

## Features

- ◆ 350W peak pulse power(8/20 $\mu$ s)
- ◆ Protects one bi-directional or two uni-directional lines
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 5V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30$ kV  
Contact discharge:  $\pm 30$ kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 27A (8/20 $\mu$ s)
- ◆ RoHS Compliant

## Mechanical Characteristics

- ◆ Package: SOT-23
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J STD 020

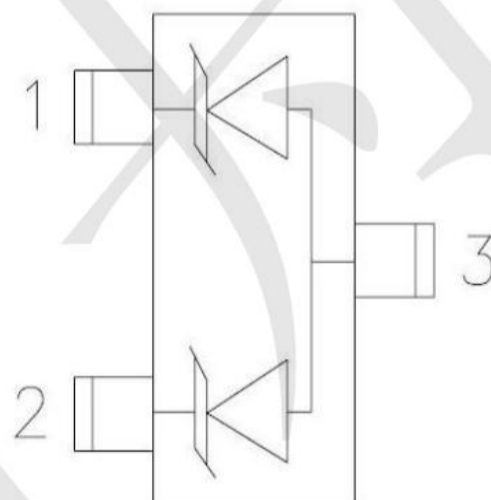
## Applications

- ◆ Cellular Handsets and Accessories
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Set Top Box
- ◆ Industrial Controls

## Ordering Information

| Part Number | Qty per Reel | Reel Size |
|-------------|--------------|-----------|
| ESD5V0AP    | 3000         | 7"        |

## Dimensions and Pin Configuration



**Marking: 5M**

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

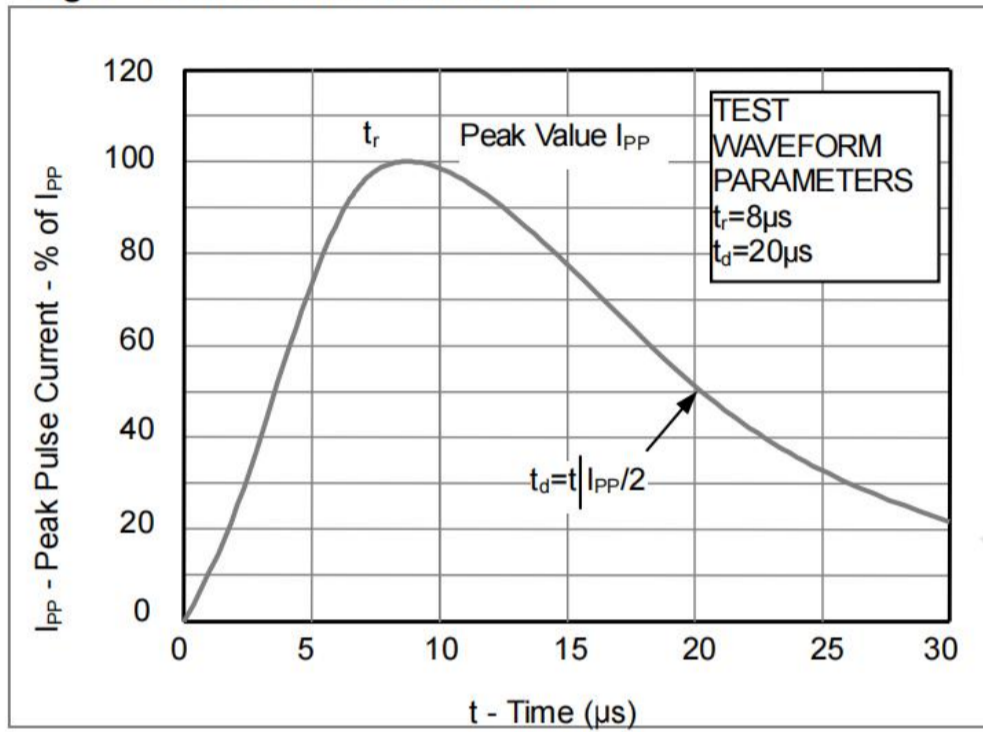
| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk              | 350         | W    |
| Peak Pulse Current (8/20μs)     | I <sub>PP</sub>  | 27          | A    |
| ESD per IEC 61000-4-2 (Air)     | VESD             | ± 30        | kV   |
| ESD per IEC 61000-4-2 (Contact) |                  | ± 30        |      |
| Operating Temperature Range     | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range       | T <sub>stg</sub> | -55 to +150 | °C   |

