I_C to 80 A . . . P_T to 300 W . . . V_{CE} to 170 V
HOMETAXIAL-BASE N-P-N POWER TYPES

I_C = 1.5 A max. P_T = 8.75 W max. (TO-39)*	I_C = 1.5 A max. P_T = 8.75 W max. (TO-39)*	I_C = 3.5 A max. P_T = 10 W max. (TO-39)*	I_C = 4 A max. P_T = 50 W max. (TO-66)**	I_C = 4 A max. P_T = 36 W max. VERSAWATT (TO-220)	I_C = 3 A max. P_T = 50 W max. (TO-66)**	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 = 15 A max. P_T = 150 W max. (TO-3)	I_C = 16 A max. P_T = 75 W max. VERSAWATT (TO-220)	I_C = 10 A max. P_T = 150 W max. (TO-3)	I_C = 30 A max. P_T = 220 W max. (TO-3)	I_C = 16 A max. P_T = 250 W max. (TO-3)	I_C = 80 A max. P_T = 300 W max. (Modified TO-3)
90 x 90▲	90 x 90	90 x 90	130 x 130	130 x 130	130 x 130	130 x 130	150 x 150	180 x 180	180 x 180	180 x 180	250 x 250	250 x 250	380 x 380
Family Designation													
2N1482	**40349**	**2N5786**	**2N3054**	**2N5298**	**2N3441**	**2N6478**	**2N5496**	**2N3055**	**2N6103**	**2N3442**	**2N3771**	**2N3773**	**2N5578**
40347 $V_{CEV(sus)}$ = 60 V h_{FE} = 25-100 @ 450 mA f_T = 1.5 MHz typ. File No. 88 E	**40349** $V_{CEV(sus)}$ = 160 V h_{FE} = 30-125 @ 150 mA f_T = 1.5 MHz typ. File No. 88 E	**2N5786** $V_{CER(sus)}$ = 45 V h_{FE} = 20-100 @ 1.6 A f_T = 1 MHz min. CT File No. 413 E	**40250** $V_{CEV(sus)}$ = 50 V h_{FE} = 25-100 @ 1.5 A f_T = 1.2 MHz typ. P_T = 29 W CT File No. 112	**2N5295** **2N5296** $V_{CER(sus)}$ = 50 V h_{FE} = 30-120 @ 1 A f_T = 0.8 MHz min. CT File No. 322	**2N6263** $V_{CER(sus)}$ = 130 V h_{FE} = 20-100 @ 0.5 A f_T = 1.2 MHz typ. P_T = 20 W File No. 529	**2N6477** $V_{CER(sus)}$=130V h_{FE}=20-100 @ 1A f_T=0.8 MHz min. 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	**2N6371** $V_{CEV(sus)}$ = 50 V h_{FE} = 15-60 @ 8 A f_T = 1 MHz typ. P_T = 117 W CT File No. 607	**2N6102** **2N6103** $V_{CER(sus)}$ = 45 V h_{FE} = 15-60 @ 8 A f_T = 0.8 MHz min. I_C = 16 A max. File No. 485	**2N4347** $V_{CEV(sus)}$ = 140 V h_{FE} = 15-60 @ 2 A f_T = 0.8 MHz typ. P_T = 100 W CT File No. 528	**2N6257** $V_{CER(sus)}$ = 45 V h_{FE} = 15-75 @ 8 A f_T = 0.6 MHz min. P_T = 150 W I_C = 20 A File No. 525	**2N4348** $V_{CEV(sus)}$ = 140 V h_{FE} = 15-60 @ 5 A f_T = 0.7 MHz typ. P_T = 120 W I_C = 10 A CT File No. 526	**2N5575** $V_{CEO(sus)}$ = 50 V h_{FE} = 10-40 @ 60 A f_T = 0.4 MHz min. File No. 359
