

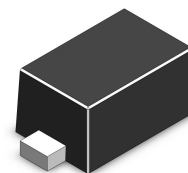
## Bi-directional TVS Diode for ESD Protection

### SE05V150D-52

#### Features

- ◆ Small Body Outline Dimensions: 0.063" x 0.032"  
(1.6 x 0.8 mm)
- ◆ Protects one bi-directional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages: 5V
- ◆ Low leakage current
- ◆ RoHS compliant

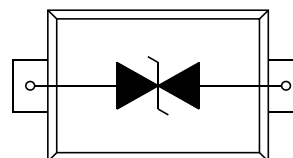
#### SOD-523



#### Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ Digital Cameras

#### Pin Configuration



#### Protection Solution to Meet

- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 5A (8/20μs)

#### Mechanical Characteristics

- ◆ SOD-523 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 0.5 Milligrams (Approximate)
- ◆ Quantity Per Reel : 5,000pcs
- ◆ Lead Finish : Lead Free

#### Absolute Maximum Ratings (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Units
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +125	°C
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C

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## SE05V150D-52

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	$V_R$	---	---	---	5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{ mA}$	5.3	---	---	V
Reverse Leakage Current	$I_R$	$V_R = 5\text{ V}$	---	---	100	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 5\text{ A}$ , $t_p = 8/20\mu\text{s}$	---	---	12.0	V
Junction Capacitance	$C_J$	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	---	---	15.0	pF

### Characteristics Curves ( $T_A=25\text{ }^\circ\text{C}$ , unless otherwise noted)

Fig1. V- I Curve Characteristics

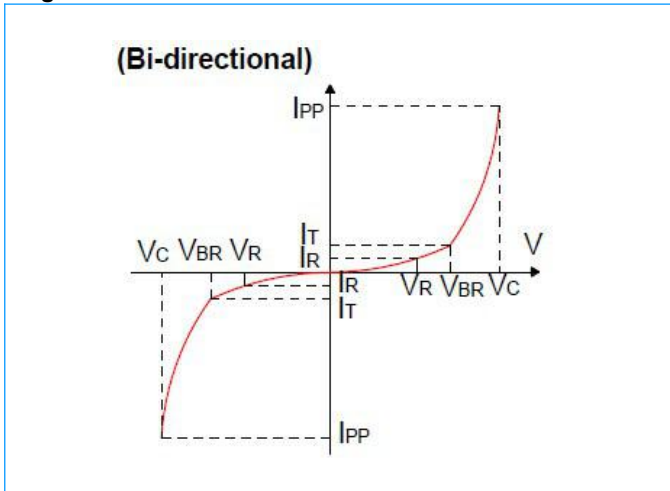


Fig2. Pulse Waveform

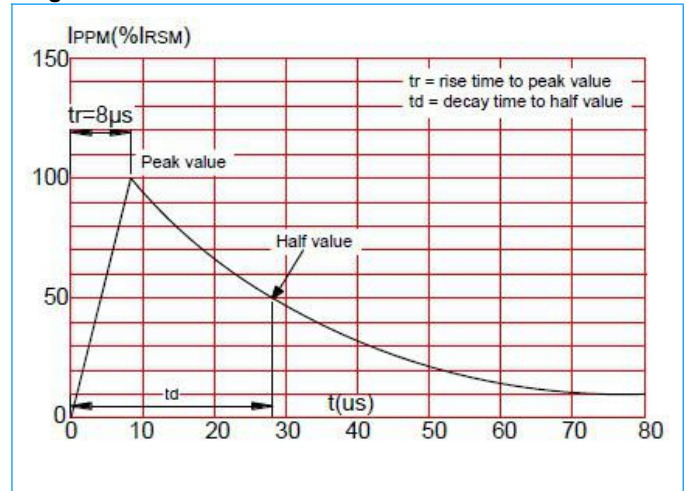


Fig3. Pulse Derating Curve

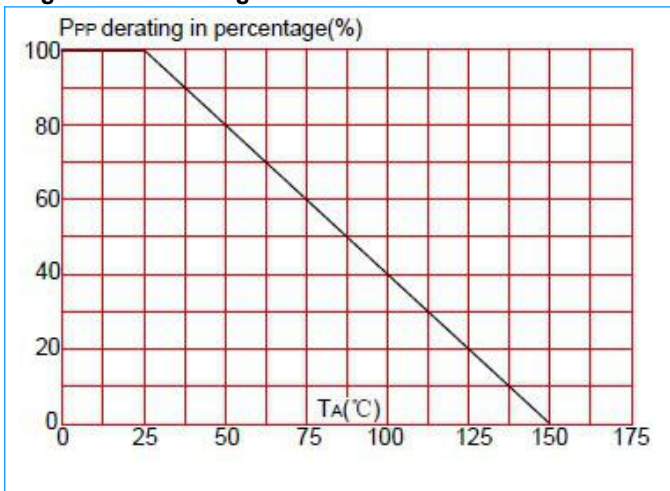
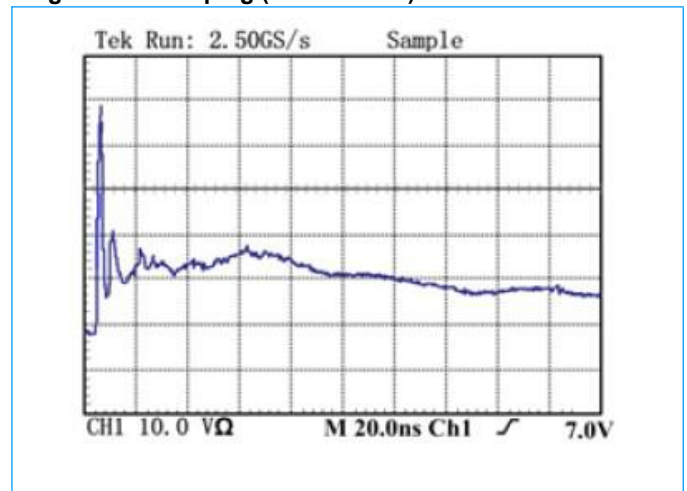


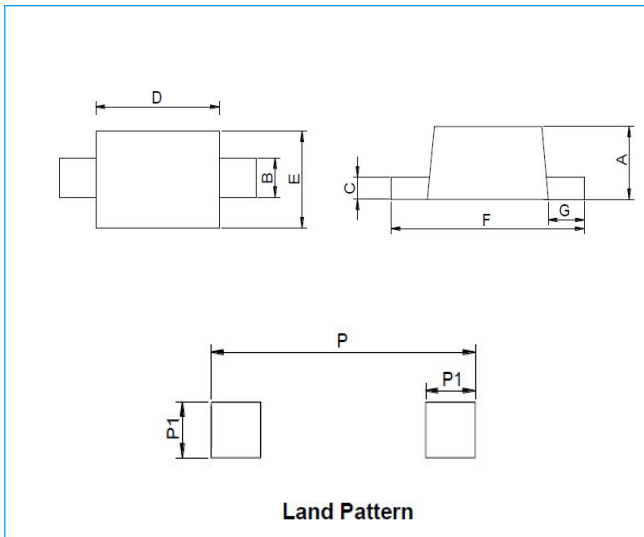
Fig4. ESD Clamping (8kV Contact)



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### SE05V150D-52

#### Package Mechanical Data



Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	0.50	0.70	0.020	0.028
B	0.25	0.35	0.010	0.014
C	0.07	0.20	0.0028	0.0079
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
F	1.50	1.70	0.059	0.067
G	0.15	0.25	0.006	0.010
P1	0.40		0.016	
P	1.80		0.072	