

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current, Per IEC61000-4-5	I <sub>PP_I/O</sub>	±6.0	A	I/O to V <sub>SS</sub> , 8/20μs
Peak Pulse Power, Per IEC61000-4-5	P <sub>PP_I/O</sub>	55	W	I/O to V <sub>SS</sub> , 8/20μs
Operating Voltage (DC)	V <sub>DC</sub>	5.5	V	I/O to V <sub>SS</sub>
ESD Protection—Contact Discharge, Per IEC61000-4-2	V <sub>ESD_I/O</sub>	±16	kV	I/O to V <sub>SS</sub>
ESD Protection—Air Discharge, Per IEC61000-4-2	V <sub>ESD_I/O</sub>	±18	kV	I/O to V <sub>SS</sub>
Operating Temperature	T <sub>OP</sub>	-55 to +85	°C	—
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C	—

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation Typical (Note 5)	P <sub>D</sub>	350	mW
Thermal Resistance, Junction to Ambient Typical (Note 5)	R <sub>ΘJA</sub>	360	°C/W

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	V <sub>RWM</sub>	—	—	5.0	V	V <sub>CC</sub> to V <sub>SS</sub>
Reverse Current (Note 6)	I <sub>R</sub> (V <sub>CC</sub> to V <sub>SS</sub> )	—	—	1.0	μA	V <sub>R</sub> = V <sub>RWM</sub> = 5V, V <sub>CC</sub> to V <sub>SS</sub>
Reverse Current (Note 6)	I <sub>R</sub> (I/O to V <sub>SS</sub> )	—	—	0.5	μA	V <sub>R</sub> = V <sub>RWM</sub> = 5V, Any I/O to V <sub>SS</sub>
Reverse Breakdown Voltage	V <sub>BR</sub>	6.2	—	—	V	I <sub>R</sub> = 1mA, V <sub>CC</sub> to V <sub>SS</sub>
Forward Clamping Voltage	V <sub>F</sub>	-1.0	-0.8	—	V	I <sub>F</sub> = -15mA, V <sub>CC</sub> to V <sub>SS</sub>
Reverse Clamping Voltage (Note 7)	V <sub>C_VCC</sub>	—	6.3	—	V	I <sub>PP</sub> = 9A, V <sub>CC</sub> to V <sub>SS</sub> , 8/20μs
	V <sub>C_I/O</sub>	—	7.7	9	V	I <sub>PP</sub> = 6A, I/O to V <sub>SS</sub> , 8/20μs
ESD Clamping Voltage	V <sub>ESD_VCC</sub>	—	6.8	—	V	TLP, 10A, t <sub>p</sub> = 100ns, V <sub>CC</sub> to V <sub>SS</sub> . Per Figure 2
	V <sub>ESD_I/O</sub>	—	9	—	V	TLP, 10A, t <sub>p</sub> = 100ns, I/O to V <sub>SS</sub> . Per Figure 2
ESD Clamping Voltage	V <sub>ESD_VCC</sub>	—	7.2	—	V	TLP, 16A, t <sub>p</sub> = 100ns, V <sub>CC</sub> to V <sub>SS</sub> . Per Figure 2
	V <sub>ESD_I/O</sub>	—	10.5	—	V	TLP, 16A, t <sub>p</sub> = 100ns, I/O to V <sub>SS</sub> . Per Figure 2
Dynamic Resistance	R <sub>DIF_VCC</sub>	—	0.1	—	Ω	TLP, 10A, t <sub>p</sub> = 100ns, V <sub>CC</sub> to V <sub>SS</sub>
	R <sub>DIF_I/O</sub>	—	0.25	—	Ω	TLP, 10A, t <sub>p</sub> = 100ns, I/O to V <sub>SS</sub>
Channel Input Capacitance	C <sub>I/O to VSS</sub>	—	0.65	0.8	pF	V <sub>R</sub> = 2.5V, V <sub>CC</sub> = 5V, f = 1MHz

Notes:

- Device mounted on Polyimide PCB pad layout (2oz copper) as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
- Short duration pulse test used to minimize self-heating effect.
- Clamping voltage value is based on an 8 × 20μs peak pulse current (I<sub>PP</sub>) waveform.

