

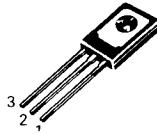
ALPHANUMERIC INDEX — CROSS-REFERENCE (Continued)

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MJE2483		2N6122	3-154	MJE344	MJE344		3-878
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MJE2491		TIP32A	3-1073	MJE344K		TIP47	3-1087
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*Consult Motorola if a direct replacement is necessary.

TABLE 7 — PLASTIC TO-225 Type (Formerly TO-126 Type)

STYLE 1:
PIN 1. EMITTER
2. COLLECTOR
3. BASE



STYLE 3:
PIN 1. BASE
2. COLLECTOR
3. EMITTER

CASE 77-06

I _C Cont Amps Max	V _{CEO(sus)} Volts Min	Device Type		h _{FE} Min/Max	@ I _C Amp	Resistive Switching			f _T MHz Min	P _D (Case) Watts @ 25°C
		NPN	PNP			t _s μs Max	t _f μs Max	@ I _C Amp		
0.3	250	MJE3440		40/160	0.02				15	15
	350	MJE3439		40/160	0.02				15	15
0.5	150	MJE341		25/200	0.05				15	20.8
	200	MJE344		30/300	0.05				15	20.8
	250	2N5655 BD157		30/250 30/240	0.1 0.05	3.5 typ	0.24 typ	0.1	10	20 20
	300	BD158 BD232 MJE340 2N5656	MJE350	30/240 20 min 30/240 30/250	0.05 0.15 0.05 0.1	3.5 typ	0.24 typ	0.1	10	20 20 20.8 20
	350	2N5657 BD159		30/250 30/240	0.1 0.05	3.5 typ	0.24 typ	0.1	10	20 20
1	40	2N4921	2N4918	20/100	0.5	0.6 typ	0.3 typ	0.5	3	30
	60	2N4922	2N4919	20/100	0.5	0.6 typ	0.3 typ	0.5	3	30
	80	2N4923	2N4920	20/100	0.5	0.6 typ	0.3 typ	0.5	3	30
1.5	45	BD165 BD135 BD135.6 BD135.10 BD135.16	BD166 BD136 BD136.6 BD136.10 BD136.16	15 min 40/250 40/100 63/160 100/250	0.5 0.15 0.15 0.15 0.15				6	20 12.5 12.5 12.5 12.5
	60	BD167 BD137 BD137.6 BD137.10 BD137.16	BD138 BD138.6 BD138.10 BD138.16	15 min 40/250 40/100 63/160 100/250	0.5 0.15 0.15 0.15 0.15				6	20 12.5 12.5 12.5 12.5
	80	BD169 BD139 BD139.6 BD139.10 BD139.16	BD140 BD140.6 BD140.10 BD140.16	15 min 40/250 40/100 63/160 100/250	0.5 0.15 0.15 0.15 0.15				6	20 12.5 12.5 12.5 12.5
	300	MJE13002•		5/25	1	4	0.7	1	5	40
	400	MJE13003•		5/25	1	4	0.7	1	5	40
2	45		BD234	25 min	1				3	25
	60	BD235	BD236	25 min	1				3	25
	80	BD237		25 min	1				3	25
	100	MJE270##	MJE271##	1.5k min	0.12				6	15
3	30	MJE520	MJE370	25 min	1					25
	40	MJE180	MJE170	50/250	0.1	0.6 typ	0.12 typ	0.1	50	12.5

• Case 77 (Style 3), # |h_{FE}| @ 1 MHz, ## Darlington

(continued)

MJE350

**PLASTIC MEDIUM POWER PNP
SILICON TRANSISTOR**

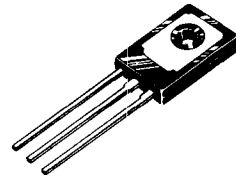
... designed for use in line-operated applications such as low power, line-operated series pass and switching regulators requiring PNP capability.

