

Features

- ◆ 150 Watts peak pulse power ($t_p = 8/20\mu s$)
- ◆ Transient protection for high speed data lines to IEC 61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact) IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects One Power or I/O Port
- ◆ Low leakage current
- ◆ Low operating and clamping voltages
- ◆ Solid-state silicon avalanche technology

Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

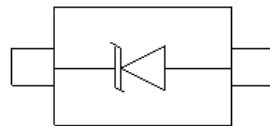
Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays, USB2.0

Ordering Information

| Part Number | Qty per Reel | Reel Size |
|---------------|--------------|-----------|
| TPPESD24VS1UB | 3000 | 7" |

Dimensions and Pin Configuration



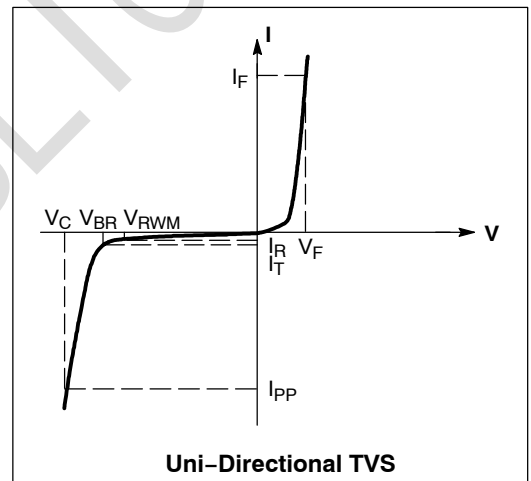
SOD-523 (Top View)

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---------------------------------|--------|-------------|------------------|
| ESD per IEC 61000-4-2 (Air) | VESD | ± 15 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 8 | |
| Operating Temperature Range | TJ | -55 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range | Tstg | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

| 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} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |
| P_{pk} | Peak Power Dissipation |
| C | Capacitance @ $V_R = 0$ and $f = 1.0$ MHz |



| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|-----------|-----|-----|-----|---------------|---|
| Reverse Working Voltage | V_{RWM} | | | 24 | V | |
| Breakdown Voltage | V_{BR} | 26 | | 32 | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 1 | μA | $V_{RWM} = 24\text{V}$ |
| Clamping Voltage | V_C | | | 60 | V | $I_{PP} = 3\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 25 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

