

### Features

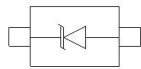
150 Watts peak pulse power ( $t_p = 8/20\mu s$ )  
 Transient protection for high speed data lines to  
 IEC 61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)  
 IEC 61000-4-4 (EFT) 40A (5/50ns)  
 Protects One Power or I/O Port  
 Low leakage current  
 Low operating and clamping voltages  
 Solid-state silicon avalanche technology

### Mechanical Characteristics

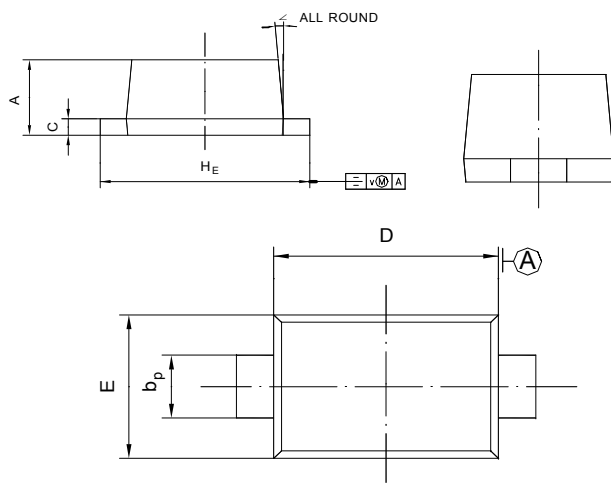
Package: SOD-523  
 Lead Finish: Matte Tin  
 Case Material: "Green" Molding Compound.  
 UL Flammability Classification Rating 94V-0  
 Moisture Sensitivity: Level 3 per J-STD-020  
 Terminal Connections: See Diagram Below

### 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



SOD-523 (Top View)



SOD-523 mechanical data

| UNIT | A            | b <sub>p</sub> | C              | D            | E            | H <sub>E</sub> | V   | ∠  |
|------|--------------|----------------|----------------|--------------|--------------|----------------|-----|----|
| mm   | 0.70<br>0.60 | 0.4<br>0.3     | 0.135<br>0.100 | 1.25<br>1.15 | 0.85<br>0.75 | 1.7<br>1.5     | 0.1 | 5° |

### Ordering information

| Order code  | Package | Making |
|-------------|---------|--------|
| ESD5Z5.0T1G | SOD-523 | ZF     |

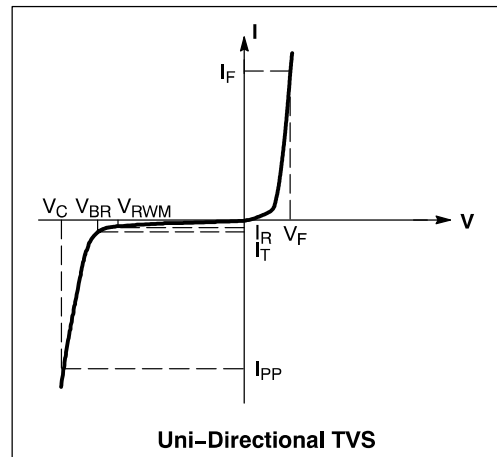
### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| ESD per IEC 61000-4-2 (Air)     | V <sub>ESD</sub> | ±25         | kV   |
| ESD per IEC 61000-4-2 (Contact) |                  | ±25         |      |
| Operating Temperature Range     | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range       | T <sub>stg</sub> | -55 to +150 | °C   |

# ESD5Z5.0T1G

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

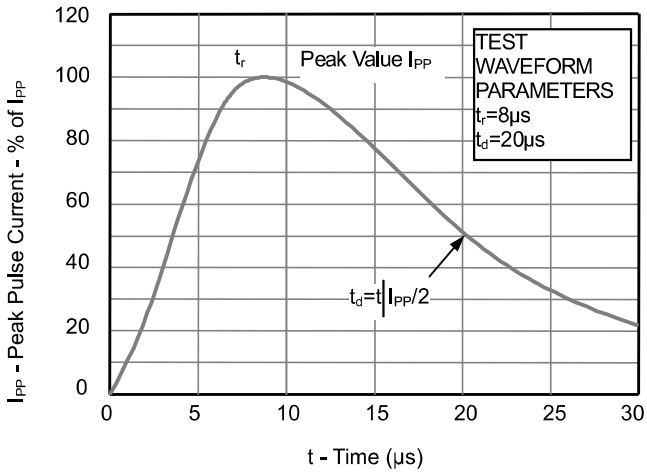
| Symbol           | Parameter  |
|------------------|--|
| I <sub>PP</sub>  | Maximum Reverse Peak Pulse Current                 |
| V <sub>C</sub>   | Clamping Voltage @ I <sub>PP</sub>                 |
| V <sub>RWM</sub> | Working Peak Reverse Voltage                       |
| I <sub>R</sub>   | Maximum Reverse Leakage Current @ V <sub>RWM</sub> |
| V <sub>BR</sub>  | Breakdown Voltage @ I <sub>T</sub>                 |
| I <sub>T</sub>   | Test Current                                       |
| I <sub>F</sub>   | Forward Current                                    |
| V <sub>F</sub>   | Forward Voltage @ I <sub>F</sub>                   |
| P <sub>pk</sub>  | Peak Power Dissipation                             |
| C                | Capacitance @ V <sub>R</sub> = 0 and f = 1.0 MHz   |



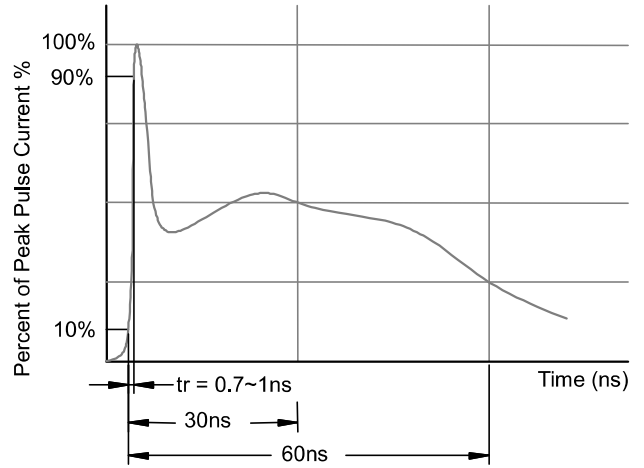
| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition                         |
|-------------------------|------------------|-----|-----|-----|------|--|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 5   | V    |  |
| Breakdown Voltage       | V <sub>BR</sub>  | 6   |     |     | V    | I <sub>T</sub> = 1mA                   |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.2 | uA   | V <sub>RWM</sub> = 5V                  |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 9   | V    | I <sub>PP</sub> = 1A (8 x 20µs pulse)  |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 15  | V    | I <sub>PP</sub> = 11A (8 x 20µs pulse) |
| Junction Capacitance    | C <sub>J</sub>   |     |     | 100 | pF   | V <sub>R</sub> = 0V, f = 1MHz          |

## RATING AND CHARACTERISTIC CURVES ( ESD5Z5.0T1G )

**Fig1. 8/20μs Pulse Waveform**



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



**Fig3. Power Derating Curve**