40348 $V_{CEV(sus)}$ = 90 V h_{FE} = 30-125 @ 300 mA f_T = 1.5 MHz typ. 88 E		**2N5785** $V_{CER(sus)}$ = 65 V h_{FE} = 20-100 @ 1.2 A f_T = 1 MHz min. CT 413 E	**2N6260** $V_{CEV(sus)}$ = 50 V h_{FE} = 20-100 @ 1.5 A f_T = 0.8 MHz min. P_T = 29 W 527	**2N5297** **2N5298** $V_{CER(sus)}$ = 70 V h_{FE} = 20-80 @ 1.5 A f_T = 0.8 MHz min. CT 322	**2N3441** $V_{CER(sus)}$ = 150 V h_{FE} = 25-100 @ 0.5 A f_T = 1.2 MHz typ. P_T = 25 W CT 529	**2N6478** $V_{CER(sus)}$=150V h_{FE}=25-100 @ 1A f_T=0.8 MHz min. 680	**2N5495** **2N5494** $V_{CER(sus)}$ = 50 V h_{FE} = 20-100 @ 3 A f_T = 0.8 MHz min. CT 353	**2N6253** $V_{CER(sus)}$ = 55 V h_{FE} = 20-70 @ 3 A f_T = 0.8 MHz min. P_T = 115 W 524	**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	**2N3442** $V_{CEV(sus)}$ = 160 V h_{FE} = 20-70 @ 3 A f_T = 0.8 MHz typ. P_T = 117 W 528	**2N3771** $V_{CER(sus)}$ = 45 V h_{FE} = 15-60 @ 15 A f_T = 0.8 MHz min. P_T = 150 W I_C = 30 A 525	**2N3773** $V_{CEV(sus)}$ = 160 V h_{FE} = 15-60 @ 8 A f_T = 0.7 MHz typ. P_T = 150 W I_C = 16 A 526	**2N5578** $V_{CEO(sus)}$ = 70 V h_{FE} = 10-40 @ 40 A f_T = 0.4 MHz min. 359
		2N5784 $V_{CER(sus)}$ = 80 V h_{FE} = 20-100 @ 1 A f_T = 1 MHz min. CT 413 E	**BDY 71** **2N3054** $V_{CER(sus)}$ = 60 V h_{FE} = 80-200 @ 0.5 A f_T = 0.8 MHz min. P_T = 25 W CT 527	**2N5293** **2N5294** $V_{CER(sus)}$ = 75 V h_{FE} = 30-120 @ 0.5 A f_T = 0.8 MHz min. CT 322	**2N6264** $V_{CER(sus)}$ = 170 V h_{FE} = 20-60 @ 1 A f_T = 1.2 MHz typ. P_T = 50 W 529		**2N5493** **2N5492** $V_{CER(sus)}$ = 65 V h_{FE} = 20-100 @ 2.5 A f_T = 0.8 MHz min CT 353	**2N3055** $V_{CER(sus)}$ = 70 V h_{FE} = 20-70 @ 4 A f_T = 0.8 MHz min. P_T = 115 W CT 524	**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	**2N6262** $V_{CEV(sus)}$ = 170 V h_{FE} = 20-70 @ 3 A f_T = 0.8 MHz min. P_T = 150 W 528	**2N3772** $V_{CER(sus)}$ = 70 V h_{FE} = 15-60 @ 10 A f_T = 0.8 MHz min. P_T = 150 W CT 525	**2N6259** $V_{CEV(sus)}$ = 160 V h_{FE} = 15-60 @ 8 A f_T = 0.6 MHz min. P_T = 250 W I_C = 16 A 526	
			2N6261 $V_{CER(sus)}$ = 85 V h_{FE} = 25-100 @ 1.5 A f_T = 0.8 MHz min. P_T = 50 W 527				**2N5497** **2N5496** $V_{CER(sus)}$ = 80 V h_{FE} = 20-100 @ 3.5 A f_T = 0.8 MHz min. CT 353	**2N6254** $V_{CER(sus)}$ = 85 V h_{FE} = 20-70 @ 5 A f_T = 0.8 MHz min. P_T = 150 W 524	**BD278** $V_{CER(sus)}$=55V h_{FE}=15-75 @ 4 A f_T=0.8 MHz min. I_C = 10 A max. 668		**BDY29** $V_{CER(sus)}$ = 85 V h_{FE} = 15-60 @ 15 A P_T = 220 W	**BDY37** $V_{CER(sus)}$ = 150 V h_{FE} = 15-60 @ 8 A P_T = 150 W	
									BD278A $V_{CER(sus)}$ = 55 V h_{FE} = 30 min. @ 2 A 668				

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

*Available with:
a. flange for easy heat sinking $R\theta_{JC}$ = 15° C/W
b. free-air radiator $R\theta_{JA}$ = 40-50° C/W

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

File No. (e.g. File No. 88E), where shown, relates to the data bulletin.