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

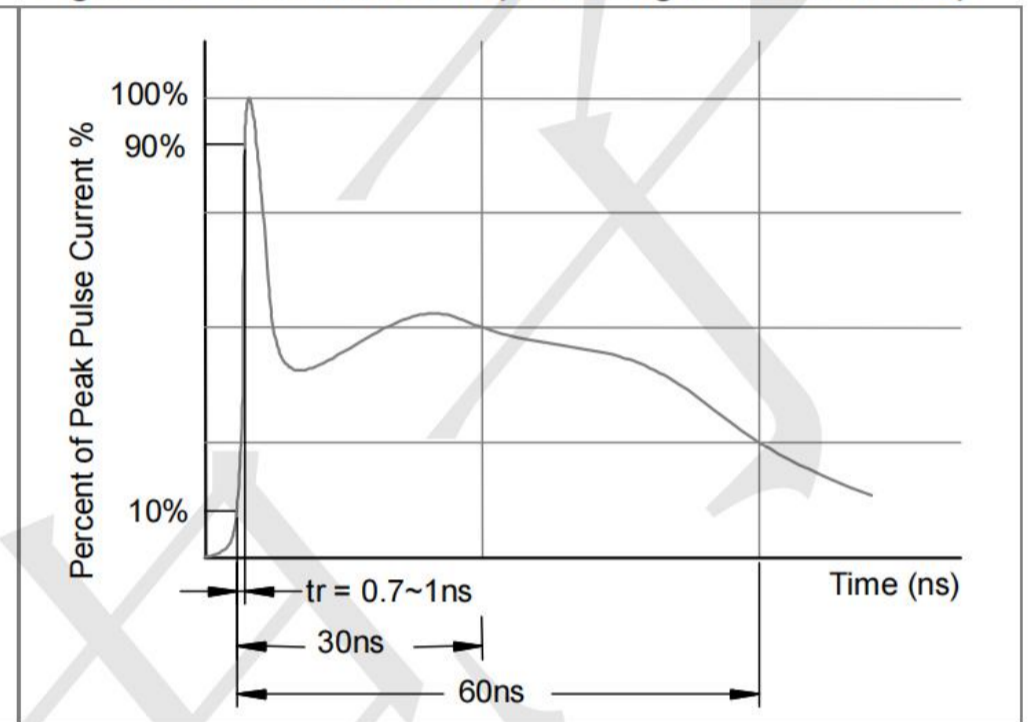
| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition  |
|-------------------------|------------------|-----|-----|-----|------|---|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 5   | V    |   |
| Breakdown Voltage       | V <sub>BR</sub>  | 6   |     |     | V    | I <sub>T</sub> = 1mA  |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.1 | μA   | V <sub>RWM</sub> = 5V                                       |
| Forward Voltage         | V <sub>F</sub>   |     | 0.8 | 1.2 | V    | I <sub>F</sub> = 10mA                                       |
| Clamping Voltage        | V <sub>C</sub>   |     | 7   |     | V    | I <sub>PP</sub> = 1A (8 x 20μs pulse)                       |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 20  | V    | I <sub>PP</sub> = 27A (8 x 20μs pulse)                      |
| Junction Capacitance    | C <sub>J</sub>   |     |     | 200 | pF   | V <sub>R</sub> =0, f=1MHz, Pin 1 to Pin 3 or Pin 2 to Pin 3 |
| Junction Capacitance    | C <sub>J</sub>   |     | 90  |     | pF   | V <sub>R</sub> =0, f=1MHz, Pin 1 to Pin 2                   |

**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**

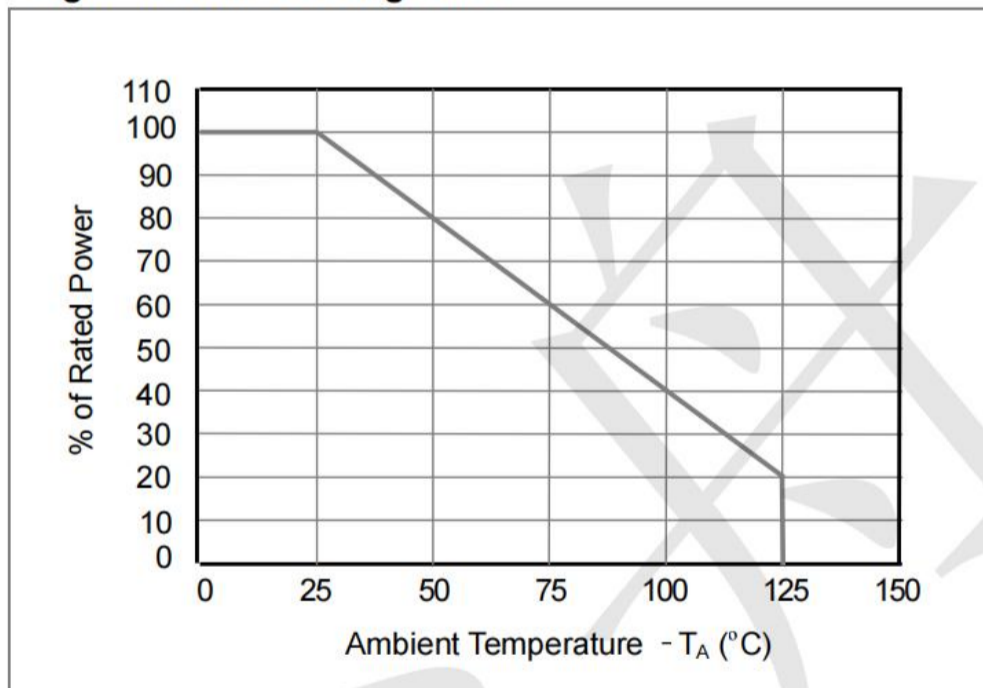
**Fig1. 8/20 $\mu\text{s}$  Pulse Waveform**



