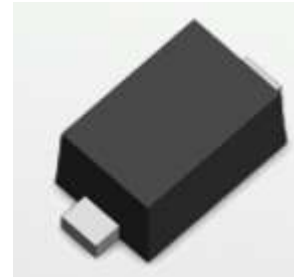


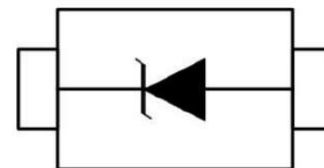
### Features

- Ultra low leakage: nA level
- Operating voltage: 12V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 15\text{kV}$
    - Contact discharge:  $\pm 8\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 12A (8/20 $\mu\text{s}$ )
- RoHS Compliant

### Dimensions SOD-523



### Pin Configuration



### Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

### Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch

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

| Parameter                              | Symbol           | Value       | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (8/20 $\mu\text{s}$ ) | P <sub>pp</sub>  | 200         | W    |
| ESD per IEC 61000-4-2 (Air)            | V <sub>ESD</sub> | $\pm 15$    | Kv   |
| ESD per IEC 61000-4-2 (Contact)        |                  | $\pm 8$     |      |
| Operating Temperature Range            | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range              | T <sub>STJ</sub> | -55 to +150 | °C   |

## Electrical Characteristics (TA=25°C unless otherwise specified)

| Part Number | Device Marking | V <sub>RWM</sub> (V) | V <sub>BR</sub> (V) | I <sub>T</sub> (mA) | V <sub>C</sub> @1A | V <sub>C</sub> |      | I <sub>R</sub> μA (Max) | C (Pf) (Typ.) |
|-------------|----------------|----------------------|---------------------|---------------------|--------------------|----------------|------|-------------------------|---------------|
|             |                |                      |                     |                     |                    | (Max)          | (@A) |                         |               |
| SDA12T1     | 12V            | 12                   | 13.3                | 1                   | 15                 | 17             | 5    | 1                       | 25            |

## Characteristic Curves

Fig1. 8/20μs Pulse Waveform



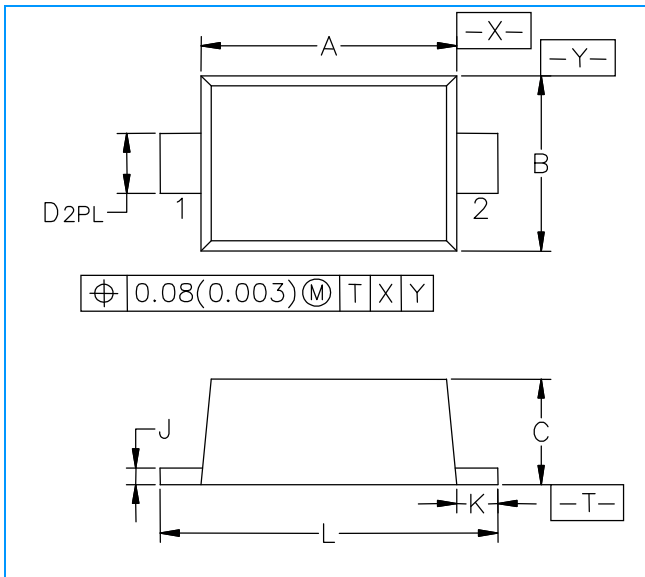
Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)



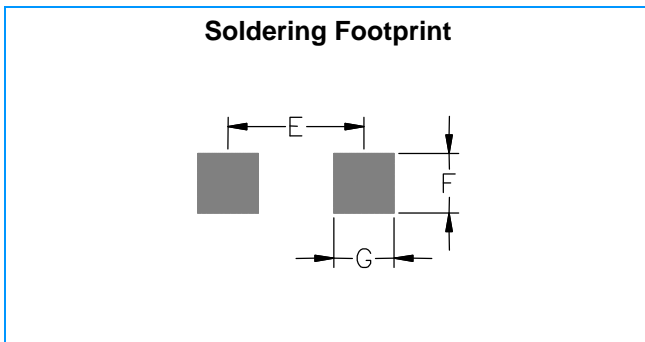
Fig3. Power Derating Curve



## SOD-523 Package Outline & Dimensions



| Symbol   | Millimeters |      |      | Inches |        |        |
|----------|-------------|------|------|--------|--------|--------|
|          | Min.        | Nom. | Max. | Min.   | Nom.   | Max.   |
| <b>A</b> | 1.10        | 1.20 | 1.30 | 0.043  | 0.047  | 0.051  |
| <b>B</b> | 0.70        | 0.80 | 0.90 | 0.028  | 0.032  | 0.035  |
| <b>C</b> | 0.50        | 0.60 | 0.70 | 0.020  | 0.024  | 0.028  |
| <b>D</b> | 0.25        | 0.30 | 0.35 | 0.010  | 0.012  | 0.014  |
| <b>J</b> | 0.07        | 0.14 | 0.20 | 0.0028 | 0.0055 | 0.0079 |
| <b>K</b> | 0.15        | 0.20 | 0.25 | 0.006  | 0.008  | 0.010  |
| <b>S</b> | 1.50        | 1.60 | 1.70 | 0.059  | 0.063  | 0.067  |



| Symbol   | Millimeters | Inches |
|----------|-------------|--------|
| <b>E</b> | 1.40        | 0.0547 |
| <b>F</b> | 0.40        | 0.0157 |
| <b>G</b> | 0.40        | 0.0157 |