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

COMPLEMENTARY-PAIR POWER TYPES

Hometaxial-Base/Epitaxial-Base

I_C 1.5 to 2 A		I_C = 2.5 A		I_C 3 to 3.5 A		I_C 4 to 6 A		I_C 12 to 17 A	
N-P-N	**P-N-P**	**N-P-N**	**P-N-P**	**N-P-N**	**P-N-P**	**N-P-N**	**P-N-P**	**N-P-N**	**P-N-P**
2N5293 **2N5294** $V_{CER}(SUS)$ = 75 V I_C = 1.5 A VERSAWATT (TO-220) **File No. 322**	**2N6106** **2N6107** $V_{CER}(SUS)$ = −80 V I_C = −1.5 A VERSAWATT (TO-220) File No.676	**2N5786** $V_{CER}(SUS)$ = 45 V I_C = 2.5 A (TO-39) File No.413E	**2N5783** $V_{CER}(SUS)$ = −45 V I_C = −2.5 A (TO-39) 413E	**2N3054** $V_{CER}(SUS)$ = 60 V I_C = 3 A (TO-66) **File No. 527**	**2N5955** $V_{CER}(SUS)$ = −65 V I_C = −3 A (TO-66) 675	**2N5495** **2N5494** $V_{CER}(SUS)$ = 50 V I_C = 4 A VERSAWATT (TO-220) **File No. 353**	**2N6110** **2N6111** $V_{CER}(SUS)$ = −40 V I_C = −4 A VERSAWATT TO-220) File No.676	**2N3055** $V_{CER}(SUS)$ = 70 V I_C = 12 A (TO-3) **File No. 524**	**2N6247** $V_{CER}(SUS)$ = −90V I_C = −12 A (TO-3) File No.677
2N5295 **2N5296** $V_{CER}(SUS)$ = 50 V I_C = 2 A VERSAWATT (TO-220) **322**	**2N6106** **2N6107** $V_{CER}(SUS)$ = −80 V I_C = −2 A VERSAWATT (TO-220) 676	**2N5297** **2N5298** $V_{CER}(SUS)$ = 70 V I_C = 2.5 A VERSAWATT (TO-220) **322**	**2N6106** **2N6107** $V_{CER}(SUS)$ = −80 V I_C = −2.5 A VERSAWATT (TO-220) 676	**2N5491** **2N5490** $V_{CER}(SUS)$ = 50 V I_C = 3 A VERSAWATT (TO-220) **353**	**2N6106** **2N6107** $V_{CER}(SUS)$ = −80 V I_C = −3 A VERSAWATT (TO-220) 676	**2N4347** $V_{CEV}(SUS)$ = 140 V I_C = 4 A (TO-3) **528**	**2N5954*** $V_{CER}(SUS)$ = −85 V I_C = −4 A (TO-66) 675	**2N4348** $V_{CEV}(SUS)$ = 140 V I_C = 14 A (TO-3) **526**	**2N6248** $V_{CER}(SUS)$ = −110 V I_C = −14 A (TO-3) 677
2N3441 $V_{CER}(SUS)$ = 150 V I_C = 2 A (TO-66) **529**	**(2N6468)†** $V_{CER}(SUS)$ = −125 V I_C = −2 A (TO-66)	**2N5785** $V_{CER}(SUS)$ = 65 V I_C = 2.5 A (TO-39) **413 E**	**2N5782** $V_{CER}(SUS)$ = −65 V I_C = −2.5 A (TO-39) **413 E**	**40250** $V_{CER}(SUS)$ = 50 V I_C = 3.5 A (TO-66) **112**	**2N5956** $V_{CER}(SUS)$ = −45 V I_C = −3.5 A (TO-66) **435**	**2N6371** $V_{CEV}(SUS)$ = 50 V I_C = 6 A (TO-3) **607**	**2N5956** $V_{CER}(SUS)$ = −45 V I_C = −6 A (TO-66) 675	**2N3772** $V_{CER}(SUS)$ = 70 V I_C = 17 A (TO-3) **525**	**2N6247** $V_{CER}(SUS)$ = −90 V I_C = −17 A (TO-3) 677
		2N5784 $V_{CER}(SUS)$ = 80 V I_C = 2.5 A (TO-39) **413 E**	**2N5781** $V_{CER}(SUS)$ = −80 V I_C = −2.5 A (TO-39) **413 E**	**2N5493** **2N5492** $V_{CER}(SUS)$ = 65 V I_C = 3.5 A VERSAWATT (TO-220) **353**	**2N6108** **2N6109** $V_{CER}(SUS)$ = −60 V I_C = −3.5 A VERSAWATT (TO-220) 676	**2N3055** $V_{CER}(SUS)$ = 70 V I_C = 6 A (TO-3) **524**	**2N5955** $V_{CER}(SUS)$ = −65 V I_C = −6 A (TO-66) 675		

