



1-Line Bidirectional ESD Protection Diode

General description

These surge protection diodes are designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

Features and benefits

- Bidirectional ESD protection of one line
- Reverse stand-off voltage: 15.0V Max
- Low Capacitance 20 pF(Typ)
- Low leakage current: nA Level
- Response time is typically < 1 ns
- IEC61000-4-2 Level 4 ESD Protection
- RoHS compliant

Application information

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers

Ordering information

| Device | Package | Packaging | Reel Size |
|--------|---------|------------------|-----------|
| SD15C | SOD323 | 3000/Tape & Reel | 7 inch |

Schematic & Pin configuration

| Simplified outline | Graphic symbol |
|--------------------|----------------|
| | |

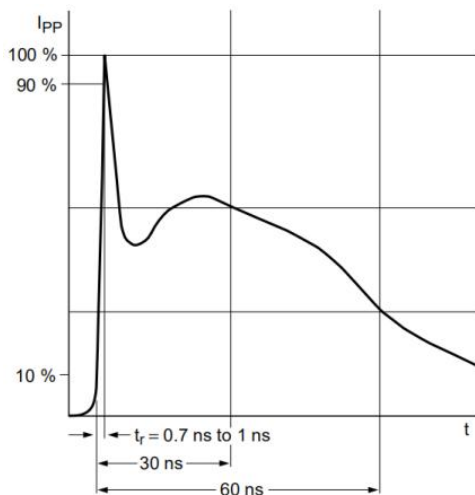
Maximum Ratings ($T_{OP} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|-------------------------------------------------------|-----------|-------------|--------------------|
| Peak Pulse Power ($t_p = 8/20\text{ }\mu\text{s}$) | P_{PPM} | 260 | W |
| Peak Pulse Current($t_p = 8/20\text{ }\mu\text{s}$) | I_{PPM} | 8 | A |
| ESD voltage IEC 61000-4-2 (air discharge) | V_{ESD} | 30 | kV |
| ESD voltage IEC 61000-4-2 (contact discharge) | V_{ESD} | 30 | kV |
| Maximum lead temperature for soldering during 10s | T_L | 260 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |
| Operating Temperature Range | T_{OP} | -40 to +125 | $^{\circ}\text{C}$ |

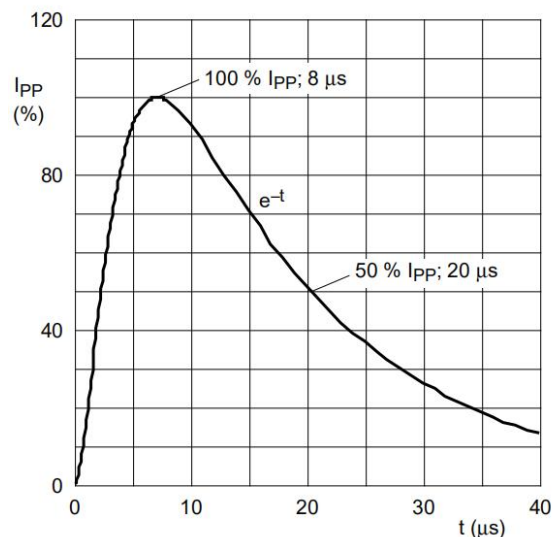
Electrical Characteristics ($T_{OP} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Condition |
|----------------------------|-----------|------|------|------|------|-----------------------------------------|
| Reverse Working Voltage | V_{RWM} | -- | -- | 15.0 | V | |
| Breakdown Voltage | V_{BR} | 17.0 | -- | 20.0 | V | $I_T=1\text{mA}$ |
| Leakage Current I_{Leak} | I_R | -- | -- | 100 | nA | $V_{RWM}=15\text{V}$ |
| Clamping Voltage | V_C | -- | 31.0 | 33.0 | V | $I_{PP}=8\text{A}, t_p=8/20\mu\text{s}$ |
| Junction Capacitance | C_J | -- | 20.0 | 25.0 | pF | $V_R=0\text{V}, f=1\text{MHz}$ |

Typical Characteristics



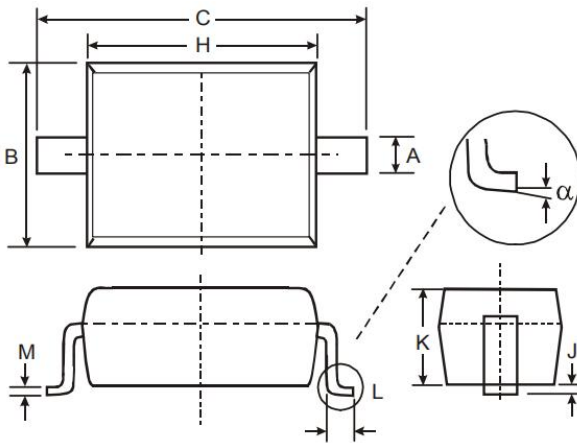
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20μs pulse)

Package Outline Dimensions

SOD323



| SYMBOL | MILLIMETERS | |
|----------|-------------|------|
| | MIN | MAX |
| A | 0.25 | 0.35 |
| B | 1.20 | 1.40 |
| C | 2.40 | 2.70 |
| H | 1.60 | 1.80 |
| J | 0.01 | 0.15 |
| K | 0.80 | 1.00 |
| L | 0.20 | 0.40 |
| M | 0.08 | 0.15 |
| α | 0° | 8° |