

**100W Ultra-Low Capacitance Bidirectional TVS For ESD Protection****DESCRIPTION**

The SESD33DLCBW 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 high-speed data lines. The SESD33DLCBW has an ultra-low capacitance with a typical value at 0.25pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into an ultra-small 1.0 x 0.6 x 0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make SESD33DLCBW an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

FEATURES

- Ultra small package: 1.0 x 0.6 x 0.5mm
- Ultra low capacitance: 0.25pF typical
- Ultra low leakage : nA level
- Operating voltage : 3.3V
- Low clamping voltage

APPLICATIONS

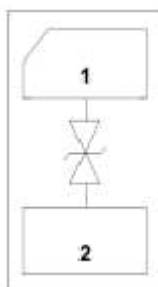
- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface(DVI)
- Portable instrumentation

MECHANICAL DATA

- Case : Molded, plastic DFN1006-2L
- Polarity : Shown follows
- Epoxy : UL94-V0 rated flame retardant

IEC COMPATIBILITY

- IEC 61000-4-2 (ESD) $\pm 25\text{kV}$ (air), $\pm 20\text{kV}$ (contact)
- IEC 61000-4-5 (Lightning) 4A (8/20 μs)

SCHEMATIC & PIN CONFIGURATION



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

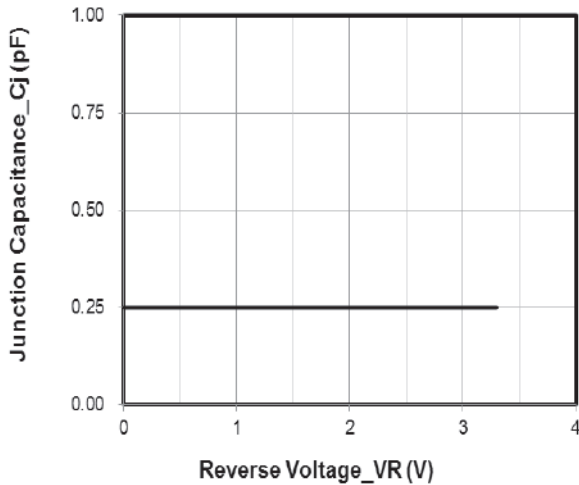
Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 μs)	Ppk	100	W
Peak Pulse Current(8/20 μs)	I _{PP}	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 25 ± 20	kV
Operating Temperature Range	T _J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

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

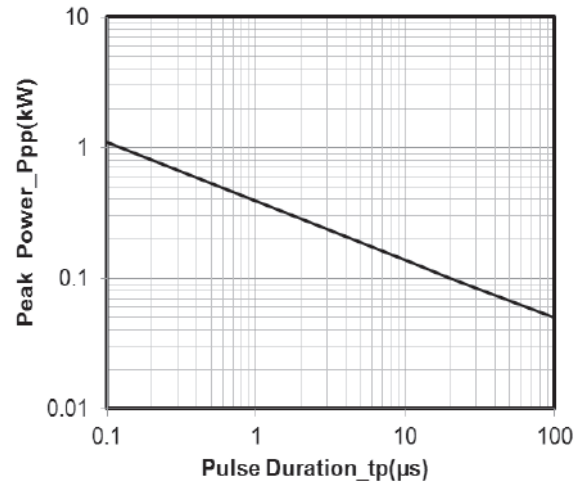
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Breakdown Voltage	V _{BR}	5			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 3.3V
Clamping Voltage	V _C			11	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	V _C			25	V	I _{PP} = 4A (8 x 20 μs pulse)
Junction Capacitance	C _J		0.25	0.3	pF	V _R = 0V, f = 1MHz



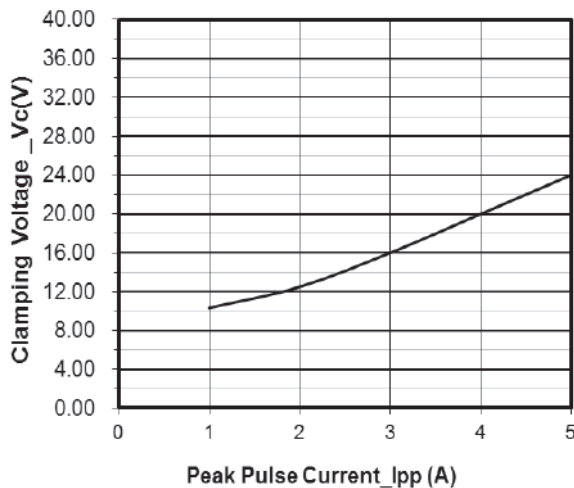
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



