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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA

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

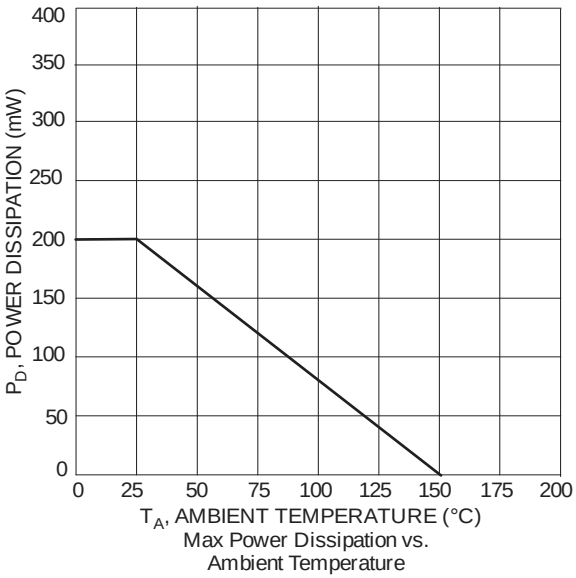
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	200	mW
Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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 with the collector lead 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.
7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information



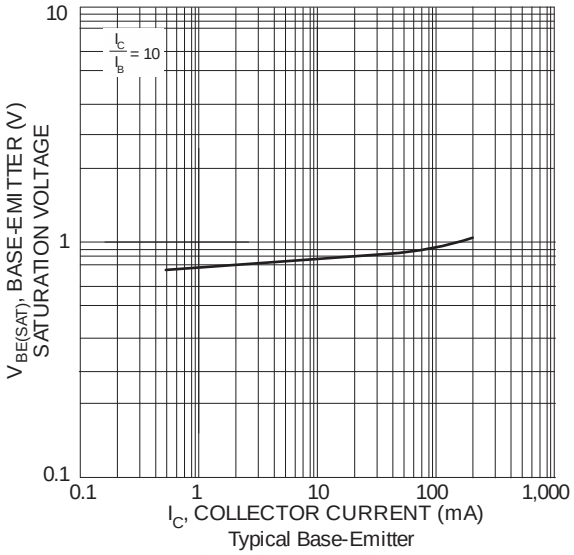
Max Power Dissipation vs.
Ambient Temperature

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

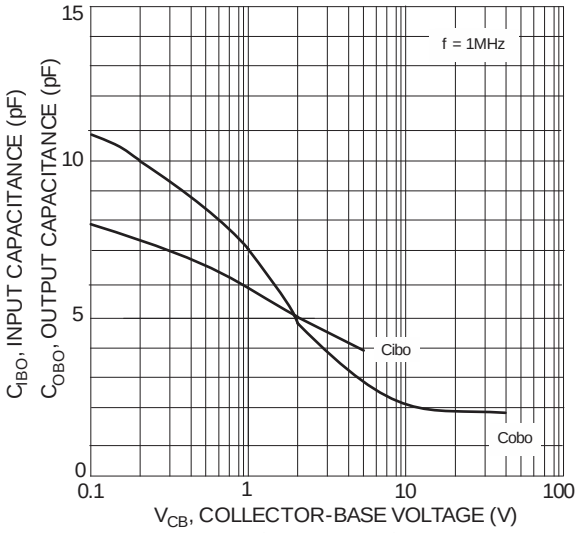
Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 8)					
Collector-Base Breakdown Voltage	BV_{CBO}	60	—	V	I_C = 10μA, I_E = 0
Collector-Emitter Breakdown Voltage	BV_{CEO}	40	—	V	I_C = 1mA, I_B = 0
Emitter-Base Breakdown Voltage	BV_{EBO}	5	—	V	I_E = 10μA, I_C = 0
Collector Cutoff Current	I_{CEX}	—	50	nA	V_{CE} = 30V, $V_{EB(OFF)}$ = 3V
Base Cutoff Current	I_{BL}	—	50	nA	V_{CE} = 30V, $V_{EB(OFF)}$ = 3V
ON CHARACTERISTICS (Note 8)					
DC Current Gain	h_{FE}	40 70 100 60 30	— — 300 — —	—	I_C = 100μA, V_{CE} = 1V I_C = 1mA, V_{CE} = 1V I_C = 10mA, V_{CE} = 1V I_C = 50mA, V_{CE} = 1V I_C = 100mA, V_{CE} = 1V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	0.25 0.30	V	I_C = 10mA, I_B = 1mA I_C = 50mA, I_B = 5mA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	0.65 —	0.85 0.95	V	I_C = 10mA, I_B = 1mA I_C = 50mA, I_B = 5mA
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}	—	4	pF	V_{CB} = 5V, f = 1.0MHz, I_E = 0
Input Capacitance	C_{ibo}	—	8	pF	V_{EB} = 0.5V, f = 1.0MHz, I_C = 0
Input Impedance	h_{ie}	1	10	kΩ	V_{CE} = 10V, I_C = 1mA, f = 1.0MHz
Voltage Feedback Ratio	h_{re}	0.5	8.0	x 10^{-4}	
Small Signal Current Gain	h_{fe}	100	400	—	
Output Admittance	h_{oe}	1	40	μS	
Current Gain-Bandwidth Product	f_T	300	—	MHz	V_{CE} = 20V, I_C = 10mA, f = 100MHz
Noise Figure	NF	—	5	dB	V_{CC} = 5V, I_C = 100μA, R_S = 1kΩ, f = 1MHz
SWITCHING CHARACTERISTICS					
Delay Time	t_D	—	35	ns	V_{CC} = 3V, I_C = 10mA, $V_{BE(OFF)}$ = -0.5V, I_{B1} = 1mA
Rise Time	t_R	—	35	ns	

