

## Bi-directional TVS Diode for ESD Protection

### SE03D3W01GC

#### Features

- ◆ Protects one I/O or power line
- ◆ Low Clamping Voltage
- ◆ Working Voltage: 3.3V
- ◆ Low Leakage Current
- ◆ Response Time is Typically < 1 ns

#### Main Applications

- ◆ Laptop Computers
- ◆ Cellular Phones
- ◆ Digital Cameras
- ◆ Personal Digital Assistants (PDAs)

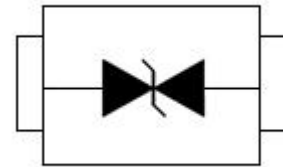
#### Mechanical Characteristics

- ◆ JEDEC SOD-323 package
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Packaging: Tape and Reel per EIA 481
- ◆ RoHS/WEEE Compliant

SOD-323



#### Schematic & PIN Configuration

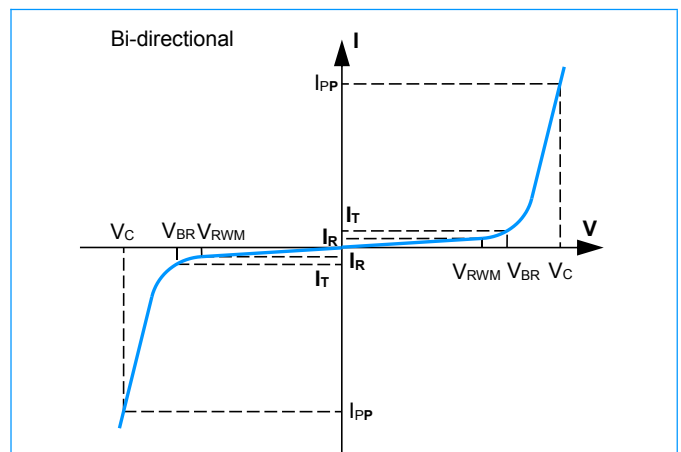


#### Absolute Maximum Rating

Rating	Symbol	Value	Units
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$
ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	$\pm 15$ $\pm 8$	KV

#### Electrical Parameters (T=25 $^{\circ}\text{C}$ )

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 @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$



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### Electrical Characteristics (T<sub>A</sub>= 25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V <sub>R</sub>	---	---	---	3.3	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> = 1 mA	4.0	---	---	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 3.3V	---	---	70	μA
Peak Pulse Current	I <sub>PP</sub>	t <sub>p</sub> = 8/20μs	---	---	27	A
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 27A, t <sub>p</sub> = 8/20μs	---	---	17	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz	---	200	---	pF

