

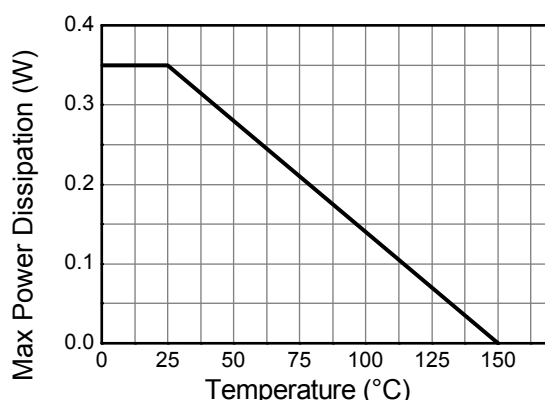
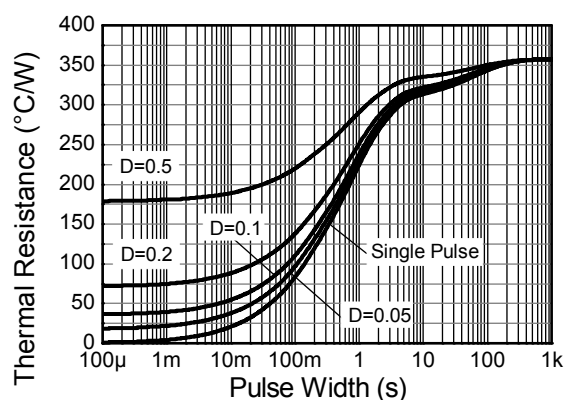
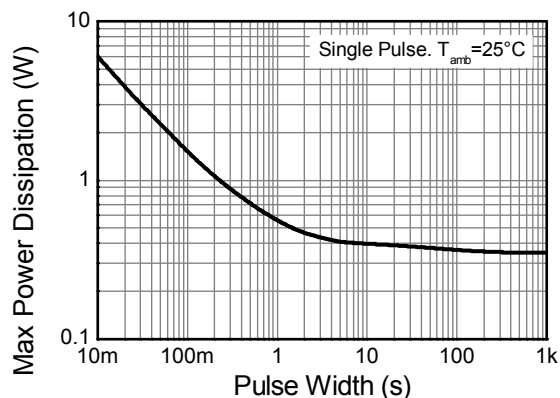
Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	80	V
Collector-Emitter Voltage	V _{CES}	80	V
Emitter-Base Voltage	V _{EBO}	12	V
Continuous Collector Current	I _C	500	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	310	mW
		350	
Thermal Resistance, Junction to Ambient	R _{θJA}	403	°C/W
		357	
Thermal Resistance, Junction to Leads	R _{θJL}	350	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

- Notes:
- 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.
 - Same as note (5), except the device is mounted on 15 mm x 15mm 1oz copper.
 - Thermal resistance from junction to solder-point (at the end of the leads).


Derating Curve

Transient Thermal Impedance

Pulse Power Dissipation

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV _{CBO}	80	—	—	V	I _C = 100μA, I _E = 0
Collector-Emitter Breakdown Voltage (Note 8)	BV _{CES}	80	—	—	V	I _C = 100μA, V _{BE} = 0
Emitter-Base Breakdown Voltage	BV _{EBO}	12	—	—	V	I _E = 100μA, I _C = 0
Collector cut-off current	I _{CBO}	—	—	100	nA	V _{CB} = 60V, I _E = 0
	I _{CES}	—	—	500	nA	V _{CE} = 60V, V _{BE} = 0
Emitter-base Cut-off Current	I _{EBO}	—	—	100	nA	V _{EB} = 10V, I _C = 0
ON CHARACTERISTICS (Note 8)						
Static Forward Current Transfer Ratio	h _{FE}	10,000 10,000	—	—	—	I _C = 10mA, V _{CE} = 5V I _C = 100mA, V _{CE} = 5V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	—	1.2 1.5	V	I _C = 10mA, I _B = 10μA I _C = 100mA, I _B = 100μA
Base-Emitter Turn-On Voltage	V _{BE(on)}	—	—	2.0	V	I _C = 100mA, V _{CE} = 5V
SMALL SIGNAL CHARACTERISTICS (Note 8)						
Current Gain-Bandwidth Product	f _T	125	—	—	MHz	I _C = 10mA, V _{CE} = 5V, f = 100MHz
Output Capacitance	C _{obo}	—	8.0	—	pF	V _{CB} = 10V, f = 1MHz, I _E = 0
Input Capacitance	C _{ibo}	—	15.0	—	pF	V _{EB} = 0.5V, f = 1MHz, I _C = 0

