

Features

- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 5V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 10A (8/20 μs)
- ◆ 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

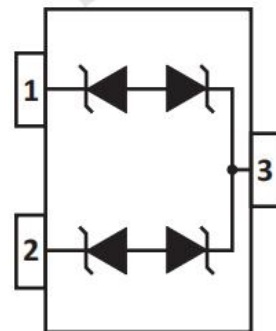
Applications

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

Ordering Information

| Part Number | Qty per Reel | Reel Size |
|-------------|--------------|-----------|
| PESD5V0S2BT | 3000 | 7" |

Dimensions and Pin Configuration



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

| Parameter | Symbol | Value | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Current (8/20μs) | Ipp | 10 | 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 | | | 5 | V | |
| Breakdown Voltage | VBR | | 6.4 | | V | IT = 1mA |
| Reverse Leakage Current | IR | | | 0.06 | uA | VRWM = 5V |
| Clamping Voltage | VC | | | 7.5 | V | Ipp=1A(8x 20us pulse) |
| Clamping Voltage | VC | | | 10 | V | Ipp=10A (8x 20us pulse) |
| Junction Capacitance | CJ | | 15 | 20 | pF | VR=0, f=1MHz, Pin 1 to Pin 3 or Pin 2 to Pin 3 |
| Junction Capacitance | CJ | | 7 | | pF | VR=0, f=1MHz, Pin1 to Pin 2 or Pin 2 to Pin1 |

