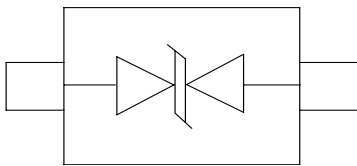


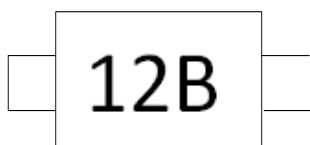
Features

- * 400W peak pulse power (8/20 μ s)
- * Protects one data or power line
- * Ultra low leakage: nA level
- * Operating voltage: 12V
- * Ultra low clamping voltage
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC61000-4-4 (Lightning) 18A (8/20ns)
- * RoHS Compliant
- * Package: SOD-323
- * Lead Finish: Matte Tin

Circuit Diagram



Marking Diagram



Transparent top view

12B:Device Marking Code

Description

The SD12T1G is designed to replace multilayer varistors in portable applications such as cell phones, notebook computers and PDA's, using monolithic sili-con technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting sensitive semiconductor compo-nents from damage. The SD12T1G complies with the IEC 61000-4-2 (ESD) standard with ± 15 kV air and ± 8 kV contact discharge. The SD12T1G is assembled into a lead-free SOD-323 package and will protect one unidirectional line. These devices will fit on the same PCB pad area as an 0805 MLV device.

Applications

- * Cellular Handsets and Accessories
- * Personal Digital Assistants
- * Notebooks and Handhelds
- * Portable Instrumentation
- * Peripherals
- * Pagers Peripherals
- * Desktop and Servers

Ordering Information

Part Number	Packaging	Reel Size
SD12T1G	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

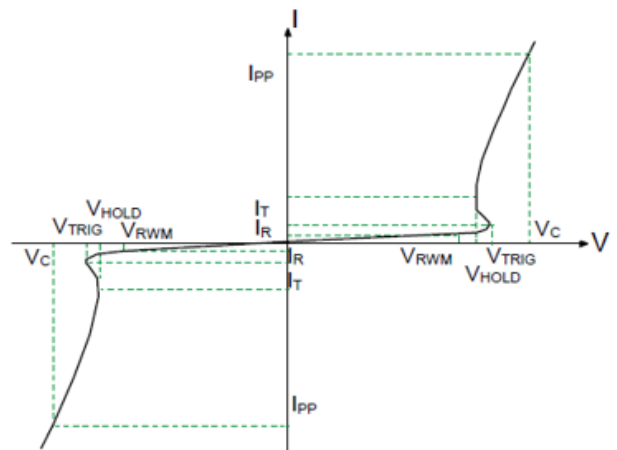
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	400	W
Peak Pulse Current (8/20 μs)	IPP	18	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				12.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	13.0	14.0	16.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 12.0\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)		17	19	V
Clamping Voltage	V_C	$I_{PP} = 18\text{A}$ (8 x 20 μs pulse)		20	25	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		15	30	pF

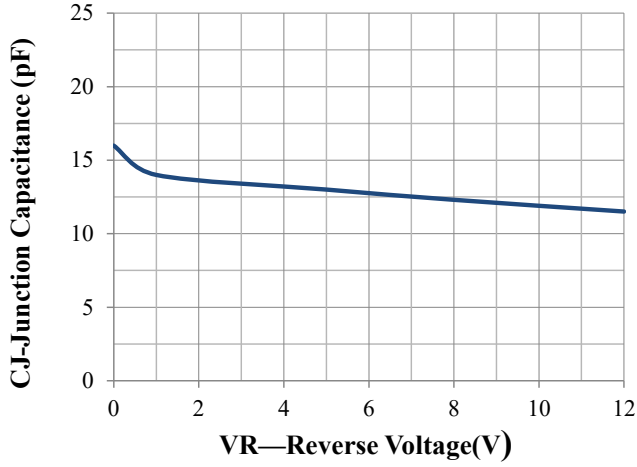
Portion Electronics Parameter

Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C

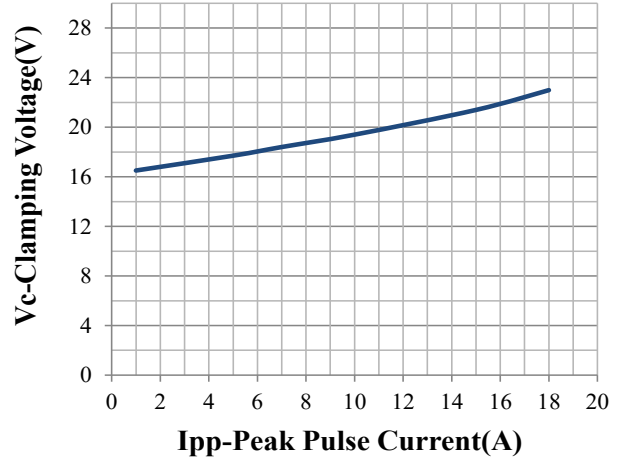




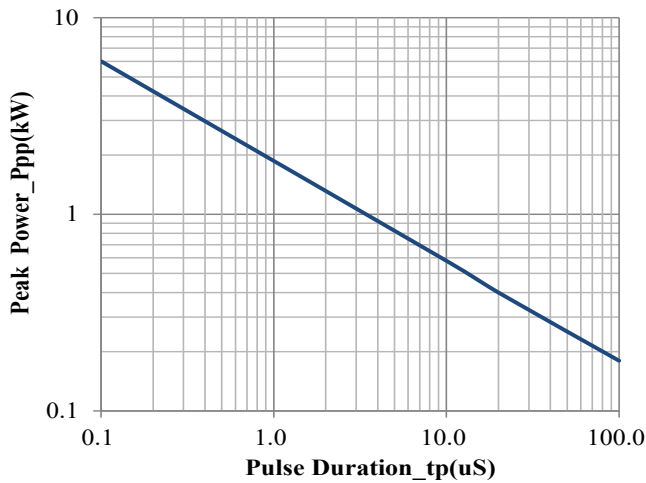
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



