SESD5Z12C
Transient Voltage Suppressors for ESD Protection

Revision:B

General Description

The SESD5Z12C isdesigned to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Features

- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 200 Watts @ 8 x 20 _μs Pulse
- Low Leakage current
- Response Time is Typically < 1 ns

Complies with the following standards

IEC61000-4-2

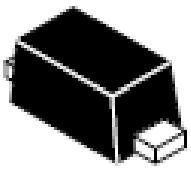
Level 4 15 kV (air discharge)

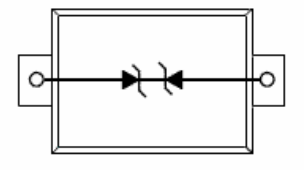
8 kV(contact discharge)

MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

Functional diagram





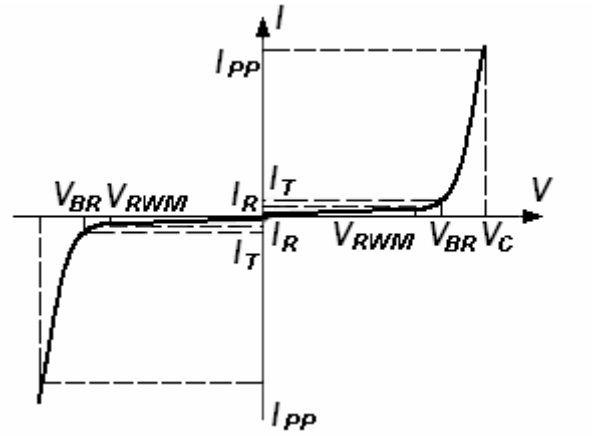
SOD-523

Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20μs)	200	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +155	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±15 ±8	kV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model Per Machine Model	16 400	kV V

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.VF = 0.9V at IF = 10mA

Part Numbers	V_{BR}			I_T	V_{RWM}	I_R	V_F	I_F	C
	Min.	Typ.	Max.				Max.	Typ.	Typ. 0v bias
	V	V	V	mA	V	μA	V	mA	pF
SESD5Z12C	12	14.2	15	1	12.0	1	1.25	200	30

*Surge current waveform per Figure 1.

1. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25℃.

Typical Characteristics

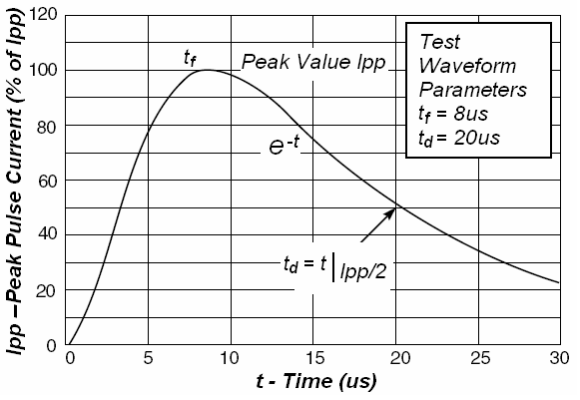


Fig1. Pulse Waveform

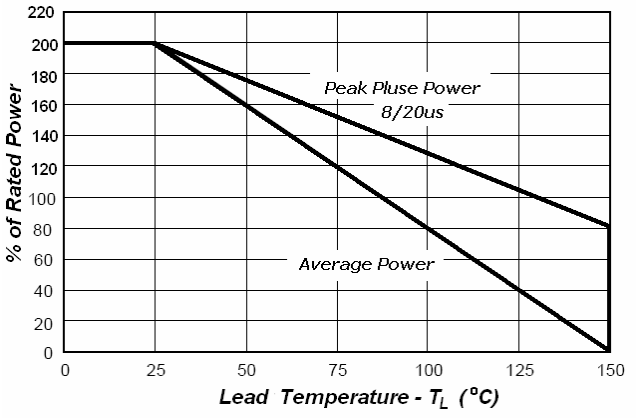


Fig2.Power Derating Curve

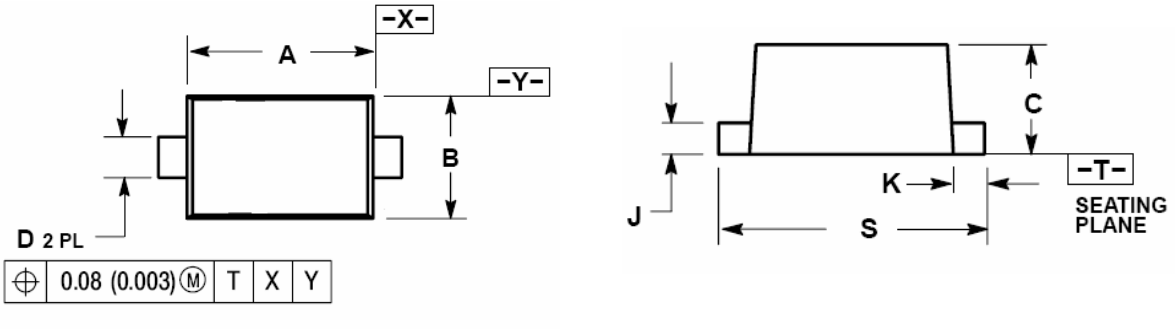
Application Note

Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

Surface mount TVS offers the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal lines to ground. As the transient rises above the operating voltage of the device, the TVS becomes a low impedance path diverting the transient current to ground. The SESD5Z5C is the ideal board evel protection of ESD sensitive semiconductor components.

The tiny SOD-523 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.

SOD-523 Mechanical Data



Dim	Millimeters			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067

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