
5. Measured from MMC of device.
6.  $\phi D_1$  shall not vary more than .254 in zone P. Zone P controlled for automatic handling.
7. Variation AF has four leads.
8. Variation AG has no index tab.
9. Controlling dimensions: Inch.

SYM BO L	VARIATIONS (ALL DIMENSIONS SHOWN IN MILLIMETERS)											
	AA		N O T E	AB		N O T E	AC		N O T E	AD		N O T E
	MIN.	MAX.		MIN.	MAX.		MIN.	MAX.		MIN.	MAX.	
A	4.32	5.33		1.66	2.15		2.93	3.81		1.27	1.52	
$\phi b$	41	53	3	41	53	3	53	53	3	41	53	3
$\phi b_1$	41	48	3	41	48	3	41	48	3	41	48	3
$\phi D$	5.31	5.84		5.31	5.84		5.31	5.84		5.31	5.84	
$\phi D_1$	4.53	4.95		4.53	4.95		4.53	4.95		4.53	4.95	
e	2.54	BSC	4	2.54	BSC	4	2.54	BSC	4	2.54	BSC	4
e1	1.27	BSC	4	1.27	BSC	4	1.27	BSC	4	1.27	BSC	4
F		.76			1.01			.76			1.01	
h												
j	92	1.16		92	1.16		92	1.16		92	1.16	
k	72	1.21	5	72	1.21	5	72	1.21	5	72	1.21	5
L	12.70		3	12.70		3	12.70		3	12.70		3
L1		1.27	3		1.27	3		1.27	3		1.27	3
L2	6.35			6.35			6.35			6.35		3
P												
R												
r												
r1												
$\angle$	45	BSC		45	BSC		45	BSC		45	NSC	
NOTE	1.2.9			1.2.9			1.2.9			1.2.9		

Y213/TO213



NOTES:

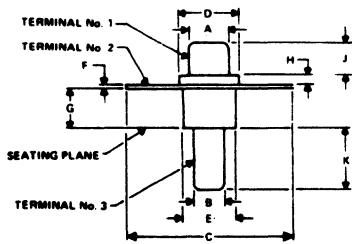
1. Refer to rules for dimensioning semiconductor product outlines included in Publication No. 76.
2. Body contour is optional within zone defined by C and H.
3. These dimensions should be measured at points .050-.056 below seating plane. When gauge is not used, measurement will be made at the seating plane.
4. B applies between K and J. Diameter is uncontrolled in K.
5. The seating plane of header shall be flat within .001 concave to .004 convex inside .520 diameter circle on the center of the header and flat within .001 concave to .008 convex overall.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	NOTES	REF
Y213a/ TO213MA	.250	.028	.620	.470	.190	.093	.050	.050	.360	.050	.142	.958	.350	.115	.570			1,5	TO66
NOTES:	.340	.034	MAX	.500	.210	.107	.075	MAX	.508	MAX	.152	.962	MAX	.145	.590			3	



# 18. OUTLINE DRAWINGS

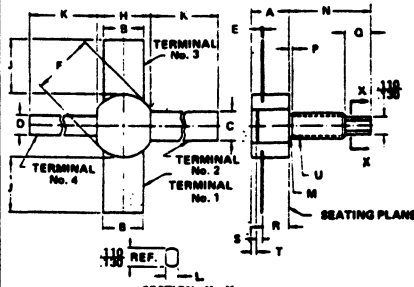
## Y215/TO215



NOTES: 1. REFER TO RULES FOR DIMENSIONING SEMICONDUCTOR PRODUCT OUTLINES INCLUDED IN PUBLICATION No. 76

	A	B	C	D	E	F	G	H	J	
Y215a/	.117	.080	.496	.175	.157	.009	.114	.027	.098	.179
TO215AA	.123	.084	.504	.185	.167	.012	.127	.040	.105	.191

## Y216/TO216

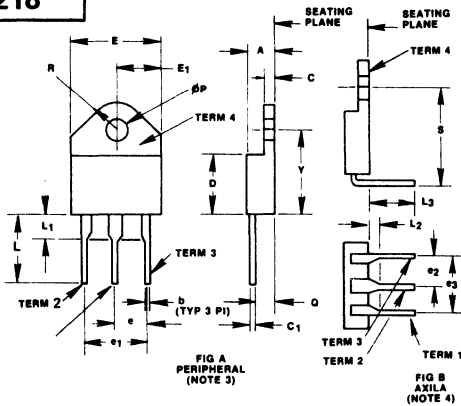


### NOTES:

1. Refer to rules for dimensioning semiconductor product outlines included in Publication No. 76
2. Typical all leads.
3. Body contour optional within T, F and H.
4. U is pitch diameter of coated threads. Ref: Unified Screw Threads, ANSBI. 1-1960

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
Y216a/	.150	.195	.135	.095	.004	.305	.110	.275	.265	.455	.053	.120	.425	.078	.110	.120	.025		8-32UNC2
TO216AA	.230	.205	.145	.105	.010	.320	.130	.300	.290	.510	.064	.163	.470	MAX	.150	.170	.045		A

## Y217/TO218



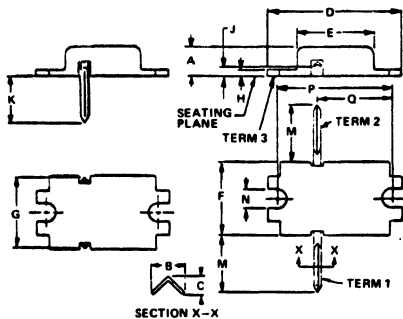
S M D L	AA		H O E
	MIN.	MAX.	
A	4.318	4.953	
b	1.143	1.397	
c	1.016	1.524	
d	.305	.457	
D	10.287	10.795	
E	14.732	15.748	9
E1	7.366	7.874	
e	5.207	5.715	8
e1	10.668	11.176	8
e2	-	-	
e3	-	-	
L	11.938	-	
L1	2.794	3.429	
L2	-	-	
L3	-	-	
s/p	3.896	4.089	
Q	2.784	3.429	
R	4.318	4.826	9
S	16.837	17.145	
Y	13.482	14.478	

### NOTES:

1. Refer to applicable symbol list.
2. Dimensioning and tolerancing per ANSI Y14.5, 1966.
3. Figure A, peripheral terminal configuration, applicable.
4. Figure B, axial terminal configuration, applicable.
5. Maximum radius of 1.270 on all body edges and corners.
6. Position of lead to be measured 4.899-4.826 from bottom of dimension D.
7. Position of lead to be measured 1.270-1.397 below seating plane.
8. Lead dimensions uncontrolled in L1 and L2.
9. Tab outline optional within boundaries of dimensions E and R.
10. Controlling dimensions: Inch.
11. Millimeter dimensions are taken to the same number of places beyond the decimal point as the corresponding inch dimensions. Maximum conversion error is no more than .02 times the smallest unit value of corresponding inch dimensions.

NOTE 1,2,3,10,11

## Y219/TO219



	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	NOTES
Y219a/	.150	.045	.025	.890	.480	.480	.450	.055		.370		.138	.740	.500			1,2,4
TO219AA	.200	.060	.045	.910	.515	.520	.505	.070		.450		.150	.760	.520			

### NOTES:

Y219b/

TO219AB

.160 .045 .025 .890 .480 .480 .450 .055 .100 .415 .128 .740 .500 1,3,4

.200 .060 .045 .910 .515 .520 .505 .070 .120 .360 .150 .760 .520

NOTES:

1. REFER TO RULES FOR DIMENSIONING SEMICONDUCTOR PRODUCT OUTLINES INCLUDED IN PUBLICATION No. 76.

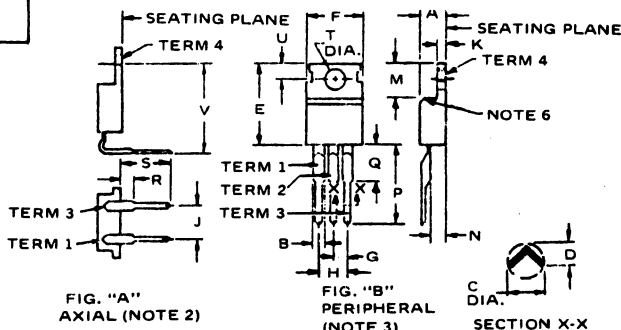
2. FIGURE "A", AXIAL TERMINAL CONFIGURATION, APPLICABLE.

3. FIGURE "B", PERIPHERAL TERMINAL CONFIGURATION, APPLICABLE.

4. TERMINAL END CONFIGURATIONS ARE OPTIONAL.

5. G IS MEASURED AT SEATING PLANE.

## Y220/TO220



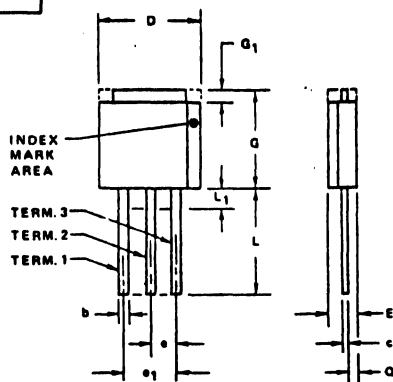
### NOTES:

1. Refer to rules for dimensioning semiconductor product outlines included in Publication No. 76.
2. Figure "A", Axial Terminal Configuration, applicable.
3. Figure "B", Peripheral Terminal Configuration, applicable.
4. Alternate lead configurations allowed within C and D.
5. Tab contour optional within M and F.
6. Chamfer optional.
7. Position of lead to be measured .050 - .055 below seating plane.
8. Position of lead to be measured .250 - .255 from bottom of dimension E.

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T	U	V	NOTES
Y220a/	.140	.045	.020	.012	.560	.380			.190	.020	.230	.080			.050	.340	.139	.100	.580	2
TO220AA	.190	.070	.045	.045	.625	.420			.210	.055	.270	.115			MAX	.422	.147	.120	.610	
Y220b/	.140	.045	.020	.012	.560	.380	.090	.190		.020	.230	.080	.500	.250			.139	.100		3
TO220AB	.190	.070	.045	.045	.650	.420	.110	.210		.055	.270	.115	.580	MAX			.161	.135		

# 18. OUTLINE DRAWINGS

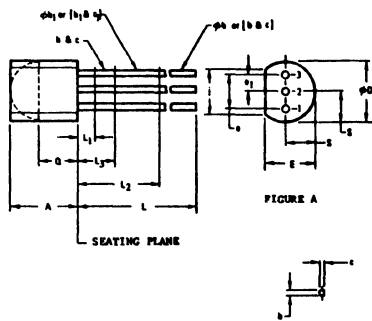
## Y221/TO221



- NOTES:
1. REFER TO APPLICABLE SYMBOL LIST.
  2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1966.
  3. LEAD DIMENSIONS UNCONTROLLED IN THIS ZONE TO ALLOW FOR BODY AND LEAD IRREGULARITIES.
  4. LEAD SPACING TO BE MEASURED BETWEEN .125 AND .150 FROM THE POINT OF EMERGENCE FROM THE BODY.
  5. CONTROLLING DIMENSIONS: INCH.

	b	c	D	E	e	e1	G	G1	L	L1	J	NOTES
Y221a/ _O221AA	.045	.010	.360	.120	.095	.190	.220	.050	.371	.100	.039	1, 2, 5
	.055	.026	.400	.190	.105	.210	.370	MAX	.520	MAX	.076	
NOTES:					4	4				3		
Y221b/ _O221AB	.023	.010	.360	.120	.095	.190	.220	.050	.371	.100	.039	1, 2, 5
	.029	.026	.400	.190	.105	.210	.370	MAX	.520	MAX	.076	
NOTES:					4	4				3		

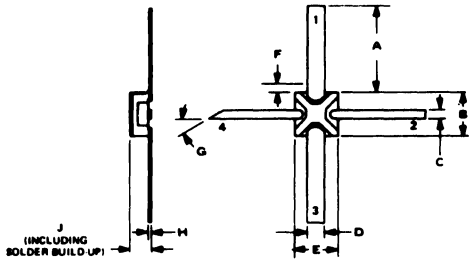
## Y226/TO226





# 18. OUTLINE DRAWINGS

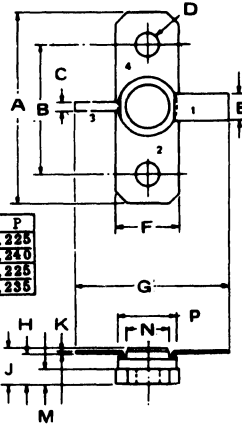
**W21**



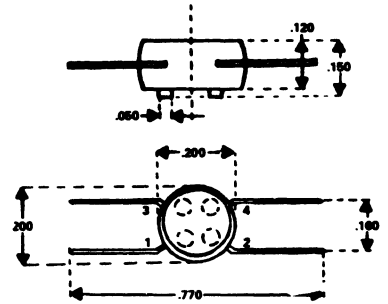
	A	B	C	D	E	F	G	H	J
W21	.200	.090	.017	.036	.080	.020	30°	.003	.050
	MIN	.110	.023	.042	.110			.006	MAX
W21a	.275	.131	.023	.074	.131		45°	.003	.059
		.143	.031	.082	.143				
W21b	.230	.095	.016	.036	.095			.002	.050
	.280	.105	.074	.044	.105			.006	MAX
W21c	.230	.065	.016	.036	.065			.002	.050
	.280	.075	.024	.044	.075			.006	MAX

**W24**

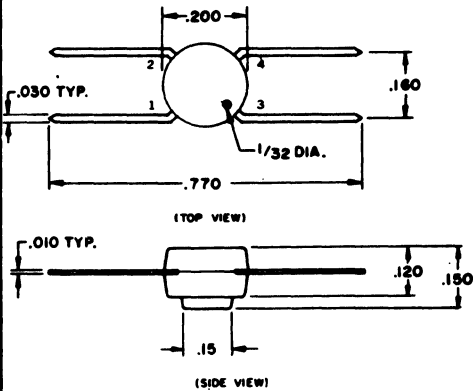
	A	B	C	D	E	F	G	H	J	K	M	N	P
W24	.790	.557	.026	.120	.113	.240	.740	.120	.165	.005	.055	.180	.225
	.810	.567	.032	.132	.117	.250	.780	.140	.185	.005	.065	.180	.240
W24a	.795	.560	.045	.128	.115	.245	.935	.115	.145	.003	.055	.175	.225
	.810	.565	.055	.132	.125	.255	MAX	.135	.165	.005	.065	.185	.235



**W25**

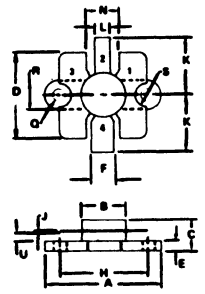


**W28**



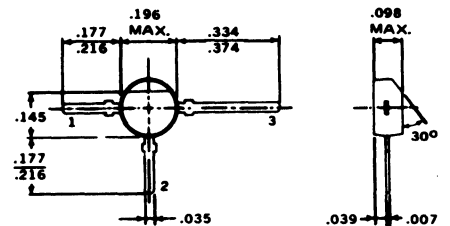
**W30**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.51	25.15	0.965	0.990
B	9.47	9.75	0.373	0.383
C	5.97	7.62	0.235	0.300
D	17.78	19.30	0.700	0.760
E	2.16	2.67	0.085	0.105
F	4.32	4.57	0.170	0.180
H	18.29	18.54	0.720	0.730
J	0.10	0.15	0.004	0.006
K	12.19	12.70	0.480	0.500
L	3.05	3.30	0.120	0.130
M	6.86	7.11	0.270	0.280
Q	2.79	3.18	0.110	0.125
R	6.10	6.80	0.240	0.268
S	2.67	3.05	0.105	0.120
U	1.65	1.91	0.065	0.075

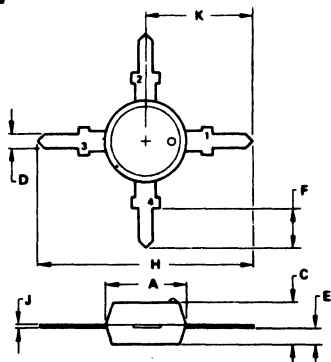


NOTE:  
1. DIM "D" IS DIA  
DIM "S" IS RAD

**W31**

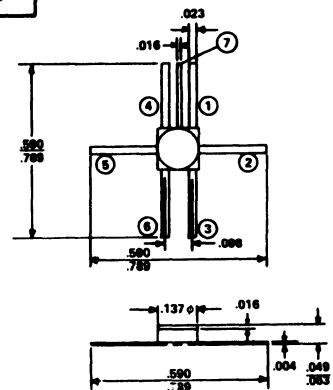


**W33**



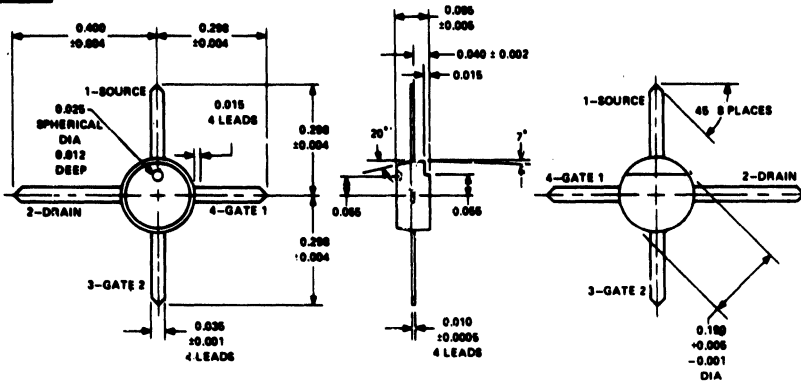
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	4.78	-	0.189
C	-	3.05	-	0.120
D	0.64	0.89	0.025	0.035
E	0.97	1.22	0.038	0.048
F	2.21	2.46	0.087	0.097
H	12.40	12.90	0.488	0.508
J	0.10	0.15	0.004	0.006
K	6.20	6.45	0.244	0.254

**W35**



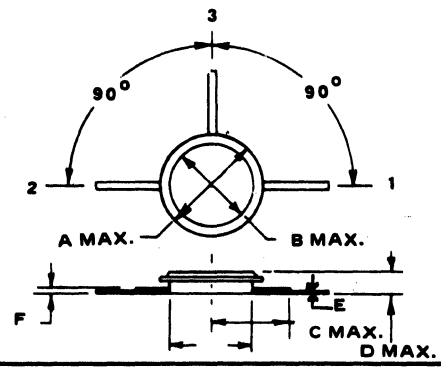
# 18. OUTLINE DRAWINGS

**W37**

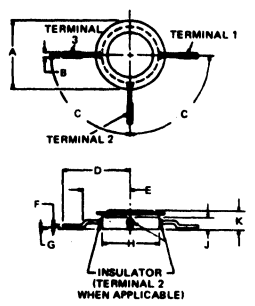


**W39**

W39	A	B	C	D	E	F
W39A	.880	.540	.525	.190	.025	.018
MAX	.880	.560	.575	MAX	.020	.020



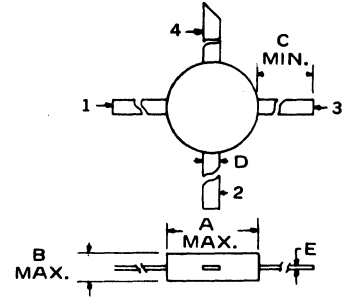
**W41**



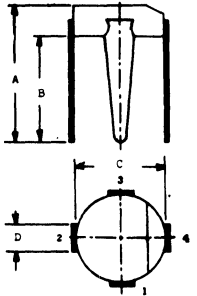
NOTE:  
1. CONTROLLED AREA OF DIAMETER DOES NOT INCLUDE THE BRAZED AREA AROUND THE CERAMIC AND TERMINAL 2.

**W43**

	A	B	C	D	E
W43	2.41	1.04	3.17	2.03	1.43

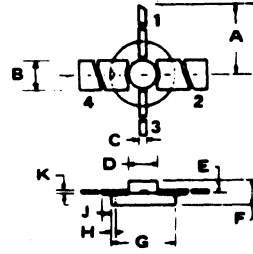


**W44**



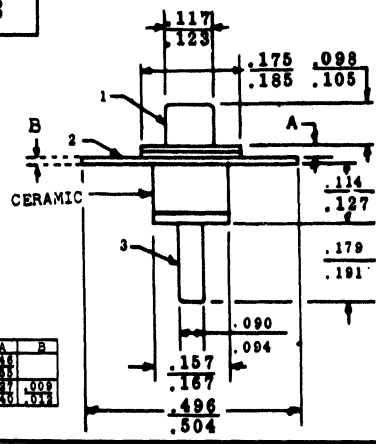
	A	B	C	D
W44	.275	.177	.189	.047

**W45**



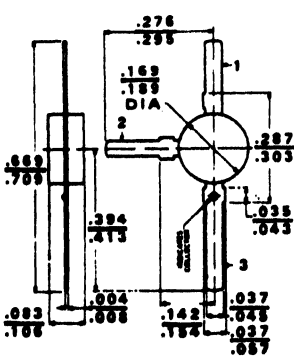
	A	B	C	D	E	F	G	H	J	K
W45	.438	.125	.030	.110	.030	.080	.204	.015	.050	.004
W45a	.300	.060	.030	.128	.025	.045	.204	.015	MAX	.006
MIN							.206			.004

**W48**

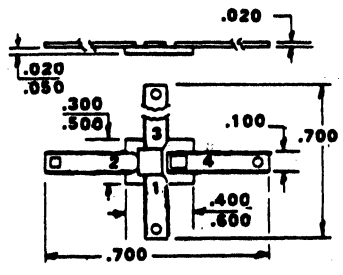


	A	B
W48	.043	.035
W48a	.047	.030
MIN	.040	.037

**W49**

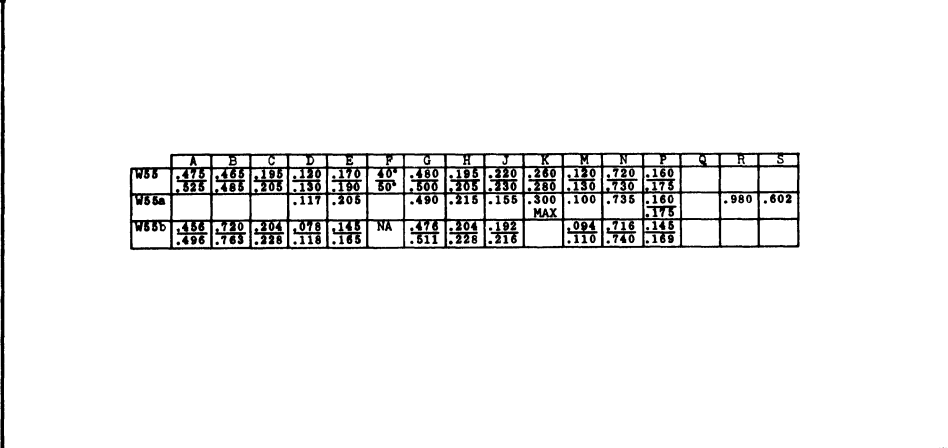
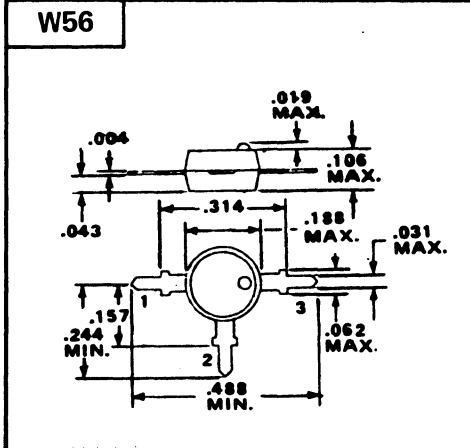
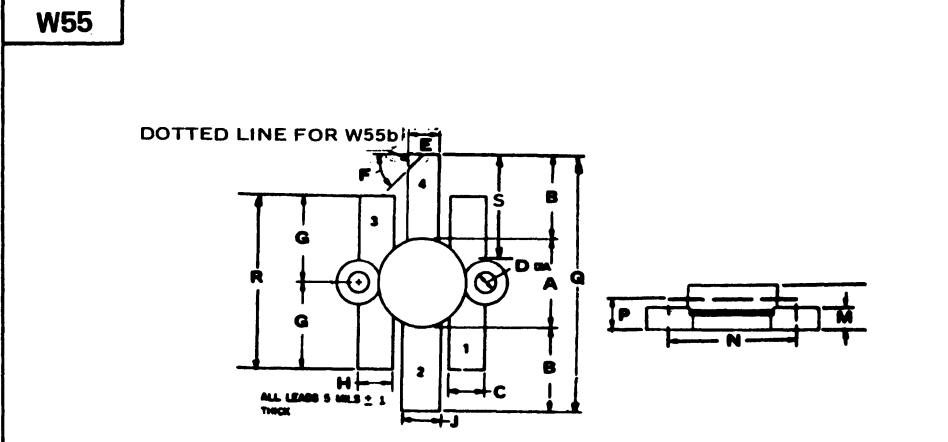
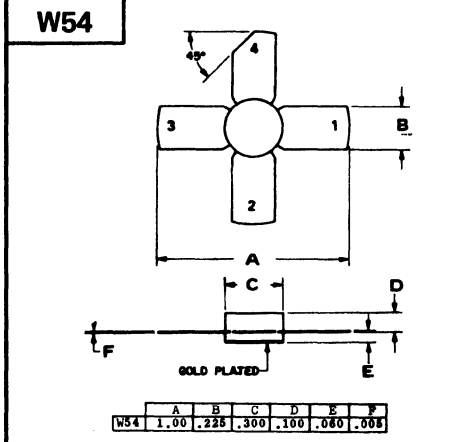
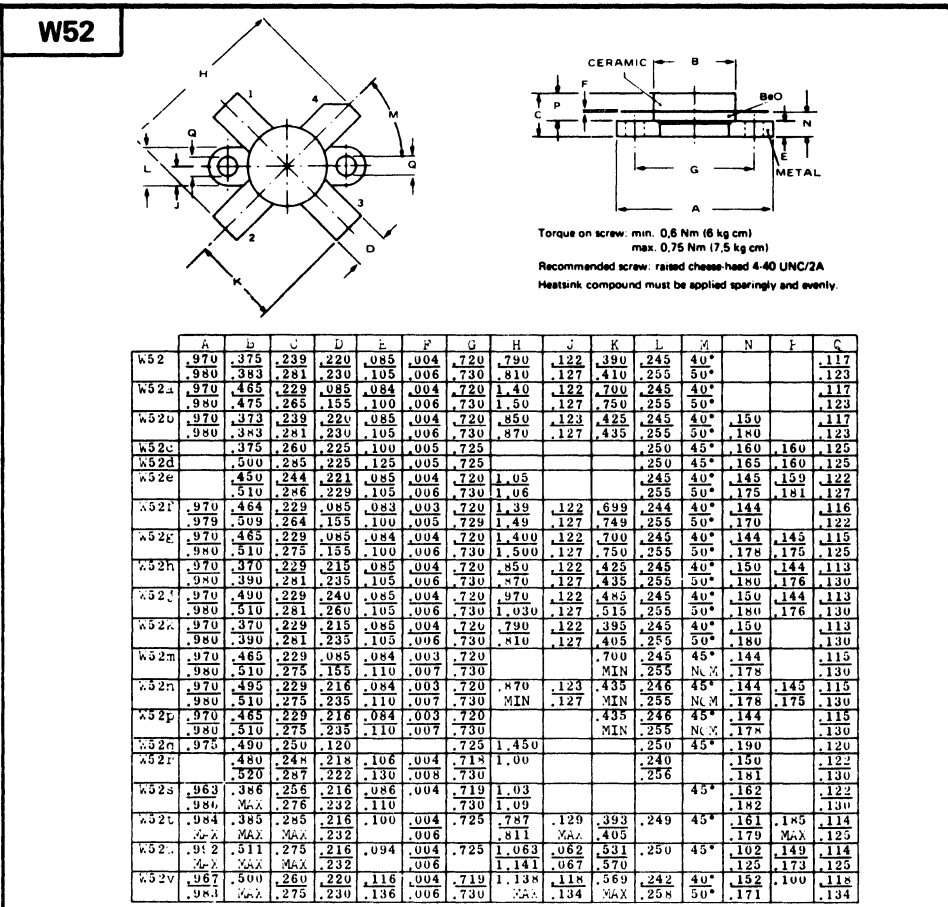
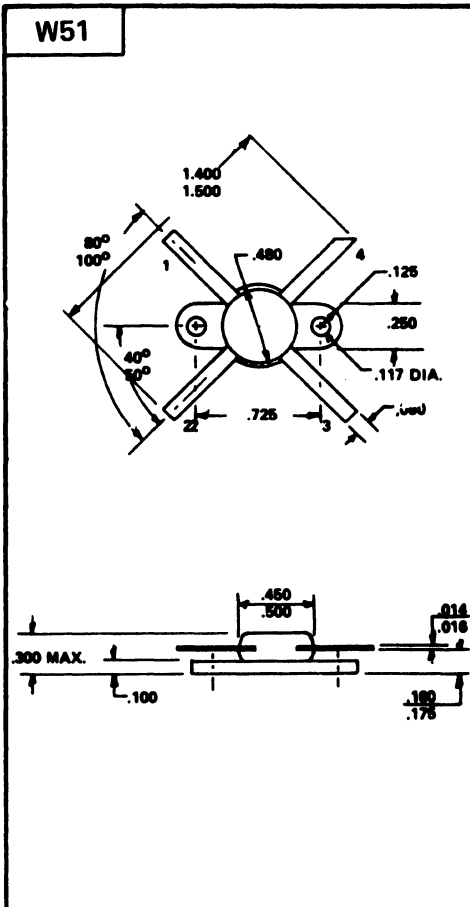


**W50**



BEAM LEAD TRANS  
DIMENSIONS IN MILLIMETERS

# 18. OUTLINE DRAWINGS

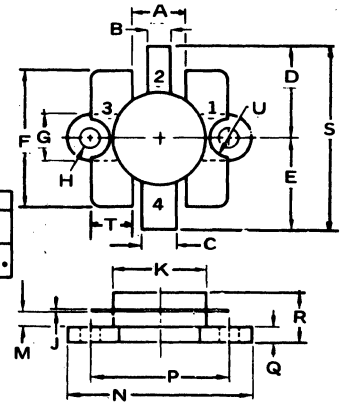




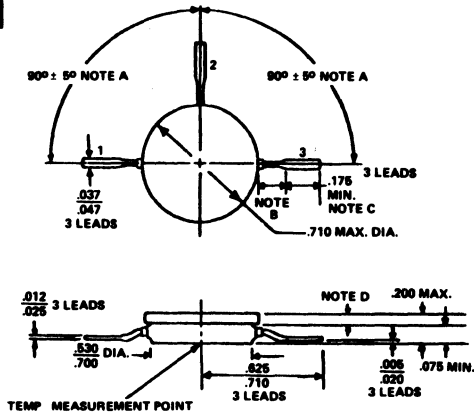
# 18. OUTLINE DRAWINGS

**W61**

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T	U	REMARKS
W61	.270	.120	.170	.480	.480	.720	.240	.110	.004	.490	.065	.385	.720	.085	.235	.960		.105	
W61a	.280	.130	.180	.500	.500	.760	.260	.125	.008	.510	.075	.390	.730	.105	.300	1.000	.216	.120	Lead 2 Slanted 45°

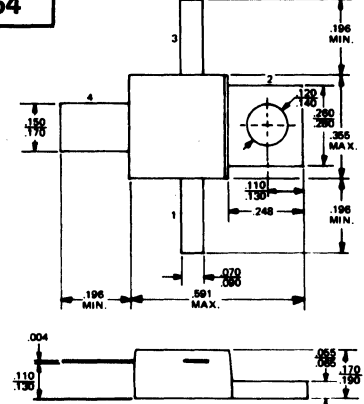


**W63**

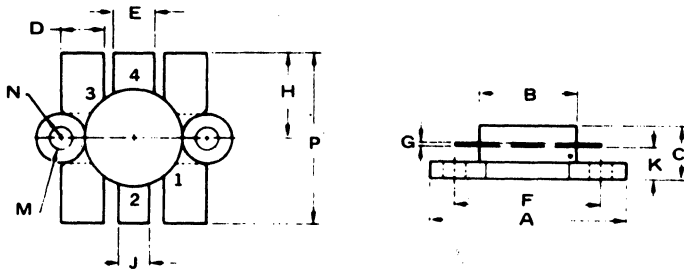


- NOTES:**
- A. MEASURED WHERE LEADS EMERGE FROM PACKAGE.
  - B. LEAD CROSS-SECTION AND SHAPE ARE OPTIONAL IN THIS AREA.
  - C. SPECIFIED LEAD WIDTH AND THICKNESS APPLY WITHIN THIS DIMENSION.
  - D. CONTOUR OF PACKAGE IS OPTIONAL WITHIN THIS AREA.

