

## Features

- ◆ 380W peak pulse power(8/20 $\mu$ s)
- ◆ Protects one bi-directional or two uni-directional lines
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 12V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm$ 30kV  
Contact discharge:  $\pm$ 30kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 12A (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

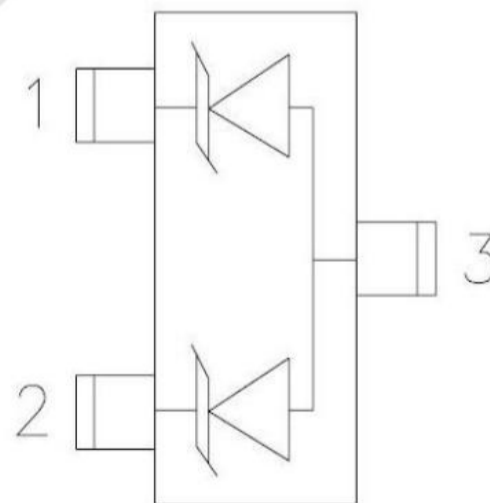
## Applications

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

## Ordering Information

| Part Number | Qty per Reel | Reel Size |
|-------------|--------------|-----------|
| SM15        | 3000         | 7"        |

## Dimensions and Pin Configuration



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

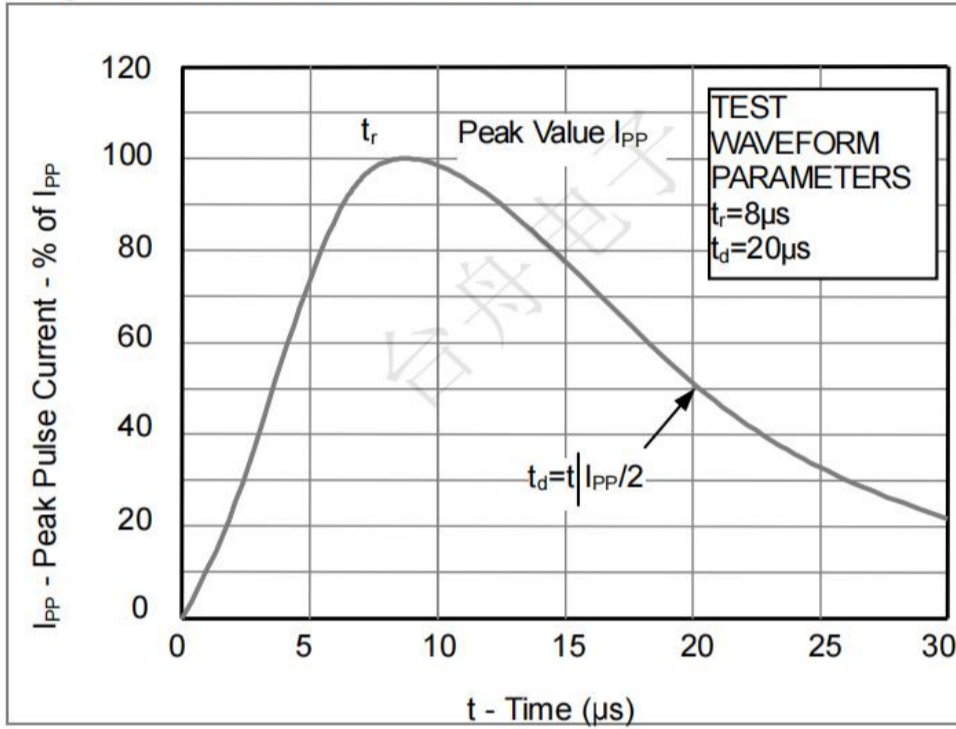
| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk              | 380         | W    |
| Peak Pulse Current (8/20μs)     | I <sub>PP</sub>  | 12          | A    |
| 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)

