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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-10	V
Collector Current - Continuous	I_C	-500	mA

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

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	300	mW
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to +150	°C

ESD Ratings (Note 6)

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 1oz copper that is on a single-sided FR-4 PCB; device is measured under still air conditions whilst operating in a steady-state.
6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

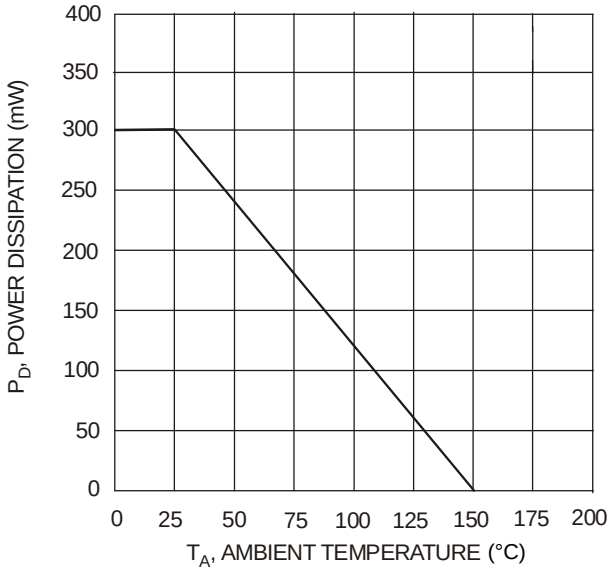


Fig. 1, Max Power Dissipation vs. Ambient Temperature

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)					
Collector-Emitter Breakdown Voltage	BV_{CEO}	-30	—	V	I_C = -100μA, V_{BE} = 0V
Collector Cut-Off Current	I_{CBO}	—	-100	nA	V_{CB} = -30V, I_E = 0
Emitter Cut-Off Current	I_{EBO}	—	-100	nA	V_{EB} = -10V, I_C = 0
ON CHARACTERISTICS (Note 7)					
DC Current Gain MMBTA63 MMBTA64 MMBTA63 MMBTA64	h_{FE}	5,000 10,000 10,000 20,000	—	—	I_C = -10mA, V_{CE} = -5.0V I_C = -10mA, V_{CE} = -5.0V I_C = -100mA, V_{CE} = -5.0V I_C = -100mA, V_{CE} = -5.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-1.5	V	I_C = -100mA, I_B = -100μA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	-2.0	V	I_C = -100mA, V_{CE} = -5.0V
SMALL SIGNAL CHARACTERISTICS					
Current Gain-Bandwidth Product	f_T	125	—	MHz	V_{CE} = -5.0V, I_C = -10mA, f = 100MHz

