

## Features

- \* 80W peak pulse power (8/20  $\mu$ s)
- \* Protects one data or power line
- \* Operating voltage: 5V
- \* Ultra low clamping voltage
- \* Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 20$ kV
    - Contact discharge:  $\pm 15$ kV
  - IEC61000-4-5 (SURGE) 4.5A (8/20us)

## Ordering Information

| Part Number    | Qty per Reel | Reel Size |
|----------------|--------------|-----------|
| TPESD9L5.0ST5G | 8000         | 7"        |

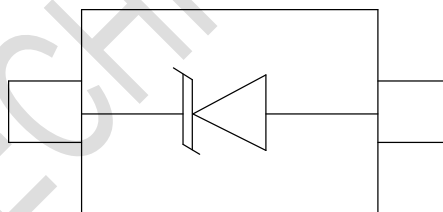
## Mechanical Characteristics

- \* Package: SOD-923(0402)
- \* Ultra low leakage: nA level
- \* Case Material: "Green" Molding Compound.
- \* UL Flammability Classification Rating 94V-0
- \* Moisture Sensitivity: Level 3 per J-STD-020

## Applications

- \* Mobile Phones and Accessories
- \* Battery Protection
- \* USB VBus
- \* Power Line Protection
- \* Hand Held Portable Applications

## Dimensions and Pin Configuration



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

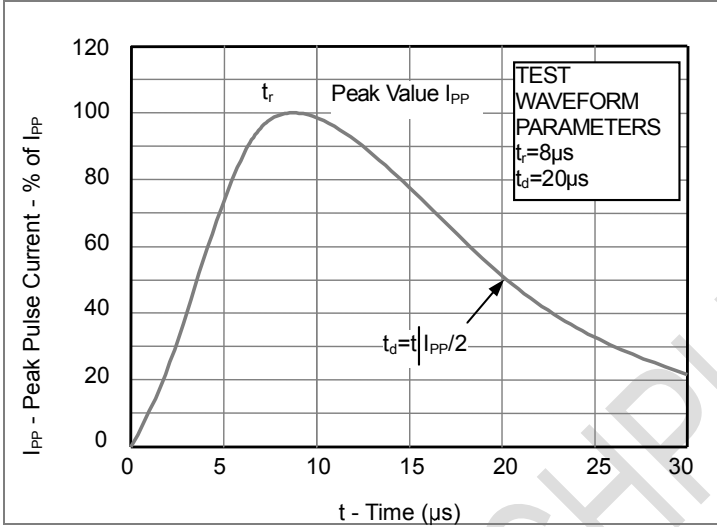
| Parameter                       | Symbol | Value       | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk    | 80          | W    |
| Peak Pulse Current (8/20μs)     | IPP    | 4.5         | A    |
| ESD per IEC 61000-4-2 (Air)     | VESD   | ±20         | kV   |
| ESD per IEC 61000-4-2 (Contact) |        | ±15         |      |
| Operating Temperature Range     | TJ     | -55 to +125 | °C   |
| Storage Temperature Range       | Tstg   | -55 to +150 | °C   |