**W64**

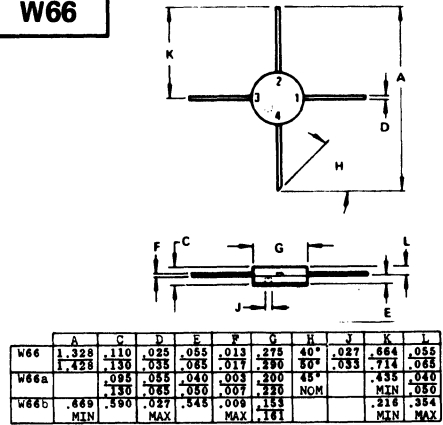


**W65**



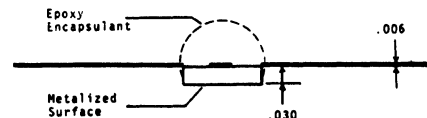
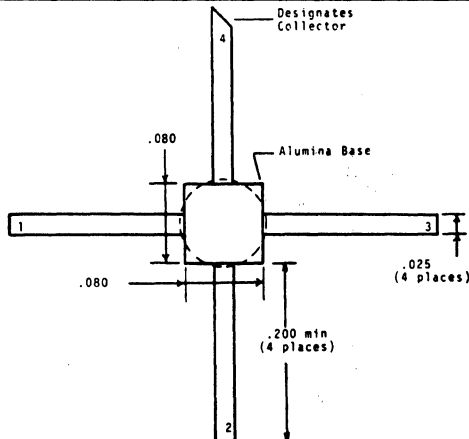
	A	B	C	D	E	F	G	H	J	K	M	N	P
W65	.960	.490	.235	.210	.220	.718	.004	.420	.175	.160	.115	.120	.840
W65a	.990	.510	.300	.220	.230	.732	.006	.430	.185	.175	.125	.130	.860
W65b	.960	.490	.235	.215	.200	.720	.004	.420	.180	.160	.115	.120	.840
W65b	.990	.510	.300	TYP	.210	.730	.006	.430	.180	.170	.130	.130	.860
W65c	.960	.490	.235	.200	.225	.725		.375	.180		.125		.750
W65c	.990	.510	.300	NOM	NOM			NOM	NOM		NOM		NOM

**W66**



	A	C	D	E	F	G	H	J	K	L
W66	1.328	.110	.025	.055	.013	.275	40°	.027	.664	.055
W66a	1.428	.130	.035	.085	.017	.290	50°	.033	.714	.065
W66b	.985	.085	.040	.003	.200	45°			.435	.040
W66b	.990	.085	.050	.007	.220	NOM			MIN	.050
W66b	.489	.590	.027	.545	.009	.115			.218	.314
W66b	MIN	MAX	MAX	MAX	MAX	MAX			MIN	MAX

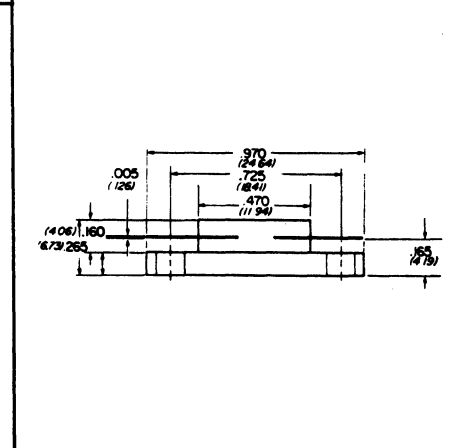
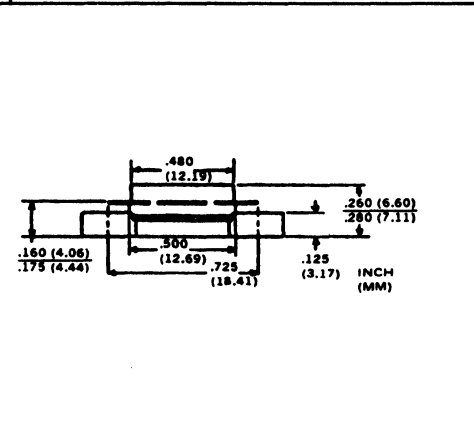
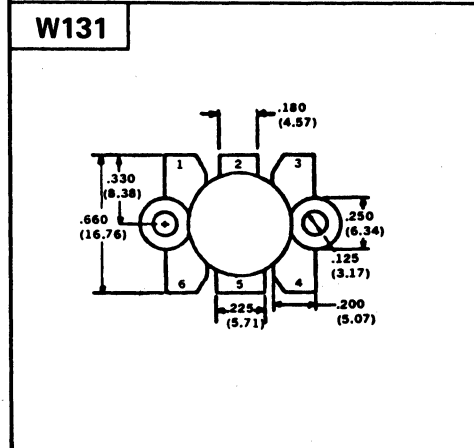
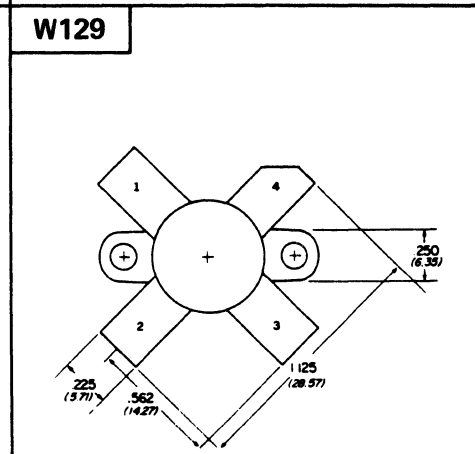
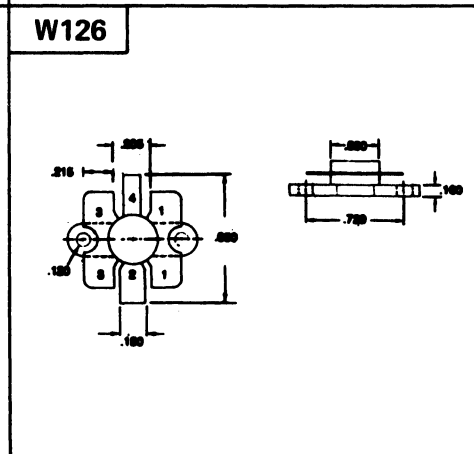
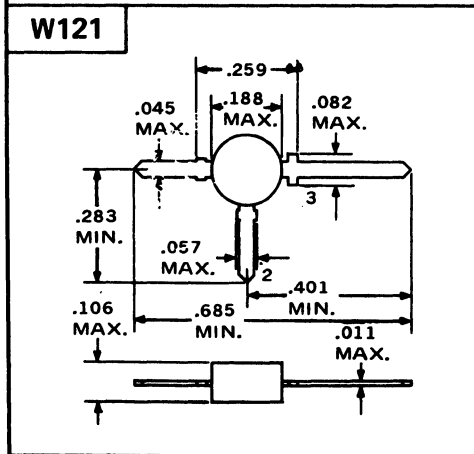
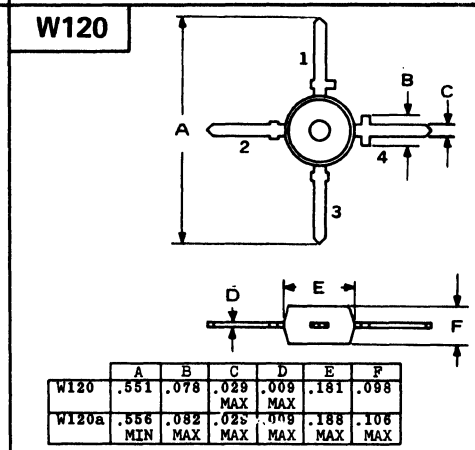
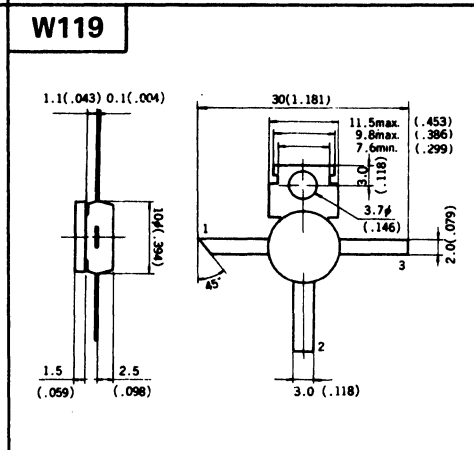
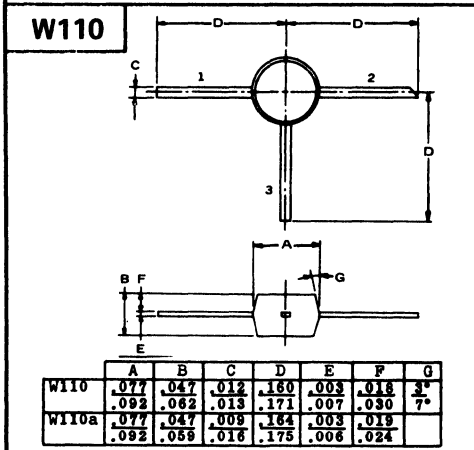
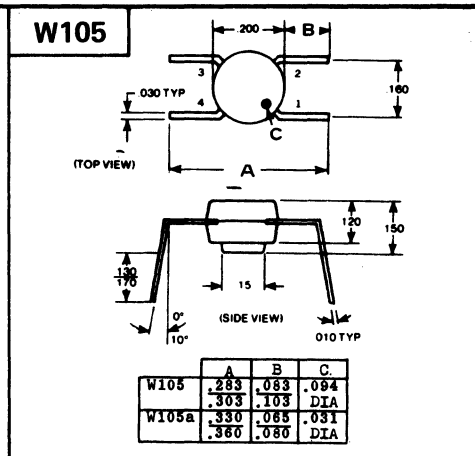
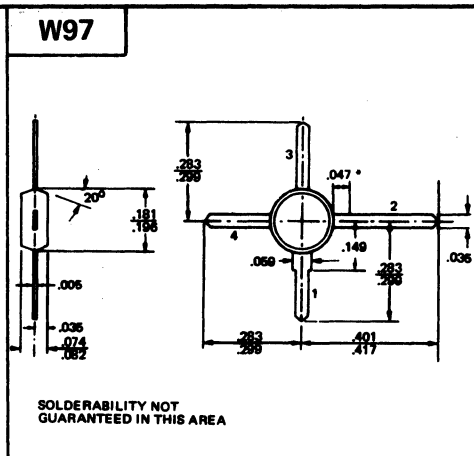
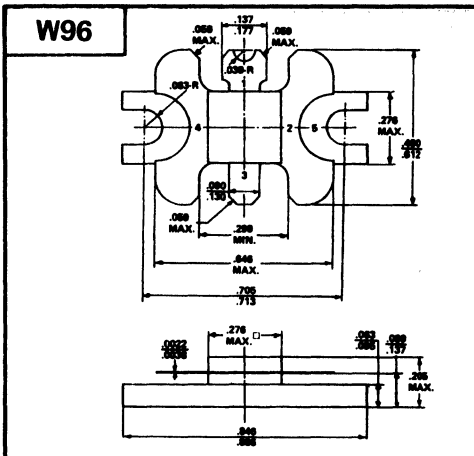
**W67**



**W67a: HAS NON-MAGNETIC LEADS**



# 18. OUTLINE DRAWINGS





# 18. OUTLINE DRAWINGS

**W165**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.44	5.21	0.175	0.205
C	1.90	2.54	0.075	0.100
D	0.94	0.99	0.033	0.039
F	0.20	0.30	0.008	0.012
G	0.76	1.14	0.030	0.045
K	7.24	8.13	0.285	0.320
L	10.54	11.43	0.415	0.450

STYLE 1:  
PIN 1. EMITTER  
2. BASE  
3. EMITTER  
4. COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.08	5.59	0.200	0.220
C	2.41	3.30	0.095	0.130
D	1.40	1.65	0.055	0.065
E	1.02	1.27	0.040	0.050
F	0.64	0.89	0.025	0.035
J	0.08	0.18	0.003	0.007
K	11.05	-	0.435	-
M	45° NOM		45° NOM	

**W166**

**W167**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.44	5.21	0.175	0.205
C	1.90	2.54	0.075	0.100
D	0.94	0.99	0.033	0.039
F	0.20	0.30	0.008	0.012
G	0.76	1.14	0.030	0.045
K	7.24	8.13	0.285	0.320
L	10.54	11.43	0.415	0.450

**W168**

**W171**

NOTES: Dimensions shown are in inches (+.010)

**W172**

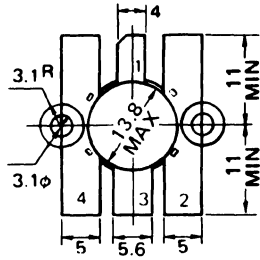
**W173**

1: Collector  
2: Emitter  
3: Base  
4: Emitter

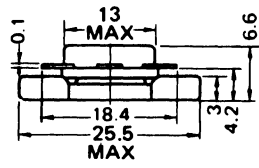
Unit: mm

# 18. OUTLINE DRAWINGS

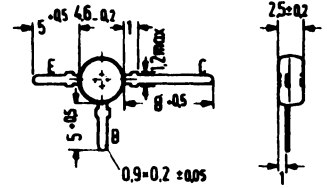
W174



1. Collector 2. Emitter 3. Base 4. Emitter  
Unit: mm

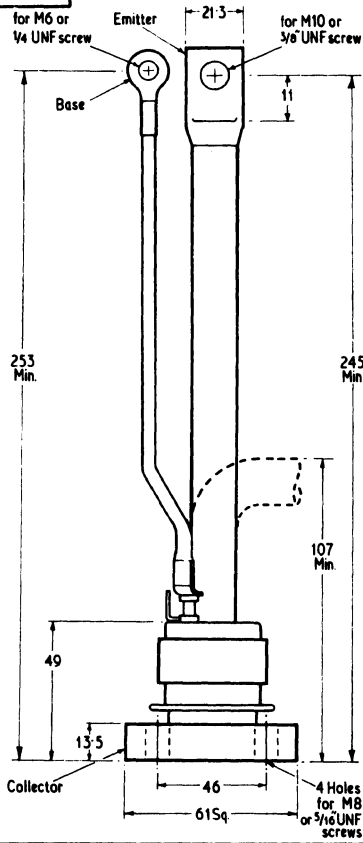


W175

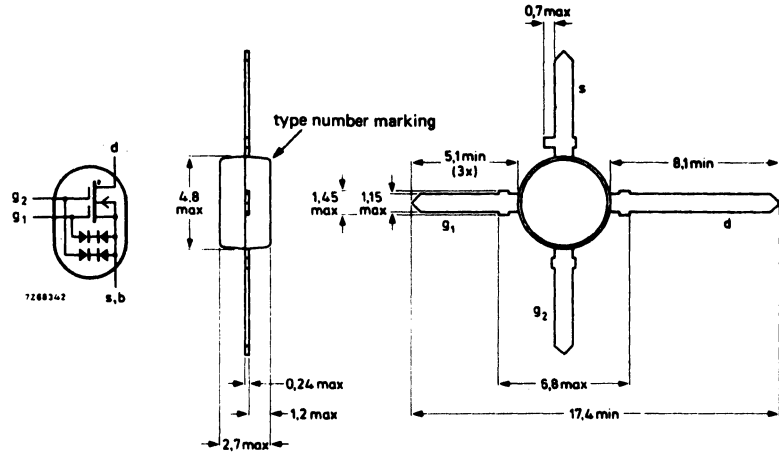


Dimensions in mm

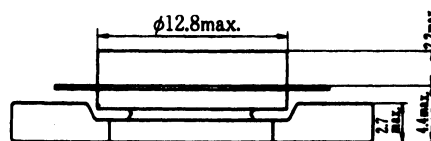
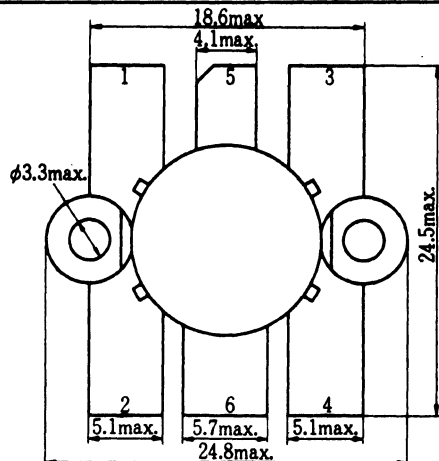
W176



W177



W178





# 18. OUTLINE DRAWINGS

**W179**

STYLE 1:  
 PIN 1. DRAIN  
 2. SOURCE  
 3. GATE 1  
 4. GATE 2

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.44	5.21	0.175	0.205
C	1.90	2.54	0.075	0.100
D	0.84	0.99	0.033	0.039
F	0.20	0.30	0.008	0.012
G	0.76	1.14	0.030	0.045
K	7.24	8.13	0.285	0.320
L	10.54	11.43	0.415	0.450

**W180**

STYLE 1:  
 PIN 1. GROUND  
 2. OUTPUT  
 3. + SUPPLY  
 4. OUTPUT

NOTES:  
 1. DIMENSION A IS DATUM.  
 2. POSITIONAL TOLERANCE FOR DIMENSION D LEADS:  
 $\text{M} \begin{matrix} \text{0.136} \\ \text{(0.005)} \end{matrix} \text{A} \begin{matrix} \text{M} \\ \text{A} \end{matrix}$   
 3. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1973.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	15.37	15.62	0.605	0.615
B	13.21	13.46	0.520	0.530
C	4.95	5.72	0.195	0.225
D	0.41	0.50	0.016	0.020
F	1.22	1.32	0.048	0.052
G	2.54 BSC		0.100 BSC	
J	0.36	0.40	0.014	0.016
L	17.40	18.16	0.685	0.715
M	30° NOM		30° NOM	
N	12.19	12.70	0.480	0.500

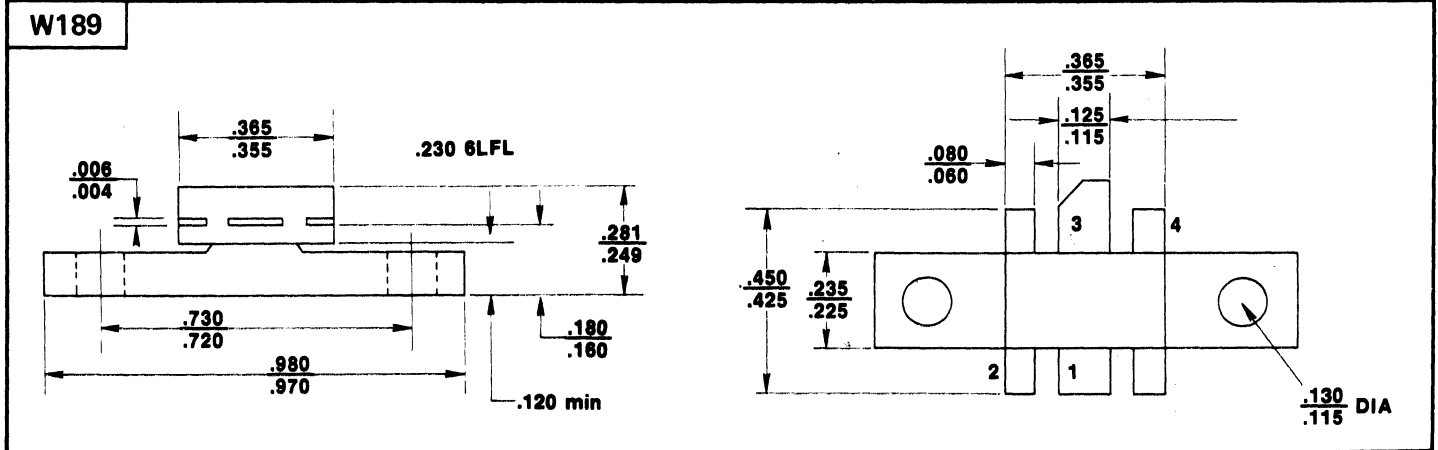
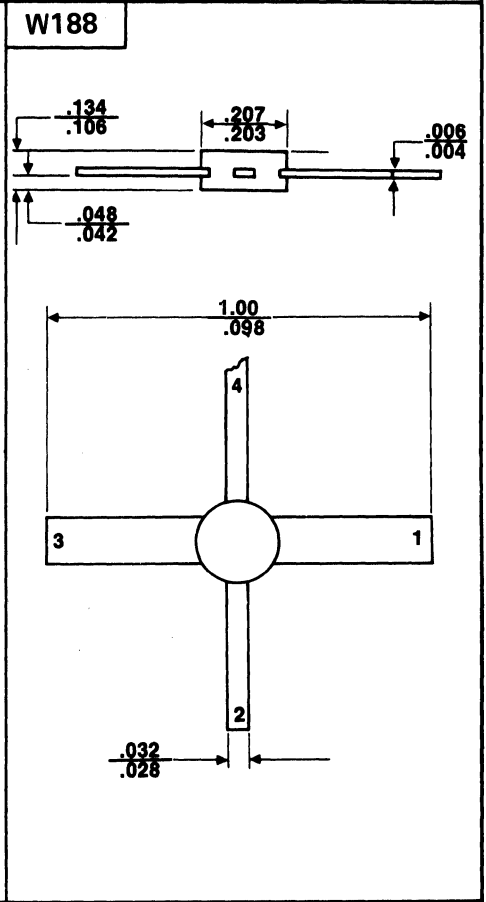
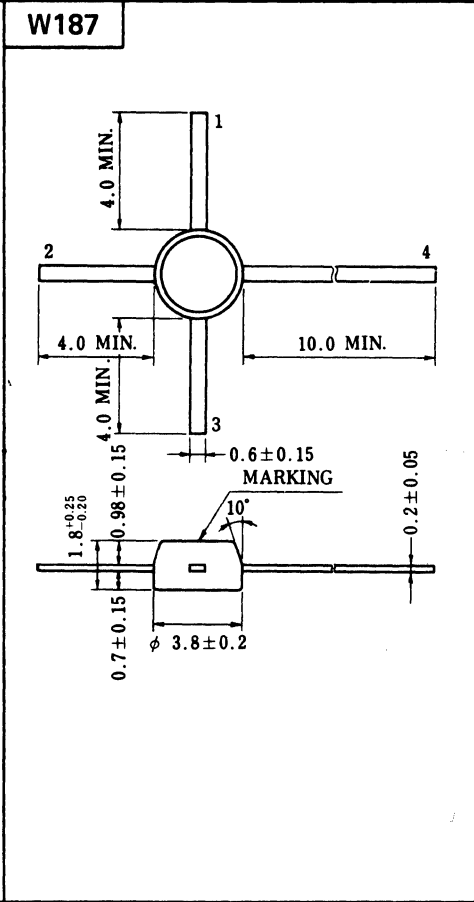
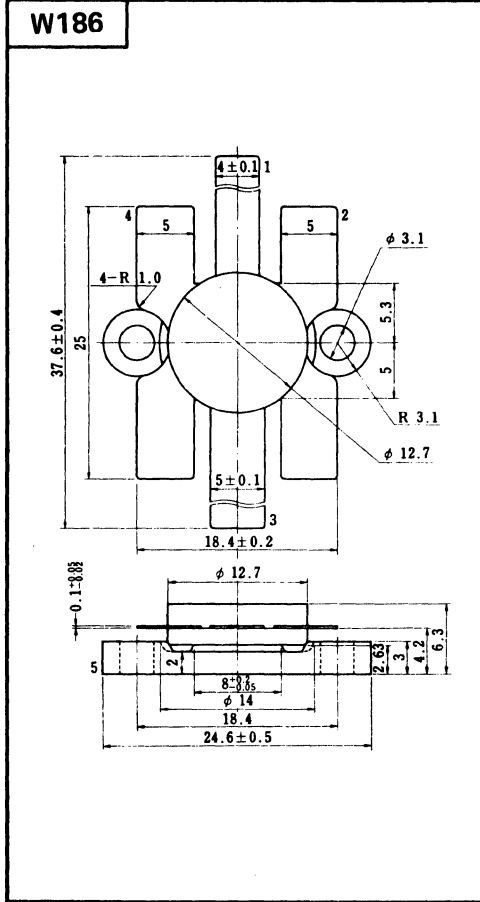
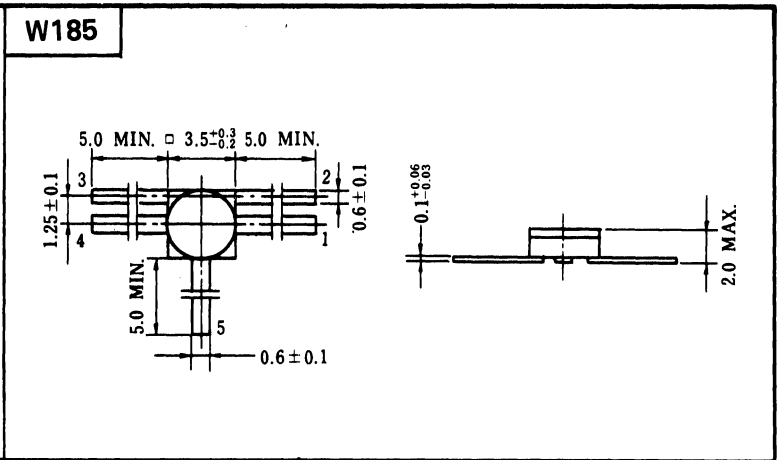
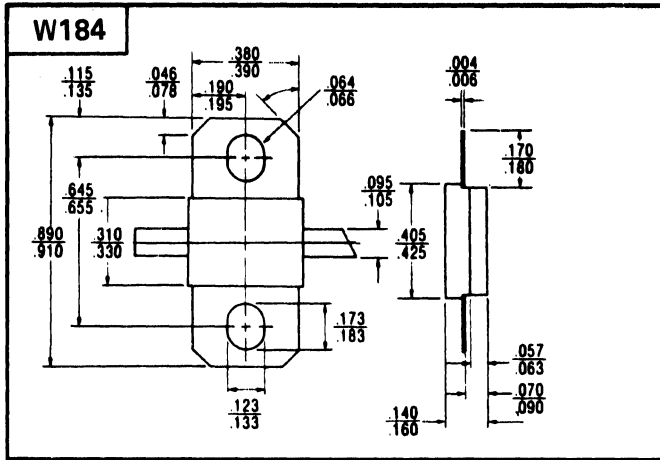
All seals to be made on pressure sealing surface.

