

IC to 80 A . . . PT to 300 W . . . VCE to 170 V  
HOMETAXIAL-BASE N-P-N POWER TYPES

$I_C = 1.5$ A max. $P_T = 8.75$ W max. (TO-38)*	$I_C = 1.5$ A max. $P_T = 8.75$ W max. (TO-38)*	$I_C = 3.5$ A max. $P_T = 10$ W max. (TO-38)*	$I_C = 4$ 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. $P_T = 60$ 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 <sup>A</sup>	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
<b>40347</b> $V_{CE(sus)} = 60$ V $V_{CE(sus)} = 25-100$ $h_{FE} = 25-100$ @ 450 mA $f_T = 1.5$ MHz typ.  File No. 88 E	<b>40349</b> $V_{CE(sus)} = 160$ V $V_{CE(sus)} = 30-125$ @ 150 mA $f_T = 1.5$ MHz typ.  File No. 88 E	<b>2N5786</b> $V_{CE(sus)} = 45$ V $V_{CE(sus)} = 20-100$ $h_{FE} = 1.6$ A $f_T = 1$ MHz min.  CT File No. 413 E	<b>40250</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 25-100$ $h_{FE} = 1.5$ A $f_T = 1.2$ MHz typ. $P_T = 29$ W  CT File No. 112	<b>2N5295</b> <b>2N5296</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 30-120$ @ 1 A $f_T = 0.8$ MHz min.  CT File No. 322	<b>2N6263</b> $V_{CE(sus)} = 130$ V $V_{CE(sus)} = 20-100$ $h_{FE} = 0.5$ A $f_T = 1.2$ MHz typ. $P_T = 20$ W  File No. 529	<b>2N6477</b> $V_{CE(sus)} = 130$ V $V_{CE(sus)} = 20-100$ $h_{FE} = 1$ A $f_T = 0.8$ MHz min.  File No. 680	<b>2N5491</b> <b>2N5490</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 20-100$ $h_{FE} = 2$ A $f_T = 0.8$ MHz min.  CT File No. 353	<b>2N6371</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 15-60$ @ 8 A $f_T = 1$ MHz typ. $P_T = 117$ W  CT File No. 607	<b>2N6102</b> <b>2N6103</b> $V_{CE(sus)} = 45$ V $V_{CE(sus)} = 15-60$ @ 8 A $f_T = 0.8$ MHz min. $I_C = 16$ A max.  File No. 485	<b>2N4347</b> $V_{CE(sus)} = 140$ V $V_{CE(sus)} = 15-60$ @ 2 A $f_T = 0.8$ MHz typ. $P_T = 100$ W  CT File No. 528	<b>2N6257</b> $V_{CE(sus)} = 45$ V $V_{CE(sus)} = 15-75$ @ 8 A $f_T = 0.6$ MHz min. $P_T = 150$ W $I_C = 20$ A  File No. 525	<b>2N4348</b> $V_{CE(sus)} = 140$ V $V_{CE(sus)} = 15-60$ @ 5 A $f_T = 0.7$ MHz typ. $P_T = 120$ W $I_C = 10$ A  CT File No. 526	<b>2N5575</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 10-40$ @ 60 A $f_T = 0.4$ MHz min.  File No. 359
<b>40348</b> $V_{CE(sus)} = 90$ V $V_{CE(sus)} = 30-125$ @ 300 mA $f_T = 1.5$ MHz typ.  88 E		<b>2N5785</b> $V_{CE(sus)} = 65$ V $V_{CE(sus)} = 20-100$ $h_{FE} = 1.2$ A $f_T = 1$ MHz min.  CT 413 E	<b>2N6260</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 20-100$ $h_{FE} = 1.5$ A $f_T = 0.8$ MHz min. $P_T = 29$ W  527	<b>2N5297</b> <b>2N5298</b> $V_{CE(sus)} = 70$ V $V_{CE(sus)} = 20-80$ @ 1.5 A $f_T = 0.8$ MHz min.  