

Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 8A (8/20 μs)
- RoHS Compliant

Dimensions SOD-523



Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

Pin Configuration



Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch
- Device Marking: 5B

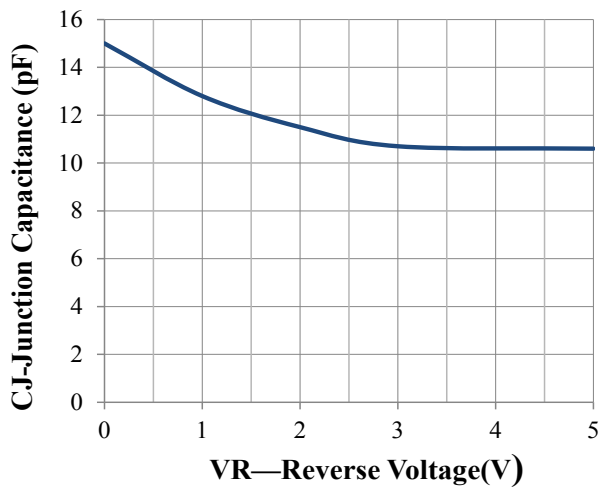
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (8/20 μs) | P _{pp} | 100 | W |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ± 30 | Kv |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | T _J | -55 to +125 | °C |
| Storage Temperature Range | T _{STJ} | -55 to +150 | °C |

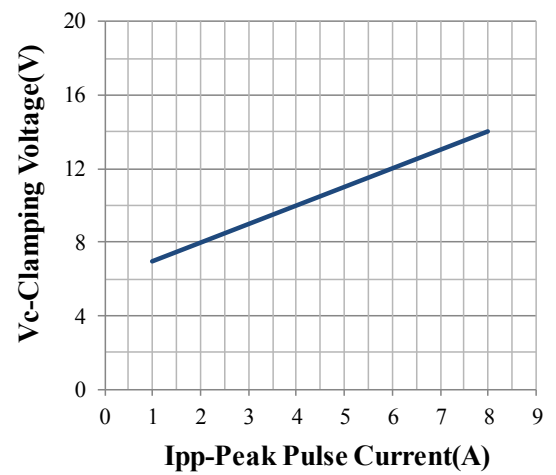
Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|-------------------------|-----------|---|-----|-----|-----|---------------|
| Reverse Working Voltage | V_{RWM} | | | | 5 | V |
| Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ | 5.5 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5\text{V}$ | | | 1 | μA |
| Clamping Voltage | V_C | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) | | | 9 | V |
| Clamping Voltage | V_C | $I_{PP} = 8\text{A}$ (8 x 20 μs pulse) | | | 12 | V |
| Junction Capacitance | C_J | $V_R = 0\text{V}$, $f = 1\text{MHz}$ | | 15 | | pF |

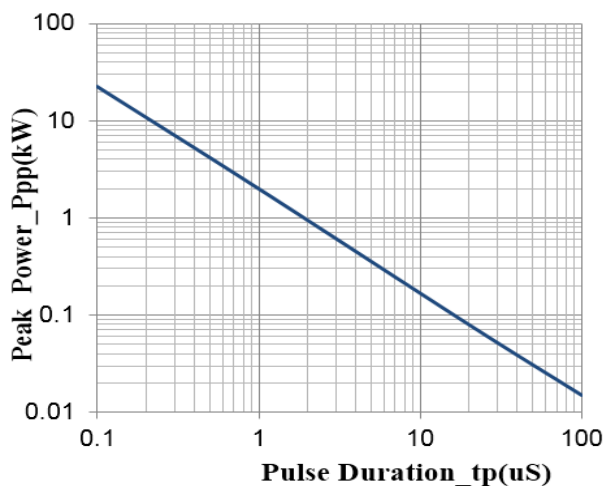
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



