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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA

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

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	0.75	W
	(Note 6)		1.2	
Thermal Resistance, Junction to Ambient Air	(Note 5)	$R_{\theta JA}$	166	°C/W
	(Note 6)		104	
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 with the exposed collector pad on minimum recommended pad layout 1oz copper that is on a single-sided 1.6mm FR-4 PCB; device is measured under still air conditions whilst operating in a steady-state.
6. Same as note 5, except the device is mounted with the exposed collector pad on 25mm x 25mm 1oz copper.
7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

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}	180	—	—	V	I_C = 100µA
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	160	—	—	V	I_C = 10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	6.0	—	—	V	I_E = 100µA
Collector Cut-off Current	I_{CBO}	—	—	50	nA	V_{CB} = 120V
				50	µA	V_{CB} = 120V, T_A = +100°C
Emitter Cut-off Current	I_{EBO}	—	—	50	nA	V_{EB} = 4V
ON CHARACTERISTICS (Note 8)						
Static Forward Current Transfer Ratio	h_{FE}	80	—	—	—	I_C = 1mA, V_{CE} = 5V
		80		250		I_C = 10mA, V_{CE} = 5V
		30		—		I_C = 50mA, V_{CE} = 5V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	—	0.15 0.20	V	I_C = 10mA, I_B = 1mA I_C = 50mA, I_B = 5mA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	—	1.0	V	I_C = 10mA, I_B = 1mA I_C = 50mA, I_B = 5mA
SMALL SIGNAL CHARACTERISTICS						
Transition Frequency	f_T	100	—	300	MHz	I_C = 10mA, V_{CE} = 10V, f = 100MHz
Output Capacitance	C_{obo}	—	—	6	pF	V_{CB} = 10V, I_E = 0, f = 1MHz
Small Signal Current Gain	h_{fe}	50	—	200	—	V_{CB} = 10V, I_C = 1mA, f = 1kHz
Noise Figure	NF	—	—	8	dB	V_{CB} = 5V, I_C = 200µA, R_S = 1kΩ, f = 1kHz

