

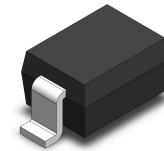
# Transient Voltage Suppressors for ESD Protection

## SE05D3S21HZ

### Features

- ◆ Working voltage :5V
- ◆ Low capacitance
- ◆ Low leakage current: 1μA @ V<sub>RWM</sub>
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

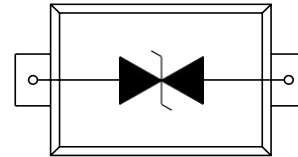
### SOD-323



### Applications

- ◆ Cellular Handsets and Accessories
- ◆ High Speed I/O Lines
- ◆ Notebooks & Handhelds
- ◆ Peripherals

### Pin Configuration



### Mechanical Characteristics

- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating: UL 94V-0
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size: 7 inch

### Absolute Maximum Rating

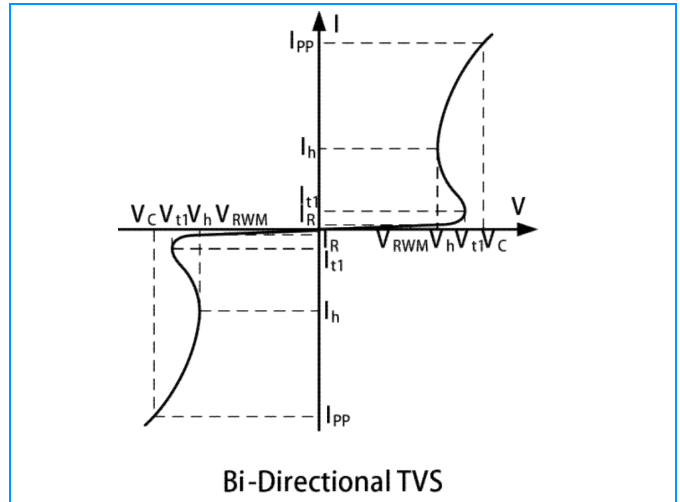
Symbol	Parameter	Value	Units
T <sub>LST</sub>	Lead Soldering Temperature	260 (10sec)	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>OPT</sub>	Operating Temperature Range	-55 to +125	°C
V <sub>ESD</sub>	ESD per IEC 61000-4-2(Air)	±30	KV
	ESD per IEC 61000-4-2 (Contact)	±30	

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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 @ $V_h$

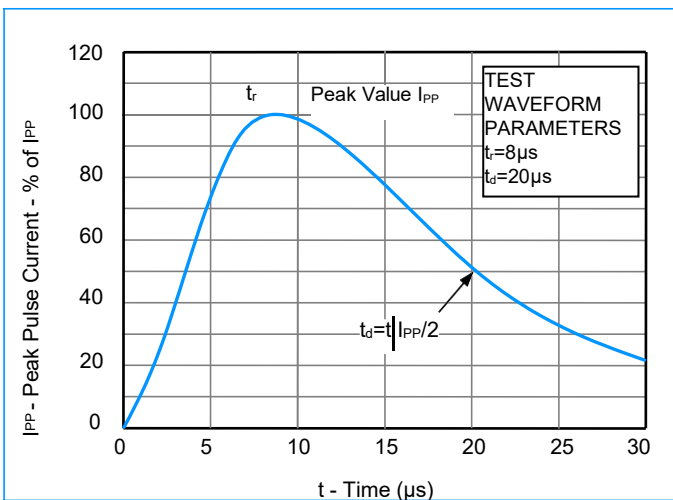


### Electrical Characteristics (@ $T_A=25^\circ\text{C}$ Unless Otherwise Specified )

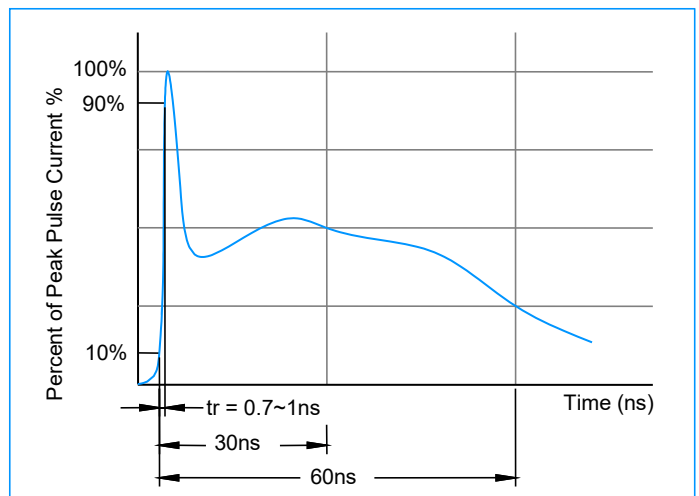
Symbol	Test Condition	Minimum	Typical	Maximum	Units
$V_{RWM}$	--	--	--	5	V
$I_R$	$V_{RWM}=5\text{V}, T=25^\circ\text{C}$	--	--	1	$\mu\text{A}$
$V_{BR}$	$I_T = 1\text{mA}$	5.5	--	6.5	V
$V_C$	$I_{PP}=5\text{A}, t_p=8/20\mu\text{s}$	--	8.5	9.5	V
$V_C$	$I_{PP}=7\text{A}, t_p=8/20\mu\text{s}$	--	10	12	V
$C_J$	$V_R=0\text{V}, f=1\text{MHz}$	--	14	--	pF