CT 322	<b>2N3441</b> $V_{CE(sus)} = 150$ V $V_{CE(sus)} = 25-100$ @ 0.5 A $f_T = 1.2$ MHz typ. $P_T = 25$ W  CT 529	<b>2N6478</b> $V_{CE(sus)} = 150$ V $V_{CE(sus)} = 25-100$ @ 1 A $f_T = 0.8$ MHz min.  680	<b>2N5495</b> <b>2N5494</b> $V_{CE(sus)} = 50$ V $V_{CE(sus)} = 20-80$ @ 3 A $f_T = 0.8$ MHz min.  CT 353	<b>2N6253</b> $V_{CE(sus)} = 55$ V $V_{CE(sus)} = 20-70$ @ 3 A $f_T = 0.8$ MHz min. $P_T = 115$ W  524	<b>2N6098</b> <b>2N6099</b> $V_{CE(sus)} = 65$ V $V_{CE(sus)} = 20-80$ @ 4 A $f_T = 0.8$ MHz min. $I_C = 10$ A max.  485	<b>2N3442</b> $V_{CE(sus)} = 160$ V $V_{CE(sus)} = 20-70$ @ 3 A $f_T = 0.8$ MHz typ. $P_T = 117$ W  528	<b>2N3771</b> $V_{CE(sus)} = 45$ V $V_{CE(sus)} = 15-60$ @ 15 A $f_T = 0.8$ MHz min. $P_T = 150$ W $I_C = 30$ A  525	<b>2N3773</b> $V_{CE(sus)} = 160$ V $V_{CE(sus)} = 15-60$ @ 8 A $f_T = 0.7$ MHz typ. $P_T = 150$ W $I_C = 16$ A  526	<b>2N5578</b> $V_{CE(sus)} = 70$ V $V_{CE(sus)} = 10-40$ @ 40 A $f_T = 0.4$ MHz min.  359
		<b>2N5784</b> $V_{CE(sus)} = 80$ V $V_{CE(sus)} = 20-100$ @ 1 A $f_T = 1$ MHz min.  CT 413 E	<b>BDY 71</b> <b>2N3054</b> $V_{CE(sus)} = 60$ V $V_{CE(sus)} = 80-200$ @ 0.5 A $f_T = 0.8$ MHz min. $P_T = 25$ W  CT 527	<b>2N5293</b> <b>2N5294</b> $V_{CE(sus)} = 75$ V $V_{CE(sus)} = 30-120$ @ 0.5 A $f_T = 0.8$ MHz min.  CT 322	<b>2N6264</b> $V_{CE(sus)} = 170$ V $V_{CE(sus)} = 20-60$ @ 1 A $f_T = 1.2$ MHz typ. $P_T = 50$ W  529		<b>2N5493</b> <b>2N5492</b> $V_{CE(sus)} = 65$ V $V_{CE(sus)} = 20-100$ @ 2.5 A $f_T = 0.8$ MHz min.  CT 353	<b>2N3055</b> $V_{CE(sus)} = 70$ V $V_{CE(sus)} = 20-70$ @ 4 A $f_T = 0.8$ MHz min. $P_T = 115$ W  CT 524	<b>2N6100</b> <b>2N6101</b> $V_{CE(sus)} = 75$ V $V_{CE(sus)} = 20-80$ @ 5 A $f_T = 0.8$ MHz min. $I_C = 10$ A max.  485	<b>2N6262</b> $V_{CE(sus)} = 170$ V $V_{CE(sus)} = 20-70$ @ 3 A $f_T = 0.8$ MHz min. $P_T = 150$ W  528	<b>2N3772</b> $V_{CE(sus)} = 70$ V $V_{CE(sus)} = 15-60$ @ 10 A $f_T = 0.8$ MHz min. $P_T = 150$ W  CT 525	<b>2N6259</b> $V_{CE(sus)} = 160$ V $V_{CE(sus)} = 15-60$ @ 8 A $f_T = 0.6$ MHz min. $P_T = 250$ W $I_C = 16$ A  526	
			<b>2N6261</b> $V_{CE(sus)} = 85$ V $V_{CE(sus)} = 25-100$ @ 1.5 A $f_T = 0.8$ MHz min. $P_T = 50$ W  527				<b>2N5497</b> <b>2N5496</b> $V_{CE(sus)} = 80$ V $V_{CE(sus)} = 20-100$ @ 3.5 A $f_T = 0.8$ MHz min.  CT 353	<b>2N6254</b> $V_{CE(sus)} = 85$ V $V_{CE(sus)} = 20-70$ @ 5 A $f_T = 0.8$ MHz min. $P_T = 150$ W  524	<b>BD278</b> $V_{CE(sus)} = 55$ V $V_{CE(sus)} = 15-75$ @ 4 A $f_T = 0.8$ MHz min. $I_C = 10$ A max.  668		<b>BDY29</b> $V_{CE(sus)} = 85$ V $V_{CE(sus)} = 15-60$ @ 15 A $P_T = 220$ W  CT 525	<b>BDY37</b> $V_{CE(sus)} = 150$ V $V_{CE(sus)} = 15-60$ @ 8 A $P_T = 150$ W  CT 526	
									<b>BD278A</b> $V_{CE(sus)} = 55$ V $V_{CE(sus)} = 30$ min. @ 2 A  668				

