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}	6.0	V
Collector Current	I_C	200	mA

Thermal Characteristics

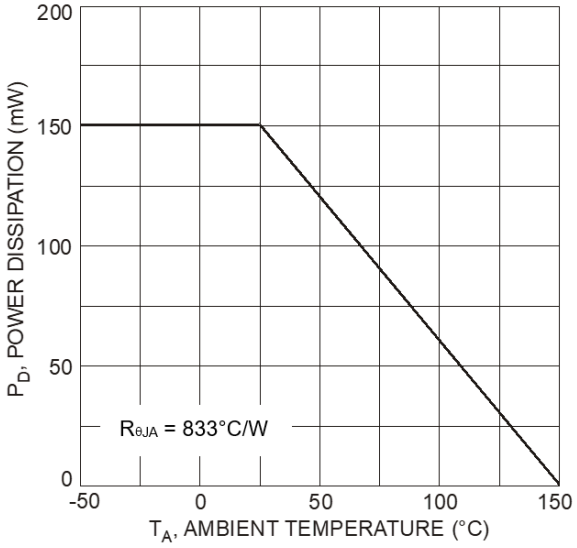
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\Theta JA}$	833	°C/W
Operating and Storage and Temperature Range	T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge—Human Body Model	ESD HBM	4000	V	3A
Electrostatic Discharge—Machine Model	ESD MM	400	V	C

Notes: 5. For the device mounted on minimum recommended pad layout FR-4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristic and Derating Information



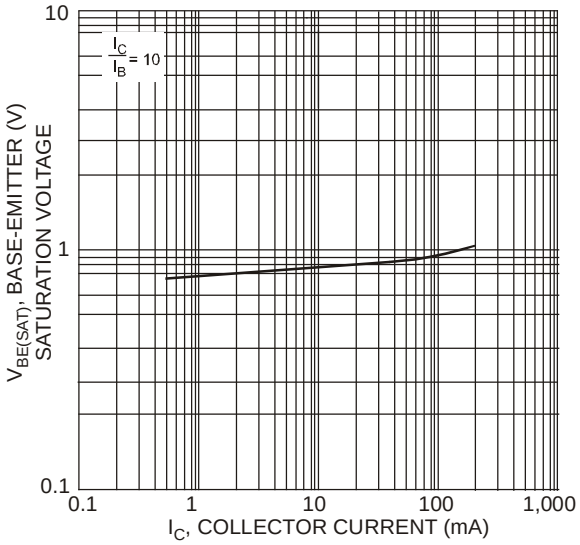
Derating Curve - Total

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

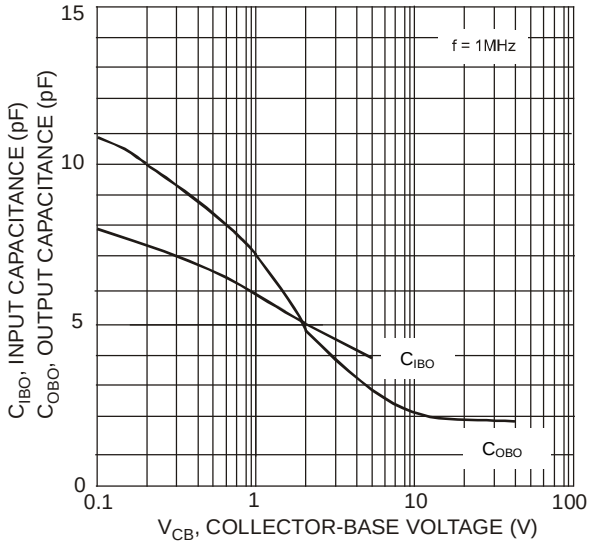
Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS					
Collector-Base Breakdown Voltage	BV_{CBO}	60	—	V	I_C = 100µA, I_E = 0
Collector-Emitter Breakdown Voltage (Note 7)	BV_{CEO}	40	—	V	I_C = 1.0mA, I_B = 0
Emitter-Base Breakdown Voltage	BV_{EBO}	6.0	—	V	I_E = 100µA, I_C = 0
Collector-Emitter Cut-Off Current	I_{CEV}	—	50	nA	V_{CE} = 30V, $V_{EB(OFF)}$ = 3.0V
Emitter-Base Cut-Off Current	I_{EBO}	—	50	nA	V_{EB} = 6V
ON CHARACTERISTICS (Note 7)					
DC Current Gain	h_{FE}	40 70 100 60 30	— — 300 — —	—	I_C = 100µA, V_{CE} = 1.0V I_C = 1.0mA, V_{CE} = 1.0V I_C = 10mA, V_{CE} = 1.0V I_C = 50mA, V_{CE} = 1.0V I_C = 100mA, V_{CE} = 1.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	0.20 0.30	V	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	0.65 —	0.85 0.95	V	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{OBO}	—	4.0	pF	V_{CB} = 5.0V, f = 1.0MHz, I_E = 0
Input Capacitance	C_{IBO}	—	8.0	pF	V_{EB} = 0.5V, f = 1.0MHz, I_C = 0
Input Impedance	h_{ie}	1.0	10	kΩ	V_{CE} = 10V, I_C = 1.0mA, f = 1.0kHz
Voltage Feedback Ratio	h_{re}	0.5	8.0	$\times 10^{-4}$	
Small Signal Current Gain	h_{fe}	100	400	—	
Output Admittance	h_{oe}	1.0	40	µS	
Current Gain-Bandwidth Product	f_T	300	—	MHz	V_{CE} = 20V, I_C = 10mA, f = 100MHz
Noise Figure	NF	—	5.0	dB	V_{CE} = 5.0V, I_C = 100µA, R_S = 1.0kΩ, f = 1.0kHz
SWITCHING CHARACTERISTICS					
Delay Time	t_d	—	35	ns	V_{CC} = 3.0V, I_C = 10mA, $V_{BE(OFF)}$ = -0.5V, I_{B1} = 1.0mA
Rise Time	t_r	—	35	ns	
Storage Time	t_s	—	200	ns	V_{CC} = 3.0V, I_C = 10mA, I_{B1} = $-I_{B2}$ = 1.0mA
Fall Time	t_f	—	50	ns	

