Features

* 400W peak pulse power (8/20μs)
* 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: ±30kV

Contact discharge: ±30kV

– IEC61000-4-4 (Lightning) 18A (8/20ns)

* RoHS Compliant
* Package: SOD-323
* Lead Finish: Matte Tin

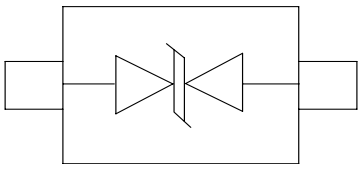
Description

The PESD12VL1BA 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 PESD12VL1BA complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. The PESD12VL1BA 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.

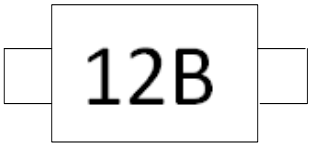
Applications

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

Circuit Diagram



Marking Diagram



Transparent top view

12B:Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
PESD12VL1BA	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

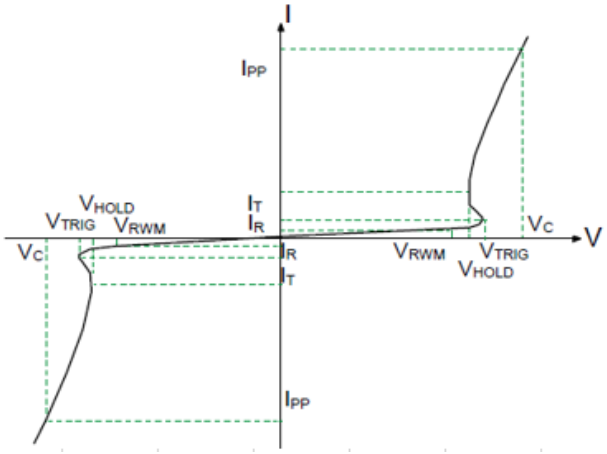
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	400	W
Peak Pulse Current (8/20μs)	IPP	18	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

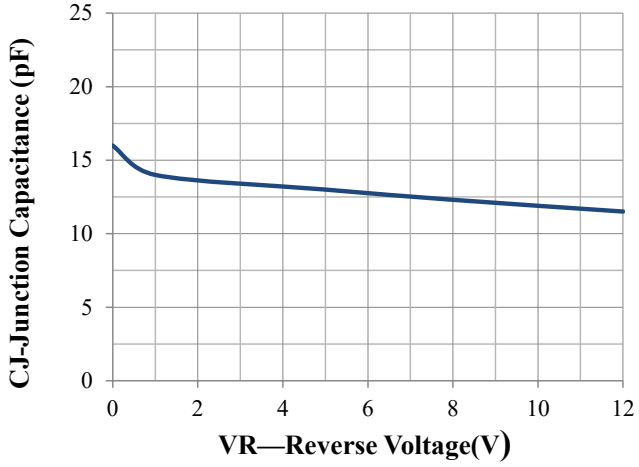
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				12.0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	13.0	14.0	16.0	V
Reverse Leakage Current	I_R	V_{RWM} = 12.0V			0.5	μA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20μs pulse)		17	19	V
Clamping Voltage	V_C	I_{PP} = 18A (8 x 20μs pulse)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

Portion Electronics Parameter

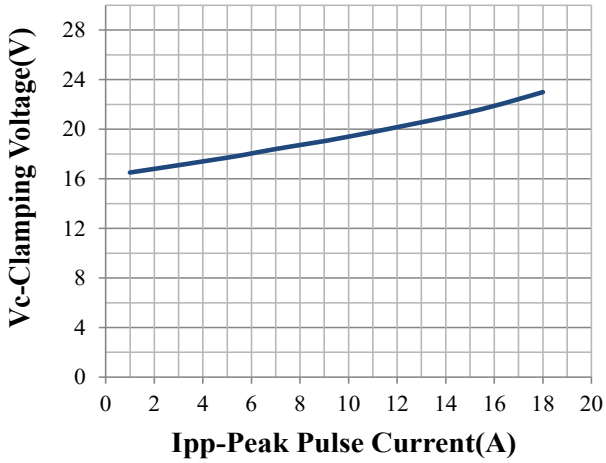
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



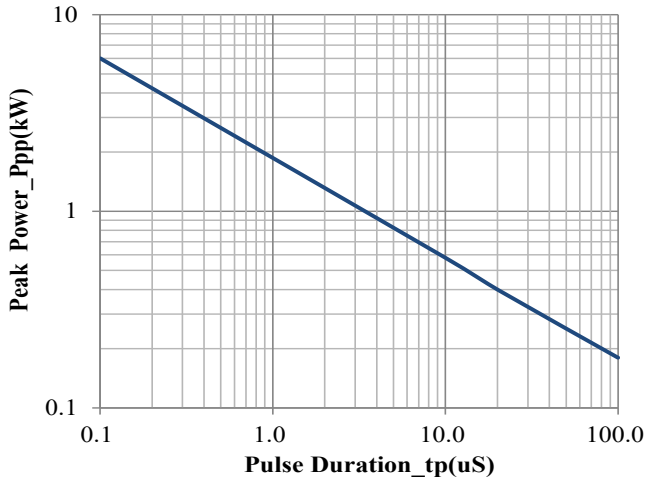
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