### Characteristic Curves

Fig1. 8/20μs Pulse Waveform

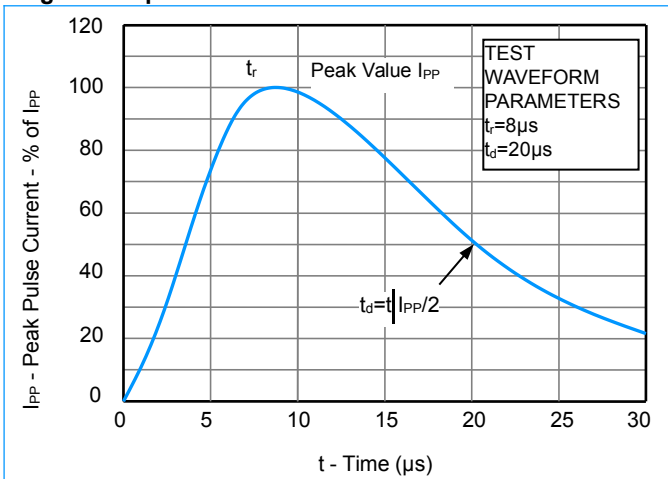


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

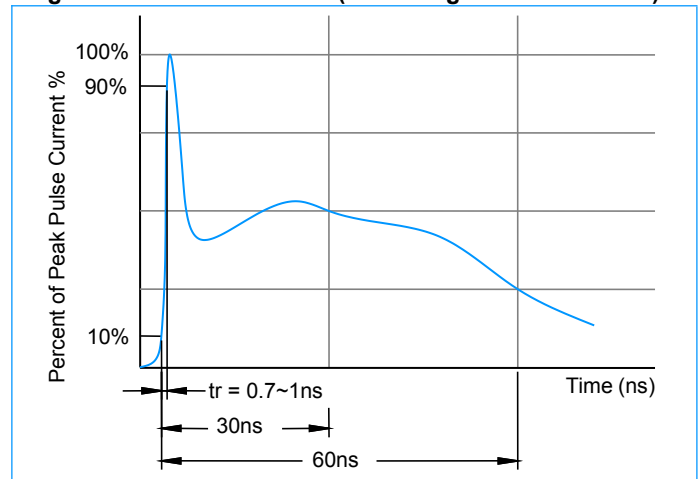


Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

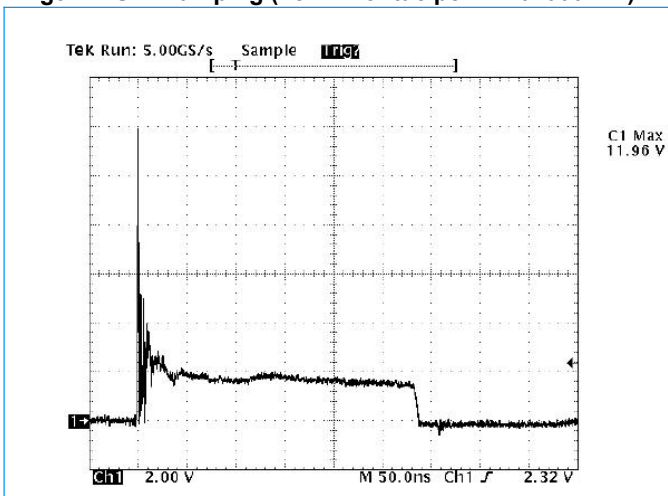
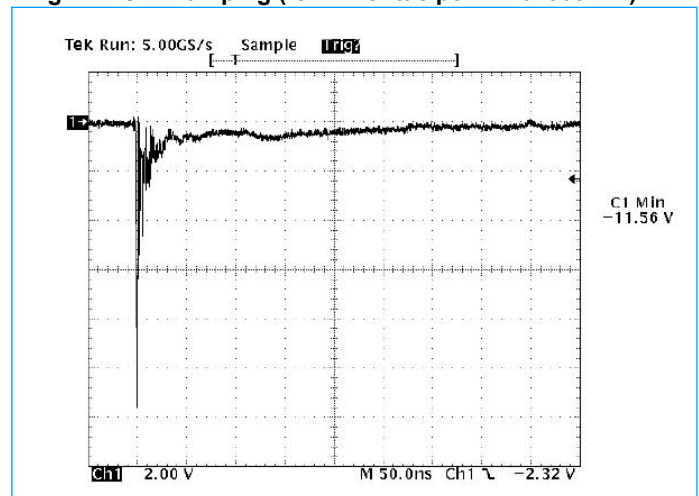


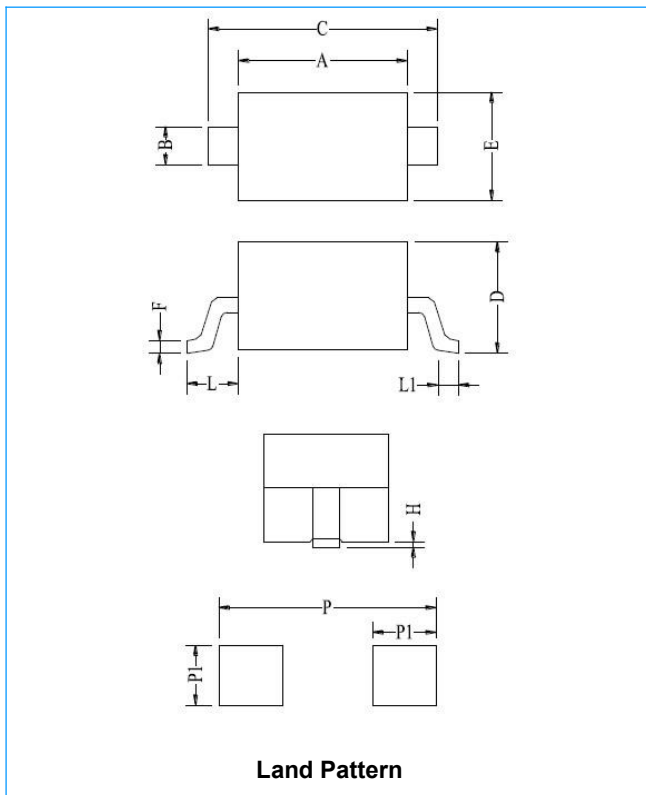
Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)



### SOD-323 Package Mechanical Data

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**SE03D3W01GC**



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.80	0.063	0.071
B	0.25	0.35	0.010	0.014
C	2.50	2.70	0.098	0.106
D	0.00	1.00	0.000	0.039
E	1.20	1.40	0.047	0.055
F	0.08	0.15	0.003	0.006
L	0.475REF		0.019REF	
L1	0.25	0.40	0.010	0.016
H	0.00	0.10	0.000	0.004
P	3.00		0.118	
P1	0.80		0.031	