EPITAXIAL-BASE N-P-N & P-N-P POWER TYPES

I_C to 15 A . . . P_T to 200 W . . . V_{CE} to 125 V

I_c = −3.5 max. P_T = 10 W max. (TO-39)	I_c = 6 A max. P_T = 40 W max. (TO-66)**	I_c = −6 A max. P_T = 40 W max. (TO-66)**	I_c = 7 A max. P_T = 40 W max. VERSAWATT (TO-220)	I_c = −7 A max. P_T = 40 W max. VERSAWATT (TO-220)	I_c = 15 A max. P_T = 125 W max. (TO-3)	I_c = −15 A max. P_T = 125 W max. (TO-3)	I_c = 15 A max. P_T = 75 W max. VERSAWATT (TO-220)	I_c = −15 A max. P_T = 75 W max. VERSAWATT (TO-220)
90 x 90▲	90 x 90	90 x 90	90 x 90	90 x 90	150 x 150	150 x 150	150 x 150	150 x 150
Family Designation								
2N5781 [P-N-P]	**2N6372** [N-P-N]	**2N5954** [P-N-P]	**2N6292** [N-P-N]	**2N6107** [P-N-P]	**2N6472** [N-P-N]	**2N6248** [P-N-P]	**2N6488** [N-P-N]	**2N6491** [P-N-P]
2N5783 $V_{CER(SUS)}$ = −45 V h_{FE} = 20-100 @ −1.6 A f_T = 8 MHz min. CT File No. 413E	**2N6374** $V_{CER(SUS)}$ = 45 V h_{FE} = 20-100 @ 3 A f_T = 4 MHz min. File No.675	**2N5956** $V_{CER(SUS)}$ = −45 V h_{FE} = 20-100 @ −3 A f_T = 5 MHz min. CT File No.675	**2N6288** **2N6289** $V_{CER(SUS)}$ = 40 V h_{FE} = 30-150 @ 3 A f_T = 4 MHz min. File No.676	**2N6110** **2N6111** $V_{CER(SUS)}$ = −40 V h_{FE} = 30-150 @ −3 A f_T = 10 MHz min. CT File No.676	**2N6470** $V_{CER(sus)}$=45V h_{FE}=20-150 @ 5 A f_T=5 MHz typ. File No. 677	**2N6469** $V_{CER(sus)}$= −45V h_{FE}=20-150 @ −5 A f_T=6 MHz min. CT File No. 677	**2N6486** $V_{CER(sus)}$=50V h_{FE}=20-150 @ 5 A f_T=5 MHz typ. File No. 678	**2N6489** $V_{CER(sus)}$= −50V h_{FE}=20-150 @ −5A f_T= 5 MHz typ. File No. 678
2N5782 $V_{CER(SUS)}$ = −65 V h_{FE} = 20-100 @ −1.2 A f_T = 8 MHz min. CT 413E	**2N6373** $V_{CER(SUS)}$ = 65 V h_{FE} = 20-100 @ 2.5 A f_T = 4 MHz min. 675	**2N5955** $V_{CER(SUS)}$ = −65 V h_{FE} = 20-100 @ −2.5 A f_T = 5 MHz min. CT 675	**2N6290** **2N6291** $V_{CER(SUS)}$ = 60 V h_{FE} = 30-150 @ 2.5 A f_T = 4 MHz min. 676	**2N6108** **2N6109** $V_{CER(SUS)}$ = −60 V h_{FE} = 30-150 @ −2.5 A f_T = 10 MHz min. CT 676	**2N6471** $V_{CER(sus)}$=65V h_{FE}=20-150 @ 5A f_T= 5MHz typ. 677	**2N6246** $V_{CER(SUS)}$ = −65 V h_{FE} = 20-150 @ −5 A f_T = 6 MHz min. 677	**2N6487** $V_{CER(sus)}$=70V h_{FE}=20-150 @ 5A f_T= 5 MHz typ. 678	**2N6490** $V_{CER(sus)}$= −70V h_{FE}=20-150 @ −5A f_T= 5 MHz typ. 678
2N5781 $V_{CER(SUS)}$ = −80 V h_{FE} = 20-100 @ −1 A f_T = 8 MHz min. CT 413E	**2N6372** $V_{CER(SUS)}$ = 85 V h_{FE} = 20-100 @ 2 A f_T = 4 MHz min. 675	**2N5954** $V_{CER(SUS)}$ = −85 V h_{FE} = 20-100 @ −2 A f_T = 5 MHz min. 675	**2N6292** **2N6293** $V_{CER(SUS)}$ = 80 V h_{FE} = 30-150 @ 2 A f_T = 4 MHz min. 676	**2N6106** **2N6107** $V_{CER(SUS)}$ = −80 V h_{FE} = 30-150 @ −2 A f_T = 10 MHz min. CT 676	**2N6472** $V_{CER(sus)}$=85V h_{FE}=20-150 @ 5A f_T= 5 MHz typ. 677	**2N6247** $V_{CER(SUS)}$ = −85 V h_{FE} = 20-150 @ 5 A f_T = 6 MHz min. CT 677	**2N6488** $V_{CER(sus)}$=90V h_{FE}=20-150 @ 5A f_T= 5 MHz typ. 678	**2N6491** $V_{CER(sus)}$= −90V h_{FE}= 20-150 @ −5A f_T= 5 MHz typ. 678
			2N6473 $V_{CER(sus)}$=110V h_{FE}=30-150 @ 1.5A f_T=5 MHz typ. 676	**2N6475** $V_{CER(sus)}$=110V h_{FE}=30-150 @ −1.5A f_T=5 MHz typ. 676		**2N6248** $V_{CER(SUS)}$ = −105 V h_{FE} = 20-100 @ −5 A f_T = 6 MHz min. CT 677		
			2N6474 $V_{CER(sus)}$=130V h_{FE}=30-150 @ 1A f_T= 5 MHz typ. 676	**2N6476** $V_{CER(sus)}$=130V h_{FE}=30-150 @ −1A f_T= 5 MHz typ. 676				

