

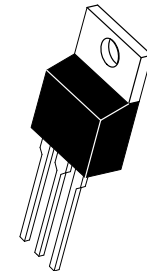
NPN Silicon High-Voltage Transistor

... useful for general-purpose, high voltage applications requiring high f_T .

- Collector-Emitter Sustaining Voltage —
 $V_{CEO(sus)} = 350 \text{ Vdc (Min) @ } I_C = 2.5 \text{ mAdc}$
- DC Current Gain —
 $h_{FE} = 40 \text{ (Min) @ } I_C = 100 \text{ mAdc}$ — MJE2361T
- Current-Gain-Bandwidth Product —
 $f_T = 10 \text{ MHz (Typ) @ } I_C = 50 \text{ mAdc}$

MJE2360T
MJE2361T

0.5 AMPERE
POWER TRANSISTORS
NPN SILICON
350 VOLTS
30 WATTS



CASE 221A-06
TO-220AB

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	350	Vdc
Collector-Base Voltage	V_{CB}	375	Vdc
Emitter-Base Voltage	V_{EB}	6.0	Vdc
Collector Current — Continuous	I_C	0.5	Adc
Base Current	I_B	0.25	Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	30 0.24	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}	4.167	$^\circ\text{C/W}$

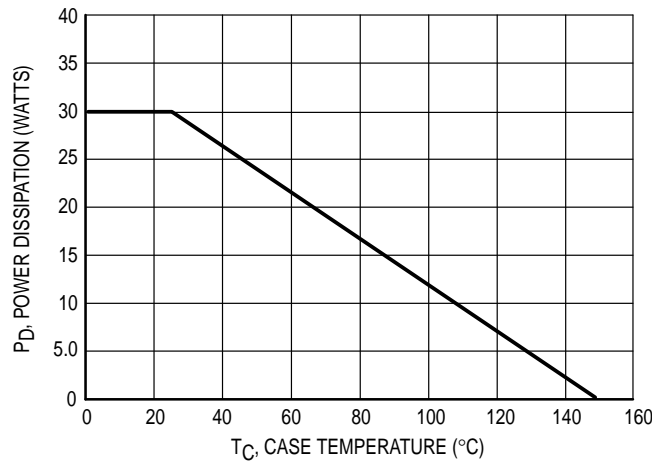


Figure 1. Power-Temperature Derating Curve

MJE2360T MJE2361T

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Sustaining Voltage ⁽¹⁾ (I _C = 2.5 mA _{dc} , I _B = 0)	V _{CEO(sus)}	350	—	—	V _{dc}
Collector Cutoff Current (V _{CE} = 250 V _{dc} , I _B = 0)	I _{CEO}	—	—	0.25	mA _{dc}
Collector Cutoff Current (V _{CE} = 375 V _{dc} , V _{EB(off)} = 1.5 V _{dc})	I _{CEX}	—	—	0.5	mA _{dc}
Collector Cutoff Current (V _{CB} = 375 V _{dc} , I _E = 0)	I _{CBO}	—	—	0.1	mA _{dc}
Emitter Cutoff Current (V _{BE} = 5.0 V _{dc} , I _C = 0)	I _{EBO}	—	—	0.1	mA _{dc}

ON CHARACTERISTICS (1)

DC Current Gain (I _C = 50 mA _{dc} , V _{CE} = 10 V _{dc})	MJE2360T MJE2361T MJE2360T MJE2361T	h _{FE}	25	—	200	—
(I _C = 100 mA _{dc} , V _{CE} = 10 V _{dc})			50	—	250	
			15	—	—	
			40	—	—	
Collector–Emitter Saturation Voltage (I _C = 100 mA _{dc} , I _B = 10 mA _{dc})		V _{CE(sat)}	—	—	1.5	V _{dc}
Base–Emitter On Voltage (I _C = 100 mA _{dc} , V _{CE} = 10 V _{dc})		V _{BE(on)}	—	—	1.0	V _{dc}

DYNAMIC CHARACTERISTICS

Current–Gain — Bandwidth Product (I _C = 50 mA _{dc} , V _{CE} = 10 V _{dc} , f = 1.0 MHz)	f _T	—	10	—	MHz
Output Capacitance (V _{CB} = 100 V _{dc} , I _E = 0, f = 100 kHz)	C _{ob}	—	20	—	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

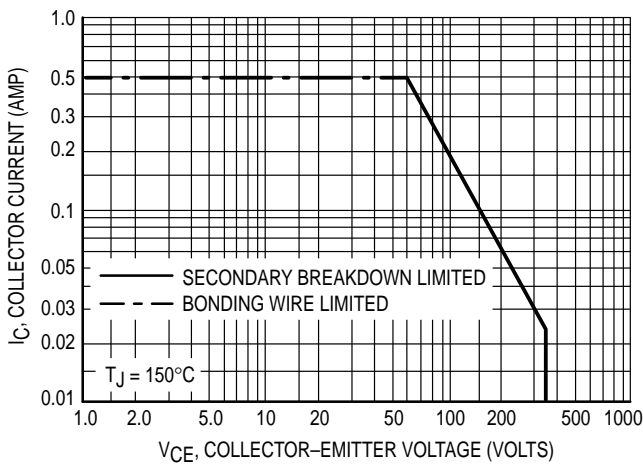
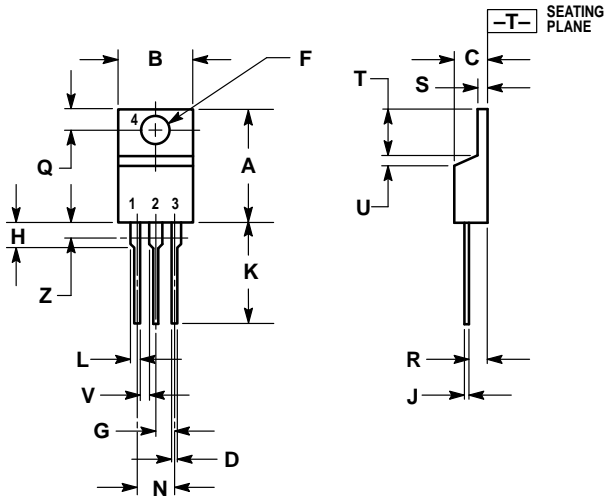


Figure 2. DC Safe Operating Area

The Safe Operating Area Curves indicate I_C – V_{CE} limits below which the device will not enter secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a catastrophic failure. To insure operation below the maximum T_J, power–temperature derating must be observed for both steady state and pulse power conditions.

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.

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

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

CASE 221A-06
 TO-220AB
 ISSUE Y

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How to reach us:

USA / EUROPE: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, Toshikatsu Otsuki,
6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-3521-8315

MFAX: RMFAX0@email.sps.mot.com - TOUCHTONE (602) 244-6609
INTERNET: <http://Design-NET.com>

HONG KONG: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

