

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	300	V
Collector-Emitter Voltage	V _{CEO}	300	V
Emitter-Base Voltage	V _{EBO}	6.0	V
Collector Current - Continuous	I _C	500	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	300	mW
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	417	°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:
- 6. For a device mounted on minimum recommended pad layout 1oz copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 - 7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 8)					
Collector-Base Breakdown Voltage	BV _{CBO}	300	—	V	I _C = 100μA, I _E = 0
Collector-Emitter Breakdown Voltage	BV _{CEO}	300	—	V	I _C = 1.0mA, I _B = 0
Emitter-Base Breakdown Voltage	BV _{EBO}	6.0	—	V	I _E = 100μA, I _C = 0
Collector Cut-Off Current	I _{CBO}	—	100	nA	V _{CB} = 200V, I _E = 0
Emitter Cut-Off Current	I _{EBO}	—	100	nA	V _{EB} = 6.0V, I _C = 0
ON CHARACTERISTICS (Note 8)					
DC Current Gain	h _{FE}	25 40 40	— — —	—	I _C = 1.0mA, V _{CE} = 10V I _C = 10mA, V _{CE} = 10V I _C = 30mA, V _{CE} = 10V
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	0.5	V	I _C = 20mA, I _B = 2.0mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	0.9	V	I _C = 20mA, I _B = 2.0mA
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C _{cb}	—	3.0	pF	V _{CB} = 20V, f = 1.0MHz, I _E = 0
Current Gain-Bandwidth Product	f _T	50	—	MHz	V _{CE} = 20V, I _C = 10mA, f = 100MHz

