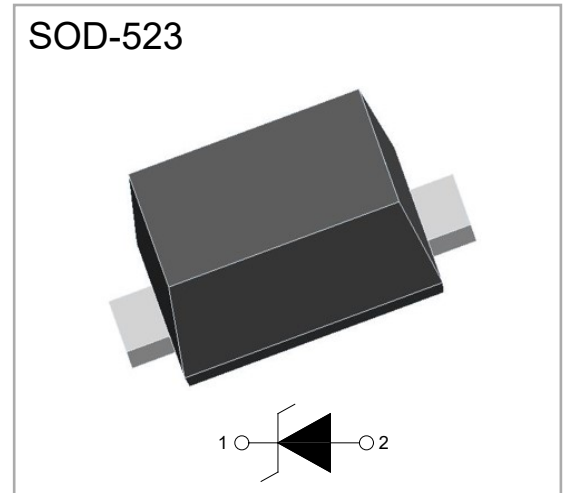


## ■ Features

- 240 Watts Peak Pulse Power per (tp=8/20us)
- Low clamping voltage
- Stand-off voltages: 2.5V to 12V
- Low leakage current
- Response Time is Typically <1ns
- IEC61000-4-2 Level 4 ESD protection
- IEC61000-4-4 Level 4 EFT Protection
- ESD Rating of Class 3(>16kV) per Human Body Model

SOD-523



## ■ Mechanical Data

- SOD-523 package
- Molding compound flammability rating: UL 94V-0
- High temperature soldering guaranteed: 260 °C/10s
- Device Meets MSL 1 Requirements
- Packaging: Tape and Reel

## ■ Absolute Maximum Rating( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air) ESD per IEC61000-4-2(Contact)	$V_{ESD}$	$\pm 30$	kV
IEC 61000-4-4(EFT)		40	A
ESD Voltage per human body model		16	kV
ESD Voltage per machine model		400	v
Total Power Dissipation on FR-5 Board (note 1)@ $T_a=25^\circ\text{C}$	$P_{PP}$	200	W
Operating temperature	$T_{OPT}$	-55-+150	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55-+150	$^\circ\text{C}$
Lead Soldering temperature-Maximum (10 second Duration)	$T_L$	260(10 sec.)	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired

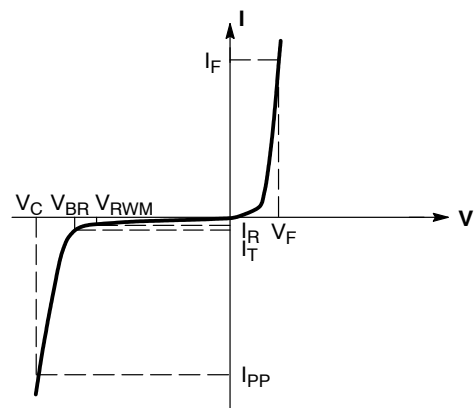
Note 1. FR-5=1.0x0.75x0.62 in.

■ Electrical Characteristics (TA = 25°C unless otherwise noted)

DEVICE	DEVICE MARKING	VRWM (V) (max.)	IR(uA) @VRWM (max.)	VBR(V) @IT(note2) (min.)	IT (mA)	Vc@5A (V) (Typ.)	Vc (V) (max.) (@A)		Ppk (W) (max.)	C (pF) (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	0.05	5.0	<b>1.0</b>	8.4	14.1	11.2	158	105
ESD5Z5.0	ZF	5.0	0.05	6.2	<b>1.0</b>	11.6	18.6	9.4	174	80
ESD5Z6.0	ZG	6.0	0.01	6.8	<b>1.0</b>	12.4	20.5	8.8	181	70
ESD5Z7.0	ZH	7.0	0.01	7.5	<b>1.0</b>	13.5	22.7	8.8	200	65
ESD5Z12	ZM	12	0.01	14.1	<b>1.0</b>	17	25	9.6	240	55

■ Electrical Parameters (TA = 25°C unless otherwise noted)

Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>pp</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage@ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>
P <sub>PK</sub>	Peak Power Dissipation
C	Max. Capacitance @ VR=0 and f=1MHZ



