

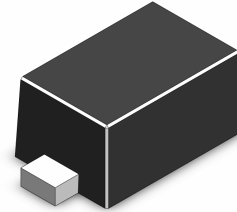
# Transient Voltage Suppressors for ESD Protection

## SE05D5S21HZ

### Features

- u Working voltage : 5.0V
- u Low leakage current : 0.1 $\mu$ A @  $V_{RWM}$
- u Low clamping voltage
- u Response Time is < 1 ns

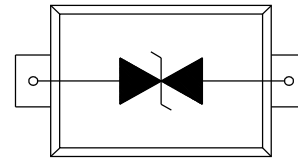
SOD-523



### Applications

- u Cell Phone Handsets and Accessories
- u Microprocessor based equipment
- u Personal Digital Assistants (PDA's)
- u Notebooks, Desktops, and Servers

### Pin Configuration



### Mechanical Characteristics

- u SOD-523 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Quantity Per Reel : 5,000pcs
- u Reel Size : 7 inch

### Absolute Maximum Rating

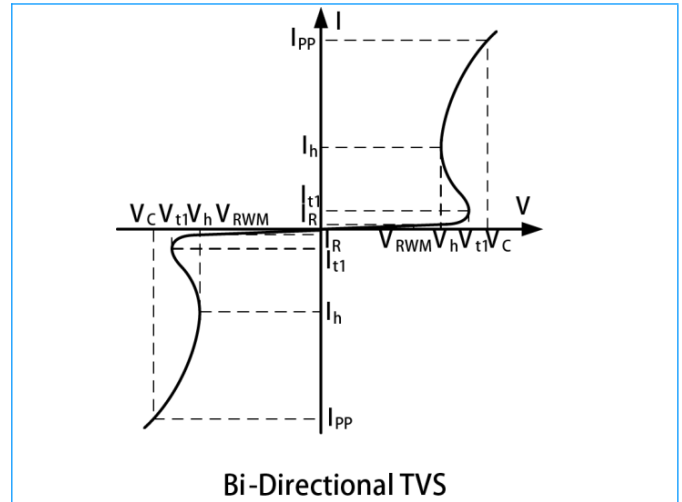
Symbol	Parameter	Value	Units
$T_{LST}$	Lead Soldering Temperature	260 (10sec)	$^{\circ}$ C
$T_{STG}$	Storage Temperature Range	-55 to +150	$^{\circ}$ C
$T_{OPT}$	Operating Temperature Range	-55 to +125	$^{\circ}$ C
$V_{ESD}$	ESD per IEC 61000-4-2(Air)	$\pm$ 30	KV
	ESD per IEC 61000-4-2 (Contact)	$\pm$ 30	

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### I-V Curve Characteristics

Symbol	Parameter
$I_{PP}$	Maximum Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{t1}$	Trigger Voltage
$I_{t1}$	Trigger Current @ $V_{t1}$
$V_h$	Holding Voltage
$I_h$	Holding Current @ $V_h$

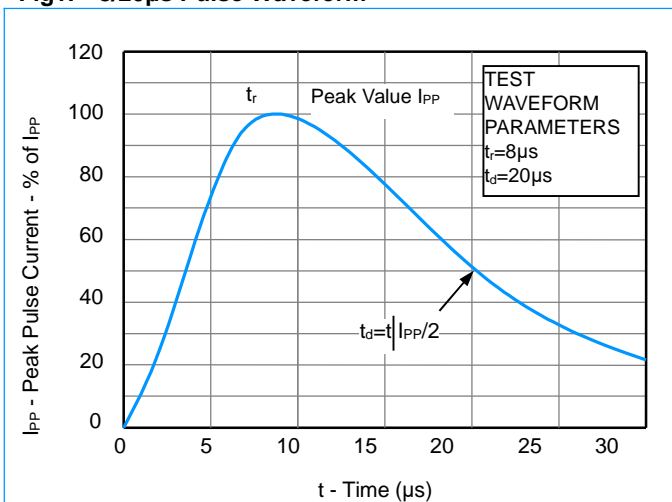


### Electrical Characteristics (@ $T_A=25^\circ\text{C}$ Unless Otherwise Specified)

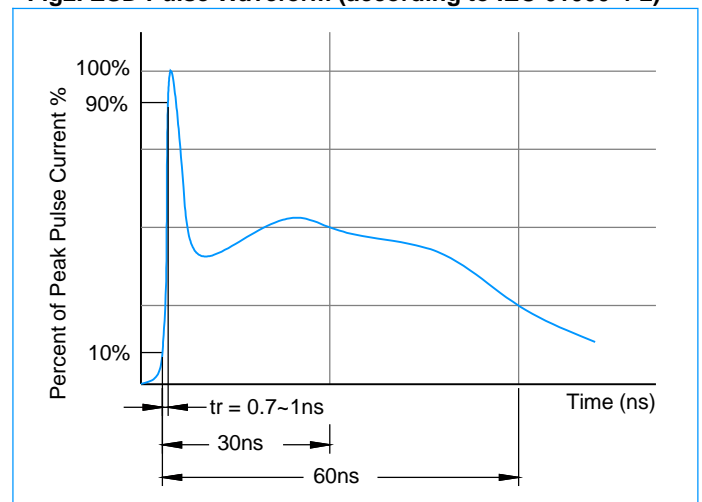
Symbol	Test Condition	Minimum	Typical	Maximum	Units
$V_{RWM}$	--	--	--	5.0	V
$I_R$	$V_{RWM}=5\text{V}, T=25^\circ\text{C}$	--	--	0.1	$\mu\text{A}$
$V_{BR}$	$I_T = 1\text{mA}$	5.6	--	8.7	V
$V_C$	$I_{PP}=5\text{A}, t_p=8/20\mu\text{s}$	--	--	14	V
$C_J$	$V_R=0\text{V}, f=1\text{MHz}$	--	14	--	pF

