

Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	120	V
Collector-Emitter Voltage	V _{CEO}	100	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current - Continuous	I _C	1	A
Peak Pulse Collector Current	I _{CM}	3	A
Base Current – Continuous	I _B	0.3	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	625	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	200	°C/W
Thermal Resistance, Junction to Lead (Note 6)	R _{θJL}	81	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

ESD Ratings (Note 7)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

- Notes:
5. For a device mounted on minimum recommended pad layout that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 6. Thermal resistance from junction to solder-point (at the end of collector lead).
 7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

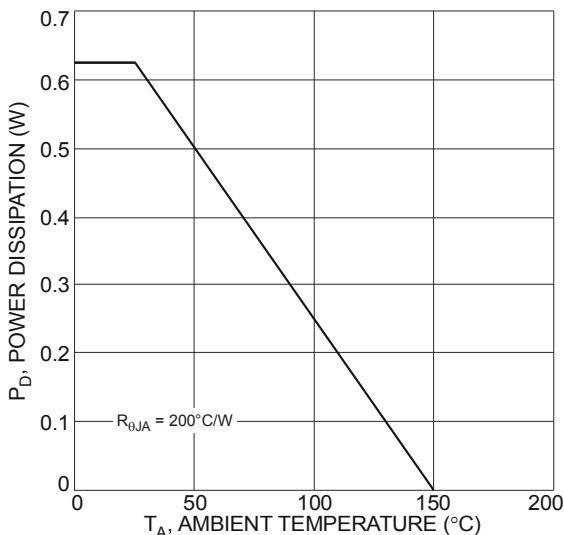


Fig. 1 Power Dissipation vs. Ambient Temperature

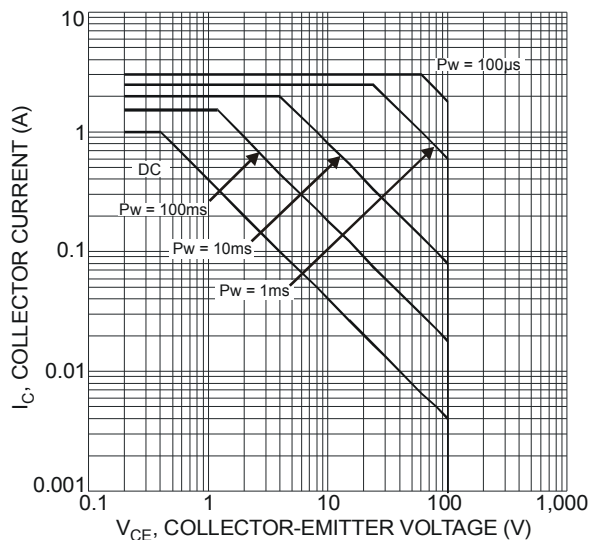


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

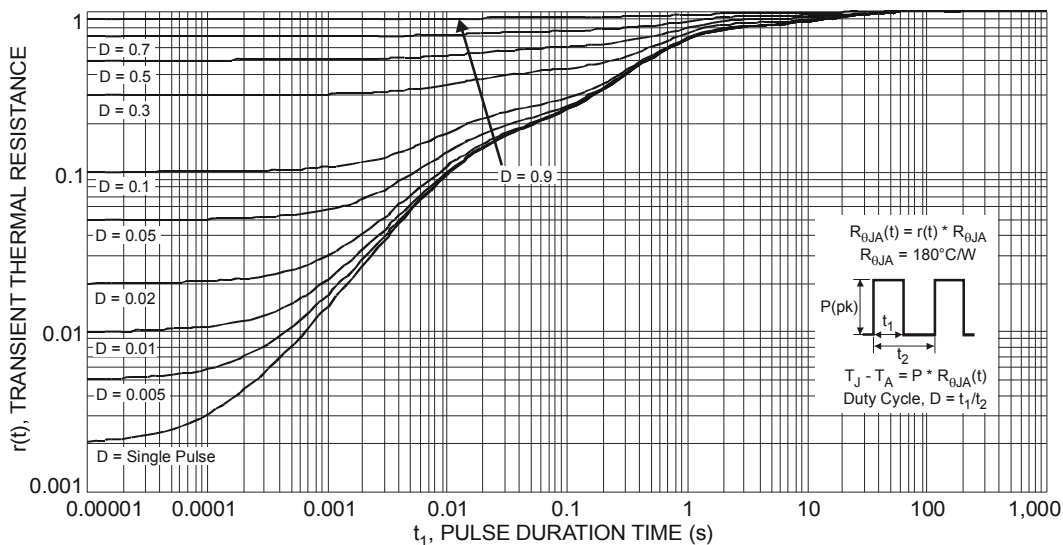


Fig. 3 Transient Thermal Response

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 8)						
Collector-Base Breakdown Voltage	BV _{CBO}	120	—	—	V	I _C = 100μA, I _E = 0
Collector-Emitter Breakdown Voltage	BV _{CEO}	100	—	—	V	I _C = 10mA, I _B = 0
Emitter-Base Breakdown Voltage	BV _{EBO}	5	—	—	V	I _E = 100μA, I _C = 0
Collector Cutoff Current	I _{CBO}	—	—	100 50	nA μA	V _{CB} = 80V, I _E = 0 V _{CB} = 80V, I _E = 0, T _A = 150°C
Collector Cutoff Current	I _{CES}	—	—	100	nA	V _{CE} = 80V, V _{BE} = 0
Emitter Cutoff Current	I _{EBO}	—	—	100	nA	V _{EB} = 4V, I _C = 0
ON CHARACTERISTICS (Note 8)						
DC Current Gain	h _{FE}	150 150 100 80	— — — —	— 500 — —	V	V _{CE} = 10V, I _C = 1mA V _{CE} = 10V, I _C = 250mA V _{CE} = 10V, I _C = 500mA V _{CE} = 10V, I _C = 1A
Collector-Emitter Saturation Voltage	V _{CE(sat)}	— — —	— — —	40 120 200	mV	I _C = 100mA, I _B = 10mA I _C = 500mA, I _B = 50mA I _C = 1A, I _B = 100mA
Collector-Emitter Saturation Resistance	R _{CE(sat)}	—	—	200	mΩ	I _C = 1A, I _B = 100mA
Base-Emitter Saturation Voltage	V _{BE(sat)}	—	—	1.05	V	I _C = 1A, I _B = 100mA
Base-Emitter Turn On Voltage	V _{BE(on)}	—	—	0.9	V	V _{CE} = 10V, I _C = 1A
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C _{obo}	—	—	7.5	pF	V _{CB} = 10V, f = 1.0MHz
Current Gain-Bandwidth Product	f _T	100	—	—	MHz	V _{CE} = 10V, I _C = 50mA, f = 100MHz