Uni-Directional TVS



■ Typical Characteristics

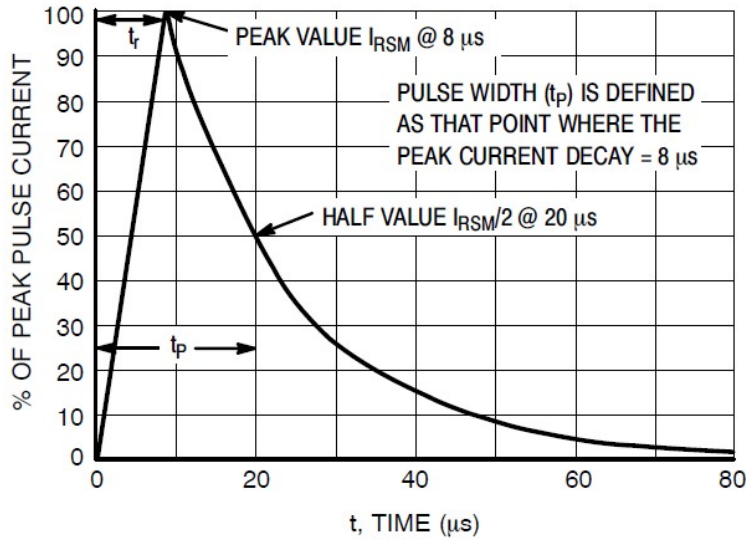


Figure 1. 8 x 20  $\mu s$  Pulse Waveform

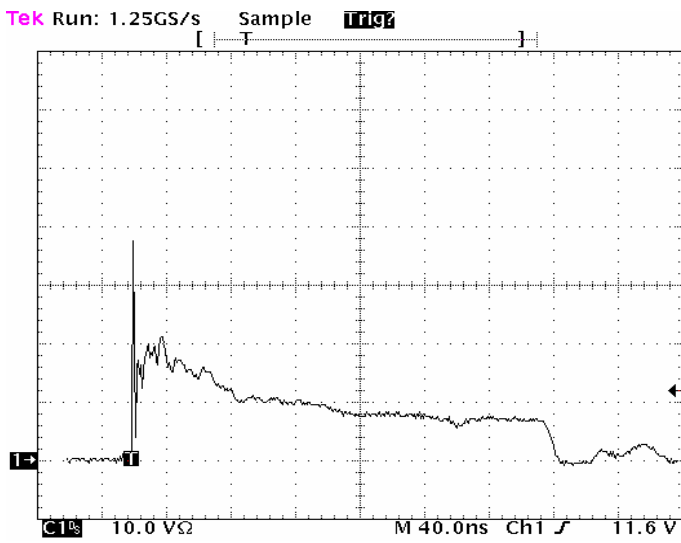


Figure 2. ESD Clamping Voltage Screenshot  
Positive 8 kV contact per IEC 61000-4-2

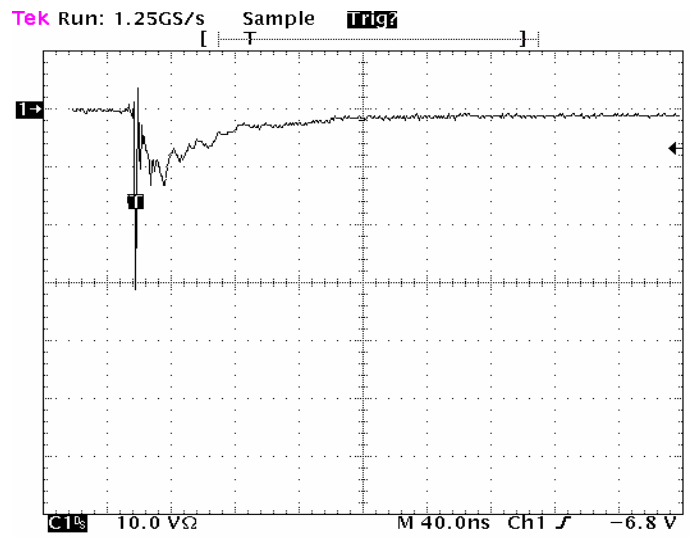
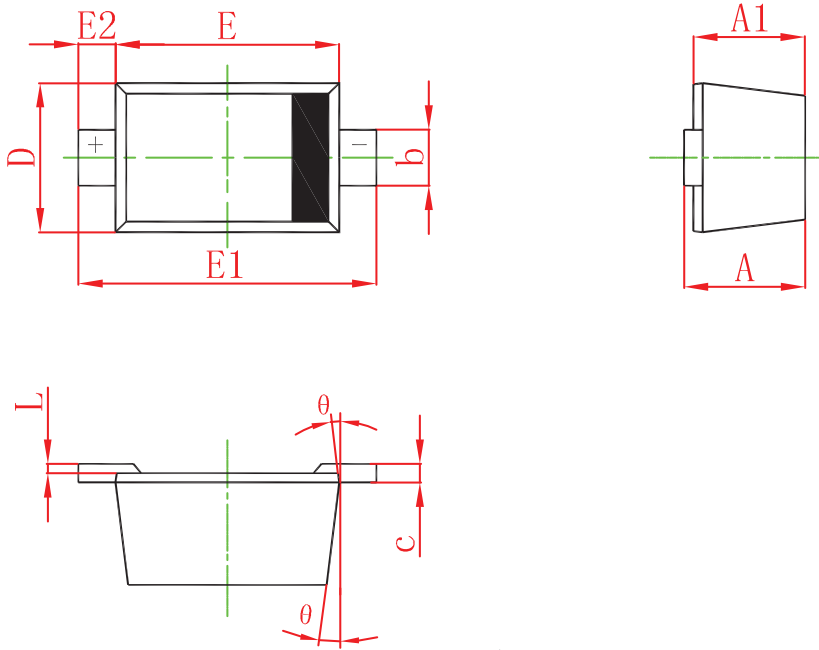


Figure 3. ESD Clamping Voltage Screenshot  
Negative 8 kV contact per IEC 61000-4-2



■ SOD-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

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