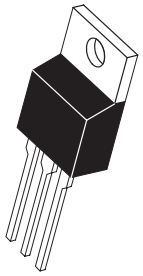
MJE2360T
MJE2361T

NPN Silicon High-Voltage Transistor

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

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

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°C Derate above 25°C	P_D	30 0.24	Watts W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	4.167	°C/W

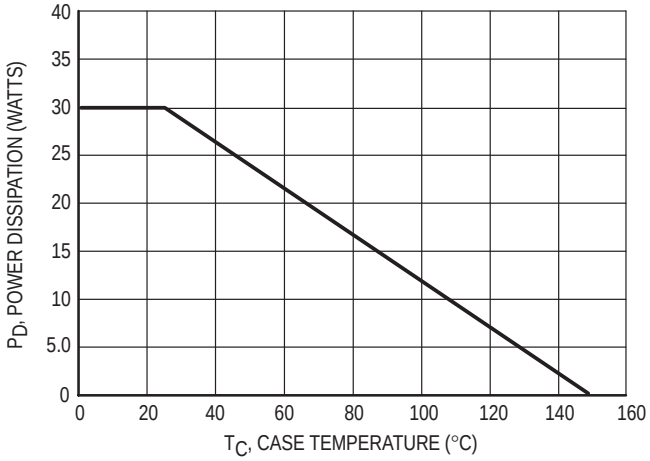


Figure 1. Power–Temperature Derating Curve

REV 1

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 mAdc, I_B = 0)		$V_{CEO(sus)}$	350	—	—	Vdc
Collector Cutoff Current (V_{CE} = 250 Vdc, I_B = 0)		I_{CEO}	—	—	0.25	mAdc
Collector Cutoff Current (V_{CE} = 375 Vdc, $V_{EB(off)}$ = 1.5 Vdc)		I_{CEX}	—	—	0.5	mAdc
Collector Cutoff Current (V_{CB} = 375 Vdc, I_E = 0)		I_{CBO}	—	—	0.1	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)		I_{EBO}	—	—	0.1	mAdc
ON CHARACTERISTICS (1)						
DC Current Gain		h_{FE}				—
(I_C = 50 mAdc, V_{CE} = 10 Vdc)	MJE2360T		25	—	200	
	MJE2361T		50	—	250	
(I_C = 100 mAdc, V_{CE} = 10 Vdc)	MJE2360T		15	—	—	
	MJE2361T		40	—	—	
Collector–Emitter Saturation Voltage (I_C = 100 mAdc, I_B = 10 mAdc)		$V_{CE(sat)}$	—	—	1.5	Vdc
Base–Emitter On Voltage (I_C = 100 mAdc, V_{CE} = 10 Vdc)		$V_{BE(on)}$	—	—	1.0	Vdc
DYNAMIC CHARACTERISTICS						
Current–Gain — Bandwidth Product (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)		f_T	—	10	—	MHz
Output Capacitance (V_{CB} = 100 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	—	20	—	pF

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

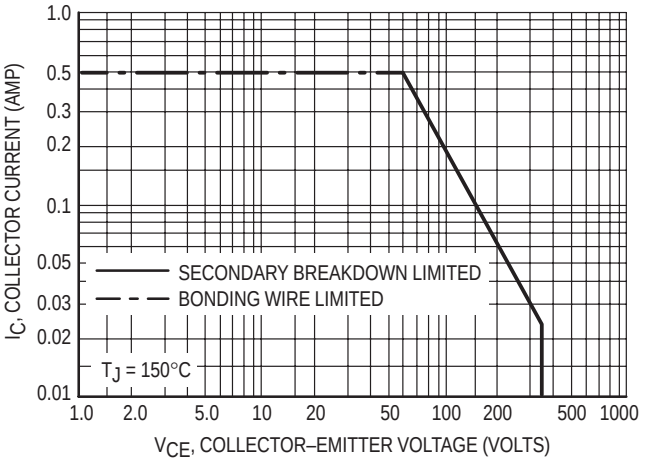


Figure 2. DC Safe Operating Area

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.