**W181**

**W182**

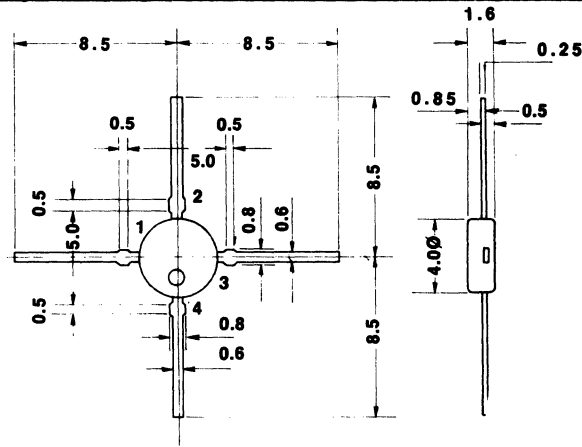
**W183**

# 18. OUTLINE DRAWINGS

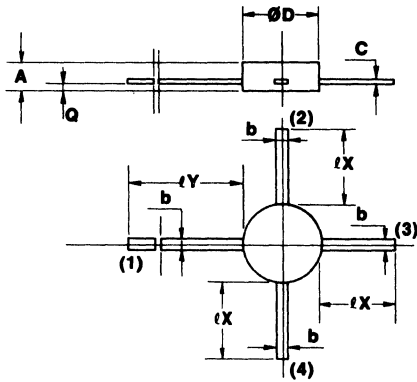


# 18. OUTLINE DRAWINGS

W190

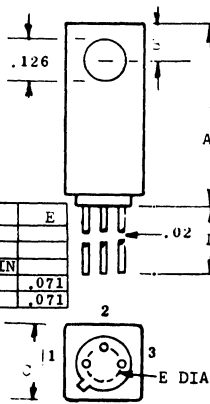


W191



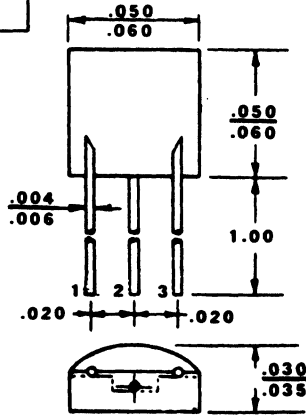
	MIN.	TYP	MAX.
A	1.3	1.5	1.7
b	0.5	0.6	0.7
c	0.15	0.2	0.25
OD	3.9	4.0	4.1
LX	3.4		
LY	9.4		
Q	0.4	0.5	0.6

X9

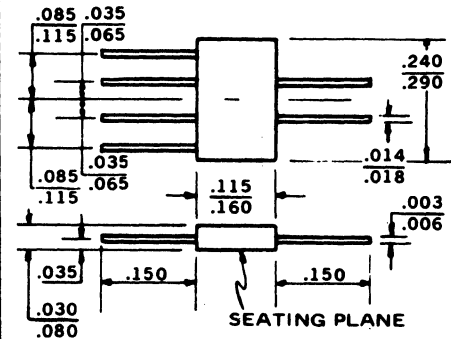


	A	B	C	D	E
X9	.670	.118	.236	1.58	
X9a	.610	.134	.276	1.58	
X9b	.670	.118	.236	.50 MIN	
X9c	.618	.134	.283	1.50	.071
X9d	.618	.134	.276	1.50	.071

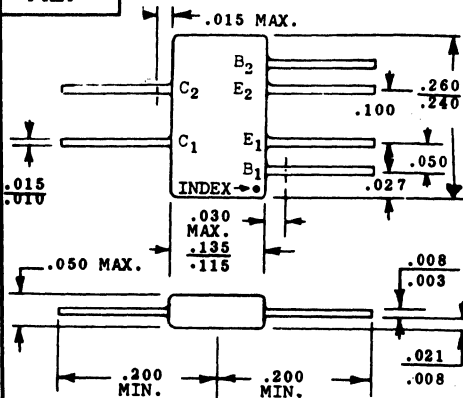
X16



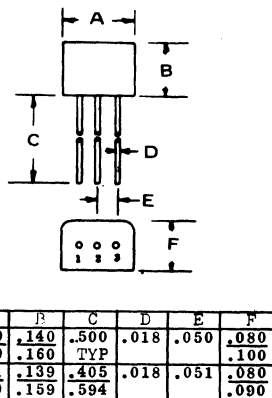
X22



X27

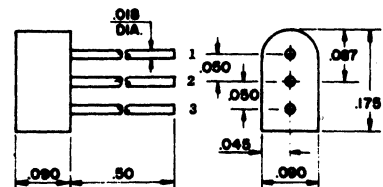


X59



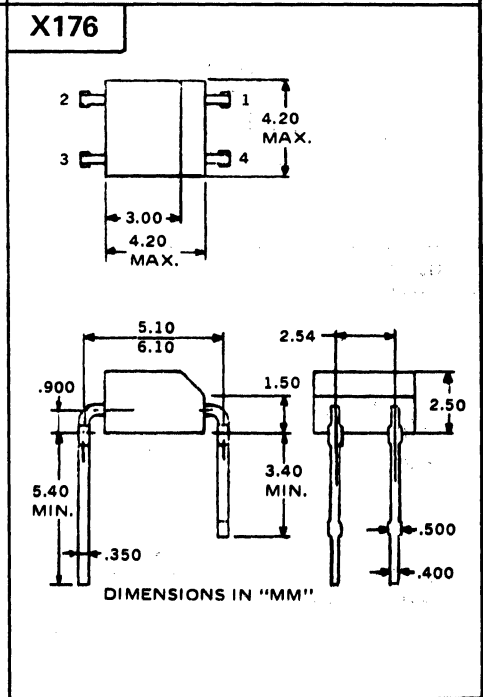
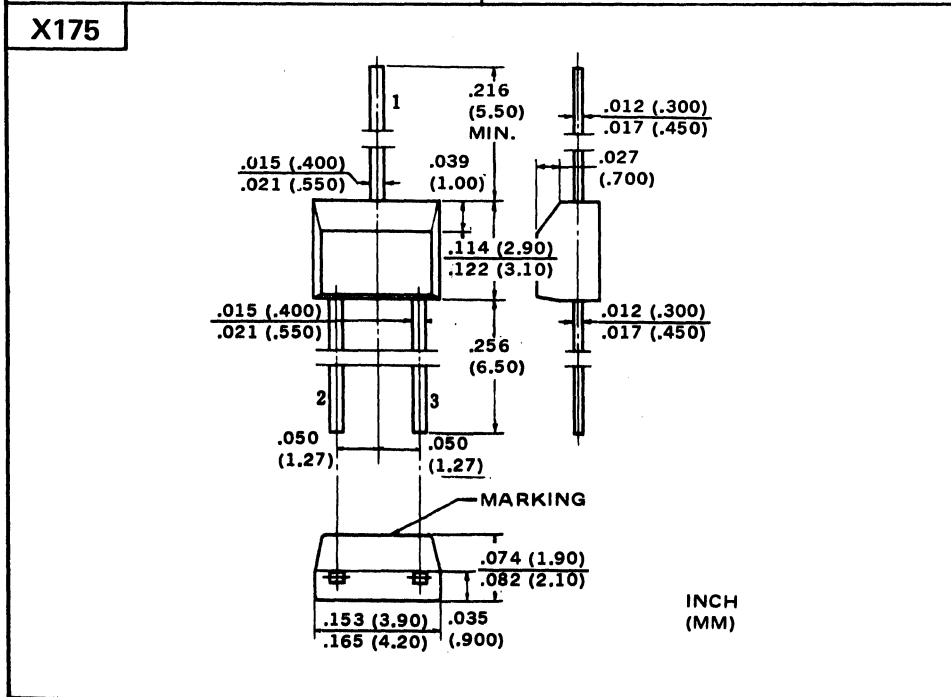
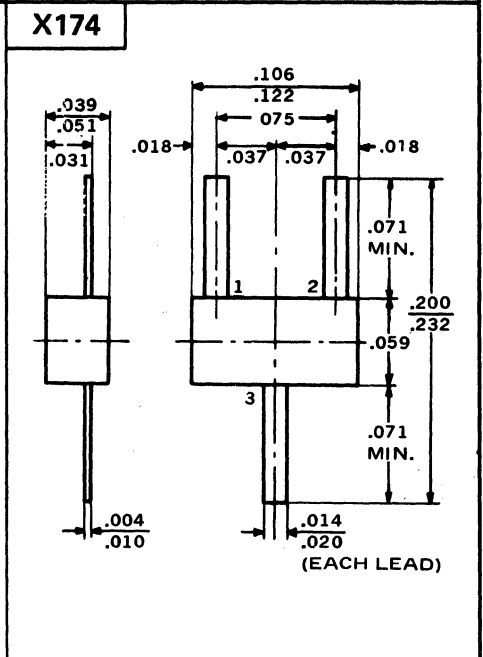
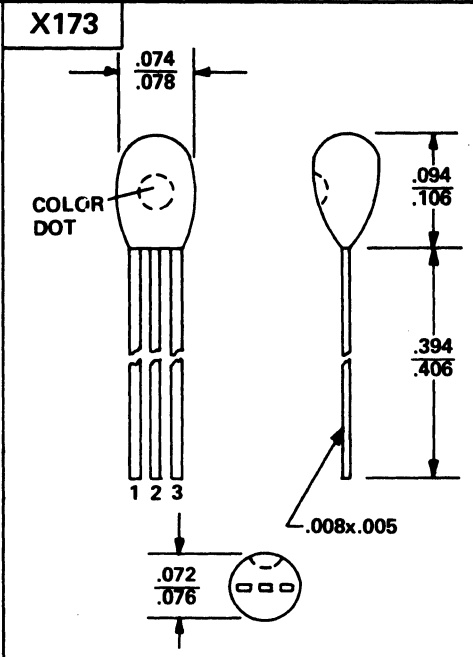
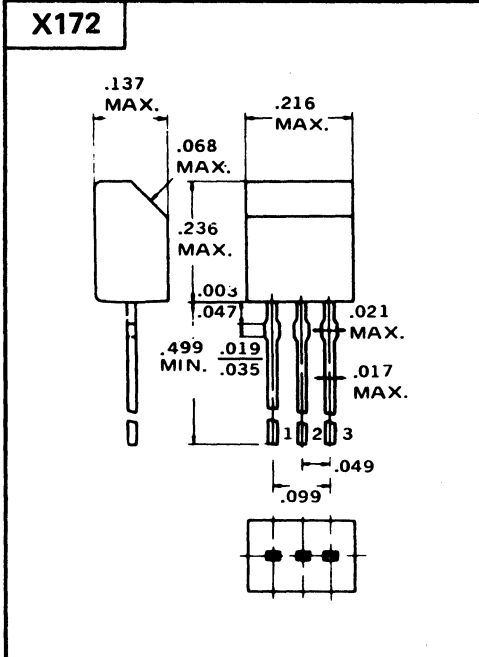
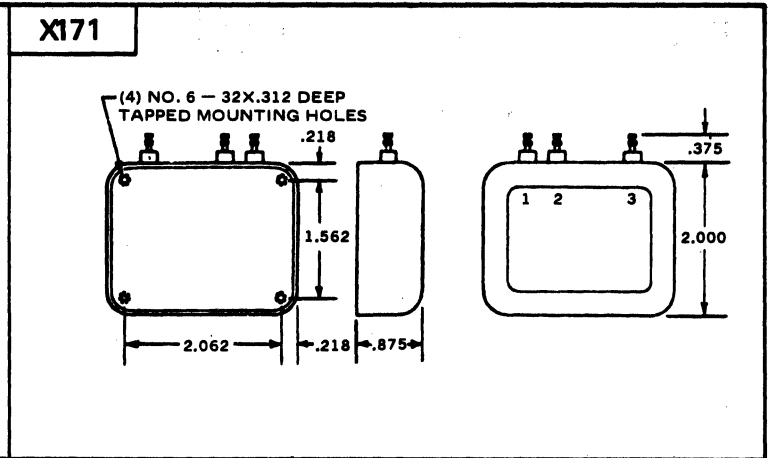
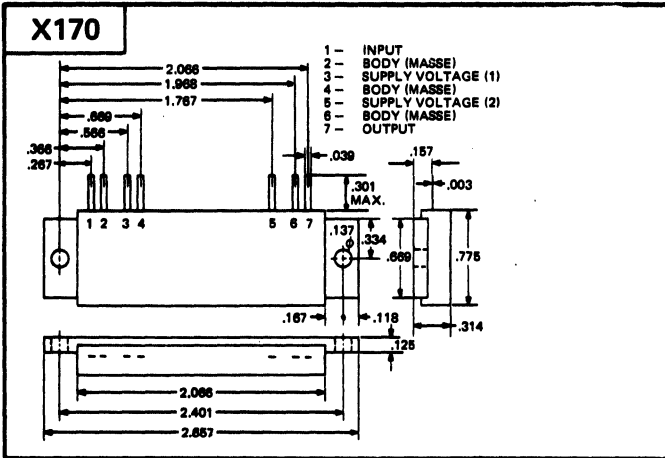
	A	B	C	D	E	F
X59	.170	.140	.500	.018	.050	.080
	.190	.160	TYP			.100
X59a	.171	.139	.405	.018	.051	.080
	.190	.159	.594			.090

X149

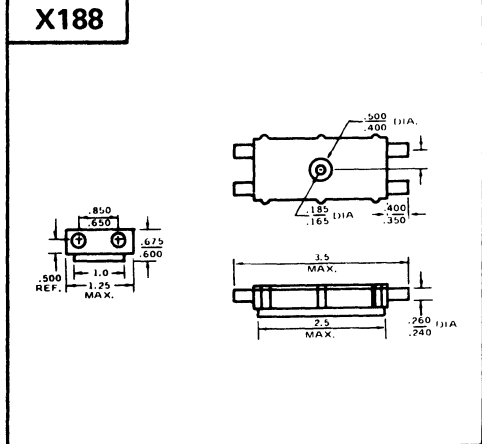
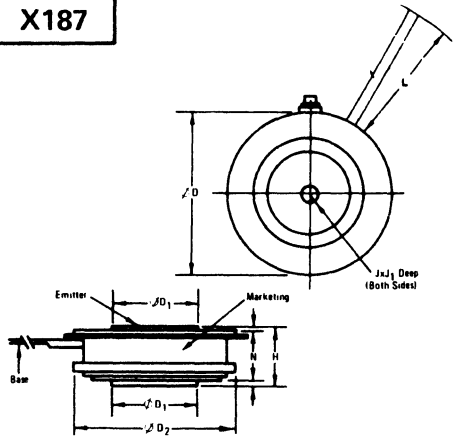
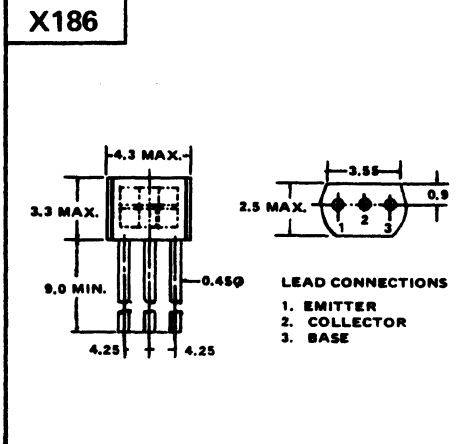
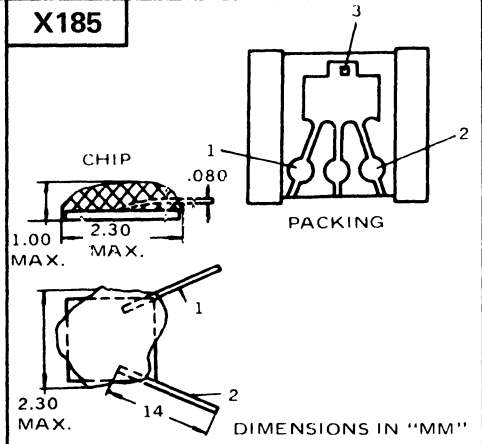
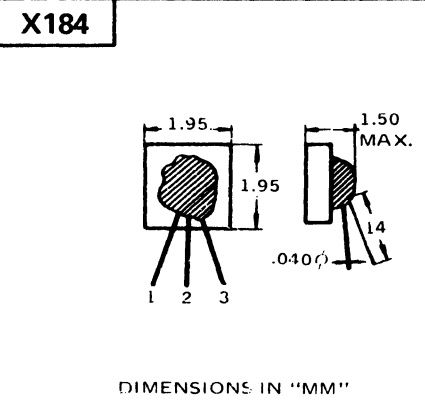
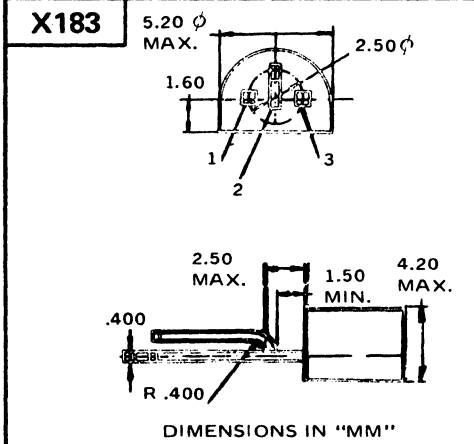
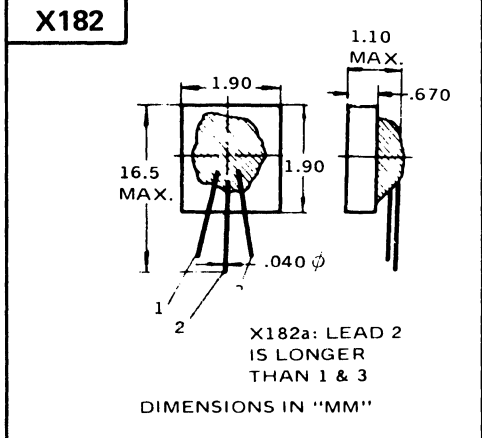
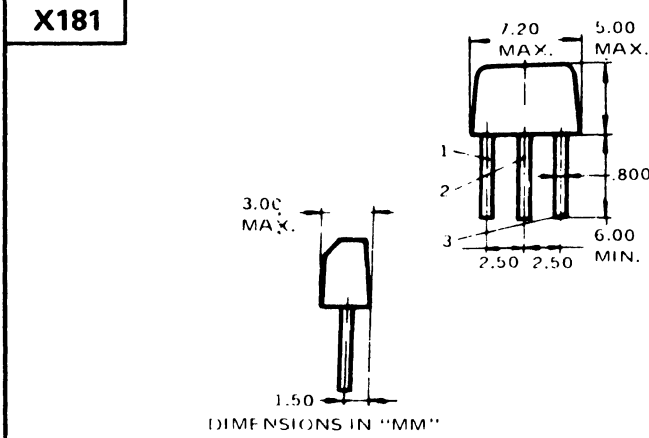
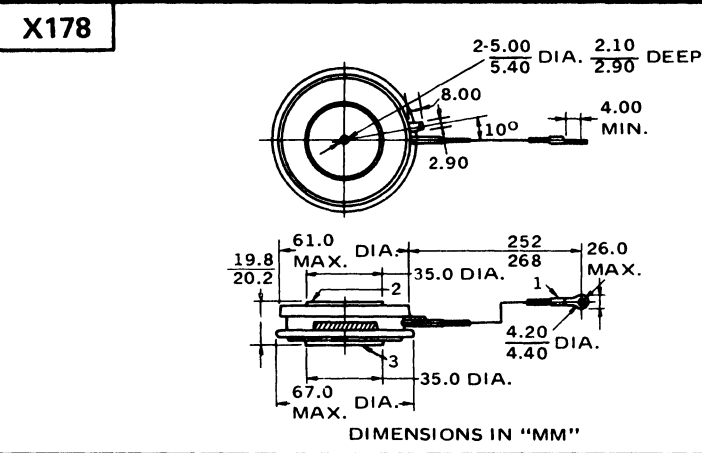
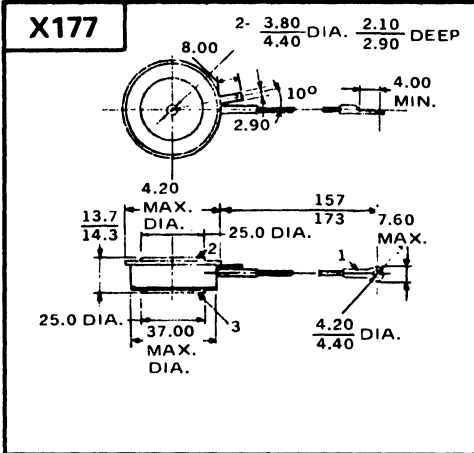




# 18. OUTLINE DRAWINGS



# 18. OUTLINE DRAWINGS

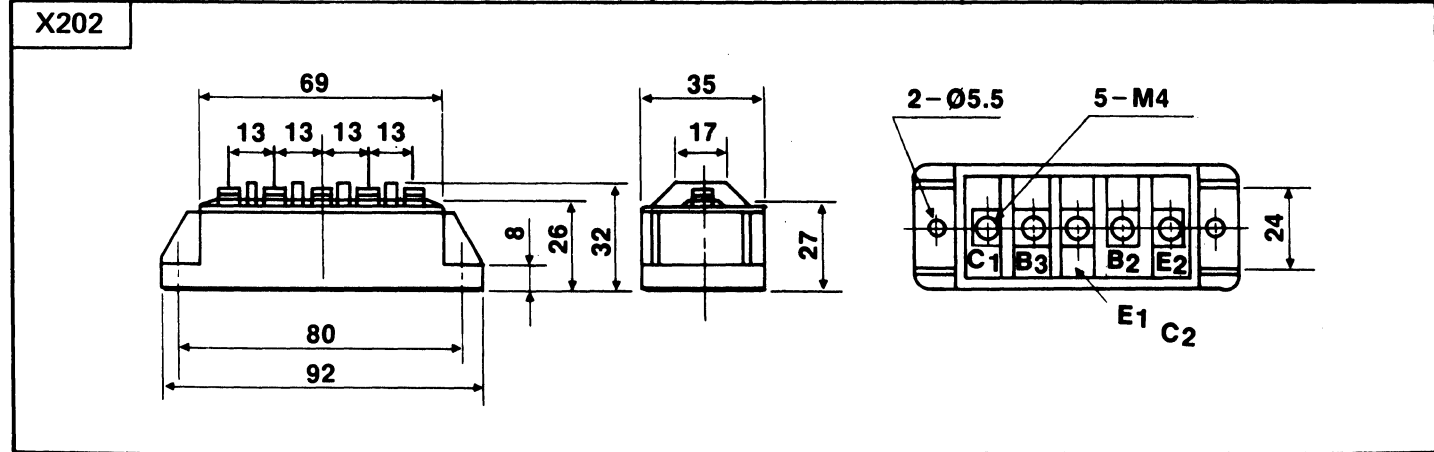
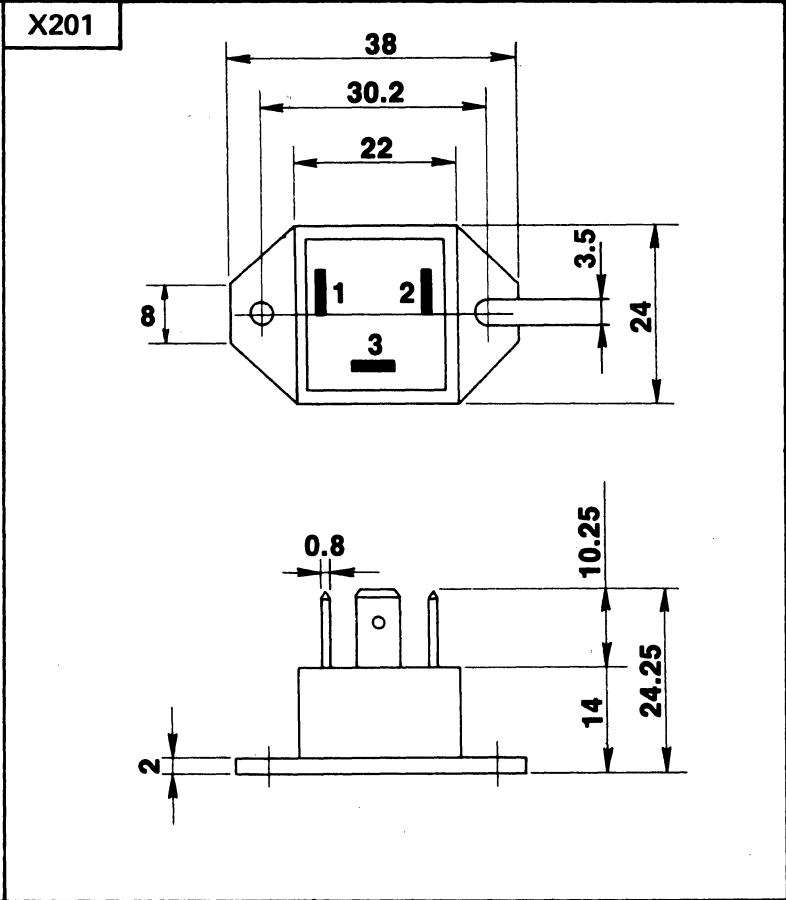
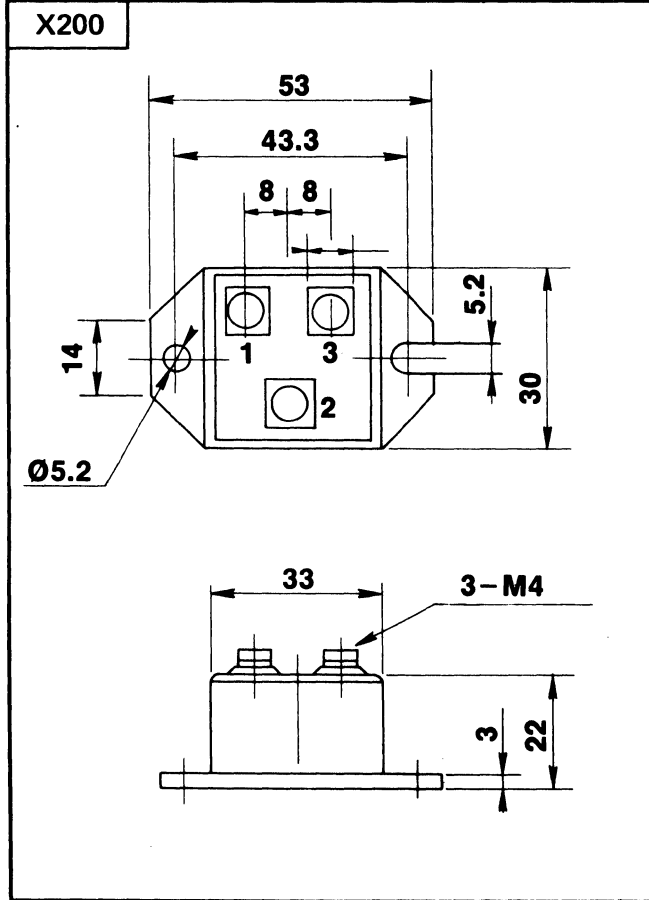
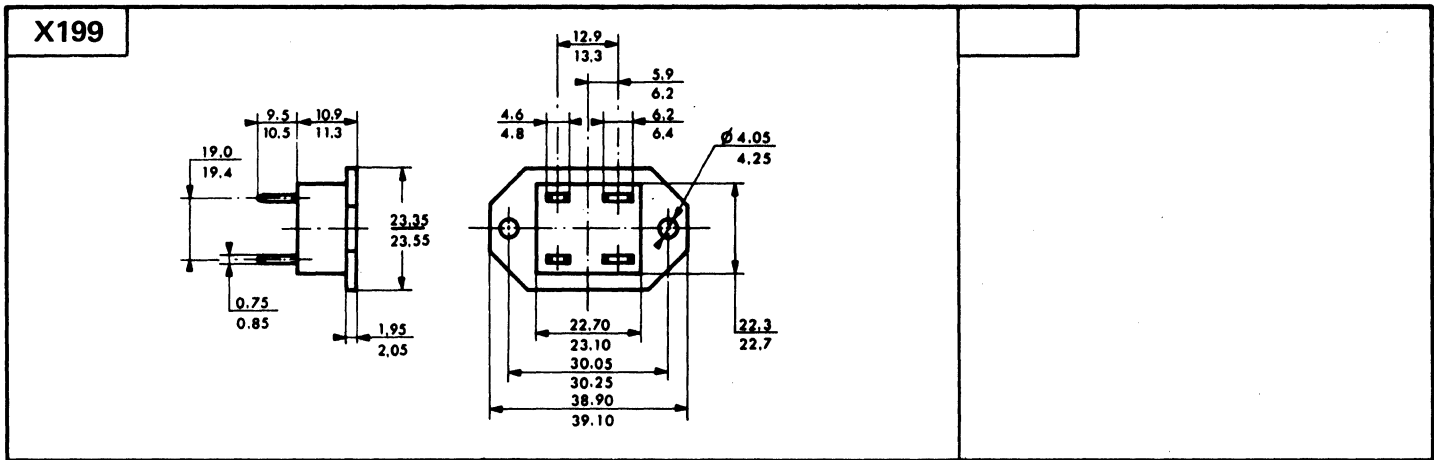