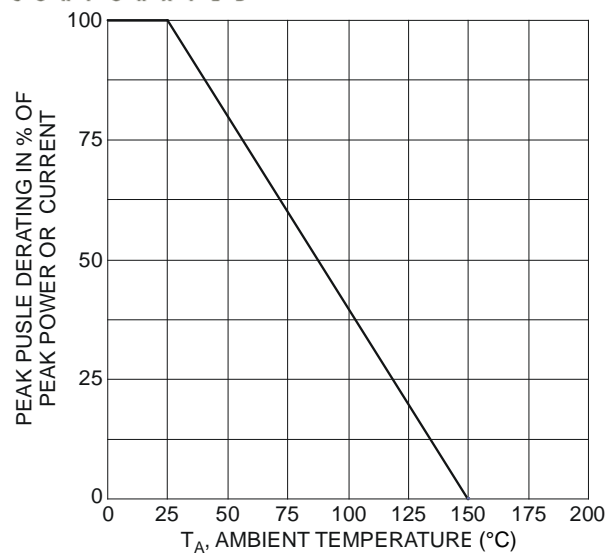


Figure 1 Pulse Derating Curve

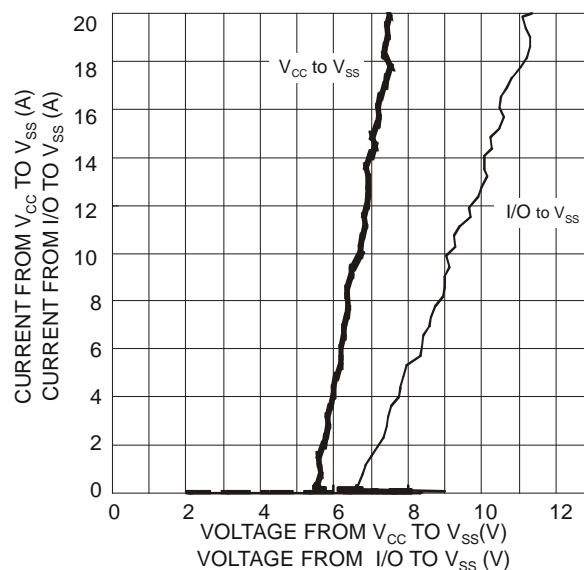


Figure 2 Current vs. Voltage

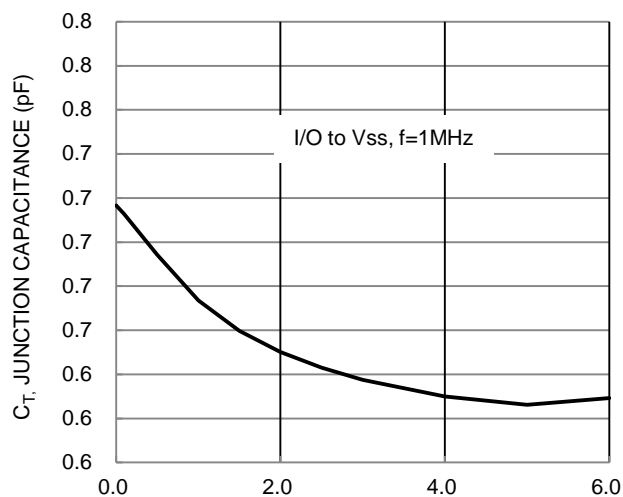


Figure 3 Typical Total Capacitance

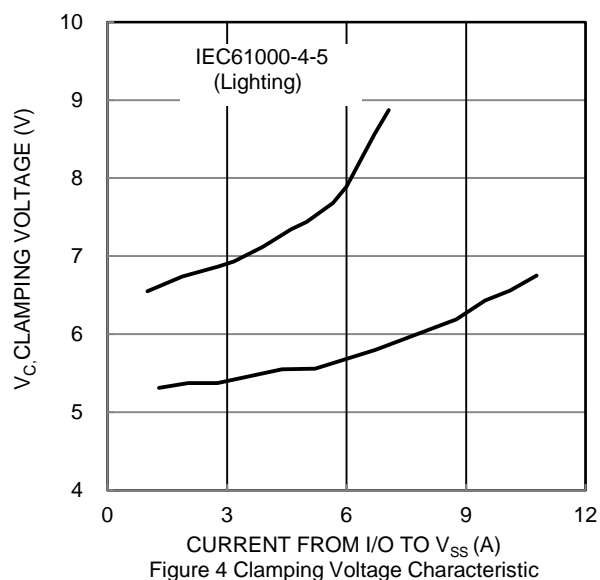
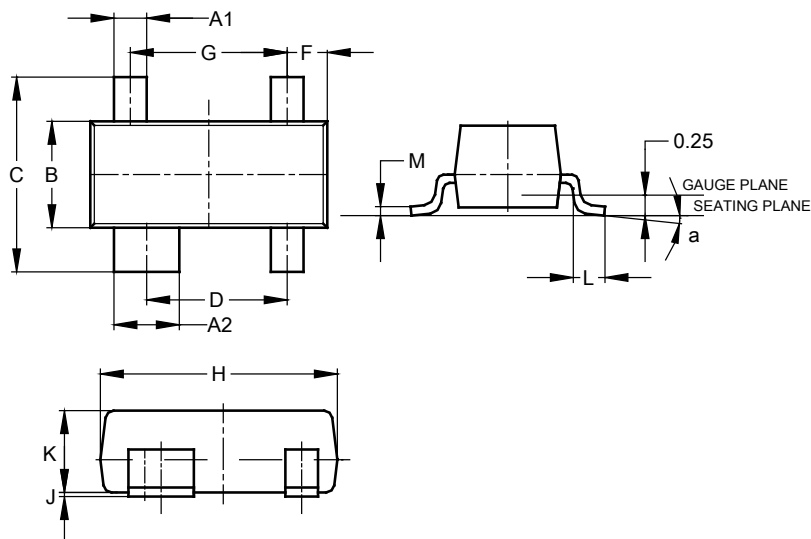


Figure 4 Clamping Voltage Characteristic

## Package Outline Dimensions

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

SOT143

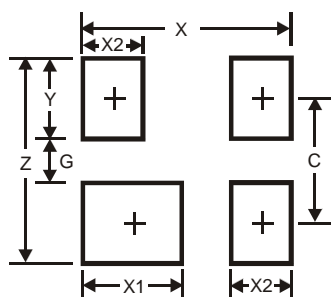


SOT143			
Dim	Min	Max	Typ
A1	0.37	0.51	0.400
A2	0.77	0.93	0.800
B	1.20	1.40	1.30
C	2.28	2.48	2.38
D	1.58	1.83	1.72
F	0.45	0.60	0.49
G	1.78	2.03	1.92
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.89	1.00	-
L	0.46	0.60	0.50
M	0.085	0.18	0.11
a	0°	8°	-
All Dimensions in mm			

## Suggested Pad Layout

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

SOT143



Dimensions	Value (in mm)
Z	2.70
G	1.30
X	2.50
X1	1.00
X2	0.60
Y	0.70
C	2.00

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