### Characteristic Curves

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



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



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### Characteristic Curves (Continue)

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

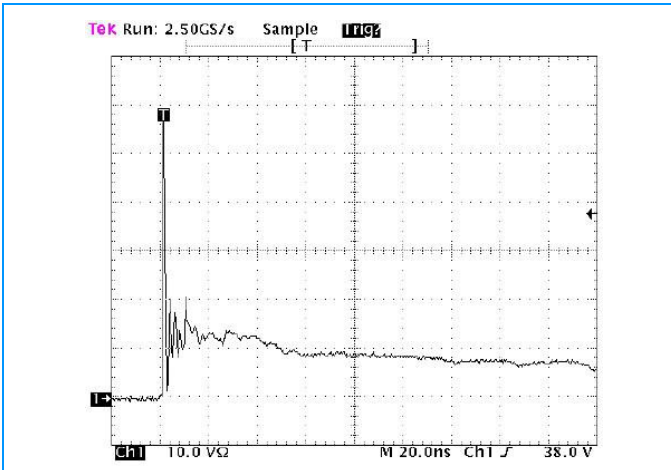
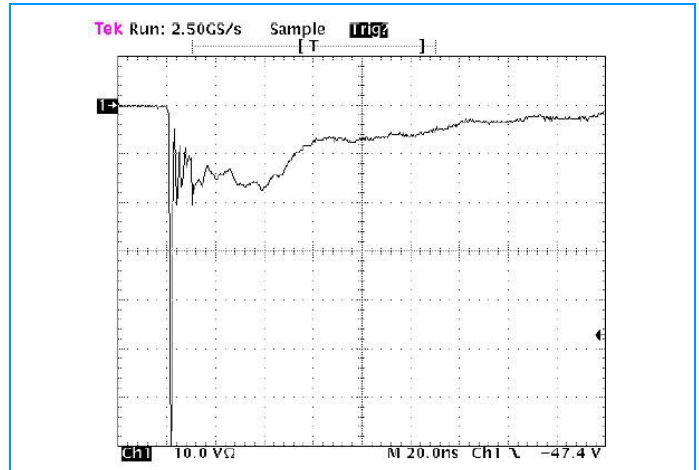
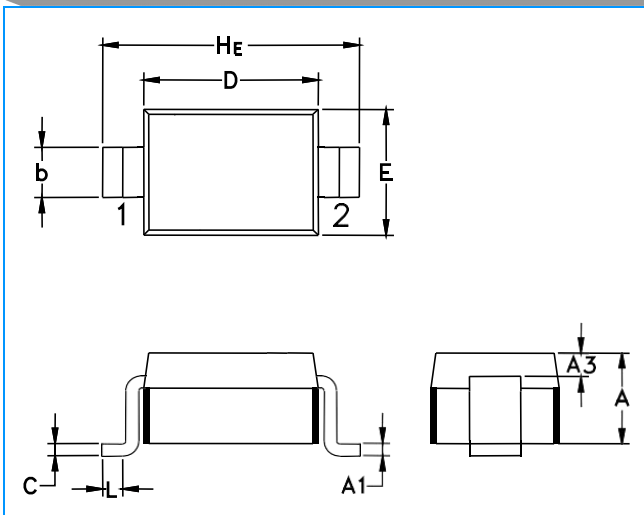


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

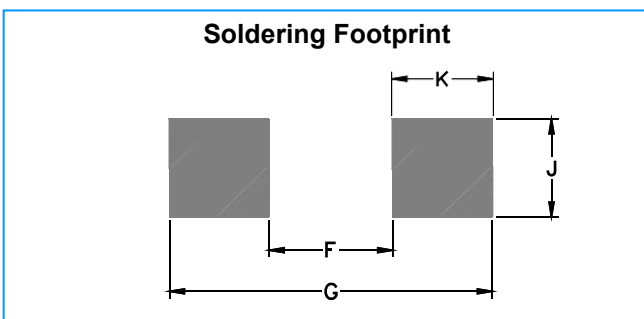


### SOD-323 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.40	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08	--	--	0.003	--	--
HE	2.30	2.50	2.70	0.090	0.098	0.105

### Soldering Footprint



Symbol	Millimeters	Inches
F	1.60	0.063
G	2.85	0.112
J	0.83	0.033
K	0.63	0.025