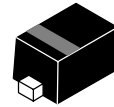


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## DESCRIPTION

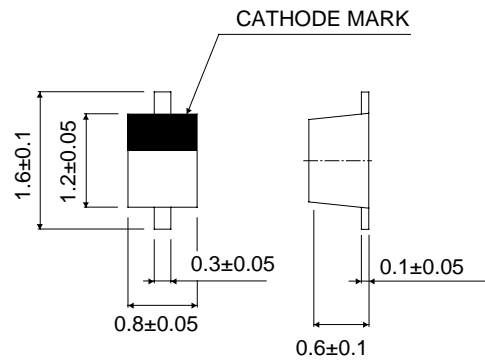
- . Designed to protect voltage sensitive components from ESD.
- . Excellent clamping capability, low leakage and fast response.
- . Cellular phones, MP3 players, digital cameras ... etc.
- . Suitable for electronics where board space is a major design consideration.

SOD-523



## FEATURES

- . Response time is typically < 1 ns
- . Low leakage
- . Stand-off voltage: 3.3V
- . ESD rating of class 3 (> 16 kV) per human body model
- . IEC61000-4-2 level 4 ESD protection



Dimensions in millimeters

## MARKING CODE

ZE

## MAXIMUM RATINGS

Rating 25°C ambient temperature unless otherwise specified.

| TYPE NUMBER                                      | SYMBOL                                    | LIMITS           | UNITS          |
|--|---|------------------|----------------|
| IEC61000-4-2 (ESD)                               | Air Contact                               | +/- 30<br>+/- 30 | kV             |
| ESD Voltage                                      | per human body model<br>per machine model | $V_{ESD}$        | 16 kV<br>400 V |
| Lead Solder Temperature - Max. (10 sec duration) | $T_L$                                     | 260              | °C             |
| Thermal Resistance Junction-to-ambient           | $R_{\theta JA}$                           | 625              | °C/W           |
| Junction and Storage Temperature Range           | $T_{J, T_{STG}}$                          | -55 ~ +150       | °C             |
| Total Power Dissipation on FR-5 board (Note 1)   | $P_D$                                     | 200              | mW             |

Stresses exceeding "Maximum Ratings" may damage the device. "Maximum Ratings" are stress ratings only. Functional operation above the recommended. Operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.

## ELECTRICAL CHARACTERISTICS (T = 25 °C unless otherwise noted, V<sub>F</sub> = 0.9V Max. @ I<sub>F</sub>=10mA for all types)

| TYPE NUMBER               | SYMBOL           | Min. | Typ. | Max. | UNIT | TEST CONDITIONS  |
|---------------------------|------------------|------|------|------|------|--|
| Reverse Stand-Off Voltage | V <sub>RWM</sub> | -    | -    | 3.3  | V    |  |
| Reverse Leakage Current   | I <sub>R</sub>   | -    | -    | 0.08 | μA   | V <sub>RWM</sub> = 3.3 V                                       |
| Clamping Voltage          | V <sub>C</sub>   | -    | -    | 9.4  | V    | I <sub>PP</sub> = 5 A  |
| Peak Pulse Current        | I <sub>PP</sub>  | -    | -    | 11.2 | A    | (surge charge waveform per Figure 2.)                          |
| Clamping Voltage          | V <sub>C</sub>   | -    | -    | 14.1 | V    | I <sub>PP</sub> = 11.2 A (surge charge waveform per Figure 2.) |
| Reverse Breakdown Voltage | V <sub>BR</sub>  | 5.0  | -    | -    | V    | I <sub>T</sub> = 1mA, T <sub>AMBIENT</sub> = 25 °C             |
| Test Current              | I <sub>T</sub>   | -    | 1.0  | -    | mA   |  |
| Junction Capacitance      | C                | -    | 105  | -    | pF   |  |
| Peak Power Dissipation    | P <sub>PK</sub>  | -    | -    | 158  | W    | (surge charge waveform per Figure 2.)                          |

## ELECTRICAL CHARACTERISTIC CURVES

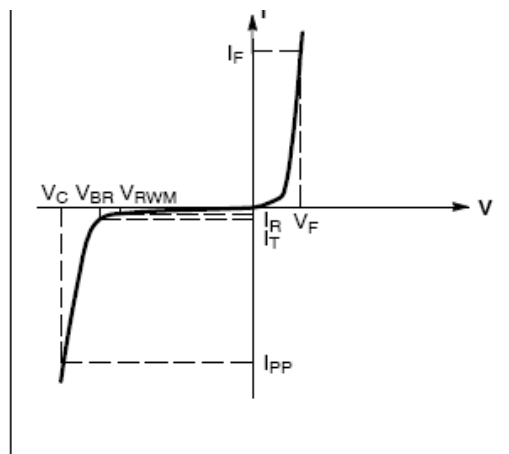


Figure 1. Uni-Directional TVS

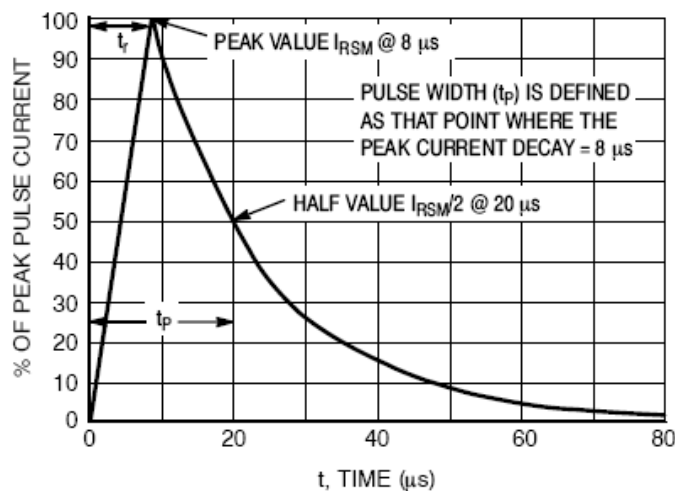


Figure 2. 8 x 20 μs Pulse Waveform