* Or higher voltage type 2N6248.

High-Voltage

I_C = 0.2 A		I_C = 2 A	
N-P-N	**P-N-P**	**N-P-N**	**P-N-P**
2N3440 $V_{CEO}(SUS)$ = 250 V I_C = 0.2 A (TO-39) File No.64E	**2N5415** $V_{CEO}(SUS)$ = −200 V I_C = −0.2 A (TO-39) File No.336E	**2N3584** $V_{CER}(SUS)$ = 350 V I_C = 2 A (TO-66) **File No. 138**	**2N6212** $V_{CER}(SUS)$ = −325 V I_C = −2 A (TO-66) **File No. 507**
2N6175 $V_{CER}(SUS)$ = 300 V I_C = 0.2 A (Plastic TO-5) 508 E	**BFT19A** $V_{CER}(sus)$ = −300 V I_C = −0.2 A (TO-39) 683	**2N3585** $V_{CER}(SUS)$ = 400 V I_C = 2 A (TO-66) 138	**2N6213** $V_{CER}(SUS)$ = −375 V I_C = −2 A (TO-66) 507
2N3439 $V_{CEO}(SUS)$ = 350 V I_C = 0.2 A (TO-39) 64 E	**2N5416** $V_{CER}(SUS)$ = −350 V I_C = −0.2 A (TO-39) 336	**BUX67** $V_{CER}(sus)$ = 175V I_C = 2A (TO−66) 871	**BUX66** $V_{CER}(sus)$ = −175V I_C = −2A (TO−66) 870
2N6176 $V_{CER}(SUS)$ = 350 V I_C = 0.2 A (Plastic TO-5) 508 E	**BFT19B** $V_{CER}(SUS)$ = −400V I_C = −0.2 A (TO-39) 683	**BUX67A** $V_{CER}(sus)$ = 275V I_C = 2A (TO−66) 871	**BUX66A** $V_{CER}(sus)$ = −275V I_C = −2A (TO−66) 870
		BUX67B $V_{CER}(sus)$ = 350V I_C = 2A (TO−66) 871	**BUX66B** $V_{CER}(sus)$ = −350V I_C = −2A (TO−66) 870
		BUX67C $V_{CER}(sus)$ = 400V I_C = 2A (TO−66) 871	**BUX66C** $V_{CER}(sus)$ = −400V I_C = −2A (TO−66) 870

Note: The collector current (I_C) value shown is for h_{FE} of 10 min.