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

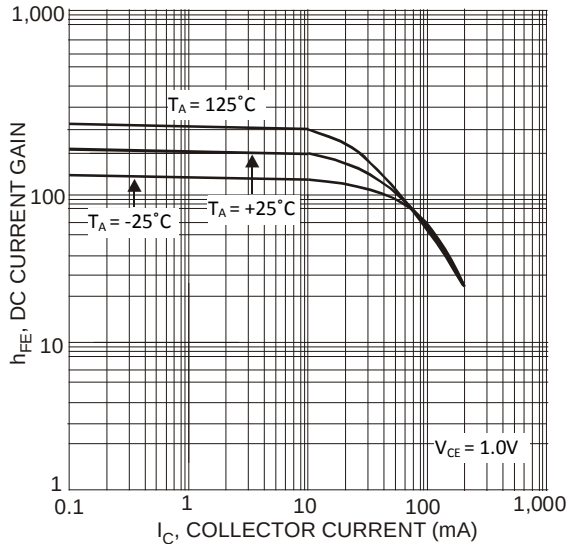
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



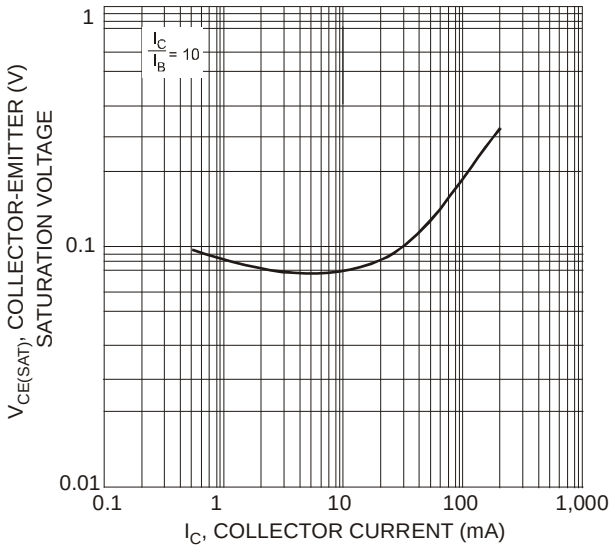
Typical Base-Emitter Saturation Voltage vs. Collector Current



Input and Output Capacitance vs. Collector-Base Voltage



Typical DC Current Gain vs. Collector Current

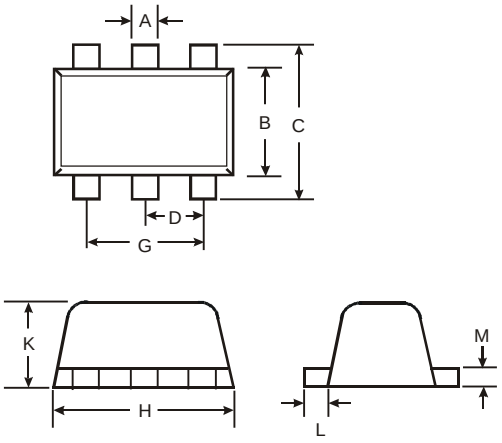


Typical Collector-Emitter Saturation Voltage vs. Collector Current

Package Outline Dimensions

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

SOT563

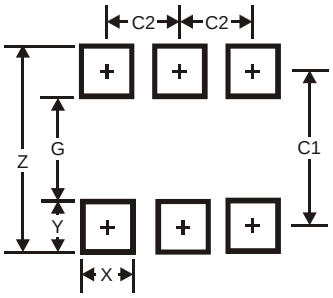


SOT563			
Dim	**Min**	**Max**	**Typ**
A	0.15	0.30	0.20
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	-	-	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.55	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	0.11
All Dimensions in mm			

Suggested Pad Layout

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

SOT563



Dimensions	SOT563
Z	2.2
G	1.2
X	0.375
Y	0.5
C1	1.7
C2	0.5

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