MJE9780*

*Motorola Preferred Device

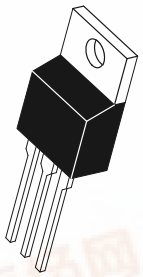
Advance Information

PNP Silicon Power Transistor

The MJE9780 is designed for vertical output of 14–inch to 17–inch televisions and CRT monitors, as well as other applications requiring a 150 volt PNP transistor.
Features:

- Standard TO–220AB Package
- Gain Range of 50 – 200 at 500 mAdc/10 volts

PNP SILICON POWER TRANSISTOR
3.0 AMPERES
150 VOLTS



CASE 221A–06
TO–220AB

MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Rating	Symbol	MJE9780	Unit
Collector–Emitter Sustaining Voltage	V_{CEO}	150	Vdc
Collector–Base Voltage	V_{CBO}	200	Vdc
Emitter–Base Voltage	V_{EBO}	6.0	Vdc
Collector Current — Continuous — Peak	I_C I_{CM}	3.0 5.0	Adc
Total Power Dissipation (T_A = 25°C) Derate above 25°C	P_D	2.0 0.016	Watts W/°C
Total Power Dissipation Derate above 25°C	P_D	40 0.32	Watts W/°C
Operating and Storage Temperature	T_J, T_{stg}	– 55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case — Junction to Ambient	$R_{\theta JC}$ $R_{\theta JA}$	3.12 62.5	°C/W
Maximum Lead Temperature for Soldering Purposes: 1/8″ from Case for 5 Seconds	T_L	260	°C

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS*					
Collector–Emitter Sustaining Voltage (I_C = 50 mA, I_B = 0)	$V_{CEO(sus)}$	150	—	—	Vdc
Collector–Base Voltage (I_C = 5.0 mAdc)	V_{CBO}	200	—	—	Vdc
Emitter–Base Voltage (I_B = 5.0 mAdc)	V_{EBO}	6.0	—	—	Vdc
Emitter Cutoff Current (V_{EB} = 5.0 Vdc, I_C = 0)	I_{EBO}	—	—	10	µAdc
Collector Cutoff Current (V_{CB} = 150 Vdc, I_E = 0)	I_{CBO}	—	—	10	µAdc

* Indicates Pulse Test: P.W. = 300 µsec max, Duty Cycle = 2%.

(continued)

This document contains information on a new product. Specifications and information herein are subject to change without notice.

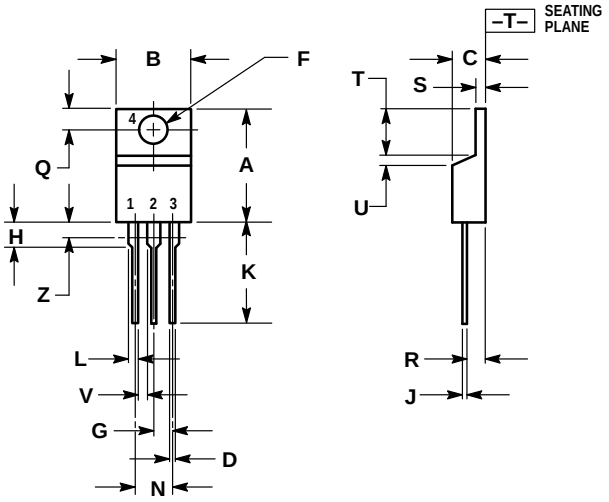
Preferred devices are Motorola recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS — continued (T_C = 25°C unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS*					
Collector–Emitter Saturation Voltage (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{CE(sat)}$	—	—	0.8	Vdc
Base–Emitter On Voltage (I_C = 500 mAdc, V_{CE} = 4.0 Vdc)	$V_{BE(on)}$	—	—	1.5	Vdc
DC Current Gain	h_{FE}				—
(I_C = 50 mAdc, V_{CE} = 10 Vdc)		60	—	—	
(I_C = 500 mAdc, V_{CE} = 10 Vdc)		50	—	200	
DYNAMIC CHARACTERISTICS					
Current Gain Bandwidth Product (I_C = 500 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T	—	5.0	—	MHz

* Indicates Pulse Test: P.W. = 300 μsec max, Duty Cycle = 2%.

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	—	1.15	—
Z	—	0.080	—	2.04

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

CASE 221A–06
TO–220AB
ISSUE Y

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