

## Features

- Ultra low capacitance: 0.35pF Max
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - – IEC61000-4-5 (Lightning)4A (8/20  $\mu\text{s}$ )
- RoHS Compliant
- Lead Finish: NiPdAu

## Mechanical Characteristics

- Package: SOT-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

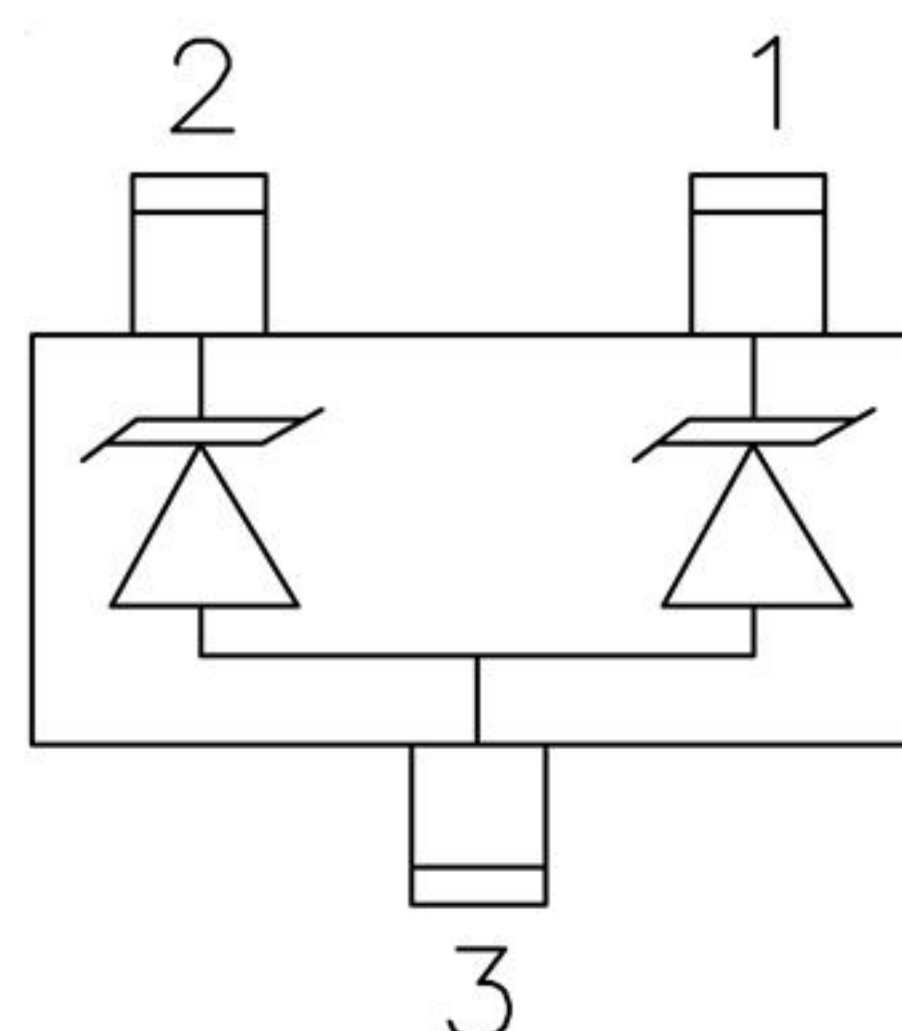
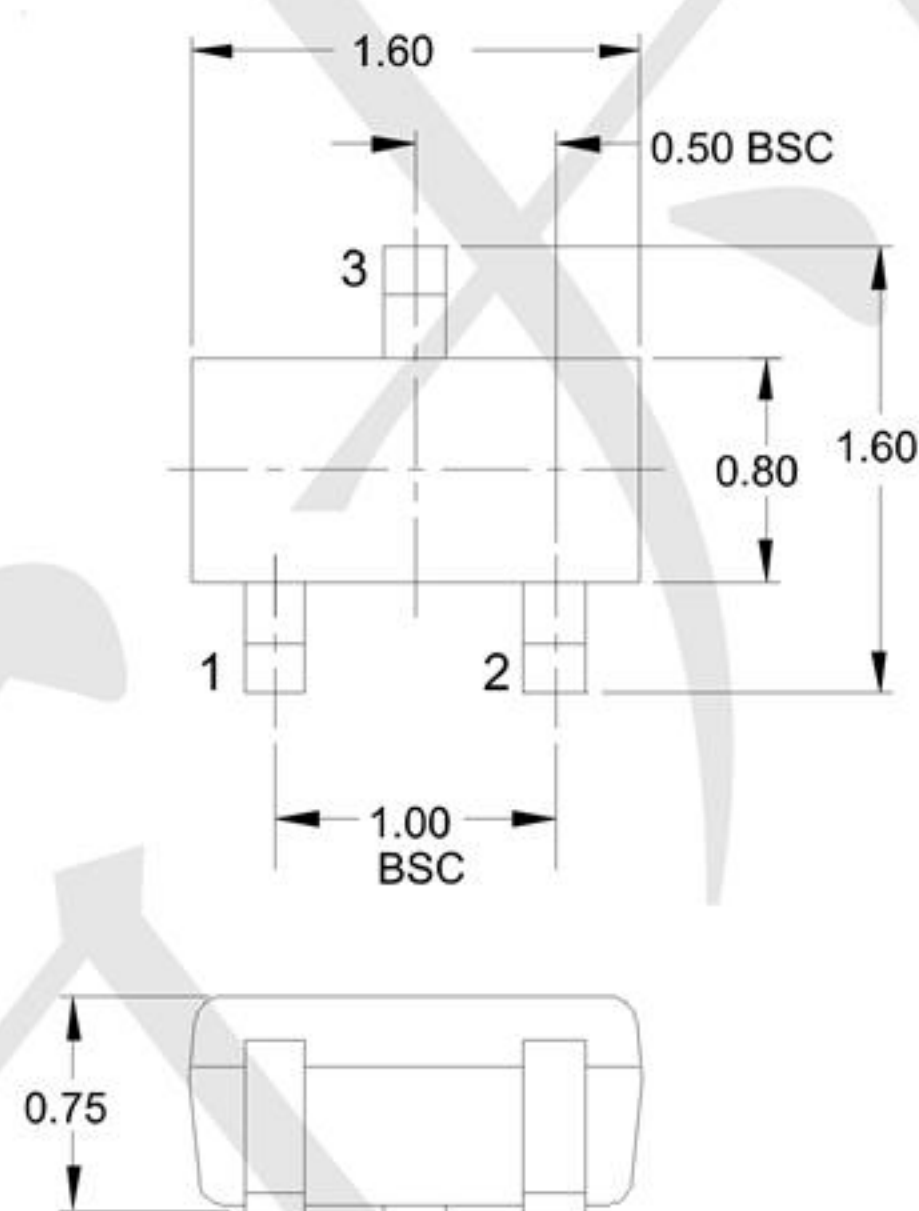
## Applications

