

1-Line Bi-directional TVS Diode

Description

The SESDB5V0DNG2 is a bi-directional TVS diode, 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 SESDB5V0DNG2 complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 25\text{kV}$ contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size and high ESD protection make SESDB5V0DNG2 an ideal choice to protect cellphone, digital cameras, audio players and many other portable applications.

Features

- Ultra small package: 1.0x0.6mm
- low capacitance: 15pF (Typ.)
- Protects one data or power line
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 25\text{kV}$
 - IEC 61000-4-5 (Lighting) 7A (8/20 μs)
- RoHS Compliant

Mechanical Characteristics

- Package: DFN1006-2 (1.0x0.6mm)
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020

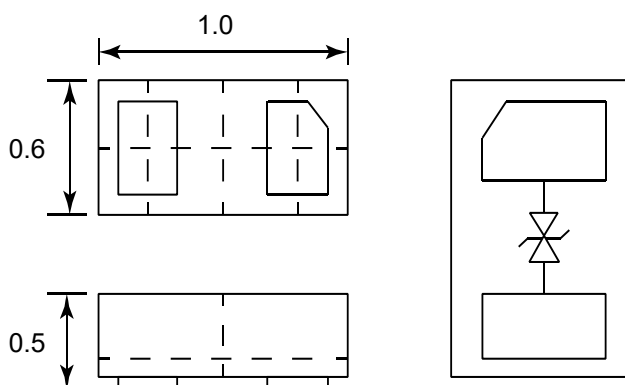
Applications

- Smart Phone and Tablet PC
- TV and Set Top Box
- Wearable Devices
- PDAs

Ordering Information

Part Number	Shipping	Reel Size
SESDB5V0DNG2	10000/Tape & Reel	7 inch

Dimensions and Pin Configuration



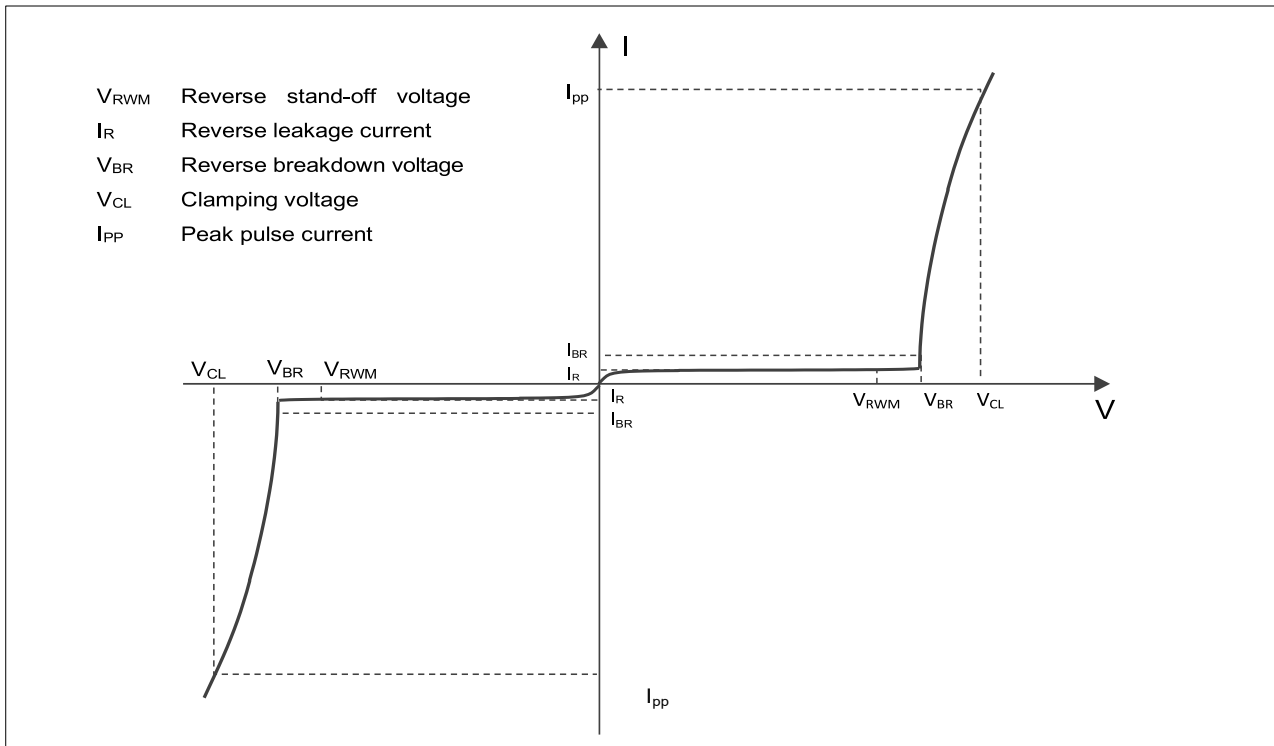
Package Dimensions Circuit and Pin Schematic

