

**Absolute Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	V
Collector Current	I <sub>C</sub>	100	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	833	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-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	200	V	B

Notes: 5. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

## Thermal Characteristics and Derating Information

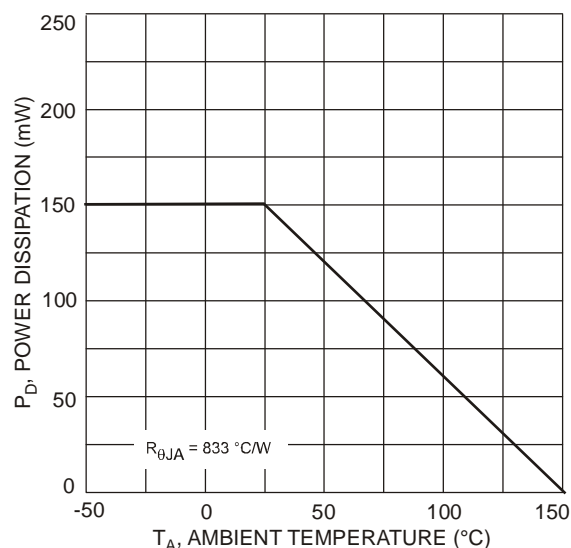


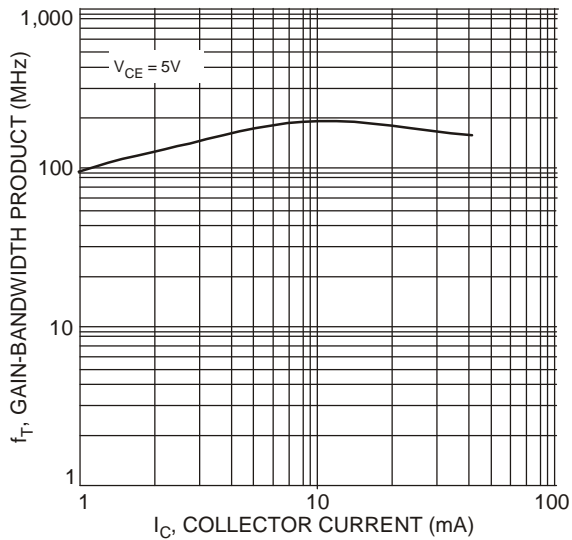
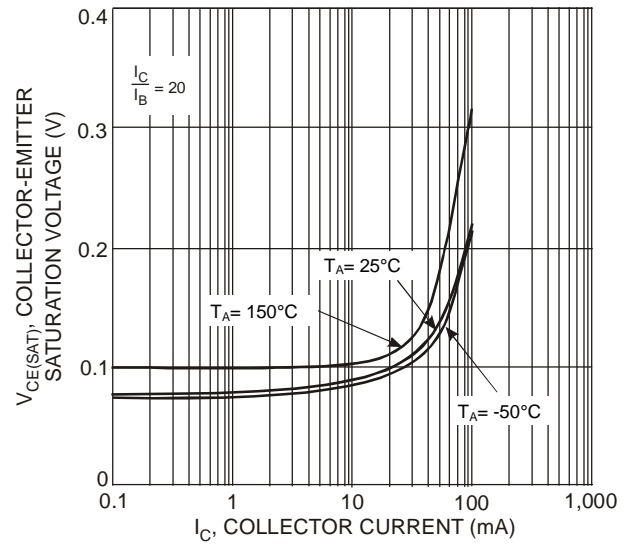
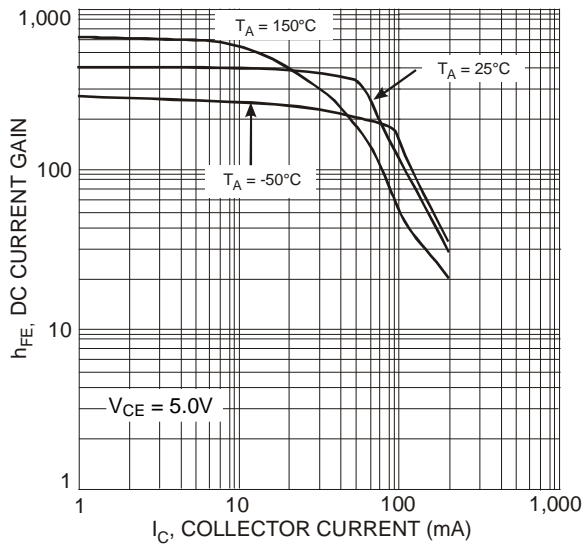
Fig. 1 Power Dissipation vs. Ambient Temperature

