

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: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- RoHS Compliant

Applications

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

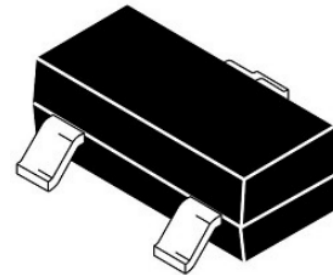
Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000pcs
- Reel Size: 7 inch
- Device Marking: 5M

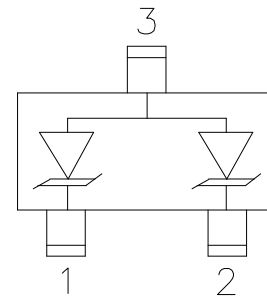
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (8/20 μs) | Ppp | 80 | W |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ± 25 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 20 | |
| Operating Temperature Range | T _J | -55 to +125 | °C |
| Storage Temperature Range | T _{STJ} | -55 to +150 | °C |

Dimensions SOT-23



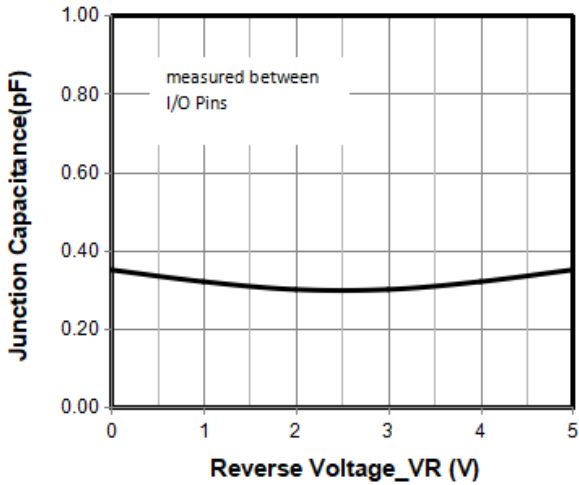
Pin Configuration



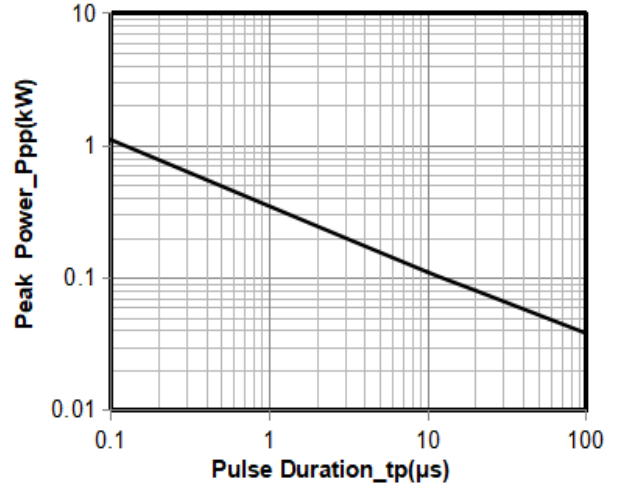
Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|--------|-----|------|-----|------|--|
| Reverse Working Voltage | VRWM | | | 5 | V | Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2 |
| Breakdown Voltage | VBR | 6 | | | V | IT = 1mA, pin 1 or pin 2 to pin 3 and between pin 1 and pin 2 |
| Reverse Leakage Current | IR | | 0.01 | 0.5 | μA | VRWM = 5V, Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2 |
| Clamping Voltage | VC | | | 9 | V | I _{PP} = 1A (8 x 20μs pulse), pin 1 or pin 2 to pin 3 |
| Clamping Voltage | VC | | | 16 | V | I _{PP} = 5A (8 x 20μs pulse), pin 1 or pin 2 to pin 3 |
| Junction Capacitance | CJ | | 0.3 | 0.4 | pF | VR = 0V, f = 1MHz, between pin 1 and pin 2 |
| Junction Capacitance | CJ | | | 0.8 | pF | VR = 0V, f = 1MHz, pin 1 or pin 2 to pin 3 |

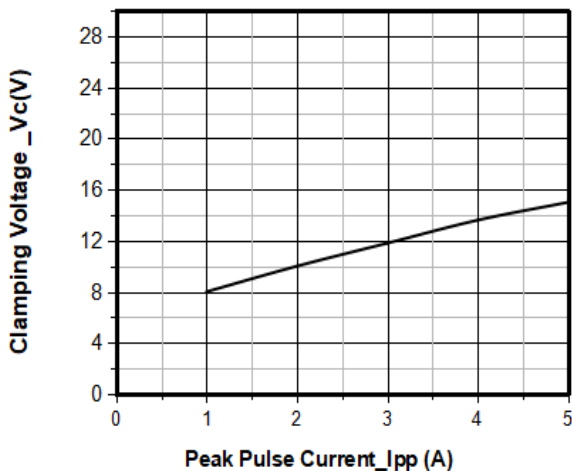
Typical Performance Characteristics(TA=25°C unless otherwise specified)



