

### Features

- \* 1300W peak pulse power ( 8/20 $\mu$ s)
- \* Protects one data or power line
- \* Ultra low leakage: nA level
- \* Operating voltage: 12V
- \* Ultra low clamping voltage
- \* Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30$ kV  
Contact discharge:  $\pm 30$ kV
  - IEC61000-4-5 (Lightning) 46A (8/20 $\mu$ s)
- \* RoHS Compliant

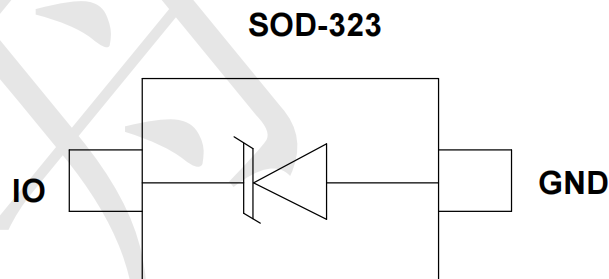
### Mechanical Characteristics

- \* Package: SOD-323
- \* Lead Finish: Matte Tin
- \* Case Material: "Green" Molding Compound.
- \* UL Flammability Classification Rating 94V-0
- \* Moisture Sensitivity: Level 3 per J-STD-020
- \* Terminal Connections: See Diagram Below
- \* Shipping Qty :3000 /7Inch Tape & Reel

### Applications

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

### Dimensions and Pin Configuration



**Marking: QB**

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

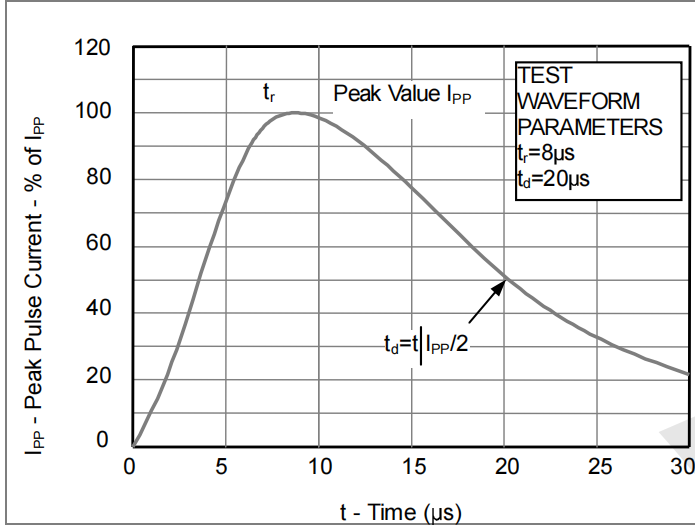
| Parameter                       | Symbol | Value       | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk    | 1300        | W    |
| Peak Pulse Current (8/20μs)     | IPP    | 46          | A    |
| ESD per IEC 61000-4-2 (Air)     | VESD   | ±30         | kV   |
| ESD per IEC 61000-4-2 (Contact) |        | ±30         |      |
| Operating Temperature Range     | TJ     | -55 to +125 | °C   |
| Storage Temperature Range       | Tstg   | -55 to +150 | °C   |

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

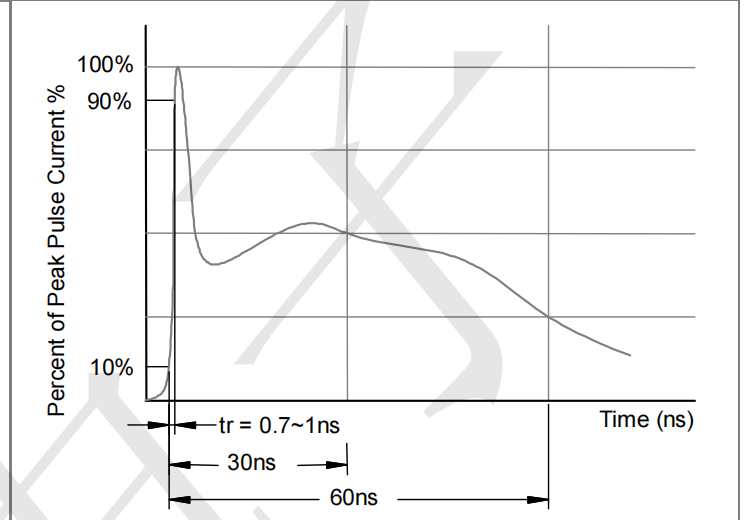
| Parameter               | Symbol | Min | Typ | Max | Unit | Test Condition             |
|-------------------------|--------|-----|-----|-----|------|----------------------------|
| Reverse Working Voltage | VRWM   |     |     | 12  | V    |                            |
| Breakdown Voltage       | VBR    | 13  | 14  | 17  | V    | IT = 1mA                   |
| Reverse Leakage Current | IR     |     |     | 1   | μA   | VRWM = 12V                 |
| Forward Voltage         | VF     |     | 0.8 | 1.2 | V    | IF=10mA                    |
| Clamping Voltage        | VC     |     | 20  |     | V    | IPP = 10A (8 x 20μs pulse) |
| Clamping Voltage        | VC     |     | 28  | 30  | V    | IPP = 46A (8 x 20μs pulse) |
| Junction Capacitance    | CJ     |     |     | 200 | pF   | VR = 0V, f = 1MHz          |