High-Speed

I_C = 1 A			
N-P-N	**P-N-P**	**N-P-N**	**P-N-P**
2N3053 $V_{CER}(SUS)$ = 50 V I_C = 1 A (TO-39) **File No. 432 E**	**2N4037** $V_{CER}(SUS)$ = −60 V I_C = −1 A (TO-39) File No.216E	**2N6179** $V_{CER}(SUS)$ = 65 V I_C = 1 A (Plastic TO-5) **File No. 562**	**2N6181** $V_{CER}(SUS)$ = −65 V I_C = −1 A (Plastic TO-5) 562
2N2102 $V_{CER}(SUS)$ = 80 V I_C = 1 A (TO-39) 106E	**2N4036** $V_{CER}(SUS)$ = −85 V I_C = −1 A (TO-39) 216 E	**2N6178** $V_{CER}(SUS)$ = 90 V I_C = 1 A (Plastic TO-5) 562	**2N6180** $V_{CER}(SUS)$ = −90 V I_C = −1 A (Plastic TO-5) 562
2N5321 $V_{CER}(SUS)$ = 65 V I_C = 1 A (TO-39) 325 E	**2N5323** $V_{CER}(SUS)$ = −65 V I_C = −1 A (TO-39) 325 E		
2N5320 $V_{CER}(SUS)$ = 90 V I_C = 1 A (TO-39) 325 E	**2N5322** $V_{CER}(SUS)$ = −90 V I_C = −1A (TO-39) 325 E		

File No. (e.g. File No. 322), where shown, relates to data bulletin.

See Epitaxial-Base and Monolithic Darlington Matrices for additional Complementary-Pair Power Types.

APPLICATION INFORMATION . . .

Power Types [N-P-N & P-N-P] as Pass Transistors for Series Regulator Service

Pass Transistor Conditions	Peak Output Voltage (V)	Regulator Output Current (I_o) — A				
		Up to 0.2	0.2 to 1	1 to 4	4 to 20	> 20
With preregulator $I_c = I_o$ V_{CE} = constant or $\approx 4[V_{CE(sat)}]$ $P_{MAX} \approx 4(I_o)[V_{CE(sat)}]$	10 to 60	[2N2102, 2N4036] 2N1482	[2N5321, 2N5323, 2N6179, 2N6181]	[2N3054, 2N5955, 2N5497, 2N6106]	[2N3055, 2N6247, 2N3771]	2N3772 2N5575
	60 to 150	40349	2N3441	2N3442 2N4347 2N5293	2N3772 2N4348	2N5578
	150 to 400	[2N3440, BFT 19,A,B,C, BFT 28,A,B,C, 2N5415]	[2N3585, 2N6212]	2N5240 BUX 16,A,B,C	2N5805 2N6251	-

Bracket signifies a complementary pair (n-p-n, 2N2102; p-n-p, 2N4036) suitable for symmetrical power-supply circuits.

Power Types for Electrostatic Deflection and Video Output

Bandwidth > 1MHz	
Output Voltage < 60V (Peak-to-Peak)	Output Voltage 60 to 400V (Peak-to-Peak)
2N2102 2N3878 2N4036 2N5320 2N5322*	2N3439 BF 257 BF 258 BF 259 2N3585 2N5416 BFT 19,A,B,C. BFT 28,A,B,C. 2N6177 2N6213 BUX 66,A,B,C BUX 67,A,B,C

* P-N-P Type

MILITARY SPECIFICATION TYPES

Power Transistors

RCA (JAN) Type No.	MIL-Spec. 19500/	RCA(JAN) Type No.	MIL-Spec. 19500/	RCA(JAN) Type No.	MIL-Spec. 19500/	RCA(JAN) Type No.	MIL-Spec 19500/	RCA(JAN) Type No.	MIL-Spec 19500/
2N1479	207	TX2N1485	180	2N3055	407	TX2N3584	384	2N5039	439
2N1480	207	2N1486	180	TX2N3055	407	2N3585	384	TX2N5039	439
2N1481	207	TX2N1486	180	2N3439	368	TX2N3585	384	2N6211	461
2N1482	207	2N1487	208	TX2N3439	368	2N3771	413	TX2N6211	461
2N1483	180	2N1488	208	2N3440	368	TX2N3771	413	2N6212	461
TX2N1483	180	2N1489	208	TX2N3440	368	2N3772	413	TX2N6212	461
2N1484	180	2N1490	208	2N3441	369	TX2N3772	413	2N6213	461
TX2N1484	180	2N2015	248	2N3442	370	2N5038	439	TX2N6213	461
2N1485	180	2N2016	248	2N3584	384	TX2N5038	439		

