

## Transient Voltage Suppressors for ESD Protection

### SE05V150D-92

#### Features

- ◆ Small body outline dimensions
- ◆ Low body height
- ◆ Low Leakage current
- ◆ Response time is typically < 1 ns

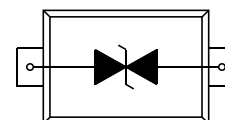
#### Applications

- ◆ Cellular phones
- ◆ Portable devices
- ◆ Digital cameras
- ◆ Power supplies

#### Protection Solution to Meet

- ◆ IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 5A (8/20 $\mu\text{s}$ )

#### Pin Configuration



#### SOD-923



#### Mechanical Characteristics

- ◆ SOD-923 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Quantity Per Reel : 8,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

#### Absolute Maximum Ratings

Symbol	Parameter	Value	Units
$T_L$	Lead Soldering Temperature	260 (10 sec.)	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$
$T_{OP}$	Operating Temperature Range	-40 to +125	$^{\circ}\text{C}$
$T_J$	Maximum Junction Temperature	150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	$V_R$	---	---	---	5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{ mA}$	5.6	---	---	V
Reverse Leakage Current	$I_R$	$V_R = 5\text{ V}$	---	---	0.5	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 5\text{ A}$ , $t_p = 8/20\mu\text{s}$	---	---	11.6	V
Junction Capacitance	$C_J$	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	---	---	15.0	pF

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

Fig1. V - I Curve Characteristics

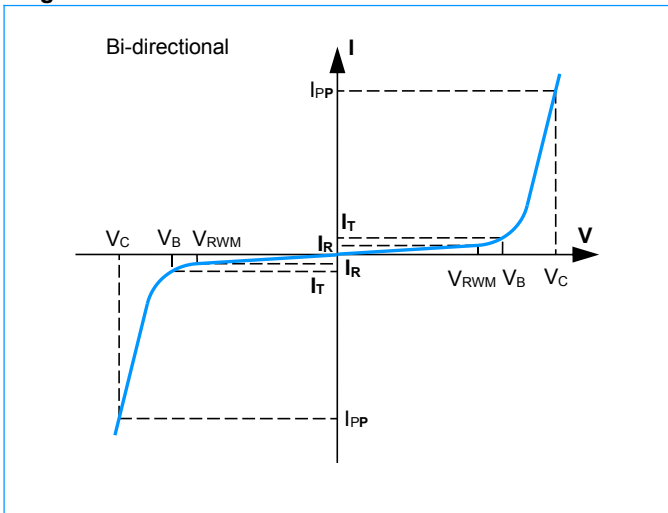


Fig2. 8/20 $\mu\text{s}$  Pulse Waveform

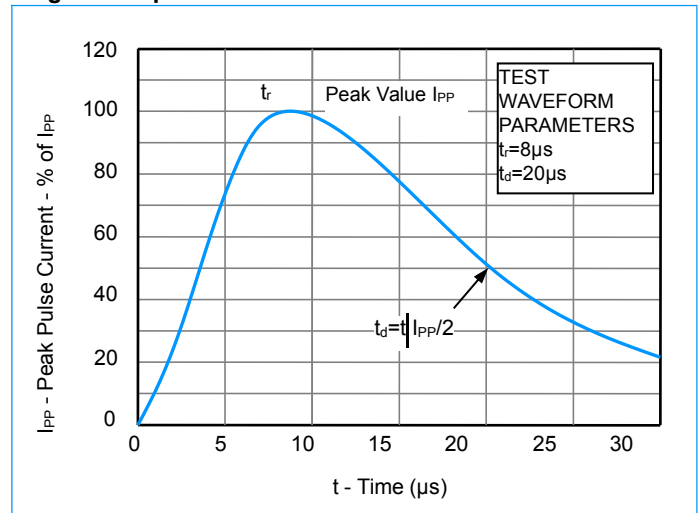


Fig3. ESD Pulse Waveform (according to IEC 61000-4-2)