### Characteristic Curves

**Fig1. 8/20 $\mu\text{s}$  Pulse Waveform**



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



# Transient Voltage Suppressors for ESD Protection

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### Characteristic Curves (Continue)

Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

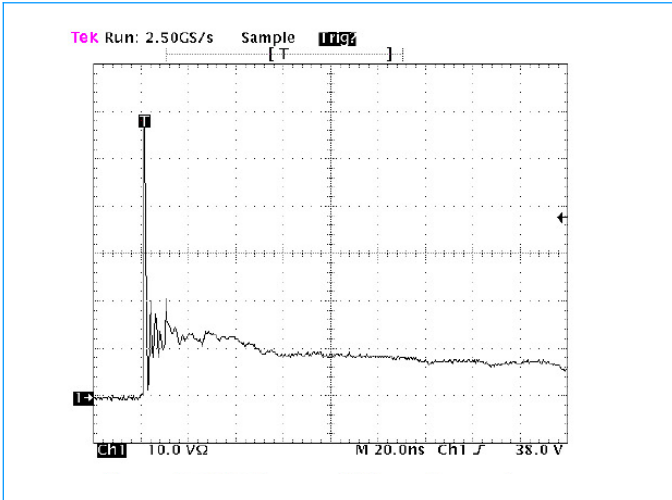
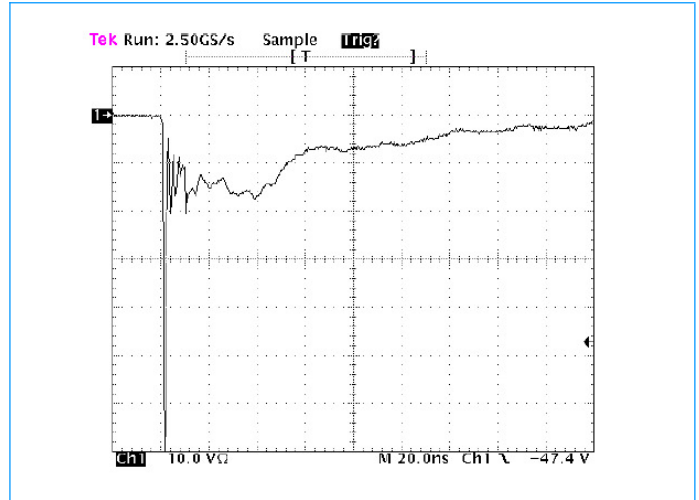
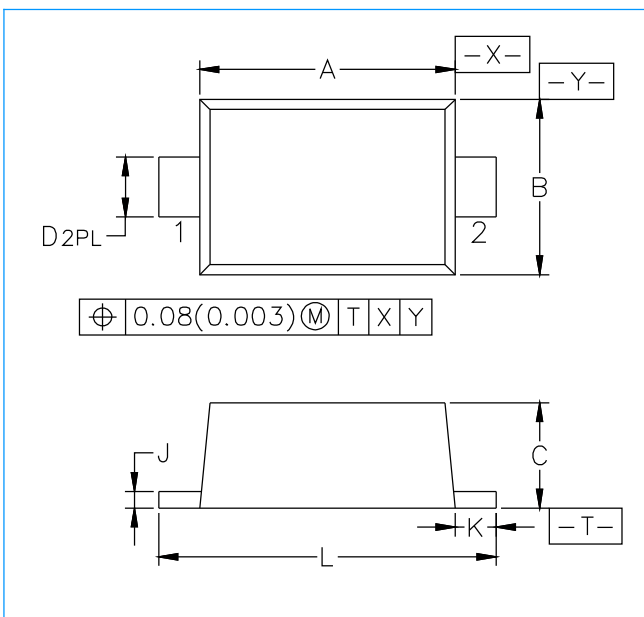


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

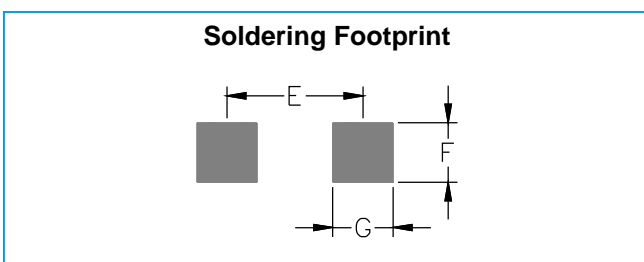


### SOD-523 Package Outline & Dimensions



Symbol	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
L	1.50	1.60	1.70	0.059	0.063	0.067

### Soldering Footprint



Symbol	Millimeters	Inches
E	1.40	0.0547
F	0.40	0.0157
G	0.40	0.0157