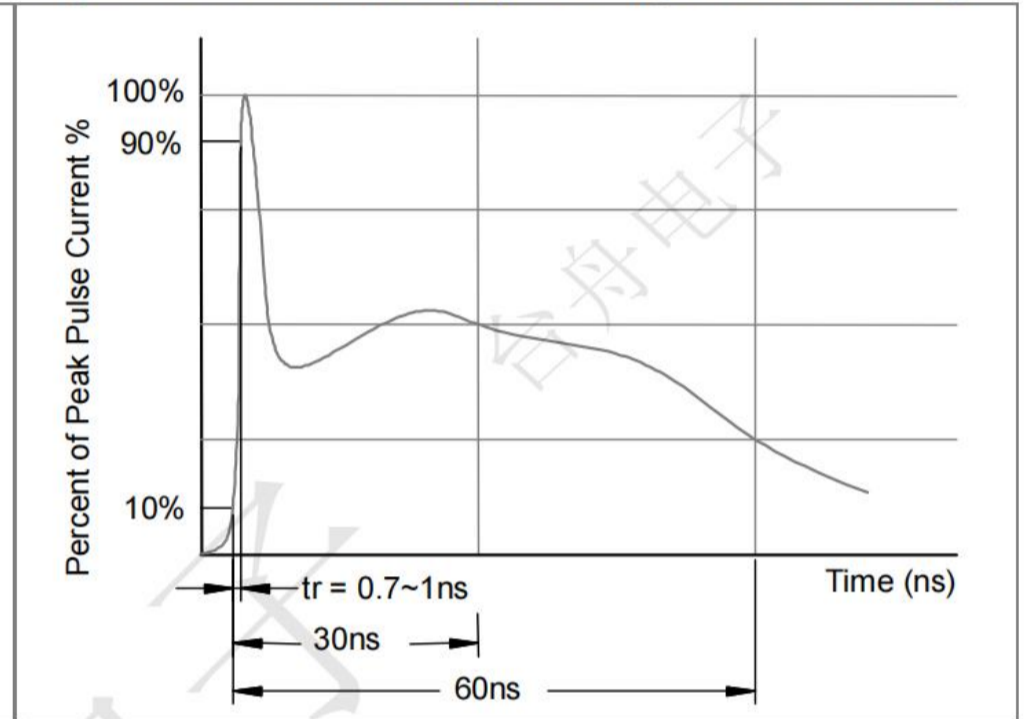
| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition  |
|-------------------------|------------------|-----|-----|-----|------|---|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 15  | V    |   |
| Breakdown Voltage       | V <sub>BR</sub>  | 16  |     |     | V    | I <sub>T</sub> = 1mA  |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.1 | μA   | V <sub>RWM</sub> = 36V                                      |
| Forward Voltage         | V <sub>F</sub>   |     | 0.8 | 1.2 | V    | I <sub>F</sub> = 10mA                                       |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 27  | V    | I <sub>PP</sub> = 5A (8 x 20μs pulse)                       |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 33  | V    | I <sub>PP</sub> = 12 A (8 x 20μs pulse)                     |
| Junction Capacitance    | C <sub>J</sub>   |     |     | 85  | 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>   |     | 40  |     | 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)**

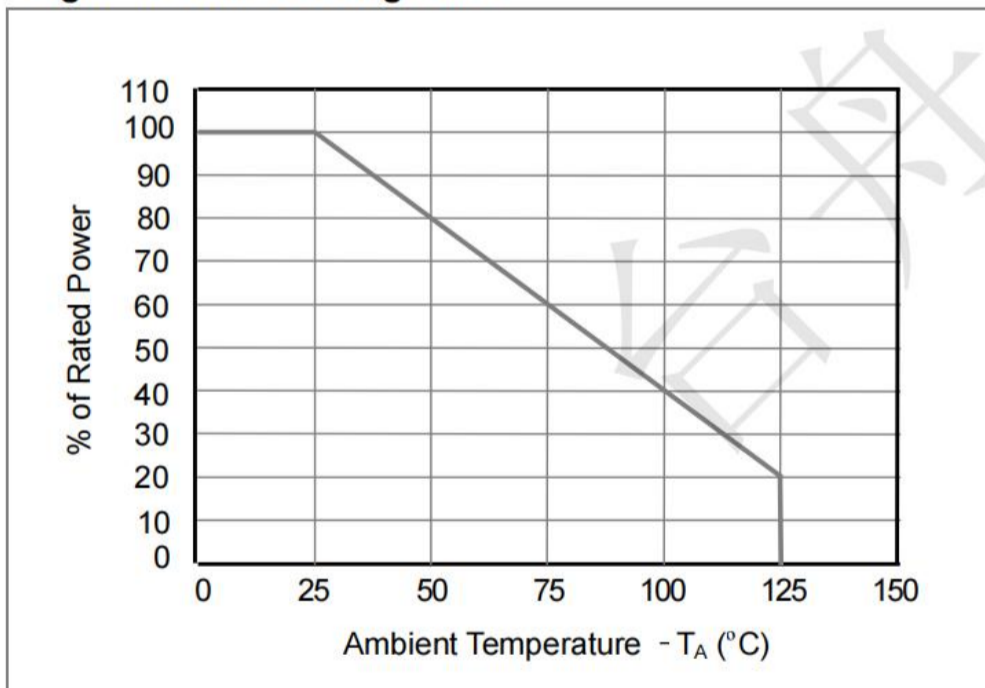
**Fig1. 8/20 $\mu\text{s}$  Pulse Waveform**