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

## Ordering Information

| Part Number  | Qty per Reel | Reel Size |
|--------------|--------------|-----------|
| RCLAMP0502BA | 3000         | 7"        |

## Dimensions and Pin Configuration



**Marking: P5 Or P5\***

\* =DATE CODE



**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            | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | VESD   | ± 30<br>± 30 | kV   |
| 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   | 7.5  | 8.5  | V    | IT = 1mA                                 |
| Reverse Leakage Current | IR     |     |      | 0.07 | μA   | VRWM = 5V                                |
| Clamping Voltage        | VC     |     |      | 9    | V    | Ipp = 1A (8 x 20μs pulse)                |
| Clamping Voltage        | VC     |     |      | 15   | V    | Ipp = 4A (8 x 20us pulse)                |
| Junction Capacitance    | CJ     |     | 0.5  | 0.6  | pF   | VR = 0V, f = 1MHz, any I/O pin to ground |
|                         |        |     | 0.25 | 0.35 | pF   | VR = 0V, f = 1MHz, between I/O pins      |



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

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

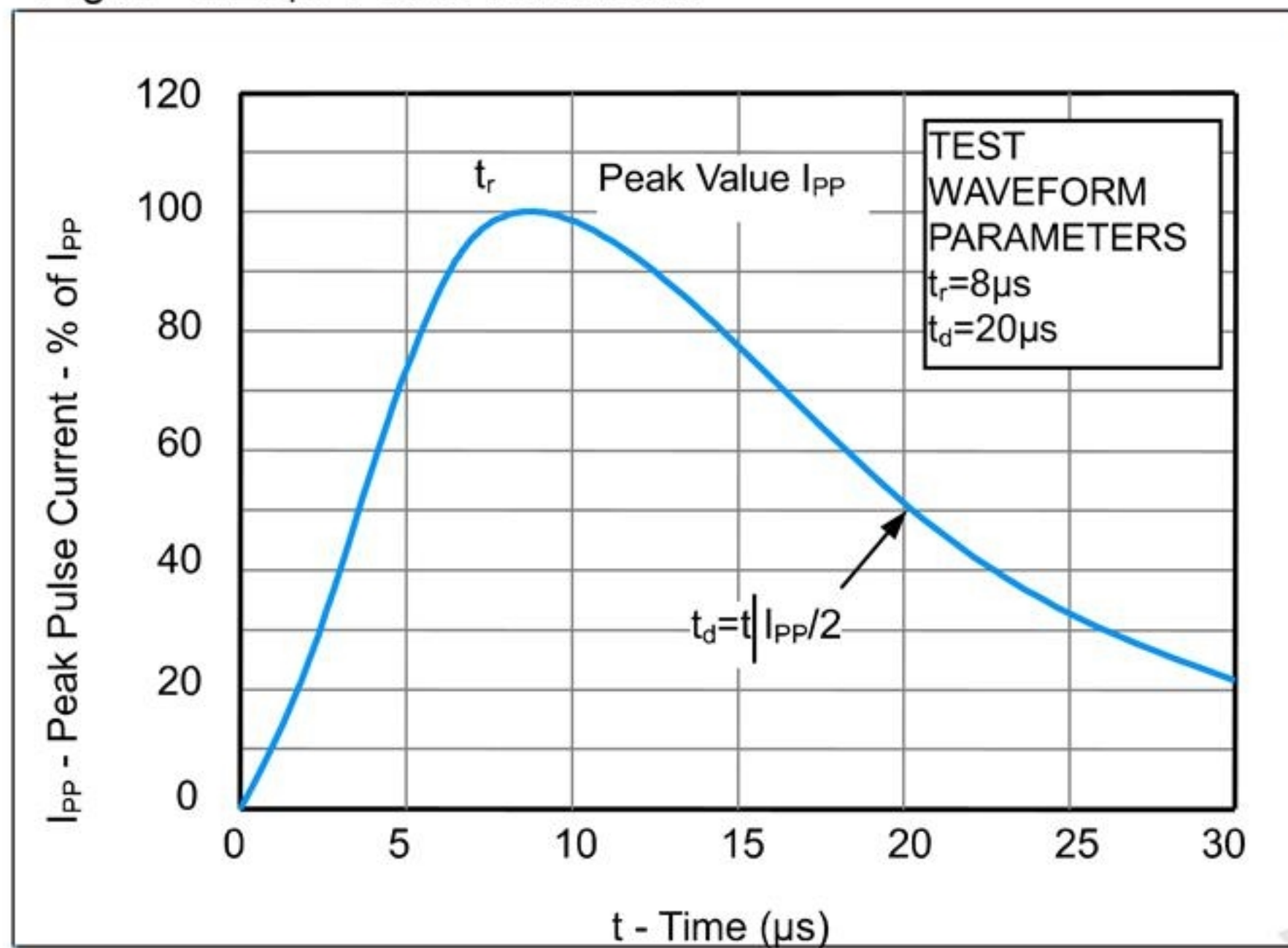


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

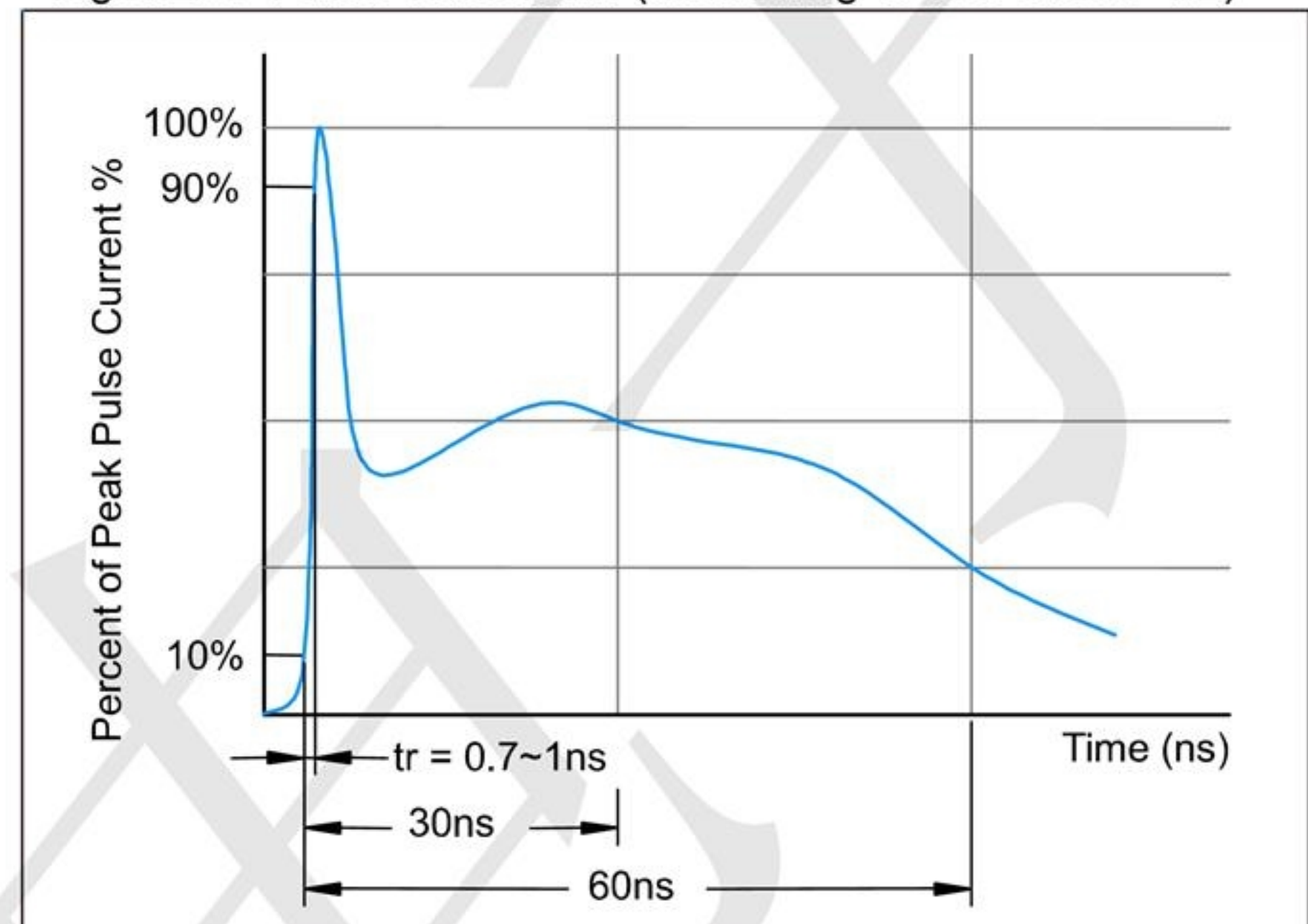
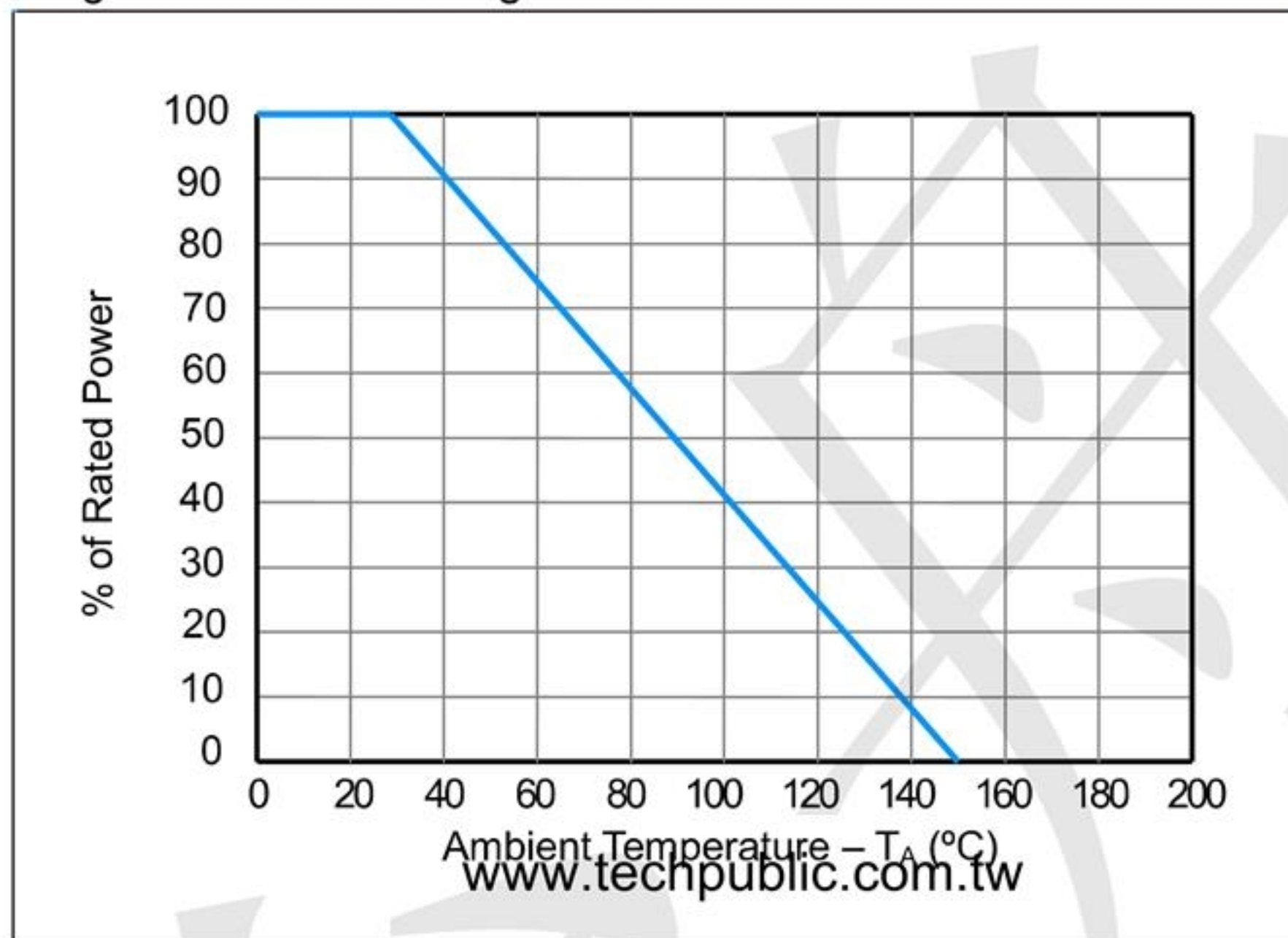
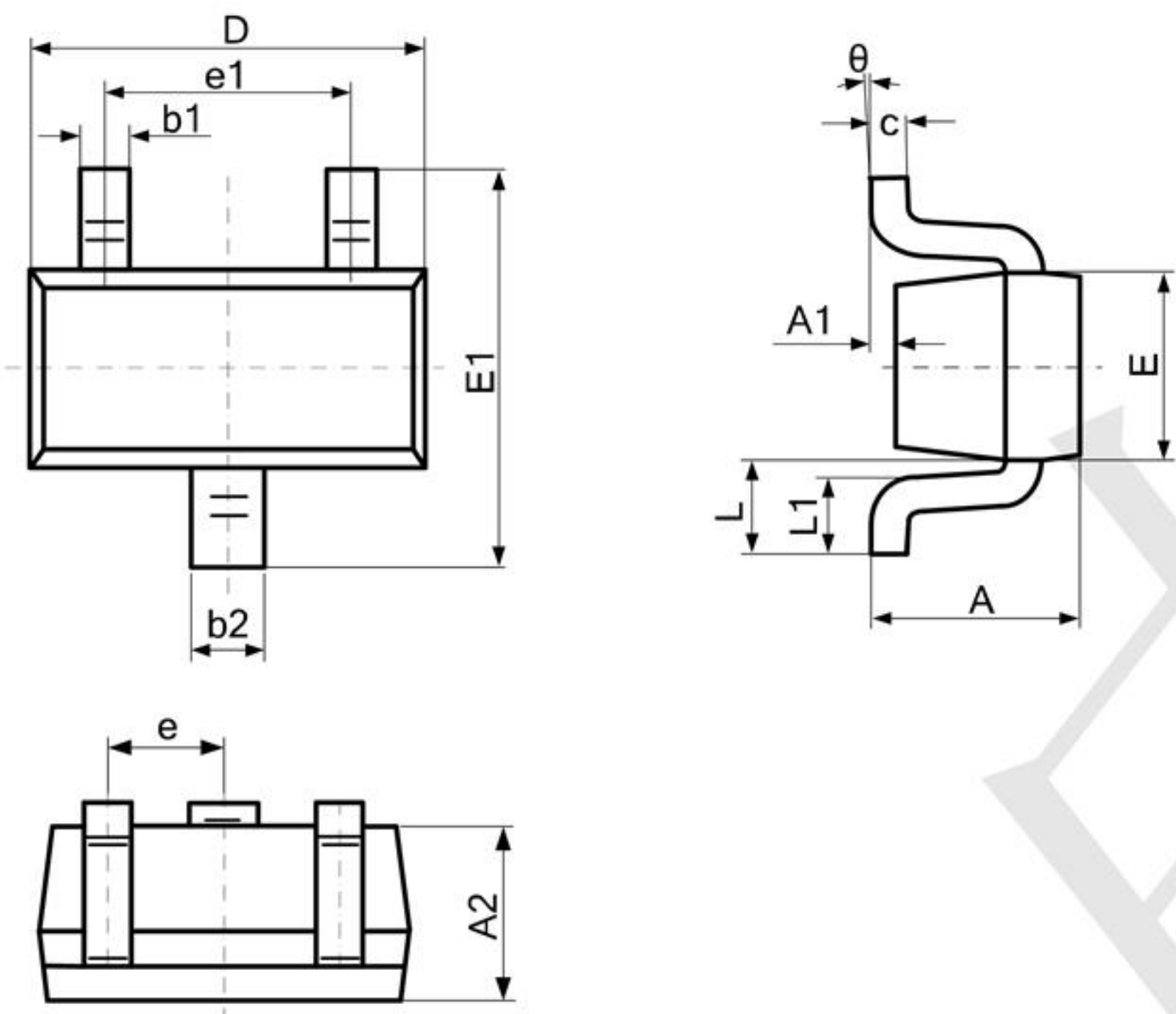