Note: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

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

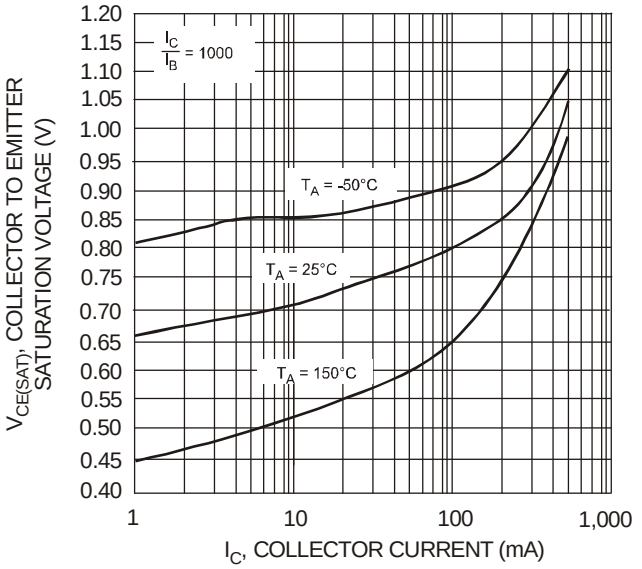


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

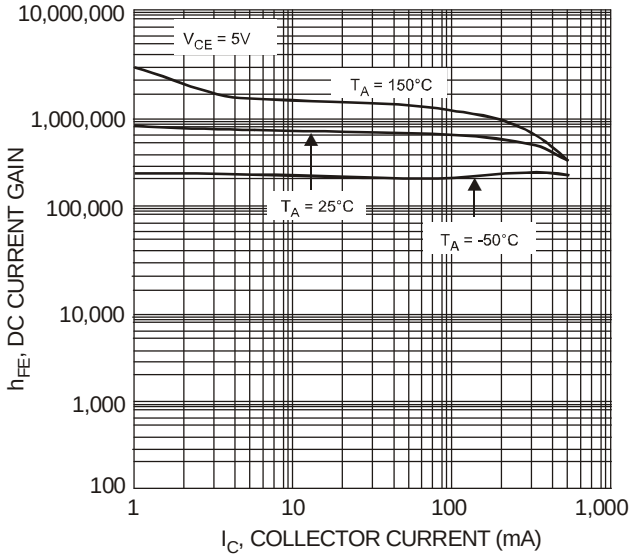


Fig. 3, DC Current Gain vs. Collector Current

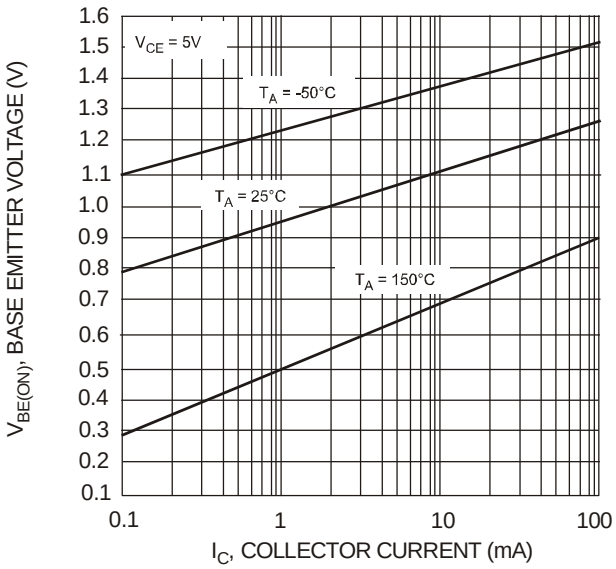


Fig. 4, Base Emitter Voltage vs. Collector Current

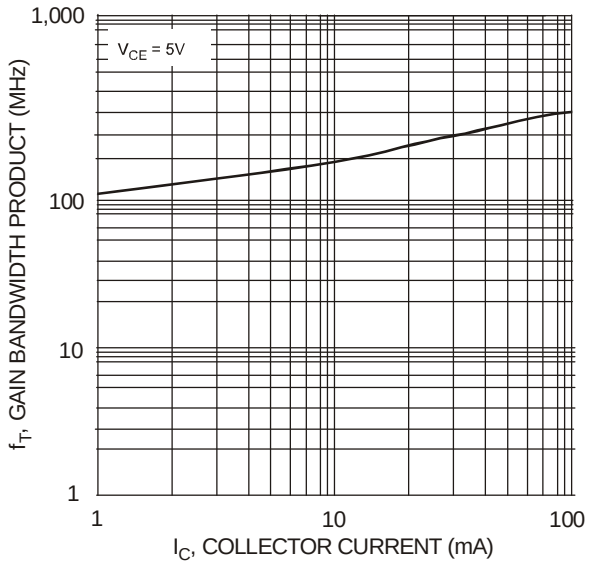
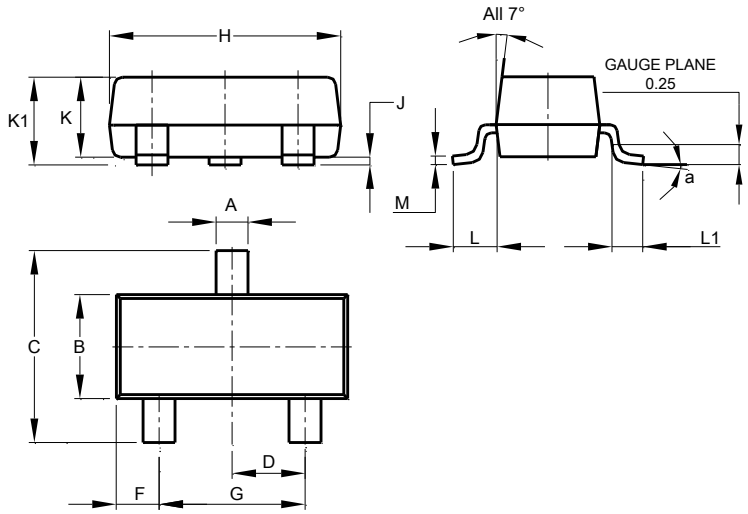


Fig. 5, Gain Bandwidth Product vs. Collector Current

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT23

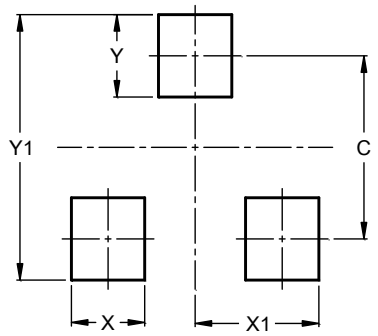


SOT23			
Dim	**Min**	**Max**	**Typ**
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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