

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

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	I _C	3.0	Adc
— Peak	I _{CM}	5.0	
Total Power Dissipation (T _A = 25°C)	P _D	2.0	Watts
Derate above 25°C		0.016	W/°C
Total Power Dissipation	P _D	40	Watts
Derate above 25°C		0.32	W/°C
Operating and Storage Temperature	T _J , T _{stg}	– 55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	R _{θJC}	3.12	°C/W
— Junction to Ambient	R _{θJA}	62.5	
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
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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

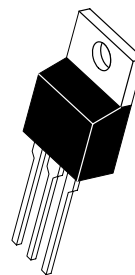
* Indicates Pulse Test: P.W. = 300 μsec max, Duty Cycle = 2%.

(continued)

MJE9780*

*ON Semiconductor Preferred Device

PNP SILICON POWER
TRANSISTOR
3.0 AMPERES
150 VOLTS



CASE 221A–09
TO–220AB

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

MJE9780

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

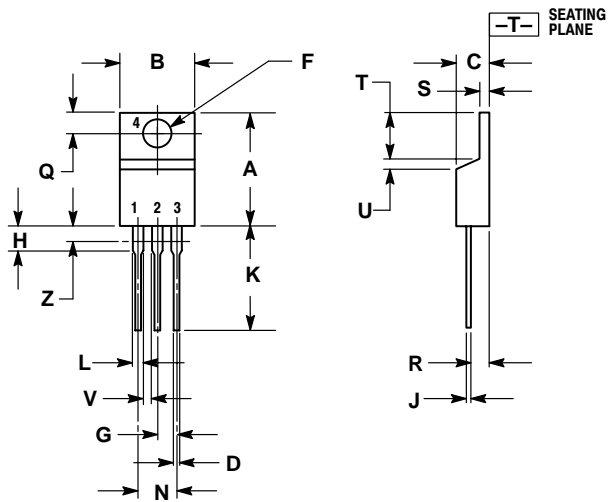
Characteristics	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS*					
Collector–Emitter Saturation Voltage ($I_C = 500\text{ mAdc}$, $I_B = 50\text{ mAdc}$)	$V_{CE(sat)}$	—	—	0.8	Vdc
Base–Emitter On Voltage ($I_C = 500\text{ mAdc}$, $V_{CE} = 4.0\text{ Vdc}$)	$V_{BE(on)}$	—	—	1.5	Vdc
DC Current Gain ($I_C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

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

MJE9780

PACKAGE DIMENSIONS


TO-220AA
CASE 221A-09
ISSUE AA



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.

DIM	INCHES		MILLIMETERS	
	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

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