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

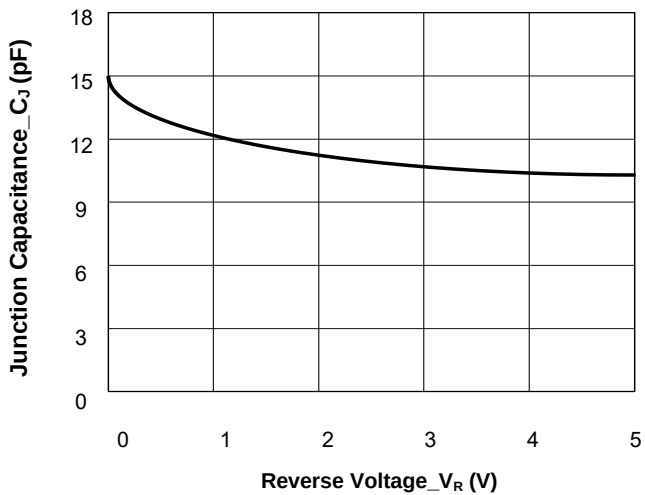
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{PK}	80	W
Peak Pulse Current (8/20μs)	I _{PP}	7	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±25 ±25	kV
Operating Temperature Range	T _{OP}	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

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

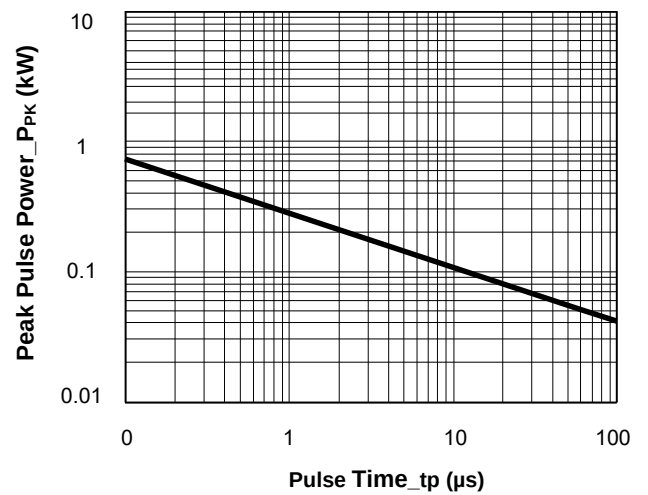
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	
Breakdown Voltage	V _{BR}	5.6	6.5	8.4	V	I _T = 1mA
Reverse Leakage Current	I _R			0.3	μA	V _{RWM} = 5V
Clamping Voltage	V _C			8	V	I _{PP} = 1A (8/20μs pulse)
Clamping Voltage	V _C			12	V	I _{PP} = 6.5A (8/20μs pulse)
Junction Capacitance	C _J		15	21	pF	V _R = 0V, f = 1MHz

Electrical characteristics ($T_A = 25^\circ\text{C}$, unless otherwise noted)