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

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

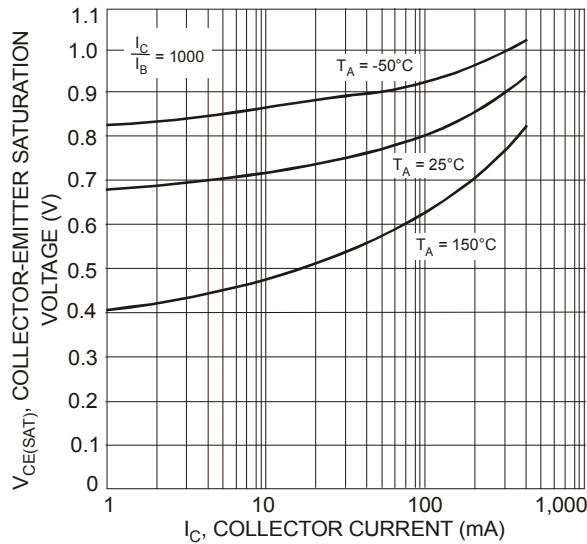


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

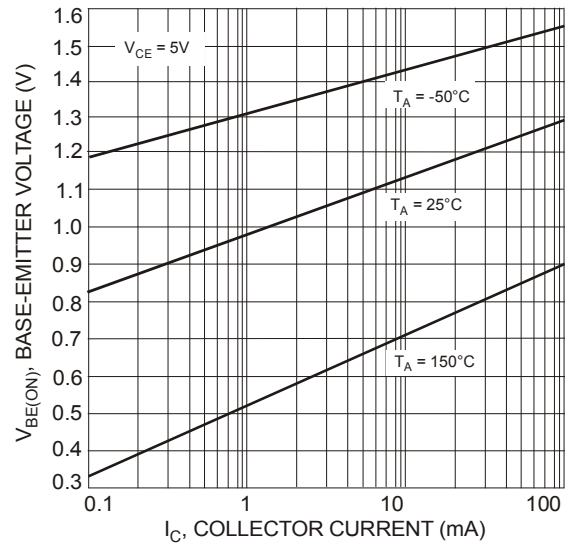


Fig. 3 Typical Base-Emitter Voltage vs. Collector Current

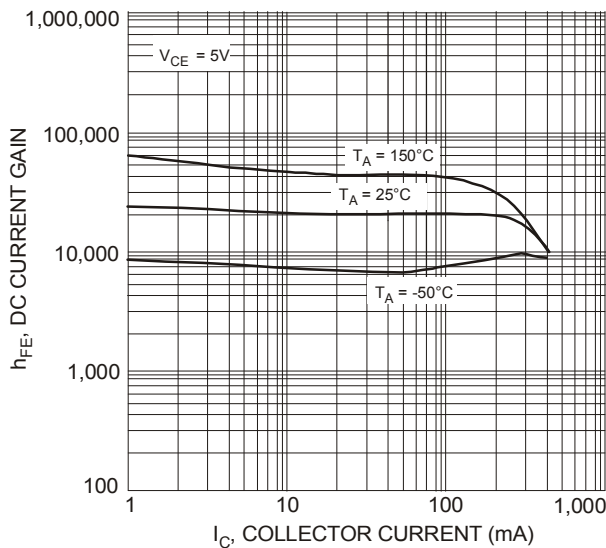


Fig. 4 Typical DC Current Gain vs. Collector Current

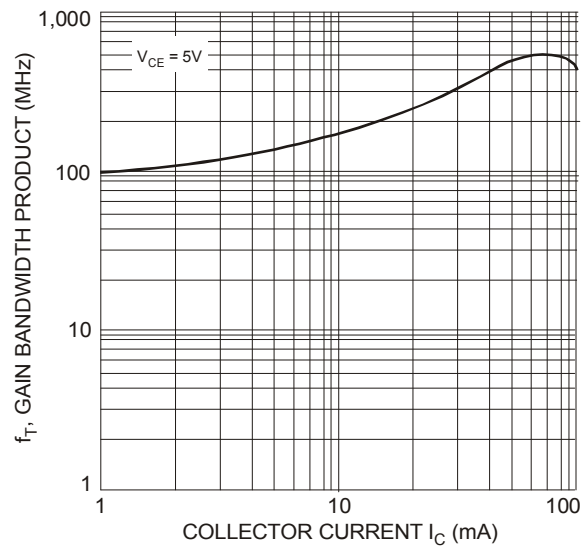
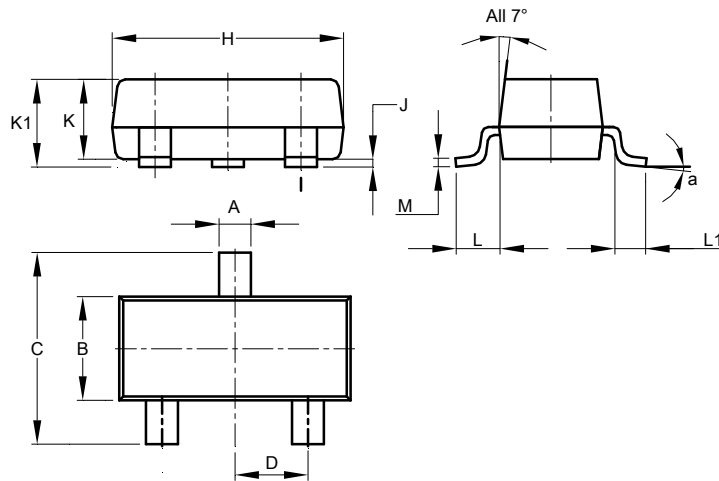


Fig. 5 Typical Gain Bandwidth Product vs. Collector Current

Package Outline Dimensions

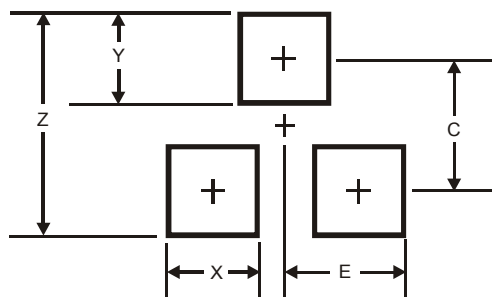
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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

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