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

Fig1. 8/20 μs Pulse Waveform

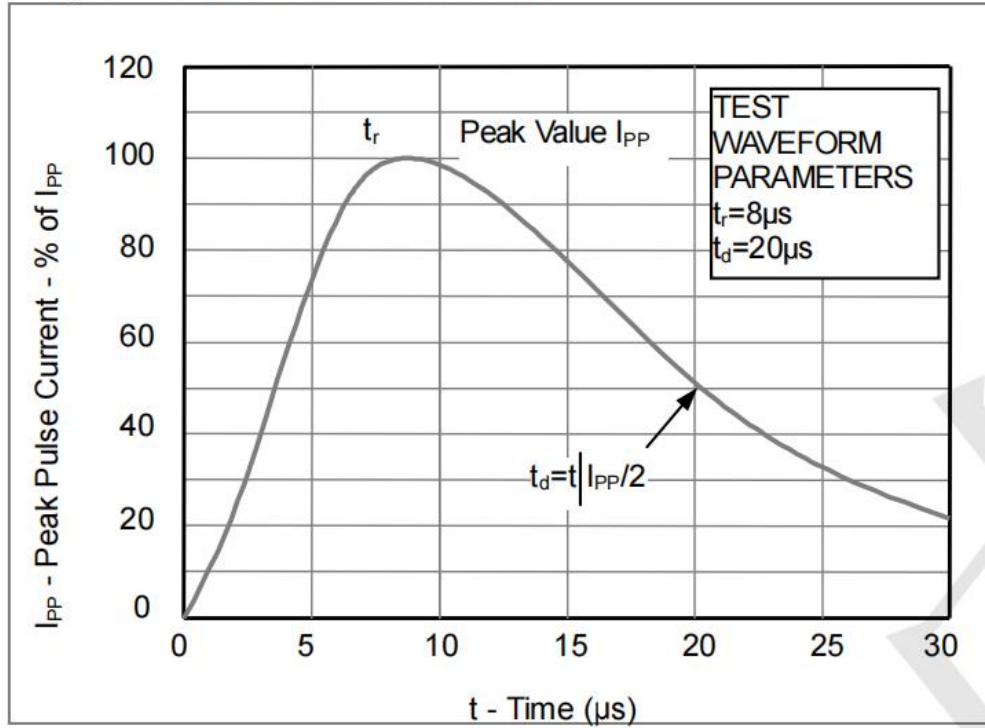


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

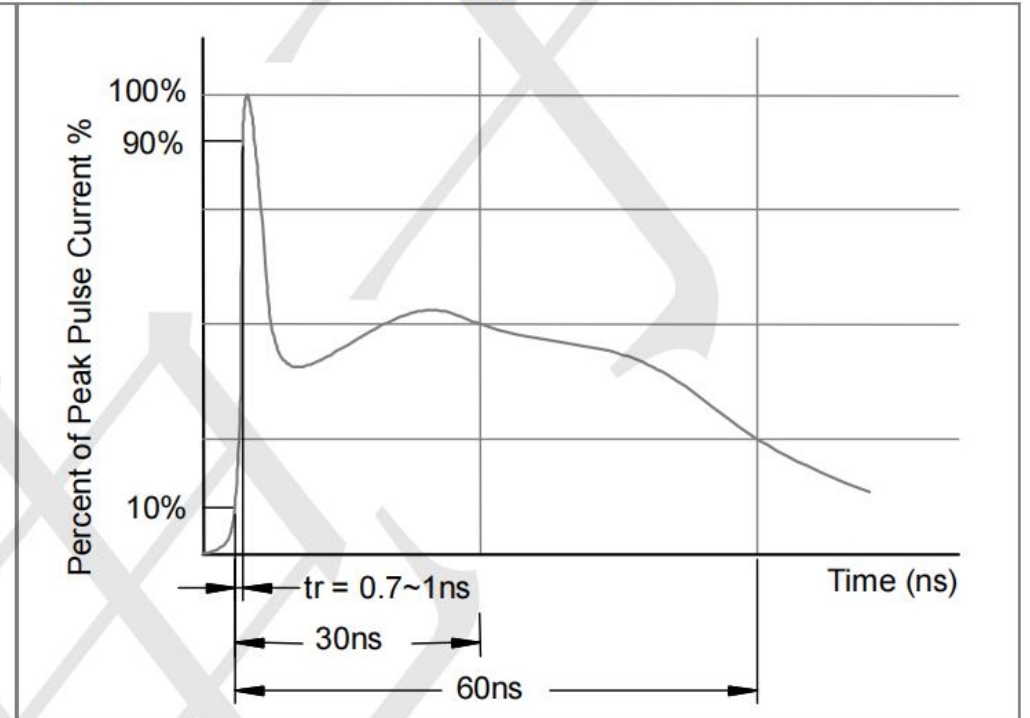
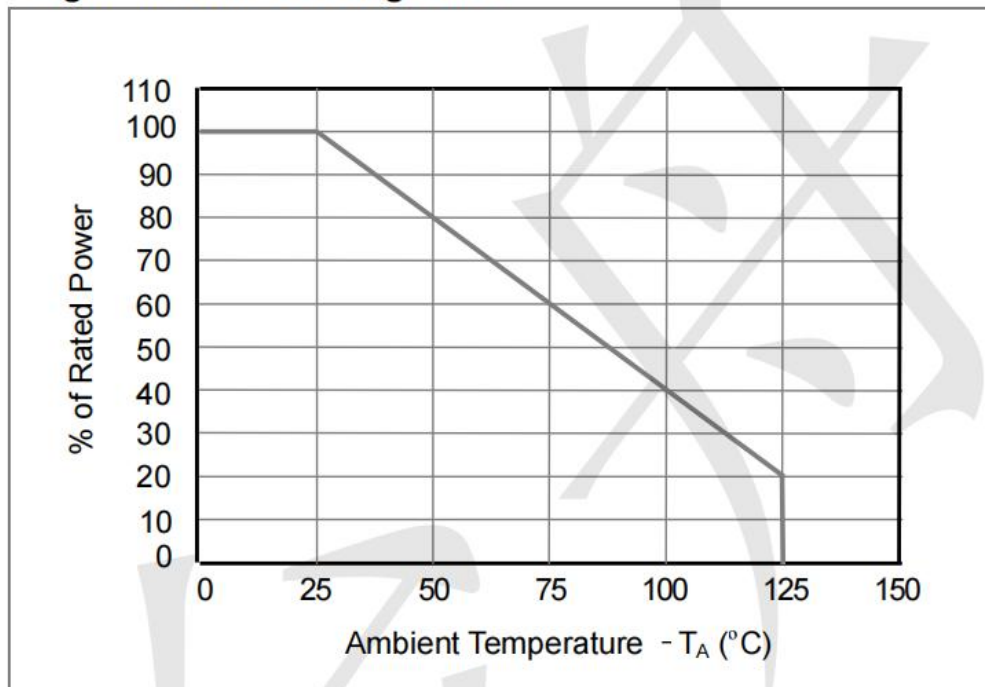
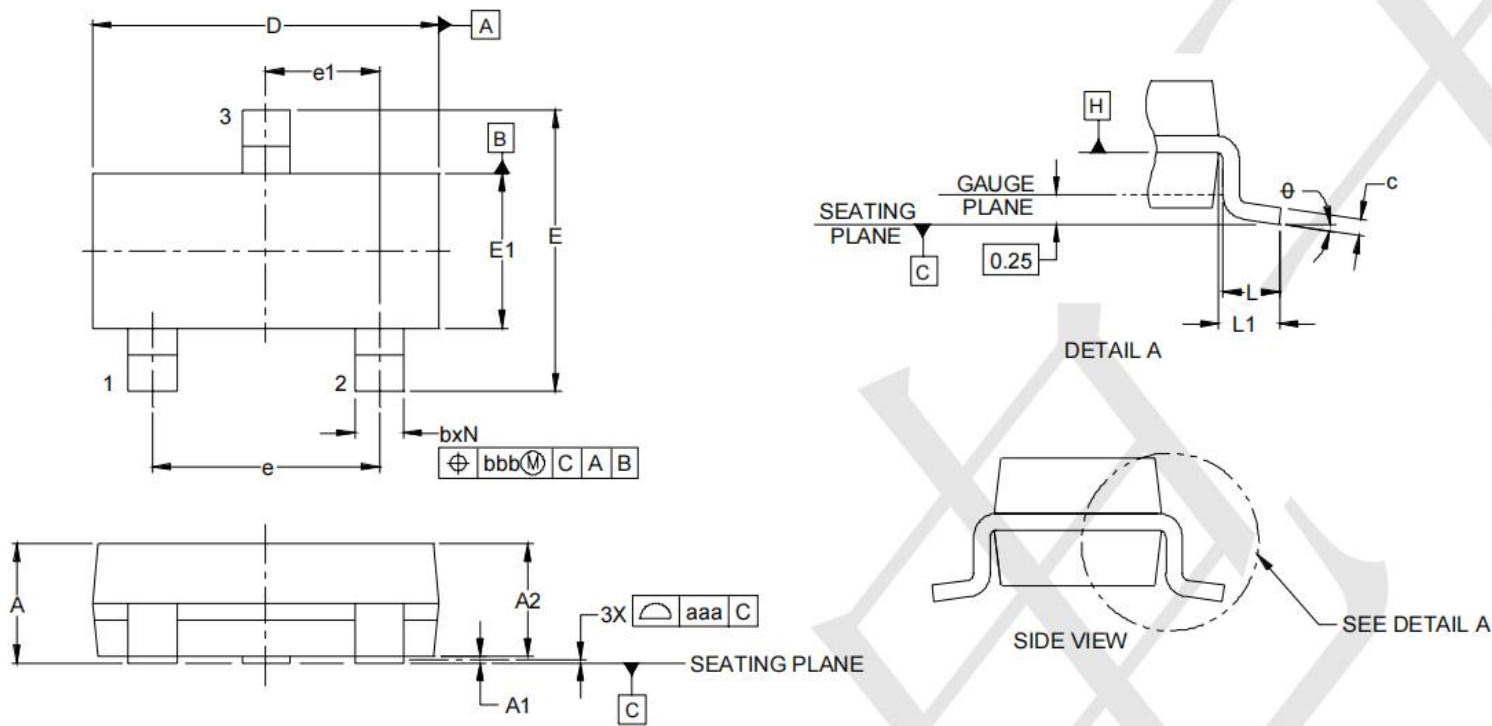