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

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

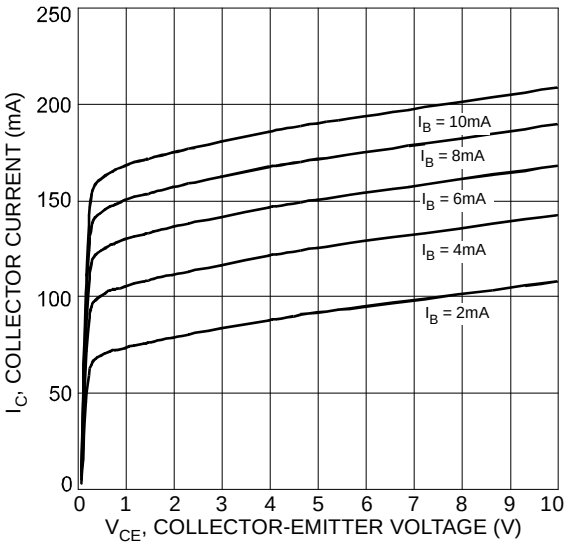


Fig.1 Typical Collector Current vs. Collector-Emitter Voltage

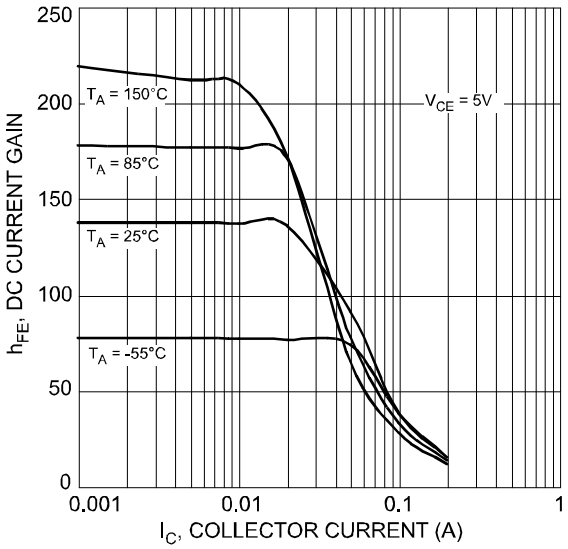


Fig.2 Typical DC Current Gain vs. Collector Current

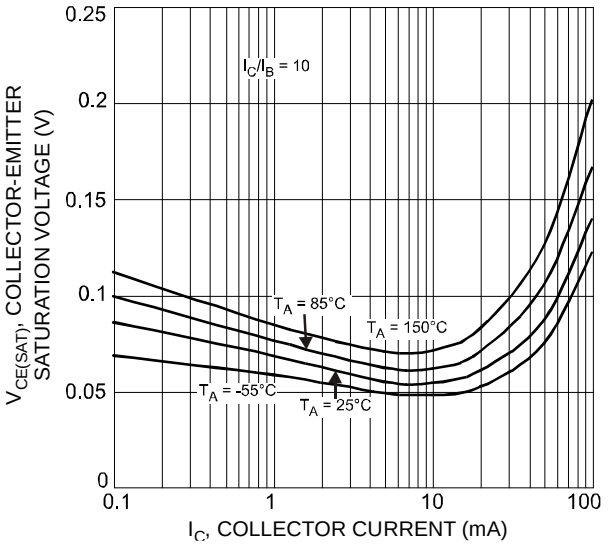


Fig.3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

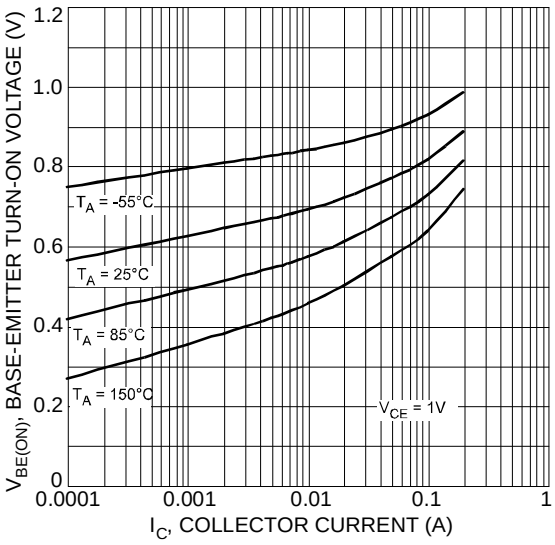


Fig.4 Typical Base-Emitter Turn-On Voltage vs. Collector Current

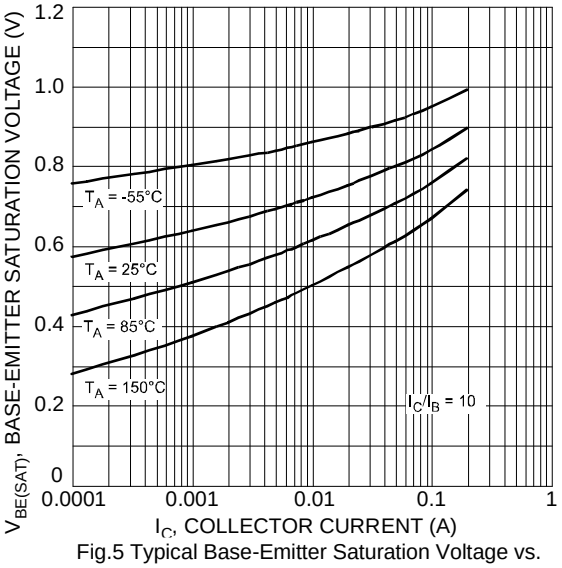


Fig.5 Typical Base-Emitter Saturation Voltage vs. Collector Current

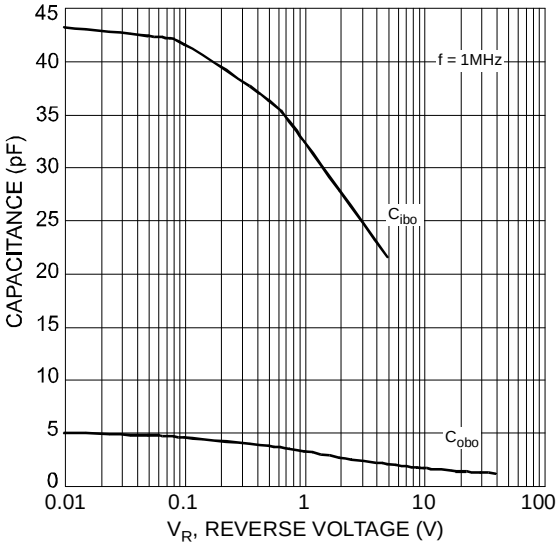


Fig.6 Typical Capacitance Characteristics

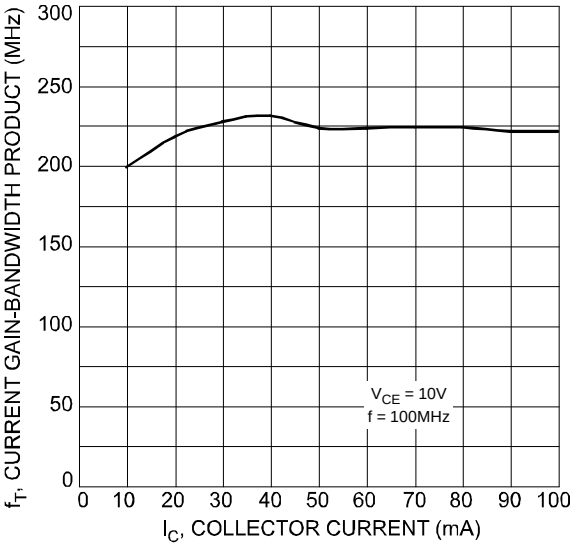
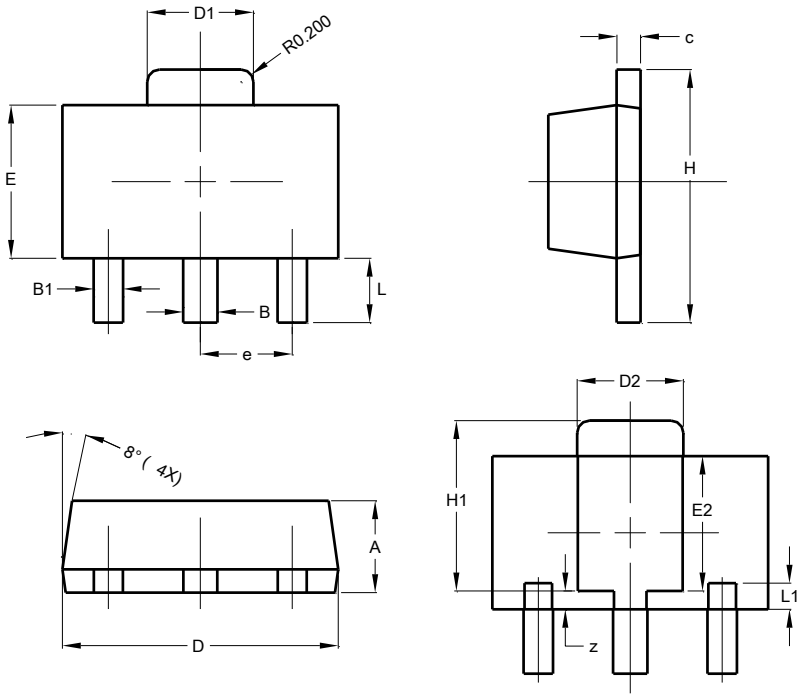