Notes: 8. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

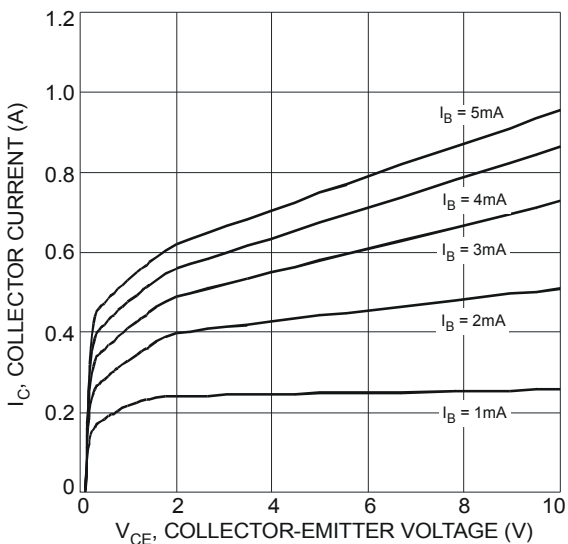


Fig. 4 Typical Collector Current vs. Collector-Emitter Voltage

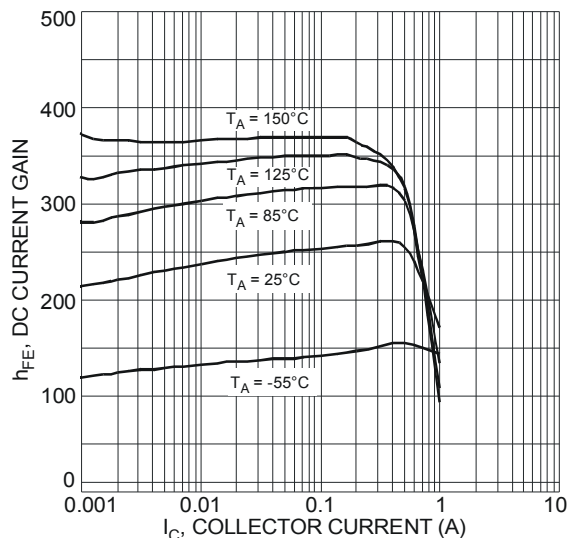


Fig. 5 Typical DC Current Gain vs. Collector Current

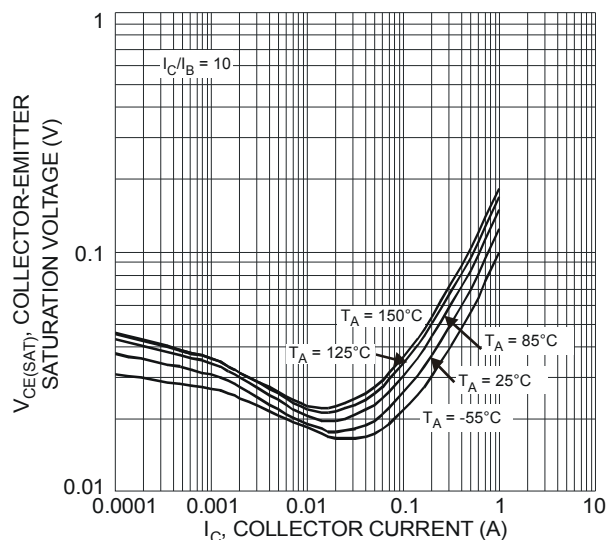


Fig. 6 Typical Collector-Emitter Saturation Voltage vs. Collector Current

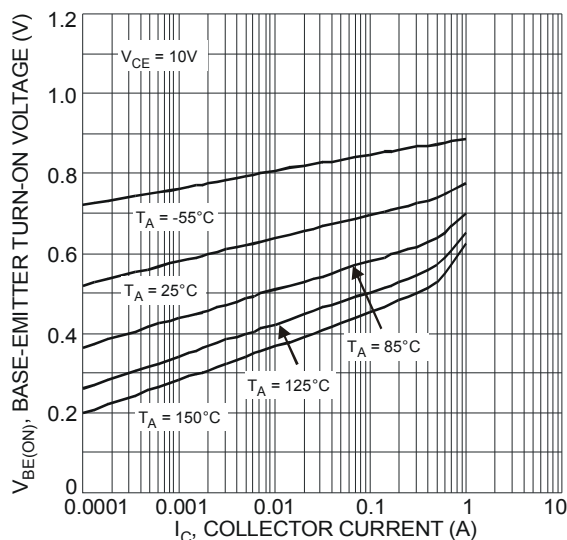


Fig. 7 Typical Base-Emitter Turn-On Voltage vs. Collector Current