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

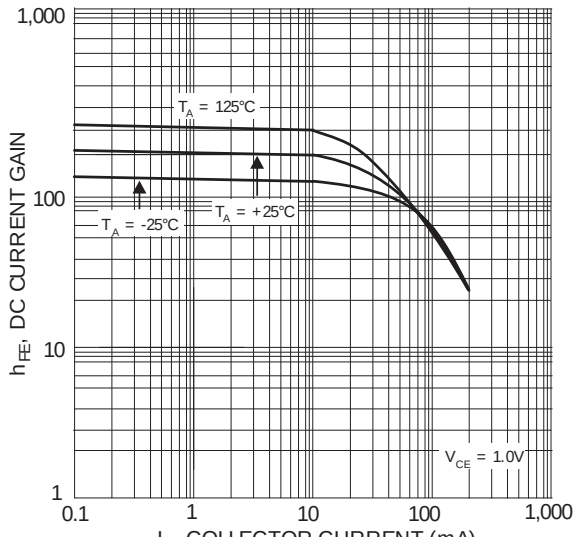
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



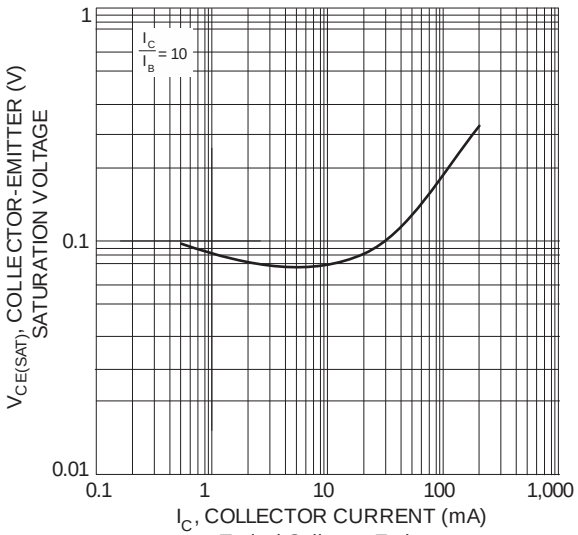
Typical Base-Emitter
Saturation Voltage vs. Collector Current



Input and Output Capacitance vs.
Collector-Base Voltage



Typical DC Current Gain vs. Collector Current

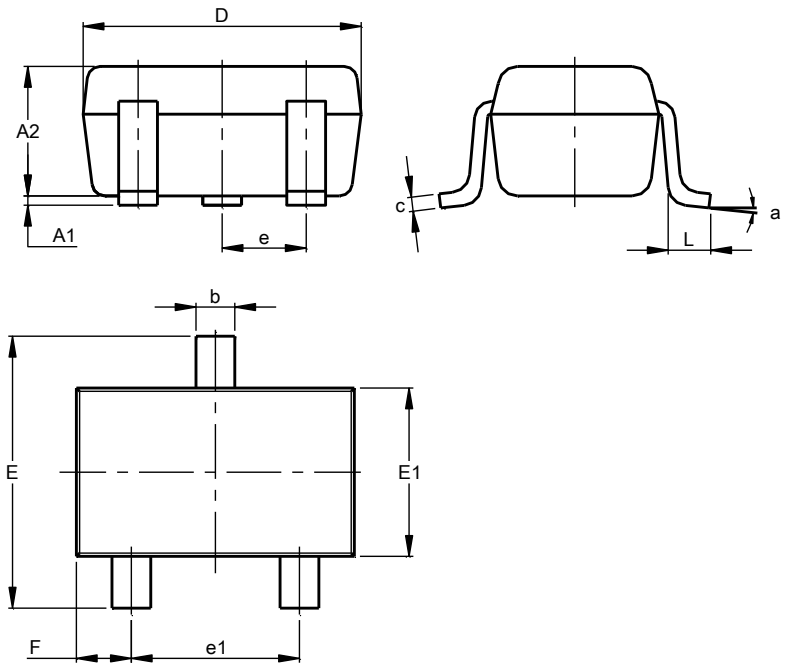


Typical Collector-Emitter
Saturation Voltage vs. Collector Current

Package Outline Dimensions

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

SOT323

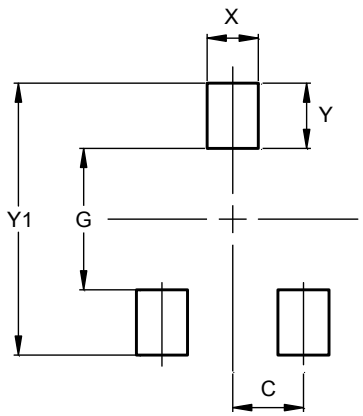


SOT323			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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