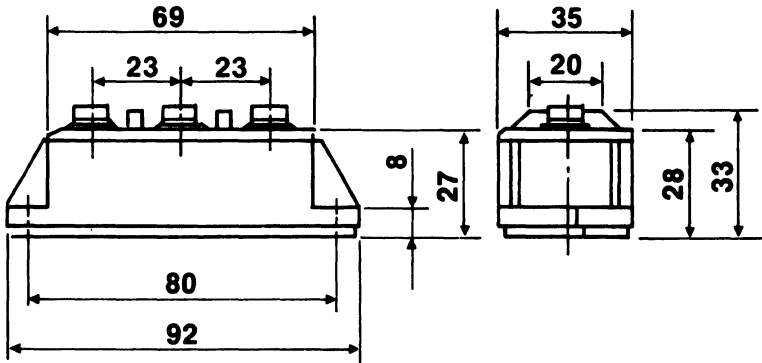
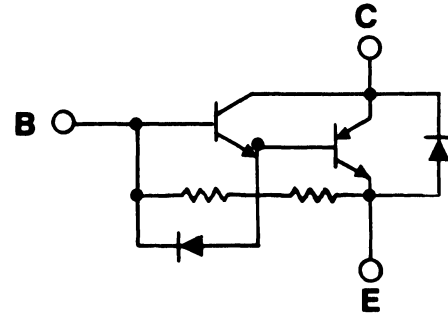
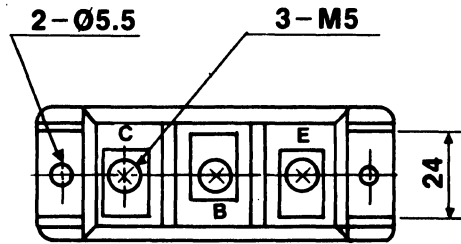


# 18. OUTLINE DRAWINGS

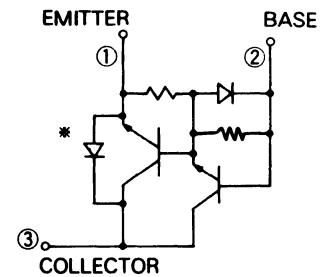
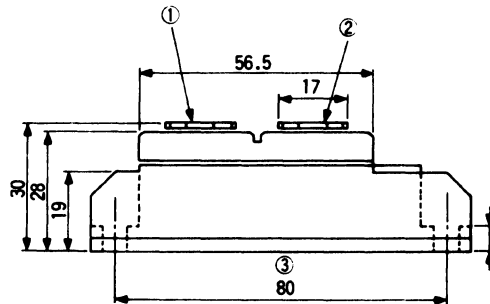
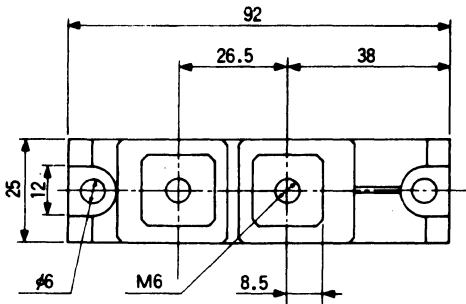


# 18. OUTLINE DRAWINGS

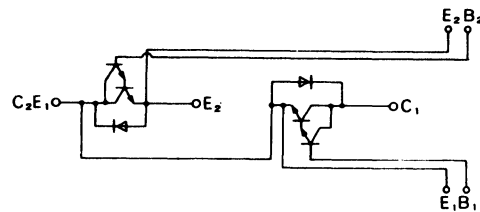
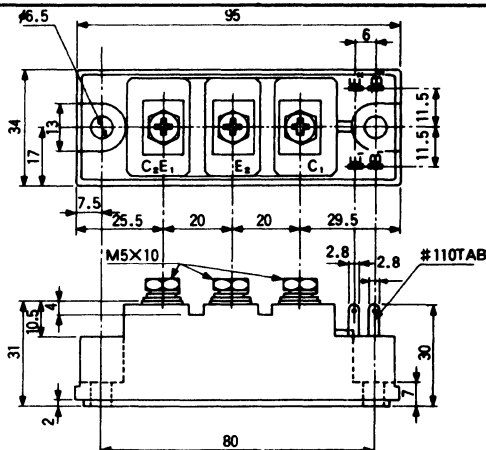
X203



X204

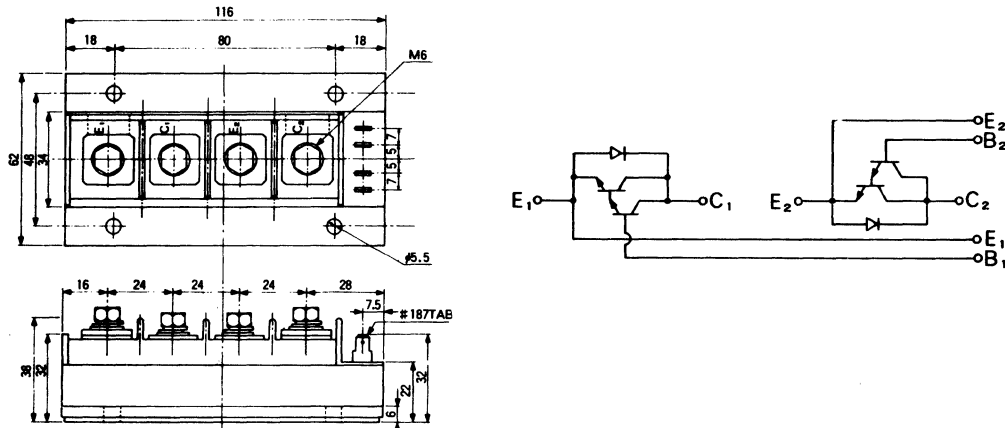


X205

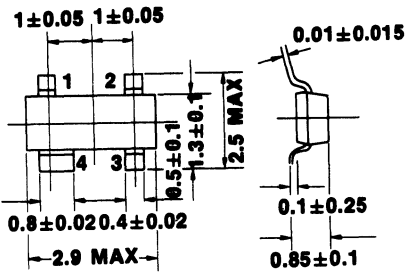


# 18. OUTLINE DRAWINGS

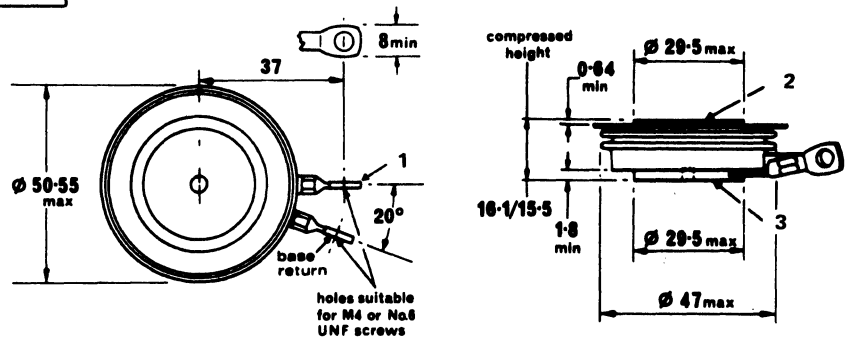
**X206**



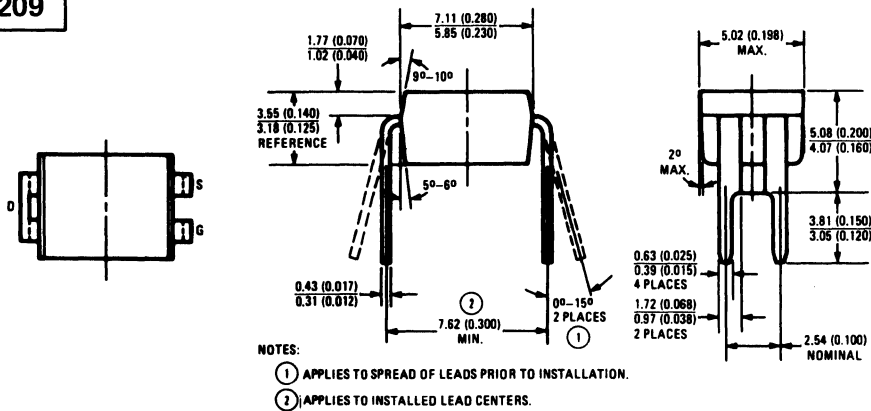
**X207**



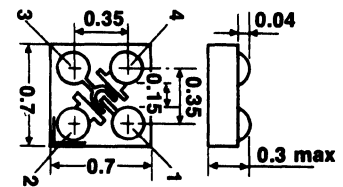
**X208**



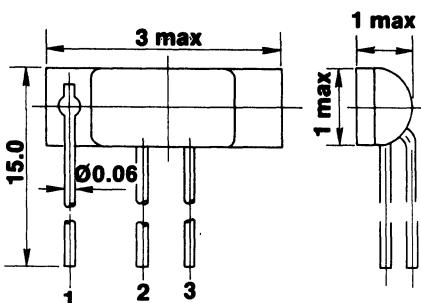
**X209**



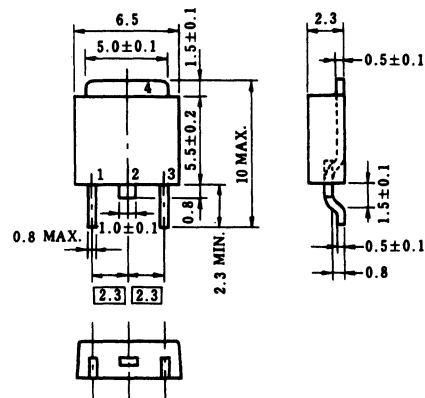
**X210**



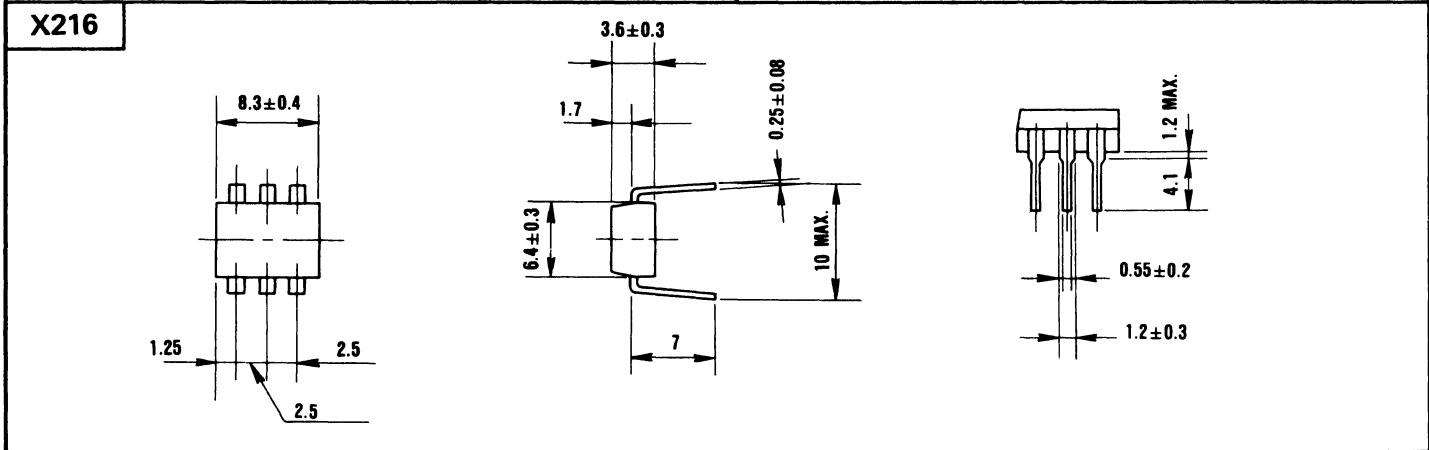
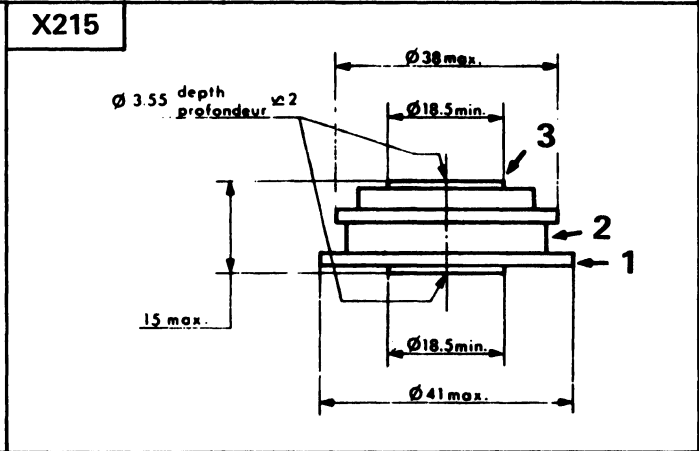
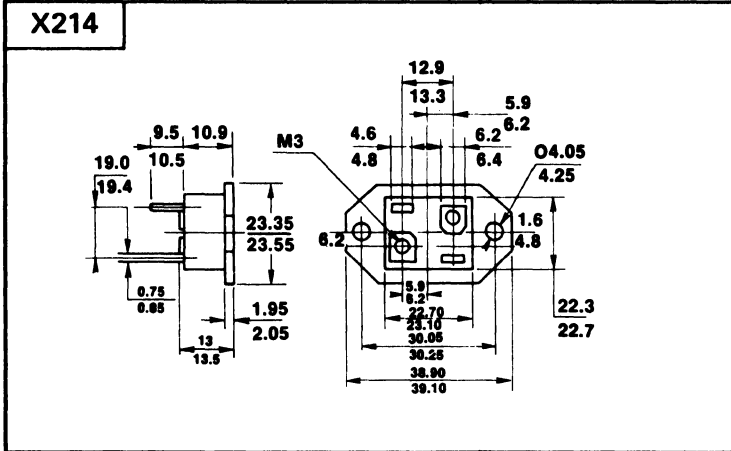
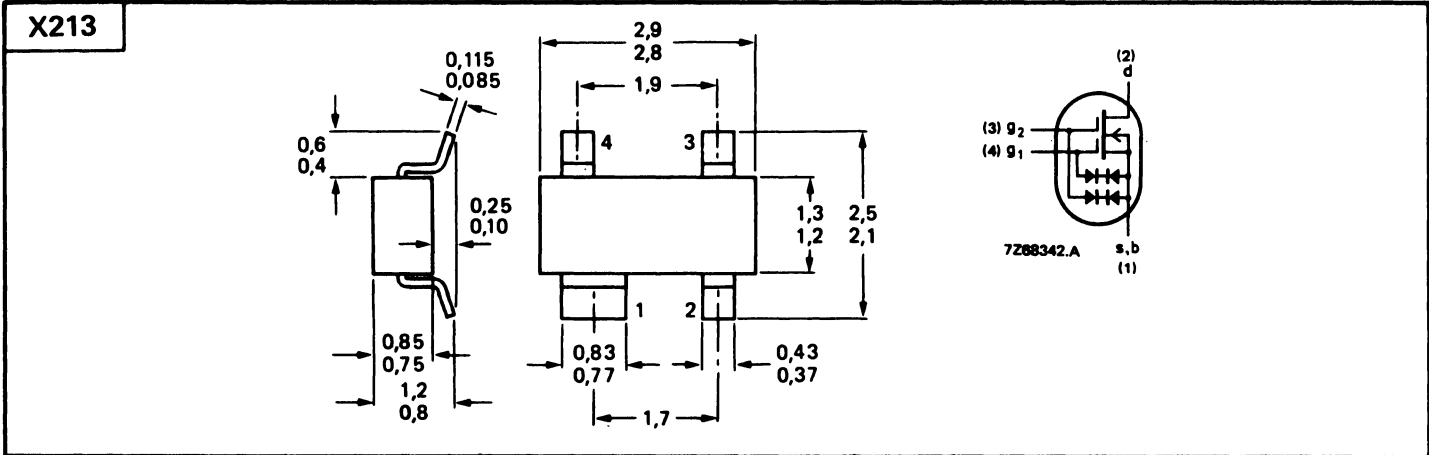
**X211**



**X212**



# 18. OUTLINE DRAWINGS



**Y200 SERIES**

THE Y200 SERIES (Y200 & HIGHER) REPRESENTS THE T0200 SERIES, WITH THE PREFIX "T0" REPLACED BY "Y" FOR SPACE-SAVING PURPOSES. THESE DRAWINGS ARE LOCATED IN ORDER IN THE "T0" SERIES.



## 18. OUTLINE DRAWINGS

### ZA NOTES

4. Same as TO36 outline except 5mm (metric) thread.
8. Outline available in different package styles. Consult manufacturer for details.
11. Device also available R51 outline.
22. The outline drawing for this device may be either TO5, TO13, or ZA23. Consult manufacturer.
24. The outline drawing for this device may be either TO13 or ZA23. Consult manufacturer.
29. Type number with R suffix indicates a TO18 package; type number with an S suffix indicates a TO5 package.
30. The outline drawing for this device may be either T25b or T42b. Consult manufacturer.

### JEDEC "TO" DRAWING NOTES

1. This zone is controlled for automatic handling. The variation in actual diameter within the zone shall not exceed 0.010 (0.25MM).
2. (All leads) Diameter is uncontrolled to .020 from seating plane and beyond minimum tolerance of lead length (1.5 or .5) from seating plane. Dim. A applies between .020 and .250 from seating plane. Dim. B applies between .250 and minimum tolerance of lead length.
3. Measured from maximum diameter of the actual device.
4. Leads having maximum diameter .019 (.483MM) measured in gauging plane .054 + .001 - .000 (1.37MM + .025MM - .000MM) below the seating plane of the device shall be within .007 (.178MM) of their true locations.
5. Tab centerline.
6. Diameter (a) concentric within 0.0006 total indicator reading. Cap flange shall never extend beyond header periphery. 0.005 max. burr or weld flash.
7. Diameter (a) concentric within 0.0006 total indicator reading.
8. Applies to thickness of tab.
9. (Three leads), the specified lead diameter applies to the zone between .050 (1.27MM) and .250 (6.35MM) from the reference plane. Between .250 (6.35MM) and end of lead, a maximum of .021 (.533MM) is held. Outside of the zones the lead diameter is not controlled.
10. 6—32NC—2A. Maximum pitch diameter of plated threads shall be basic pitch diameter (.1177, 2.98MM). Reference (screw thread standards for federal services 1957) handbook H28 — part 1.
11. Complete threads shall extend to within three threads of the seating plane and shall remain within tolerance to within two threads tip of stud.
12. Maximum (.019, .483MM) diameter leads and maximum (.230, 5.84MM) stud shoulder to within .007 (.178MM) radius of true location relative to the (.460, 11.68MM) diameter flange at a gauging plane .054 (1.37MM) .001 (.025MM), - .000 (.000MM), from the reference plane.
13. Dimension does not include sealing flanges.
14. The outline contour with exception of hexagon is optional within zones or dimension specified.
15. Pitch diameter of 10—32 UNF—2A (coated) threads. (ASA B1.1—1960).
16. This terminal can be flatten and pierced or hook type.
17. Position of leads in relation to the hexagon is not controlled.
18. Pitch diameter — thread 1/4—28 UNF—2A (coated). Reference screw thread standards for federal services — handbook H—28 or ASA B1.1 — 1960.
19. Pitch diameter — thread 5/16—24 UNF—2A (coated). Reference (screw thread standards for federal services — handbook H—28 or ASA B1.1 — 1960).
20. Contour and orientation of fixed terminal lugs are optional.
21. Minimum flat.
22. Minimum diameter of seating plane.
23. A chamfer (or undercut) on one or both ends of hexagonal portion is optional.
24. Minimum difference in terminal lengths to establish datum line for numbering terminals.
25. Minimum spacing between terminals.
26. The device may be measured by direct methods or by the gage and gaging procedure described on gage drawing GS—1.
27. Four leads.
28. These dimensions should be measured at points .050 to .055 below seating plane. When gage is not used, measurement will be made at seating plane.
29. Two leads.
30. Insulation rundown.
31. Three leads.
32. (Insulated) locator pin.

## 18. OUTLINE DRAWINGS

### JEDEC "TO" DRAWING NOTES

33. Externally coated devices shall not have coating on the leads beyond this zone.
34. (All leads) Diameter is uncontrolled to .050 from seating plane and beyond minimum tolerance of lead length (1.5 or .5) from seating plane. Dim. A applies between .050 and .250 from seating plane. Dim. B applies between .250 and minimum tolerance of lead length from seating plane.
35. Four holes.
36. Four equally spaced feet to lie within this zone. Minimum distance between a lead and a foot .031.
37. Angular orientation of individual terminals is undefined.
38. Complete threads shall extend to within 2½ threads of the seating plane.
39. The leads shall be essentially straight within this zone.
40. 1/4—28 UNF—2B.
41. Terminals may be referred to by number as follows: Terminal No. 1 is the odd terminal and connected to the case. Other terminals are numbered clockwise from No. 1.
42. Leads having maximum diameter .045 measured in gage plane .031, .001, .000 below the seating plane of the device shall be within .010 of their true position relative to minimum diameter .096 holes in the mounting flange.
43. 8—32 UNF—2A.
44. Hex for standard 1/4 ignition wrench.
45. Pitch diameter of 8—32 UNC—2A (coated) threads (ASA B1.1—1960).
46. Maximum size leads and stud must be within .0055 of the exact positions shown with respect to the .885 maximum diameter measured at points .015 maximum below seating plane.
47. .190—32 UNF—2A. Maximum pitch diameter of plated threads shall be basic pitch diameter. .190 reference (screw thread standards for federal services 1957) handbook H28 1957 P1.
48. Lead diameter in this area unrestricted.
49. Both ends.
50. Two mounting holes.
51. Maximum diameter leads measured at a gaging plane .054, .001, .000 below the seating plane shall be within .010 of their true positions with respect to the .725 diameter.
52. Angular orientation of edge optional.
53. Square, radius or diagonal on end of terminal is optional.
54. Index tab for visual orientation only.
56. Leads shall emerge from the body dimension within the limits indicated by the .015/.035, .010 & .025 dimensions.
57. Minimum and Maximum dimensions both apply to the major (largest) diameter only.
58. Radius at corners of mounting flange optional.
59. Angular orientation of terminal ends as shown  $\pm 15$  deg.
60. A .075 clearance from hole centers to .765/.785 diameter for mounting fasteners.
61. (All leads) Diameter is uncontrolled beyond .625 from seating plane. Dim. A applies between .050 and .250 from seating plane. Dim. B applies between .250 and .625 from seating plane.
62. Measured at seating plane.
63. Complete threads to extend to within 3½ threads of seating plane.
64. Leads having maximum diameter .019 (.483MM) measured in gaging plane .025 (.635MM) .001 (.025MM) — .000 (.000MM) below the seating plane of the device shall be within .007 (.178MM) of their true positions.
65. (Eight leads). Maximum number of leads omitted in this outline, three (3). The number and position of leads actually present are indicated in the product registration. Outline designation determined by the location and minimum angular spacing of any two adjacent leads.
66. (Four leads). Maximum number of leads omitted in this outline, none (0). The number and position of leads actually present are indicated in the product registration. Outline designation determined by the location and minimum angular or linear spacing of any two adjacent leads.
67. (Four, six, ten, or twelve leads). Maximum number of leads omitted in this outline, one (1). The number and position of leads actually present are indicated in the product registration. Outline designation determined by the location and minimum angular spacing of any two adjacent leads.
68. Length of incomplete or undercut threads.
69. Lead diameter uncontrolled above the seating plane.
70. Contour and orientation of terminal flats are undefined.
71. The body and terminals of the device, with the exception of the extended lug length, lies within the cylinder defined by the dotted outline.
72. Pitch diameter of 1/2—20 UNF—2A (coated) threads (ASA—B1.1).
73. Leads missing from their designated positions shall also be counted when numbering leads for specific applications.
74. Lead spacing shall be measured within .030 (.762MM) from the point of emergence from the body.
75. Diameter of hole or width of slot out either side of terminals.
76. Lead dimensions uncontrolled in this zone to allow for body and lead finish irregularities.
77. Contour of the package beyond this zone is uncontrolled.
78. Seated height with lead bent at right angles.
79. Flexible leads for terminals 1 and 2 are identified by color coding for specific applications.
80. Pitch diameter of 3/4—16 UNF—2A (coated) threads (ASA B1.1).
81. Irregularity in body outline not controlled in this zone.

## 18. OUTLINE DRAWINGS

### JEDEC "TO" DRAWING NOTES

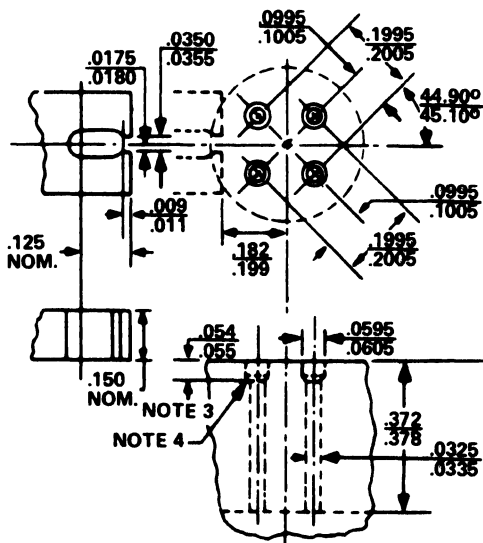
82. Terminal configurations optional between the body of device and the flats on the terminals.
83. Visual or mechanical index is optional if one lead is omitted.
84. The body of the device with exception of the hexagon, thread, and flexible lead extensions lies within the cylinder defined by the dotted outline.
85. Pitch diameter of 1—12 UNF—2A (coated) threads. (ASA Bul. 1—1960).
86. The body of the device with the exception of heat sink and flexible leads lies within the cylinder defined by the dotted lines.
87. Pitch diameter of threads — 1/2—20 UNF2B (ASA Bul. 1—1960).
88. Parallel, twisted or coaxial flexible leads for terminals 1 and 2 are identified by color for specific applications. Coaxial shielded lead has shield as terminal 2.
89. When dimensions less than .180 (4.58mm) are used, clearance in the second fin will be provided.
90. The use of either a hook, short tab, or tall tab terminal contour is optional. An index point is required when the tall tab terminal contour (identical to the adjacent terminals) option is used.
91. Elongated hole in tab is optional.
92. With the device seated in a .165 (4.20mm) .010 (.25mm) — .000 (.00mm) hole a maximum force of 20 grams on each of the terminals shall cause the flats of the terminals to contact the seating plane.
93. Use of tab extension is optional.
94. Pitch of diameter 5/8—18 UNF—2A (coated) threads (ASA Bul. 1—1960).
95. All terminals.
96. Spacing and angle of the end leads at the point of emergence of body is not controlled.
97. Mechanical index, optional.
98. Orientation of flats not controlled in relation to the leads.
99. Measured from intersection of lead axis and body surface of diameter.
100. Dimensions, configurations, and position of leads optional in this zone.
101. Leads shall emerge from the body within the limits of .030 (.76mm) max. above the seating plane and .035 (.88mm) max. from the center line.
102. Details of the outline in this zone are optional except that the outline shall not extend beyond the seating plane.
103. An index mark shall be located on the top surface in the quadrant above terminal one.
104. These tolerances are non cumulative.
105. the cross section of each lead having a maximum diameter of .019 (.482MM) and measured in a gaging plane .054 (1.372MM)  $\pm$  .001 (.025MM) — .000 (.000MM) below the seating plane lies in a circle having a diameter of .033 (.838MM) centered at the true position of the lead axis at its point of exit relative to the maximum body diameter shown.
106. Configuration of package optional within zone specified.
107. This dimension applies to leads 1 and 3 only.
108. Maximum radius of .050 in. (1.27MM) on all body edges and corners.
109. Lead spacing to be measured between .100 in. (2.54MM) and .125 in. (3.17MM) from the point of emergence from the body.
110. Lead spacing shall be measured within this zone.
111. Installed position of lead centers.
112. Overall installed width.
113. Lead transition geometry from .015 — .023 to .030 — .070, optional on body side of seating plane.

