

The SESD5Z12T1G 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.



SOD-523

Specification Features:

- Small Body Outline Dimensions:
0.047" x 0.032" (1.20 mm x 0.80 mm)
- Low Body Height: 0.028" (0.7 mm)
- Stand-off Voltage: 2.5 V – 12 V
- Peak Power up to 240 Watts @ 8 x 20 μ s 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
- Pb-Free Packages are Available


MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air Contact		± 30 ± 30	kV
IEC 61000-4-4 (EFT)		40	A
ESD Voltage Per Human Body Model Per Machine Model		16 400	kV V
Total Power Dissipation on FR-5 Board (Note 1) @ $T_A = 25^\circ\text{C}$	P_D	200	mW
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^\circ\text{C}$

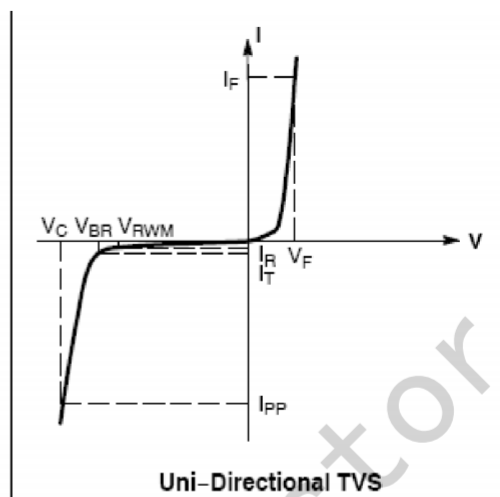
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. FR-5 = 1.0 x 0.75 x 0.62 in.

ELECTRICAL 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



ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted V_F=0.9V Max @I_F=10mA for all types)

Device*	V _{RWM} (V)	I _R (μA) @V _{RWM}	V _{BR} (V@I _T) (Note 2)	I _T	V _C (V) @pp=5.0A+	V _C (V) @Max I _{pp} +	pp(A)+	PPKW)+	C(pF)
	Max	Max	Min	mA	Typ	Max	Max	Max	Typ
SESD5Z2.5T1G*	2.5	6.0	4.0	1.0	6.5	10.9	11.0	120	145
SESD5Z3.3T1G*	3.3	0.1	5.0	1.0	8.4	14.1	11.2	158	105
SESD5Z5.0T1G*	5.0	0.05	6.2	1.0	11.6	18.6	9.4	174	80
SESD5Z6.0T1G*	6.0	0.01	6.8	1.0	12.4	20.5	8.8	181	70
SESD5Z7.0T1G*	7.0	0.01	7.5	1.0	13.5	22.7	8.8	200	65
SESD5Z12T1G*	12	0.01	14.1	1.0	17	25	9.6	240	55

The "G" suffix indicates Pb-Free package available

*Other voltages available upon request

+Surge current waveform per Figure 1.

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

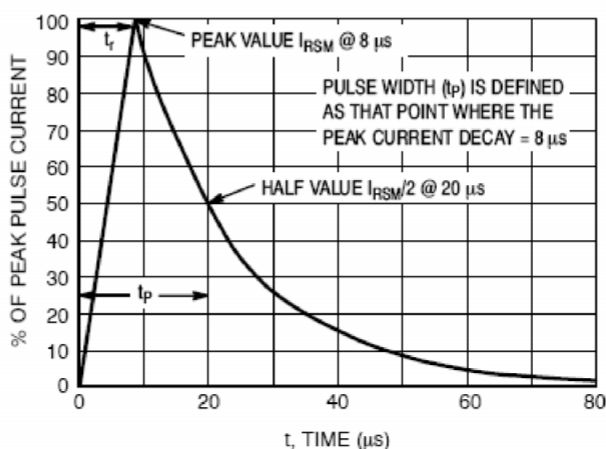


Figure 1. 8 x 20 μs Pulse Waveform

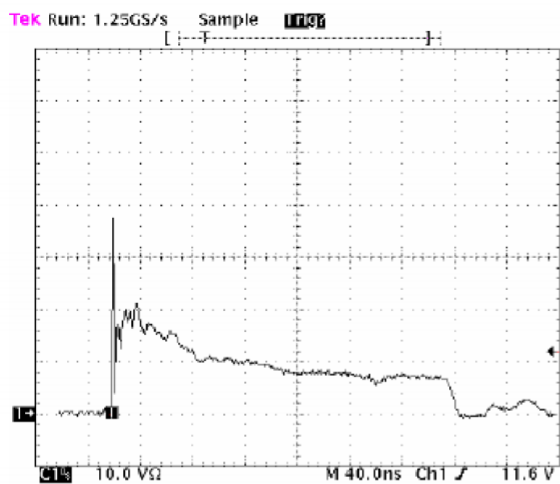


Figure 2. Positive 8 kV contact per IEC 6100-4-2

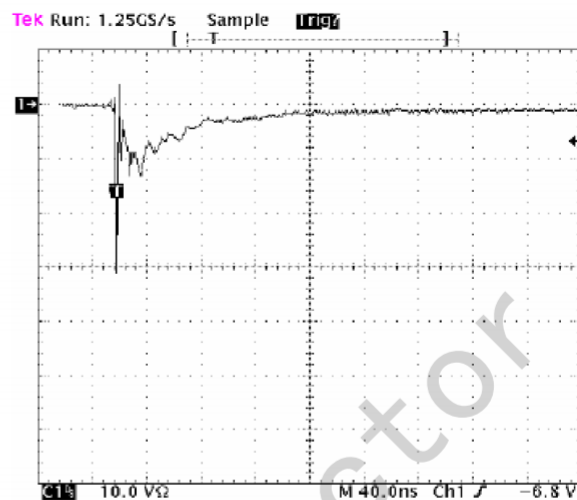
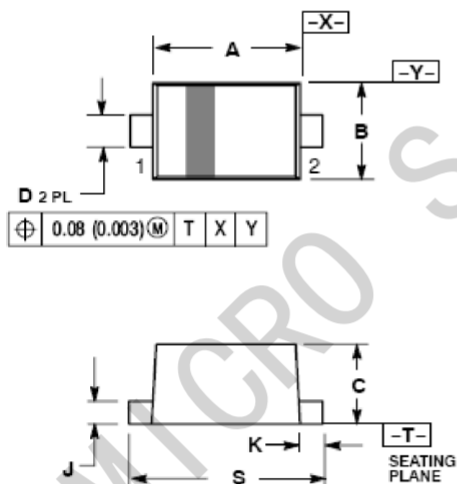


Figure 3. Negative 8 kV contact per IEC 6100-4-2

SOD-523
CASE 502-01
ISSUE B



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

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