

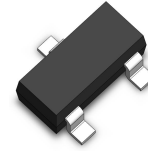
Transient Voltage Suppressors Array for ESD Protection

ESDXXV23T-2A Series

Description

The ESDXXV23T-2A 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.

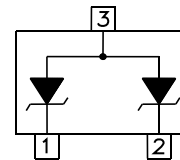
SOT-23



Feature

- ◆ 350 Watts Peak Pulse Power per Line (tp=8/20µs)
- ◆ Protects one bidirectional line or two unidirectional lines
- ◆ Low clamping voltage
- ◆ RoHS Compliant
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 12A (8/20µs)

Functional Diagram



Applications

- ◆ Cellular Handsets and Accessories
- ◆ Portable Electronics
- ◆ Industrial Controls
- ◆ Set-Top Box
- ◆ Instrumentation
- ◆ Servers, Notebook, and Desktop PC

Mechanical Characteristics

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 8.0 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

| Symbol | Parameter | Value | Units |
|------------------|---------------------------------------|-------------|-------|
| PPP | Peak Pulse Power (tp=8/20µs waveform) | 350 | W |
| T _L | Lead Soldering Temperature | 260 (10sec) | °C |
| T _{STG} | Storage Temperature Range | -55 to +150 | °C |
| T _{OP} | Operating Temperature Range | -55 to +150 | °C |
| | IEC61000-4-2 (ESD) | | |
| | Air Discharge | ±15 | KV |
| | Contact Discharge | ±8 | |
| | IEC61000-4-4 (EFT) | 40 | A |
| | IEC61000-4-5 (Lightning) | 12 | A |

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

| Part Number | V _{RWM} (V) (Max.) | V _B (V) (Min.) | I _T (mA) | V _C @1A (Max.) | V _C | | I _R (μA) (Max.) | C (pF) (Typ.) |
|---------------|-----------------------------------|---------------------------------|------------------------|---------------------------------|----------------|------|----------------------------------|---------------------|
| | | | | | (Max.) | (@A) | | |
| ESD3.3V23T-2A | 3.3 | 4.0 | 1 | 6.5 | 10.9 | 13 | 100 | 400 |
| ESD05V23T-2A | 5 | 6.0 | 1 | 9.8 | 13.5 | 10 | 10 | 300 |
| ESD08V23T-2A | 8 | 8.5 | 1 | 13.4 | 16.9 | 8 | 5 | 250 |
| ESD12V23T-2A | 12 | 13.3 | 1 | 19 | 25.9 | 5 | 1 | 150 |
| ESD15V23T-2A | 15 | 16.7 | 1 | 24 | 30 | 4 | 1 | 100 |
| ESD24V23T-2A | 24 | 26.7 | 1 | 43 | 49 | 3 | 1 | 88 |
| ESD36V23T-2A | 36 | 40.0 | 1 | 51 | 76.8 | 2 | 1 | 60 |

