

1-Line , Bi-directional , Transient Voltage Suppressor

Description

SESDB5V0UDL2 is a bi-directional TVS (Transient Voltage Suppressor). It has been specifically designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge) and Lightning . SESDB5V0UDL2 may be used to provide ESD protection up to $\pm 30\text{kV}$ (air and contact discharge) according to IEC61000-4-2, and withstand peak pulse current up to $7\text{A}(8/20\mu\text{s})$ according to IEC61000-4-5 . SESDB5V0UDL2 is available in DFN0603-2 package. Standard products are Pb-free and Halogen-free.

Features

- Operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) $7\text{A}(8/20\mu\text{s})$
- RoHS Compliant

Mechanical Characteristics

- Package: DFN0603-2 ($0.6 \times 0.3 \times 0.3\text{mm}$)
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

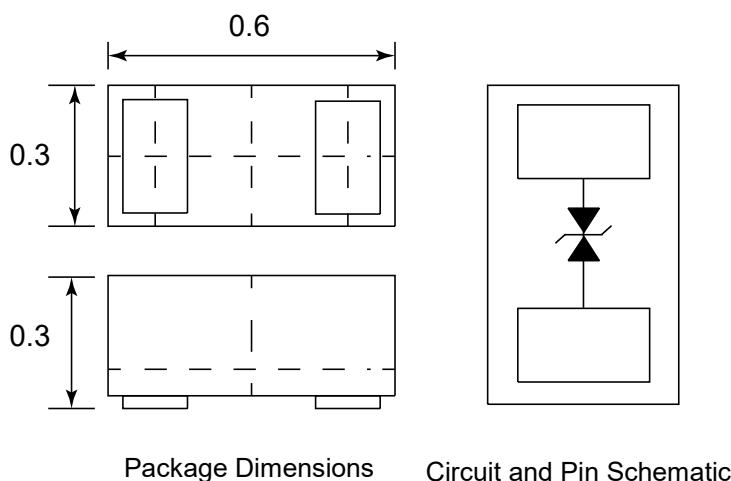
Applications

- Cellular Handsets
- USB V_{BUS} and CC Line Protection
- Microphone Line Protection
- GPIO Protection

Ordering Information

Part Number	Shipping	Reel Size
SESDB5V0UDL2	10000/Tape & Reel	7 inch

Dimensions and Pin Configuration



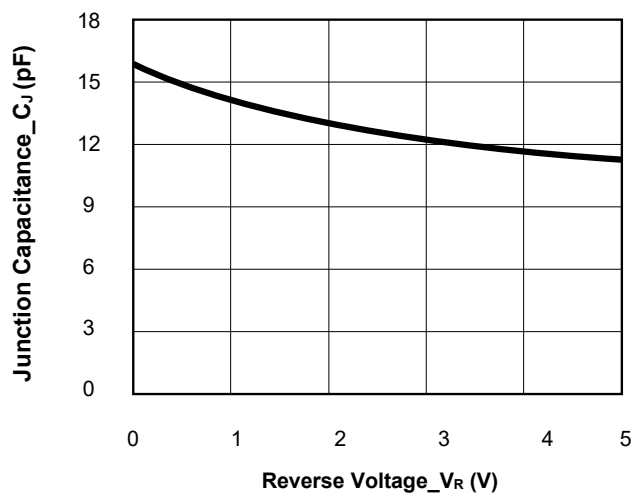
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	84	W
Peak Pulse Current (8/20 μs)	I_{PP}	7	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Operating Temperature Range	T_{OP}	-40 to ~85	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to ~150	$^{\circ}\text{C}$

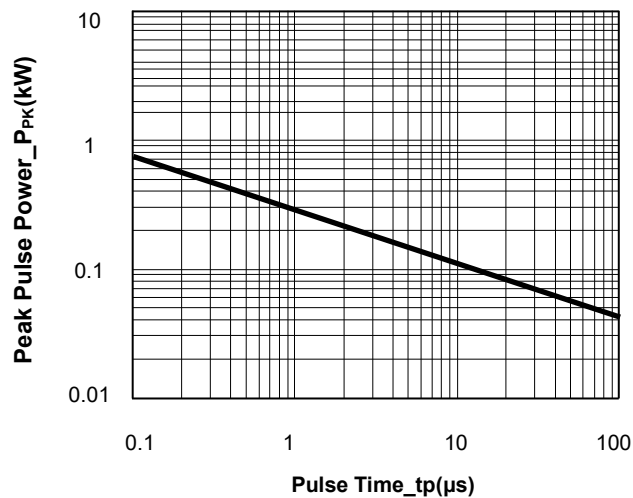
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	5.3			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			0.1	μA	$V_{RWM}=5\text{V}$
Clamping Voltage	V_C		6.3	8	V	$I_{PP} = 1\text{A}(8/20\mu\text{s pulse})$
Clamping Voltage	V_C		9.5	12	V	$I_{PP} = 7\text{A}(8/20\mu\text{s pulse})$
Junction Capacitance	C_J		16	21	pF	$V_R = 0\text{V}, f = 1\text{MHz}$