# 18. OUTLINE DRAWINGS

## JEDEC GAUGE DESIGNATIONS

The Gauge Designations below are referenced in the JEDEC TO Outline Drawings

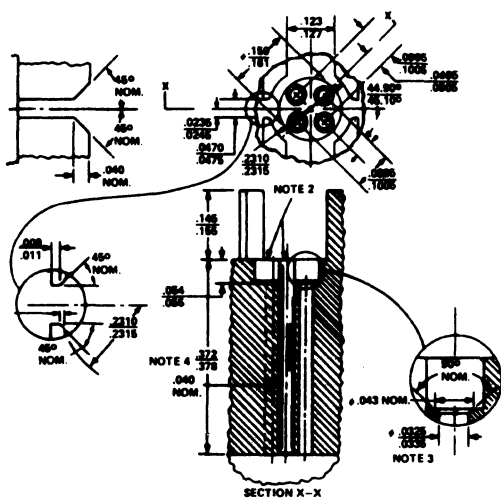
GS1



NOTES:

1. THE LOCATION OF THE TAB LOCATOR WITHIN THE LIMITS INDICATED WILL BE DETERMINED BY THE TAB AND FLANGE DIMENSIONS OF THE DEVICE BEING CHECKED.
2. THE FOLLOWING GAUGING PROCEDURE SHALL BE USED:  
  
THE DEVICE BEING MEASURED SHALL BE INSERTED UNTIL ITS SEATING PLANE IS .125" (3.18 MM) ± .010" (.254MM) FROM THE SEATING SURFACE OF THE GAUGE. A FORCE OF 8 ± .5 OZ. SHALL THEN BE APPLIED PARALLEL AND SYMMETRICAL TO THE DEVICE'S CYLINDRICAL AXIS. WHEN EXAMINED VISUALLY AFTER THE FORCE APPLICATION (THE FORCE NEED NOT BE REMOVED) THE SEATING PLANE OF THE DEVICE SHALL BE SEATED AGAINST THE GAUGE.  
  
THE USE OF A PIN STRAIGHTENER PRIOR TO INSERTION IN THE GAUGE IS PERMISSIBLE.
3. GAUGING PLANE.
4. DRILL ANGLE.

GS2



NOTE 1: THE FOLLOWING GAUGING PROCEDURE SHALL BE USED:

THE DEVICE BEING MEASURED SHALL BE INSERTED UNTIL ITS SEATING PLANE IS 0.125" ± .010" FROM THE SEATING SURFACE OF THE GAUGE. A FORCE OF 8 ± .5 OZ. SHALL THEN BE APPLIED PARALLEL AND SYMMETRICAL TO THE DEVICE'S CYLINDRICAL AXIS. WHEN EXAMINED VISUALLY AFTER THE FORCE APPLICATION (THE FORCE NEED NOT BE REMOVED) THE SEATING PLANE OF THE DEVICE SHALL BE SEATED AGAINST THE GAUGE.

THE USE OF A PIN STRAIGHTENER PRIOR TO INSERTION IN THE GAUGE IS PERMISSIBLE.

A SPACER MAY BE USED TO OBTAIN THE 0.125" DISTANCE FROM THE GAUGE SEAT PRIOR TO FORCE APPLICATION.

- NOTE 2: THESE SURFACES TO BE PARALLEL AND IN SAME PLANE WITHIN ± .001"
- NOTE 3: FOUR HOLES.
- NOTE 4: PRESSED IN.

# 18. OUTLINE DRAWINGS

## D.A.T.A. LEAD CODE IDENTIFICATION GUIDE

LEAD CODE EXPANDER			
□ - Emitter (E,E2) or Source (S) tied to Case	∅ - Collector (C,C1/C2) or Gate (G) tied to Case		
‡ - Base (B,B1) or Drain (D) tied to Case	§ - Anode (A) tied to Case -		
△ - Case tied to Substrate	* - Base (B2) tied to Case		
♦ - Lead Configuration Shown on outline drawing			

LEAD CODE	LEAD CONFIGURATION			
	1	2	3	4
A	E	B	C	
B	E	C	B	
C	B	E	C	
D	B	C	E	
E	C	E	B	
F	C	B	E	
G	E	B	C	CASE
H	E	B1	CASE	C
J	B	E	C	CASE
K	B	E	CASE	C
L	E	C	B	C
M	B	C	CASE	E
N	C	B	E	E
P	E	B	C	C
R	E	B	E	C
S	E	C	E	B
T	B	E	E	
U	C	B	E	B
V	C	E	B	E
W	E	E	C	
X	B	C	E	CASE
Y	B	E	C	E
Z	B	E	B	C
AA	C	B	C	E
AB	E	K	C	B
AC	E	B	C	B
AD	B	C	B	E
AE	E	B	E	C
AF	OMITTED	E	B	C
AG	B	E	B	C
AH	C	B	E	C
AJ	B	E	E	C
AK	C	E	C	B
CA	E	B1		B2 CASE
CB	B1	E	B2	
CC	E	B1		B2
CD	E	B2	B1	
CE	K	G	A	
CF	A	G	K	
CG	B2	E	B1	
CH	E	B1	B2	
DA	S	G	D	
DB	S	D	G	
DC	D	G	S	
DD	D	S	G	
DE	G	S	D	
DF	G	D	S	
DG	S	G	D	CASE
DH	S	D	G	CASE
DJ	D	S	G	CASE
DK	D	G	S	CASE
DM	D	G	SUB CASE	S
DN	S	G	D	SUB CASE
DP	D	G	S	SUB CASE
DQ	S	D	G	
DR	S	G	D	SUB CASE
DS	D	G	SUB S	
DT	D	G	S	SUB S
DU	S	G1	D	G2 CASE
DV	S	G1	D	G2 SUB
DW	D	S	G	SUB CASE
DX	D	G2	G1	S SUB
DY	S	D	G2	G1 CASE
DZ	G	D	SUB	S CASE

LEAD CODE	LEAD CONFIGURATION			
	1	2	3	4
EA	G1	G2	D	C
EB	S	D	G	G
EC	D	S	G1	G2
ED	G	S1	D	S2
EE	C1	S	G2	D
EF	S1	G	S2	D
EG	D	S	S	S
EH	S	G1	S2	D
EJ	SUB	D	S	G
EK	SUB	S	DRAIN	G
EM	SUB	G	D	
EN	S	D	G2	G1
EP	D	G	S	
EQ	G1	G2	S	D
ER	D	S	SUB	G
ES	G2	G1	CASE	D
ET	S	D	G2	G1
EU	SUB	G1	D	G2
EV	S	G	D	
EW	CASE	D	G	S
EX	S	D	S	G
EY	S	G	S	D
FA	B/C	E	E	
PB	S	L	G	SUB CASE
FC	G	L	S	SUB CASE
FD	G	S, Sub	D	
GA	E	B1	C	B2
GB	C	B1	E	B2
GC	E1	S	C	E2
GD	E1	B	E2	C
GE	C	E1	B	E2
GF	E	B1		E2
GG	E2	E1	B	C
GH	E2	B	E1	C
GJ	B	E1	C	E2
GK	B1	E	C	B2
GM	B1	C	E	B2
GN	E	E2	B1	C
GP	E1	E2	B	
GQ	E2	B2	B1	E1
GR	B2	E	C	B1
GS	G	B	D	S
KA	E2	B1	C1/C2	E1/B2
KB	E2	C1/C2	B1	
KC	E2	B1	C1/C2	
KD	E2	E1/B2	B1	C1/C2
KE	B1	C1/C2	E2	
KF	B1	E2	C1/C2	
KH	B1	C1/C2	E2	CASE
KJ	E2	E1/B2	B1	
KK	B1	NC	E2	C1/C2
KM	E	B2	B1	C
KN	C1/C2	B1	E2	C1/C2

ABBREV.	TERM
A	Anode
B	Base
B1	Base 1
C	Collector
C1/C2	Collector(1/2)
D	Drain
E	Emitter
E1/B2	Emitter 1/Base 2
E2	Emitter 2
G	Gate
K	Cathode
S	Source
Case	Case/Shield
Sub	Substrate

LEAD CODE	LEAD CONFIGURATION								
	1	2	3	4	5	6	7	8	9
PA	C1	B1	E1	E2	B2	C2			
PB	B1	E1	E2	B2	C2				C1
PC	S1	D1	G1	S2	D2	G2			
PD	E1	B1	C1	S2	B2	E2			
PE	S1	D1	G1	SUB	S2	D2	G2		
PF	S1	D1	G1	C	S2	D2	G2		
PG	B2	E2	C2	B1	E1	C1			
PH	B2	E1/E2	C2	B1	E1/E2	C1			
PJ	S1	D1	G1	C2	D2	G2			
PK		S1/S2	SUB		D2	G2	G1	D1	
PL	E1	B1	C1	E2	B2	C2			
PM	E1	B1	C1	E2	B2	C2			
PN	E1	C1	B1	E2	C2	B2			
PP	E2	E1	B1	C	B2				
PQ	E1	B1	C1	CASE	C2	B2	E2	TAB	
PR	C1	B1	E1	E2	B2	C2			
PS	E1	E2	C2	B2	B1	C1			
PT	D1	G1		SUB	C2	D2	S		
PV	D1	S1	G1	SUB	G2	D2	S		
PW	S1	D1	G1	SUB	G2	D2	S1		
PX	D1	S1	G1	BASE	G2	D2	S		
PY	D1	S1	G1	SUB	G2	S2	D2		
PZ	S1	D1	G1	SUB	G2	S2	D2		
QA	S1	G1	D1	SUB	S2	G2	D2		
QB	S1	G1	D1	D2	G2	S2	SUB		
QC	D1	S1	G1	G2	S2	D2			
QD	G1	S1	D1	D2	S2	C2			
QE	B1	C1	C2	B2	E1/E2	D2			
QF	E1/E2	C1	B2	E1/E2	C1	B1			
QG	E1	C1	C2	E2	B2	B1			
QH	E1/E2	C1	C2	E1/E2	B2	B1			
QJ	E1	C1	B2	E2	C2	B1			
QK	E2	B1	C	B2/E1					
QM	B2	C2	C1	B1	E1/E2				
QN	E1	B1	B2	E2	C2	C1			
QO	E1/E2	B1	B2	E1/E2	C2	C1			
QQ		S1	D1	G1	S2	D2	G2		
QR		E1	B1	C1	Pin 14	Pin 13	Pin 12		
QS	E1	B1	C1	SUB	C2	B2	E2	SUB	
QT	S1	D1	G1	S2	D2	G2			
QU	S1	G1	D1	D2	G2	S2			
QV	S1	G1	D1	D2	G2	S2			
QW	S1	D1	G1	S2	D2	G2			
QX	D1	B2	G1	BASE	G2	D2	S1/S2		
QY	B1	B2	E2	E1	C				
QZ	E1	C1	B1	B2	C2	E2			
RA	B2	E1/E2	C2	C1	E1/E2	B1			
RB	B2	E2	C2	C1	E1	B1			
RC	D1	G1	S1	D2	G2	S2			
RD	B1	B2	E2	E1	C1/C2				
RE	E2	B2	C2	C1	B1	E1			
RF	B1	C1	E1/E2	C2	B2				
RG	E1	C1	B1/B2	C2	E2				
RH	S1	D1	G1	SUB	S2	D2	G2	SUB	
RJ	D1	G1	S1	SUB	S2	G2	D2		
RK	B	E	B	C	C	B			
RL	E1/E2	C1	C2	E1/E2	E1/E2	B2	B1	E1/E2	
RM	E	C	E	B	E				
RN	EA1	B1	EB1	E	EB2	B2	EA2	C1/C2	
RP	C	E	E	B	E	E			
RR	E	B	E	E	C	E			
RS	B1	C1	E1	E2	C2	B2			
RT	D2	G2	S2	S1	G1	D1			
RT	E	B	E	E	C	E			

LEAD CODE GROUPING	
A - BZ	Bipolar
CA - CZ	UJT
DA - FZ	FET
GA - HZ	MultiElement (2 to 4 Lead)
KA - KZ	Darlington
PA - RZ	MultiElement (5 to 9 Lead)

SECTION 19

# TRANSISTOR 53

## MANUFACTURERS' SALES OFFICES

These manufacturers have listed their sales offices in this section for your convenience. Please contact the sales office nearest you for any information you may need.

(MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS)

### ALGG — AEG-TELEFUNKEN



	Zip Code	Telephone No.	TWX/Telex
Serienprodukte Geschäftsbereich Elektronische Bauelemente Theresienstrasse 2, Heilbronn, Germany .....	7100	07131-8821	728746

### AMC — API ELECTRONICS, INC.



	Zip Code	Telephone No.	TWX/Telex
375 Rabro Drive, Hauppauge, New York .....	11788	516-582-6767	

### AMX — AMEX ELECTRONICS, INC.



	Zip Code	Telephone No.	TWX/Telex
2730 South Harbor Blvd., Unit B, Santa Ana, California .....	92704	714-979-3931	678401 TABIRN

### CDIL — CONTINENTAL DEVICE INDIA LIMITED



	Zip Code	Telephone No.	TWX/Telex
C-120, Naraina Industrial Area, New Delhi, India .....	110028	536150 (4 lines)	031-2770 (A/B CDIL 2770) Cable "PREET" NEW DELHI, INDIA

### CRI — CRIMSON SEMICONDUCTOR, INC.

	Zip Code	Telephone No.	TWX/Telex
16 West 32nd Street, New York, New York .....	10001	212-947-8585	12319 EAST EUR NYK RCA 236090



**SECTION 19  
MANUFACTURERS' SALES OFFICES**

**DIT — DIODE TRANSISTOR CO., INC.**



40 Pier Lane, W. Fairfield, New Jersey .....	Zip Code <b>07006</b>	Telephone No. <b>201-686-0400</b>	TWX/Telex <b>139-385</b>
		Outside NY and NJ area, call toll free <b>800-526-4581</b>	

**ECCA — EURODIA GES.M.B.H.**



Waldgasse 37, Wien, Austria .....	Zip Code <b>A-1101</b>	Telephone No. <b>0222/64 62 24</b>	TWX/Telex <b>132150</b>
		<b>62 37 41, K2, 82</b>	

**EET — EE TECH**



	Zip Code	Telephone No.	TWX/Telex
<b>Electronics &amp; Energy Technology USA Plant and Headquarters</b>			
2352 Utah Ave., El Segundo, California .....	<b>90245</b>	<b>213-675-9141</b>	<b>664455</b>
<b>Chicago Regional Office</b>			
ILLINOIS ..... Crystal Lake .....	EETech ..... <b>60014</b>	<b>815-455-6600</b>	
	457 Coventry Ln. Suite 129c		
<b>New Jersey Regional Office</b>			
NEW JERSEY ..... Montvale .....	EETech ..... <b>07645</b>	<b>201-573-8900</b>	
	210b Summit Ave.		
<b>European Sales &amp; Marketing Headquarters</b>			
ENGLAND ..... Kent .....	EETech ..... <b>0732-50957</b>	<b>95496</b>	
	96 High Street Sevenoaks		

**ETC — ELECTRONIC TRANSISTORS CORPORATION**



112-15 Northern Boulevard, Flushing, New York .....	Zip Code <b>11368</b>	Telephone No. <b>212-651-7200</b>	TWX/Telex <b>960173</b>
		<b>800-651-0772</b>	

## SECTION 19 MANUFACTURERS' SALES OFFICES

### FERB — FERRANTI ELECTRONICS LIMITED



	Zip Code	Telephone No.	TWX/Telex
Fields New Road, Chadderton, Oldham, England .....	<b>OL9 8NP</b>	<b>061-624-0515/ 6661</b>	<b>668038</b>
<b>GERMANY</b> ..... <b>Munich 22</b> ..... Ferranti GmbH .....	<b>D8000</b>	<b>089 293 871</b>	<b>523980</b>
Widenmayerstrasse 5			
<b>Hannover 71</b> ..... Ferranti GmbH .....	<b>3000</b>	<b>0511/524166</b>	<b>523980</b>
Brabeckstr 5			
<b>UNITED STATES</b>			
<b>CALIFORNIA</b> ..... <b>Sunnyvale</b> ..... Interdesign, Inc. ....	<b>94086</b>	<b>408-734-8666</b>	<b>910-339-9374</b>
(A Ferranti Company) 1255 Reamwood Avenue			
<b>NEW YORK</b> ..... <b>Commack</b> ..... Ferranti Electric, Inc. ....	<b>11725</b>	<b>516-543-0200</b>	<b>510-226-1490</b>
87 Modular Avenue			

### FSC — FAIRCHILD CAMERA & INSTRUMENT CORPORATION



	Zip Code	Telephone No.	TWX/Telex
DISCRETE DIVISION 4300 Redwood Hwy., San Rafael, California .....	<b>94903</b>	<b>415-479-8000</b>	<b>910-384-4258</b> <b>Cable</b> <b>FAIRSEMCO</b>

### GESY — GENERAL ELECTRIC COMPANY



	Zip Code	Telephone No.	TWX/Telex
SEMICONDUCTOR PRODUCTS DEPARTMENT Box 44, West Genesee Street, Auburn, New York.....	<b>13021</b>	<b>315-253-7321</b>	<b>RECOMM</b> <b>B25AO</b>
<b>EUROPE</b>			
<b>IRELAND</b> ..... <b>Dundalk</b> ..... International General Electric .....		<b>Dundalk</b> <b>0-42-32371</b>	<b>RECOMM</b> <b>B24GX</b> <b>33816</b>
Company of NY			
<b>SINGAPORE</b> ..... Far East Marketing Operation .....		<b>65-258</b> <b>3522</b>	<b>RS35582</b>

**SECTION 19  
MANUFACTURERS' SALES OFFICES**

**GPD — GERMANIUM POWER DEVICES CORPORATION**



	Zip Code	Telephone No.	TWX/Telex
Shetland Industrial Center, Bldg. 4 - York Street Post Office Box 56 - Shawsheen Village Station Andover, Massachusetts .....	01810	617-475-5982	94-7150 GPD ANDR

**GSE — GENERAL SEMICONDUCTOR INDUSTRIES, INC.**



	Zip Code	Telephone No.	TWX/Telex
2001 West 10th Place, Tempe, Arizona .....	85281	602-968-3101	910-950-1942

**HSE — HYBRID SEMICONDUCTORS & ELECTRONICS INC.**



	Zip Code	Telephone No.	TWX/Telex
56-32 210th Street, Oakland Gardens, New York .....	11364	212-631-2060	64-5067

**SALES OFFICE**

<b>NEW YORK</b> .....	<b>Brooklyn</b> .....	Alpha Electronics, Inc. ....	11218	212-633-2800	232-463 710-584-2460
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**CONTINENTAL**

<b>EUROPE</b> .....	<b>New York</b> .....	Remy Electronics Inc. ....	11235	212-934-7225	237733
	<b>(Brooklyn)</b>	1424 Sheepshead Bay Rd.			

**HTN — HI-TRON SEMICONDUCTOR CORPORATION**



	Zip Code	Telephone No.	TWX/Telex
85 Engineers Rd., Hauppauge, New York .....	11787	516-231-1500	510-227-9666

**HVS — HIGH VOLTAGE SEMICONDUCTOR INC.**



	Zip Code	Telephone No.	TWX/Telex
23 Keswick Ln., Huntington Station, New York .....	11746	516-421-3600	

## SECTION 19 MANUFACTURERS' SALES OFFICES

### IDC — INTERNATIONAL DIODE CORPORATION

*International Diode Corporation*

	Zip Code	Telephone No.	TWX/Telex
229 Cleveland Avenue, Harrison, New Jersey.....	<b>07029</b>	<b>201-482-6518</b> <b>201-482-5292</b>	

### ITTG — ITT SEMICONDUCTORS



	Zip Code	Telephone No.	TWX/Telex
INTERMETALL Post Office Box 840, Freiburg, West Germany.....	<b>D-7800</b>	<b>761-5170</b>	<b>772715</b>
<b>JAPAN.....Tokyo.....</b> ITT Semiconductors .....	<b>160-91</b>	<b>3478881-5</b>	<b>22858</b>
Post Office Box 21 Shinjuku-ku			
<b>UNITED KINGDOM.....Sidcup.....</b> ITT Semiconductors .....	<b>DA14 5HT</b>	<b>1-300 3333</b>	<b>21836</b>
<b>(Kent)</b> H Maidstone Rd.			
<b>UNITED STATES .....Lawrence.....</b> ITT Semiconductors .....	<b>01841</b>	<b>617-688-1881</b>	<b>710-342-1357</b>
<b>(Massachusetts)</b> 500 Broadway			

### KSL — K.S.L. MICRODEVICES

	Zip Code	Telephone No.	TWX/Telex
3350 Scott Blvd., Bldg. 38, Santa Clara, CA.....	<b>95050</b>	<b>408-727-4017</b>	

### LTE — LANSDALE TRANSISTOR & ELECTRONICS, INC.



	Zip Code	Telephone No.	TWX/Telex
SUBSIDIARY OF KIDDO, INC. KIDDE 3600 West Osborn Road, Phoenix, Arizona.....	<b>85019</b>	<b>602-269-6262</b>	<b>669-416</b>

### LUCB — LUCAS ELECTRICAL LIMITED

**Lucas**

	Zip Code	Telephone No.	TWX/Telex
Mere Green Road, Four Oaks, Sutton Coldfield, Warwickshire, England.....		<b>021-308-3501</b>	<b>338461</b>

## SECTION 19 MANUFACTURERS' SALES OFFICES

### MATJ — MATSUSHITA-PANASONIC ELECTRIC CORPORATION OF AMERICA



	Zip Code	Telephone No.	TWX/Telex
Electronic Components Division Product Marketing/Eastern Regional Sales One Panasonic Way, Secaucus, New Jersey .....	<b>07094</b>	<b>201-348-5268 201-348-5232</b>	<b>710-992-8920</b>
<b>CALIFORNIA</b> ..... <b>Irvine</b> ..... Electronic Components Division ..... Western Regional Sales 17032 Murphy Street	<b>92714</b>	<b>714-751-2101</b>	<b>65-5398</b>
<b>FLORIDA</b> ..... <b>Pompano Beach</b> .... Electronic Components Division ..... Sales Office P.O. Box 6022ST1	<b>33060</b>	<b>305-782-6009</b>	
<b>GEORGIA</b> ..... <b>Norcross</b> ..... Southern Region ..... Two Meca Way	<b>30093</b>	<b>404-923-9700</b>	<b>707396</b>
<b>ILLINOIS</b> ..... <b>Arlington Heights</b> ... Electronic Components Division ..... Central Regional Sales 425 E. Algonquin Road	<b>60005</b>	<b>312-364-7945</b>	<b>910-222-4693</b>
<b>INDIANA</b> ..... <b>Indianapolis</b> ..... Electronic Components Division ..... District Sales Office 6100 N. Keystone Avenue	<b>46220</b>	<b>317-257-4417</b>	<b>810-341-3174</b>
<b>VIRGINIA</b> ..... <b>Lynchburg</b> ..... Electronic Components Division ..... Sales Office P.O. Box 11436	<b>24506</b>	<b>804-239-0150</b>	

### MEHK — MICRO ELECTRONICS LTD.



	Zip Code	Telephone No.	TWX/Telex
38 Hung To Road, Kwun Tong, Kowloon, Post Office Box 9477, Hong Kong .....		<b>3-430181</b>	<b>HX43510</b>
<b>ENGLAND</b> ..... <b>Middlesex</b> ..... York House ..... Empire Way Wembley		<b>01-903-2721</b>	<b>934263</b>
<b>GERMANY</b> ..... <b>Munich 40</b> ..... M. E. Micro Electronics BmbH ..... Nordenstrasse 1A	<b>8000</b>	<b>089-2723165</b>	<b>5216194</b>
<b>U.S.A.</b> ..... <b>Santa Clara</b> ..... (California) ..... Micro Electronics Corporation ..... 3370 Montgomery Drive	<b>95051</b>	<b>408-988-1101</b>	<b>910-338-2228</b>

## SECTION 19 MANUFACTURERS' SALES OFFICES

### NECJ — NIPPON ELECTRIC COMPANY, LTD.

# NEC

	Zip Code	Telephone No.	TWX/Telex
INTERNATIONAL ELECTRON DEVICES DIVISION 33-1 Shiba Gochome, Minato-ku, Tokyo, Japan .....	108	(03) 454-1111	NECTOK J22686
<b>BRAZIL</b> ..... <b>Sao Paulo SP</b> ..... NEC do Brasil Electronica ..... e Comunicacoes Ltda. Paulista Avenue No. 949 6th and 7th Floor		011-289-7111	NECB BR 112-3689
<b>FRANCE</b> ..... <b>Boulogne-Billancourt</b> NEC Electronics France ..... Tour Chenonceaux 204 Rond-Point du Pond-de-Sevres	92516	1-620-6400	NEC EF 203544F
<b>GERMANY</b> ..... <b>Dusseldorf 1</b> ..... NEC Electronics (Europe) GMBH .... Karlstr, 123-127	4000	0021-36141	NEC D 8587419
<b>HONG KONG</b> ..... <b>New Territories</b> .... NEC Hong Kong Ltd. .... Flat A,B, 12/F, Chuan Kei Factory Bldg. 15-23 Kin Hong Street, Kwai Chung		0-242-824/7	HK NEC HX 84561
<b>ITALY</b> ..... <b>Milano</b> ..... NEC Electronics Italiana S.R.L. .... Via Cardano 3	20124	6709108	NEC EIT I 315355
<b>SINGAPORE</b> ..... <b>Industrial Estate</b> .... NEC Singapore Pte, Ltd. .... JTC Flatted Factory Bldg. Block 12 50 Kallang Bahru, Kallang Basin	1233	292-3616 292-5648	NEC SIN RS24350
<b>UNITED KINGDOM</b> ..... <b>Scotland</b> ..... NEC Electronics (UK) Limited ..... 116 Stevenston Street New Stevenston Motherwell	ML1 4LT	0698-732-221	NEC UKG 777565
<b>UNITED STATES</b> ..... <b>California</b> ..... NEC Electronics U.S.A. Inc. .... <b>(San Mateo)</b> (Head Office) 3055 Clearview Way	94402	415-341-1346	NEC SMT 172897

### PHIN — PHILIPS ELECTRONIC COMPONENTS & MATERIALS DIVISION



	Zip Code	Telephone No.	TWX/Telex
MARKETING COMMUNICATIONS Building BA, Eindhoven, Netherlands .....		(040) 723142	35000
<b>ARGENTINA</b> ..... <b>Buenos Aires</b> ..... Philips Argentina S.A. .... Vedia 3892	1430	541-7141/7545	21243