▲Pellet size—values shown are edge dimensions in thousands-of-an-inch (mils).

**Available with free-air radiator $R_{\theta JA}$ = 30° C/W

"TA" designations (e.g. TA8662) in this booklet are Developmental-type devices.

File No. (e.g. File No.413E), where shown, relates to the data bulletin.

CT—Complementary Type available, see matrix on Complementary-Pair Power Types.

PLASTIC-PACKAGED POWER TYPES

I_C = 2 A max. P_T = 25 W max. (Plastic TO-5)	I_C = -2 A max. P_T = 25 W max. (Plastic TO-5)	I_C = 1 A max. P_T = 20 W max. (Plastic TO-5)	I_C = 7 A max. P_T = 40 W max. VERSAWATT (TO-220)	I_C = –7 A max. P_T = 40 W max. VERSAWATT (TO-220)	I_C = 15 A max. P_T = 75 W max. VERSAWATT (TO-220)	I_C = –15 A max. P_T = 75 W max. VERSAWATT (TO-220)	I_C = 4 A max. P_T = 36 W max. VERSAWATT (TO-220)	I_C = 3 A max. P_T = 36 W max. VERSAWATT (TO-220)	I_C = 7 A max. P_T = 50 W max. VERSAWATT (TO-220)	I_C = 16 A max. P_T = 75 W max. VERSAWATT (TO-220)
42 x 42[▲]	42 x 42	32 x 32	90 x 90	90 x 90	150 x 150	150 x 150	130 x 130	130 x 130	150 x 150	180 x 180
HIGH-SPEED		HIGH-VOLTAGE	EPITAXIAL BASE				HOMETAXIAL BASE			
Family Designation										
2N6178 [N-P-N]	**2N6180** [P-N-P]	**2N6177** [N-P-N]	**2N6292** [N-P-N]	**2N6107** [P-N-P]	**2N6488** [N-P-N]	**2N6491** [P-N-P]	**2N5298** [N-P-N]	**2N6478** [N-P-N]	**2N5496** [N-P-N]	**2N6103** [N-P-N]
2N6179 "Plastic 2N5321" $V_{CER}(SUS)$ = 65 V h_{FE} = 40-250 @ 500 mA f_T = 50 MHz min. CT File No. 562	**2N6181** "Plastic 2N5323" $V_{CER}(SUS)$ = –65 V h_{FE} = 40-250 @ –500 mA f_T = 50 MHz min. CT File No. 562	**2N6175** "Plastic 2N3440" $V_{CER}(SUS)$ = 300 V h_{FE} = 30-190 @ 20 mA f_T = 20 MHz min. CT File No. 508	**2N6288** **2N6289** $V_{CER}(SUS)$ = 40 V h_{FE} = 30-150 @ 3 A f_T = 4 MHz min. File No.676	**2N6110** **2N6111** $V_{CER}(SUS)$ = –40 V h_{FE} = 30-150 @ –3 A f_T = 10 MHz min. CT File No.676	**2N6486** $V_{CER}(SUS)$ = 45 V h_{FE} = 20-150 @ 5 A f_T = 5 MHz typ. File No.678	**2N6489** $V_{CER}(SUS)$ = –45 V h_{FE} = 20-150 @ 5 A f_T = 5 MHz typ. File No.678	**2N5295** **2N5296** $V_{CER}(SUS)$ = 50 V h_{FE} = 30-120 @ 1 A f_T = 0.8 MHz min. CT File No. 322	**2N6478** $V_{CER}(SUS)$ = 135 V h_{FE} = 20-80 f_T = 1.2 MHz typ. I_C = 3 A max. File No.680	**2N5491** **2N5490** $V_{CER}(SUS)$ = 50 V h_{FE} = 20-100 @ 2 A f_T = 0.8 MHz min. CT File No. 353	**2N6102** **2N6103** $V_{CER}(SUS)$ = 45 V h_{FE} = 15-60 @ 8 A f_T = 0.9 MHz min. I_C = 16 A max. File No. 485
