

Transient Voltage Suppressors for ESD Protection

ESDXXV32D-A Series

Description

The ESDXXV32D-A series 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 suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

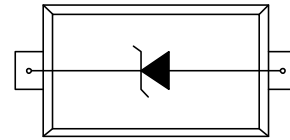
Feature

- ◆ 240~400 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects one I/O line or power line(Unidirectional)
- ◆ Low clamping voltage
- ◆ Working voltages:3.3V ~ 36V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact):
3.3V ~ 15V
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±15kV (contact):
24V ~ 36V
- ◆ IEC61000-4-4(EFT)40A(5/50 ns)

Applications

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

Functional Diagram



Mechanical Data

- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 5 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

| Symbol | Parameter | Value | Units |
|------------------|---------------------------------------|---------------|-------|
| P _{PP} | Peak Pulse Power (tp=8/20μs waveform) | 240~400 | 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 | -40 to +125 | °C |

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Electrical Characteristics (@25°C Unless Otherwise Specified)

| Part Number | Device Marking Code | Stand-Off Voltage V_{RWM} (V) | Breakdown Voltage V_{BR} (Min.) (V) | Test Current I_T (mA) | V_C @1A (Max.) | V_C | | Maximum Reverse Leakage I_R @ V_{RWM} (uA) | Typical Junction Capacitance (pF) |
|-------------|---------------------|---------------------------------|---------------------------------------|-------------------------|------------------|--------|------|--|-----------------------------------|
| | | | | | | (Max.) | (@A) | | |
| ESD03V32D-A | 03W | 3.3 | 3.8 | 1.0 | 7.5 | 16 | 25 | 100 | 350 |
| ESD05V32D-A | 05W | 5.0 | 6.0 | 1.0 | 9.8 | 17 | 24 | 5 | 300 |
| ESD08V32D-A | 08W | 7.5 | 7.8 | 1.0 | 13.4 | 20 | 18 | 3 | 200 |
| ESD12V32D-A | 12W | 12.0 | 13.3 | 1.0 | 20.0 | 30 | 11 | 1 | 100 |
| ESD15V32D-A | 15W | 15.0 | 16.7 | 1.0 | 25.0 | 36 | 9 | 1 | 90 |
| ESD24V32D-A | 24W | 24.0 | 26.6 | 1.0 | 45.0 | 50 | 7.5 | 1 | 80 |
| ESD36V32D-A | 36W | 36.0 | 40.0 | 1.0 | 58.0 | 60 | 4 | 1 | 40 |

Characteristics Curves

Fig1. 8/20μs Pulse Waveform

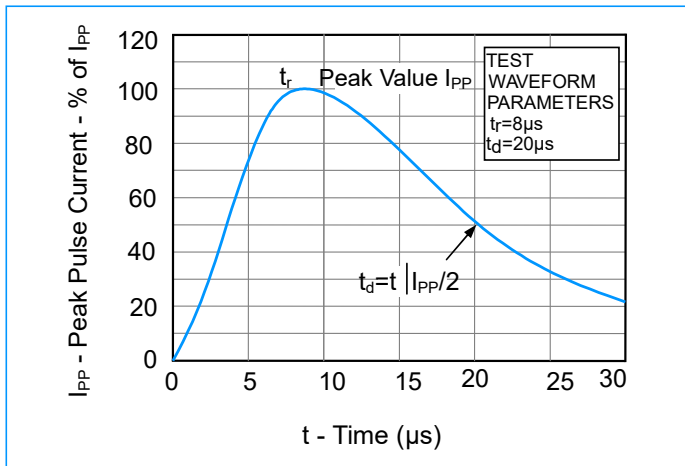


Fig2. Power Rating Derating Curve

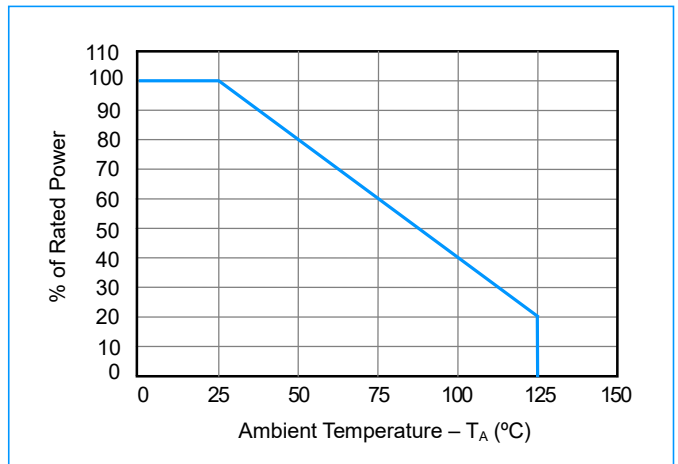
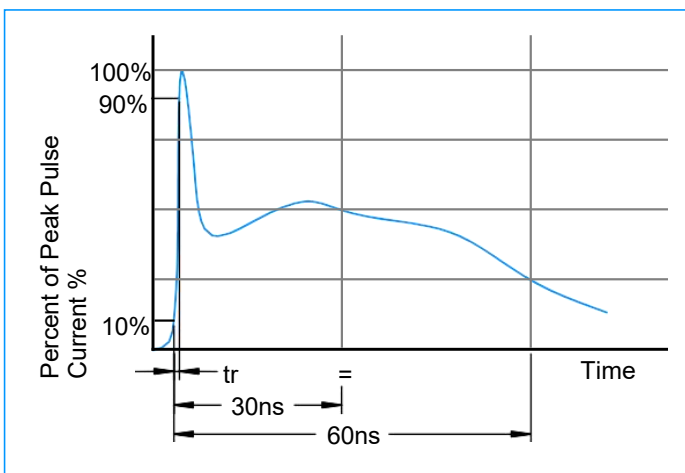


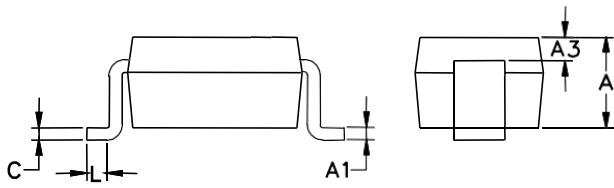
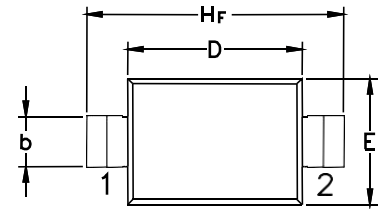
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



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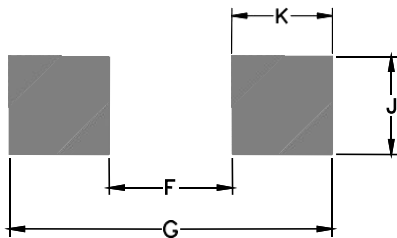
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SOT-23 Package Outline & Dimensions



| 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 | | |
| H _E | 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 |

Ordering Information

| Device | Package | Quantity | Reel Size |
|--------------------|---------|---------------|-----------|
| ESDXXV32D-A Series | SOD-323 | 3,000pcs/Reel | 7 inch |