

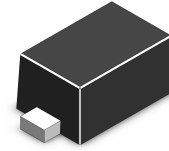
Transient Voltage Suppressors for ESD Protection

ESDXXV52D-C Series

Description

The ESDXXV52D-C 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.

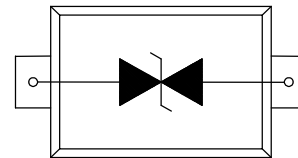
SOD-523



Feature

- u 100 Watts Peak Pulse Power per Line (tp=8/20μs)
- u Protects one I/O line
- u Low clamping voltage
- u Working voltages : 3.3V, 5V, 8V
- u Low leakage current
- u IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)

Functional Diagram



Applications

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

Mechanical Characteristics

- u SOD-523 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 2 Milligrams (Approximate)
- u Quantity Per Reel : 3,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Mechanical Characteristics

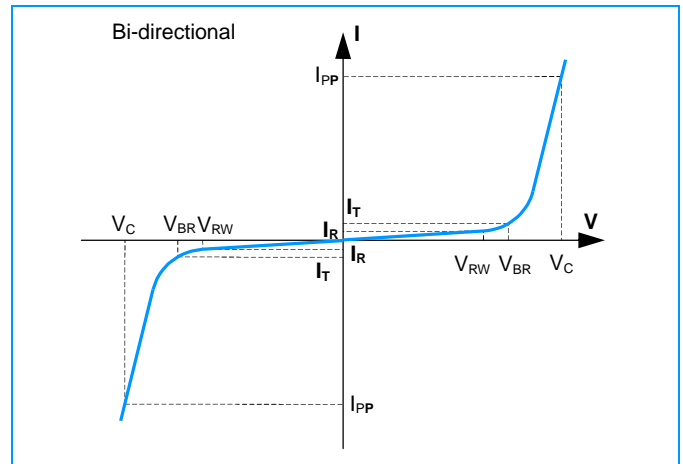
| Symbol | Parameter | Value | Units |
|------------------|---------------------------------------|-------------|-------|
| P _{PP} | Peak Pulse Power (tp=8/20μs waveform) | 100 | W |
| T _L | Lead Soldering Temperature | 260 (10sec) | °C |
| T _{STG} | Storage Temperature Range | -55 to +150 | °C |
| T _J | Operating Temperature Range | -55 to +150 | °C |
| | IEC61000-4-2 (ESD) | | |
| | Air Discharge | ±30 | KV |
| | Contact Discharge | ±30 | |
| | IEC61000-4-4 (EFT) | 40 | A |

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I-V Curve Characteristics

| Symbol | Parameter |
|-----------|---|
| I_{PP} | Maximum Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Working Peak Reverse Voltage |
| I_R | Maximum Reverse leakage Current @ V_{RWM} |
| I_T | Test Current |
| V_B | Breakdown Voltage @ I_T |



Electrical Characteristics (@ 25°C Unless Otherwise Specified)

| Part Number | Device Marking | V_{RWM} (V) (Max.) | V_B (V) (Min.) | I_T (mA) | V_C @1A (Max.) | V_C | | I_R (μ A) (Max.) | C (pF) (Typ.) |
|--------------|----------------|----------------------|------------------|------------|------------------|--------|------|-------------------------|---------------|
| | | | | | | (Max.) | (@A) | | |
| ESD3.3V52D-C | CT | 3.3 | 4 | 1 | 7 | 12 | 8 | 1 | 10 |
| ESD05V52D-C | DT | 5 | 6 | 1 | 9.8 | 20 | 5 | 1 | 10 |
| ESD08V52D-C | GT | 8 | 8.5 | 1 | 17.5 | 25 | 3 | 1 | 7 |

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

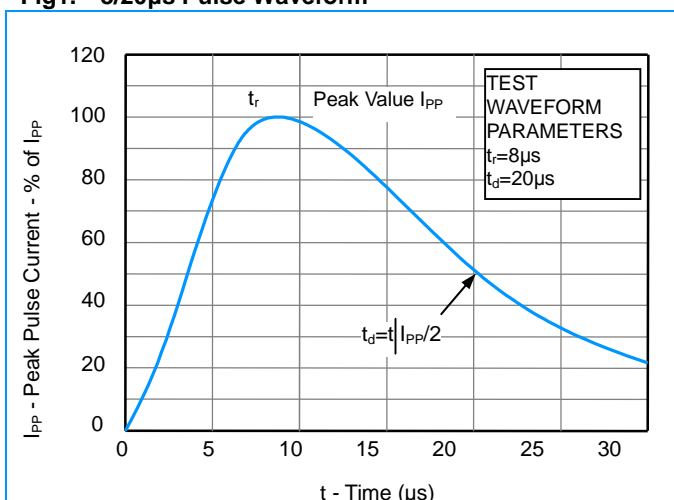
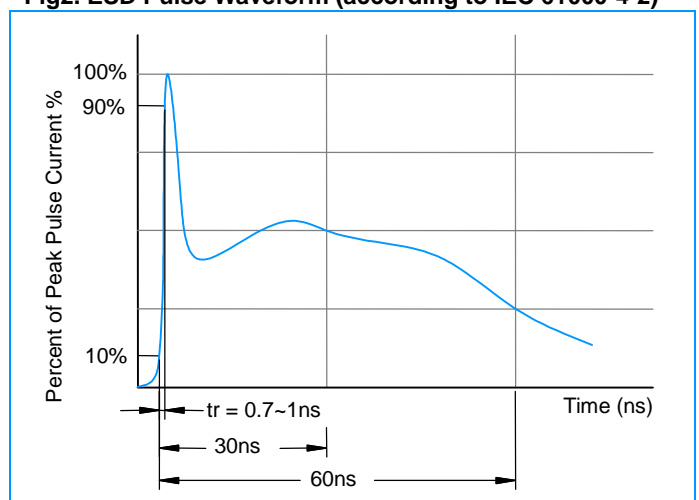


