

## Features

- Ultra low capacitance: 0.5pF typical (IO to IO)
- Ultra low leakage: nA level
- Low operating voltage: 24V
- Complies with following standards:
- – IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 25\text{kV}$   
Contact discharge:  $\pm 15\text{kV}$
- – IEC 61000-4-5 (Lightning) 2A (8/20 $\mu\text{s}$ )
- RoHS Compliant

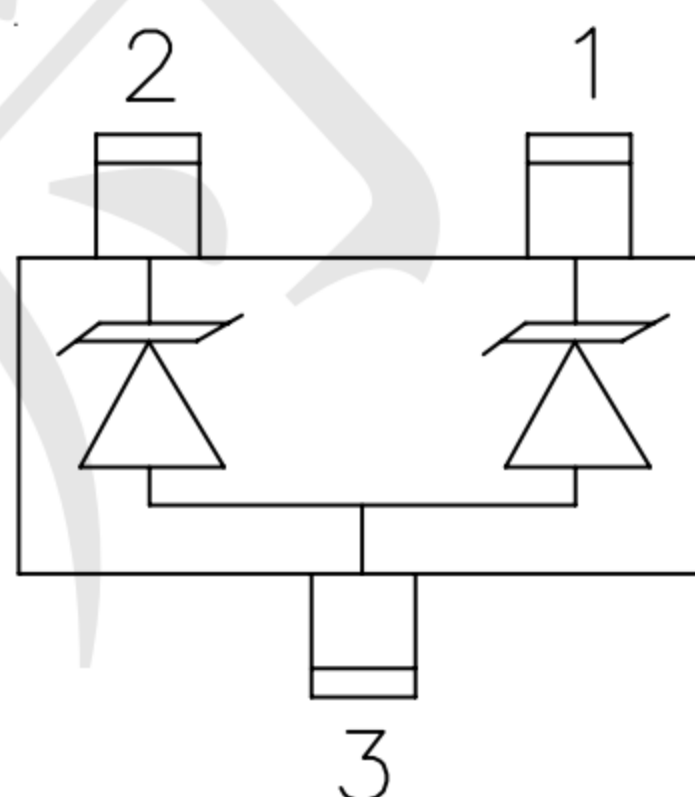
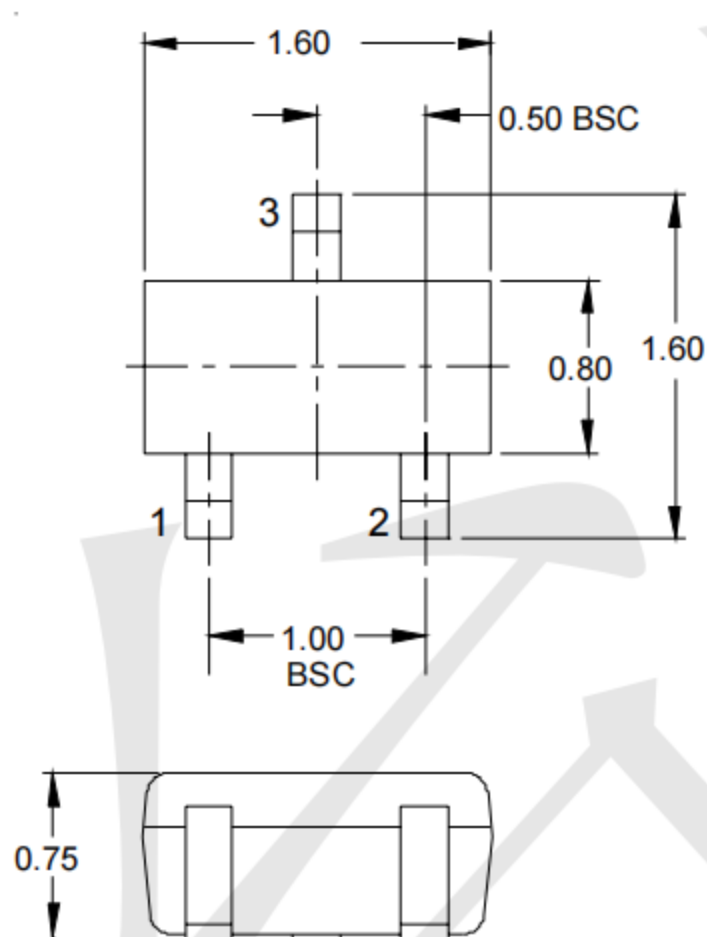
## Mechanical Characteristics

- 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
- Shipping Qty : 3000pcs/7Inch Tape & Reel

## Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

## Dimensions and Pin Configuration



**Marking: P7**

## Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)       | P <sub>pk</sub>  | 70          | W    |
| Peak Pulse Current (8/20μs)     | I <sub>pp</sub>  | 2           | A    |
| ESD per IEC 61000-4-2 (Air)     | V <sub>ESD</sub> | ±25         | kV   |
| ESD per IEC 61000-4-2 (Contact) |                  | ±15         |      |
| Operating Temperature Range     | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range       | T <sub>stg</sub> | -55 to +150 | °C   |

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition                              |
|-------------------------|------------------|-----|-----|-----|------|---------------------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 24  | V    |                                             |
| Breakdown Voltage       | V <sub>BR</sub>  | 26  |     |     | V    | I <sub>T</sub> = 1mA                        |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.2 | μA   | V <sub>RWM</sub> = 24V                      |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 43  | V    | I <sub>PP</sub> = 2A (8 x 20us pulse)       |
| Junction Capacitance    | C <sub>J</sub>   |     | 1   | 1.2 | pF   | V <sub>r</sub> =0V ,f=1MH Pin1 or 2 to Pin3 |
|                         |                  |     | 0.5 |     | pF   | V <sub>r</sub> =0V ,f=1MH Pin1 to Pin2      |

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

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

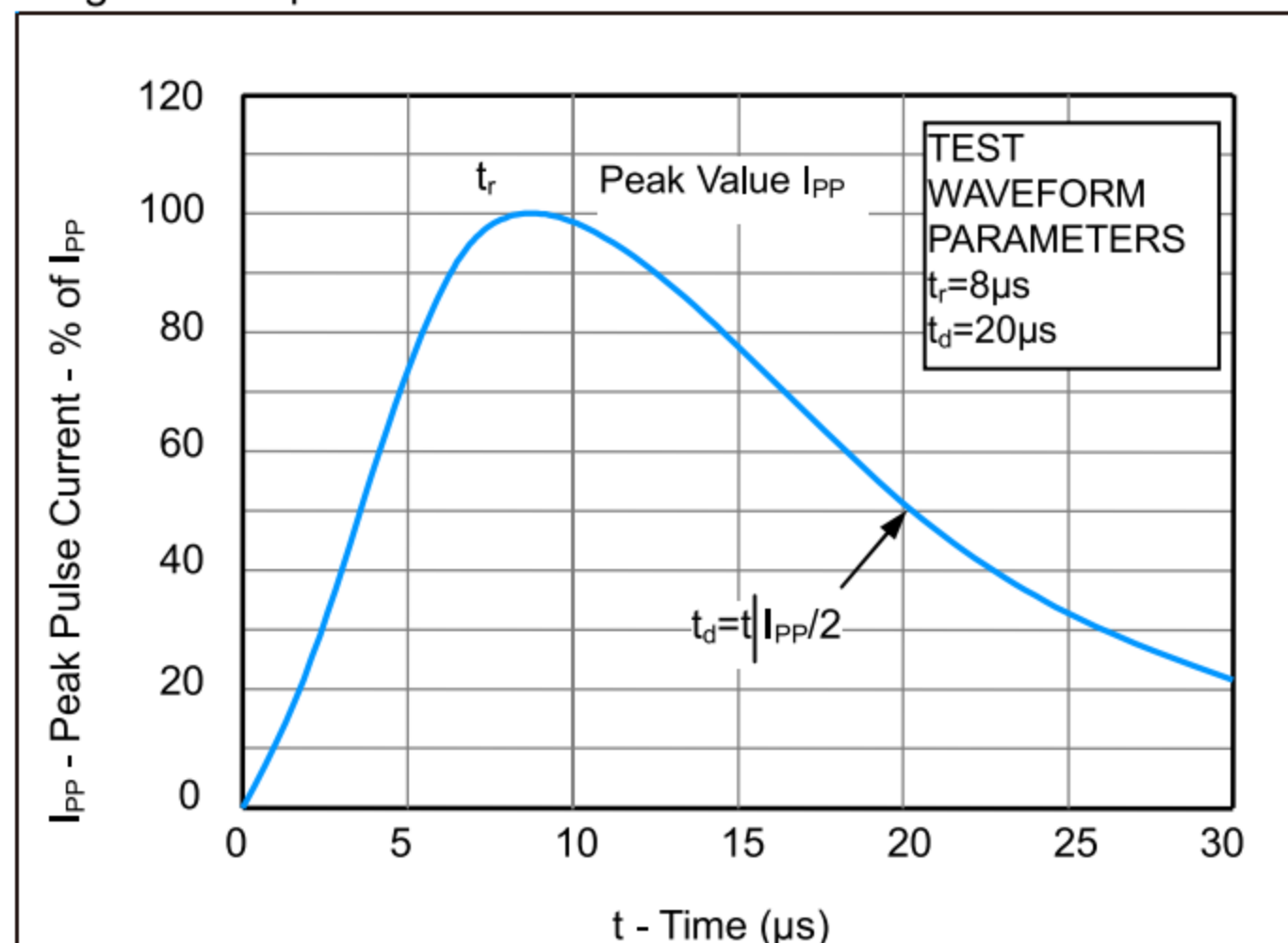


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

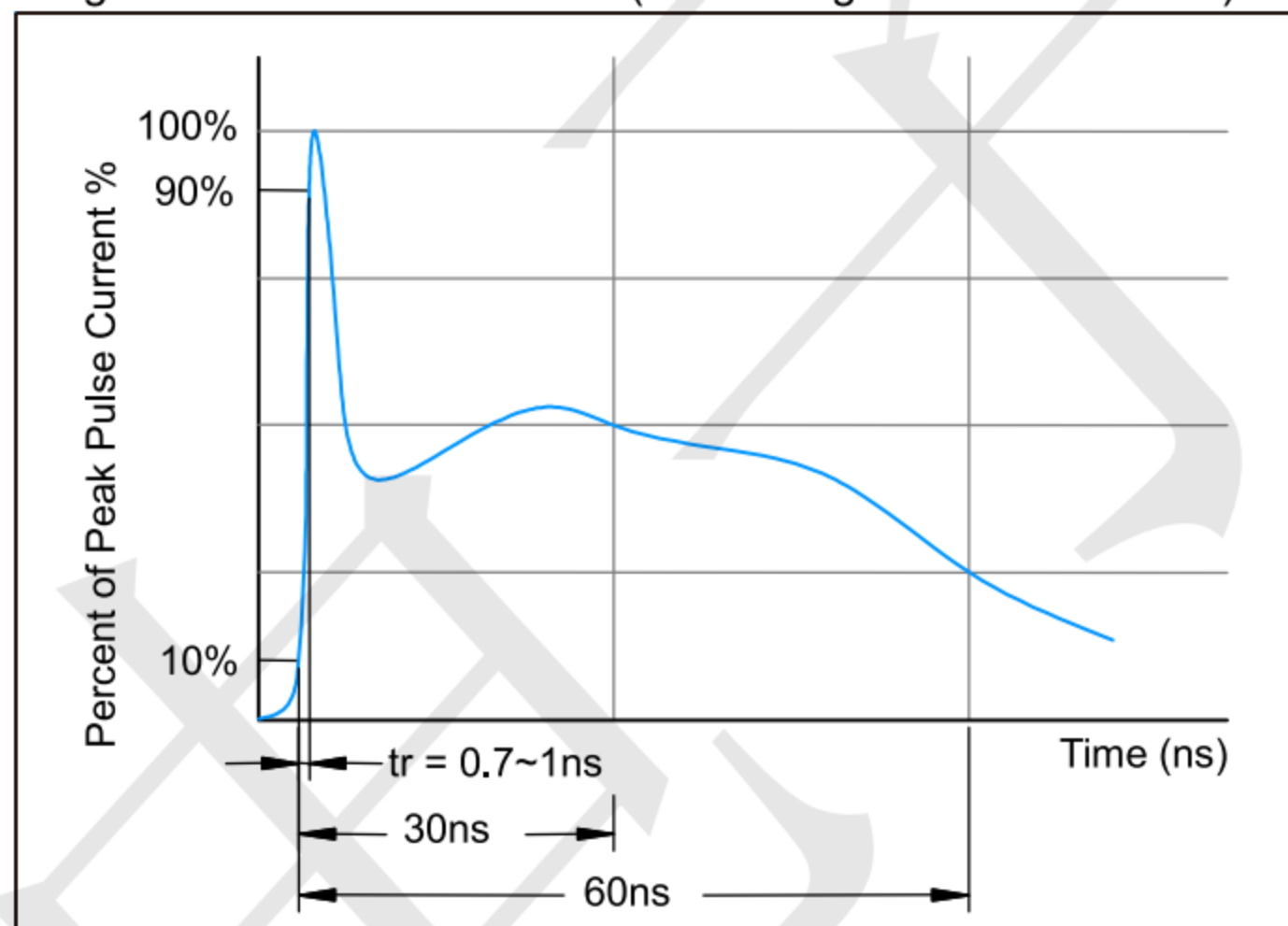
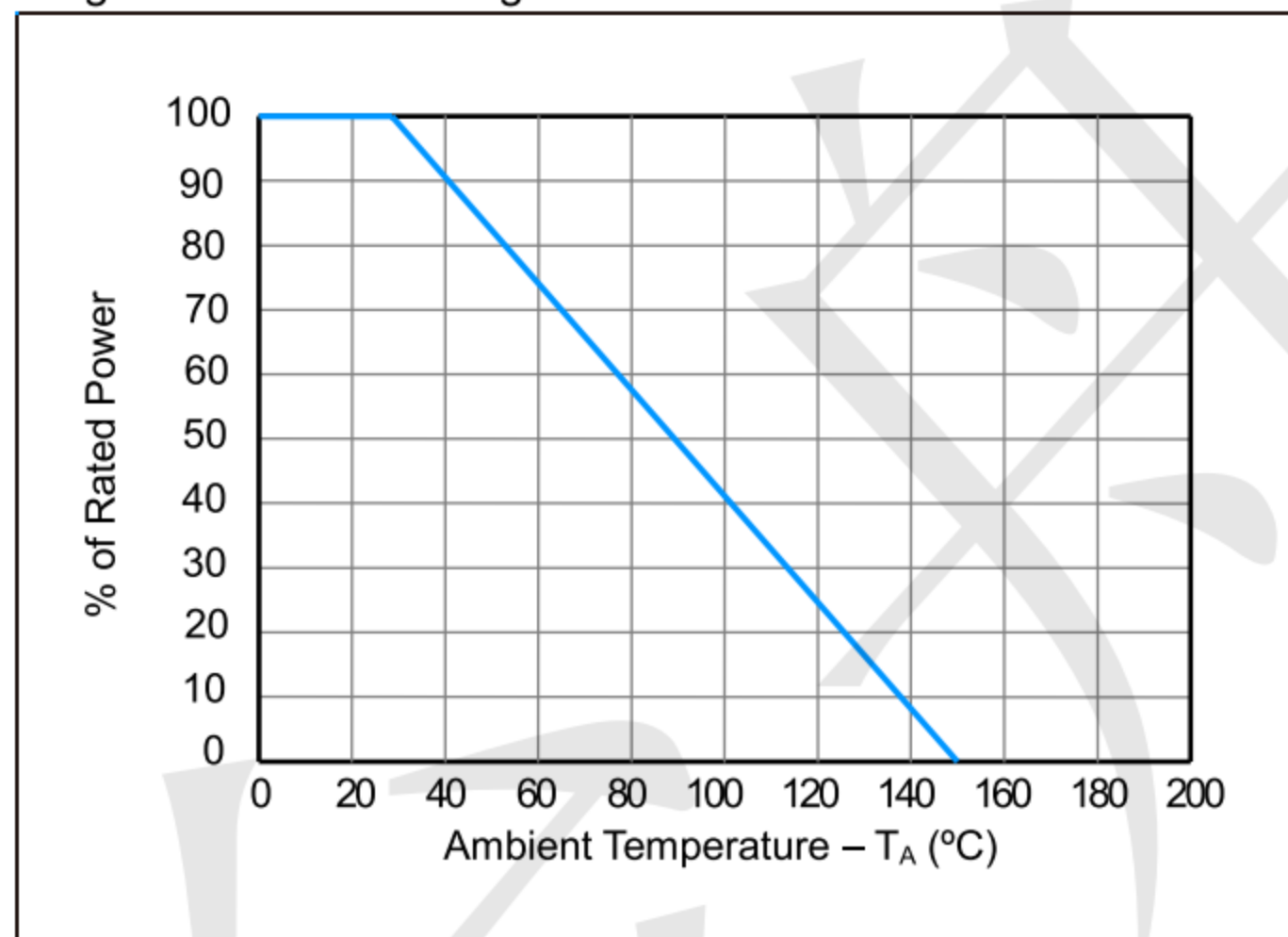
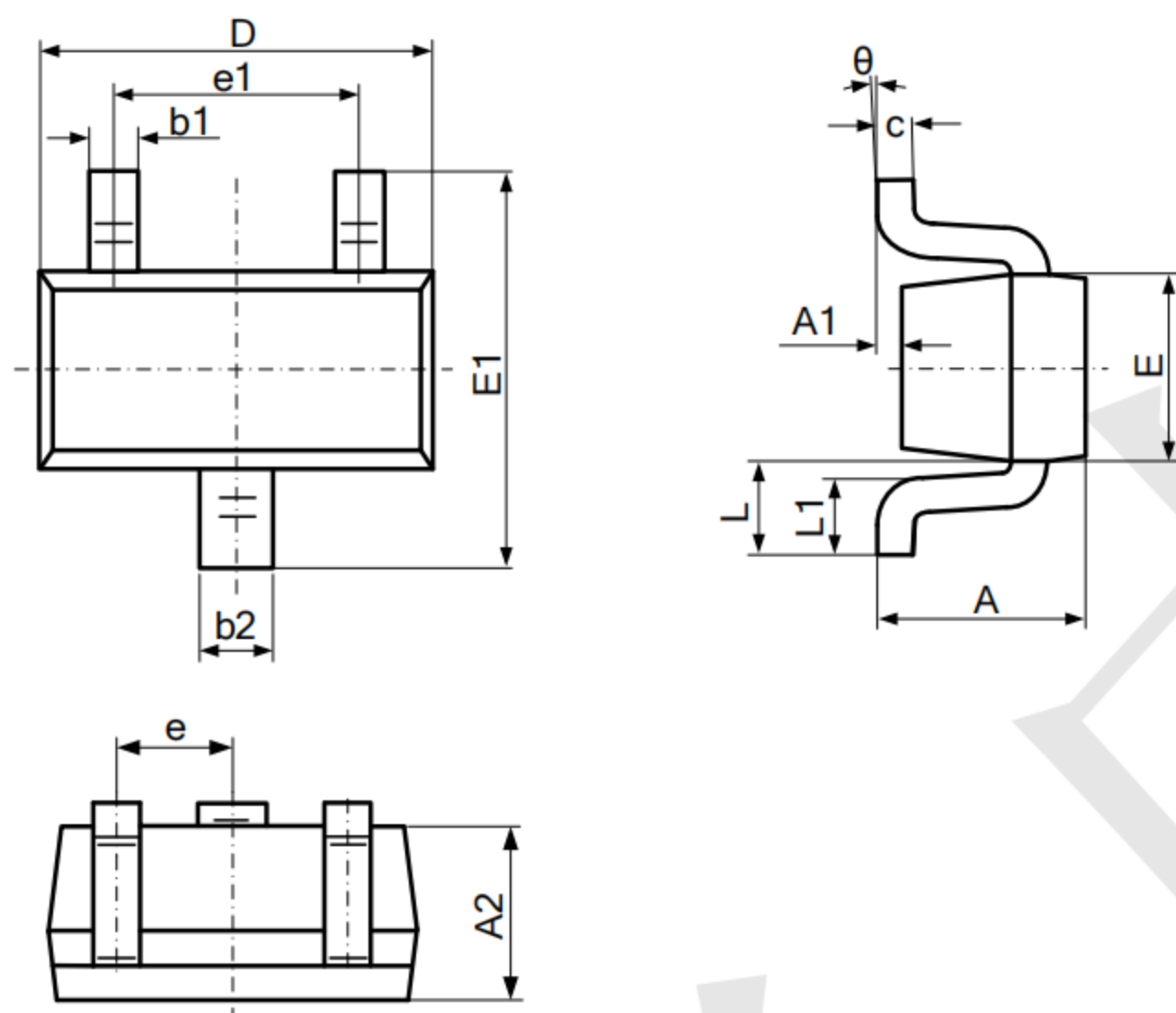