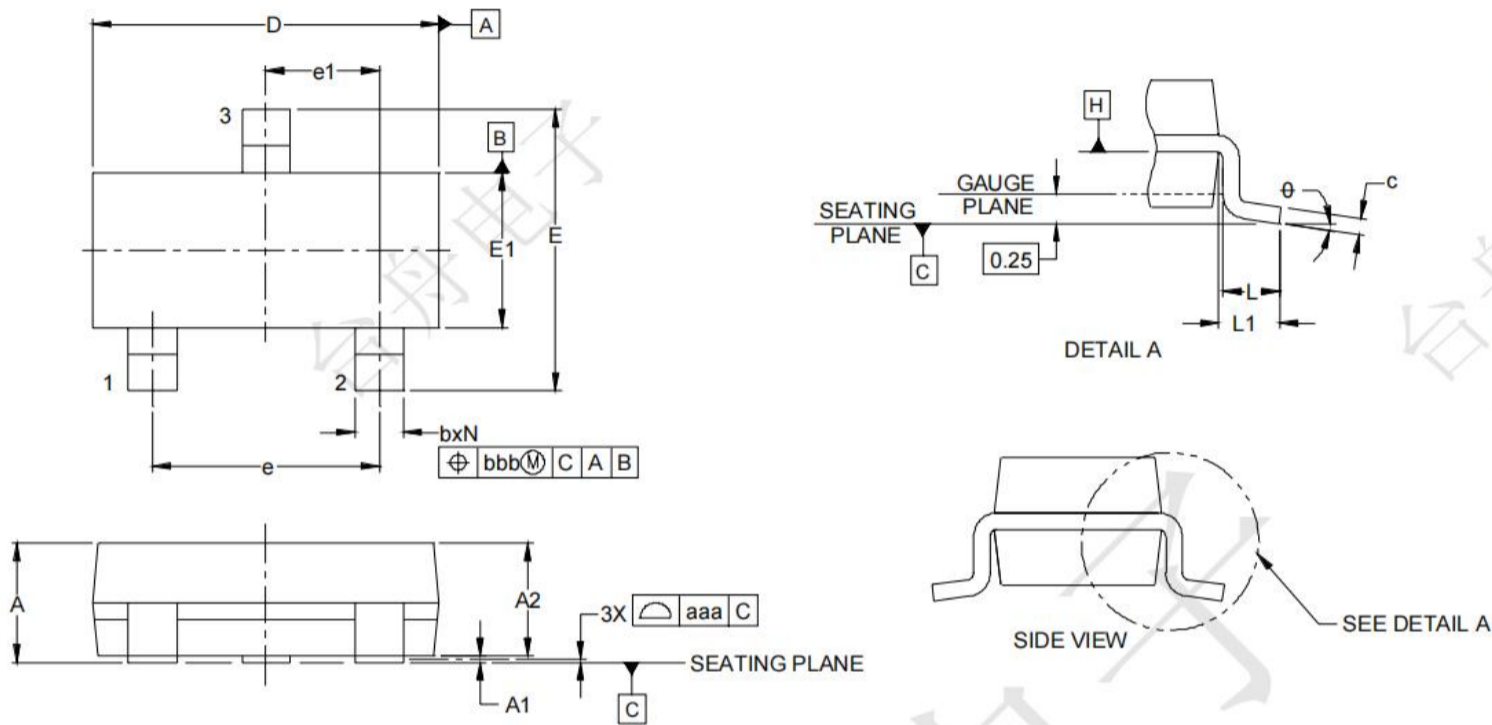
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



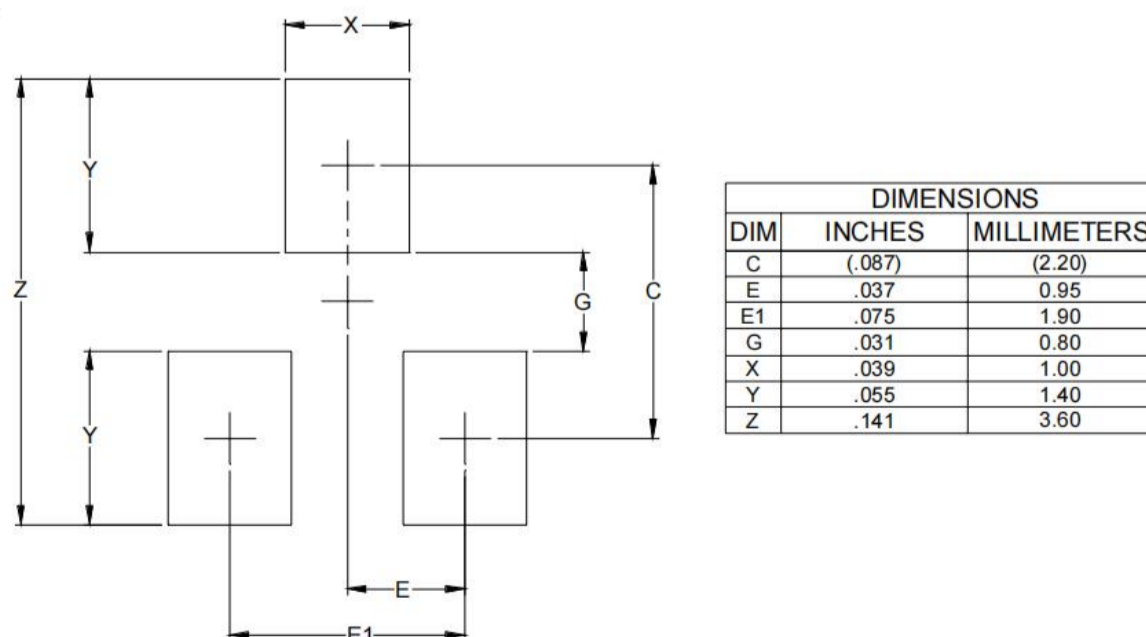
**Fig3. Power Derating Curve**



**Outline Drawing - SOT23**



**Land Pattern - SOT23**



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