Definitions of electrical characteristics

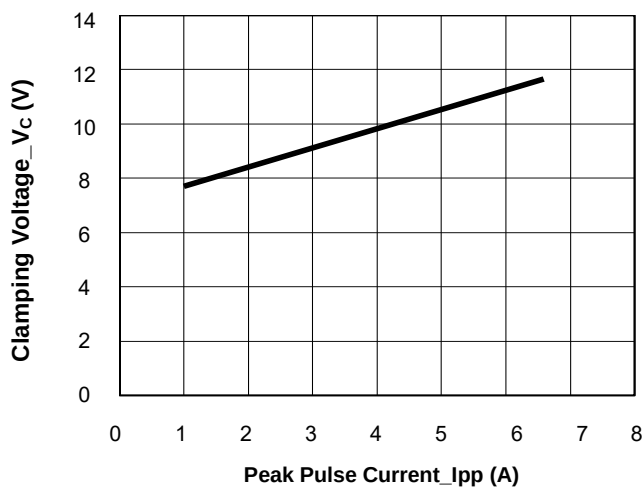
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



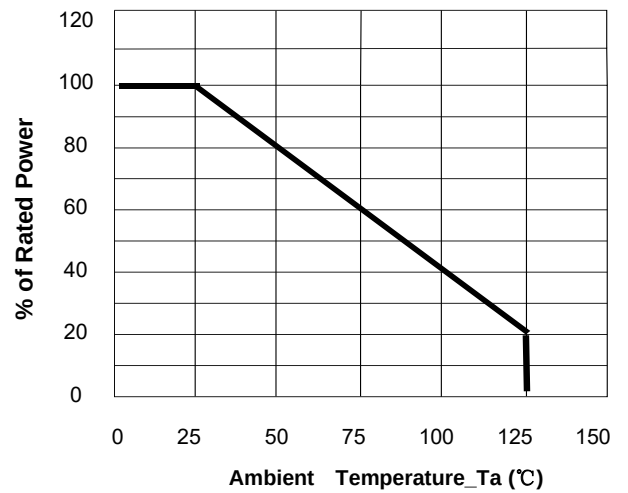
Junction Capacitance vs. Reverse Voltage



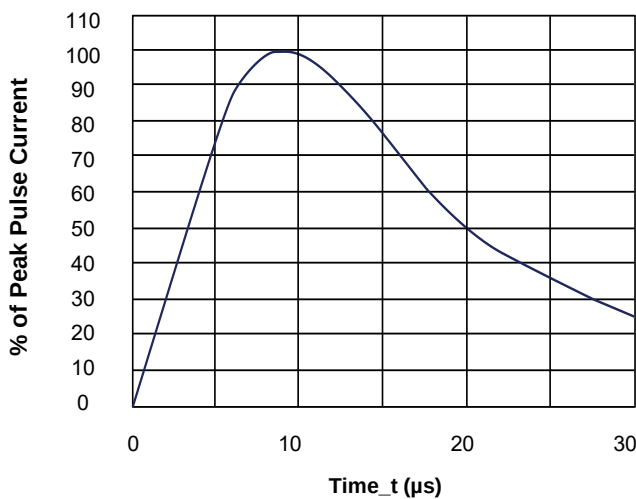
Peak Pulse Power vs. Pulse Time



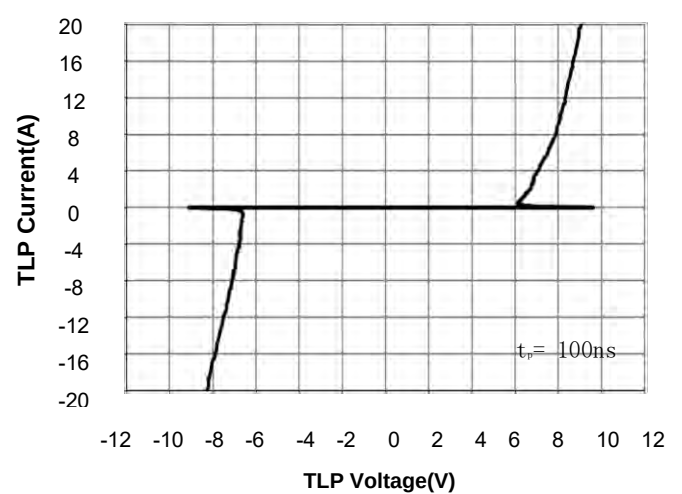
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