<sup>A</sup>Pellet size—values shown are edge dimensions in thousandths-of-an-inch (mils)  
\* Available with:  
a. flange for easy heat sinking  $R\theta_{JC} = 15^\circ$  C/W  
b. free-air radiator  $R\theta_{JA} = 40-50^\circ$  C/W  
\*\* Available with free-air radiator  $R\theta_{JA} = 30^\circ$  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.

## 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 $I_c = I_o$ $V_{CE} = \text{constant or } \approx 4[V_{CE}(\text{sat})]$ $P_{MAX} \approx 4(I_o)[V_{CE}(\text{sat})]$	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		

**2N1482 FAMILY [n-p-n] (silicon)**  
 $f_T = 1.4 \text{ MHz typ}; P_T = 8.75 \text{ W max}$

**DESCRIPTION**

**2N TYPES**

- 2N1479● Medium Power DC-to-DC Converter, Inverter
- 2N1480● Medium Power Chopper, DC and Servo
- 2N1481● Medium Power Amplifier, Relay and Solenoid
- 2N1482● Medium Power Actuating Circuits

$V_{CE0(sus)}$ V	$V_{CER(sus)}$ V	$V_{CEV(sus)}$ V	$h_{FE}$		$I_{CBO} - \mu A$			$V_{CE(sat)} - V$			$V_{BE} - V$		
			$I_C$ A	$V_{CE}$ V	Temp. - °C 25	150	$V_{CB}$ V	$I_C$ A	$I_B$ A	$I_C$ A			
40	—	60	20-60	0.2	4	10	500	30	1.4	0.2	0.02	3	0.2
55	—	100	20-60	0.2	4	10	500	30	1.4	0.2	0.02	3	0.2
40	—	60	35-100	0.2	4	10	500	30	1.4	0.2	0.02	3	0.2
55	—	100	35-100	0.2	4	10	500	30	1.4	0.2	0.02	3	0.2

**OTHER TYPES**

- 40347 Low Power Audio Driver
- 40348 Relay and Solenoid Driver

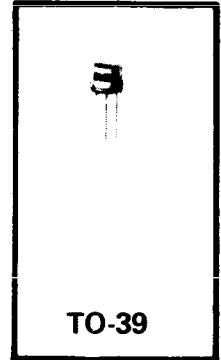
40	—	60	25-150	0.45	4	1	—	30	1	0.45	0.045	1.5	0.45
65	—	90	30-125	0.3	4	1	—	60	0.75	0.3	0.03	1.3	0.3

**HIGH-RELIABILITY TYPES**

- 40367 Hi-Rel Version of 2N1482

55	—	100	35-100	0.2	4	4	—	30	1.4	0.2	10	3	0.2
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●JAN types available



**2N TYPES**

- 2N1483■ Intermediate Power DC-to-DC Converter,
- 2N1484■ Inverter Chopper, Regulators, DC and
- 2N1485■ Servo Amplifiers Relay and Solenoid—
- 2N1486■ Actuating Circuits

**2N1486 FAMILY [n-p-n] (silicon)**  
 $f_T = 1.2 \text{ MHz typ}; P_T = 25 \text{ W max}$

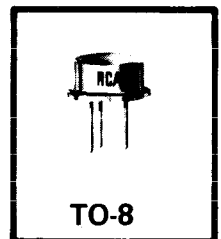
40	—	60	20-60	0.75	4	15	0.75	30	2	0.75	0.075	3.5	0.75
55	—	100	20-60	0.75	4	15	0.75	30	2	0.75	0.075	3.5	0.75
40	—	60	35-100	0.75	4	15	0.75	30	0.75	0.75	0.04	2.5	0.75
55	—	100	35-100	0.75	4	15	0.75	30	0.75	0.75	0.04	2.5	0.75

**HIGH-RELIABILITY TYPES**

- 40368 Hi-Rel Version of 2N1486

55	—	100	35-100	0.75	4	9	—	30	0.75	0.75	0.04	2.5	0.75
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■JAN & JAN TX types available



**2N TYPES**

- 2N1487● High Power DC-to-DC Converter, Inverter, Chopper
- 2N1488● Voltage and Current Regulator, DC and Servo
- 2N1489● Amplifier, Relay, and Solenoid
- 2N1490● Actuating Circuits

**2N1490 FAMILY [n-p-n] (silicon)**  
 $f_T = 0.8 \text{ MHz typ}; P_T = 75 \text{ W max}$

40	—	60	15-45	1.5	4	25	1000	30	3	1.5	0.3	3.5	1.5
55	—	100	15-45	1.5	4	25	1000	30	3	1.5	0.3	3.5	1.5
40	—	60	25-75	1.5	4	25	1000	30	1	1.5	0.1	2.5	1.5
55	—	100	25-75	1.5	4	25	1000	30	1	1.5	0.1	2.5	1.5

**HIGH-RELIABILITY TYPES**

- 40369 Hi-Rel Version of 2N1490

55	—	100	25-75	1.5	4	10	—	30	1	1.3	0.1	2.5	1.3
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●JAN types available