Continued on next page



## SECTION 19 MANUFACTURERS' SALES OFFICES



### PHIN — PHILIPS ELECTRONIC COMPONENTS & MATERIALS DIVISION (Cont'd)

		Zip Code	Telephone No.	TWX/Telex
MARKETING COMMUNICATIONS				
Building BA, Eindhoven, Netherlands.....			<b>(040) 723142</b>	<b>35000</b>
<b>AUSTRALIA.....Lane Cove .....</b>	Philips Industries Holdings, Ltd. .... Elcoma Division 67 Mars Road	<b>2066 N.S.W.</b>	<b>427 0888</b>	<b>21611</b>
<b>AUSTRIA.....Wien .....</b>	Osterreichische Philips..... Bauelemente Industrie G.m.b.H. Triesterstrasse 64	<b>A-1101</b>	<b>62 91 11</b>	<b>131802</b>
<b>BELGIUM .....</b>	<b>Bruxelles .....</b> N.V. Philips & M.B.L.E. Associated.. 9 Rue du Pavillon	<b>B-1030</b>	<b>(02) 242 74 00</b>	<b>21420</b>
<b>BRAZIL .....</b>	<b>Sao Paulo, SP.....</b> Ibrape..... Av. Brigadeiro Faria Lima Caixa Postal 7383	<b>1735</b>	<b>(011) 211-2600</b>	<b>112 4354</b>
<b>CANADA .....</b>	<b>Scarborough .....</b> Philips Electronics Ltd. .... (Ontario) Electron Devices Division 601 Milner Avenue	<b>M1B 1M8</b>	<b>292-5161</b>	<b>65-25103</b>
<b>DENMARK.....</b>	<b>Kobenhavn NV.....</b> Miniwatt A/S .....	<b>DK-2400</b>	<b>(01) 69 16 22</b>	<b>15310</b>
<b>FINLAND.....</b>	<b>Helsinki 10.....</b> Oy Philips Ab .....	<b>SF-00100</b>	<b>1 72 71</b>	<b>124811</b>
<b>FRANCE .....</b>	<b>Paris 11 .....</b> R.T.C. (RTCF)* .....	<b>F-75540</b>	<b>355-44-99</b>	<b>680495</b>
<b>GERMANY.....</b>	<b>Hamburg 1.....</b> VALVO (VALG)* .....	<b>D-2</b>	<b>(040) 3296-0</b>	<b>216891</b>
<b>HONG KONG .....</b>	<b>Kwai Chung .....</b> Philips Hong Kong Ltd. ....		<b>(0)-24 5121</b>	<b>75820</b>
<b>ITALY .....</b>	<b>Milano .....</b> Philips S.p.A. ....	<b>I-20124</b>	<b>2-6994</b>	<b>3 30262</b>
	Sezione Elcoma Piazza IV Novembre 3			

Continued on next page

## SECTION 19 MANUFACTURERS' SALES OFFICES



### PHIN — PHILIPS ELECTRONIC COMPONENTS & MATERIALS DIVISION (Cont'd)

	Zip Code	Telephone No.	TWX/Telex
MARKETING COMMUNICATIONS Building BA, Eindhoven, Netherlands.....		(040) 723142	35000
<b>JAPAN.....Tokyo.....</b> Nihon Philips Corporation..... Shuwa Shinagawa Bldg. 26-33 Takanawa, 3-chome Minato-ku	<b>108</b>	<b>(448) 5611</b>	<b>26388 02422205</b>
<b>KOREA .....Seoul.....</b> Philips Electronics (Korea) Ltd. .... Philips House-Elcoma Division 260-199 Itaewon-dong Yongsan-ku C.P.O. Box 3680		<b>794-4202</b>	<b>27291</b>
<b>MEXICO .....Mexico 6, D.F. ....</b> Electronica S.A. de C.V. .... Varsovia No. 36		<b>533-11-80</b>	<b>1771227</b>
<b>NETHERLANDS.....Eindhoven.....</b> Philips Nederland..... Marketgroup Elonco Postbus 90050	<b>5600 PB</b>	<b>(040) 79 33 33</b>	<b>51238</b>
<b>NEW ZEALAND .....Auckland.....</b> Philips Electrical Industries Ltd. .... (St. Lukes) Elcoma Division 2 Wagener Place		<b>894-160</b>	<b>2312</b>
<b>NORWAY.....Oslo 6.....</b> Norsk A/S Philips..... Electronica Dept. Sandstuveien 70		<b>68-02-00</b>	<b>11141</b>
<b>SOUTH AFRICA.....Johannesburg.....</b> EDAC (Pty.) Ltd. .... (New Doorn- fontein) 3rd Fl. Rainer House Upper Railway Rd. & Ove St.	<b>2001</b>	<b>614 - 2362/9</b>	<b>8-3607</b>
<b>SPAIN.....Barcelona 7.....</b> Miniwatt S.A. .... Balmes 22		<b>301 63 12</b>	<b>54666</b>
<b>SWEDEN.....Stockholm 27.....</b> Philips Komponenter A.B. .... Lidingövägen 50	<b>S-11584</b>	<b>08/679780</b>	<b>10776</b>
<b>SWITZERLAND .....Zurich.....</b> Philips A.G. .... Elcoma Dept. Allmendstrasse 140-142	<b>CH-8027</b>	<b>01-488 22 11</b>	<b>52392</b>

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## SECTION 19 MANUFACTURERS' SALES OFFICES



### PHIN — PHILIPS ELECTRONIC COMPONENTS & MATERIALS DIVISION (Cont'd)

	Zip Code	Telephone No.	TWX/Telex
MARKETING COMMUNICATIONS Building BA, Eindhoven, Netherlands .....		(040) 723142	35000
TAIWAN ..... Taipei .....	Philips Taiwan Ltd. .... San Min Bldg., 3rd Floor 57-1 Chung Shan N. Road Section 2 P.O.B. 22978	(02) 5631717	21570
UNITED KINGDOM..... London.....	Mullard Ltd. .... Mullard House Torrington Place	WC1E 7HD    01-580-6633	264341
UNITED STATES ..... Rhode Island .....	Amperex Corporation ..... (APX)* Sem. & Microcircuits Division Providence Pike, Slatersville	02876    401-762-9000	92-7584

### PTC — POWER TRANSISTOR COMPANY



800 West Carson Street, Torrance, California .....	Zip Code 90502	Telephone No. 213-320-1190 213-775-3959	TWX/Telex 655381
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#### REPRESENTATIVES INTERNATIONAL

FRANCE ..... Boulogne .....	International Semiconductor ..... Corporation 27 Avenue Yves Kermen	92100    6045275 +	250 030
INDIA ..... Bombay .....	International Marketing Corporation . Harilela House, 3rd Floor Mint Road OPP.G.P.O.	400001    267253 61501	Cable UNIQUE DEAL
WEST GERMANY..... Lubeck.....	HIV GmbH ..... Geniner Str. 66	2400    (0451) 57017	26422 HIV D
ENGLAND ..... Haverhill .....	Magnaquest, Inc. .... Homefield Rd. Suffolk	86604 Haverhill	817670

## SECTION 19 MANUFACTURERS' SALES OFFICES

### PTI — POWERTECH INC.



	Zip Code	Telephone No.	TWX/Telex
0-02 Fair Lawn Avenue, Fair Lawn, New Jersey .....	<b>07410</b>	<b>201-791-5050</b>	<b>130389</b>

#### INTERNATIONAL

GERMANY.....2 Hamburg 56 .....			
Infratron .....			<b>040/81 75 78</b>
Sandmoorweg 22, Postfach 560 173			

ITALY .....			
Milano .....	<b>20122</b>	<b>897907</b>	
Milano Brothers International .....		<b>897740</b>	
Piazza Velasca 5			

#### UNITED STATES

CALIFORNIA .....			
Tarzana .....	<b>91356</b>	<b>213-881-9111</b>	
Power Component Sales .....			
19562 Ventura Blvd.			

### RHM — ROHM CORPORATION



	Zip Code	Telephone No.	TWX/Telex
8 Whatney, P.O. Box 19515, Irvine, CA .....	<b>92713</b>	<b>714-855-2131</b>	<b>910-595-1721</b>

#### REGIONAL OFFICES

CALIFORNIA .....			
San Jose .....	<b>95110</b>	<b>408-292-2817</b>	
50 West Brokaw .....			
Suite 64			

MASSACHUSETTS .....			
Westwood .....	<b>02090</b>	<b>617-329-8820</b>	
54 Hartford Street .....			
Suite 102			

NORTH CAROLINA .....			
Greensboro .....	<b>23407</b>	<b>919-855-0217</b>	
2303 W. Meadowview Rd. ....			
Suite 3, Kinston Bldg.			

### RTCF — R.T.C. LA RADIOTECHNIQUE-COMPELEC



	Zip Code	Telephone No.	TWX/Telex
130, Avenue Ledru-Rollin, Paris Cedex 11, France.....	<b>75.540</b>	<b>355-44-99</b>	<b>PHILAMP PARIS 280746</b>

### SCA — SEMICOA



	Zip Code	Telephone No.	TWX/Telex
333 McCormick Avenue, Costa Mesa, California.....	<b>92626</b>	<b>714-979-1900</b>	<b>910-595-1961 678315</b>

## SECTION 19 MANUFACTURERS' SALES OFFICES

### SEI — SEMICONDUCTORS INC.



	Zip Code	Telephone No.	TWX/Telex
CORPORATE HEADQUARTERS 1334 S. Killian Dr., Lake Park, Florida .....	33403	305-842-0305	510-952-7704
CALIFORNIA ..... Santa Ana ..... 2610 Croddy Way .....	92704	714-662-3830	

### SES — SEMITRONICS CORPORATION



	Zip Code	Telephone No.	TWX/Telex
64 Commercial Street, Freeport, New York.....	11520	516-623-9400	510-225-7509

### SIX — SILICONIX INCORPORATED



	Zip Code	Telephone No.	TWX/Telex
2201 Laurelwood Rd., Santa Clara, CA.....	95054	(408) 988-8000	910-388-0227

#### INTERNATIONAL

UNITED KINGDOM..... Swansea .....	Siliconix Ltd. ....	SA6 6NE	(0792) 74681	48197
	Morrison			
FRANCE ..... Creteil Cedex .....	Siliconix S.A.R.L.....	94022	377.12.51	230389F
	70-72 Ave. de Gen. de Gaulle			
	Echat 660			
W. GERMANY ..... Filderstadt-1 .....	Siliconix GmbH.....	D-7024	(0711) 702066	7255 553
	Postfach 1340			
	Johannesstrasse 27			
HONG KONG ..... Kowloon.....	Siliconix (H.K.) Ltd. ....	3-427151	7449SILXHX	
	61-63 King Yip Street			
	Kwun Tong			
JAPAN..... Tokyo.....	Nippon Siliconix .....	100	(03) 506-4670	J-23548
	1-1, Uchisaiwai-cho, 2-Chome			
	Chiyoda-ku			

**SECTION 19  
MANUFACTURERS' SALES OFFICES**

**SLD — SOLID STATE INDUSTRIES, INC.**



	Zip Code	Telephone No.	TWX/Telex
WORLD WIDE HEADQUARTERS 1060 Thomas Jefferson Street, N.W., Washington, D.C. ....	20007	202-338-3150	64100 SOLIDSTA

**Factories in:**

<b>CONNECTICUT — Hamden</b>	<b>MALAYSIA — Kuala Lumpur</b>
<b>FLORIDA — Riviera Beach</b>	<b>HONG KONG — Macao</b>
<b>NEW JERSEY — Linden</b>	<b>TAIWAN — Taipei</b>

**SML — SEMELAB**



	Zip Code	Telephone No.	TWX/Telex
10/12 Bank Street, Lutterworth, Leicestershire, England .....	LE17 4AY	045-55 4711	341927

**SOD/SODI — SOLITRON DEVICES, INC.**



	Zip Code	Telephone No.	TWX/Telex
CORPORATE OFFICES 1177 Blue Heron Blvd., Riviera Beach, Florida .....	33404	305-848-4311	510-952-6676
<b>CALIFORNIA</b> ..... <b>San Diego</b> ..... Solitron Devices, Inc. .... 8808 Balboa Avenue	92123	714-278-8780	910-335-1221

**INTERNATIONAL**

<b>ALL</b> ..... Solidev International ..... 1177 Blue Heron Blvd. Riviera Beach, Florida	33404	305-848-4311	510-952-6676
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**SPC — SOLID POWER CORPORATION**



	Zip Code	Telephone No.	TWX/Telex
440 Eastern Parkway, Farmingdale, New York .....	11735	516-694-2883	510-224-6582

**SPE — SPACE POWER ELECTRONICS, INC.**



	Zip Code	Telephone No.	TWX/Telex
Jeffrey Lane, R.D. 1, Glen Gardner, New Jersey ..... (CUSTOM DEVICES AVAILABLE)	08826	201-537-2184/5	64-2028 510-235-4290



## SECTION 19 MANUFACTURERS' SALES OFFICES

### SPR — SPRAGUE ELECTRONIC COMPANY



	Zip Code	Telephone No.	TWX/Telex
SEMICONDUCTOR DIVISION 70 Pembroke Road, Concord, New Hampshire .....	03301	603-224-1961	943346

### SSI — SOLID STATE DEVICES, INC.



	Zip Code	Telephone No.	TWX/Telex
14830 Valley View Avenue, La Mirada, California .....	90638	213-921-9660	910-583-4807
<b>ARIZONA</b> ..... <b>Scottsdale</b> .....	<b>85251</b>	<b>602-947-5445</b>	<b>910-950-1158</b>
<b>NEVADA (South)</b> <b>NEW MEXICO</b> <b>TEXAS (El Paso)</b>			
Arcom Sales Company .....			
7300 East Stetson Drive Suite D			
<b>CALIFORNIA</b> .....	<b>92025</b>	<b>714-743-3015</b>	<b>910-355-1607</b>
<b>San Diego</b> ..... (Escondido)			
Cirolia Electronic Sales, Inc. ....			
Post Office Box 2154 420 West Fifth Street			
<b>MARYLAND</b> ..... <b>New Jersey</b> .....	<b>07083</b>	<b>201-687-0620</b>	
(Union)			
Jack Onore .....			
555 Winchester Avenue			
<b>MASSACHUSETTS</b> .... <b>Brookline</b> .....	<b>02146</b>	<b>617-731-0858</b>	
<b>CONNECTICUT</b> <b>MAINE</b> <b>NEW HAMPSHIRE</b> <b>RHODE ISLAND</b> <b>VERMONT</b>			
Technology Products .....			
318 Harvard Street			
<b>MICHIGAN</b> .....	<b>48093</b>	<b>313-575-9444</b>	<b>810-226-8015</b>
<b>Warren</b> .....			
DEM Electronics Sales .....			
30833 Hoover Road			
<b>MINNESOTA</b> .....	<b>55420</b>	<b>612-888-5000</b>	
<b>Minneapolis</b> .....			
Bill Deming & Associates .....			
8053 Bloomington Freeway			
<b>NORTH DAKOTA</b> <b>SOUTH DAKOTA</b> <b>WISCONSIN</b> (Western)			
<b>NEW JERSEY</b> .....	<b>07604</b>	<b>201-288-7400</b>	<b>710-990-6118</b>
<b>Hasbrouck Hgts.</b> ..			
Comp-Tech Sales .....			
336 Boulevard			

### SST — SOLID STATE INC.



	Zip Code	Telephone No.	TWX/Telex
46 Farrand Street, Bloomfield, New Jersey.....	07003	201-429-8700 212-964-5682	710-994-4780 Cable SOLSTAINC BLF
<b>ILLINOIS</b> ..... <b>Chicago</b> .....	<b>60659</b>	<b>312-561-0156</b>	<b>910-221-5378</b>
<b>WISCONSIN</b>			
C. L. Greenslade Sales, Inc. ....			
5875 Lincoln Avenue			

## SECTION 19 MANUFACTURERS' SALES OFFICES

### SSY — SOLID STATE SYSTEMS



	Zip Code	Telephone No.	TWX/Telex
960 Koehl Avenue, Union, New Jersey .....	<b>07083</b>	<b>201-688-0222</b> <b>800-526-4463</b>	<b>710-985-4856</b>

### STC — SILICON TRANSISTOR COPORATION



	Zip Code	Telephone No.	TWX/Telex
(Includes the KSC Semiconductor Subsidiary) Katrina Road, Chelmsford, Massachusetts .....	<b>01824</b>	<b>617-256-3321</b>	<b>710-343-0576</b>
<b>NEW JERSEY</b> ..... <b>W. Long Branch</b> .... Silicon Transistor Corporation .....	<b>07764</b>	<b>201-222-1320</b>	
Post Office Box 416			

#### INTERNATIONAL

<b>ENGLAND</b> ..... <b>Kent</b> ..... Silicon Transistor (BBF) Ltd. ....	<b>TN13 3JU</b>	<b>(0732)59195</b>	<b>95680</b>
Seronera House Linden Chase Sevenoaks			

### STI — SEMICONDUCTOR TECHNOLOGY, INC.



	Zip Code	Telephone No.	TWX/Telex
3131 Southeast Jay Street, Stuart, Florida .....	<b>33494</b>	<b>305-283-4500</b>	<b>510-953-7511</b>

#### INTERNATIONAL

<b>ENGLAND</b> ..... <b>Tetbury</b> ..... Diran Semicon Limited .....	<b>GL8 8EQ</b>	<b>Tetbury</b> <b>52956</b>	<b>43241</b>
P.O. Box 3 Glos.			

### SWT — SWAMPSCOTT ELECTRONICS COMPANY, INC.



	Zip Code	Telephone No.	TWX/Telex
41 Spinale Road, Swampscott, Massachusetts .....	<b>01907</b>	<b>617-598-4116</b>	
(Custom and selected devices available)			

### TSI — TRANSISTOR SPECIALTYS, INC.



	Zip Code	Telephone No.	TWX/Telex
HYBRID & SPECIAL PRODUCTS DIVISION 3 Electronics Avenue, Danvers, Massachusetts .....	<b>01923</b>	<b>617-774-8722</b>	<b>710-347-0309</b>

## SECTION 19 MANUFACTURERS' SALES OFFICES



### UPI — UPI SEMICONDUCTOR

	Zip Code	Telephone No.	TWX/Telex
DIVISION UNITED-PAGE, INC. 481 Getty Avenue, Paterson, New Jersey .....	07503	NJ201-279-7500 NY212-736-9351 800-526-5277 (outside NJ)	642597 Cable UNIPAGE

### WESTERN REGIONAL OFFICE

CALIFORNIA ..... Thousand Oaks .... UPI Semiconductors .....	91360	805-497-8991 (outside Calif.) 800-253-7035	910-336-1565
558 St. Charles Drive			



### WAB — WALBERN DEVICES INTERNATIONAL INC.

	Zip Code	Telephone No.	TWX/Telex
<b><u>PRODUCTION FACILITY &amp; CORPORATE OFFICES</u></b>			
1818 East Elizabeth Avenue, Linden, New Jersey .....	07036	201-486-2226 800-526-4183	138-833

### NATIONAL & INTERNATIONAL MARKETING OFFICES

18623 Ventura Boulevard, Tarzana, California .....	91356	213-996-7400 800-423-5291	181-501
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### REPRESENTATIVES

ARIZONA..... Phoenix .....	85044	602-893-1355	
NEW MEXICO EL PASO CTY., TEXAS CLARK CTY., NEVADA			
..... Elec-Com Associates .....			
..... 4223 East Winnetka Drive			
CALIFORNIA ..... Los Gatos .....	95030	408-358-3861	
..... Pro Associates .....			
..... 455 Los Gatos			
COLORADO ..... Denver .....	80222	303-692-0131	910-935-0822
UTAH			
..... West Inc. ....			
..... 2315 So. Monaco Pkwy. No. 123			
ILLINOIS ..... Highland Park .....	60035	312-433-2375	
WISCONSIN (Southern)			
..... Bransky Sales .....			
..... 1726 First Street			

Continued on next page

## SECTION 19 MANUFACTURERS' SALES OFFICES



### WAB — WALBERN DEVICES INTERNATIONAL INC. (Cont'd)

	Zip Code	Telephone No.	TWX/Telex
<b><u>PRODUCTION FACILITY &amp; CORPORATE OFFICES</u></b>			
1818 East Elizabeth Avenue, Linden, New Jersey.....	07036	201-486-2226 800-526-4183	138-833
<b><u>NATIONAL &amp; INTERNATIONAL MARKETING OFFICES</u></b>			
18623 Ventura Boulevard, Tarzana, California .....	91356	213-996-7400 800-423-5291	181-501
<b><u>REPRESENTATIVES</u></b>			
MASSACHUSETTS ..... Canton .....	D. Taggart Associates .....	02021	617-828-6064
MAINE	742 Washington Street		
NEW HAMPSHIRE			
VERMONT			
RHODE ISLAND			
CONNECTICUT			
MINNESOTA ..... Minneapolis .....	Bitronics Sales Co. ....	55435	612-835-7744
NORTH DAKOTA	4565 West 77th Street		910-576-3448
SOUTH DAKOTA			
WISCONSIN (Western)			
MISSOURI..... Kansas City .....	Forristal-Young Sales Co. ....	64133	816-358-6771
NEBRASKA	9010 E. 50 Hwy.		
KANSAS	P.O. Box 9520		
IOWA			
NEW JERSEY ..... Berkely Heights .....	Cambridge-Allen Associates .....	07922	201-464-0203
NEW YORK	3 Franklin Court		
OREGON ..... Beaverton.....	LD Electronics Inc. ....	97006	503-649-6177
WASHINGTON	17895 S.W.TV Hwy.	97075	503-649-8556
IDAHO	P.O. Box 626		
MONTANA			
BRITISH COLUMBIA			
PENNSYLVANIA ..... Wayne .....	T.M. McDermott & Co. ....	19087	215-293-1422
(Eastern)	108 N. Aberdeen Ave.		
NEW JERSEY (Southern)			
DELAWARE			

Continued on next page

## SECTION 19 MANUFACTURERS' SALES OFFICES

### WAB — WALBERN DEVICES INTERNATIONAL INC. (Cont'd)



	Zip Code	Telephone No.	TWX/Telex
<b><u>PRODUCTION FACILITY &amp; CORPORATE OFFICES</u></b>			
1818 East Elizabeth Avenue, Linden, New Jersey.....	07036	201-486-2226 800-526-4183	138-833
<b><u>NATIONAL &amp; INTERNATIONAL MARKETING OFFICES</u></b>			
18623 Ventura Boulevard, Tarzana, California .....	91356	213-996-7400 800-423-5291	181-501
<b><u>REPRESENTATIVES</u></b>			
TEXAS..... Irving..... Kite Electronics Sales Co., Inc. ....	75060	214-438-9336	
OKLAHOMA LOUISIANA MISSISSIPPI ARKANSAS TENNESSEE	109 S. Story P.O. Box 3688    	75061	
VIRGINIA..... Arlington .....	22202	703-525-5898	
WASHINGTON, D.C. MARYLAND	Howard Golenpaul & Associates .... Crystal Plaza 904-N 2111 Jefferson Davis Hwy.		

### WESB — WESTCODE SEMICONDUCTORS



	Zip Code	Telephone No.	TWX/Telex
WESTCODE SEMICONDUCTORS, WESTINGHOUSE BRAKE & SIGNAL CO., LTD. P.O. Box 57, Langley Road, Chippenham, Wiltshire, England.....	SN15 1JL	0249 4141	44751

### WESY — WESTINGHOUSE ELECTRIC CORPORATION



	Zip Code	Telephone No.	TWX/Telex
SEMICONDUCTOR DIVISION Youngwood, Pennsylvania .....	15697	412-925-7272	510-468-2840
<b><u>INTERNATIONAL</u></b>			
FRANCE ..... Le Mans..... (EUROPEAN HEADQUARTERS)	CDS Westinghouse ..... Avenue G. Durand	72003	(43) 84.33.40 842-720040 +
CANADA ..... Ontario.....	Westinghouse Canada Ltd. .... P.O. Box 5009 Burlington	L7R4B3	416-528-8811 061-8409
SOUTH AMERICA ..... Brazil..... (Sao Paulo)	Semiconductors Industriais ..... Westinghouse LTDA Rua Santa Justina, 41	04545	(011) 240-1745 542-6940 391-011-21683 (WEST BR)

## 20. MANUFACTURERS' LOGOS



**TFK**

*(Product Identifier)*

ALGG – AEG-Telefunken

**Ampower**  
Semiconductor Corp.

AMC – Ampower Semiconductor Corp.



AMX -- Amex Electronics



ANA -- Analog Devices

**Amperex**

APX – Amperex Electronic Corp.



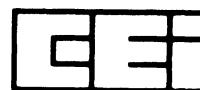
ASI – Advanced Semiconductors Inc

**BEL**

BELI – Bharat Electronics Ltd.



CDIL – Continental Device India Ltd.



CEI – Calvert Electronics International Inc.

**Central**<sup>T.M.</sup>  
Semiconductor

CEN – Central Semiconductor Div.

**CHERRY**

CHE – Cherry Semiconductor Corp.

**CSR**

CSR – CSR Industries Inc.



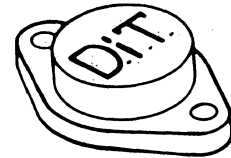
## 20. MANUFACTURERS' LOGOS



CTR – Communications  
Transistor Corp.



DIO – Dionics Inc.



DIT – Diode Transistor Co., Inc.



EET – EETECH, Div. of Beatrice Foods



EII – Eltec Instruments Inc.



ELMA – Elcoma



ESE – Elm State Electronics Inc.



ETC – Electronic Transistors Corp.



EXR – Exar Integrated Systems, Inc.



FCAJ – Fujitsu Ltd.



FERB – Ferranti Ltd.



FPMJ – Fine Products  
Microelectronics Corp.

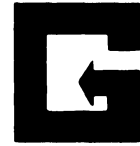
## 20. MANUFACTURERS' LOGOS



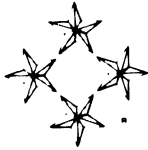
FSC – Fairchild Camera  
& Instrument Corp.



GESY – General Electric Co., SPD



GPD – Germanium Power  
Devices Corp.



**SQUARE D COMPANY**



GTC – General Transistor Corp.



GSE – General Semiconductor Ind.

HITJ – Hitachi Ltd.



HPA – Hewlett Packard



HSE – Hybrid Semiconductors  
& Electronics Inc.



HTN – Hi-Tron Semiconductor Corp.



HVS – High Voltage Semiconductor  
Specialists Inc.

*International Diode  
Corporation*

IDC – International Diode Corp.



IDI – International Devices Inc.

## 20. MANUFACTURERS' LOGOS

The logo for Intersil, featuring the word "INTERASIL" in a bold, outlined, sans-serif font.

INL – Intersil Inc.



INR – International Rectifier



IPE – In-Phase Electronics



IPSI – International Power Semiconductors



ITTG – ITT Semiconductors  
(INTERMETALL)

The logo for Keltron, featuring a stylized "K" symbol followed by the word "KELTRON".

KPDI – Keltron Power Devices Ltd.



LAM – Lambda  
Semiconductors Corp.



LTE – Lansdale Transistor  
& Electronics Inc.

The logo for Lucas, featuring the word "Lucas" in a bold, sans-serif font.

LUCB – Lucas Electrical Co., Ltd.



(Product Identifiers)

MAL – Mallory Distributor Products



MATJ – Matsushita Electronics Corp.



MEHK – Micro Electronics Ltd.

## 20. MANUFACTURERS' LOGOS



MIC – Microwave Associates Inc.



MITJ – Mitsubishi Electric Co.



MOTA – Motorola Semiconductor Products



MULB – Mullard Ltd.



NASG – North American Semiconductor Ltd.

**NEC**

NECE – NEC Electronics U.S. A.

NECJ – Nippon Electric Co., Ltd.



NJS – New Jersey Semiconductor Products Co., Inc.



NSC – National Semiconductor Corp.

**PHILCO**

PHIB – Philco Radio Television Ltd.



PHIN – N. V. Philips Gloeilampenfabrieken



PIHS – Piher International Corp.



PLSB – Plessey Semiconductors

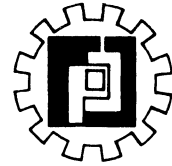
## 20. MANUFACTURERS' LOGOS



PMI -- Precision Monolithics Inc.



PPC -- PPC/ Products Corp.



PSLI -- Punjab  
Semiconductor Devices



PTC -- Power Transistor Co.

**PowerTech**  
"BIG IDEAS IN BIG POWER"

PTI -- Power Tech Inc.



RCA -- RCA Corp.  
RCAB -- RCA Solid State Europe



RHM -- ROHM Corporation



RTCF -- R.T.C. LaRadiotechnique-  
Compelec



RTN -- Raytheon Semiconductor



SAKJ -- Sanken Electric Co., Ltd.

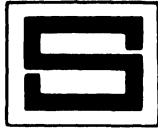


SCA -- Semicoa



SELI -- Semiconductors Ltd.

## 20. MANUFACTURERS' LOGOS



SEI – Semiconductors Inc.



SEN – Sensitron Semiconductors



SES – Semitronics Corp.



SGAI – SGS-ATES Componenti  
Elettronici

**SILICON GENERAL**

SGL – Silicon General Inc.



SHEJ – Shindengen  
Electric Mfg. Co., Ltd.

**signetics**

SIC – Signetics Corp.

**SIEMENS**



*(Product Identifier)*

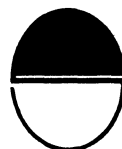
SIEG – Siemens AG



SIX – Siliconix Inc.



SLCB – Semitron Ltd.



SLD – Solid State Industries Inc.



SMLB – Semelab



## 20. MANUFACTURERS' LOGOS



SOD – Solitron Devices Inc.  
SODI – Solitron Devices Inc.

**SONY**

SONY – Sony Corporation

**SPC**

SPC – Solid Power Corp.

