

## Features

- ◆ 150W peak pulse power(8/20 $\mu$ s)
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 24V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30$ kV  
Contact discharge:  $\pm 30$ kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 4A (8/20 $\mu$ s)
- ◆ RoHS Compliant

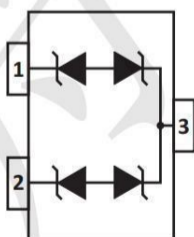
## Mechanical Characteristics

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

## Applications

- ◆ Cellular Handsets and Accessories
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Set Top Box
- ◆ Industrial Controls
- ◆ CAN Bus Protection
- ◆ Automotive Appllcatrons

## Dimensions and Pin Configuration



**Marking:M24C Or P24HC**

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

| Parameter                       | Symbol | Value       | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk    | 140         | W    |
| Peak Pulse Current (8/20μs)     | IPP    | 4           | 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   |      |     | 24   | V    |                                                                  |
| Breakdown Voltage       | VBR    | 26.7 |     |      | V    | IT = 1mA                                                         |
| Reverse Leakage Current | IR     |      |     | 0.08 | μA   | VRWM = 24V                                                       |
| Clamping Voltage        | Vc     |      | 32  |      | V    | IPP = 1A (8 x 20μs pulse)                                        |
| Clamping Voltage        | Vc     |      | 35  | 40   | V    | IPP = 4A (8 x 20μs pulse)                                        |
| Junction Capacitance    | CJ     |      | 10  | 18   | pF   | VR=0, f=1MHz, Pin 3to Pin 2,Or<br>Pin 3 to Pin 2                 |
| Junction Capacitance    | CJ     |      | 7   |      | pF   | VR=0, f=1MHz, Pin 1 to Pin 2<br>, Pin 1to Pin 2,Or Pin 2 to Pin1 |

