

Features

- * Protects one data or power line
- * Operating voltage: $\pm 5V$
- * Ultra low clamping voltage
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 22kV$
 - Contact discharge: $\pm 20kV$
 - IEC61000-4-5 (SURGE) 2A (8/20us)

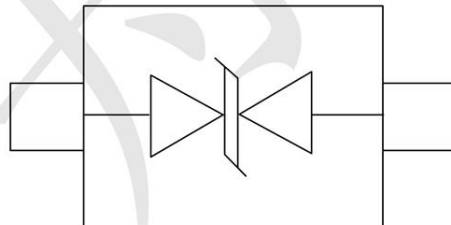
Mechanical Characteristics

- * Package: SOD523
- * Ultra low leakage: nA level
- * Case Material: "Green" Molding Compound.
- * UL Flammability Classification Rating 94V-0
- * Moisture Sensitivity: Level 3 per J-STD-020
- * 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



SOD523

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

| Parameter | Symbol | Value | Unit |
|---------------------------------|--------|-------------|------|
| ESD per IEC 61000-4-2 (Air) | VESD | ±25 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ±20 | |
| 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 | Test Condition | Min | Typ | Max | Unit |
|-------------------------|------------------|--|-----|-----|------|------|
| Reverse Working Voltage | V _{RWM} | | | | 5 | V |
| Breakdown Voltage | V _{BR} | I _T = 1mA (Pin1-Pin2) | 6.5 | | 9 | V |
| Reverse Leakage Current | I _R | V _{RWM} = 5.0V (Pin2-Pin1) | | | 0.08 | μA |
| Clamping Voltage | V _C | I _{PP} = 1A (8 x 20us pulse) (Pin1-Pin2) | | | 9 | V |
| Clamping Voltage | V _C | I _{PP} = 2A (8 x 20us pulse) (Pin1-Pin2) | | | 15 | V |
| Junction Capacitance | C _J | V _R = 0V, f = 1MHz (Pin1-Pin2) | | 0.6 | 0.9 | pF |

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

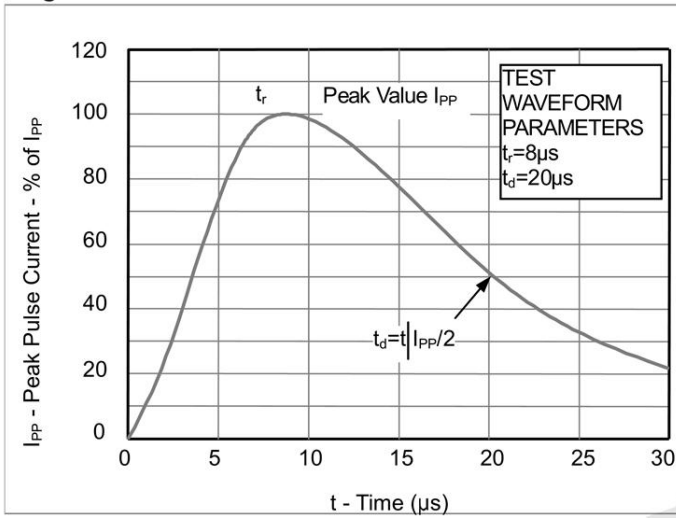


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

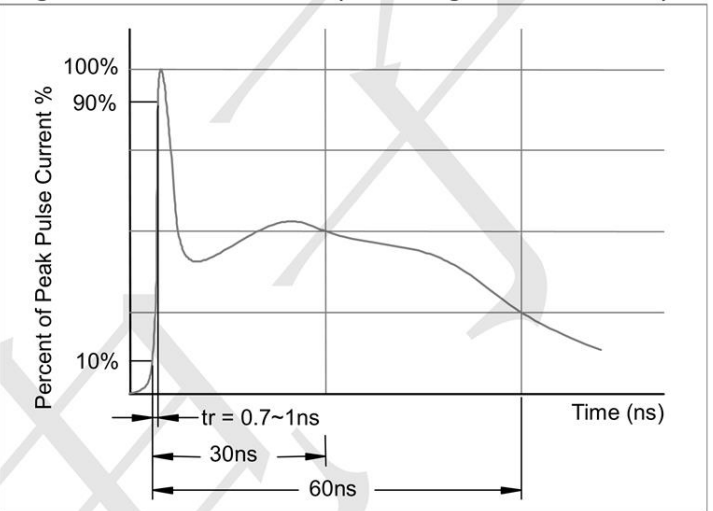
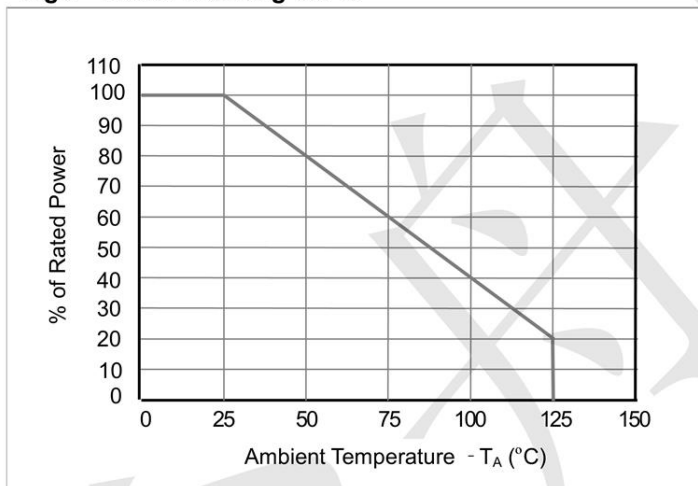


Fig3. Power Derating Curve





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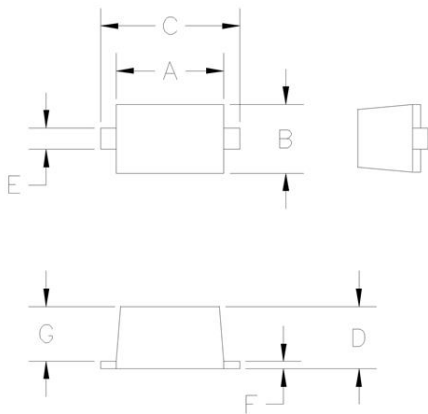
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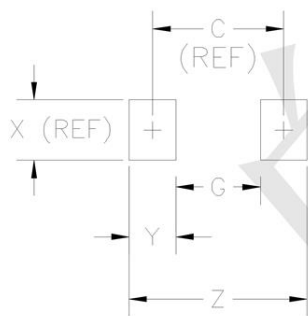
SOD-523 Package Outline Drawing



| DIM ^N | INCHES | | MM [1] | | NOTE |
|------------------|--------|------|--------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .043 | .051 | 1.10 | 1.30 | — |
| B | .028 | .035 | 0.70 | 0.90 | — |
| C | .059 | .067 | 1.50 | 1.70 | — |
| D | .020 | .028 | 0.50 | 0.70 | — |
| E | .010 | .014 | 0.25 | 0.35 | — |
| F | .004 | .008 | 0.10 | 0.20 | — |
| G | .020 | .028 | 0.50 | 0.70 | — |

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Suggested Land Pattern



| DIM ^N | INCHES | | MM [1] | | NOTE |
|------------------|--------|------|--------|------|------|
| | MIN | MAX | MIN | MAX | |
| C | — | .067 | — | 1.70 | REF |
| G | — | .043 | — | 1.10 | — |
| X | — | .031 | — | 0.80 | REF |
| Y | — | .024 | — | 0.60 | — |
| Z | — | .091 | — | 2.30 | — |

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