2N6178 "Plastic 2N5320" $V_{CER}(SUS)$ = 90 V h_{FE} = 30-130 @ 500 mA f_T = 50 MHz min. CT 562	**2N6180** "Plastic 2N5322" $V_{CER}(SUS)$ = –90 V h_{FE} = 30-130 @ –500 mA h_{FE} = 10 min. @ –1 A f_T = 50 MHz min. CT 562	**2N6176** $V_{CER}(SUS)$ = 350 V h_{FE} = 30-150 @ 20 mA f_T = 20 MHz min. CT 508E	**2N6290** **2N6291** $V_{CER}(SUS)$ = 60 V h_{FE} = 30-150 @ 2.5 A f_T = 4 MHz min. 676	**2N6108** **2N6109** $V_{CER}(SUS)$ = –60 V h_{FE} = 30-150 @ –2.5 A f_T = 10 MHz min. CT 676	**2N6487** $V_{CER}(SUS)$ = 65 V h_{FE} = 20-150 @ 5 A f_T = 5 MHz typ. 678	**2N6490** $V_{CER}(SUS)$ = –65 V h_{FE} = 20-150 @ 5 A f_T = 5 MHz typ. 678	**2N5297** **2N5298** $V_{CER}(SUS)$ = 70 V h_{FE} = 20-80 @ 1.5 A f_T = 0.8 MHz min. CT 322	**2N6478A** $V_{CER}(SUS)$ = 150 V h_{FE} = 30-120 @ 0.5 A f_T = 1.2 MHz typ I_C = 3 A max. 680	**2N5495** **2N5494** $V_{CER}(SUS)$ = 50 V h_{FE} = 20-100 @ 3 A f_T = 0.8 MHz min. CT 353	**2N6098** **2N6099** $V_{CER}(SUS)$ = 65 V h_{FE} = 20-80 @ 4 A f_T = 0.8 MHz min. I_C = 10 A max. 485
		2N6177 "Plastic 2N3439" $V_{CER}(SUS)$ = 400 V h_{FE} = 40-160 @ 20 mA f_T = 15 MHz min. 508E	**2N6292** **2N6293**[■] $V_{CER}(SUS)$ = 80 V h_{FE} = 30-150 @ 2 A f_T = 4 MHz min. 676	**2N6106** **2N6107** $V_{CER}(SUS)$ = –80 V h_{FE} = 30-150 @ –2 A f_T = 10 MHz min. CT 676	**2N6488** $V_{CER}(SUS)$ = 85 V h_{FE} = 20-150 @ 5 A f_T = 5 MHz typ. 678	**2N6491** $V_{CER}(SUS)$ = –85 V h_{FE} = 20-150 @ 5 A f_T = 5 MHz typ. 678	**2N5293** **2N5294** $V_{CER}(SUS)$ = 75 V h_{FE} = 30-120 @ 0.5 A f_T = 0.8 MHz min. CT 322		**2N5493** **2N5492** $V_{CER}(SUS)$ = 65 V h_{FE} = 20-100 @ 2.5 A f_T = 0.8 MHz min. CT 353	**2N6100** **2N6101** $V_{CER}(SUS)$ = 75 V h_{FE} = 20-80 @ 5 A f_T = 0.8 MHz min. I_C = 10 A max. 485
			2N6473 $V_{CER}(sus)$ = 110V h_{FE} = 15-150 @ 1.5A f_T = 5 MHz typ I_C = 4 A max 676	**2N6475** $V_{CER}(sus)$ = –110V h_{FE} = 15-150 @ –1.5A f_T = 5 MHz typ I_C = –4 A max 676					**2N5497** **2N5496** $V_{CER}(SUS)$ = 80 V h_{FE} = 20-100 @ 3.5 A f_T = 0.8 MHz min. CT 353	
			2N6474 $V_{CER}(sus)$ = 130V h_{FE} = 15-150 @ 1.5A f_T = 5 MHz typ I_C = 4 A max 676	**2N6476** $V_{CER}(sus)$ = –130V h_{FE} = 15-150 @ –1.5A f_T = 5 MHz typ I_C = –4 A max 676						

