

Transient Voltage Suppressors for ESD Protection

SE24D3S21HZ

Features

- ◆ Working voltage : 24V
- ◆ Low leakage current: 1.0 μ A @ V_{RWM}
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

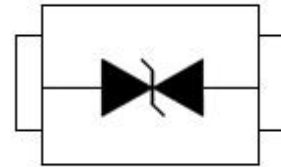
SOD-323



Applications

- ◆ Laptop Computers
- ◆ Cellular Phones
- ◆ Digital Cameras
- ◆ Personal Digital Assistants (PDAs)

Pin Configuration



Mechanical Characteristics

- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch

Absolute Maximum Rating

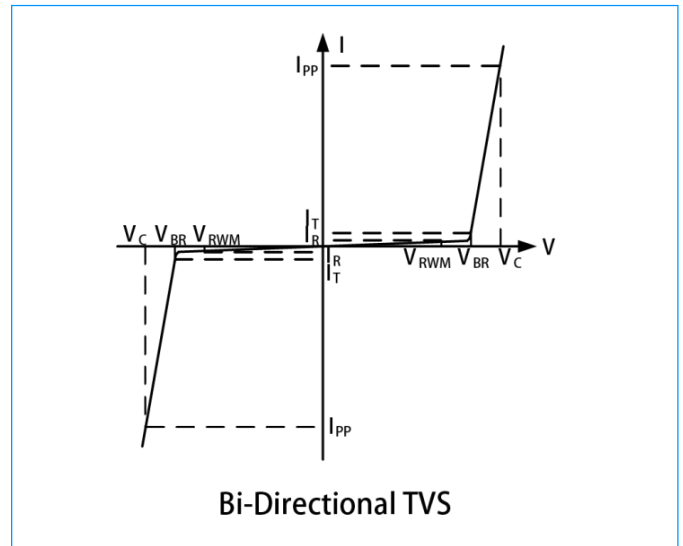
| Symbol | Parameter | Value | Units |
|-----------|---------------------------------|-------------|--------------|
| T_{LST} | Lead Soldering Temperature | 260 (10sec) | $^{\circ}$ C |
| T_{STG} | Storage Temperature Range | -55 to +150 | $^{\circ}$ C |
| T_{OPT} | Operating Temperature Range | -55 to +125 | $^{\circ}$ C |
| V_{ESD} | ESD per IEC 61000-4-2(Air) | \pm 15 | KV |
| | ESD per IEC 61000-4-2 (Contact) | \pm 8 | |

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I-V Curve Characteristics

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



Electrical Characteristics (@ $T_A=25^\circ\text{C}$ Unless Otherwise Specified)

| Symbol | Test Condition | Minimum | Typical | Maximum | Units |
|-----------|--|---------|---------|---------|---------------|
| V_{RWM} | -- | -- | -- | 24 | V |
| I_R | $V_{RWM}=24\text{V}, T=25^\circ\text{C}$ | -- | -- | 1.0 | μA |
| V_{BR} | $I_T = 1\text{mA}$ | 26.7 | -- | -- | V |
| V_C | $I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$ | -- | -- | 67 | V |
| C_J | $V_R=0\text{V}, f=1\text{MHz}$ | -- | 15 | -- | pF |

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

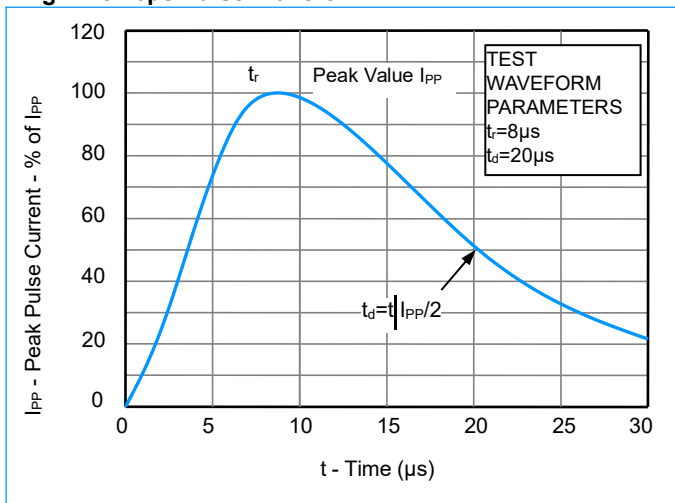
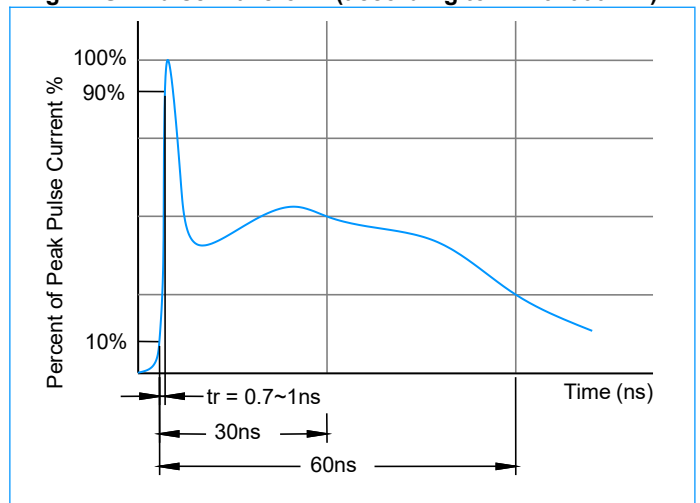