Fig3. Power Derating Curve

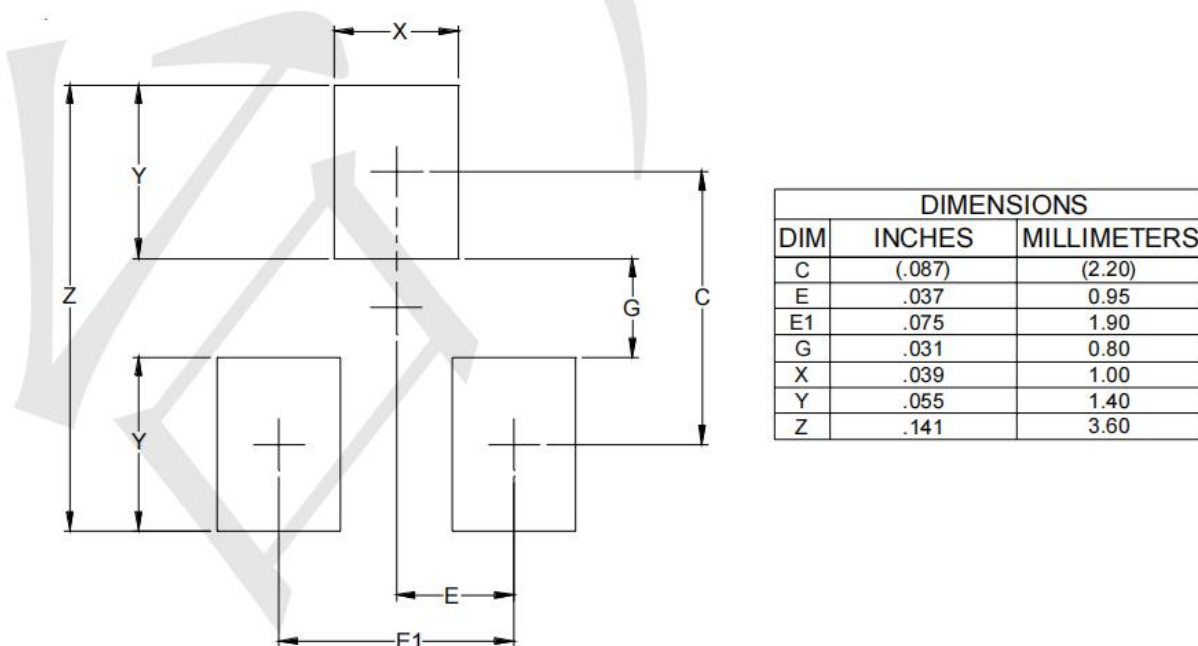


Outline Drawing - SOT23



| 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 | | |
| θ | 0° | - | 8° | 0° | - | 8° |
| aaa | .004 | | | 0.10 | | |
| bbb | .008 | | | 0.20 | | |

Land Pattern - SOT23



| DIM | DIMENSIONS | |
|-----|------------|-------------|
| | INCHES | MILLIMETERS |
| C | (.087) | (2.20) |
| E | .037 | 0.95 |
| E1 | .075 | 1.90 |
| G | .031 | 0.80 |
| X | .039 | 1.00 |
| Y | .055 | 1.40 |
| Z | .141 | 3.60 |