

Bi-directional Micro-Packaged Transient Voltage Suppressor

Features

- Small SOD-523 Package
- Bi-directional Configurations
- Peak Power Dissipation 250W @8 x 20 us Pulse
- Low Leakage
- Fast Response Time < 1 ns
- Protects One Power or I/O Port
- ESD Rating of Class 3 (>16KV) per Human Body Model
- ESD Protection to IEC 61000-4-2 Level 4
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- RoHS Compliant in Lead-Free Versions



Applications

- Communication Systems & Cellular Phones
- Personal Digital Assistant (PDA)
- Digital Cameras
- Power Supplies

Absolute Maximum Ratings

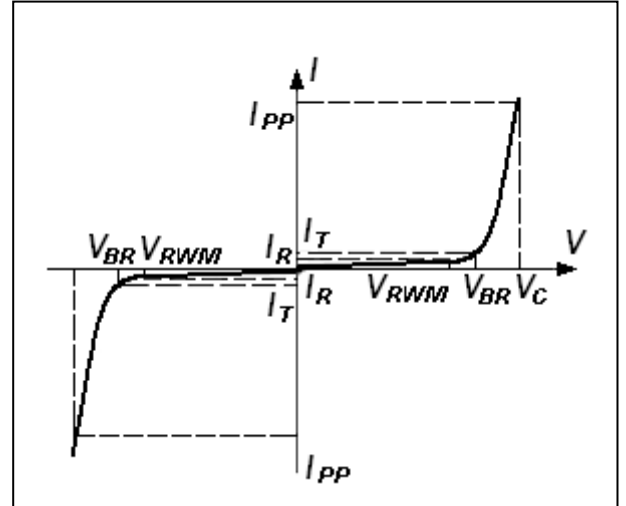
Parameter	Symbol	Value	Units
Peak Power Dissipation (Note 1.) @ $T_L = 25^\circ\text{C}$	P_{PK}	250	W
IEC 61000-4-2 (ESD)		Air	± 30 KV
		CONTACT	± 30 KV
ESD Voltage		Per Human Body Model	16 KV
		Per Machine Model	400 V
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to 150	$^\circ\text{C}$

1. 8 X 20 us, non-repetitive

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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.

Device	V_{RWM} (V)	I_R (μ A) @ V_{RWM}	V_{BR} (V) @ I_T (Note 1)		I_T	C (pF) @ $V_R=0V$ $F = 1$ MHz
	Max	Max	Min	Max	mA	Typ
ESD5B3CM	5.0	1.0	5.8	7.8	50	32

*Surge current waveform per Figure 1.

- V_{BR} is measured with a pulsed test current I_T at an ambient temperature of 25°C.

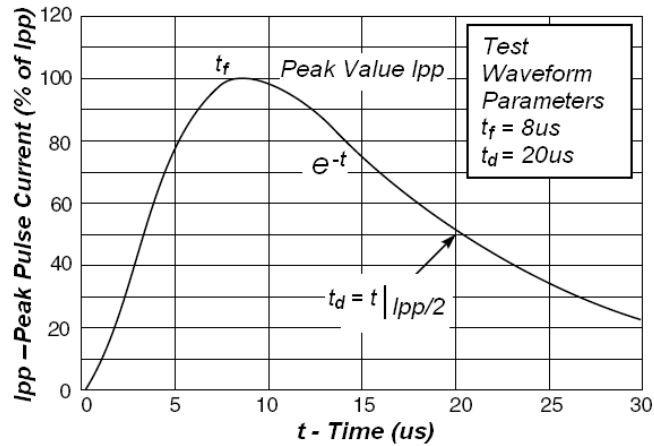


Fig1. Pulse Waveform

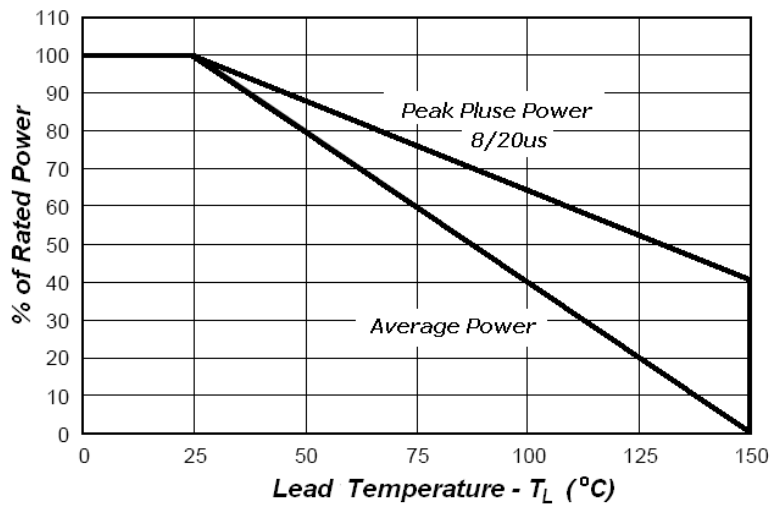
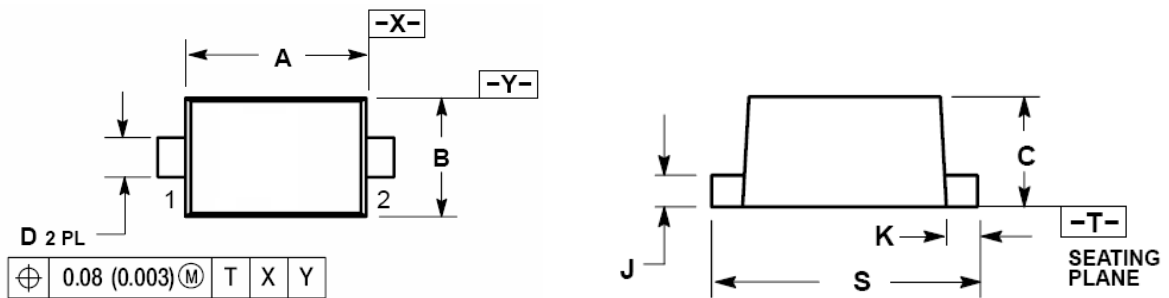


Fig2. Power Derating

Package Dimensions

SOD-523



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