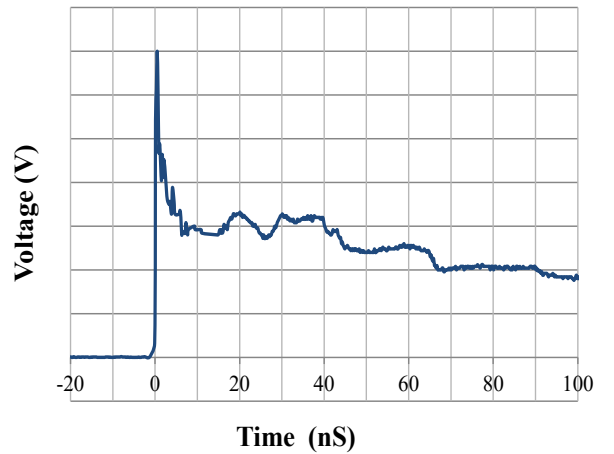
Junction Capacitance vs. Reverse Voltage



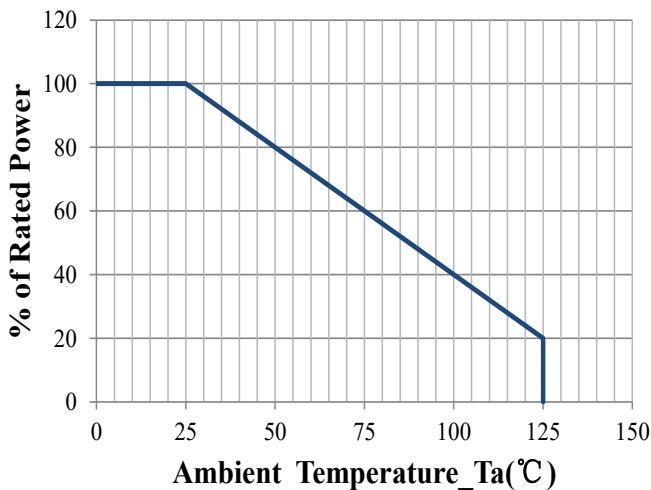
Clamping Voltage vs. Peak Pulse Current



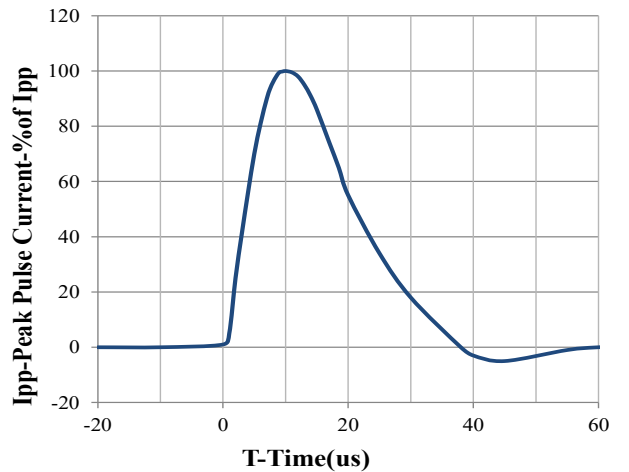
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

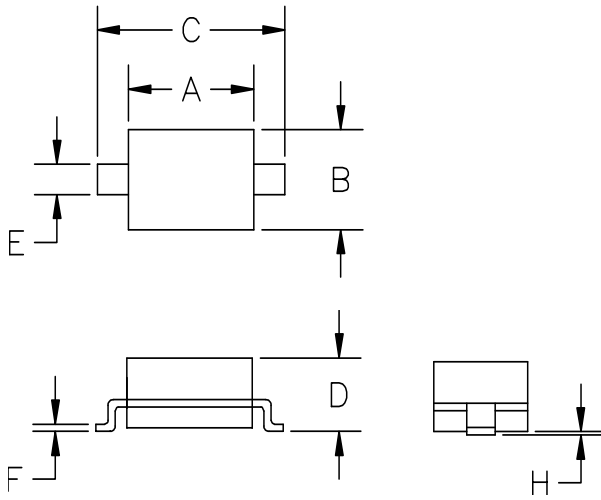


Power Derating Curve



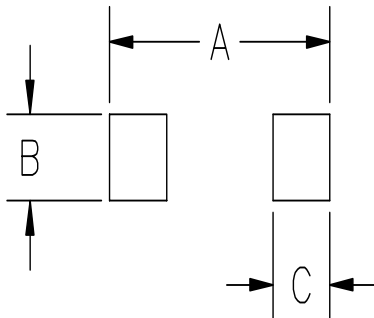
8 X 20us Pulse Waveform

SOD-323 Package Outline Drawing



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031