

## ESD12VD3B

### Description

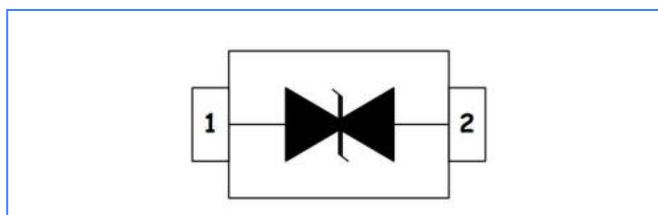
ESD12VD3B is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium

### Features

- Ultra low leakage: nA level
- Operating voltage: 12V
- Package: SOD-323
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 15\text{kV}$
    - Contact discharge:  $\pm 8\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 12A (8/20 $\mu\text{s}$ )



### Functional Diagram



### Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Peripherals
- Pagers

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	320	Watts
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 15$	Kv
ESD per IEC 61000-4-2 (Contact)		$\pm 8$	Kv
Lead Soldering Temperature	$T_L$	260 (10 sec)	°C
Operating Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{STJ}$	-55 to +150	°C

**Electrical Characteristics (TA = 25 °C unless otherwise noted)**

Parameter	Symbol	Conditions	Min.	T <sub>yp.</sub>	Max.	Units
Reverse Stand-off Voltage	V <sub>RWM</sub>				12	V
Reverse breakdown Voltage	V <sub>BR</sub>	I <sub>t</sub> = 1mA	13.3			V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = V <sub>RWM</sub>			1	μA
Clamping Voltage	V <sub>C</sub>	I <sub>pp</sub> =1A, t <sub>p</sub> = 8/20μs			19	V
		I <sub>pp</sub> =13A, t <sub>p</sub> = 8/20μs			25	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f = 1MHz			110	pF

**Characteristics Curves**

Figure 1- Power Derating Curve

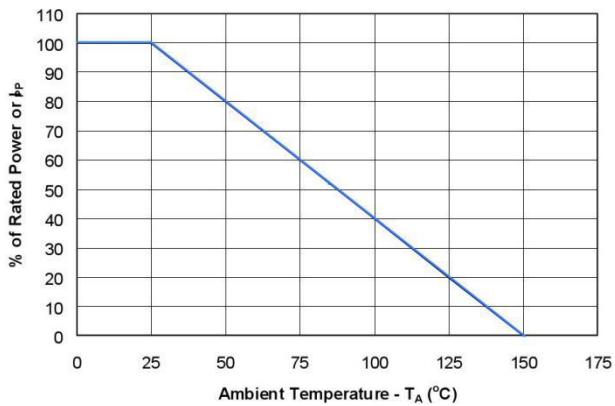


Figure 2- ESD Pulse Waveform (according to IEC 61000-4-2)

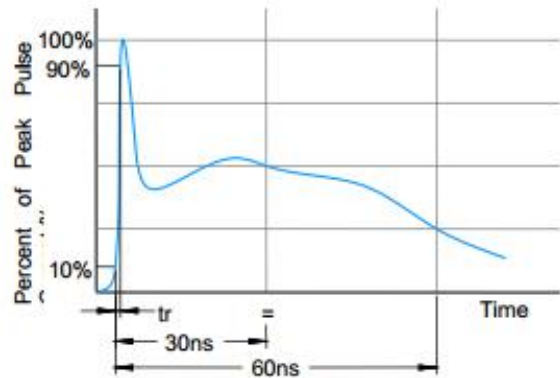
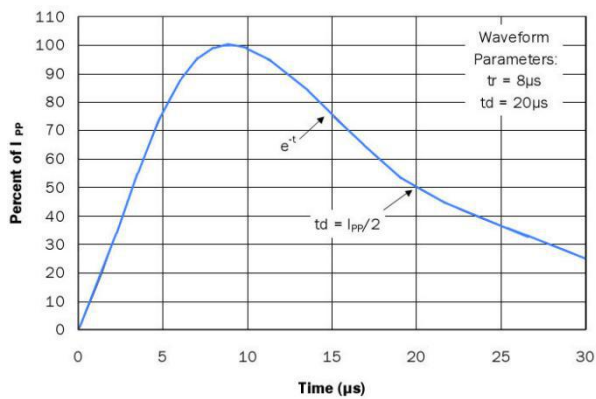
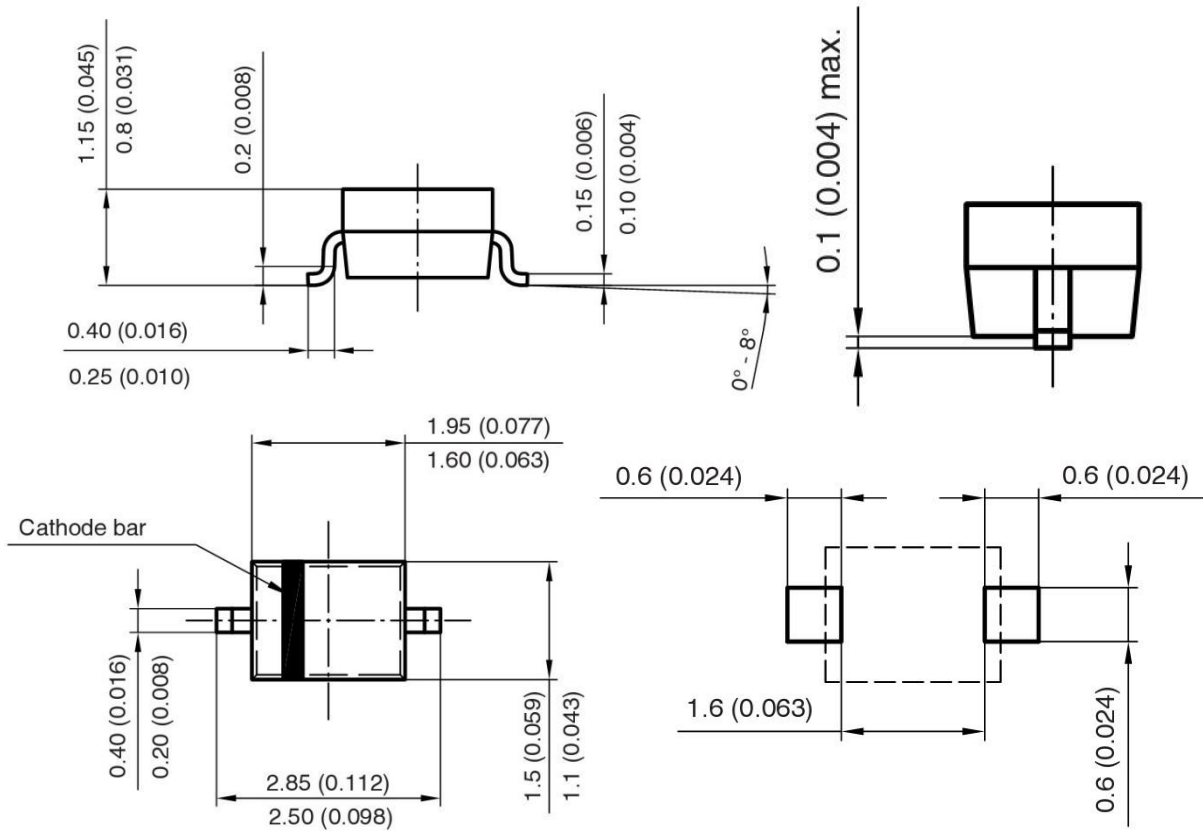


Figure3- 8/20μs Pulse Waveform



**PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOD323**



**Mounting Pad Layout**

**Disclaimer**

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

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