

DESCRIPTION

The SESD12BD is a 12V 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 SESD12BD 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 SESD12BD 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 : 12V
- Low clamping voltage

APPLICATIONS

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players

MECHANICAL DATA

- Case : Molded, plastic DFN1006-2L
- 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) 5A (8/20 μs)

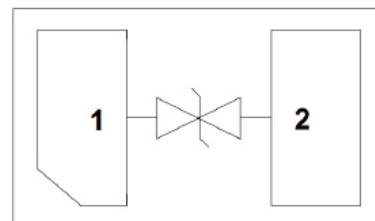
DFN1006-2L PACKAGE

Marking :



22L = Device Marking Code

SCHEMATIC & PIN CONFIGURATION



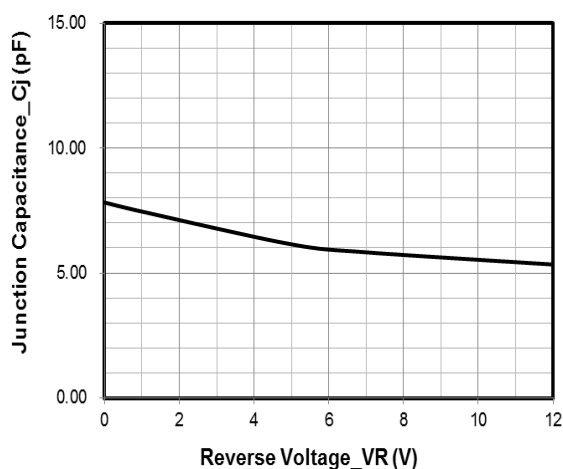
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20μs)	Ppk	100	W
Peak Pulse Current(8/20μs)	I _{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

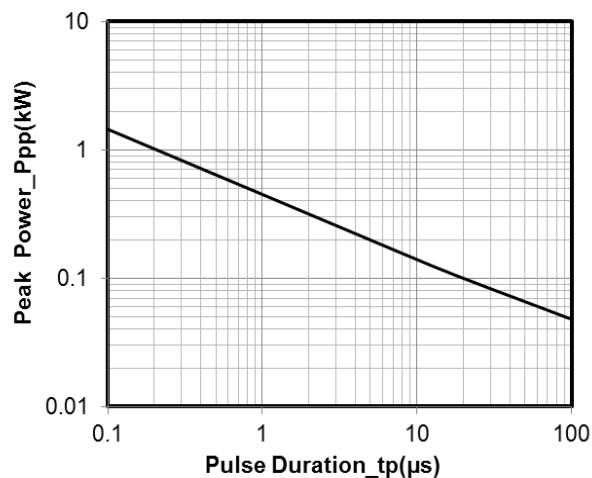
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			12	V	
Breakdown Voltage	V _{BR}	13.3			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 12V
Clamping Voltage	V _C			16	V	I _{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V _C			20	V	I _{PP} = 5A (8 x 20μs pulse)
Junction Capacitance	C _J		7.5	15	pF	V _R = 0V, f = 1MHz

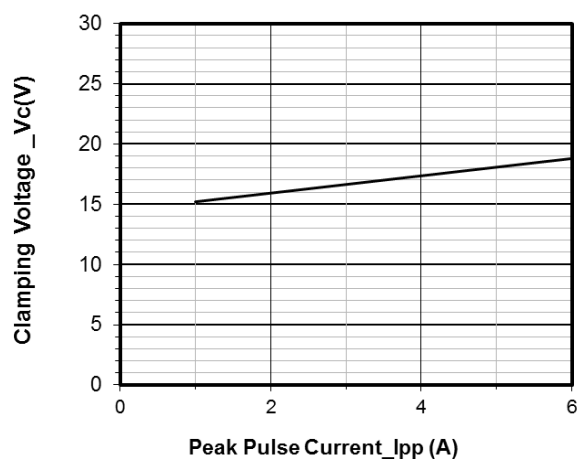
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



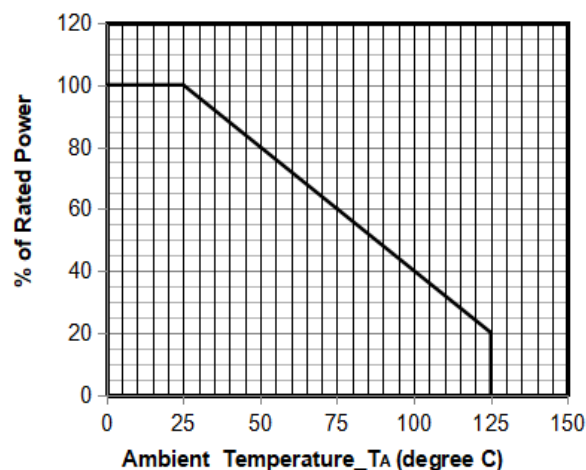
Junction Capacitance vs. Reverse Voltage