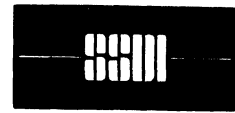


SPE – Space Power Electronics Inc.

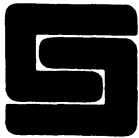


*(Product Identifier)*

SPR – Sprague Electric Co.



SSI – Solid State Devices Inc.



SST – Solid State Inc.



SSY – Solid State Systems



STC – Silicon Transistor Corp.



STI – Semiconductor  
Technology Inc.

**STOLAB**

STL – Stow Laboratories Inc.



STR – Syntar Industries Inc.

## 20. MANUFACTURERS' LOGOS



STX - Supertex, Inc.



SWT - Swampscott Electronics Co.



TAGS - TAG Semiconductors Ltd.



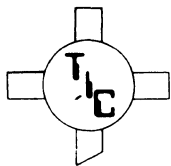
TCE - Teccor Electronics Inc.



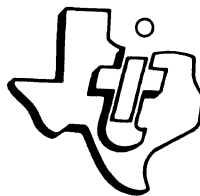
THEF - Thomson CSF  
THCS - Thomson CSF  
Semiconductor Division



TCY - Teledyne Crystalonics, Inc.



TIC - TIC Semiconductor



TII - Texas Instruments Inc.



TOSJ - Toshiba Corp.



TRWC - TRW Capacitors  
TRWS - TRW Semiconductors Inc.



TSAJ - Tokyo Sanyo Electric Co.

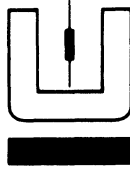


TSC - Teledyne Semiconductor

## 20. MANUFACTURERS' LOGOS



TSI – Transistor Specialtys Inc.



UNI – Unitrode Corp.



UPI – UPI Semiconductor



UTS – Uni-Tran Semiconductor Corp.



VALG – Valvo GmbH



WAB – Walbern Devices Inc.



*(Product Identifier)*

WESY – Westinghouse Electric Corp.

## 21. MANUFACTURERS' CODES NAMES & ADDRESSES

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS
	D1597	<b>ALGG</b>	* AEG-Telefunken, Geschäftsbereich Elektronische, Bauelemente, Postfach 1109, D7100, Heilbronn, West Germany
CDHS	52333	<b>AMC</b>	API Electronics Inc., 375 Rabro Dr., Hauppauge, NY 11788
		<b>AMR</b>	* American Microsemiconductor Inc., 145 Main St., Madison, NJ 07940
		<b>AMX</b>	* Amex Electronics, Inc., 2730 So. Harbor Blvd., Unit B., Santa Ana, CA 92704
		<b>ANA</b>	Analog Devices, Route One Industrial Park, P.O. Box 280, Norwood, MA 02062
CEP	25403	<b>APX</b>	* Amperex Electronic Corp., Slatersville Div., Slatersville, RI 02876
		<b>ASI</b>	Advanced Semiconductors Inc., 7525 Ethel Ave., N. Hollywood, CA 91605
		<b>BELI</b>	Bharat Electronics, Ltd., Jalahalli PO, Bangalore 13, South India
		<b>CDIL</b>	* Continental Device India Ltd., C-120, Naraina Industrial Area, New Delhi 110028, India
	05588	<b>CEI</b>	* Calvert Electronics, 1 Branca Rd., East Rutherford, New Jersey, 07073
	55464	<b>CEN</b>	* Central Semiconductor Div., Central State Ind., Inc., 148-B Lamar St., W. Babylon, NY 11704
		<b>CHE</b>	Cherry Semiconductor Corp., 2000 South County Trail, E. Greenwich, RI 02818
		<b>CRI</b>	Crimson Semiconductor, Inc., 16-20 W. 32nd St., New York, NY 10001
		<b>CSD</b>	★ Conditioning Semiconductor Devices Corp., P.O. Box 2116, Wayne, NJ 07470
	11058	<b>CSR</b>	* CSR Industries, Inc., Semicon. Div., 35 Central Ave., E. Farmingdale, NY 11735
	50155	<b>CTR</b>	Communications Transistor Corp., 301 Industrial Way, San Carlos, CA 94070
		<b>DIO</b>	Dionics, Inc., 65 Rushmore St., Westbury, NY 11590
	85072	<b>DIT</b>	Diode Transistor Co., Inc., 40 Pier Lane West, Fairfield, NJ 07006
		<b>ECCA</b>	* Eurodia GES.m.b.h., Waldgasse 37, A-1101 Wien, Australia
		<b>EET</b>	* EETECH, Div. of Beatrice Foods, 2352 Utah Ave., El Segundo, CA 90245
		<b>EFCF</b>	★ Thomson-CSF/EFCIS, 6660 Variel Ave., Canoga Park, CA 91304
		<b>EII</b>	Eltec Instruments Inc., 350 Fentress Blvd., Daytona Beach, FL 32020
	Z3537	<b>ELMA</b>	Elcoma, 71 Mars Rd., Lane Cover N.S.W., 2066, Australia
		<b>ESE</b>	Elm State Electronics Inc., 60 Connelly Pkwy., Hamden, CT 06514
	12045	<b>ETC</b>	* Electronic Transistor Corp., 112-15 Northern Blvd., Flushing, NY 11368
		<b>EXR</b>	★ Exar Integrated Systems, Inc., 750 Palomar Ave., P.O. Box 62229, Sunnyvale, CA 94088
	S0167	<b>FCAJ</b>	Fujitsu Ltd., 1015 Kamikodanaka, Nakahara-ku, Kawasaki City, Japan
	K1196	<b>FERB</b>	* Ferranti Electronics Ltd., Fields New Rd., Chadderton, Oldham OL9 8NP, England
		<b>FPMJ</b>	Fine Products Microelectronics Corp., 9, Chang-an East Rd., Sec. 1, ROC
CFJ	07263	<b>FSC</b>	Fairchild Camera & Instrument Corp., Discrete Division, 4300 Redwood Hwy., San Rafael, CA 94903
		<b>GDC</b>	General Diode Corp., 90 Eames St., Framington, MA 01701
CG	09214	<b>GESY</b>	* General Electric Co., SPD, Box 44, W. Genessee St., Auburn, NY 13021
CDTO	53399	<b>GPD</b>	* Germanium Power Devices Corp., Shetland Ind. Ctr., Bldg. 4, York St., POB 65, Shawsheen Village Sta., Andover, MA 01810
CDCG	24444	<b>GSE</b>	* General Semiconductor Industries, Inc., 2001 W. 10th Pl., POB 3078, Tempe, AZ 85281
	IT853	<b>GTC</b>	General Transistor Corp., 216 West Florence, Inglewood, CA 90301
	S4361	<b>HITJ</b>	Hitachi Limited, 1800 Bering Dr., San Jose, CA 95008
		<b>HPA</b>	Hewlett Packard, Micro. Semi. Div., 350 West Trimble Rd., San Jose, CA 95112
		<b>HSE</b>	* Hybrid Semiconductors, 56-32 210th St., Oakland Gardens, NY 11364
	6K951	<b>HTN</b>	* HI-TRON Semiconductor Corp., 85 Engineers Rd., Hauppauge, NY 11787
		<b>HVS</b>	High Voltage Semiconductors Inc., 23 Kenswick Lane, Huntington Station, NY 11746
	16068	<b>IDC</b>	* International Diode Corp., 229 Cleveland Ave., Harrison, NJ 07029

★ New Manufacturers

\* See Section 19 for Sales Office Listings

## 21. MANUFACTURERS' CODES NAMES & ADDRESSES

### MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS (Cont'd)

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	
	53763	<b>IDI</b>	International Devices Inc., 3200 Pendleton, Santa Ana, CA 92704
		<b>IMTM</b>	Industria Mexicana Toshiba, S.A., Calzada de Guadalupe 303, Cuautitlan, Edo de Mexico, Mexico
CDPR	32293	<b>INL</b>	Intersil, Inc., 10710 N. Tantau Ave., Cupertino, CA 95014
CCBS	81483	<b>INR</b>	International Rectifier, Semicon, Div., 233 Kansas St., El Segundo, CA 90245
		<b>IPE</b>	In-Phase Electronics, 3198 "H" Airport Loop Dr., Costa Mesa, CA 92626
		<b>IPSI</b>	International Power Semiconductors, 6, S.D.F., SEEPZ, Andheri East Ltd., Bombay 400 096, India
CIT	14433	<b>ITTG</b>	* ITT Semiconductors (INTERMETALL), P.O. Box 840, D7800 Freiburg, West Germany
		<b>KPDI</b>	Keltron Power Devices Ltd., Shornur Rd., Mulangunnathukavu 680-581, Trichur Dist., Kerala, India
		<b>LAM</b>	Lambda Semiconductors, 121 International Dr., Corpus Christi, TX 78410
		<b>LTE</b>	* Lansdale Transistor & Electronics, Inc., 3600 W. Osborn Rd., Phoenix, AZ 85019
	K3985	<b>LUCB</b>	* Lucas Electrical Co., Ltd., E & S Div., Mere Green Rd., Sutton Coldfield, West Midlands, B75 5BN, England
	90201	<b>MAL</b>	Mallory Distributor Products Co., Div. of Mallory Components Group, Emhart Industries, Inc., P.O. Box 1284, Indianapolis, IN 46206
	01619	<b>MATJ</b>	* Matsushita Electronics Corp., Kotari Yakemachi 1, Nagaokakyo City, Kyoto, Japan
	S4140	<b>MEHK</b>	Micro Electronics Ltd., 38 Hung to Road, Kwun Tong, Kowloon, Hong Kong
	96341	<b>MIC</b>	Microwave Associates, Inc., Semiconductor Products, Burlington, MA 01803
	90144	<b>MITJ</b>	Mitsubishi Electric Corp., Kita-Itami Works, 4-1 Mizuhara, Itami-shi, Hyogo-Ken, Post Code 664, Japan
	A2970	<b>MISI</b>	Mistral S.p.A., SEDE Legale E. Amministrativa, Casella Postale 9, 04013 Latina Scala, Italy
CGG	04713	<b>MOTA</b>	Motorola Semiconductor Products, 725 So. Madison St., Tempe, AZ 85281
		<b>MPS</b>	★ Micro Power Systems, 3100 Alfred St., Santa Clara, CA 95050
CCWV	K8996	<b>MULB</b>	Mullard Limited, New Road, Mitcham, Surrey, England
		<b>NASG</b>	North American Semiconductor Co., Ltd., Scheuderstrasse 10, D-8000 Munich 19, West Germany
		<b>NECE</b>	NEC Electronics U.S.A., Electron Div., 252 Humboldt Ct., Sunnyvale, CA 94086
	S0543	<b>NECJ</b>	Nippon Electric Co., 484 3 Chome Tsukacoshi Saiwai-Ku, Kawasaki City, Japan
		<b>NJS</b>	New Jersey Semiconductor Products Co., Inc., 20 Commerce St., Springfield, NJ 07081
CCXP	27014	<b>NSC</b>	National Semiconductor Corp., 2900 Semiconductor Dr., Santa Clara, CA 95051
		<b>PHIB</b>	Philco Ind. Bras. De Semicondutores, Av. Gal. David Sarnoff, 3113, Contagem Minas Gerais, Brazil
CDGW	H0002	<b>PHIN</b>	* N.V. Philips Gloeilampenfabrieken, Elcoma Comm. Dept., Bldg. BA, Eindhoven, Netherlands
	S3331	<b>PIHS</b>	Piher International Corp., AVDA San Julian S/N, Apart. 177, Granollers, Barcelona, Spain
		<b>PLSB</b>	Plessey Semiconductors, Cheney Manor, Swindon, Wiltshire England SN2 2QW
		<b>PMI</b>	Precision Monolithics, Inc., 1500 Space Park Dr., Santa Clara, CA 95050
CDMA	33178	<b>PPC</b>	* PPC Products Corp., 7516 Central Industrial Dr., Riviera Beach, FL 33404
		<b>PSLI</b>	Punjab Semiconductor Devices Ltd., B-76, Ind. Area, Phase VII, S.A.S. Hagar, Mohali, India
		<b>PTC</b>	* Power Transistor Co., 800 W. Carson St., Torrance, CA 90502
CDPN	32953	<b>PTI</b>	* Power Tech., Inc., 0-02 Fair Lawn Ave., Fair Lawn, NJ 07410
CRC	18714	<b>RCA</b>	RCA Corporation, RCA Solid State Div., Route 202, Somerville, NJ 08876
		<b>RCAB</b>	RCA Solid State-Europe, Parc Industrial des Hauts Sarts, B-4400 Herstal, Belgium
		<b>RHM</b>	ROHM Corp., 8 Whatney, P.O. Box 19515, Irvine, CA 92713

★ New Manufacturers

\* See Section 19 for Sales Office Listings

## 21. MANUFACTURERS' CODES NAMES & ADDRESSES

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS (Cont'd)
	F1721	<b>RTCF</b>	* R.T.C. LaRadiotechnique-Compelec., 130 Ave. Ledru-Rollin, 75540 Paris Cedex 11, France (also under PHIN, Sec. 17)
CRP	07933	<b>RTN</b>	Raytheon Semiconductor, 350 Ellis St., Mountain View, CA 94042
	S3385	<b>SAKJ</b>	Sanken Electric Co., Ltd., 1-22-8 Nishi-Ikebukuro, Toshima-ku, Tokyo, Japan
	34156	<b>SCA</b>	* Semicoa, 333 McCormick Ave., Costa Mesa, CA 92626
		<b>SEI</b>	Semiconductors Inc., 1334 S. Killian Dr., Lake Park, FL 33403
		<b>SELI</b>	Semiconductors Ltd., Sub. M/S Advani Oerlikon Ltd., Ahmednager Rd., Mile 4/5, Poona-411014, India
CQN	13409	<b>SEN</b>	* Sensitron Semiconductors, 221 W. Industry Ct., Deer Park, NY 11729
		<b>SEP</b>	Semi-Processes Inc., 1885 Norman Ave., Santa Clara, CA 95050
	31338	<b>SES</b>	* Semitronics Corporation, 64 Commercial St., Freeport, NY 11520
	A3500	<b>SGAI</b>	SGS-ATES Componenti Elet. S.p.A., Stradale Primosole, 50, Catania, Italy 95121
		<b>SGL</b>	★ Silicon General Inc., 11651 Monarch St., Garden Grove, CA 92641
		<b>SHEJ</b>	Shindengen Electric Mfg. Co., Ltd., New Ohtemachi Bldg., 2-1, 2-chome, Ohtemachi, Chiyoda-ku, Tokyo 100, Japan
		<b>SIC</b>	Signetics Corporation, 811 E. Arques Ave., Sunnyvale, CA 94086
CCZL	D1362	<b>SIEG</b>	Siemens Aktiengesellschaft, 8 Munchen Balanstrasse 73 D8000, West Germany
CDBN	17856	<b>SIX</b>	Siliconix, Inc., 2201 Laurelwood Rd., Santa Clara, CA 95054
	K5057	<b>SLCB</b>	Semitron Cricklade Ltd., Cricklade SN6 6HQ, Wiltshire, England
		<b>SLD</b>	* Solid State Industries, Inc., 1060 Thomas Jefferson St., NW, Washington, DC 20007
		<b>SMLB</b>	* Semelab, 35 High St., Lutterworth, Leicestershire, England
CDCD	22229	<b>SOD</b>	* Solitron Devices, Inc., 8808 Balboa Ave., San Diego, CA 92123
CDCD	21845	<b>SODI</b>	* Solitron Devices, Inc., 1177 Blue Heron Blvd., Riviera Beach, FL 33304
	S0482	<b>SONY</b>	Sony Corp., Atsugi Han-Ji, Gaimu-Ku, P.O. Box 10, Tokyo A.P., Tokyo 149, Japan
CDEZ	30045	<b>SPC</b>	* Solid Power Corp., 440 Eastern Pkwy., Farmingdale, NY 11735
		<b>SPE</b>	* Space Power Electronics Inc., Jeffrey Lane, R.D. 1, Glen Gardner, NJ 08826
CSF	56289	<b>SPR</b>	* Sprague Electric Co., Pembroke Rd., Concord, NH 03301
	11911	<b>SSE</b>	Solid State Electronics Co., 18646 Parthenia, Northridge, CA 91324
CDVL	30043	<b>SSI</b>	Solid State Devices Inc., 14830 Valley View Ave., P.O. Box 577, La Mirada, CA 90637
		<b>SST</b>	* Solid State, Inc., 46 Farrand St., Bloomfield, NJ 07003
		<b>SSY</b>	Solid State Systems, 960 Koehl Ave., Union, NJ 07083
CCSX	07256	<b>STC</b>	* Silicon Transistor Corp., Katrina Rd., Chelmsford, MA 01824
	50891	<b>STI</b>	* Semiconductor Technology, Inc., 3131 Southeast Jay St., Stuart, FL 33494
	56032	<b>STL</b>	Stow Laboratories, Inc., Kane Industrial Dr., Hudson, MA 01749
	55718	<b>STR</b>	Syntar Industries, Inc., 3400 Brush Hollow Rd., Westbury, NY 11590
		<b>STX</b>	Supertex, Inc., 1225 Bordeaux Dr., Sunnyvale, CA 94086
		<b>SWT</b>	* Swampscott Electronics Co., Inc., 41 Spinale Rd., Swampscott, MA 01907
	S3278	<b>TAGS</b>	TAG Semiconductors, Ltd., Hohlstrasse 608/610, CH-8048, Zurich, Switzerland
		<b>TCE</b>	★ Teccor Electronics Inc., 1801 N. Hurd, Irving, TX 75062
CCZK	12498	<b>TCY</b>	Teledyne Crystalonics Inc., 147 Sherman St., Cambridge, MA 02140
		<b>THCS</b>	# Thomson CSF, Semiconductor Div., 6660 Variel Ave., Canoga Park, CA 91303
		<b>THEF</b>	Thomson-CSF/EFCIS, 6660 Variel Ave., Canoga Park, CA 91304 Thomson-CSF/EFCIS, 50 Rue Jean Pierre Timbaud, BP5 92403 Courbevoie, France

★ New Manufacturers

\* See Section 19 for Sales Office Listings



## 21. MANUFACTURERS' CODES NAMES & ADDRESSES

QPL MFR. DESIG.	FSCM/ NATO No.	D.A.T.A. MFRS. CODE	MANUFACTURERS IN ORDER OF D.A.T.A. CODE LETTERS (Cont'd)
		<b>TIC</b>	TIC Semiconductors, 18 W. 21st St., N.Y., NY 10010
CGO	01295	<b>TII</b>	Texas Instruments, Inc., Inquiry Answering Service, M/S 51, P.O. Box 225012, Dallas, TX 75265
		<b>TIIC</b>	Texas Instruments, Inc., 280 Center St., E. Richmond Hill, Ontario, Canada
	D2336	<b>TIID</b>	Texas Instruments Deutschland GmbH, 8050 Freising, Haggertystrasse 1, West Germany
	F2210	<b>TIIF</b>	Texas Instruments France, S.A., 06 Villeneuve-Loubet, A.M., France
	S0557	<b>TOSJ</b>	Toshiba Corp., c/o Toshiba Trans. Works, 1 Komukai Toshibacho, Saiwai-ku, Kawsaki-City, Kanagawa 210, Japan
		<b>TRWC</b>	TRW Capacitors, 301 W. O St., Ogallalha, NE 69153
CCNL	01281	<b>TRWS</b>	TRW Power Semiconductors, Inc., 14520 Aviation Blvd., Lawndale, CA 90260
		<b>TSAJ</b>	Tokyo Sanyo Electric Co., Ltd., Semicon. Div., Oizumimachi, Oragun, Gumma, Japan
CDAQ	15818	<b>TSC</b>	* Teledyne Semiconductor, 1300 Terra Bella Ave., Mountain View, CA 94043
	54485	<b>TSI</b>	* Transistor Specialtys, Inc., 3 Electronics Ave., Danvers, MA 01923
CDAS	12969	<b>UNI</b>	Unitrode Corp., 580 Pleasant St., Watertown, MA 02172
	33428	<b>UPI</b>	* UPI Semiconductor, Div. of United-Page, Inc., 481 Getty Ave., Paterson, NJ 07503
		<b>USSR</b>	V/O Electronzaganpostavka, 24/2 Usievicha, Moscow 125315, U.S.S.R.
		<b>UTS</b>	Uni-Tran Semiconductor Corp., R.D. 2, Lake Ariel, PA 18436
	D2540	<b>VALG</b>	Valvo GmbH, P.O. Box 993, D2000, Hamburg 1, West Germany (under PHIN, Sec. 16)
	IT958	<b>WAB</b>	* Walbern Devices, Inc., 1818 E. Elizabeth Ave., Linden, NJ 07036
		<b>WESB</b>	Westcode Semiconductors, P.O. Box 57, Chippenham, Wiltshire, England, SN151JL
CAY	05277	<b>WESY</b>	* Westinghouse Electric Corp., Semiconductor Dept., Youngwood, PA 15697

★ New Manufacturers

\* See Section 19 for Sales Office Listings

**INTERPRETER**  
**Symbols & Codes Explained**

# TRANSISTOR — INTERPRETER SYMBOLS & CODES EXPLAINED

## SYMBOLS & CODES COMMON TO MORE THAN ONE TECHNICAL SECTION

ALL VALUES ARE TYPICAL AND @ 25°C UNLESS OTHERWISE INDICATED BY COLUMN HEADINGS OR SYMBOLS.

FOLLOWING TYPE NO. & IN TYPE NO. CROSS-INDEX:

$\frac{\%}{\#}$   $\frac{\Delta}{\square}$  } Used when two or more manufacturers assign the same type number to different devices.

— RT ..... Indicates replacement type; consult manufacturer.

### TYPE NO.

- † — Switching type, also listed in Section 12
- ∅ — Chopper, also listed in Section 15, Category 10
- \* — These types also included elsewhere with other characteristics. See Type No. Cross Index for alternate line number.
- § — Radiation resistant devices, also listed in Section 15, Category 13.

### LINE NO.

- ▼ — New Type
- ◆ — Revised Specifications
- :: — Non-JEDEC type manufactured outside U.S.A.

### LEAD CODE

See Lead Code Identification Guide at end of Section 18.

### ENGLISH-RUSSIAN ALPHABET TRANSLITERATION FOR USSR TYPES

ENGLISH	RUSSIAN	ENGLISH	RUSSIAN
A	А	L	Л
B	Б	M	М
V	В	N	Н
G	Г	O	О
D	Д	P	П
E	Е	R	Р
SZ	Ж	S	С
I	И	T	Т
K	К	U	У

### STRUCTURE (All Sections except 6 & 7)

- A — Alloy
- AN — Annular
- D — Diffused or Drift
- DM — Diffused Mesa
- E — Epitaxial
- EA — Epitaxial Amular
- EM — Epitaxial Mesa
- F — Fused
- G — Grown
- GA — Gallium Arsenide
- H — Hometaxial
- MA — Micro Alloy
- MD — Micro alloy Diffused
- ME — Mesa

### MOS — Metal Oxide Silicon

- PA — Precision Alloy
- PC — Point Contact
- PD — Precision alloy Diffused
- PE — Planar Epitaxial
- PL — Planar
- PS — Passivated
- S — Surface barrier
- \* — Matched pair
- △ — Switching, other uses
- ∇ — Chopper, other uses
- ∅ — Noise figure 8db or below
- † — Plastic package
- % — Overlay
- # — Radiation resistant device
- \$ — Tetrode

SECTIONS 2, 3, 4, & 5

GERMANIUM PNP, GERMANIUM NPN  
SILICON PNP, SILICON NPN,  
LOWER POWER TRANSISTORS

SECTIONS 2, 3, 4 & 5

TYPE NUMBER	The manufacturers designated type number of the device.
MAX COLLECTOR DISSIPATION	The maximum allowable collector dissipation at 25°C ambient.
$f_{ab}$ ( $f_{hfb}$ )	Small-signal short-circuit forward current transfer ratio cutoff frequency, common-base (alpha cutoff frequency).
DERATE IN FREE AIR MAX TEMPERATURE	The reduction in rating of the maximum power dissipation of the device at 25°C ambient. The max safe operating temperature of the device at a specified condition. See explanation of codes under Tab-6.
ABS MAX RATINGS AT 25°C	$BV_{CBO}$ — Breakdown voltage, collector-to-base, ( $V_{(BR)CBO}$ ) emitter-open. $BV_{CEO}$ — Breakdown voltage, collector-to-emitter ( $V_{(BR)CEO}$ ) base-open. $BV_{EBO}$ — Breakdown voltage, emitter-to-base ( $V_{(BR)EBO}$ ) collector-open. $I_C$ — Collector current, DC Max collector cutoff current, emitter open, tested at max collector-to-base voltage DC.
MAX $I_{CBO}$ TYPICAL "h" PARAMETERS	BIAS: $V_{CB}$ — Collector-to-base voltage DC, test cond. for $h_{fe}$ . $I_E$ — Emitter current, DC, test cond. for $h_{fe}$ . $h_{fe}$ — Small-signal short-circuit forward transfer ratio, common-emitter. COMMON EMITTER: $h_{oe}$ — Small-signal open-circuit output admittance, common-emitter. $h_{ie}$ — Small-signal short-circuit input impedance, common-emitter. $h_{re}$ — Small-signal open-circuit reverse voltage transfer ratio, common-emitter. $C_{ob}$ — Output capacitance with input AC open-circuit, common, base.
STRUCTURE	The structure of the device. See pg TR-1 for explanation of codes.
DRAWING	The outline drawing number of the device.
LEAD CODE	See "Lead Code Identification Guide" at the end of Section 18 for an explanation of codes.



# TRANSISTOR — INTERPRETER SYMBOLS & CODES EXPLAINED

SECTION 6  
SECTION 7

SILICON FIELD EFFECT TRANSISTORS - P CHANNEL  
SILICON FIELD EFFECT TRANSISTORS - N CHANNEL (CONT'D)

SECTION 6  
SECTION 7

- 13  $\Delta$  -  $V_{GD}$   
 $\dagger$  -  $V_{DG}$   
 \* - ID in Amps-Condition for  $r(DS)$  on (col 17)

- 14 Following symbols apply to both columns, may only be used in one:

- 15  $\dagger$  - Pulsed  
 $\%$  - High frequency ( $Yfs$ ) (A/V)  
 $\square$  -  $Y_{FS}$  (A/V)  
 $\S$  -  $g_{fg}$   
 $\circ$  - ID (on) in Amps  
 $\Delta$  - Typical  
 \* - Transconductance (gm)

- 16  $\Delta$  -  $Y_{is}$   
 $\S$  -  $Y_{og}$   
 $\dagger$  - Not at given test conditions  
 $\%$  - Maximum  
 \* - Pulsed

- 17  $\%$  - Maximum  
 $\Delta$  - Not given at test conditions  
 $\dagger$  -  $R_{DS}$  (on) at  $V_{DS} = 0$

- 18 # -  $C_{iss}$  (Output Shorted)  
 $\Delta$  -  $C_{dgs}$   
 $\%$  - Not given at test conditions  
 \* - Typical  
 $\square$  -  $C_{dss}$   
 $\circ$  -  $C_{dgo}$   
 $\S$  -  $C_{igs}$   
 $\$$  -  $C_{rss}$   
 $\dagger$  -  $C_{gss}$   
 $\blacktriangledown$  - Typical

- 20 A - Ambient  
 C - Case  
 J - Junction  
 S - Storage

- 21 STRUCTURE  
 D - Diffused  
 E - Epitaxial  
 GA - Gallium Arsenide  
 Ge - Germanium  
 H - Hometaxial  
 M - MOS  
 PE - Planar Epitaxial  
 PL - Planar  
 VM - VMOS  
 # - Junction type  
 \* - Insulated gate (MOS type)  
 $\S$  - Matched pair  
 $\Delta$  - Switching, other uses  
 $\square$  - Chopper, other uses  
 $\circ$  - Noise figure 8db or below  
 $\dagger$  - Plastic package  
 $\$$  - Tetrode  
 $\%$  - Insulated gate (MNOS type)  
 $\blacklozenge$  - Diode protected gates

NOTE: All devices silicon unless otherwise indicated

SECTIONS 8, 9, 10 & 11

GERMANIUM PNP, GERMANIUM NPN,  
SILICON PNP, SILICON NPN  
HIGH POWER TRANSISTORS

SECTIONS 8, 9, 10 & 11

TYPE NUMBER  
 MIN DERATE J TO C  
 MAX  $P_C$  FREE AIR AT 25°C  
 MAX TEMPERATURE

ABSOLUTE MAX RATINGS AT 25°C

MAX  $I_{CB0}$   
 $h_{FE}$

$f_{\alpha e}$  ( $f_{hfe}$ )  
 MAX SAT RES

$t_r$   
 STRUCTURE  
 DRAWING

LEAD CODE

The manufacturers designated type number of the device.

