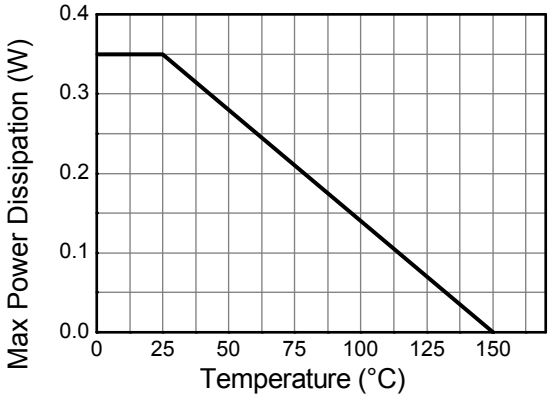
Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

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

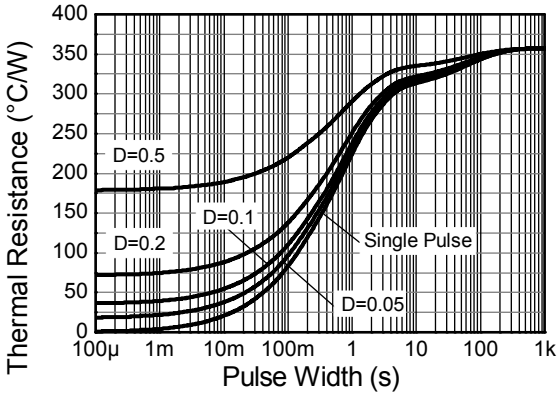
Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	310	mW
	(Note 6)		350	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	403	°C/W
	(Note 6)		357	
Thermal Resistance, Junction to Leads	(Note 7)	$R_{\theta JL}$	350	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

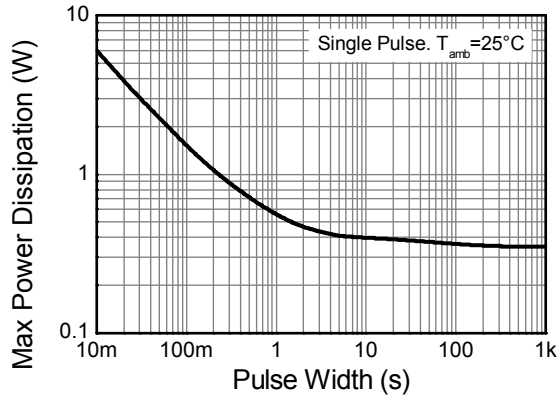
Notes:
5. For a device mounted on minimum recommended pad layout 1oz copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
6. Same as note (5), except the device is mounted on 15 mm x 15mm 1oz copper.
7. Thermal resistance from junction to solder-point (at the end of the leads).



Derating Curve



Transient Thermal Impedance



Pulse Power Dissipation

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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%