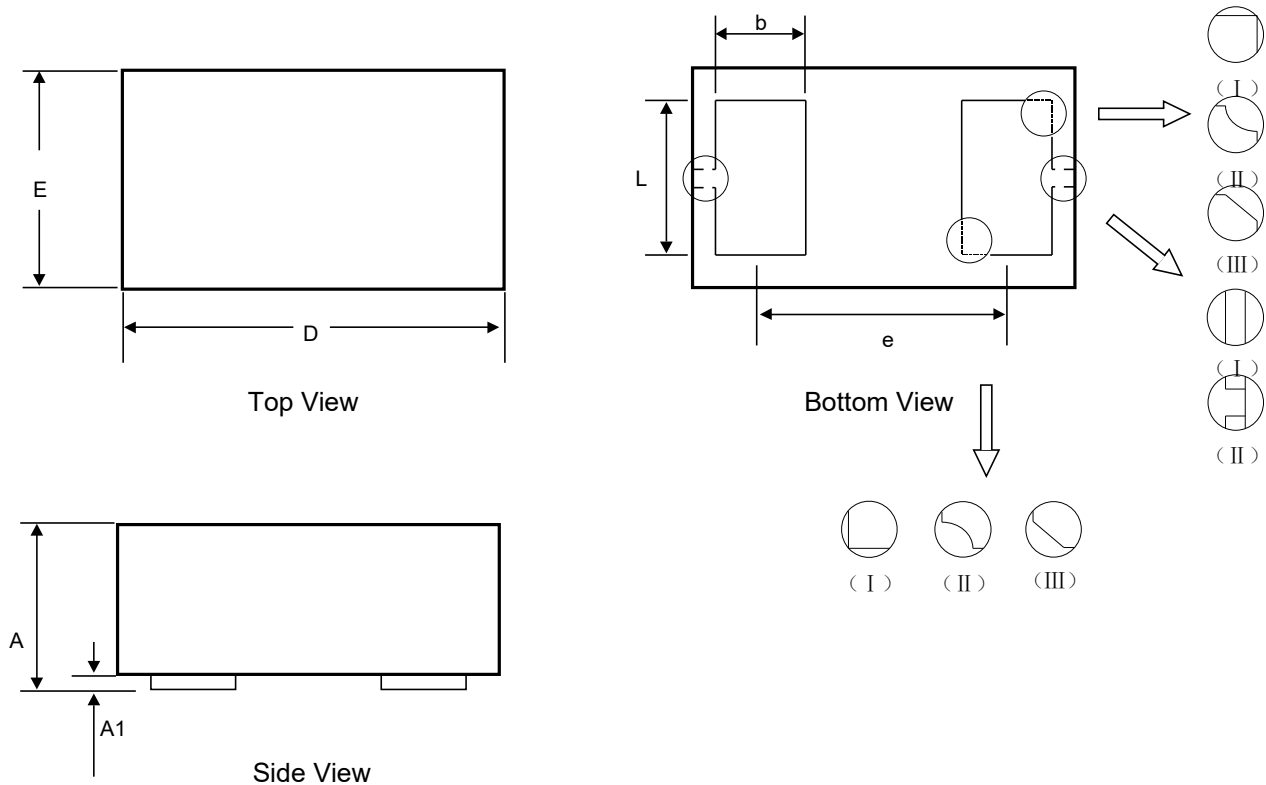


8/20μs Pulse Waveform



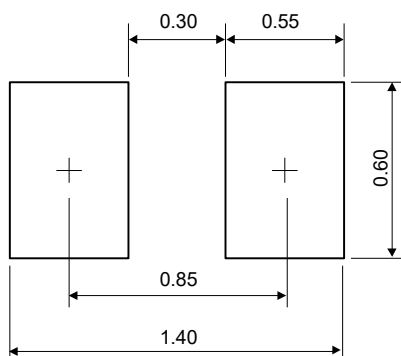
TLP Measurement

DFN1006-2 Package Outline Drawing



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.340	0.450	0.550
A1	0.000	0.020	0.050
D	0.950	1.000	1.075
E	0.490	0.600	0.675
b	0.270	0.320	0.370
L	0.450	0.500	0.550
e	0.650 BSC		

Recommended PCB Layout (Unit: mm)



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.