

## Features

- Low operating voltage: 3.3V
- Ultra low capacitance: 0.8pF (typ)
- 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  $< 1\text{ ns}$

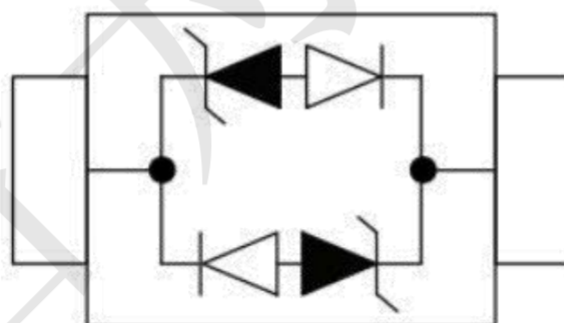
## Mechanical Characteristics

- Package: SOD523(0603)
- 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



**SOD523**

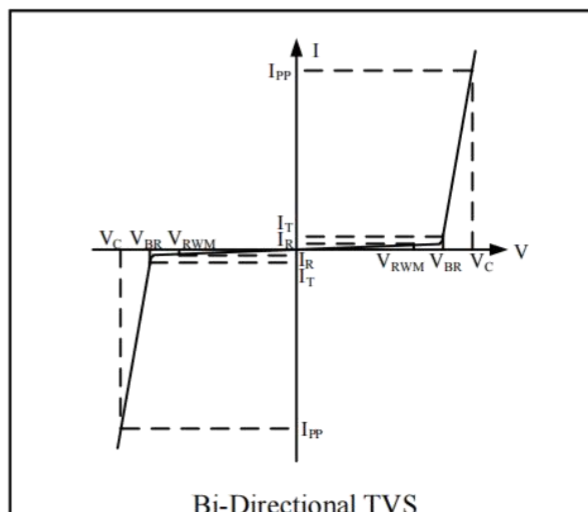
### Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter                                                      | Symbol | Value       | Unit |
|----------------------------------------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)                                      | Ppk    | 310         | W    |
| IEC 61000-4-2 Spec Current at 60 ns (A)                        | Ipp    | 17          | 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)

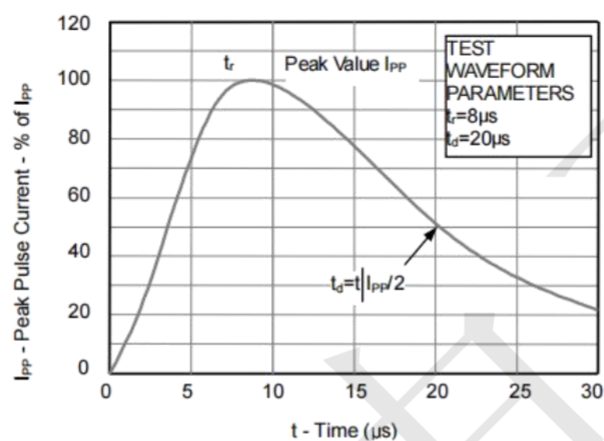
| Parameter               | Symbol | Min | Typ | Max | Unit | Test Condition         |
|-------------------------|--------|-----|-----|-----|------|------------------------|
| Reverse Working Voltage | VRWM   | --  | --  | 3.3 | V    |                        |
| Breakdown Voltage       | VBR    | 4.2 | --  | --  | V    | IT= 1mA                |
| Reverse Leakage Current | IR     | --  | --  | 0.1 | uA   | VRWM=3.3V              |
| Clamping Voltage        | VC     | --  | 8   | --  | V    | Ipp=1A(8x 20us pulse)  |
| Clamping Voltage        | VC     | --  | --  | 18  | V    | Ipp=17A(8x 20us pulse) |
| Junction Capacitance    | CJ     | --  | 0.8 | --  | 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             |

