

Transient Voltage Suppressors for ESD Protection

ESD3.3V92D-A

Description

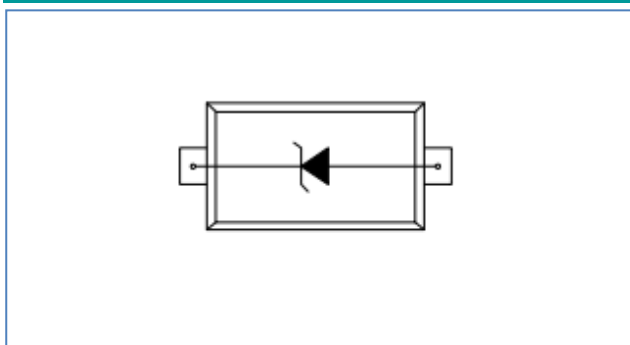
The ESD3.3V92D-A is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is very suitable for signal port and board space speed transmission is very small places, such as mobile phones, MP3 players, digital cameras and other portable.



Feature

- ◆ Protects one I/O line (unidirectional)
- ◆ Low clamping voltage
- ◆ Working Voltages: 3.3V
- ◆ Low Leakage current
- ◆ Response Time is Typically < 1 ns
- ◆ ESD Rating of Class 3 (> 16 kV) per Human Body Model
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)

Functional Diagram



Applications

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

Mechanical Data

- ◆ SOD-923 Package (1.0 x 0.6 mm)
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Low Body Height: 0.43 mm Max
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

| Symbol | Parameter | Value | Units |
|------------------|--|---------------|-------|
| P _{pp} | Peak Pulse Power (t _p =8/20μs waveform) | 102 | Watts |
| T _L | Lead Soldering Temperature | 260 (10 sec.) | °C |
| T _{STG} | Storage Temperature Range | -55 to +150 | °C |
| T _J | Operating Junction Temperature Range | -55 to +150 | °C |

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Electrical Characteristics(@25°C Unless Otherwise Specified)

| Characteristics | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------|-----------|------------------------------------|------|------|------|---------|
| Reverse Working Voltage | V_{RWM} | -- | -- | -- | 3.3 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T=1mA$; | 5.0 | -- | -- | V |
| Reverse Leakage Current | I_R | $V_{RWM}=3.3V$, $T=25^{\circ}C$; | -- | -- | 2.5 | μA |
| Positive Clamping Voltage | V_C | $I_{PP}=9.8A$, $T_P=8/20\mu s$; | -- | -- | 10.4 | V |
| Junction capacitance | C_J | $V_R=0V$, $f=1MHz$; | -- | 80 | -- | pF |

Characteristics Curves

Fig1: 8/20 μs Pulse Waveform

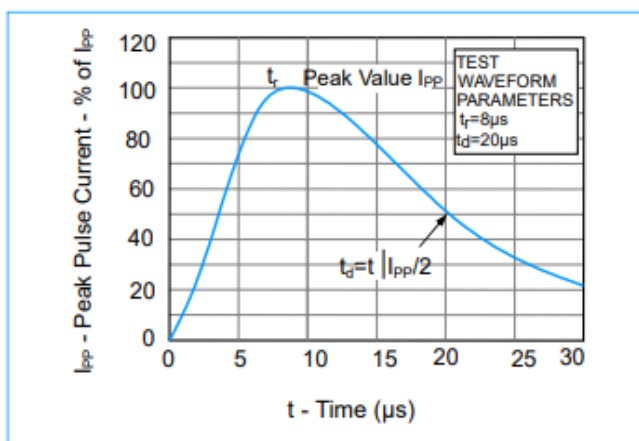


Fig2. Power Rating Derating Curve

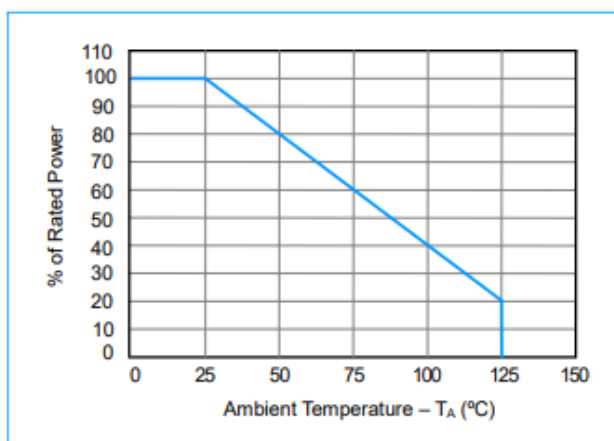
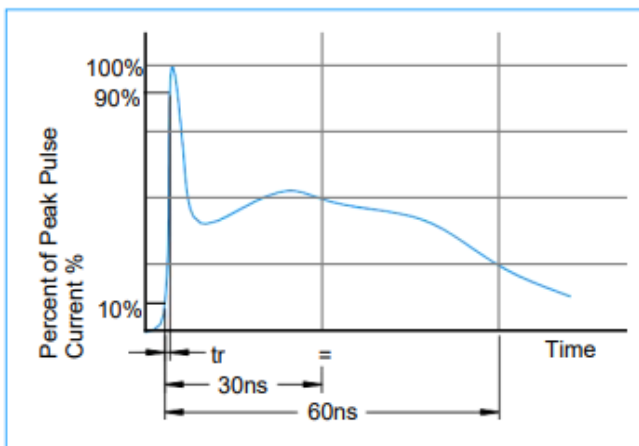


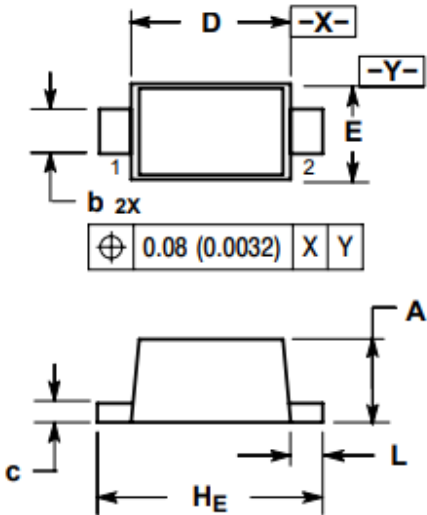
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



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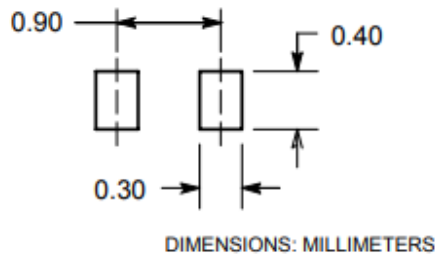
SOD-923 Package Outline &Dimensions



- NOTES:
- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 - 2. CONTROLLING DIMENSION: MILLIMETERS.
 - 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.34 | 0.37 | 0.40 | 0.013 | 0.015 | 0.016 |
| b | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |
| c | 0.07 | 0.12 | 0.17 | 0.003 | 0.005 | 0.007 |
| D | 0.75 | 0.80 | 0.85 | 0.030 | 0.031 | 0.033 |
| E | 0.55 | 0.60 | 0.65 | 0.022 | 0.024 | 0.026 |
| HE | 0.95 | 1.00 | 1.05 | 0.037 | 0.039 | 0.041 |
| L | 0.05 | 0.10 | 0.15 | 0.002 | 0.004 | 0.006 |

SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

Ordering Information

| Device | Marking | Package | Quantity | Reel Size |
|--------------|---------|---------|---------------|-----------|
| ESD3.3V92D-A | E | SOD-923 | 8,000pcs/Reel | 7 inch |