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

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

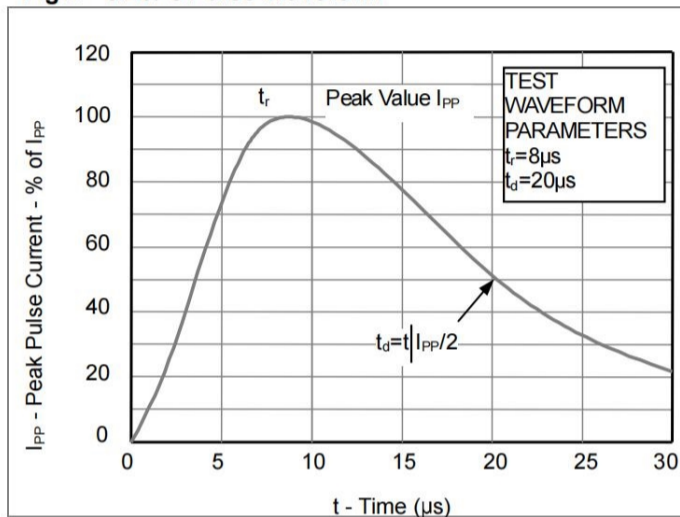


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

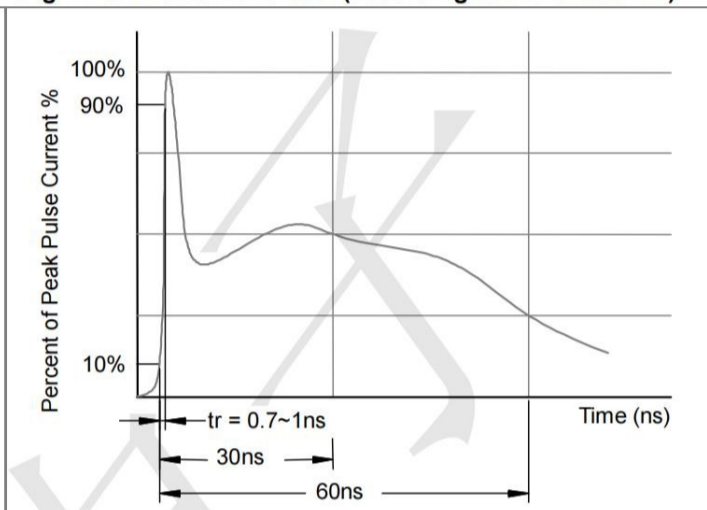
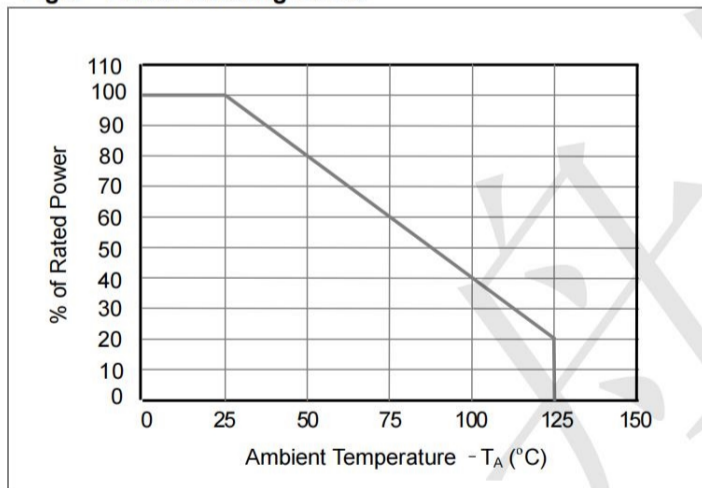
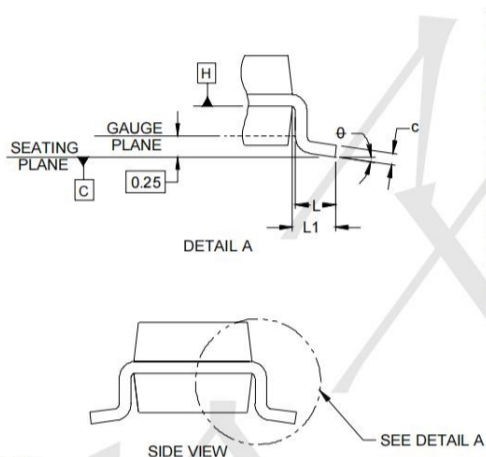
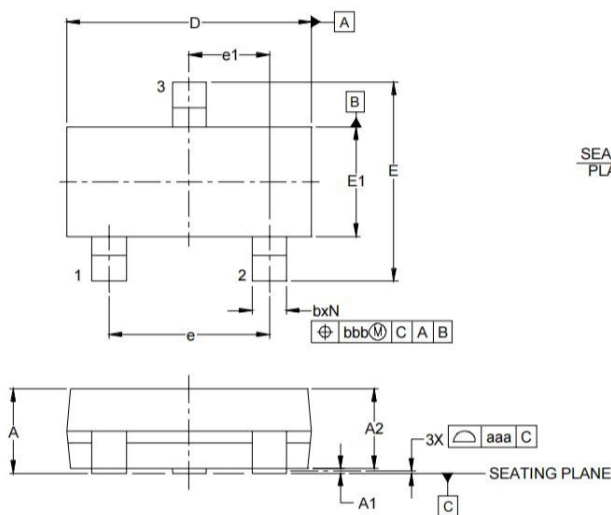


Fig3. Power Derating Curve

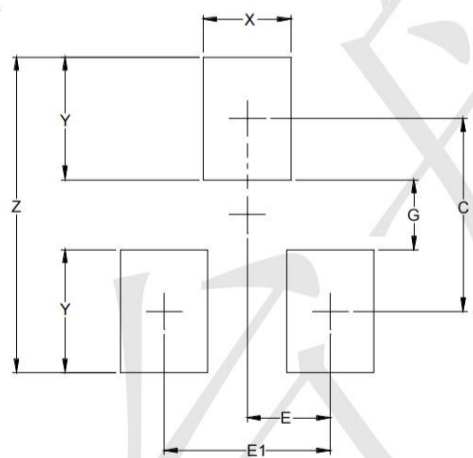


## Outline Drawing - SOT23



| 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      |      |
| phi | 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        |