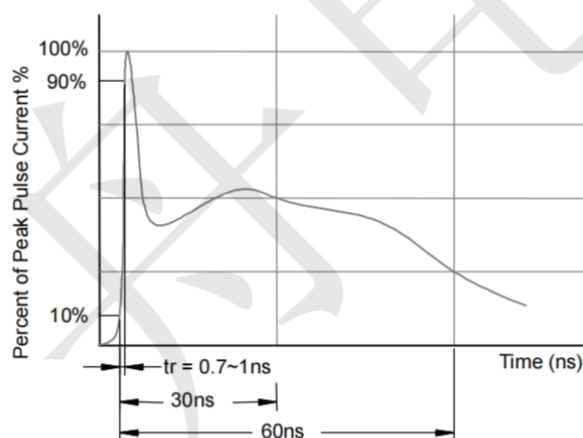


## Characteristic Curves

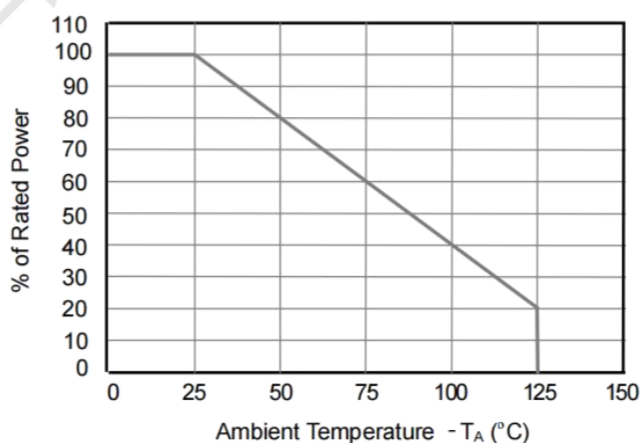
**Fig1. 8/20 $\mu$ s Pulse Waveform**



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

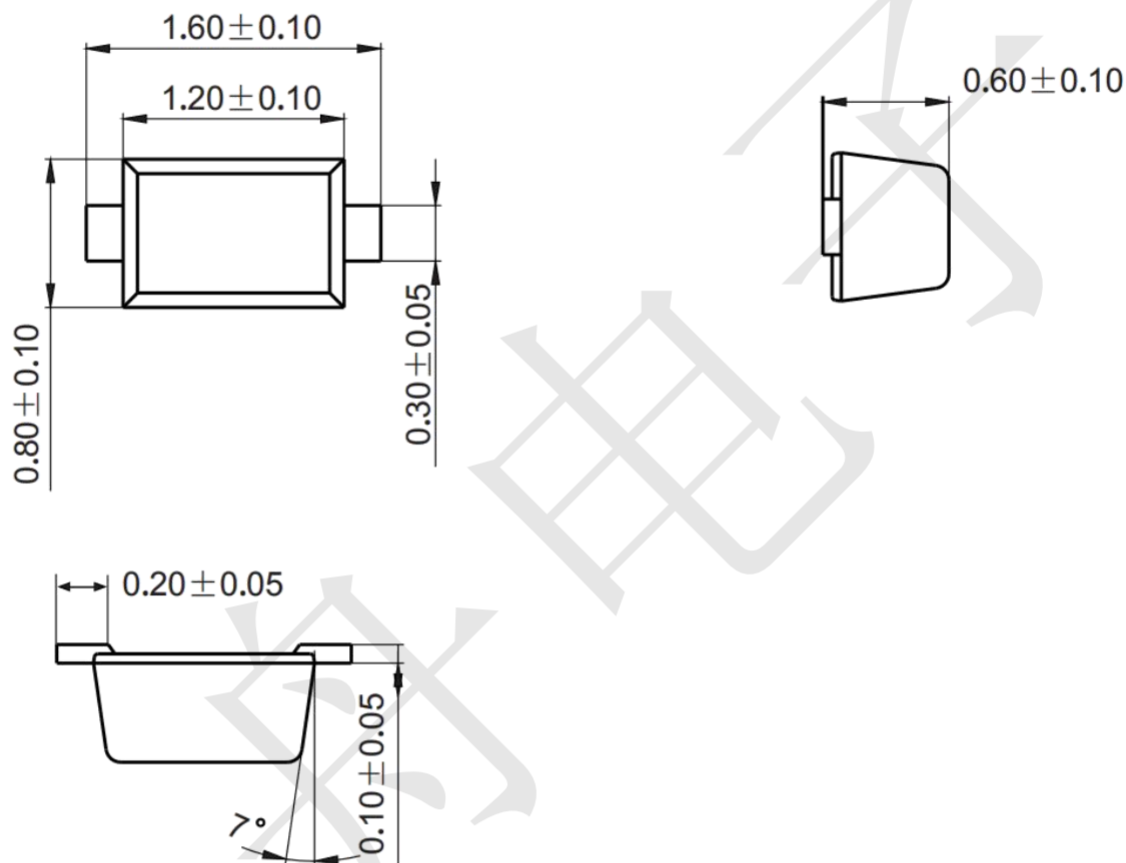


**Fig3. Power Derating Curve**



**Package Outline Dimensions (unit: mm)**

**SOD523 (0603)**



**Mounting Pad Layout (unit: mm)**

