

NPN SILICON HIGH-VOLTAGE TRANSISTORS

... designed for use general-purpose, high voltage applications requiring high f_T

FEATURES:

*Collector-Emitter Sustaining Voltage-

$$V_{CEO(SUS)} = 350 \text{ V (Min)} @ I_C = 2.5 \text{ mA}$$

* DC Current Gain-

$$hFE = 40 \text{ (Min.)} @ I_C = 100 \text{ mA- MJE2361T}$$

* Current Gain-Bandwidth Product

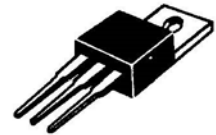
$$f_T = 10 \text{ MHz (Typ)} @ I_C = 50 \text{ mA}$$

NPN
MJE2360T
MJE2361T

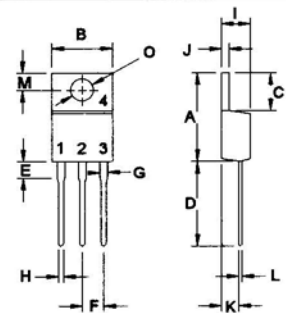
0.5 AMPERE
POWER
TRANSISTORS
350 VOLTS
30 WATTS

MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	350	V
Collector-Emitter Voltage	V_{CEV}	375	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	0.5 1.0	A
Base current	I_B	0.25	A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	30 0.24	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$



TO-220



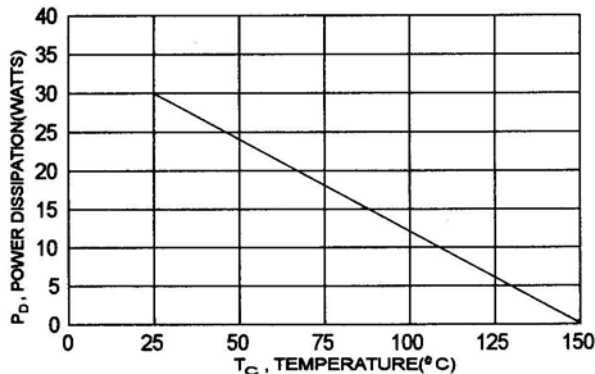
PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	4.167	$^\circ\text{C/W}$

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	16.00
B	9.78	10.42
C	5.02	6.60
D	13.00	14.62
E	3.10	4.19
F	2.41	2.67
G	1.10	1.67
H	0.69	1.01
I	3.21	4.98
J	1.14	1.40
K	2.20	3.30
L	0.28	0.61
M	2.48	3.00
O	3.50	4.00

FIGURE -1 POWER DERATING



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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ($I_C = 2.5 \text{ mA}, I_B = 0$)	$V_{CEO(sus)}$	350		V
Collector Cutoff Current ($V_{CE} = 250 \text{ V}, I_B = 0$)	I_{CEO}		0.25	mA
Collector Cutoff Current ($V_{CE} = 375 \text{ V}, V_{BE(off)} = 1.5 \text{ V}$)	I_{CEX}		0.5	mA
Collector Cutoff Current ($V_{CB} = 375 \text{ V}, I_E = 0$)	I_{CBO}		0.1	mA
Emitter Cutoff Current ($V_{EB} = 5.0 \text{ V}, I_C = 0$)	I_{EBO}		0.1	mA

ON CHARACTERISTICS (1)

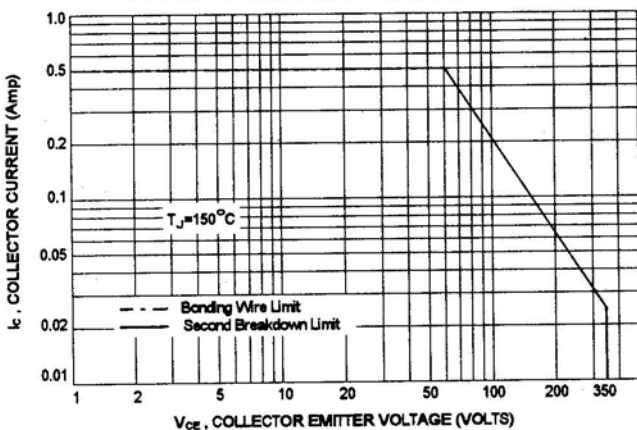
DC Current Gain ($I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}$) ($I_C = 100 \text{ mA}, V_{CE} = 10 \text{ V}$)	MJE2360T MJE2361T MJE2360T MJE2361T	h_{FE}	25 50 15 40	200 250	
Collector-Emitter Saturation Voltage ($I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$)		$V_{CE(sat)}$		1.5	V
Base-Emitter Saturation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

DYNAMIC CHARACTERISTICS

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

(1) Pulse Test: Pulse Width $\approx 300 \text{ us}$, Duty Cycle $\leq 2.0\%$

ACTIVE-REGION 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 operating below the maximum T_j , power-temperature derating must be observed for both steady state and pulse power conditions.

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