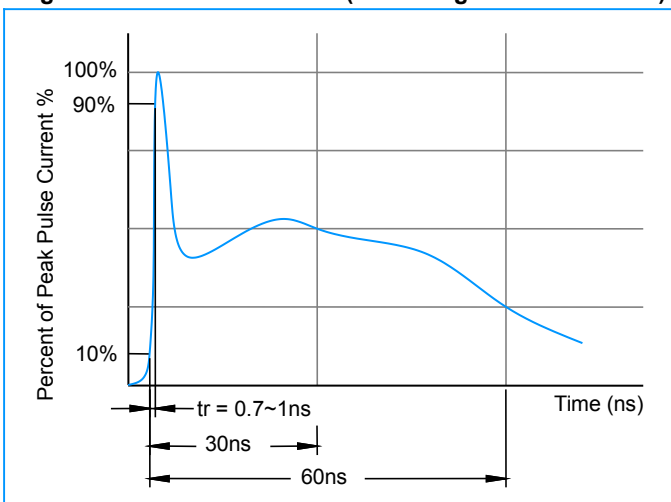
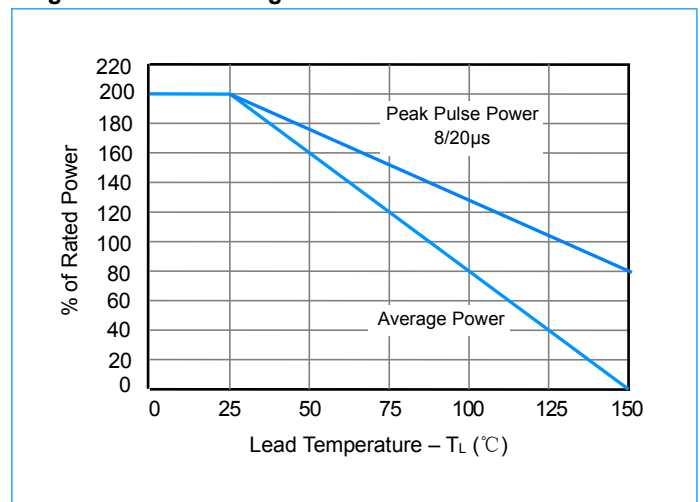


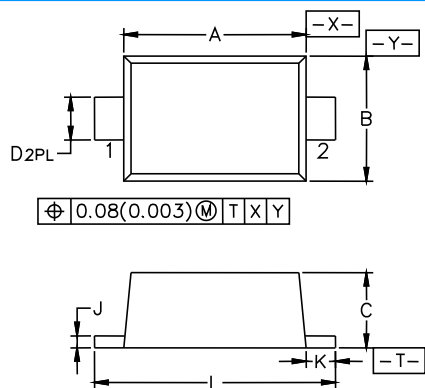
Fig4. Power Derating



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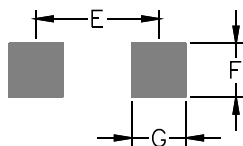
### SE05V150D-92

#### SOD-923 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
<b>A</b>	0.75	0.80	0.85	0.030	0.031	0.033
<b>B</b>	0.55	0.60	0.65	0.022	0.024	0.026
<b>C</b>	0.34	0.37	0.40	0.013	0.015	0.016
<b>D</b>	0.15	0.20	0.25	0.006	0.008	0.010
<b>J</b>	0.07	0.12	0.17	0.0028	0.0047	0.0067
<b>K</b>	0.05	0.10	0.15	0.002	0.004	0.006
<b>L</b>	0.95	1.00	1.05	0.037	0.040	0.041

#### Soldering Footprint



Symbol	Millimeters	Inches
<b>E</b>	0.90	0.0354
<b>F</b>	0.40	0.0157
<b>G</b>	0.30	0.0118