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)



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Characteristic Curves (Continue)

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

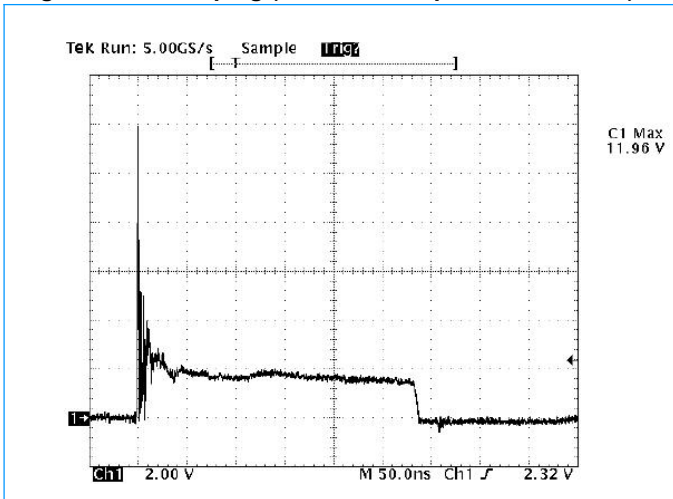
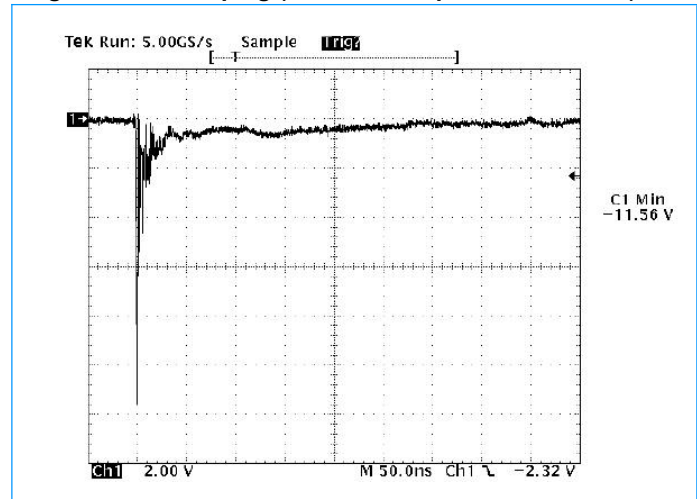
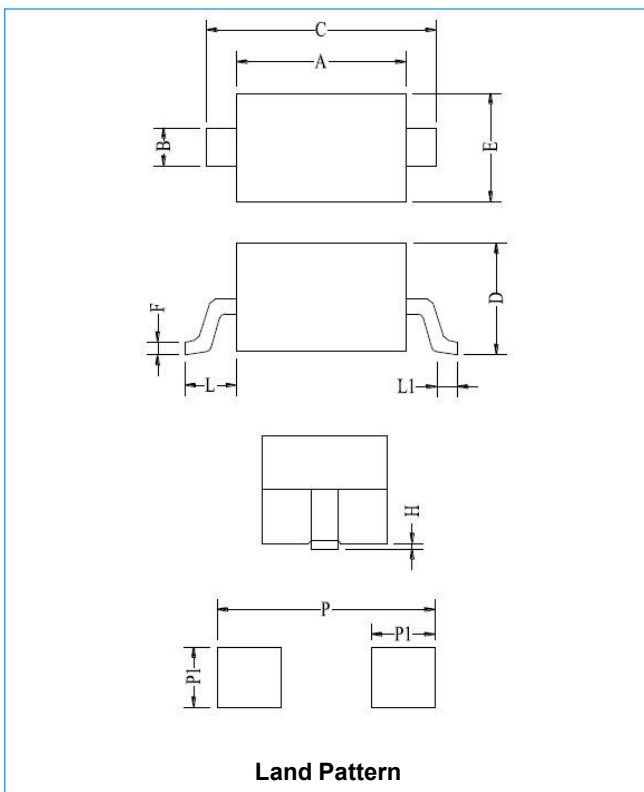


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)



SOD-323 Package Mechanical Data



| Symbol | Millimeters | | Inches | |
|--------|-------------|------|----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 1.60 | 1.80 | 0.063 | 0.071 |
| B | 0.25 | 0.35 | 0.010 | 0.014 |
| C | 2.50 | 2.70 | 0.098 | 0.106 |
| D | 0.00 | 1.00 | 0.000 | 0.039 |
| E | 1.20 | 1.40 | 0.047 | 0.055 |
| F | 0.08 | 0.15 | 0.003 | 0.006 |
| L | 0.475REF | | 0.019REF | |
| L1 | 0.25 | 0.40 | 0.010 | 0.016 |
| H | 0.00 | 0.10 | 0.000 | 0.004 |
| P | 3.00 | | 0.118 | |
| P1 | 0.80 | | 0.031 | |