- High Collector-Emitter Sustaining Voltage —
 $V_{CE(sus)} = 300 \text{ Vdc @ } I_C = 1.0 \text{ mAdc}$
- Excellent DC Current Gain —
 $h_{FE} = 30\text{-}240 \text{ @ } I_C = 50 \text{ mAdc}$
- Plastic Thermopad Package¹

0.5 AMPERE

**POWER TRANSISTOR
PNP SILICON**

**300 VOLTS
20 WATTS**



MAXIMUM RATINGS

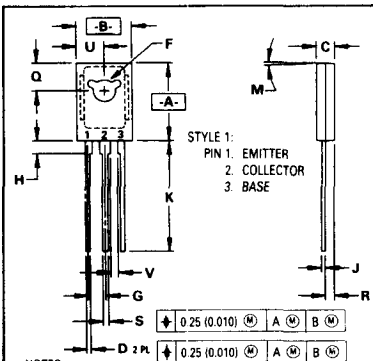
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	300	Vdc
Emitter-Base Voltage	V_{EB}	3.0	Vdc
Collector Current — Continuous	I_C	500	mAdc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	20 0.16	Watts W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	6.25	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

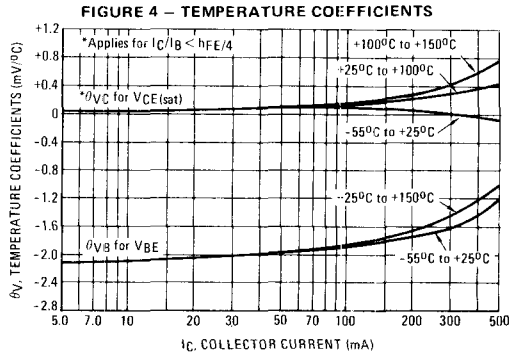
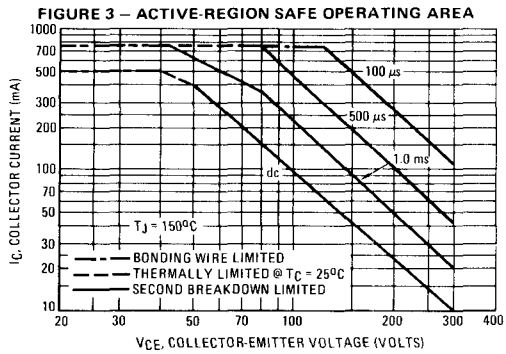
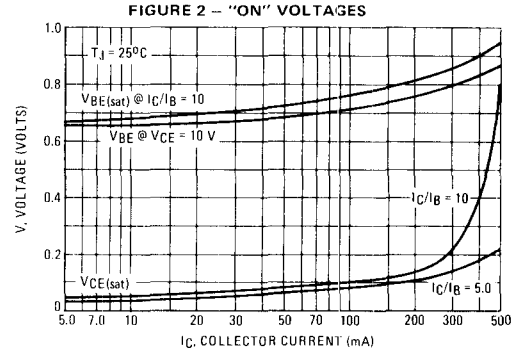
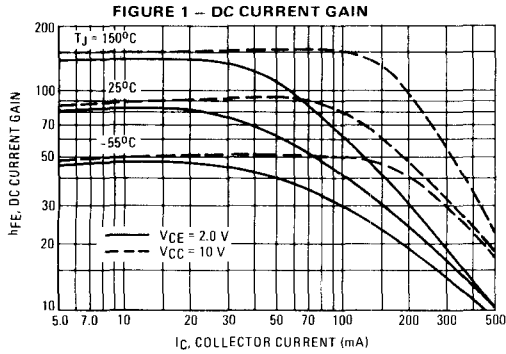
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage ($I_C = 1.0 \text{ mAdc}, I_E = 0$)	$V_{CE(sus)}$	300	—	Vdc
Collector Cutoff Current ($V_{CB} = 300 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	100	μAdc
Emitter Cutoff Current ($V_{EB} = 3.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	100	μAdc
ON CHARACTERISTICS				
DC Current Gain ($I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)	h_{FE}	30	240	—



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.80	11.04	0.425	0.435
B	7.50	7.74	0.295	0.305
C	2.42	2.66	0.095	0.105
D	0.51	0.66	0.020	0.026
F	2.93	3.17	0.115	0.125
G	2.39 BSC		0.094 BSC	
H	1.27	2.41	0.050	0.095
J	0.39	0.63	0.015	0.025
K	14.61	16.63	0.575	0.655
M	3" TYP		3" TYP	
Q	3.76	4.01	0.148	0.158
R	1.15	1.39	0.045	0.055
S	0.64	0.88	0.025	0.035
U	3.69	3.93	0.145	0.155
V	1.02	—	0.040	—

**CASE 77-06
TO-225AA TYPE**



There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 3 is based on $T_{J(pk)} = 150^\circ\text{C}$; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)} \leq 150^\circ\text{C}$. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

