

NPN Silicon High-Voltage Transistor

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

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

MAXIMUM RATINGS

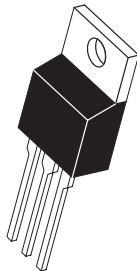
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	350	Vdc
Collector-Base Voltage	V_{CB}	375	Vdc
Emitter-Base Voltage	V_{EB}	6.0	Vdc
Collector Current — Continuous	I_C	0.5	Adc
Base Current	I_B	0.25	Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	30 0.24	Watts W/ $^\circ\text{C}$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

MJE2360T
MJE2361T

0.5 AMPERE
POWER TRANSISTORS
NPN SILICON
350 VOLTS
30 WATTS



CASE 221A-06
TO-220AB

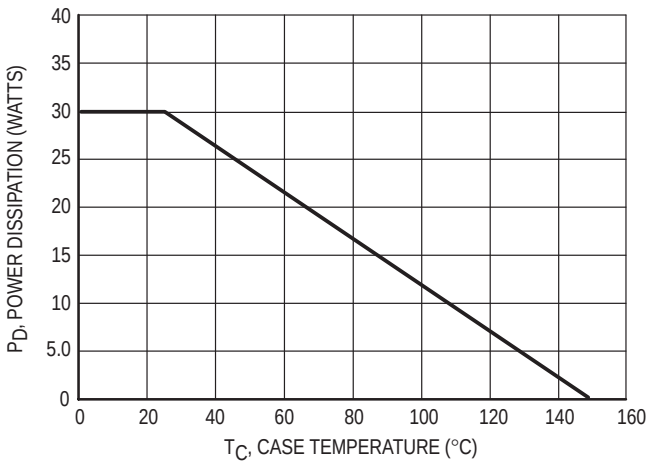


Figure 1. Power-Temperature Derating Curve

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

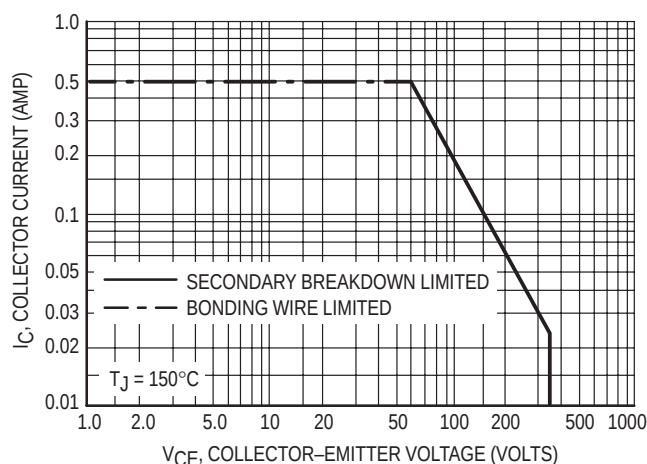
Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Sustaining Voltage ⁽¹⁾ ($I_C = 2.5\text{ mAdc}$, $I_B = 0$)	$V_{CEO(sus)}$	350	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 250\text{ Vdc}$, $I_B = 0$)	I_{CEO}	—	—	0.25	mAdc
Collector Cutoff Current ($V_{CE} = 375\text{ Vdc}$, $V_{EB(off)} = 1.5\text{ Vdc}$)	I_{CEX}	—	—	0.5	mAdc
Collector Cutoff Current ($V_{CB} = 375\text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	—	0.1	mAdc
Emitter Cutoff Current ($V_{BE} = 5.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	—	0.1	mAdc

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 50\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 100\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$)	MJE2360T MJE2361T MJE2360T MJE2361T	h_{FE}	25 50 15 40	— — — —	200 250 — —	—
Collector–Emitter Saturation Voltage ($I_C = 100\text{ mAdc}$, $I_B = 10\text{ mAdc}$)		$V_{CE(sat)}$	—	—	1.5	Vdc
Base–Emitter On Voltage ($I_C = 100\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$)		$V_{BE(on)}$	—	—	1.0	Vdc

DYNAMIC CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = 50\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, $f = 1.0\text{ MHz}$)	f_T	—	10	—	MHz
Output Capacitance ($V_{CB} = 100\text{ Vdc}$, $I_E = 0$, $f = 100\text{ kHz}$)	C_{ob}	—	20	—	pF

(1) Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$.**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.