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

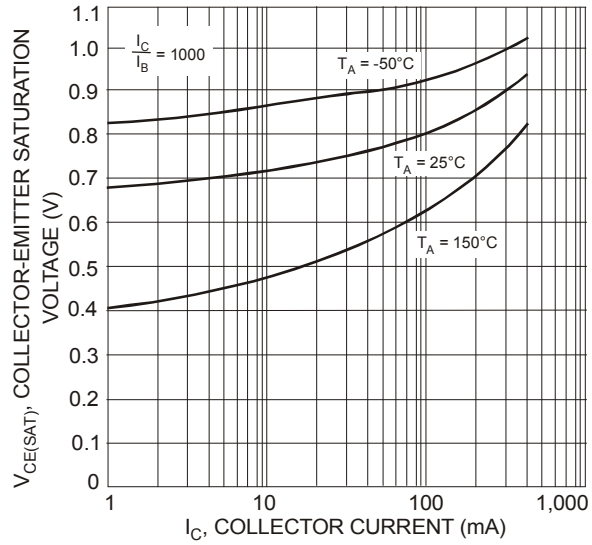

Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

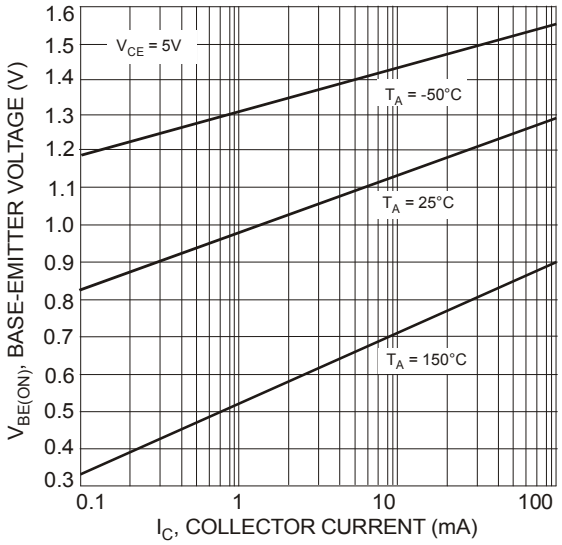

Fig. 3 Typical Base-Emitter Voltage vs. Collector Current

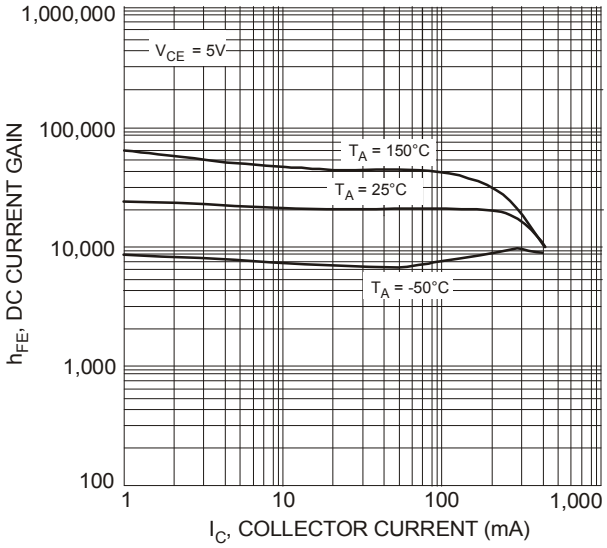

Fig. 4 Typical DC Current Gain vs. Collector Current

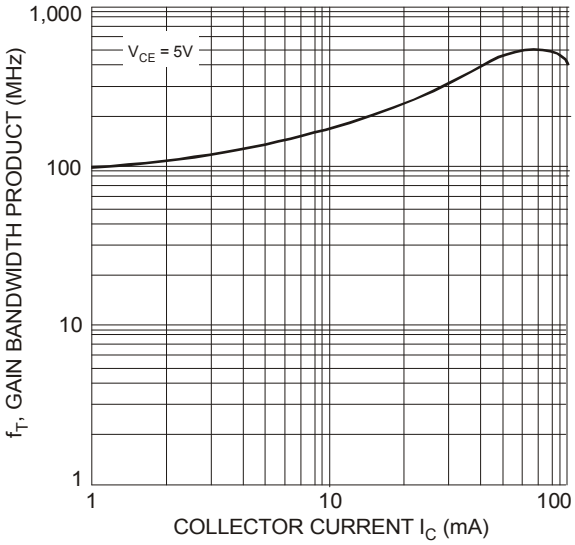

Fig. 5 Typical Gain Bandwidth Product vs. Collector Current

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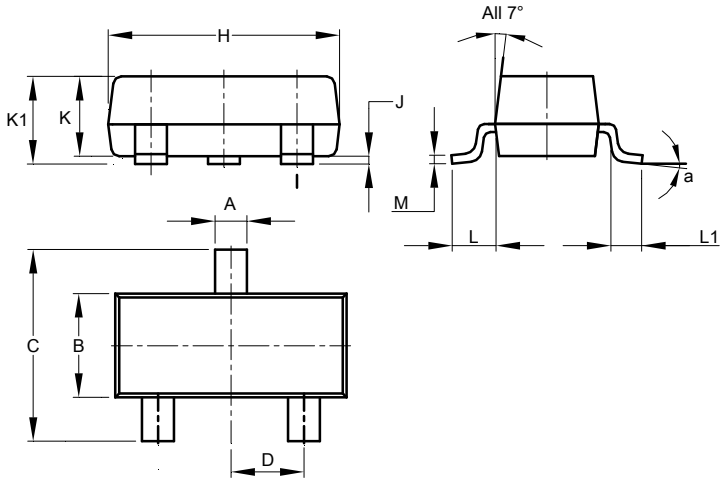
Package Outline Dimensions

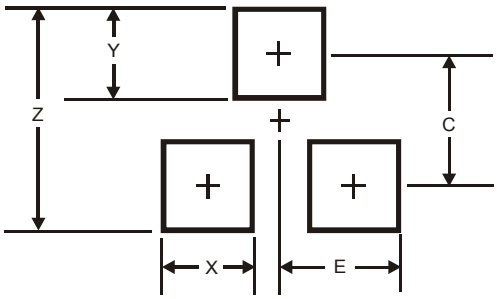
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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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