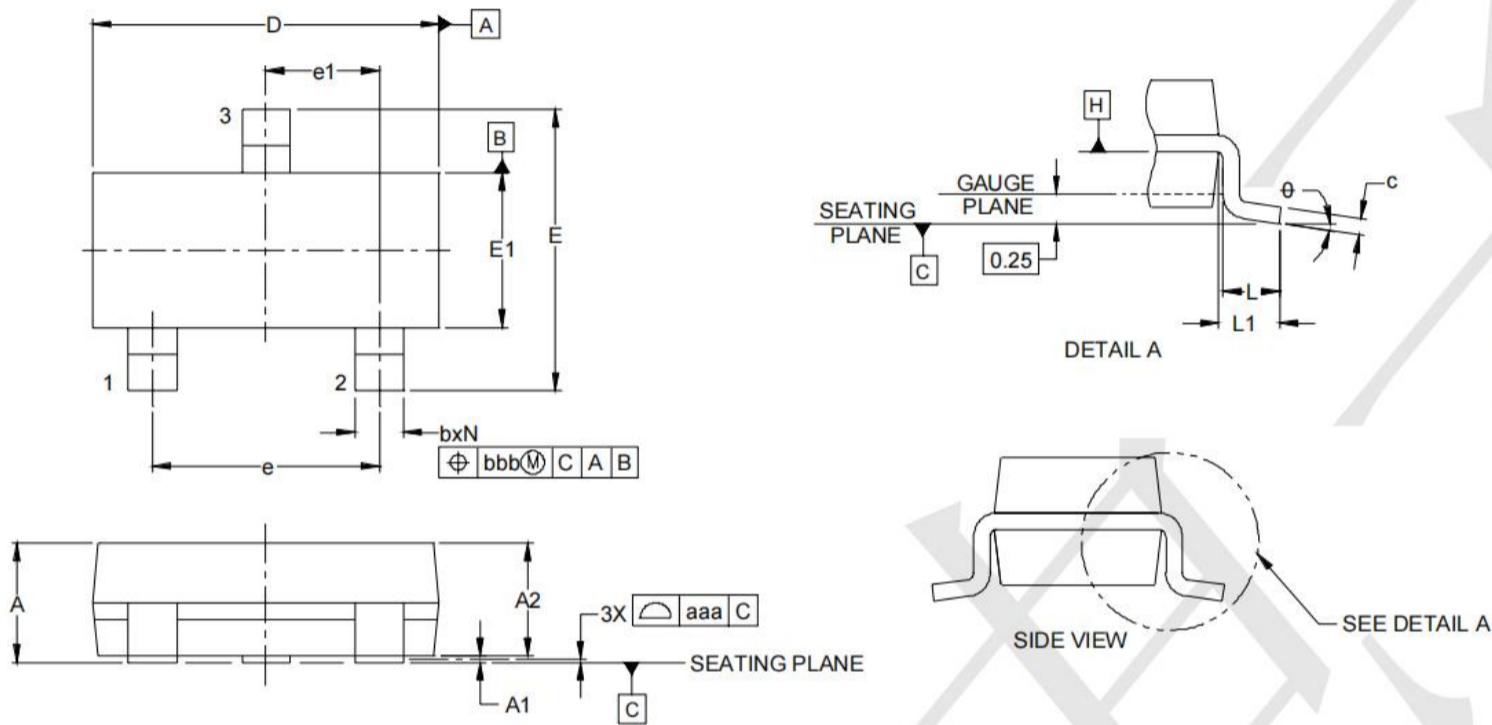
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**



**Outline Drawing - SOT23**



| DIM      | INCHES |      |      | MILLIMETERS |      |      |
|----------|--------|------|------|-------------|------|------|
|          | MIN    | NOM  | MAX  | MIN         | NOM  | MAX  |
| A        | .035   | -    | .044 | 0.89        | -    | 1.12 |
| A1       | .000   | -    | .004 | 0.01        | -    | 0.10 |
| A2       | .035   | .037 | .040 | 0.88        | 0.95 | 1.02 |
| b        | .012   | -    | .020 | 0.30        | -    | 0.51 |
| c        | .003   | -    | .007 | 0.08        | -    | 0.18 |
| D        | .110   | .114 | .120 | 2.80        | 2.90 | 3.04 |
| E        | .082   | .093 | .104 | 2.10        | 2.37 | 2.64 |
| E1       | .047   | .051 | .055 | 1.20        | 1.30 | 1.40 |
| e        | .075   |      |      | 1.90 BSC    |      |      |
| e1       | .037   |      |      | 0.95 BSC    |      |      |
| L        | .015   | .020 | .024 | 0.40        | 0.50 | 0.60 |
| L1       | .022   |      |      | (0.55)      |      |      |
| N        | 3      |      |      | 3           |      |      |
| $\theta$ | 0°     | -    | 8°   | 0°          | -    | 8°   |
| aaa      | .004   |      |      | 0.10        |      |      |
| bbb      | .008   |      |      | 0.20        |      |      |

**Land Pattern - SOT23**