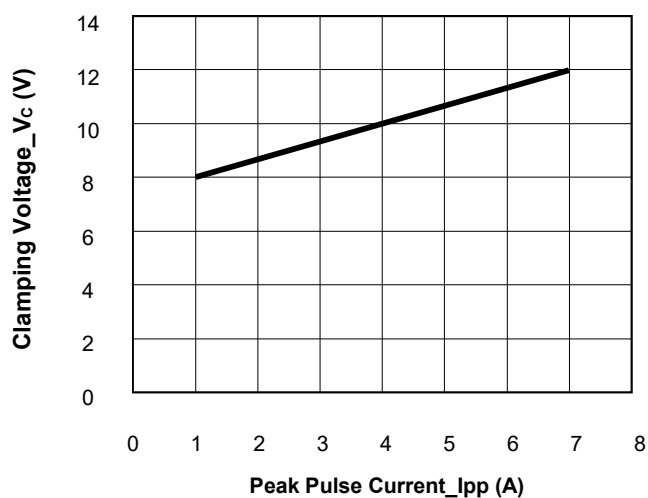
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



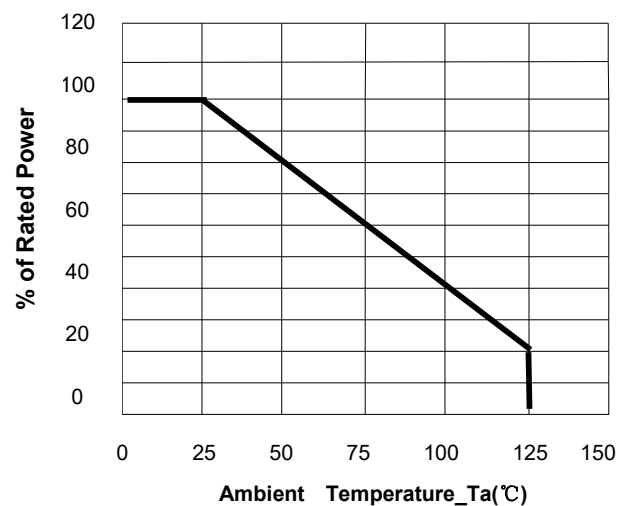
Junction Capacitance vs. Reverse Voltage



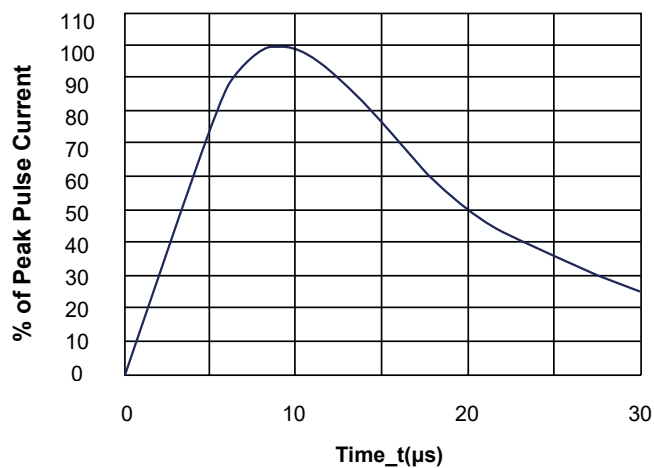
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

