

520W Surface Mount ESD Protection**DESCRIPTION**

The SESD033BD is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The SESD033BD complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small 1.0 x 0.6 x 0.5mm lead-free DFN package. The small size and high ESD surge protection make SESD033BD an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

FEATURES

- Ultra small package: 1.0 x0.6 x0.5mm
- Protects one data or power line
- Ultra low leakage : nA level
- Operating voltage : 3.3V
- Ultra low clamping voltage
- 2-pin leadless package

APPLICATIONS

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

MECHANICAL DATA

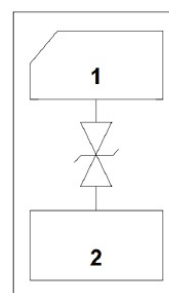
- Case : Molded, plastic DFN1006
- Polarity : Shown follows
- Epoxy : UL94-V0 rated flame retardant

IEC COMPATIBILITY

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-5 (Lightning) 30A (8/20 μs)

DFN1006 PACKAGE

38 = Device Marking Code

SCHEMATIC & PIN CONFIGURATION

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

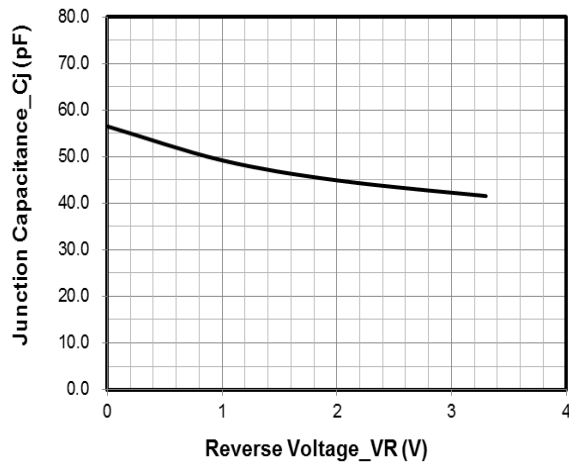
Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 μs)	Ppk	300	W
Peak Pulse Current(8/20 μs)	I _{PP}	30	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 30 ± 30	kV
Operating Temperature Range	T _J	-40 to +85	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

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

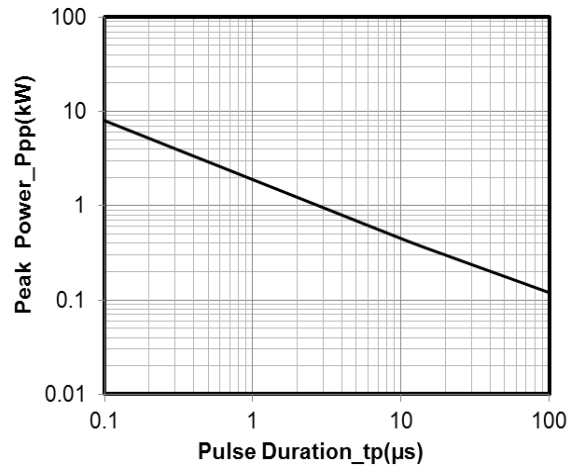
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Punch-Through Voltage	V _{PT}	3.5			V	I _T = 2 μA
Snap-Back Voltage	V _{SB}	2.8			V	I _T = 50mA
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 3.3V
Clamping Voltage	V _C			5.5	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	V _C			10.0	V	I _{PP} = 30A (8 x 20 μs pulse)
Junction Capacitance	C _J		56		pF	V _R = 0V, f = 1MHz



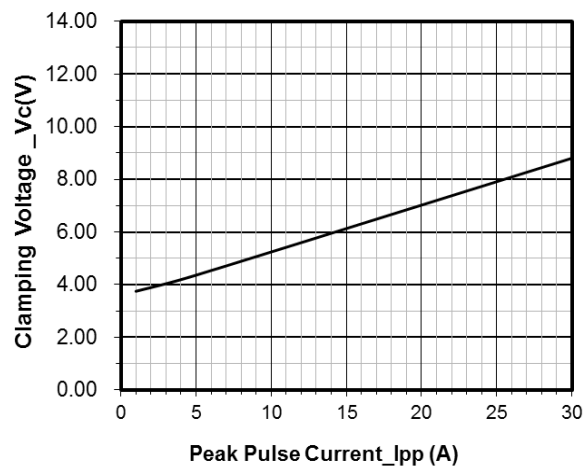
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



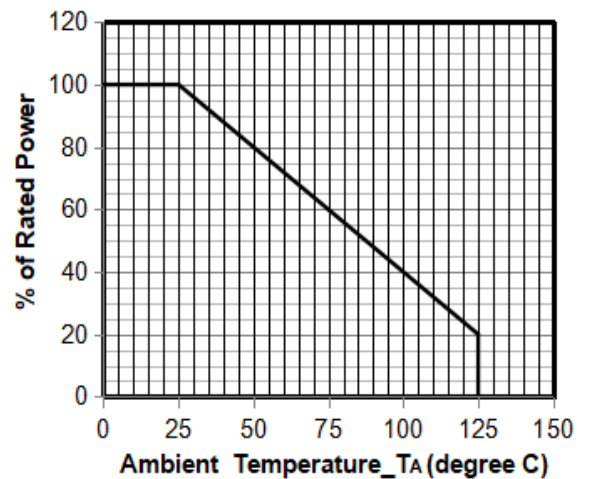
Junction Capacitance vs. Reverse Voltage



