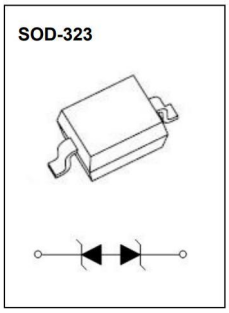
## Features

- Bi-directional ESD protection of one line
- Reverse stand−off voltage: 12V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- IEC 61000-4-2 (ESD) immunity test：
- Air discharge: ±30kV
- Contact discharge: ±30kV

12C

SOD-323



## Application

- Computers and peripherals
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection
- Portable electronics
- FireWire
- Other electronics equipments communi- cation systems

## Absolute Maximum Rating

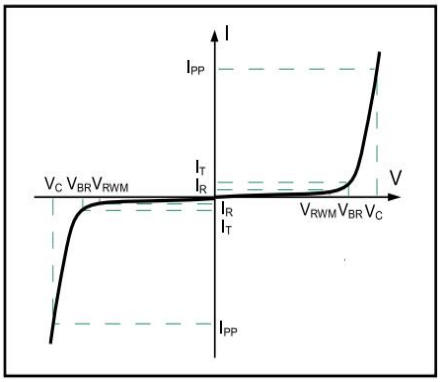
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppk | 450 | W |
| Peak Pulse Current (8/20μs) | IPP | 15 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | VESD | ±30<br>±30 | kV |
| Operating Temperature Range | TJ | −55to +125 | °C |
| Storage Temperature Range | Tstg | −55 to +150 | °C |

## Electrical Characteristics

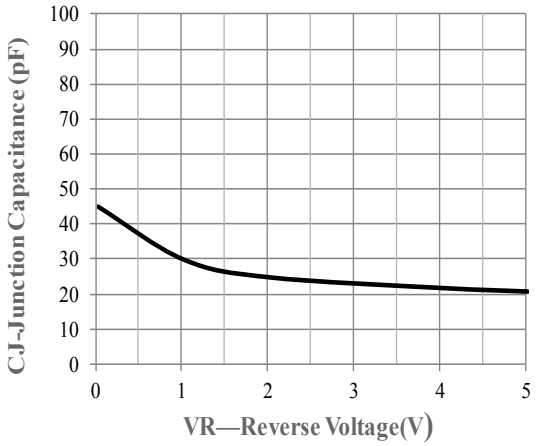
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $VR_{WM}$ | | | | 12 | V |
| Breakdown Voltage | VBR | $I_T$ = 1mA | 14.2 | | 16.2 | V |
| Reverse Leakage Current | IR | $VR_{WM}$ = ±12V | | | 0.1 | uA |
| Clamping Voltage | Vc | $I_{PP}$ = 15A (8 x 20μs pulse) | | | 28 | V |
| Junction Capacitance | Cj | VR = 0V, f = 1MHz | | | 45 | pF |

## Electronics Parameter

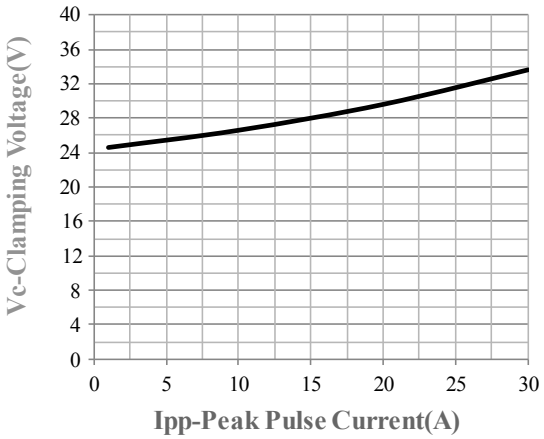
| Symbol | Parameter |
|---|---|
| $I_T$ | Test Current |
| $I_{PP}$ | Maximum Reverse Peak Pulse Current |
| $V_C$ | Clamping Voltage @Ic |
| $V_{BR}$ | Breakdown Voltage @ IT |
| $I_R$ | Reverse Leakage Current @ VRWM |
| $V_{RWM}$ | Reverse Standoff Voltage |



