

## Features

- Low operating voltage: 36V
- Ultra low capacitance: 50pF
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 25\text{kV}$   
Contact discharge:  $\pm 20\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- 2-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically  $< 1\text{ ns}$

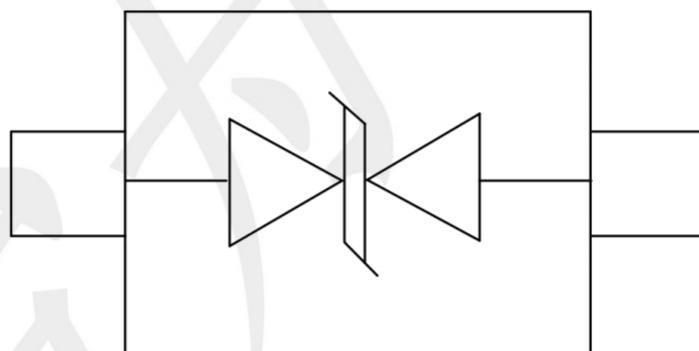
## Mechanical Characteristics

- 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**

**Marking:36X**

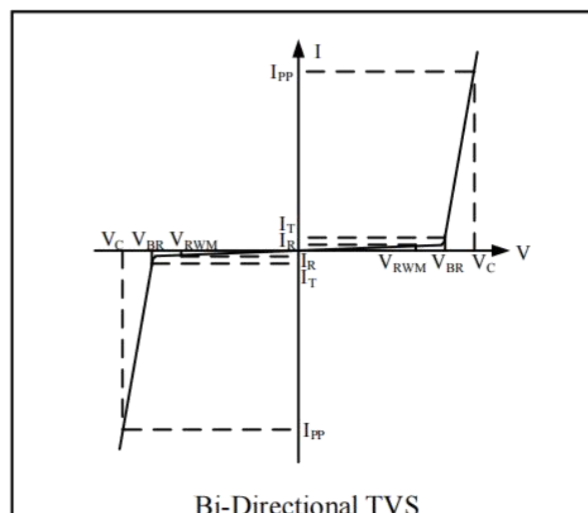
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                                                      | Symbol           | Value       | Unit |
|----------------------------------------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)                                      | P <sub>pk</sub>  | 350         | W    |
| IEC 61000-4-2 Spec Current at 60 ns (A)                        | I <sub>pp</sub>  | 6           | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | ±25<br>±20  | KV   |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150 | °C   |

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

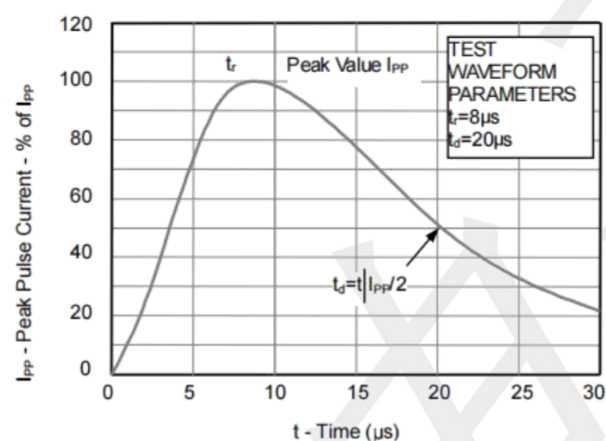
| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition                       |
|-------------------------|------------------|-----|-----|-----|------|--------------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> | --  | --  | 36  | V    |                                      |
| Breakdown Voltage       | V <sub>BR</sub>  | 38  | 40  | 45  | V    | I <sub>T</sub> = 1mA                 |
| Reverse Leakage Current | I <sub>R</sub>   | --  | --  | 1   | uA   | V <sub>RWM</sub> = 36V               |
| Clamping Voltage        | V <sub>C</sub>   | --  | 43  | 50  | V    | I <sub>pp</sub> = 1A (8x 20us pulse) |
| Clamping Voltage        | V <sub>C</sub>   | --  | 53  | 60  | V    | I <sub>pp</sub> = 6A (8x 20us pulse) |
| Junction Capacitance    | C <sub>J</sub>   | --  | 22  | 50  | pF   | V <sub>R</sub> = 0V, f = 1MHz        |

| Symbol           | Parameter                                  |
|------------------|--------------------------------------------|
| V <sub>RWM</sub> | Nominal Reverse Working Voltage            |
| I <sub>R</sub>   | Reverse Leakage Current @ V <sub>RWM</sub> |
| V <sub>BR</sub>  | Reverse Breakdown Voltage @ I <sub>T</sub> |
| I <sub>T</sub>   | Test Current for Reverse Breakdown         |
| V <sub>C</sub>   | Clamping Voltage @ I <sub>pp</sub>         |
| I <sub>pp</sub>  | Maximum Peak Pulse Current                 |
| C <sub>ESD</sub> | Parasitic Capacitance                      |
| V <sub>R</sub>   | Reverse Voltage                            |
| f                | Small Signal Frequency                     |