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)



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Characteristic Curves

Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

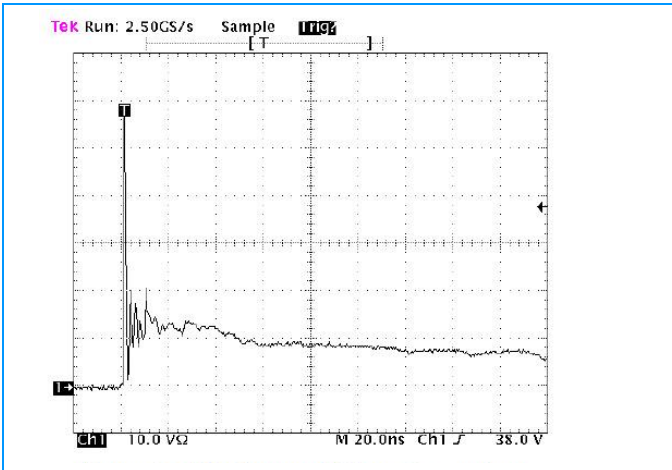
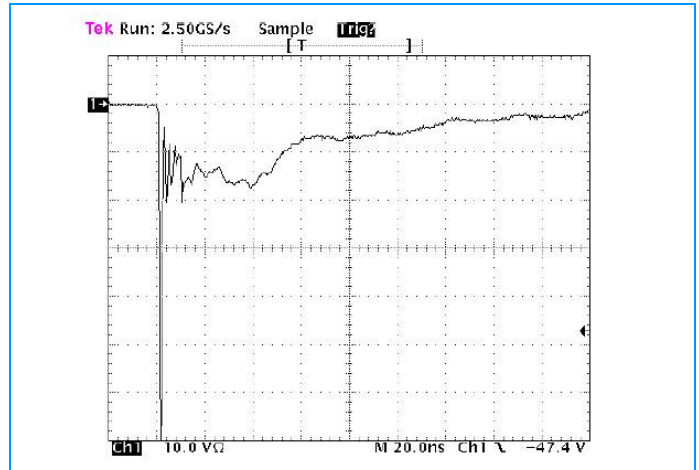
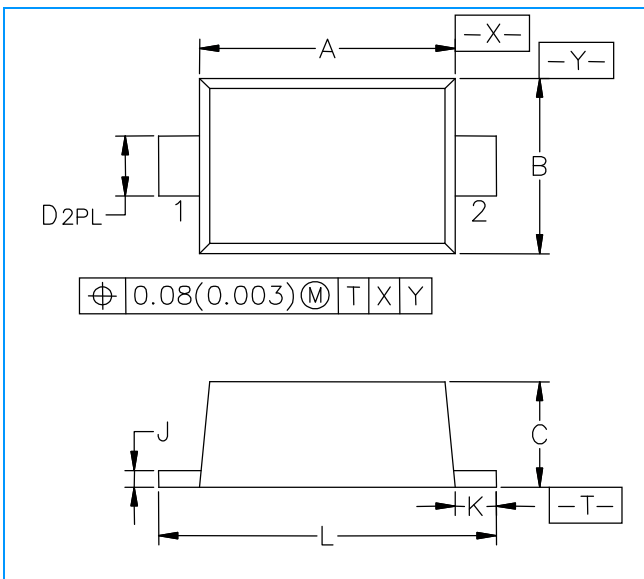


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

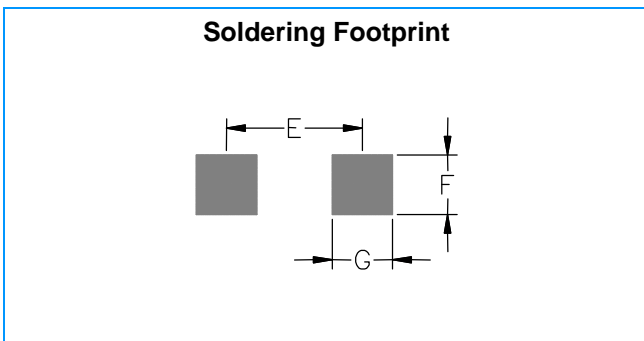


SOD-523 Package Outline & Dimensions



| Symbol | Millimeters | | | Inches | | |
|--------|-------------|------|------|--------|--------|--------|
| | Min. | Nom. | Max. | Min. | Nom. | Max. |
| A | 1.10 | 1.20 | 1.30 | 0.043 | 0.047 | 0.051 |
| B | 0.70 | 0.80 | 0.90 | 0.028 | 0.032 | 0.035 |
| C | 0.50 | 0.60 | 0.70 | 0.020 | 0.024 | 0.028 |
| D | 0.25 | 0.30 | 0.35 | 0.010 | 0.012 | 0.014 |
| J | 0.07 | 0.14 | 0.20 | 0.0028 | 0.0055 | 0.0079 |
| K | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |
| S | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |

Soldering Footprint



| Symbol | Millimeters | Inches |
|--------|-------------|--------|
| E | 1.40 | 0.0547 |
| F | 0.40 | 0.0157 |
| G | 0.40 | 0.0157 |