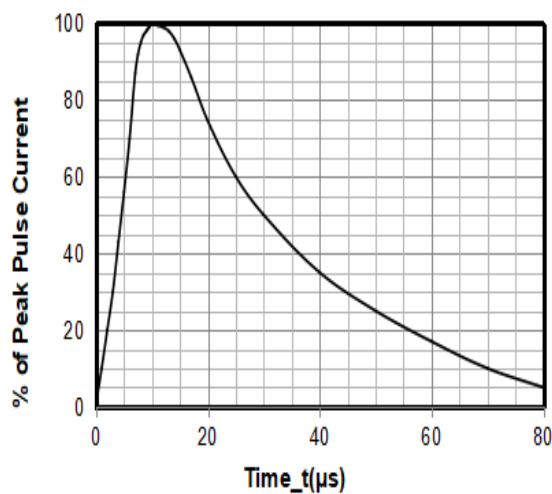
Peak Pulse Power vs. Pulse Time



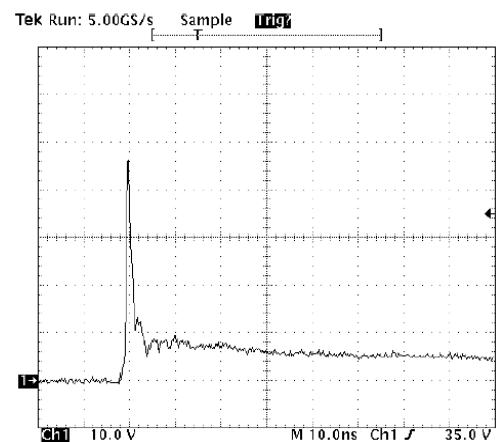
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



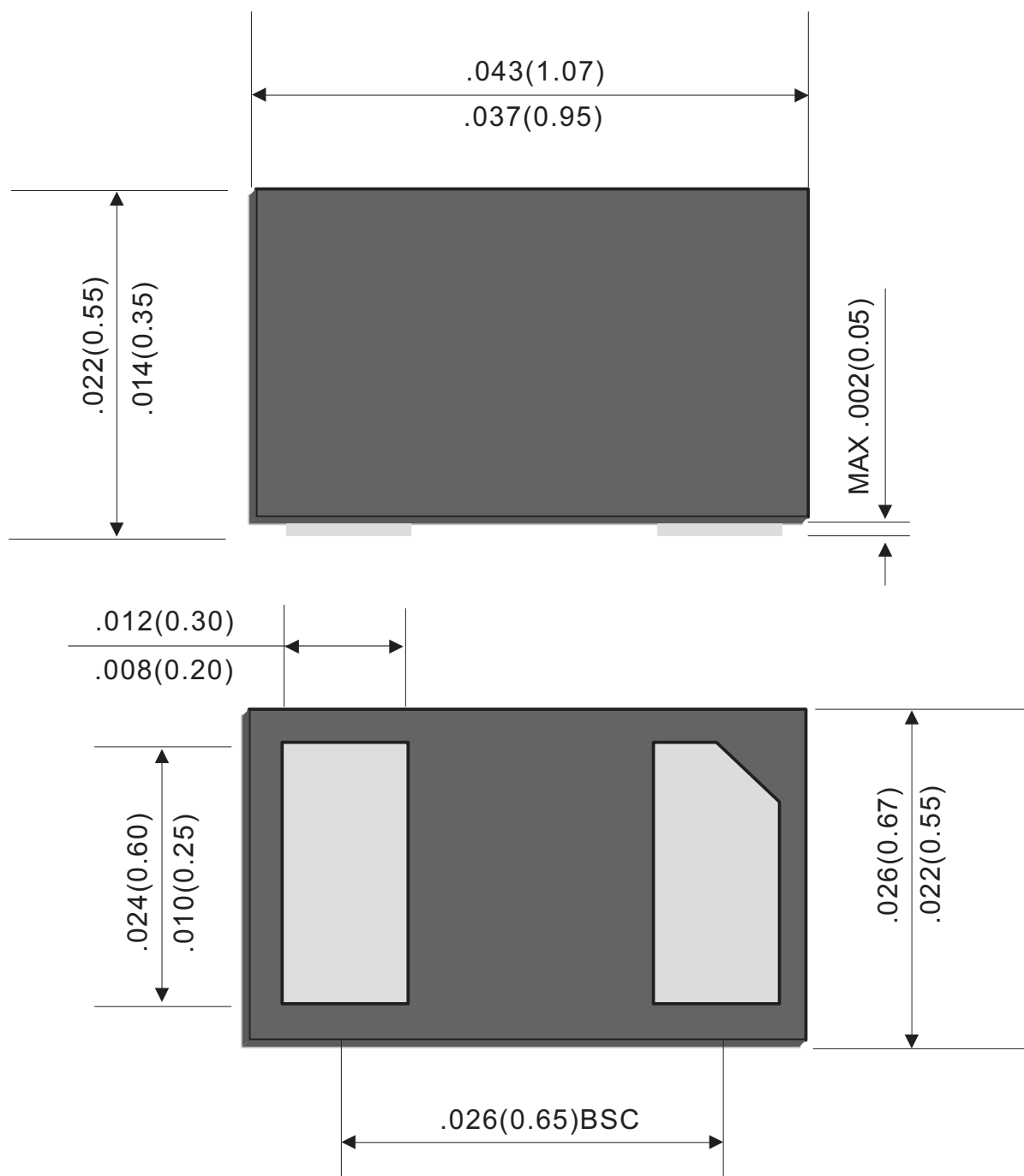
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