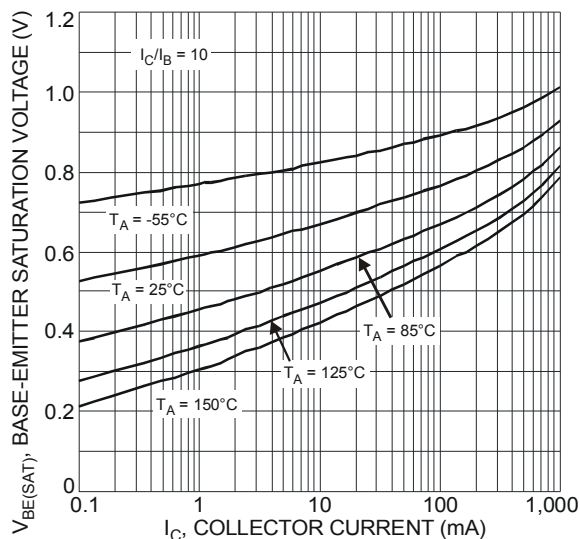
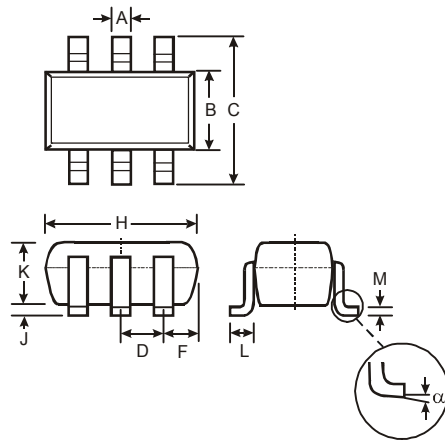


Fig. 8 Typical Base-Emitter Saturation Voltage vs. Collector Current

Package Outline Dimensions

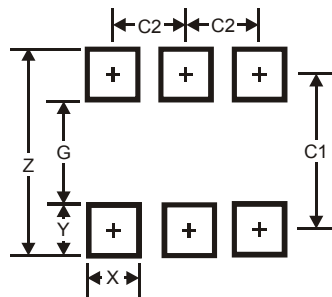
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT363			
Dim	Min	Max	Typ
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65 Typ		
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

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