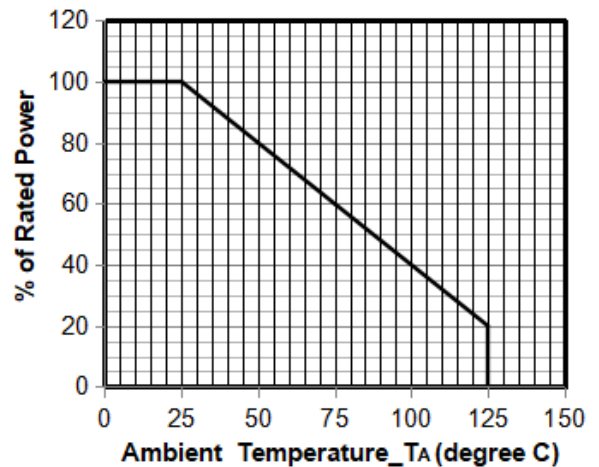
Junction Capacitance vs. Reverse Voltage



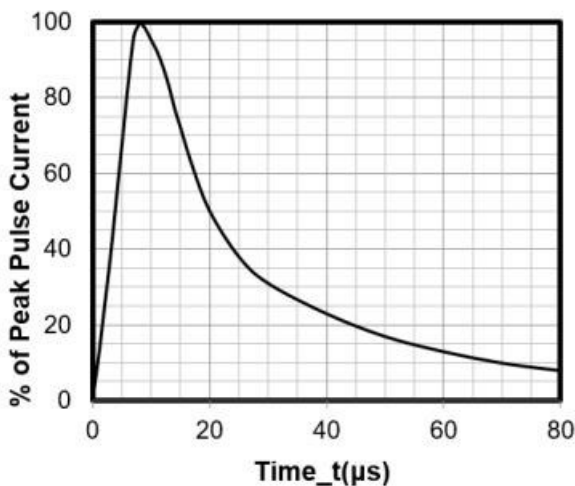
Peak Pulse Power vs. Pulse Time



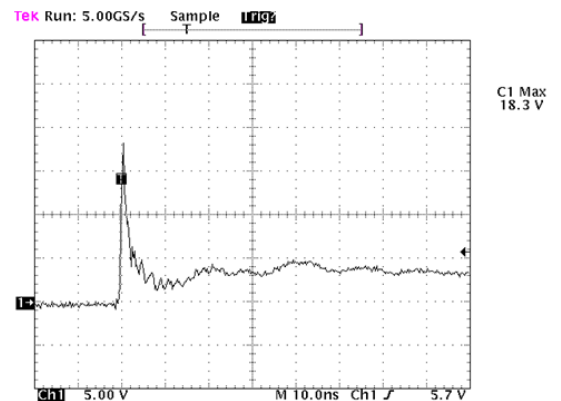
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

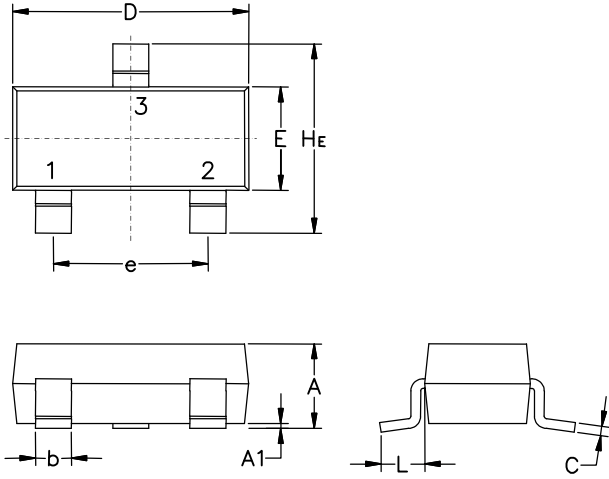


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

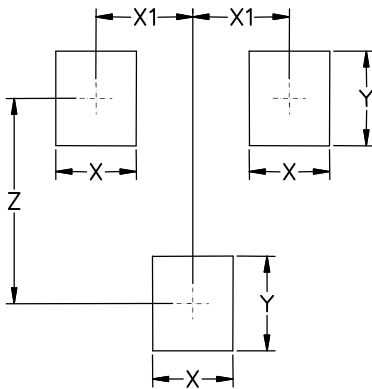
8 kV Contact per IEC61000-4-2

SOT-23 Package Outline Drawing



| 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 |
| H _E | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |

Suggested Land Pattern



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

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