Fig3. Power Derating Curve

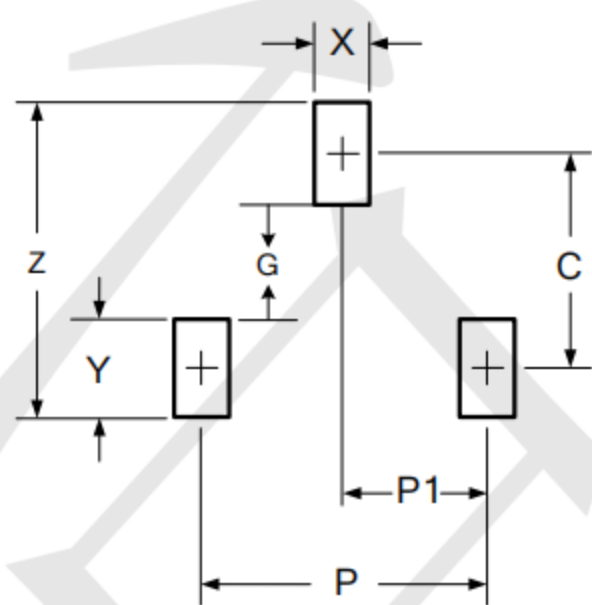


## Outline Drawing - SOT-523



| SYMBOL | DIMENSIONS |       |           |       |
|--------|------------|-------|-----------|-------|
|        | 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        |