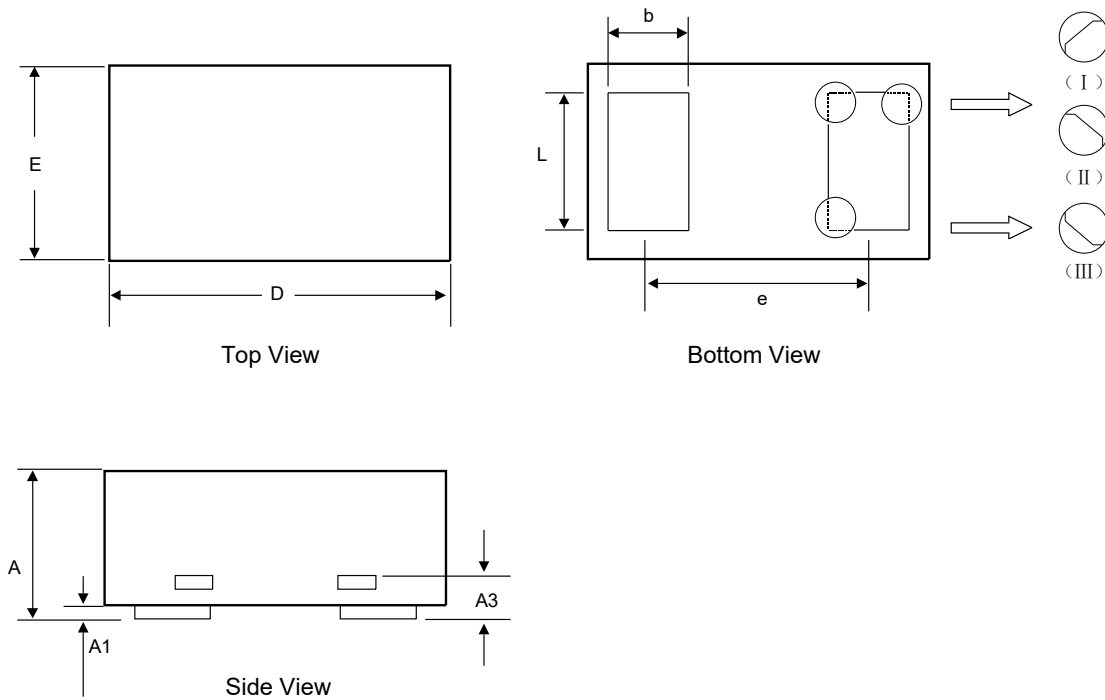


Power Derating Curve



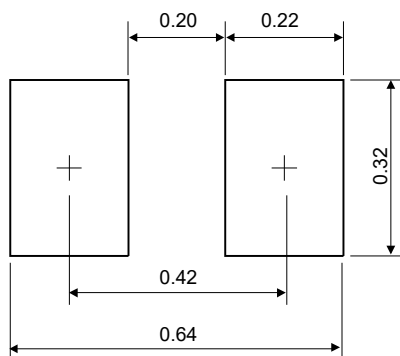
8/20μs Pulse Waveform

DFN0603-2 Package Outline Drawing



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.230	0.300	0.350
A1	0.000	-	0.050
A3	0.102REF.		
D	0.550	0.600	0.670
E	0.250	0.300	0.370
b	0.215	0.245	0.275
L	0.160	0.190	0.230
e	0.360 BSC		

Recommended PCB Layout (Unit: mm)

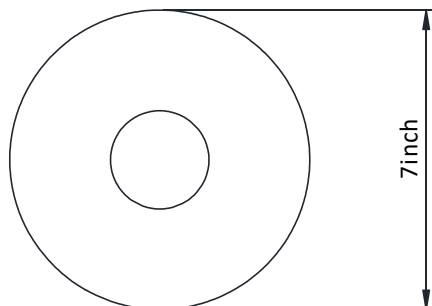


Notes:

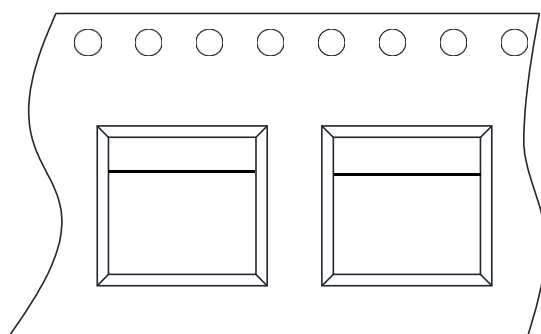
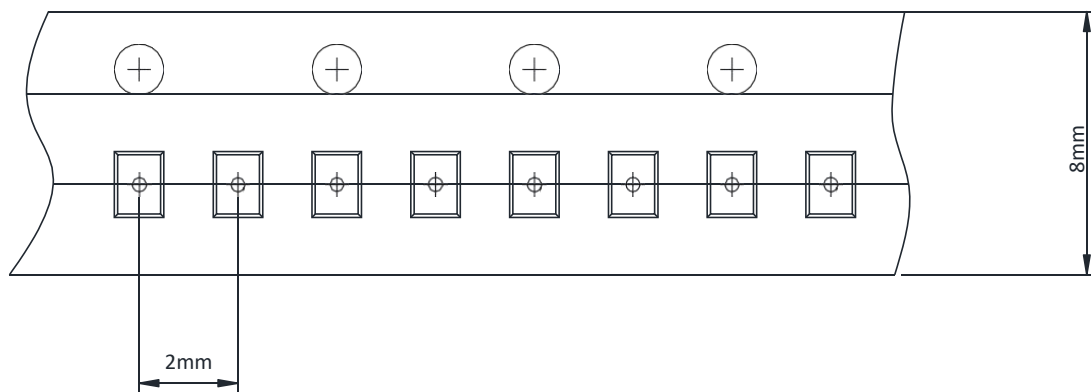
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

TAPE AND REEL INFORMATION

Reel Dimensions



Tape Dimensions



User Direction of Feed