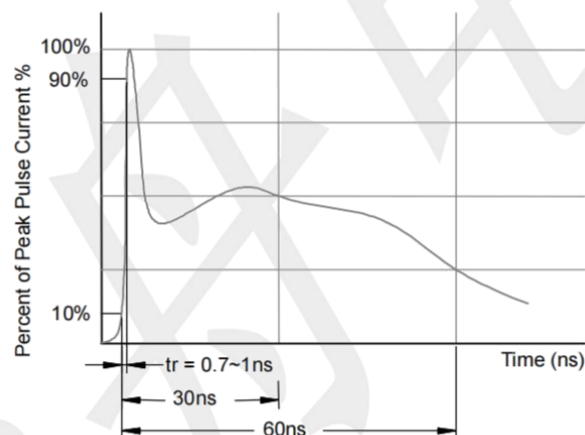


## Characteristic Curves

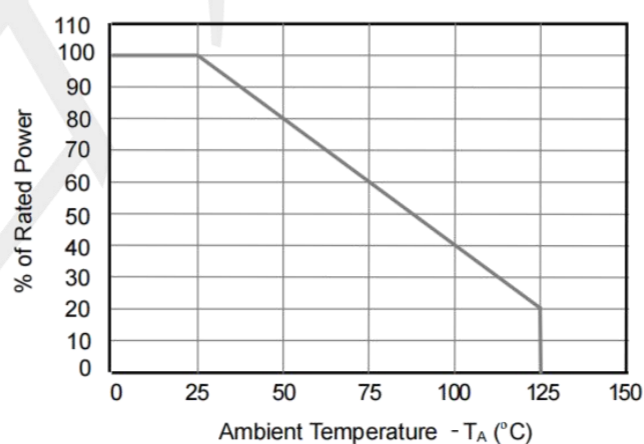
**Fig1. 8/20 $\mu$ s Pulse Waveform**



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

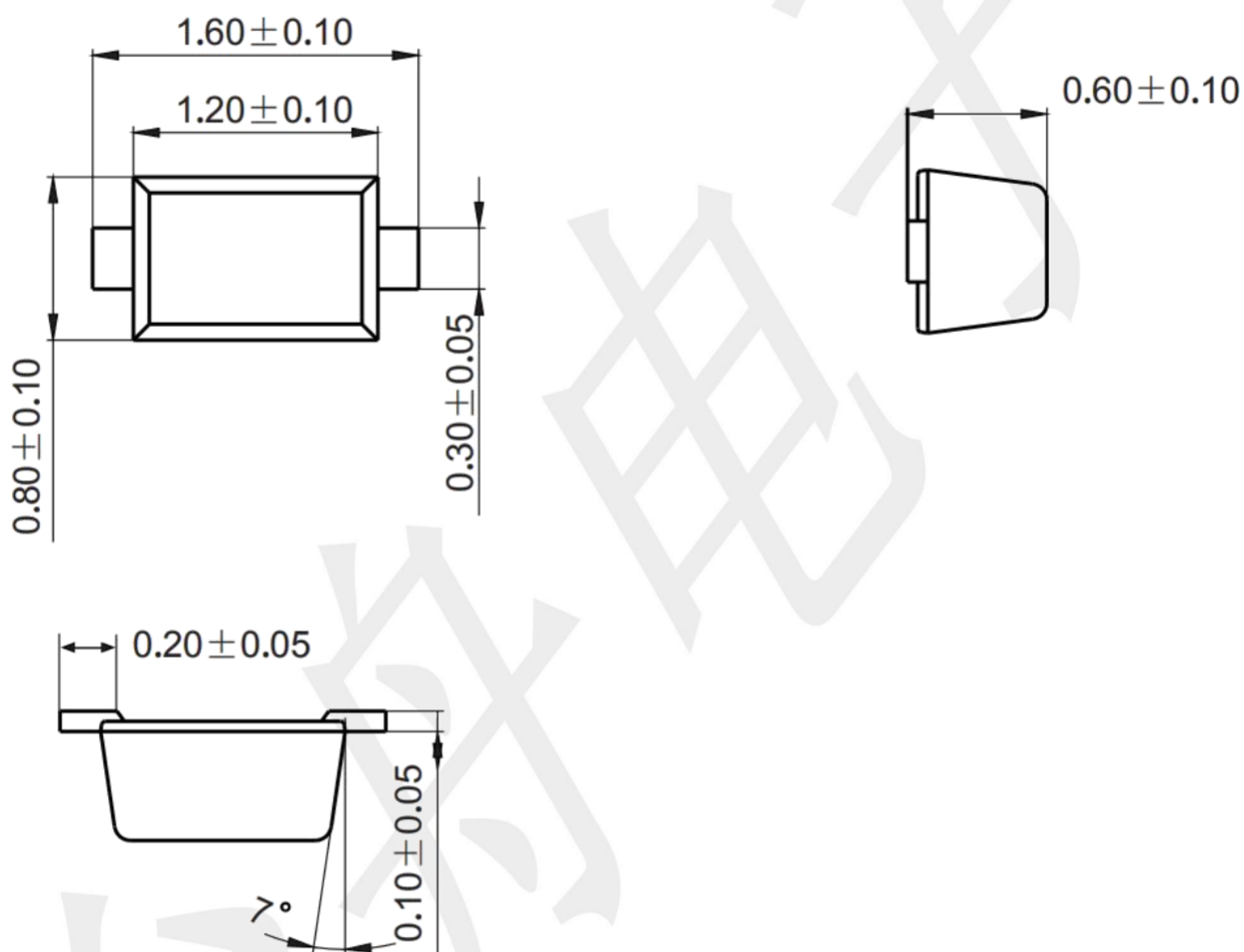


**Fig3. Power Derating Curve**



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

**SOD523 (0603)**



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