The reduction in rating of the maximum power dissipation of the device at 25°C ambient.

The maximum allowable collector dissipation at 25°C ambient.

The max safe operating temperature of the device at a specified condition. See explanation of codes under Tab-5.

$I_C$  - Collector current, DC.

$I_b$  - Base current, DC.

$BV_{CB0}$  - Breakdown voltage, collector-to-base, ( $V_{(BR)CB0}$ ) emitter-open.

$BV_{CBO}$  - Breakdown voltage, emitter-to-base, ( $V_{(BR)EBO}$ ) collector-open.

$BV_{CEO}$  - Breakdown voltage, collector-to-emitter, ( $V_{(BR)CEO}$ ) base-open.

Max collector cutoff current, emitter-open at max collector-to-base voltage DC, 25°C ambient.

BIAS:

$V_{CB}$  - Collector-to-base voltage, DC, test condition for  $h_{FE}$ .

$I_C$  - Collector current, DC, test condition for  $h_{FE}$ .

MIN/MAX:

Static forward current transfer ratio, common-emitter.

Small-signal short-circuit forward current transfer ratio cutoff frequency, common-emitter.

Maximum saturation resistance of the device.

Rise time.

The structure of the device. See page TR-1 for explanation of codes.

The outline drawing number of the device.

See "Lead Code Identification Guide" at the end of section 18 for an explanation of codes.

Continued on next page

# INTERPRETER — TRANSISTOR SYMBOLS & CODES EXPLAINED

SECTION 6  
SECTION 7

SILICON FIELD EFFECT TRANSISTORS - P CHANNEL  
SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

SECTION 6  
SECTION 7

TYPE NUMBER	The manufacturers designated type number of the device.
MAX COLLECTOR DISSIPATION	The maximum allowable collector dissipation at 25°C ambient.
MAX $V_p$	Max drain-to-source pinch-off voltage, tested at drain current DC equals 0V.
$V_{DS}$	Drain Source - Voltage, DC, test condition for max $V_p$ .
ABS MAX RATINGS AT 25°C	$BV_{DSS}$ - Breakdown voltage, drain-to-source, gate (V(BR)DSS) Short circuited to source. $BV_{GSS}$ - Breakdown voltage, gate-to-source, (V(BR)GSS) $I_D$ - Drain current, DC. $I_G$ - Gate current, DC.
MAX $I_{DSS}$	Max zero-gate voltage drain current, tested at gate-source voltage equal to 0V and drain-source voltage greater than $V_p$ .
MAX $I_{GSS}$	Max gate current, drain short-circuited to source, tested at gate-source voltage greater than $V_p$ and drain-source voltage equal to 0V.
PARAMETERS AT 25°C	TEST CONDITION FOR COMMON SOURCE: $V_{GS}$ - Gate-to-source voltage, DC. $V_{DS}$ - Drain-source voltage. COMMON SOURCE: $g_{fs}$ - Min/max common-source small signal forward transfer conductance. $Y_{OS}$ - Common-source small-signal short-circuit output admittance. $r_{(ds)}$ on-static drain-source. Max $C_{is}$ - Short-circuit input capacitance, ( $C_{iss}$ ) common source.
DERATE IN FREE AIR MAX TEMPERATURE	The reduction in rating of the maximum power dissipation of the device at 25°C ambient. The max safe operating temperature of the device at a specified condition. See explanation of codes below Tab-20.
STRUCTURE	The structure of the device. See page TR-1 for explanation of codes.
DRAWING	The outline drawing number of the device.
LEAD CODE	See "Lead Code Identification Guide" at the end of Section 18 for an explanation of codes.

## 6. SILICON FIELD EFFECT TRANSISTORS - P CHANNEL 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

LINE No.	TYPE No.	1 MAX DEVICE DISS @ 25°C (W)	MAX $V_p$		ABS MAX RATINGS @ 25°C		MAX $I_{DSS}$		MAX $I_{GSS}$		TEST COND		PARAMETERS @ 25°C COMMON SOURCE		DERATE IN FREE AIR MAX TEMP (W/°C)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	# C O A D E	
			$I_{d=0}$ (V)	$V_{ds}$ (V)	$BV_{DSS}$ (V)	$BV_{GSS}$ (V)	$I_D$ (A)	$I_G$ (A)	$V_{GS}$ (V)	$V_{DS}$ (V)	$V_{GS}$ (V)	$V_{DS}$ (V)	$g_{fs}$ (mhos)	Yes					$r_{(DS)}$ on (Ω)
★	★	2	3	4	5	6	7	10	11	12	13	14	15	16	17	18	20	21	★

- 2 - Matched type, also listed in Section 15, Category 6  
♦ - Phototransistor  
NOTE: For dual gate devices, Gate 1 specifications apply.
- 3 - Δ - With infinite heat sink (applies also to Derate column)  
† - Above 25°C; for additional information, consult manufacturer.  
# - Per Channel
- 4 - † -  $V_{GS}$  (Cut Off)  
Δ -  $V_{GST}$  (Threshold)  
% - Typical  
# - Minimum  
∅ -  $I_D$  in mA
- 5 - Δ - Depletion Mode, Type A  
\$ - Depletion-Enhancement Mode, Type B  
\* - Enhancement Mode, Type C  
K - X 1000
- 6 - Δ -  $BV_{DSS}$   
† -  $BV_{DSX}$   
\* -  $BV_{DGS}$   
∅ -  $BV_{DGO}$   
# - Min  
S - Typical  
K - X 1000
- 7 - Δ -  $BV_{DGO}$   
\* -  $BV_{DGS}$   
∅ -  $BV_{GSS}$   
S - Typical  
# - Minimum  
K - X 1000
- 10 - Δ -  $I_{DSS}$  @  $V_{GS} = 0$  and  $V_{DS} \approx V_p$   
∅ -  $V_{GS} > 0$   
# - Minimum  
\* - Typical  
% - Pulsed  
§ -  $V_{GS} < 0$
- 11 - Δ -  $I_{GDO}$
- 12 - ∅ -  $I_D$  in mA  
□ -  $I_D$  in Amps  
\* - Condition for  $r_{(DS)}$  on (col 17)

Continued on next page

★ SYMBOLS & CODES AT TOP OF FIRST INTERPRETER PAGE



# INTERPRETER — TRANSISTOR SYMBOLS & CODES EXPLAINED

SECTIONS 8, 9, 10 & 11

GERMANIUM PNP, GERMANIUM NPN,  
SILICON PNP, SILICON NPN  
HIGH POWER TRANSISTORS (CONT D)

SECTIONS 8, 9, 10 & 11

## 8. GERMANIUM PNP - 9. GERMANIUM NPN - 10. SILICON PNP - 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No	TYPE No	MIN DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX RATINGS @ 25°C					MAX Icbt @ MAX Vcb @ 25°C (A)		BIAS Vcb Ic (V) (A)		hFE MIN MAX		f <sub>oe</sub> (Hz)	MAX SAT RES (Ω)	tr (s)	STRUCTURE	DWG s/a TO200 Ser.	#	C O A D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN	MAX								

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

- 3** Also applies to J to F (Junction to Flange)  
The following symbols indicate temp at which derating starts:
- † - 40°C
  - \* - 45°C
  - # - 50°C
  - ∧ - 60°C
  - § - 75°C
  - ◆ - 80°C
  - § - 100°C
  - ∅ - Free Air
  - ▼ - Typical Value
  - △ - > 100°C

- 4** ∅ - With infinite heat sink  
The following symbols indicate conditions at which Pc is measured:
- † - 40°C
  - \* - 45°C
  - # - 50°C
  - ∧ - 60°C
  - § - 70°C
  - ◆ - 80°C
  - § - 100°C
  - ▼ - Power output
  - △ - Pulsed
  - % - Min.

- 5**
- \* - 50-65°C
  - ∅ - 70-80°C
  - # - 85-100°C
  - ◆ - 110-125°C
  - † - 130-135°C
  - § - 140-165°C
  - § - 170-200°C
  - ▼ - Over 200°C
  - A - Ambient
  - C - Case
  - J - Junction
  - S - Storage

- 6**
- ∅ - I<sub>E</sub>
  - # - Pulsed or peak
  - † - At Temp. 25°C case
  - § - Minimum
  - ▼ - Indicates Negative Value

- 7**
- ∅ - I<sub>E</sub>
  - # - Pulsed
  - § - Minimum
  - ▼ - Indicates Negative Value

- 8**
- † - At temp. 25°C case
  - § - Minimum
  - ▼ - Indicates Negative Value

- 9**
- ∅ - With infinite heat sink
  - # - BV<sub>CEX</sub> or punch-through
  - ∅ - BV<sub>CEs</sub>
  - § - BV<sub>CEr</sub>
  - ∧ - BV<sub>ceo</sub>(SUS)
  - \* - Pulsed
  - § - Minimum
  - † - At temp. 25°C case
  - ◆ - Indicates values given for BV<sub>cbo</sub>, BV<sub>ceo</sub>, and BV<sub>ebo</sub>, are not breakdown voltages.
  - ▼ - Indicates Negative Value

- 10**
- ∅ - At V<sub>CB</sub> < max. V<sub>CB</sub> (see mfr. spec.)
  - # - I<sub>CEX</sub>
  - § - I<sub>CEs</sub>
  - \* - I<sub>CEr</sub>
  - △ - I<sub>CEO</sub>
  - ▼ - Indicates Negative Value
  - ∧ - I<sub>CEV</sub>
  - † - At temp. > 25°C
  - ◆ - At temp. 25°C case
  - § - Typical

- 12**
- ∅ - V<sub>CE</sub>
  - ▼ - Indicates Negative Value

- 13**
- △ - I<sub>E</sub>
  - ∅ - I<sub>B</sub>
  - ▼ - Indicates Negative Value

- 14**
- † - h<sub>FE</sub>
  - # - Pulsed
  - ∅ - Typical
  - \* - Available to selected range narrower than indicated

- 15**
- # - Rated max. operating frequency
  - † - f<sub>αB</sub>
  - § - Gain bandwidth product (f<sub>T</sub>)
  - \* - Maximum frequency of oscillation
  - ∅ - Figure of merit (frequency for unity power gain)
  - △ - Minimum
  - ∧ - Maximum

- 16**
- ▼ - Typical value
  - # - Pulsed

- 17**
- ∧ - Maximum
  - ∅ - t<sub>d</sub> + t<sub>r</sub> = T<sub>on</sub>
  - § - t<sub>s</sub>
  - △ - t<sub>d</sub> + t<sub>r</sub> + t<sub>f</sub> = Sat. Sw. Time
  - # - t<sub>f</sub>
  - † - t<sub>s</sub> + t<sub>f</sub> = T<sub>off</sub>
  - \* - T<sub>on</sub> + T<sub>off</sub>

★ SYMBOLS & CODES AT TOP OF FIRST INTERPRETER PAGE

# TRANSISTOR — INTERPRETER SYMBOLS & CODES EXPLAINED

SECTION 12

SWITCHING TRANSISTORS

SECTION 12

<b>TYPE NUMBER</b>	The manufacturers designated type number of the device.
<b>fab (<math>f_{hfb}</math>)</b>	Small-signal short-circuit forward current transfer ratio cutoff frequency, common-base (alpha cutoff frequency).
<b>MAX RISE TIME</b>	Maximum rise time.
<b>MAX DELAY TIME</b>	Maximum delay time.
<b>MAX STORE TIME</b>	Maximum storage time.
<b>MAX FALL TIME</b>	Maximum fall time.
<b>MAX <math>P_c</math> IN FREE AIR</b>	The maximum allowable collector dissipation at 25°C ambient.
<b><math>h_{FE}</math></b>	BIAS: $V_{CB}$ — Collector-to-base voltage, DC, test condition for $h_{FE}$ . $I_e$ — Emitter current, DC, test condition for $h_{FE}$ .
<b>MAX SAT RES</b>	MIN/MAX: Static forward current transfer ratio, common-emitter.
<b><math>C_{ob}</math></b>	The maximum saturation resistance of the device.
<b><math>r_{bb} \times C_{ob}</math> (<math>r_b' C_c</math>)</b>	Output capacitance with input AC open-circuit, common-base.
<b>STRUCTURE</b>	Collector-Base Time constants
<b>MATERIAL</b>	The structure of the device. See page TR-1 for explanation of codes.
<b>MAX TEMPERATURE</b>	The material of which the device is composed. See explanation of codes under Tab-16.
<b>DRAWING</b>	The max safe operating temperature of the device at a specified condition. See explanation of codes under Tab-17.
<b>LEAD CODE</b>	The outline drawing number of the device. See "Lead Code Identification Guide" at the end of Section 18 for an explanation of codes.

## 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX $P_c$ IN FREE AIR @ 25°C (W)	BIAS			MAX SAT RES. (Ω)	Cob (F)	$r_{bb} \times C_{ob}$ (s)	STRUCTURE P-NPN N-NPN	MATERIAL	MAX TEMP (°C)	DWG # Y200 s/a TO200 Ser.	LEAD CODE
								Vcb (V)	Ie (A)	hFE								
3			4	5	6	7	8	9	10	11	12	13	14	15	16	17		

- 3
- † —  $f_{\alpha e}$
  - § — Gain Bandwidth product ( $f_T$ )
  - \* — Maximum frequency of oscillation
  - ∅ — Figure of merit (frequency for unity power gain)
  - # — Rated operating frequency
  - △ — Minimum
  - ▣ — Maximum

- 4
- § — Charge storage time constant
- 5
- ◆ — Stored base charge — picocoulomb
  - ∅ — Total switching time
  - ∅ —  $T_{on} = t_r + t_d$
  - † — Typical value

- 6
- ∅ —  $T_{off} = t_s + t_f$
- 7
- † — Typical value
  - \* —  $T_{on} + T_{off} = t_d + t_r + t_f + t_s$
  - ▣ —  $T_d$  (off)

- 8
- ∅ — With infinite heat sink
- The following symbols indicate temperature at which derating starts:
- † — 40°C
  - \* — 45°C
  - # — 50°C
  - ▣ — 60°C
  - § — 70°C
  - ◆ — 80°C
  - § — 100°C or greater
  - △ — Pulsed

- 9
- ∅ —  $V_{CE}$
- 10
- ∅ —  $I_c$
  - △ —  $I_B$

- 11
- † —  $h_{fe}$
  - # — Pulsed
  - △ — Minimum
  - ▣ — Maximum
  - \* — Available to selected range narrower than indicated
  - § —  $Y_{fs}$  in millimho (FETs only). Bias values are  $V_{DS}$  and  $I_D$ .

- 12
- § —  $R_{on}$  (FETs only)
  - # — Pulsed
  - ∇ — Typical value
  - \* —  $r_{ds}$  (on)

- 13
- ▣ — Maximum
  - § —  $C_{cb}$
  - § —  $C_{iss}$  (FETs only)

- 14
- † —  $r'_{bb}$

- 15
- N — NPN or "N" channel
  - P — PNP or "P" channel
  - § — Field effect transistor

- 16
- Ge — Germanium
  - Si — Silicon

- 17
- A — Ambient
  - C — Case
  - J — Junction
  - S — Storage

SYMBOLS & CODES AT TOP OF FIRST INTERPRETER PAGE

# INTERPRETER — TRANSISTOR SYMBOLS & CODES EXPLAINED

SECTION 13

DARLINGTON TRANSISTORS

SECTION 13

TYPE NUMBER	The manufacturers designated type number of the device.
POLARITY AND MATERIAL	See explanation of codes under Tab-3.
MIN DERATE J TO C	The reduction in rating of the maximum power dissipation of the device at 25°C ambient.
$h_{FE}$	MIN/MAX: Static forward current transfer ratio, common-emitter.
ABSOLUTE MAX RATINGS AT 25°C	TEST CONDITIONS: $V_{CE}$ — Collector-to-emitter voltage DC. $I_C$ — Collector-current, DC. $I_C$ — Collector-current, DC. $I_B$ — Base-current, DC. $BV_{CBO}$ — Breakdown voltage, collector-to-base, ( $V_{(BR)CBO}$ ) emitter-open. $BV_{EBO}$ — Breakdown voltage, emitter-to-base, ( $V_{(BR)EBO}$ ) collector-open. $BV_{CEO}$ — Breakdown voltage, collector-to-emitter, ( $V_{(BR)CEO}$ ) base-open. The maximum allowable collector dissipation at 25°C case temperature.
MAX COLLECTOR (CASE) DISSIPATION	The max safe operating temperature of the device at a specified condition. See explanation of codes under Tab-15.
MAX TEMPERATURE	Maximum collector cutoff current, emitter-open at maximum collector-to-base voltage, 25°C ambient.
MAX $I_{CBO}$	Transition Frequency; frequency at which small-signal forward current transfer ratio (common-emitter) extrapolates to unity.
$f_T$	Maximum saturation resistance of the device.
MAX SAT RES	The structure of the device. See page TR-1 for explanation of codes.
STRUCTURE	The outline drawing number of the device.
DRAWING NUMBER	See "Lead Code Identification Guide" at the end of Section 18 for an explanation of codes.
LEAD CODE	

## 13. DARLINGTON TRANSISTORS

IN ORDER OF (1) MIN DERATING FACTOR  
(2) MIN  $h_{FE}$  (3) IC TEST (4) TYPE No.

LINE No	4	TYPE No	POL & MAT N-NPN P-PNP	1   MIN DERATE J TO C (W C)	h <sub>FE</sub>		ABSOLUTE MAX RATINGS @ 25°C					MAX COLL (CASE) DISS-Pc (W)	M A X T °C	MAX ICBO @ MAX VCB @ 25°C (A)	f <sub>T</sub> (Hz)	MAX SAT RES (Ω)	S T U R R U E C	DWG No	L C O A D E
					2-TYP	MAX 2-TYP	VCE 2VCB (V)	IC 2IB (A)	IC IE (A)	IB IE (A)	BVCBO (V)								

- 3 N — NPN  
P — PNP  
Si — Silicon  
Ge — Germanium  
C — Complementary pair

- 4 Also applies to J to F (Junction to Flange)  
† — 40°C      ◆ — 80°C  
\* — 45°C      \$ — 100°C  
# — 50°C      ∅ — Free Air  
□ — 60°C      ▼ — Typical Value  
§ — 75°C      △ — > 100°C

Symbols indicate temp. at which derating starts.

- 5 † —  $h_{FE}$   
6 # — Pulsed  
∅ — Typical  
\* — Available to selected range narrower than indicated

- 7 ∅ —  $V_{CB}$   
▼ — Indicates Negative Value

- 8 △ —  $I_E$   
∅ —  $I_B$   
▼ — Indicates Negative Value

- 9 ∅ —  $I_E$   
# — Pulsed or Peak  
† — At temp. 25°C case  
\$ — Minimum  
▼ — Indicates Negative Value

- 10 ∅ —  $I_E$   
# — Pulsed  
\$ — Minimum  
▼ — Indicates Negative Value

- 11 † — At temp. 25°C case

- 12 \$ — Minimum  
▼ — Indicates Negative Value

- 13 # —  $BV_{CEX}$  or punch-through  
∅ —  $BV_{CES}$   
\$ —  $BV_{CER}$   
\$ — Minimum  
\* — Pulsed  
□ —  $BV_{CEO}$  (SUS)  
† — At temp. 25°C case  
◆ — Indicates values given for  $BV_{CBO}$ ,  $BV_{CEO}$ , and  $BV_{EBO}$ , are not breakdown voltages.  
▼ — Indicates Negative Value

- 14 The following symbols indicate temp. at which derating starts:  
† — 40°C  
\* — 45°C  
# — 50°C  
□ — 60°C  
§ — 70°C  
◆ — 80°C  
\$ — 100°C  
∅ — At ambient temp.  
▼ — Power output  
△ — Pulsed  
% — Minimum

- 15 \* — 50-65°C      \$ — 170-200°C  
∅ — 70-80°C      ▼ — Over 200°C  
# — 85-100°C      A — Ambient  
◆ — 110-125°C      C — Case  
† — 130-135°C      J — Junction  
\$ — 140-165°C      S — Storage

★ SYMBOLS & CODES AT TOP OF FIRST INTERPRETER PAGE

# TRANSISTOR — INTERPRETER SYMBOLS & CODES EXPLAINED

SECTION 13

DARLINGTON TRANSISTORS (CONT'D)

SECTION 13

- 16**
- ∅ - At  $V_{CB} < \text{Max. } V_{CB}$  (see Mfr. spec.)
  - # -  $I_{CEX}$
  - § -  $I_{CES}$
  - \* -  $I_{CER}$
  - △ -  $I_{CEO}$
  - ∅ -  $I_{CEV}$
  - ⌘ - Typical
  - ◆ - At temp. 25°C case
  - † - At temp. > 25°C
  - ▼ - Indicates Negative Value

- 17**
- # - Rated max. operating frequency
  - † -  $f_{\alpha b}$
  - \* - Max. frequency of oscillation
  - ∅ - Figure of merit (frequency for unity power gain)
  - △ - Minimum
  - ⌘ -  $f_{\alpha e}$
  - ∅ - Maximum

- 18**
- ▼ - Typical value
  - # - Pulsed

SECTION 14

TRANSISTOR ARRAYS

SECTION 14

TYPE NO.	The manufacturers designated type number for the device.
DATA SHEET	References page number of manufacturers supplied data sheet.
TECHNOLOGY	The main level of integration (structure) of the device.
TRAN PER DEV	The number of individual transistors available.
BASIC CKT CONNECT	A code showing the basic type of circuit connection (configuration) utilized. (See code listing.)
SPECIAL CKT FEATURES	A code showing special features or characteristics of the circuits. (See code listing.)
NO. SPEC CKT	The number of special circuits available per device.
MAX IC	Maximum allowable collector current.
MAX VCEO	Maximum allowable collector to emitter potential with the base lead open circuit.
POLAR AND MATER	Polarity (NPN/PNP) of transistors used and material used in manufacturing.
MINIMUM hFE	The ratio of the DC output current to the DC input current, for common emitter configuration.
@ IC	The collector current at which the minimum hFE is specified.
@ VCE	The collector emitter voltage at which the minimum hFE is specified.
MIN FT	Transition frequency or frequency at which hfe extrapolates to unity.
MAX tON	The sum of $t_r$ (rise time) and $t_d$ (delay time) where $t_r$ is defined as the time duration during which the leading edge of a pulse is increased from 10% to 90% of its maximum amplitude and $t_d$ is defined as the time interval from the point at which the leading edge of the input pulse has reached 10% of its maximum amplitude to the point at which the leading edge of the output pulse has reached 10% of its maximum amplitude.
TOTAL PKG DISS	The maximum allowable power dissipation of the entire device.
TEMP LOW	Minimum allowable ambient operating temperature.
TEMP HIGH	Maximum allowable ambient operating temperature.
LOGIC DWG NO.	Indicates where schematic or logic diagram may be found.
OUTLINE DWG NO.	Indicates where device packaging information may be found.

## 14. TRANSISTOR ARRAYS

IN ORDER OF: (1) TECHNO. (2) TRANS./DEVICE  
(3) MAX IC (4) MAX V<sub>ceo</sub> (5) TYPE NO.

LINE No.	TYPE NO.	DATA SHT.	TECH	ARRAY CONFIG.			MAX. I <sub>c</sub> (A)	MAX. V <sub>ceo</sub> (V)	POLARITY AND MAT'L.	MINIMUM hFE		DYNAMIC CHARACTER		MAX. OPER. POWER DISS. (W)	OPER. TEMP. RANGE (°C)	DRAWINGS	
				TIC	SPECIAL CKT. FEAT.	NC OK				@ I <sub>c</sub> (A)	@ V <sub>ce</sub> (V)	MIN. FT (Hz)	MAX. Ton (S)			LOGIC OR BLOCK	OUTLINE
★			★	5	6		9	10	11	12	13	15	16	17	★	★	★

★ SYMBOLS & CODES AT TOP OF FIRST INTERPRETER PAGE

Continued on next page

# INTERPRETER — TRANSISTOR SYMBOLS & CODES EXPLAINED

SECTION 14

TRANSISTOR ARRAYS (CONT'D)

SECTION 14

- 5 6 CC — Common Collector
- CE — Common Emitter
- CG — Common Gate
- DA — Darlington
- DF — Differential
- IN — Independent
- MP — Matched Pair
- VA — Varactor input
- CM — CMOS FET

- 11 N — NPN or N Channel
- P — PNP or P Channel
- Si — Silicon

- 9 a — Per Transistor
- b — Per Darlington Pair
- c — ICBO

- 10 a — Per Transistor
- \* — Minimum

- 12 † — Typical
- f —  $h_{fe}$

- 13 \* — Negative

- 15 † — Typical

- 16 † — Typical
- R — Rise time

- 17 † — Typical
- $\Delta$  — Power dissipation per transistor

SECTION 15

MISCELLANEOUS TRANSISTORS

SECTION 15

- TYPE NUMBER      The manufacturers designated type number of the device.
- CATEGORY        USE:  
The type/main function of the device.
- STRUCTURE:  
The structure of the device. See Tab-4 and page TR-1 for an explanation of codes.
- MAT                The material of which the device is composed. See explanation of codes under Tab-5.
- DRAWING         The outline drawing number of the device.
- LEAD CODE       See "Lead Code Identification Guide" at the end of Section 18 for explanation of codes.
- DESCRIPTION     A brief description of the devices main characteristics and/or parameters.

## 15. MISCELLANEOUS TRANSISTORS

IN ORDER OF: (1)CATEGORY,(2)TYPE NO.

LINE No.	TYPE No.	1 CATEGORY	2 USTRUCTURE	3 M DWG #	4 L C E O A D D E	DESCRIPTION
				Y200 s/a TO200 Ser.		

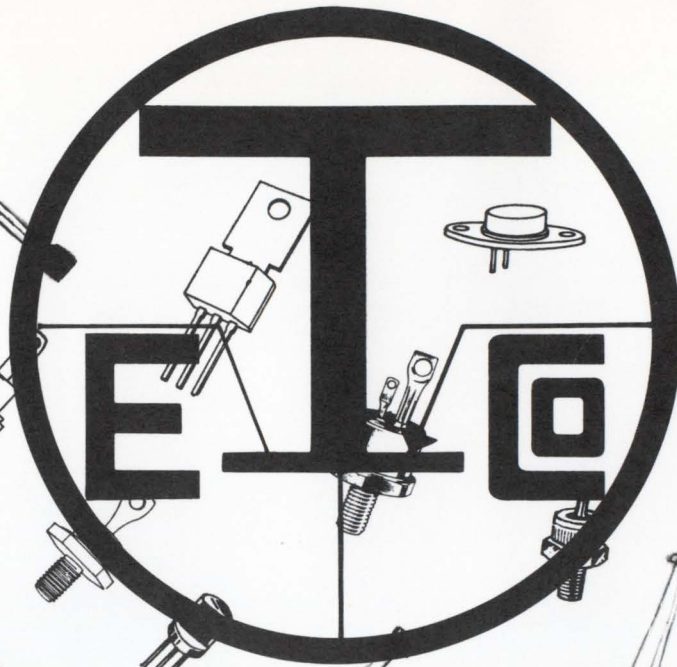
- ★
- ★
- 3
- 4
- 5
- ★

- 3 1 — Avalanche Mode
- 2 — Bi-directional
- 3 — Field effect
- 5 — Complementary symmetry (PNP & NPN) matched pair
- 6 — Matched pair
- 7 — Phototransistor (now listed in the OPTOELECTRONICS D.A.T.A.BOOK)
- 9 — Unijunction:  
N—N-type emitter (P-type base)  
P—P-type emitter (N-type base)
- 10 — Chopper
- 11 — Unmatched composite (dual/quad)
- 13 — Radiation resistant devices
- 14 — Pressure/temperature sensors
- 15 — Transistor chips
- 16 — Switching
- 18 — RF power amplifier (rated below 300 MHz)
- 19 — Other
- 4 N — NPN or N channel
- P — PNP or P channel
- 5 GA — Gallium Arsenide
- Ge — Germanium
- Si — Silicon
- GS — Germanium and Silicon (composite)
- Mo — Molybdenum

★ — Symbols and codes explained on pgs. 1 and 2 of interpreter pg.

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JAN2N1481	JAN2N3439	JAN2N5039
JAN2N1482	JANTX2N3439	JANTX2N5039
JAN2N1483	JAN2N3440	JAN2N5671
JANTX2N1483	JANTX2N3440	JANTX2N5671
JAN2N1484	JAN2N3442	JAN2N5672
JANTX2N1484	JANTX2N3442	JANTX2N5672
JAN2N1485	JAN2N3584	JAN2N6249
JANTX2N1485	JANTX2N3584	JANTX2N6249
JAN2N1486	JAN2N3585	JAN2N6250
JANTX2N1486	JANTX2N3585	JANTX2N6250
JAN2N1488	JAN2N3879	JAN2N6251
	JANTX2N3879	JANTX2N6251

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