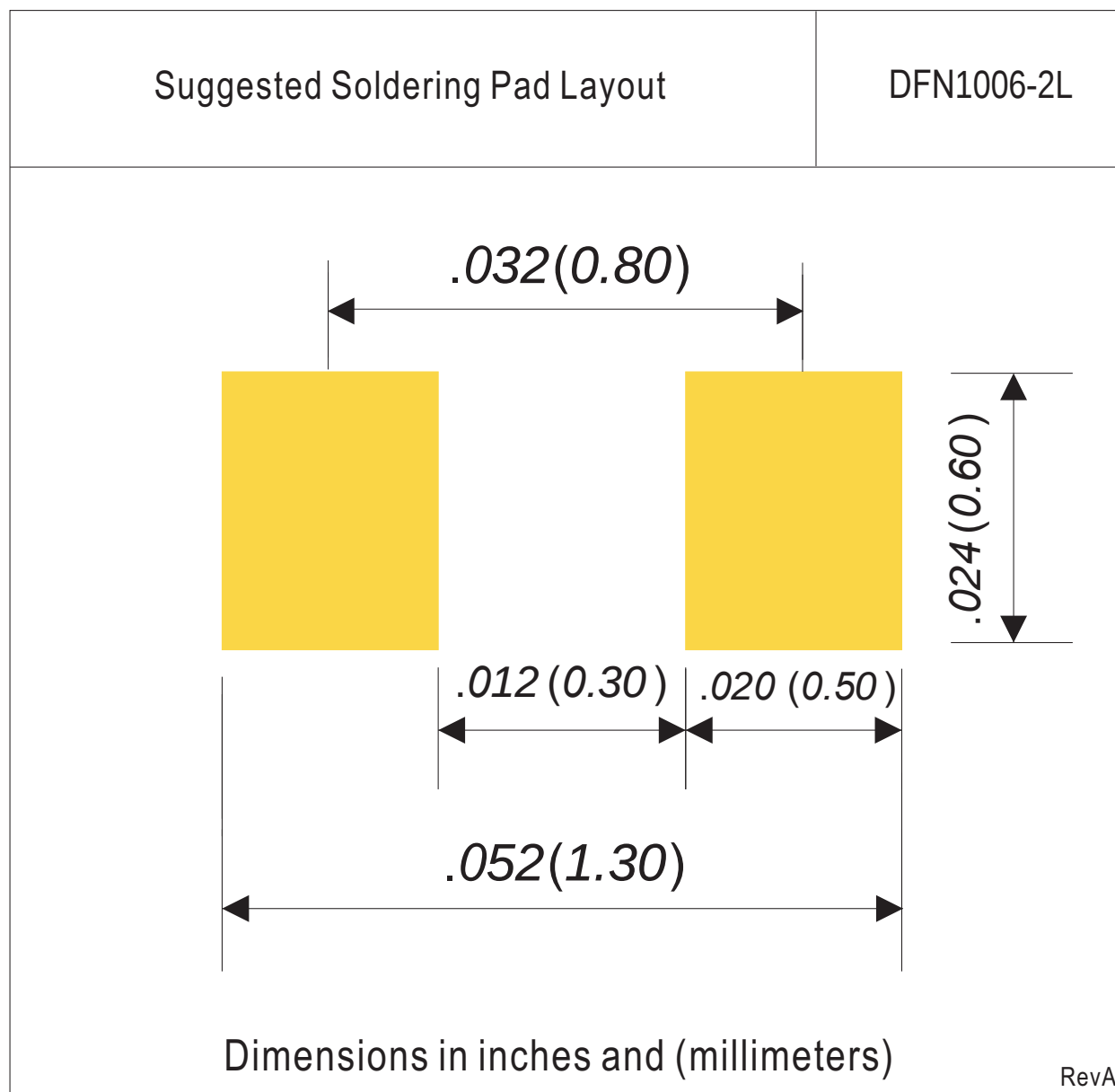
Outline Drawing

DFN1006



Dimensions in inches and (millimeters)

Rev.B-1



Ordering Information:

Device PN	Packing
SESD033BD -T ⁽¹⁾ H ⁽²⁾ -WS	Tape&Reel: 10 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Halogen free product for packing code suffix "H"

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