Fig3. Power Derating Curve



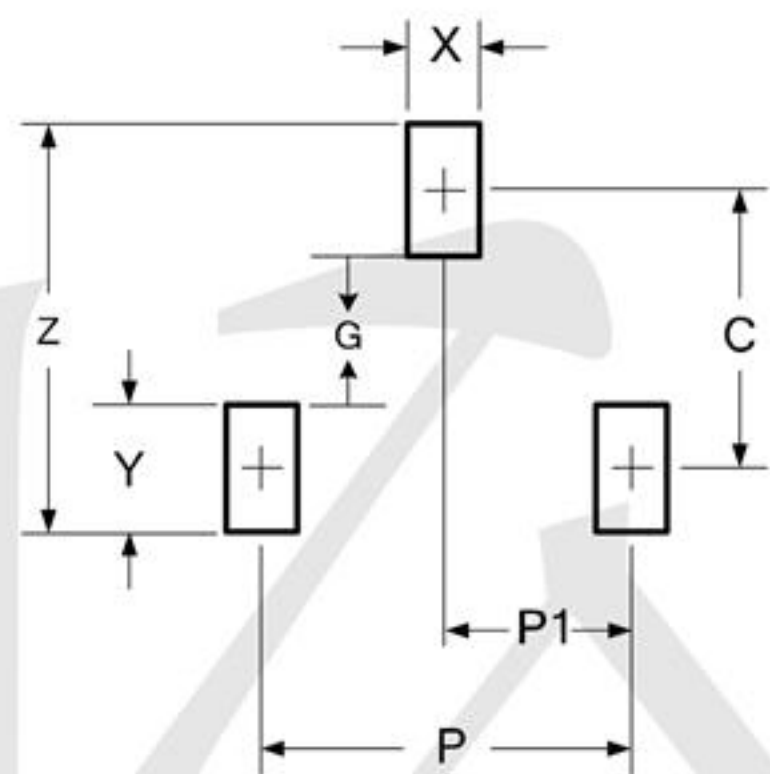


Outline Drawing - SOT-523



| DIMENSIONS |            |       |           |       |
|------------|------------|-------|-----------|-------|
| SYMBOL     | MILLIMETER |       | INCHES    |       |
|            | MIN        | MAX   | MIN       | MAX   |
| A          | 0.700      | 0.900 | 0.028     | 0.035 |
| A1         | 0.000      | 0.100 | 0.000     | 0.004 |
| A2         | 0.700      | 0.800 | 0.028     | 0.031 |
| b1         | 0.150      | 0.250 | 0.006     | 0.010 |
| b2         | 0.250      | 0.325 | 0.010     | 0.013 |
| c          | 0.100      | 0.200 | 0.004     | 0.008 |
| D          | 1.500      | 1.700 | 0.059     | 0.067 |
| E          | 0.750      | 0.850 | 0.030     | 0.033 |
| E1         | 1.450      | 1.750 | 0.057     | 0.069 |
| e          | 0.950 BSC  |       | 0.037 BSC |       |
| e1         | 0.900      | 1.100 | 0.035     | 0.043 |
| L          | 0.300      | 0.500 | 0.012     | 0.020 |
| L1         | 0.028      | 0.440 | 0.011     | 0.017 |
| θ          | 0          | 8°    | 0         | 8°    |

Land Pattern - SOT-523



| DIMENSIONS |        |             |
|------------|--------|-------------|
| DIM        | INCHES | MILLIMETERS |
| C          | .055   | 1.40        |
| P          | .039   | 1.00        |
| P1         | .020   | 0.50        |
| G          | .024   | 0.60        |
| X          | .016   | 0.40        |
| Y          | .031   | 0.80        |
| Z          | .087   | 2.20        |