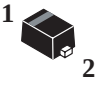
WEITRON

ESD5Z Series

Transient Voltage Suppressors for ESD Protection

Lead(Pb)-Free

TRANSIENT VOLTAGE SUPPRESSORS
200 WATTS
2.5-12.0 VOLTS



SOD-523/SC-79

Description:

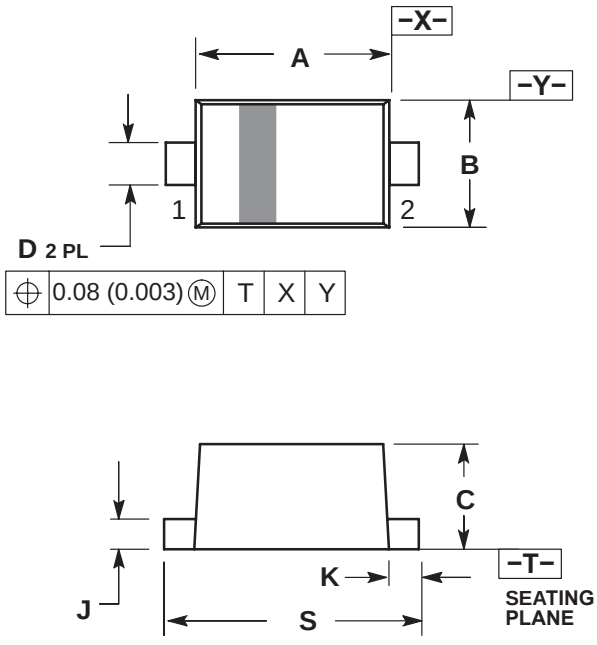
* The ESD5Z Series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.

Features:

* Stand−off Voltage: 2.5 V − 12 V
* Peak Power up to 200 Watts @ 8 x 20 μs Pulse
* Low Leakage
* 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˚C Unless Otherwise Noted)

Characteristic	Symbol	Value	Unit
ESD Voltage Per Human Body Model		16	kV
Electrostatic discharge IEC61000-4-2 Air discharge IEC61000-4-2 Contact discharge		 ±15 ±8	kV
Electrostatic discharge IEC61000-4-4		 40	A
Peak Pulse Power (tp = 8/20μs)	P_{pp}	200	W
Lead Solder Temperature -Maximum	T_L	260(10s)	℃
Junction Temperature Range	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to +150	℃
Operating Temperature Range	T_{op}	-40 to +125	℃

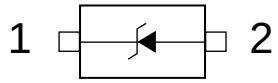
Electrical Characteristics (T_A = 25°C unless otherwise noted, V_F = 0.9 V Max. @ I_F = 10 mA for all types)

Device	Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T	V_C (V)(Note 1) @ I_{PP} = 5.0 A	V_C (V)(Note 1) @ Max I_{PP}	I_{PP} (A) (Note 1)	P_{pk}(W) (Note 1)	C (pF)
		Max	Max	Min	mA	Typ	Max	Max	Max	Typ
ESD5Z2.5	ZD	2.5	6.0	4.0	1.0	6.5	10.9	11.0	120	145
ESD5Z3.3	ZE	3.3	1.0	5.0	1.0	8.4	14.1	11.2	158	105
ESD5Z5.0	ZF	5.0	1.0	6.2	1.0	11.6	18.6	9.4	174	80
ESD5Z6.0	ZG	6.0	1.0	6.8	1.0	12.4	20.5	8.8	181	70
ESD5Z7.0	ZH	7.0	1.0	7.5	1.0	13.5	22.7	8.8	200	65
ESD5Z12	ZM	12	1.0	14.1	1.0	17	25	9.6	240	55

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.

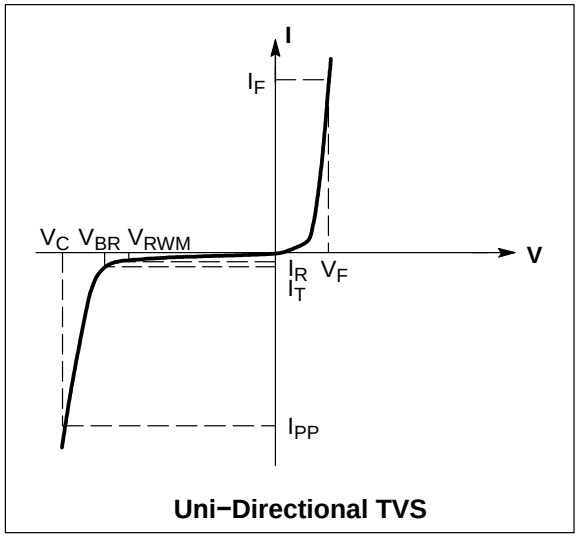
Eqivalent Circuit Diagram



SOD-523 / SC-79
(Top View)

Typical Characteristics (T_A = 25°C unless otherwise noted)

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}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Max. Capacitance @V_R = 0 and f = 1 MHz



Uni−Directional TVS

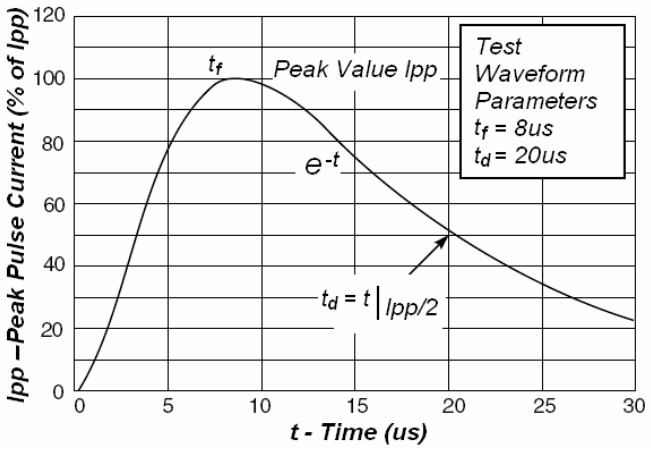


Fig1. Pulse Waveform

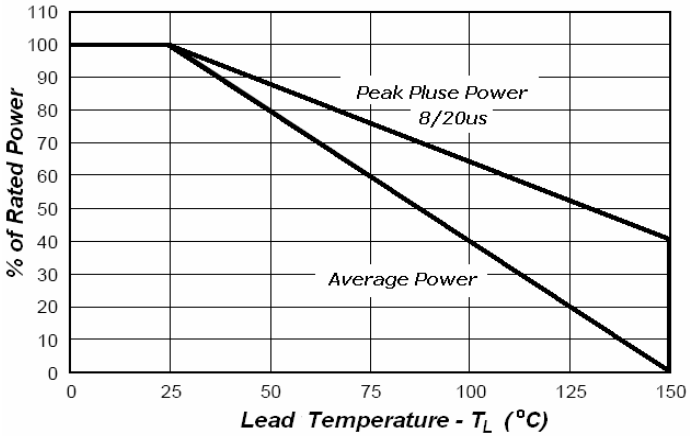


Fig2.Power Derating