

## Features

- Small Body Outline Dimensions:  
0.063" x 0.032" (1.6x0.8 mm)
- Low Body Height: 0.024" (0.6 mm) Nom
- 100 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Protects one I/O or power line
- Replacement for MLV(0603)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- Solid-state silicon-avalanche technology



## IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 6.5A (8/20 $\mu s$ )

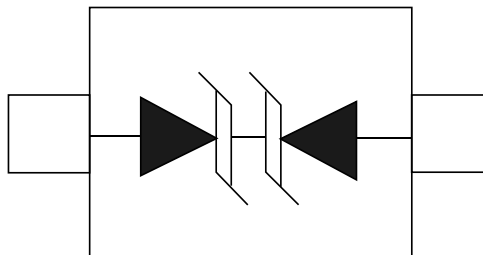
## Mechanical Characteristics

- JEDEC SOD-523 package
- Molding compound flammability rating:  
UL 94V-0
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS/WEEE Compliant

## Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 players

## Schematic & PIN Configuration

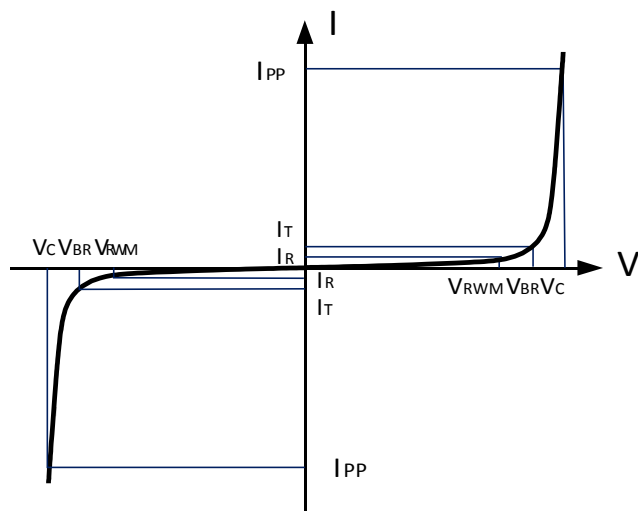


SOD-523 (Top View)

| Absolute Maximum Rating                          |            |              |       |
|--------------------------------------------------|------------|--------------|-------|
| Rating                                           | Symbol     | Value        | Units |
| Peak Pulse Power ( $t_p = 8/20\mu s$ )           | $P_{PP}$   | 100          | Watts |
| Maximum Peak Pulse Current ( $t_p = 8/20\mu s$ ) | $I_{PP}$   | 6.5          | A     |
| Operating Temperature                            | $T_J$      | -55 to + 125 | °C    |
| Storage Temperature                              | $T_{STTh}$ | -55 to +150  | °C    |

## Electrical Parameters (T=25°C)

| 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 @ $I_F$                     |



## Electrical Characteristics

| MSD5C051V                 |           |                                  |         |         |         |         |
|---------------------------|-----------|----------------------------------|---------|---------|---------|---------|
| Parameter                 | Symbol    | Conditions                       | Minimum | Typical | Maximum | Units   |
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                  |         |         | 5.0     | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                      | 6.0     |         |         | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 5V, T = 25^\circ C$   |         |         | 1       | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{PP} = 6.5A, t_p = 8/20\mu s$ |         |         | 15.5    | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$             |         | 1       |         | pF      |

## Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

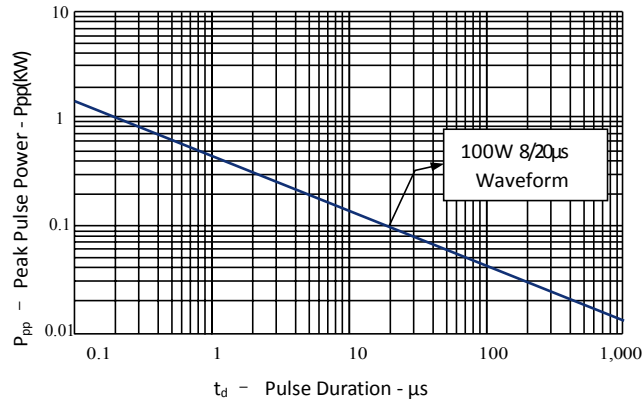


Figure 2: Power Derating Curve

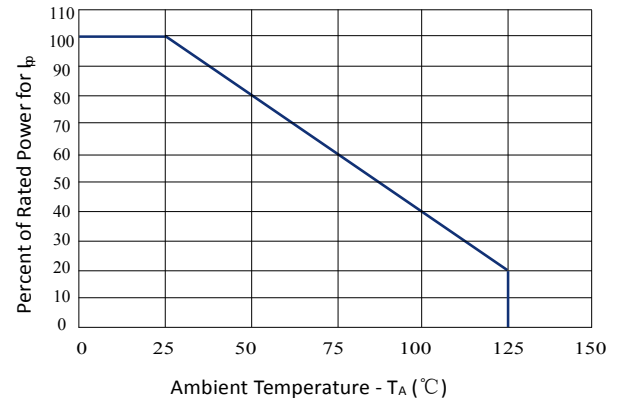


Figure 3: Clamping Voltage vs. Peak Pulse Current

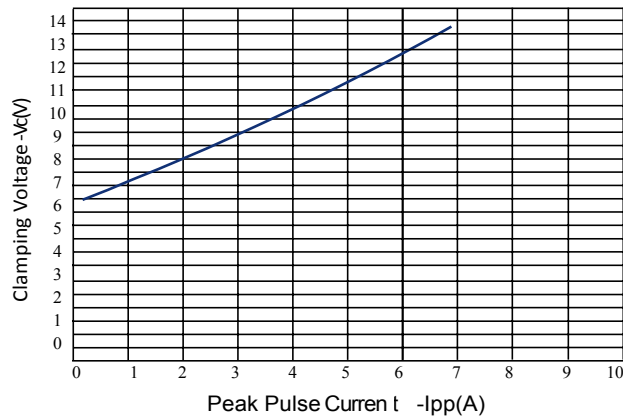


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

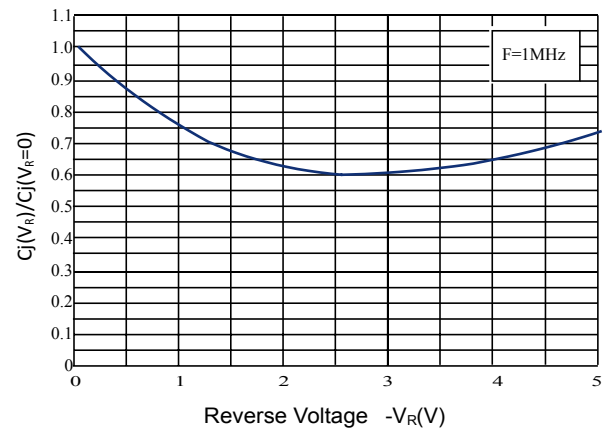


Figure 5: Pulse Waveform

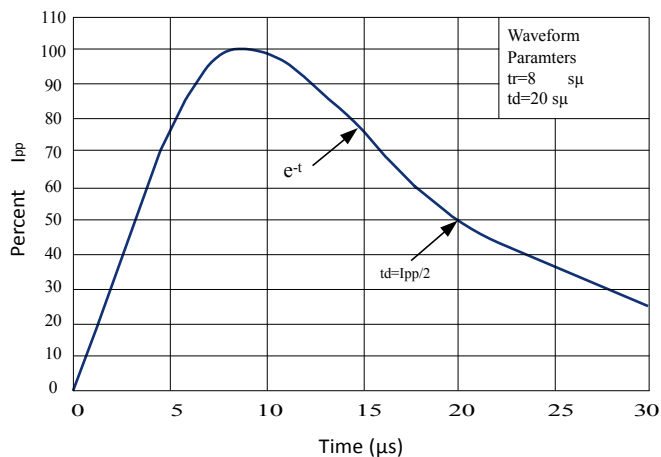
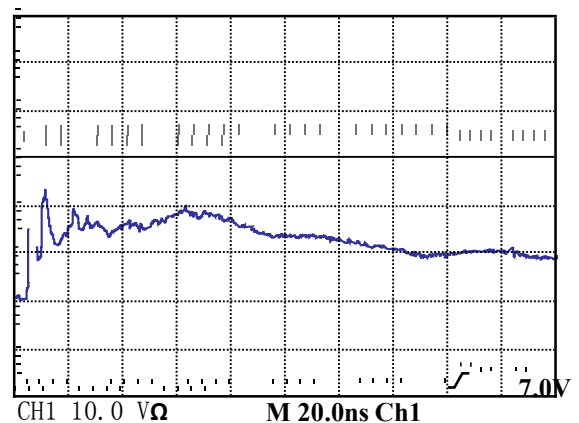


Figure 6: ESD Clamping( 8kV Contact per IEC 61000-4-2)

Tek Run: 2.50GS/s Sample



Outline Drawing – SOD-523