## Electrical Characteristics (@ $T_A = +25^{\circ}\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	—	—	V	$I_C = 10\mu\text{A}$ , $I_B = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45	—	—	V	$I_C = 10\text{mA}$ , $I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	—	—	V	$I_E = 1\mu\text{A}$ , $I_C = 0$
DC Current Gain (Note 7)	$h_{FE}$	200	290	450	—	$V_{CE} = 5.0\text{V}$ , $I_C = 2.0\text{mA}$
Collector-Emitter Saturation Voltage (Note 7)	$V_{CE(SAT)}$	—	—	100 300	mV	$I_C = 10\text{mA}$ , $I_B = 0.5\text{mA}$ $I_C = 100\text{mA}$ , $I_B = 5.0\text{mA}$
Base-Emitter Saturation Voltage (Note 7)	$V_{BE(SAT)}$	—	700 900	—	mV	$I_C = 10\text{mA}$ , $I_B = 0.5\text{mA}$ $I_C = 100\text{mA}$ , $I_B = 5.0\text{mA}$
Base-Emitter Voltage	$V_{BE}$	580 —	660 —	700 770	mV	$V_{CE} = 5.0\text{V}$ , $I_C = 2.0\text{mA}$ $V_{CE} = 5.0\text{V}$ , $I_C = 10\text{mA}$
Collector-Emitter Cutoff Current	$I_{CBO}$ $I_{CBO}$	—	—	15 5.0	nA $\mu\text{A}$	$V_{CB} = 30\text{V}$ $V_{CB} = 30\text{V}$ , $T_A = +150^{\circ}\text{C}$
Gain Bandwidth Product	$f_T$	100	—	—	MHz	$V_{CE} = 5.0\text{V}$ , $I_C = 10\text{mA}$ , $f = 100\text{MHz}$
Output Capacitance	$C_{OBO}$	—	—	4.5	pF	$V_{CB} = 10\text{V}$ , $f = 1.0\text{MHz}$
Noise Figure	NF	—	—	10	dB	$V_{CE} = 5\text{V}$ , $R_S = 2.0\text{k}\Omega$ , $f = 1.0\text{kHz}$ , BW = 200Hz

Note: 7. Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ . Duty cycle  $\leq 2\%$ .

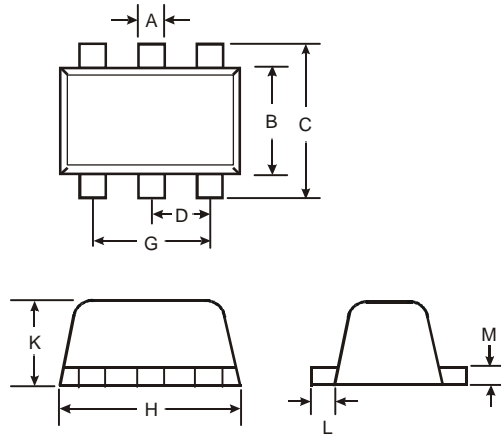
**Typical Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)



## Package Outline Dimensions

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

### SOT563

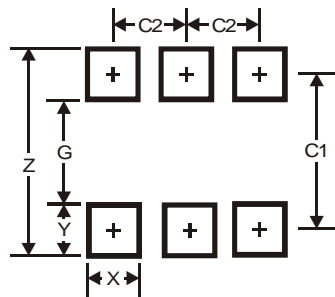


SOT563			
Dim	Min	Max	Typ
A	0.15	0.30	0.20
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	-	-	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.55	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	0.11
All Dimensions in mm			

## Suggested Pad Layout

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

### SOT563



Dimensions	Value (in mm)
Z	2.2
G	1.2
X	0.375
Y	0.5
C1	1.7
C2	0.5

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