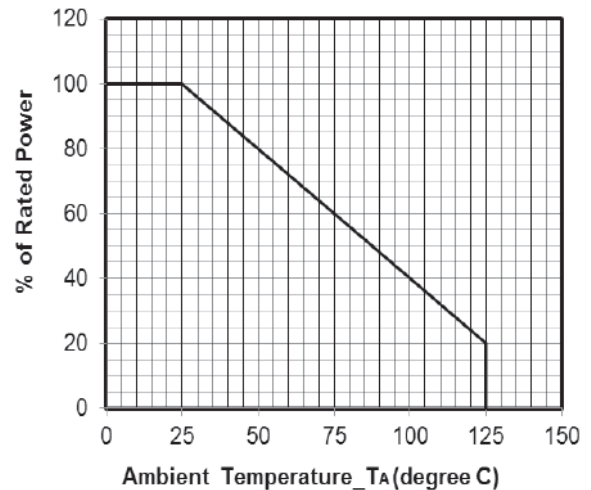
Junction Capacitance vs. Reverse Voltage



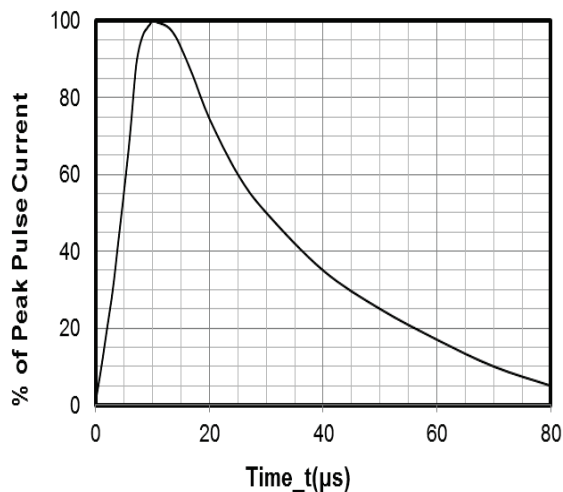
Peak Pulse Power vs. Pulse Time



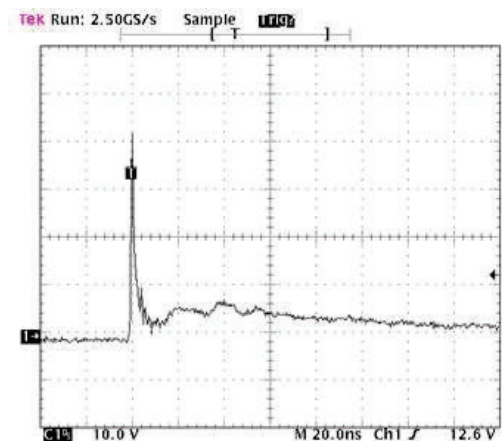
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20 s Pulse Waveform



Note: Data is taken with a 10x attenuator

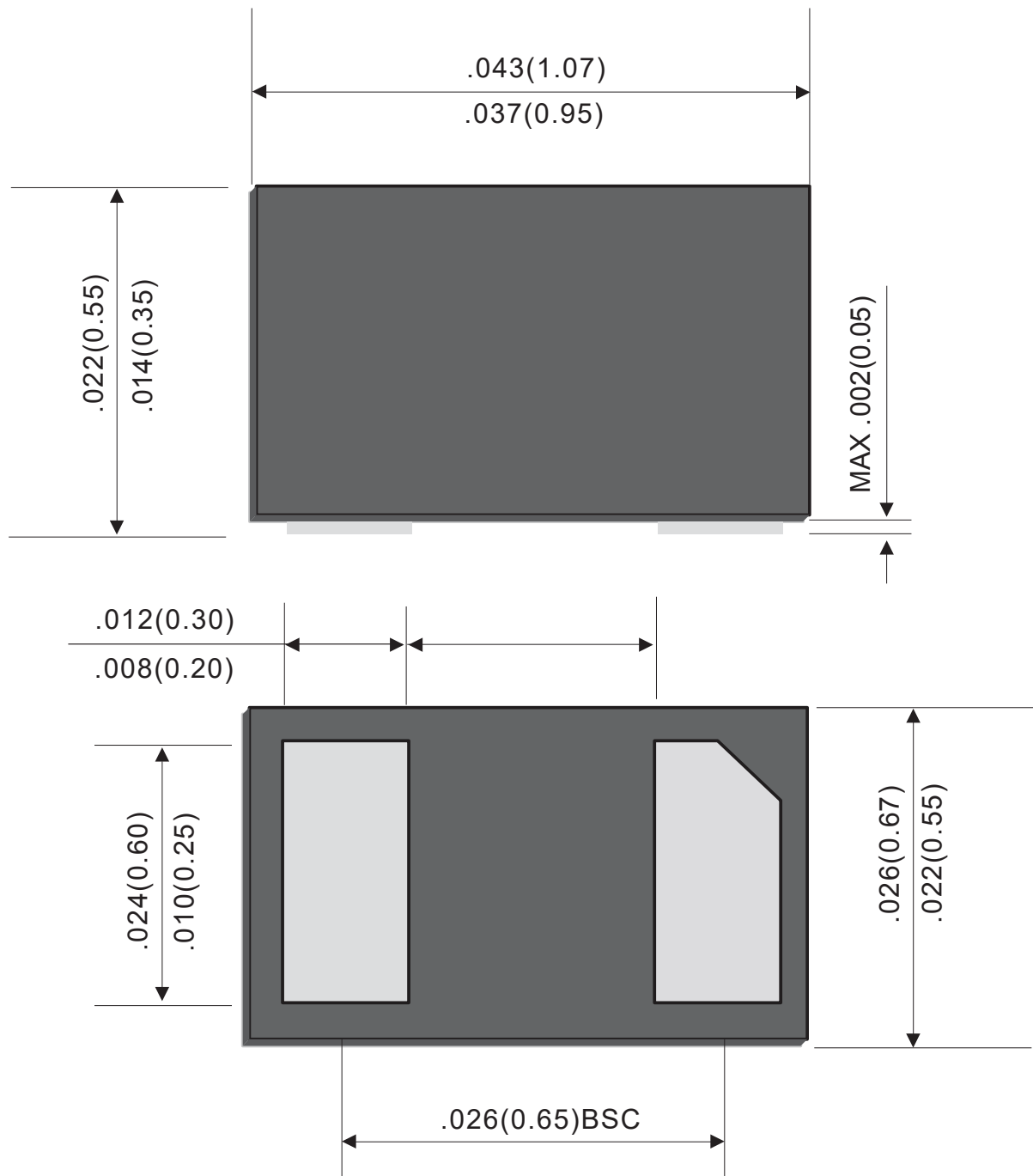
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2



