

## Features

- Low operating voltage: 18V
- Ultra low capacitance: 40pF
- Ultra low leakage: nA level
- Low clamping voltage
- -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)
- 2-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically  $< 1\text{ ns}$

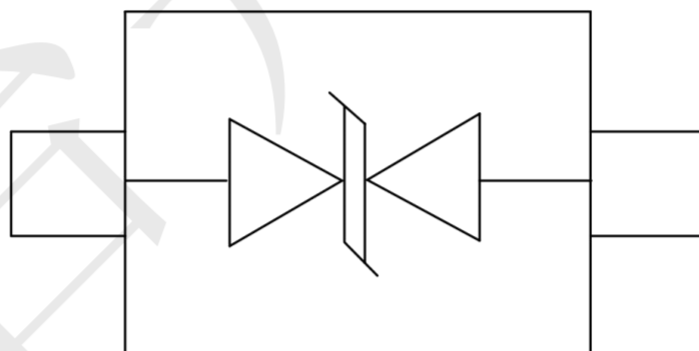
## Mechanical Characteristics

- Package: SOD323(0805)
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

## Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals

## Dimensions and Pin Configuration



**SOD323**

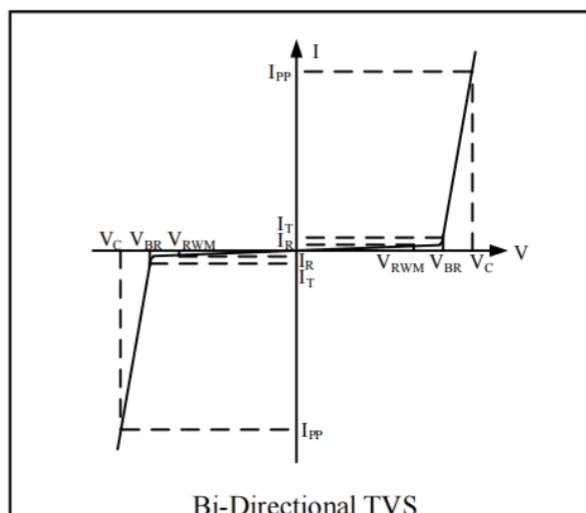
### Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter                                                      | Symbol | Value       | Unit |
|----------------------------------------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)                                      | Ppk    | 220         | W    |
| Peak Pulse Current (8/20μs)                                    | Ipp    | 6           | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | VESD   | ±30<br>±30  | KV   |
| Operating Temperature Range                                    | TJ     | -55 to +125 | °C   |
| Storage Temperature Range                                      | Tstg   | -55 to +150 | °C   |

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

| Parameter               | Symbol | Min | Typ | Max | Unit | Test Condition        |
|-------------------------|--------|-----|-----|-----|------|-----------------------|
| Reverse Working Voltage | VRWM   | --  | --  | 18  | V    |                       |
| Breakdown Voltage       | VBR    | 20  | --  | 24  | V    | IT= 1mA               |
| Reverse Leakage Current | IR     | --  | --  | 0.1 | uA   | VRWM=18V              |
| Clamping Voltage        | VC     | --  | 30  | --  | V    | Ipp=1A(8x 20us pulse) |
| Clamping Voltage        | VC     | --  | --  | 35  | V    | Ipp=6A(8x 20us pulse) |
| Junction Capacitance    | CJ     | --  | --  | 40  | pF   | VR = 0V, f = 1MHz     |

| Symbol | Parameter                          |
|--------|------------------------------------|
| VRWM   | Nominal Reverse Working Voltage    |
| IR     | Reverse Leakage Current @ VRWM     |
| VBR    | Reverse Breakdown Voltage @ IT     |
| IT     | Test Current for Reverse Breakdown |
| VC     | Clamping Voltage @ IPP             |
| IPP    | Maximum Peak Pulse Current         |
| CESD   | Parasitic Capacitance              |
| VR     | Reverse Voltage                    |
| f      | Small Signal Frequency             |