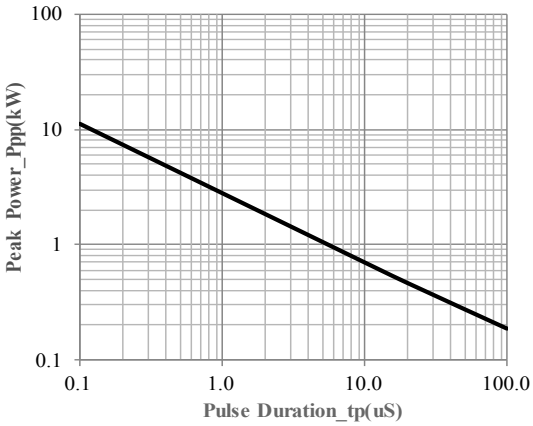
## RATING AND CHARACTERISTIC CURVES



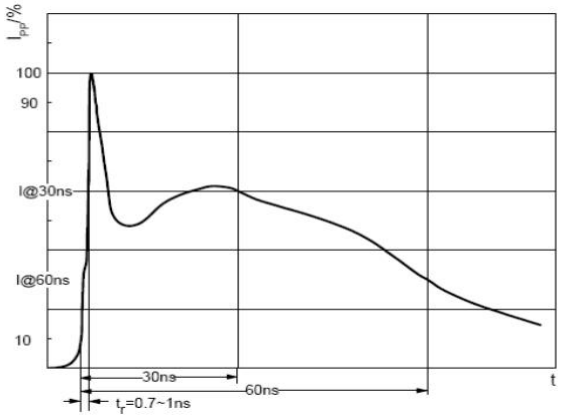

Junction Capacitance vs. Reverse Voltage



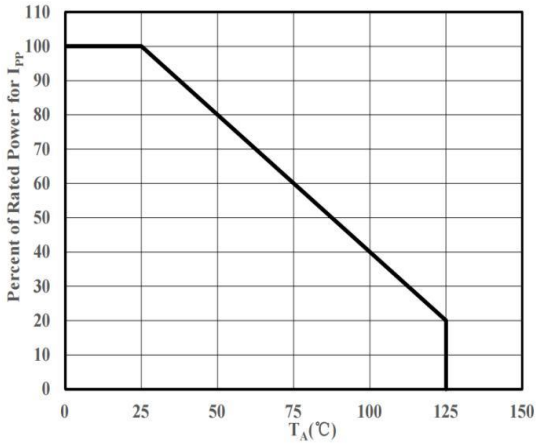

Clamping Voltage vs. Peak Pulse Current



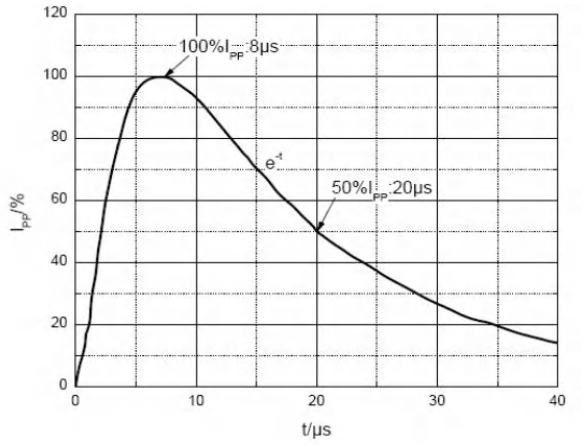

Peak Pulse Power vs. Pulse Time




ESD pulse waveform according to IEC61000-4-2




Power Derating Curve

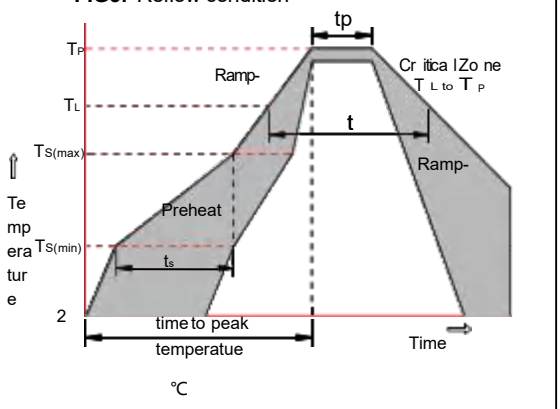



8/20μs pulse waveform according to IEC 61000-4-5

## Soldering parameters

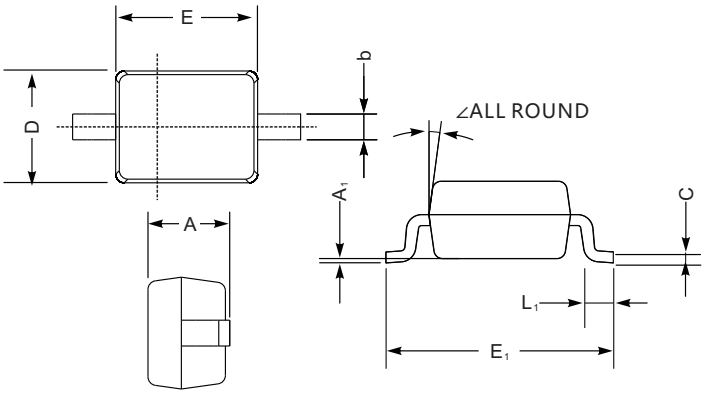
| Reflow Condition | | Pb-Free assembly (see as bellow) |
|---|---|---|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150℃ |
| | -Temperature Max($T_{s(max)}$) | +200℃ |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp ($T_L$) to peak) | | 3℃/sec. Max |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate | | 3℃/sec. Max |
| Reflow | -Temperature($T_L$)(Liquid us) | +217℃ |
| | -Temperature($t_L$) | 60-150 secs. |
| Peak Temp ($T_p$) | | +260(+0/-5)℃ |
| Time within 5℃ of actual Peak Temp ($t_p$) | | 30 secs. Max |
| Ramp-down Rate | | 6℃/sec. Max |
| Time 25℃ to Peak Temp ($T_P$) | | 8 min. Max |