Outline Drawing

DFN1006-2L



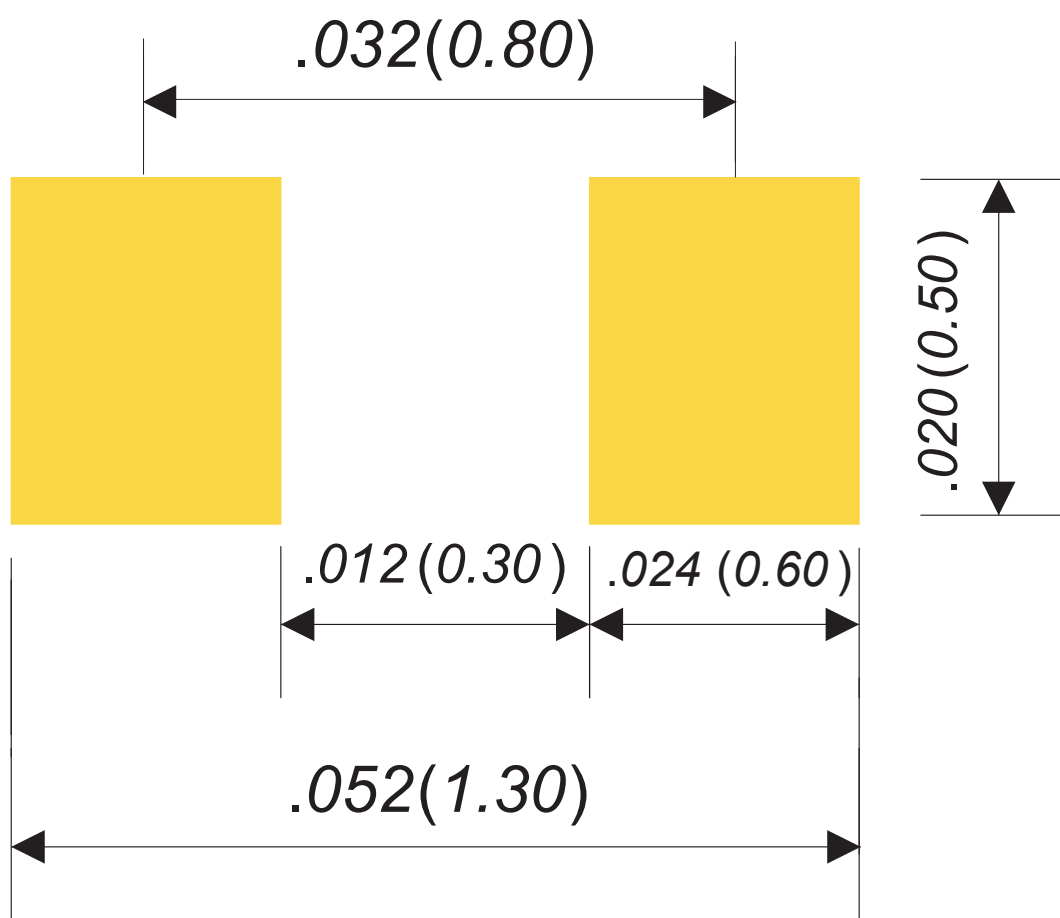
Dimensions in inches and (millimeters)

Rev.B-1



Suggested Soldering Pad Layout

DFN1006-2L



Dimensions in inches and (millimeters)

RevA

**Ordering Information:**

Device PN	Marking ⁽⁴⁾	Packing
SESD33DLCBW-T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	S/FK/3L	Tape&Reel: 10 Kpcs/Reel

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

(2) Packing code suffix "G" for RoHS product ; Packing code Suffix "H" for halogen free product.
All materials and products supplied comply with the U.S. Toxic Substances Control Act statement, PBT Chemicals.

(3) Willas brand abbreviation, Label Type does not display.

(4) There may be additional marking, which relates to the lot trace code information (data code and vendor code), the logo or the environmental category on the device.

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