[▲]Pellet size—values shown are edge dimensions in thousands-of-an-inch (mils).

CT—Complementary Type available, see matrix on Complementary-Pair Power Types.

2N6292 FAMILY [n-p-n] (silicon)

f_T = 4 MHz min; P_T = 40 W max

DESCRIPTION

2N TYPES

2N6288 Epitaxial-Base, TO-220AB
2N6289 Epitaxial-Base, TO-220AA
2N6290 Epitaxial-Base, TO-220A
2N6291 Epitaxial-Base, TO-220AA
2N6292 Epitaxial-Base, TO-220AB
2N6293 Epitaxial-Base, TO-220AA

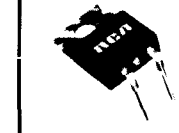
AUDIO TYPES

40979 Output, 12-W Amplifier
40871 Driver, Audio Amplifier
40873 General Purpose
40875 Output Audio Amplifier

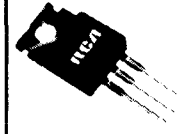
OTHER TYPES

BD239 Epitaxial - Base, TO-220 Ab
BD239A Epitaxial - Base, TO220 AB
BD239B Epitaxial - Base, TO-220 AB
BD239C Epitaxial - Base, TO220 AB
BD241 Epitaxial - Base, TO-220 AB
BD241A Epitaxial - Base, TO-220 AB
BD241B Epitaxial - Base, TO220 AB
BD241C Epitaxial - Base, TO-220 AB
BD243 Epitaxial - Base, TO-220 AB
BD243A Epitaxial - Base, TO-220 AB
BD243B Epitaxial - Base, TO-220 AB
BD243C Epitaxial - Base, TO-220 AB