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

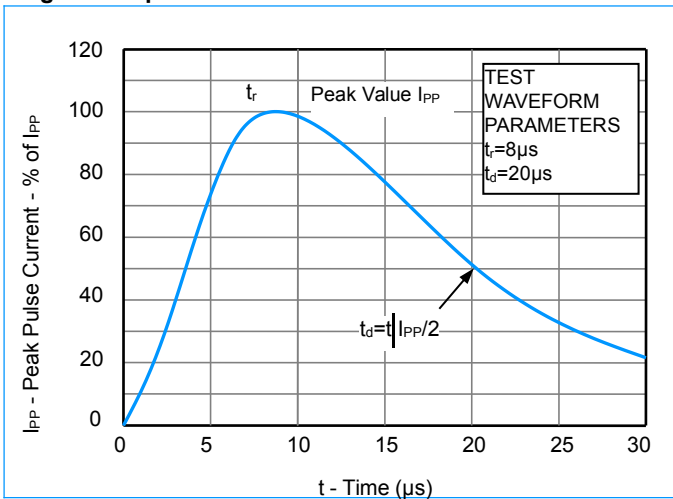


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

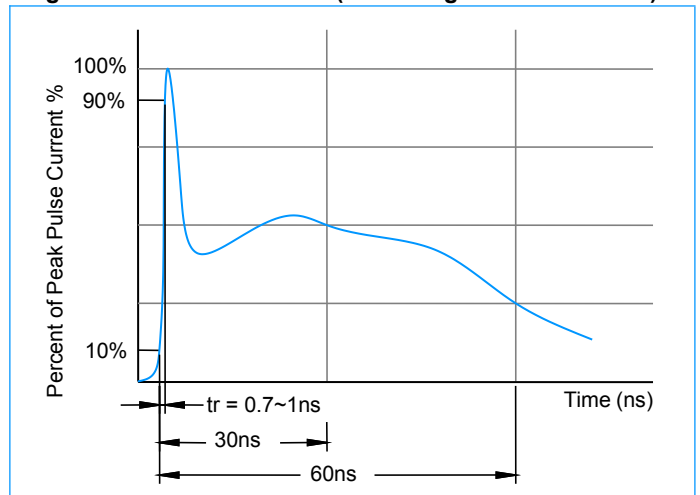
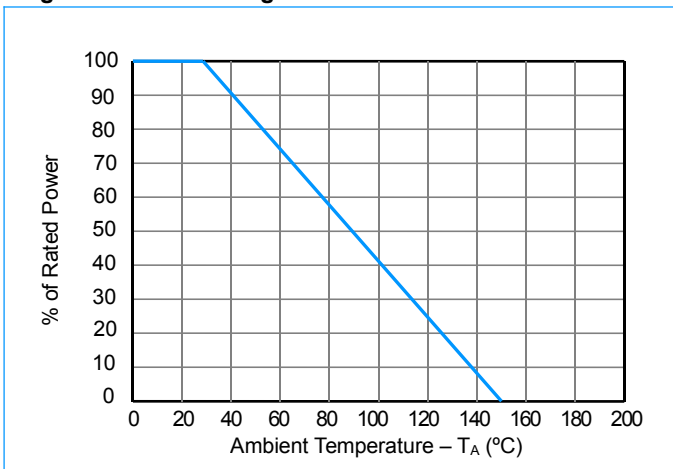


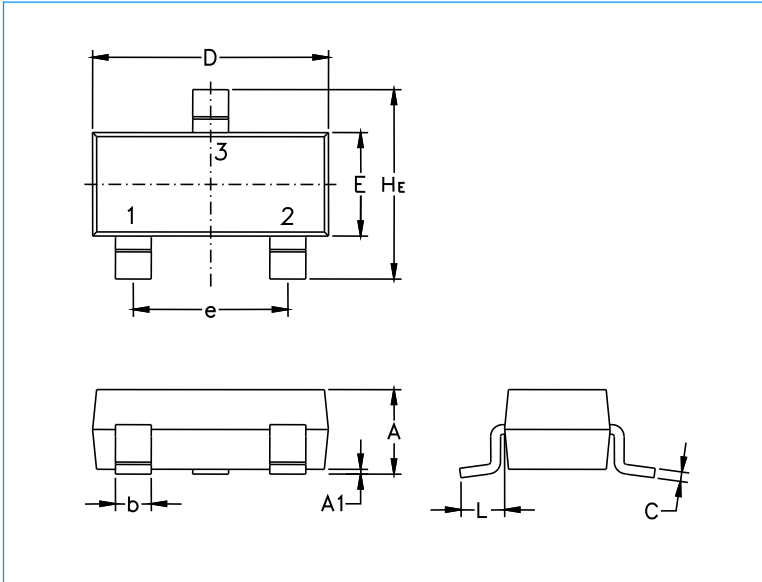
Fig3. Power Derating Curve



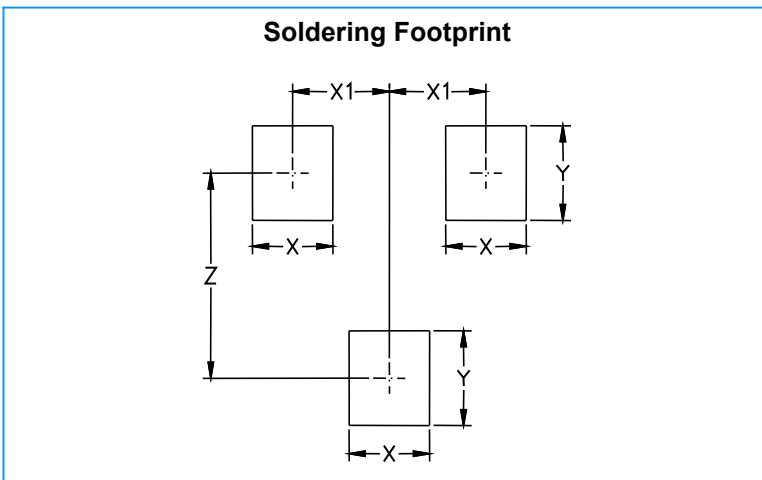
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SOT-23 Package Outline & Dimensions



| Symbol | Millimeters | | | Inches | | |
|-----------|-------------|------|------|--------|-------|-------|
| | Min. | Nom. | Max. | Min. | Nom. | Max. |
| A | 0.89 | 1.00 | 1.11 | 0.035 | 0.040 | 0.044 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.37 | 0.44 | 0.50 | 0.15 | 0.18 | 0.020 |
| c | 0.09 | 0.13 | 0.18 | 0.003 | 0.005 | 0.007 |
| D | 2.80 | 2.90 | 3.04 | 0.110 | 0.114 | 0.120 |
| E | 1.20 | 1.30 | 1.40 | 0.047 | 0.051 | 0.055 |
| e | 1.78 | 1.90 | 2.04 | 0.070 | 0.075 | 0.081 |
| L | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| He | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |



| Symbol | Millimeters | Inches |
|-----------|-------------|--------|
| X | 0.80 | 0.031 |
| X1 | 0.95 | 0.037 |
| Y | 0.90 | 0.035 |
| Z | 2.00 | 0.079 |