DESCRIPTION

2N3771 FAMILY [n-p-n] (silicon)

f_T = 0.8 MHz min; P_T up to 250 W max

2N TYPES

2N6257 High-Current, General Purpose
2N3771■ High-Current, General Purpose
2N3772■ High-Current, General Purpose
BDY29 High-Current, General Purpose

AUDIO TYPES

40411 Output, 70-W Class AB Amplifier

$V_{CEO(sus)}$ 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_{CE} V	$V_{CE(sat)}$–V	I_C A	I_B A	V_{BE}–V	I_C A
40	45	50	15-75	8	4	4	20▲	45	1.5	8	0.8	2.2	8
40	45	50	15-60	15	4	2	10▲	50	2	15	1.5	2.7	15
60	70	80	15-60	10	4	5	10▲	100	1.4	10	1	2.2	10
75	–	90	15-60	15	2	1●	10▲	100	1.2	15	1.5	3.5	30
–	90	–	35-100	4	4	0.5●	2●	80	0.8	4	0.4	1.2	4

▲ At V_{CE} = 30 V

■JAN & JAN TX types available. ●I_{CER}

TO-3

2N3773 FAMILY [n-p-n] (silicon)

f_T = 0.7 MHz typ; P_T up to 250 W max

2N TYPES

2N4348 High-Current High Voltage, General Purpose
2N3773 High-Current High Voltage, General Purpose
2N6259 High-Current High Voltage, General Purpose
BDY37 High-Current High Voltage, General Purpose

120	140	140	15-60	5	4	2	10	120	1	5	0.5	2	5
140	150	160	15-60	8	4	2	10	140	1.4	8	0.8	2.2	8
150	160	170	15-60	8	2	0.2	4	150	1	8	0.8	2	8
140	–	160	15-60	8	4	2●	10●	140	1.4	8	0.8	2.2	8

2N3879 FAMILY [n-p-n] (silicon)

f_T = 60 MHz min; P_T = 35 W max

2N TYPES

2N3878 Audio, Ultrasonic Amplifiers and RF
2N3879 High-Current High-Speed Switch
2N5202 High-Current High-Speed Switch
2N6500 High-Current High-Speed Switch

AUDIO TYPES

40364 Output, 20-W Class AB Amplifier

OTHER TYPES

40375 2N3878 with Heat Radiator*

50	65	–	50-200	0.5	5	4	4	100	2	4	0.5	2.5	4
75	90	–	20-80	4	5	4	4	100	1.2	4	0.4	1.8	4
–	75	–	10-100	4	1.2	10	10	100	1.2	4	0.4	1.9	4
90	110	–	15-60	3	2	5	10	110	1.5	3	0.3	2.5	3
–	70	–	35-175	0.5	5	0.5●	2●	50	2	2.5	0.25	1.8	2.5
50	65	–	50-200	0.5	5	4	4	100	2	4	0.5	2.5	4

* Radiator improves $R_{\theta JA}$ from 70°C/W to 30°C/W

TO-66

2N4036 FAMILY [p-n-p] (silicon)

f_T = 60 MHz min; P_T up to 7 W max

● I_{CER}

2N TYPES

2N4036 PNP Complement of 2N2102
2N4037 PNP Complement of 2N3053
2N4314 Low Cost, High Voltage

-65	-85	-85	40-140	-0.15	-10	-0.02●	–	-60	-0.65	-0.15	-0.015	-1.1	-0.15
-40	-60	-60	50-250	-0.15	-10	-0.25●	–	-60	-1.4	-0.15	-0.015	-1.5	-0.15
-65	-85	-85	50-250	-0.15	-10	-0.25●	–	-60	-1.4	-0.15	-0.015	-1.5	-0.15

TO-39