| Do not exceed | | +260℃ |

**FIG5:** Reflow condition



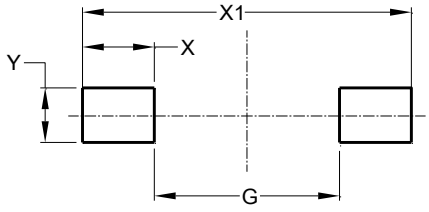

## Package Dimensions & Suggested Pad Layout

**SOD323**




SOD-323 mechanical data

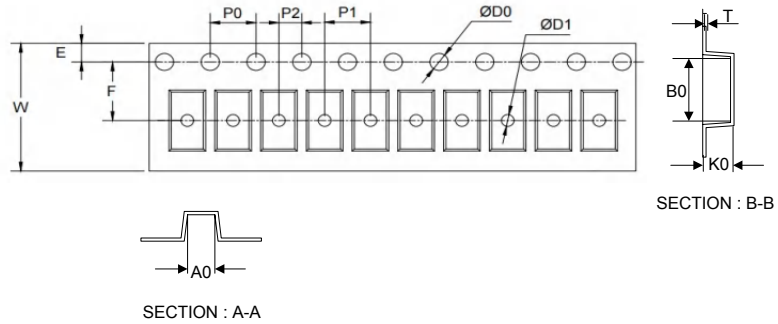
| UNIT | | A | C | D | E | $E_1$ | b | $L_1$ | $A_1$ | ∠ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.1 | 0.15 | 1.4 | 1.8 | 2.75 | 0.4 | 0.45 | 0.2 | 9° |
| | min | 0.8 | 0.08 | 1.2 | 1.4 | 2.55 | 0.25 | 0.2 | — | |
| mil | max | 43 | 5.9 | 55 | 70 | 108 | 16 | 16 | 8 | |
| | min | 32 | 3.1 | 47 | 63 | 100 | 9.8 | 7.9 | — | |




| Dimensions | Value (in mm) |
|---|---|
| G | 1.40 |
| X | 1.20 |
| X1 | 3.80 |
| Y | 1.00 |

## Tape & rell specification

Tape

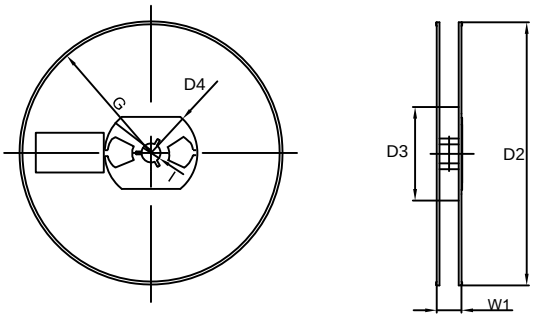



SECTION : A-A

SECTION : B-B

| Symbol | Dimension (mm) |
|---|---|
| P0 | 4.00±0.20 |
| P1 | 4.00±0.20 |
| P2 | 2.00±0.20 |
| D0 | 1.55±0.20 |
| D1 | 1.00±0.20 |
| E | 1.55±0.25 |
| F | 3.60±0.20 |
| W | 8.00±0.20 |
| A0 | 2.00±0.20 |
| B0 | 3.25±0.20 |
| K0 | 1.35±0.20 |
| T | 0.23±0.10 |

7” Reel




| | |
|---|---|
| D2 | 177.0±5.0 |
| D3 | 55Min. |
| D4 | R24.6±2.0 |
| G | R82.0±2.0 |
| I | 13.0±2.0 |
| W1 | 10.20±3.0 |

Quantity: 3000PCS