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

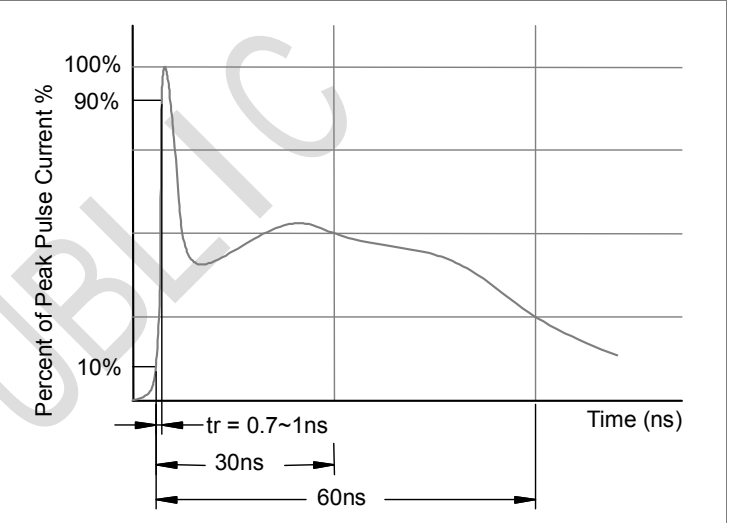
| Parameter               | Symbol           | Test Condition                                       | Min | Typ | Max  | Unit |
|-------------------------|------------------|--|-----|-----|------|------|
| Reverse Working Voltage | V <sub>RWM</sub> |  |     |     | 5    | V    |
| Breakdown Voltage       | V <sub>BR</sub>  | I <sub>T</sub> = 1mA (Pin1-Pin2)                     | 5.4 | 6.7 | 8.5  | V    |
| Reverse Leakage Current | I <sub>R</sub>   | V <sub>RWM</sub> = 5.0V (Pin2-Pin1)                  |     |     | 0.08 | μA   |
| Clamping Voltage        | V <sub>C</sub>   | I <sub>PP</sub> = 1A (8 x 20us pulse)<br>(Pin1-Pin2) |     |     | 9    | V    |
| Clamping Voltage        | V <sub>C</sub>   | I <sub>PP</sub> = 4A (8 x 20us pulse)<br>(Pin1-Pin2) |     |     | 15   | V    |
| Junction Capacitance    | C <sub>J</sub>   | V <sub>R</sub> = 0V, f = 1MHz                        |     | 0.5 |      | pF   |

## Characteristic Curves

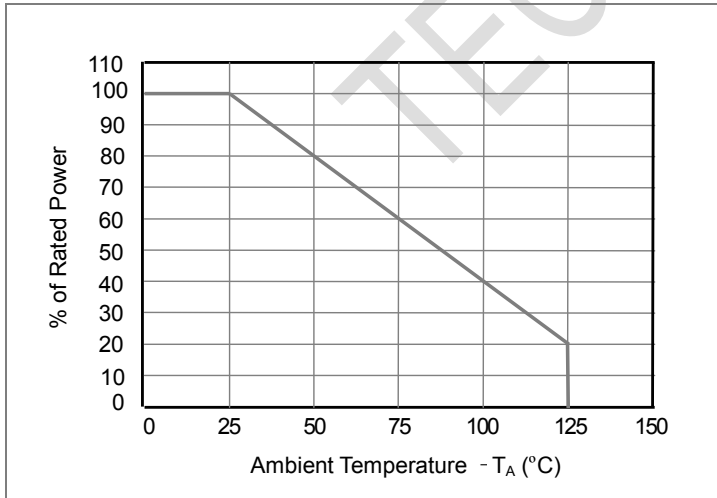
**Fig1. 8/20 $\mu$ s Pulse Waveform**



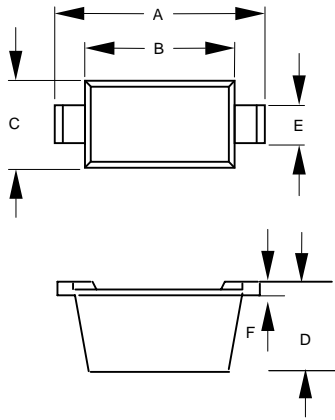
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**



**Outline Drawing - SOD-923(0402)**



| DIM | DIMENSIONS |      |      |      | NOTE |
|-----|------------|------|------|------|------|
|     | INCHES     |      | MM   |      |      |
|     | MIN        | MAX  | MIN  | MAX  |      |
| A   | .037       | .041 | 0.95 | 1.05 |      |
| B   | .030       | .033 | 0.75 | 0.85 |      |
| C   | .022       | .026 | 0.55 | 0.65 |      |
| D   | .014       | .017 | 0.36 | 0.43 |      |
| E   | .006       | .010 | 0.15 | 0.25 |      |
| F   | .003       | .007 | 0.07 | 0.17 |      |

**Land Pattern - SOD-923(0402)**

