

Transient Voltage Suppressors for ESD Protection

 Lead(Pb)-Free

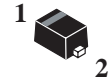
**TRANSIENT VOLTAGE
SUPPRESSORS**

200 WATTS

5.0 VOLTS

Description:

* The ESD5Z5.0C is designed 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.



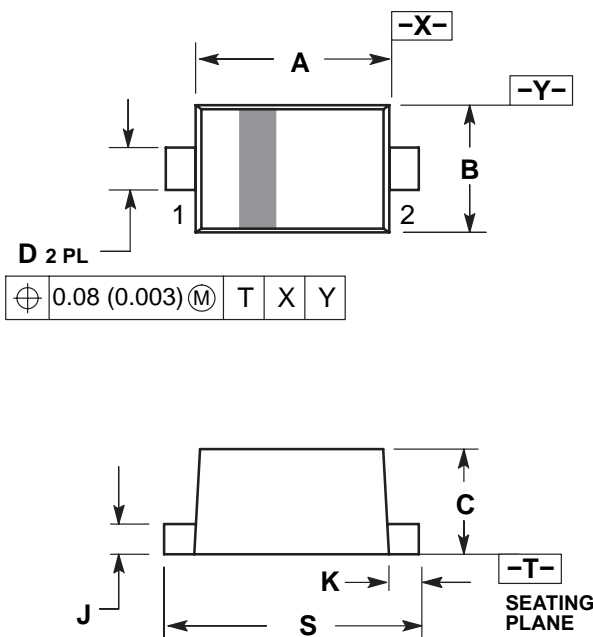
SOD-523/SC-79

Features:

- * Small Body Outline Dimensions
- * Low Body Height
- * Peak Power up to 200 Watts @ 8 x 20 μ s Pulse
- * Low Leakage current
- * Response Time is Typically < 1 ns
- * ESD Rating of Class 3 (> 16 kV) per Human Body Model
- * IEC61000-4-2 Level 4 ESD Protection
- * IEC61000-4-4 Level 4 EFT Protection

SOD-523 Outline Dimensions

Unit:mm



MILLIMETERS			
DIM	MIN	NOM	MAX
A	1.10	1.20	1.30
B	0.70	0.80	0.90
C	0.50	0.60	0.70
D	0.25	0.30	0.35
J	0.07	0.14	0.20
K	0.15	0.20	0.25
S	1.50	1.60	1.70

Maximum Ratings($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

Characteristic	Symbol	Value	Unit
ESD Voltage Per Human Body Model Per Machine Model		16 400	kV V
Electrostatic discharge IEC61000-4-2 Air discharge IEC61000-4-2 ContactAir discharge		± 15 ± 8	kV
Electrostatic discharge IEC61000-4-4		40	A
Total Power Dissipation on FR-5 Board ¹ , @ $T_A = 25^{\circ}\text{C}$	P_{PP}	200	W
Lead Solder Temperature -Maximum	T_L	260(10s)	$^{\circ}\text{C}$
Junction Temperature Range	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$
Operating Temperature Range	T_{OP}	-40 to +125	$^{\circ}\text{C}$

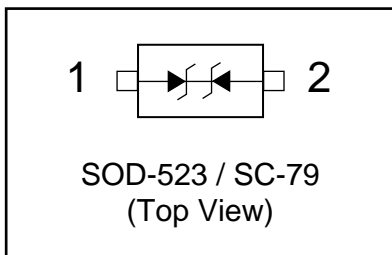
Electrical Characteristics ($T_A = 25^{\circ}\text{C}$ unless otherwise noted, $V_F = 0.9\text{ V Max.}$ @ $I_F = 10\text{ mA}$ for all types)

Device	Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)		I_T mA	V_C (V)(Note 1) @ $I_{pp} = 5.0\text{ A}$	V_C (V)(Note 1) @ $\text{Max } I_{pp}$	I_{pp} (A) (Note 1)	P_{pk} (W) (Note 1)	C (pF)
		Max	Max	Min	Max		Typ	Max	Max	Max	Typ
ESD5Z5.0C	5C	5.0	1	5.6	7.8	1.0	11.6	18.6	9.4	174	80

Note 1. Surge current waveform per Fig.1

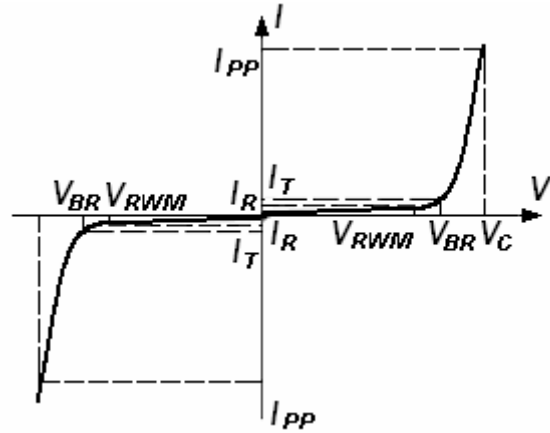
2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C .

Equivalent Circuit Diagram



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



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

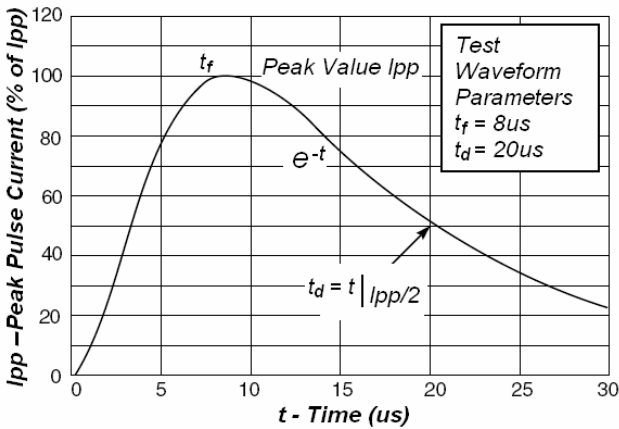


Fig1. Pulse Waveform

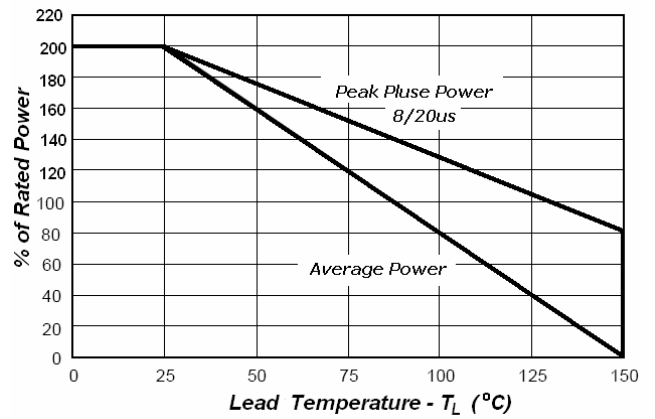


Fig2. Power Derating