V_{CEO}(sus) V	V_{CER}(sus) V	V_{CEV}(sus) V	h_{FE}	I_C A	V_{CE} V	I_{CEV}–mA Temp.–°C 25	150	V_{CB} V	V_{CE}(sat)–V	I_C A	I_B A	V_{BE}–V	I_C A
30	40	40 ▲	30-150	3	4	0.1	2 ■	37.5	1	3	0.3	1.5	3
30	40	40 ▲	30-150	3	4	0.1	2 ■	37.5	1	3	0.3	1.5	3
50	60	60 ▲	30-150	2.5	4	0.1	2*	56	1	2.5	0.25	1.5	2.5
50	60	60 ▲	30-150	2.5	4	0.1	2*	56	1	2.5	0.25	1.5	2.5
70	80	80 ▲	30-150	2	4	0.1	2†	75	1	2	0.2	1.5	2
70	80	80 ▲	30-150	2	4	0.1	2†	75	1	2	0.2	1.5	2
40	50	-	50-250	1.5	4	0.01●	-	35	1	1.5	0.075	1.5	1.5
100	120	–	50-250	1	4	1 ●	–	110	1	1	0.1	1.5	1
70	80	–	30-150	2	4	1 ●	–	70	1	2	0.2	1.5	2
50	60	–	20-120	3	4	1 ●	–	50	1	3	0.3	1.5	3
45	–	–	15	1	4	0.2 #	–	45	0.7	1	– 0.2	1.3	1
60	–	–	15	1	4	0.2 #	–	60	0.7	1	– 0.2	1.3	1
80	–	–	15	1	4	0.2 #	–	80	0.7	1	– 0.2	1.3	1
100	–	–	15	1	4	0.2 #	–	100	0.7	1	– 0.2	1.3	1
45	–	–	10	3	4	0.2 #	–	45	1.2	3	– 0.6	1.8	3
60	–	–	10	3	4	0.2 #	–	60	1.2	3	– 0.6	1.8	3
80	–	–	10	3	4	0.2 #	–	80	1.2	3	– 0.6	1.8	3
100	–	–	10	3	4	0.2 #	–	100	1.2	3	– 0.6	1.8	3
45	–	–	15	3	4	0.4 #	–	45	1.5	6	– 1.00	2.	6
60	–	–	15	3	4	0.4 #	–	60	1.5	6	– 1.00	2.	6
80	–	–	15	3	4	0.4 #	–	80	1.5	6	– 1.00	2.	6
100	–	–	15	3	4	0.4 #	–	100	1.5	6	– 1.00	2.	6



TO-220 AA



TO-220 AB
VERSAWATT

▲ V_{CEX}(sus) ■ At V_{CE} = 30 V * At V_{CE} = 50 V † At V_{CE} = 70 V ● I_{CER} # I_{CES}

2N6372 FAMILY [n-p-n] (silicon)

f_T = 4 MHz min; P_T = 40 W max

2N TYPES

2N6374 General Purpose
2N6373 General Purpose
2N6372 General Purpose

V_{CEO}(sus) V	V_{CER}(sus) V	V_{CEV}(sus) V	h_{FE}	I_C A	V_{CE} V	I_{CEV}–mA Temp.–°C 25	150	V_{CB} V	V_{CE}(sat)–V	I_C A	I_B A	V_{BE}–V	I_C A
40	45	50 ▲	20-100	3	4	100●	2	45	1	3	0.3	2	3
60	65	70 ▲	20-100	2.5	4	100●	2	65	1	2.5	0.25	2	2.5
80	85	90 ▲	20-100	2	4	100●	2	85	1	2	0.2	2	2

TO-66

▲ V_{CEX}(sus) ● I_{CEX}–μA