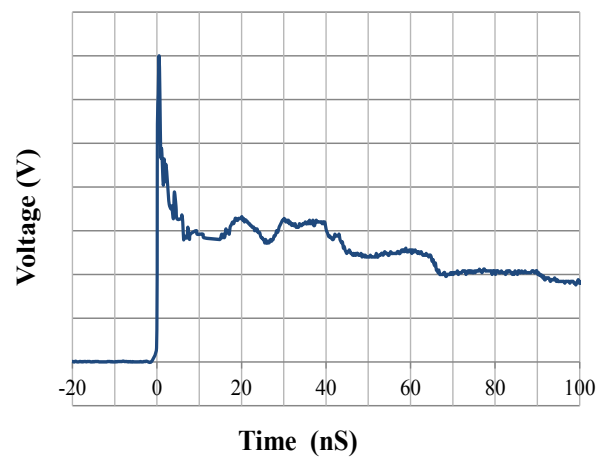
Junction Capacitance vs. Reverse Voltage



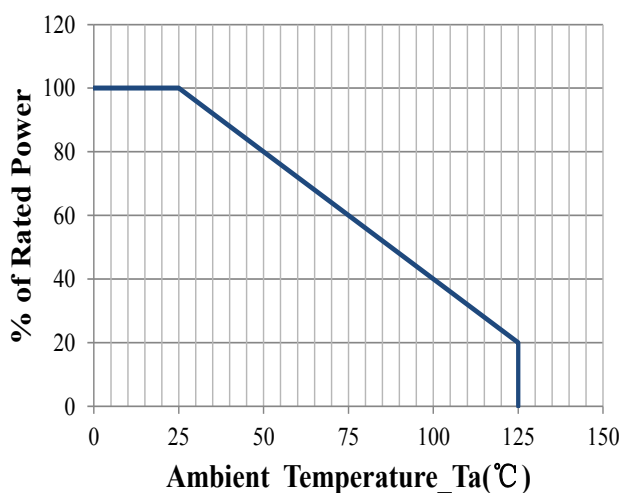
Clamping Voltage vs. Peak Pulse Current



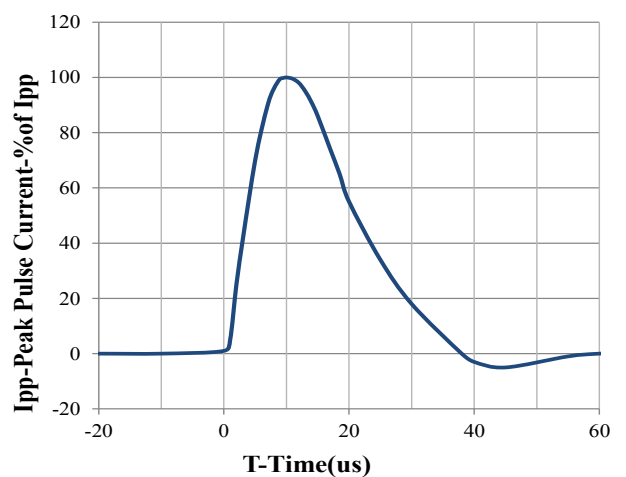
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve



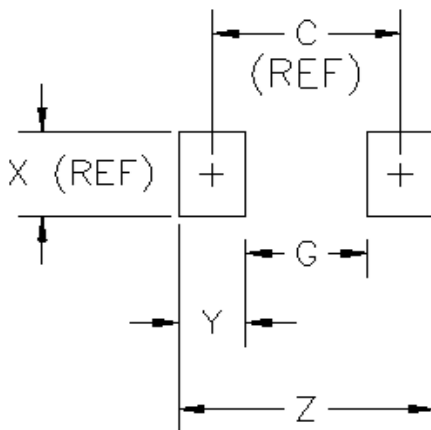
8 X 20us Pulse Waveform

SOD-523 Package Outline & Dimensions



| DIMENSIONS | | | | | |
|------------------|--------|------|------|------|------|
| DIM ^N | INCHES | | MM | | 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 | — |

Suggested Land Pattern



| DIMENSIONS | | | | | |
|------------------|--------|------|-----|------|------|
| DIM ^N | INCHES | | MM | | 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 | — |