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

Typical Electrical Characteristics

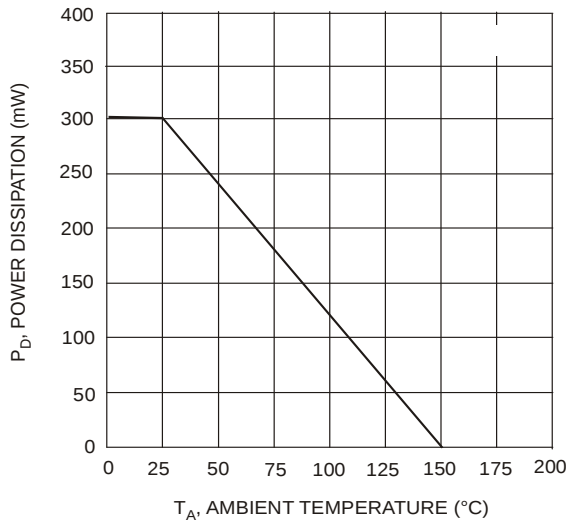


Fig. 1, Max Power Dissipation vs Ambient Temperature

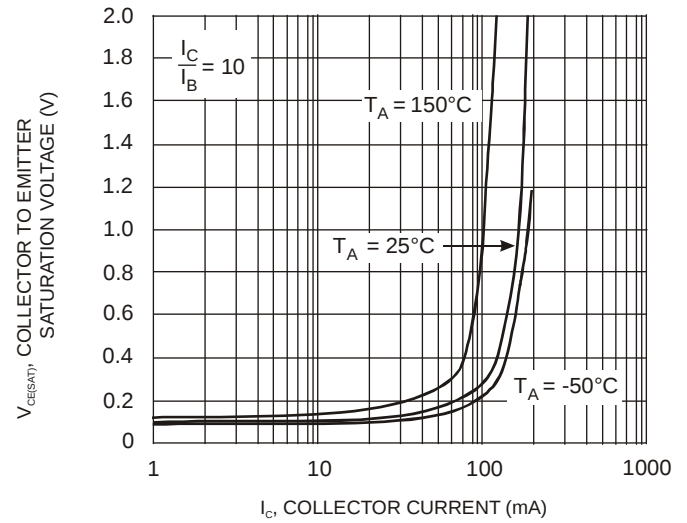


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

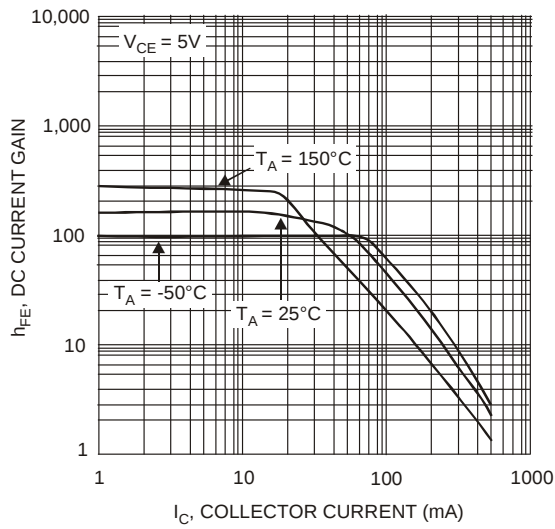


Fig. 3, DC Current Gain vs Collector Current

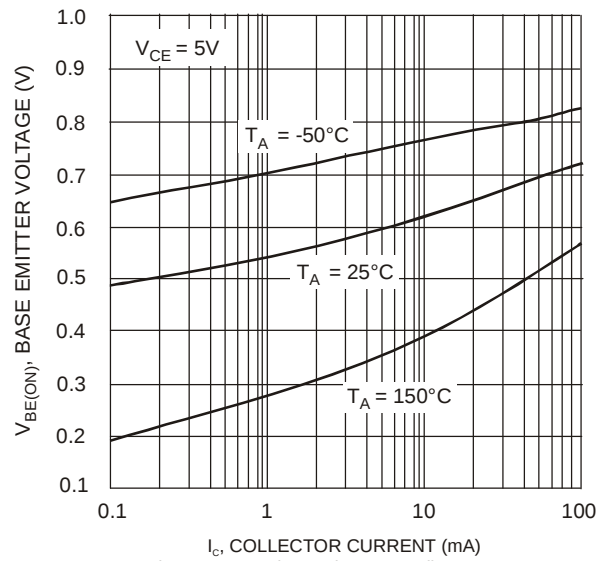
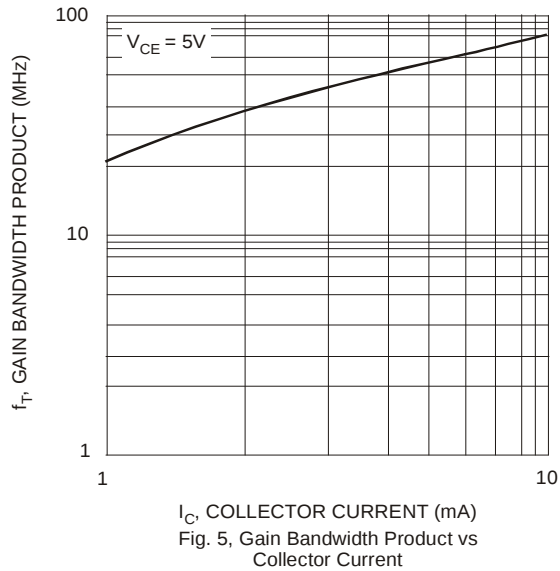
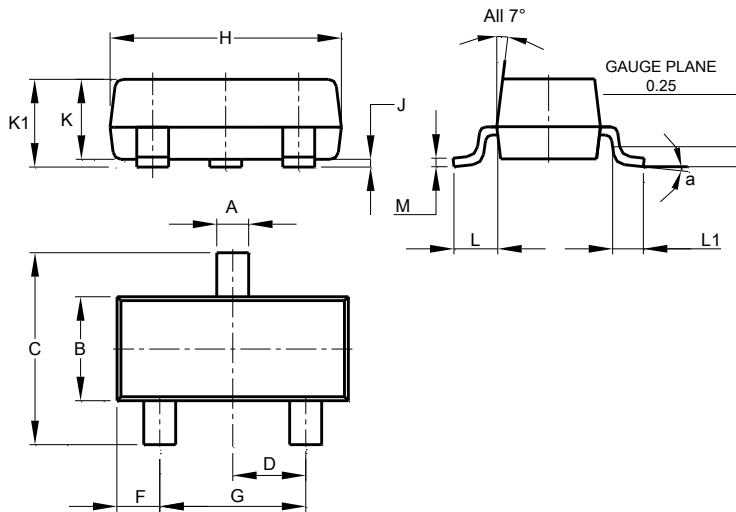


Fig. 4, Base Emitter Voltage vs Collector Current



Package Outline Dimensions

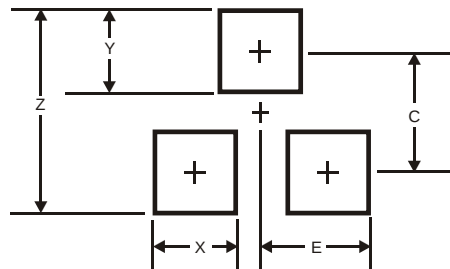
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	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	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device terminals and PCB tracking.

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