Fig.7 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

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

SOT89



SOT89			
Dim	Min	Max	Typ
A	1.40	1.60	1.50
B	0.50	0.62	0.56
B1	0.42	0.54	0.48
c	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.62	1.83	1.733
D2	1.61	1.81	1.71
E	2.40	2.60	2.50
E2	2.05	2.35	2.20
e	-	-	1.50
H	3.95	4.25	4.10
H1	2.63	2.93	2.78
L	0.90	1.20	1.05
L1	0.327	0.527	0.427
z	0.20	0.40	0.30
All Dimensions in mm			

Suggested Pad Layout

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

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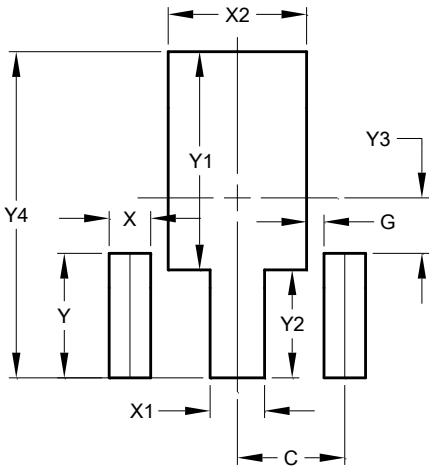

Dimensions	Value (in mm)
C	1.500
G	0.244
X	0.580
X1	0.760
X2	1.933
Y	1.730
Y1	3.030
Y2	1.500
Y3	0.770
Y4	4.530

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