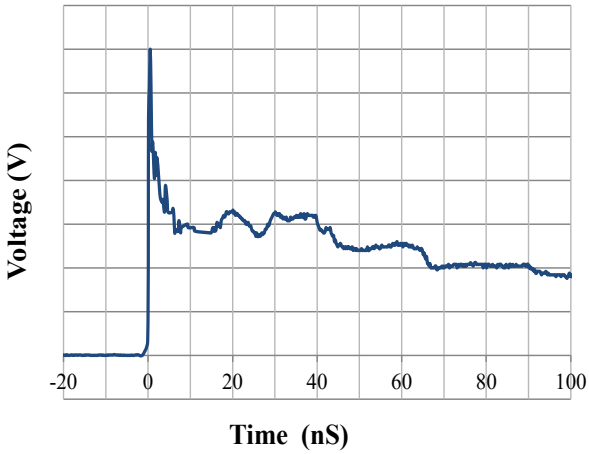
Junction Capacitance vs. Reverse Voltage



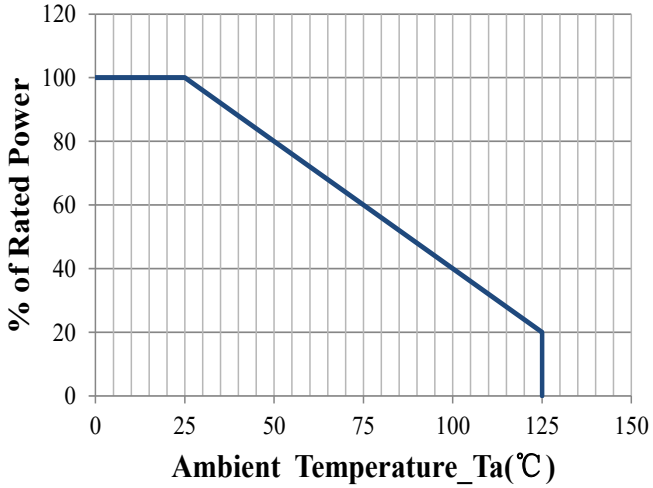
Clamping Voltage vs. Peak Pulse Current



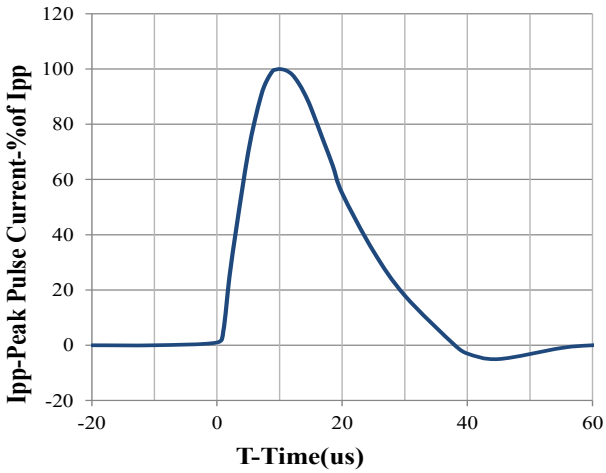
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

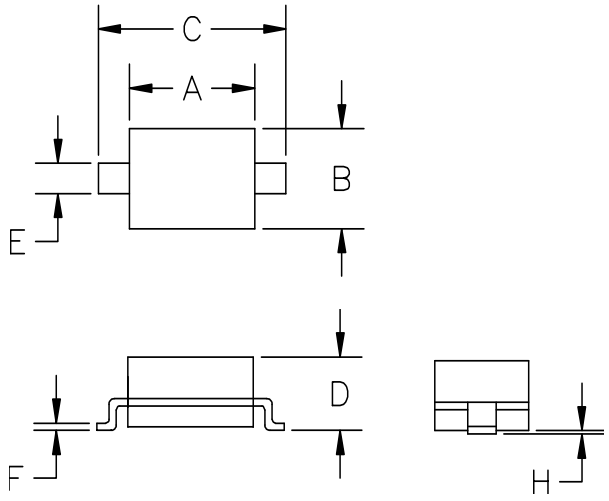


Power Derating Curve



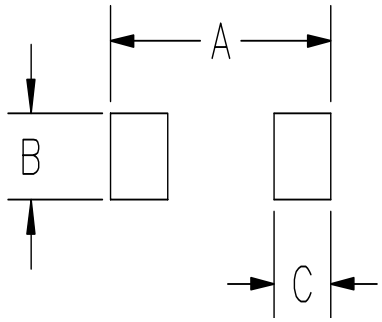
8 X 20us Pulse Waveform

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