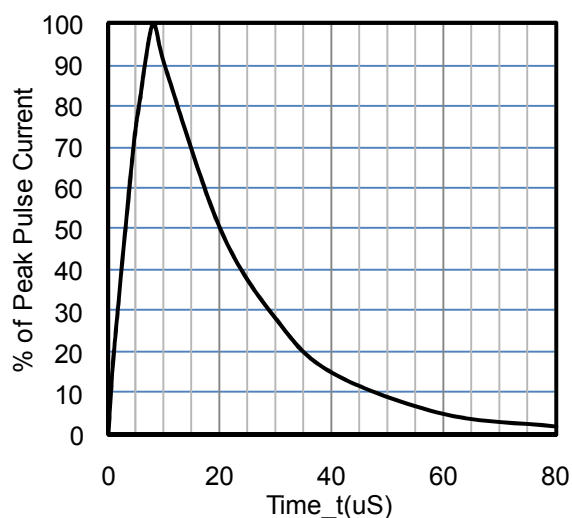
Peak Pulse Power vs. Pulse Time



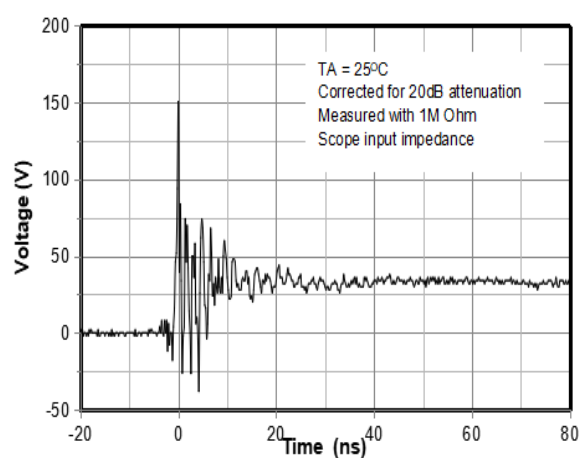
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

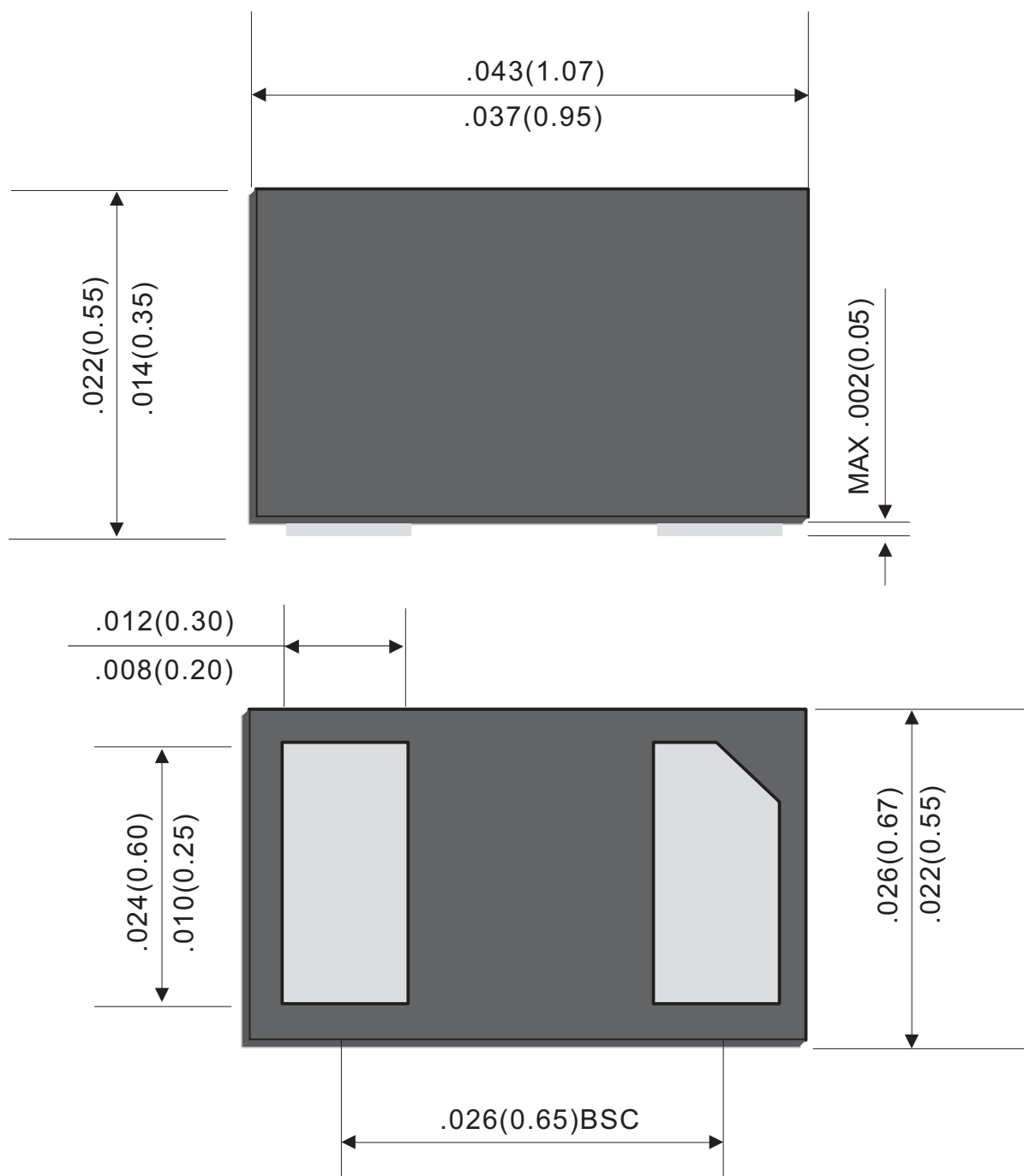


ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

Outline Drawing

DFN1006-2L



Dimensions in inches and (millimeters)

Rev.B-1

Device PN	Packing
SESD12BD -T ⁽¹⁾ H ⁽²⁾ -WS	Tape&Reel: 10 Kpcs/Reel

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

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