## Characteristic Curves

**Fig1. 8/20 $\mu$ s Pulse Waveform**

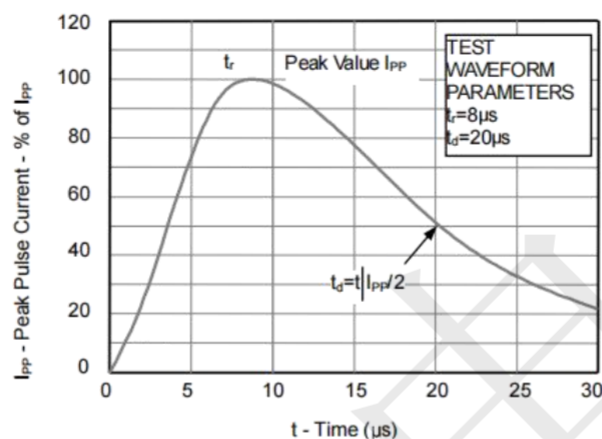


**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**

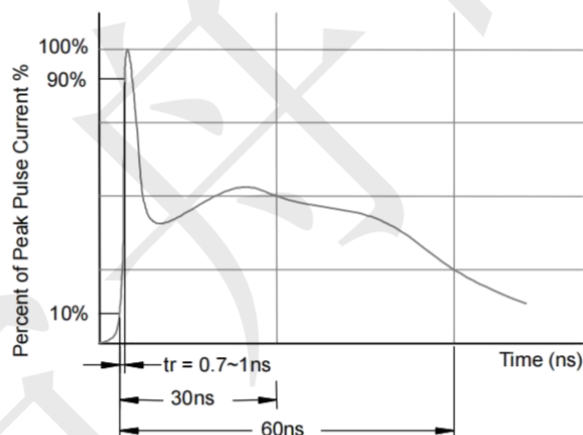
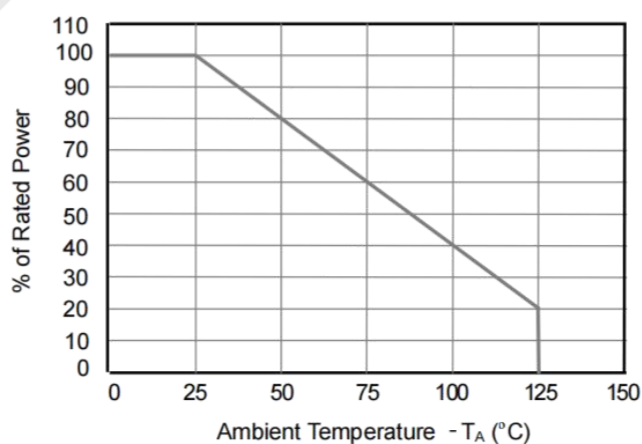
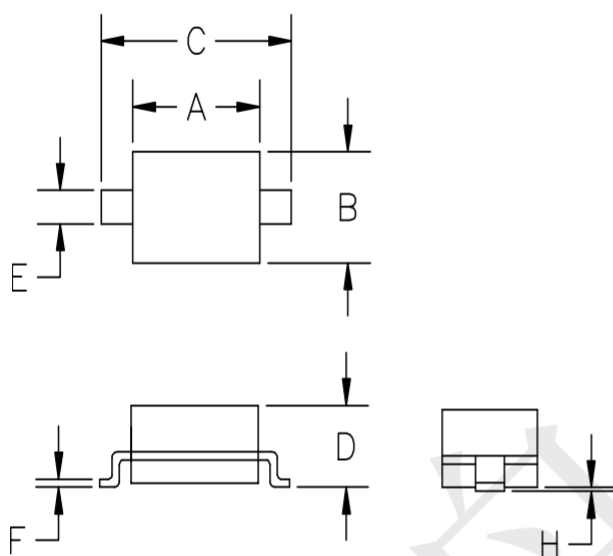


**Fig3. Power Derating Curve**



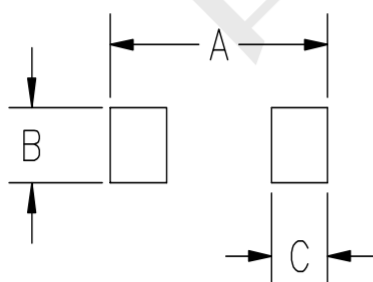
## Package Outline Dimensions (unit: mm)

**SOD323 (0805)**



| DIMENSIONS |             |      |        |       |
|------------|-------------|------|--------|-------|
| SYM        | MILLIMETERS |      | INCHES |       |
|            | MIN         | MAX  | MIN    | MAX   |
| A          | 1.50        | 1.80 | 0.060  | 0.071 |
| B          | 1.20        | 1.40 | 0.045  | 0.054 |
| C          | 2.30        | 2.70 | 0.090  | 0.107 |
| D          | -           | 1.10 | -      | 0.043 |
| E          | 0.30        | 0.40 | 0.012  | 0.016 |
| F          | 0.10        | 0.25 | 0.004  | 0.010 |
| H          | -           | 0.10 | -      | 0.004 |

## Mounting Pad Layout (unit: mm)



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| A   | 3.15        | 0.120  |
| B   | 0.80        | 0.031  |
| C   | 0.80        | 0.031  |