**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**

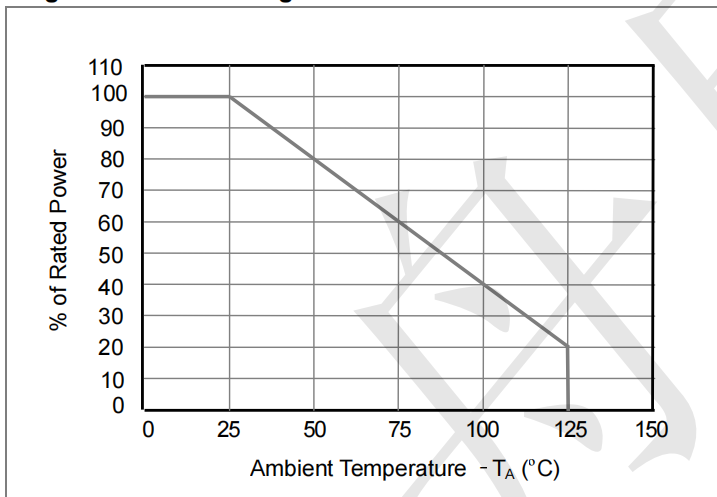
**Fig1. 8/20μs Pulse Waveform**



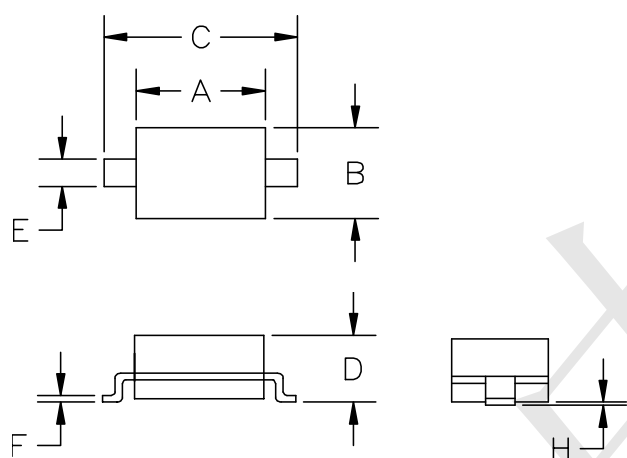
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**

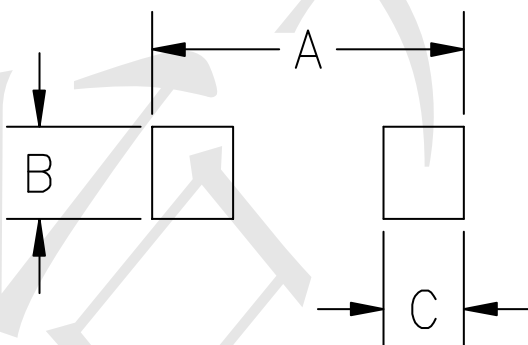


## Outline Drawing - SOD-323



| SYM | DIMENSIONS  |      |        |       |
|-----|-------------|------|--------|-------|
|     | MILLIMETERS |      | INCHES |       |
|     | MIN         | MAX  | MIN    | MAX   |
| A   | 1.50        | 1.80 | 0.060  | 0.071 |
| B   | 1.20        | 1.40 | 0.045  | 0.054 |
| C   | 2.30        | 2.70 | 0.090  | 0.107 |
| D   | -           | 1.10 | -      | 0.043 |
| E   | 0.30        | 0.40 | 0.012  | 0.016 |
| F   | 0.10        | 0.25 | 0.004  | 0.010 |
| H   | -           | 0.10 | -      | 0.004 |

## Land Pattern - SOD-323



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| A   | 3.15        | 0.120  |
| B   | 0.80        | 0.031  |
| C   | 0.80        | 0.031  |