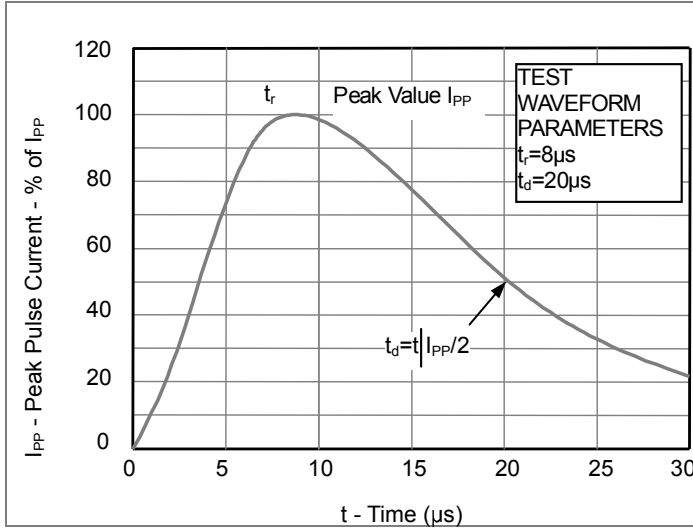


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

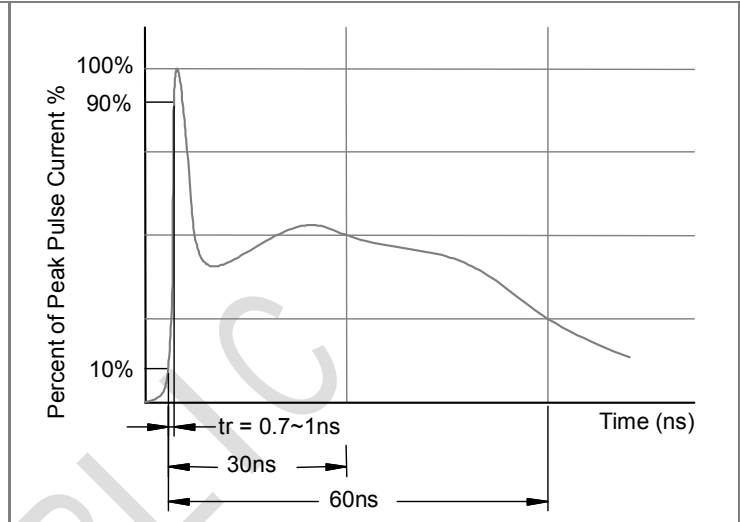
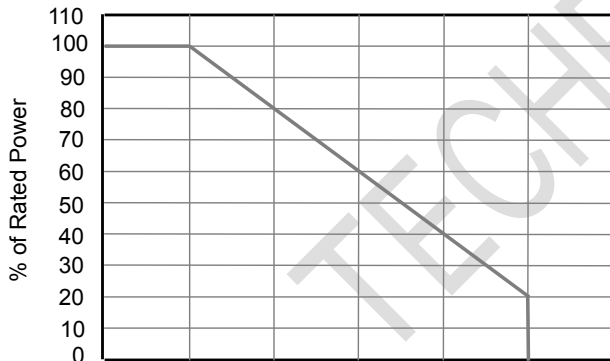
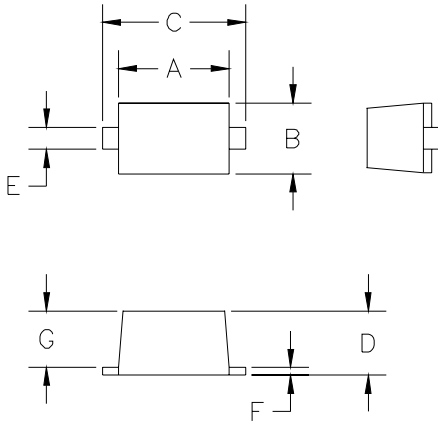


Fig3. Power Derating Curve



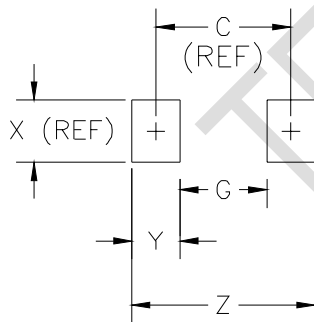
SOD-523 Package Outline Drawing



| DIM ^N | INCHES | | MM [1] | | NOTE |
|------------------|--------|------|--------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .043 | .051 | 1.10 | 1.30 | — |
| B | .028 | .035 | 0.70 | 0.90 | — |
| C | .059 | .067 | 1.50 | 1.70 | — |
| D | .020 | .028 | 0.50 | 0.70 | — |
| E | .010 | .014 | 0.25 | 0.35 | — |
| F | .004 | .008 | 0.10 | 0.20 | — |
| G | .020 | .028 | 0.50 | 0.70 | — |

[1] CONTROLLING DIMENSION: MILLIMETERS

Suggested Land Pattern



| DIM ^N | INCHES | | MM [1] | | NOTE |
|------------------|--------|------|--------|------|------|
| | MIN | MAX | MIN | MAX | |
| C | — | .067 | — | 1.70 | REF |
| G | — | .043 | — | 1.10 | — |
| X | — | .031 | — | 0.80 | REF |
| Y | — | .024 | — | 0.60 | — |
| Z | — | .091 | — | 2.30 | — |

[1] CONTROLLING DIMENSION: MILLIMETERS