

## Features

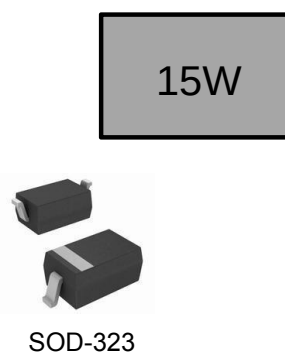
400W (8x20us) Peak Pulse Power  
Low Clamping Voltage  
SOD-323 Package  
RoHS Compliant  
Matte Tin Lead finish (Pb-Free)  
Protect One I/O or Power Line  
Meet IEC61000-4-2 Level 4:  
Contact Discharge > 25 kV  
Air Discharge > 25 kV

## Mechanical Data

Package: SOD-323  
Lead Finish: Lead Free  
UL Flammability Classification Rating 94V-0

## Applications

Smart Phones  
Laptop Computers  
Portable Electronics

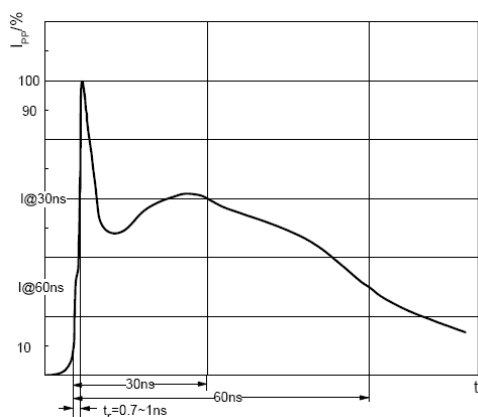


## Absolute Maximum Rating

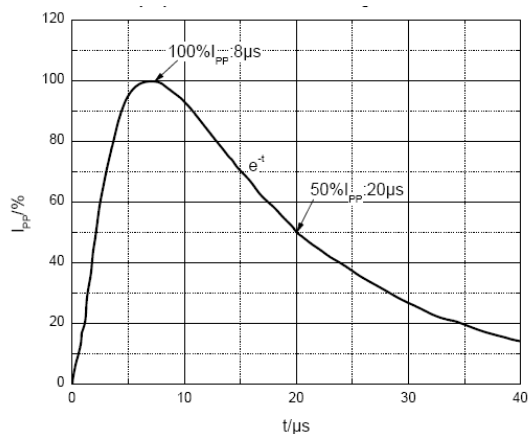
| Symbol  | Parameter                  | Value       | Unit |
|---------|----------------------------|-------------|------|
| TJ      | Junction Temperature       | -55 to +150 | °C   |
| TSTG    | Storage Temperature        | -55 to +150 | °C   |
| Ipp Max | Maximum Peak Pulse Current | 10          | A    |
| PPK     | Peak Pulse Power           | 400         | W    |

## Electrical Characteristics

| SD15   |                              |                                              |      |      |     |               |
|--------|------------------------------|----------------------------------------------|------|------|-----|---------------|
| Symbol | Parameter                    | Conditions                                   | Min  | Typ  | Max | Unit          |
| VRWM   | Reverse Working Peak Voltage |                                              |      |      | 15  | V             |
| VBR    | Reverse Breakdown Voltage    | $I_T = 1\text{mA}$                           | 16.7 | 17.8 | 21  | V             |
| IR     | Reverse Leakage Current      | VRWM = 15V                                   |      |      | 1   | $\mu\text{A}$ |
| VC     | Clamping Voltage             | $I_{PP} = 1.0\text{A}$ (8/20 $\mu\text{s}$ ) |      | 29   | 40  | V             |
|        |                              |                                              |      |      |     |               |
| Ipp    | Peak Pulse Current           | $t_p = 8/20\mu\text{s}$                      |      |      | 10  | A             |
| CJ     | Capacitance                  | VR = 0V, f = 1MHz                            |      | 40   | 80  | pF            |



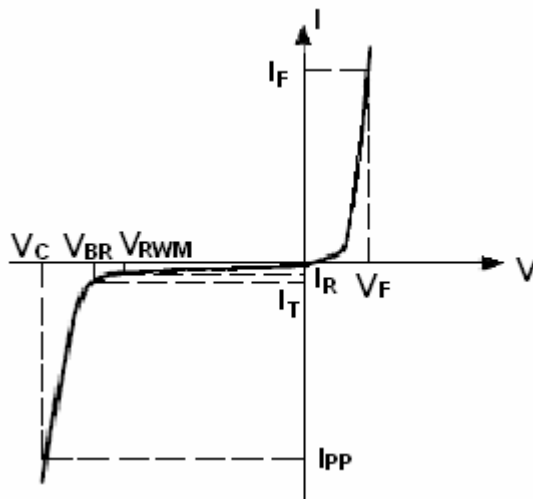
ESD pulse waveform according to IEC61000-4-2



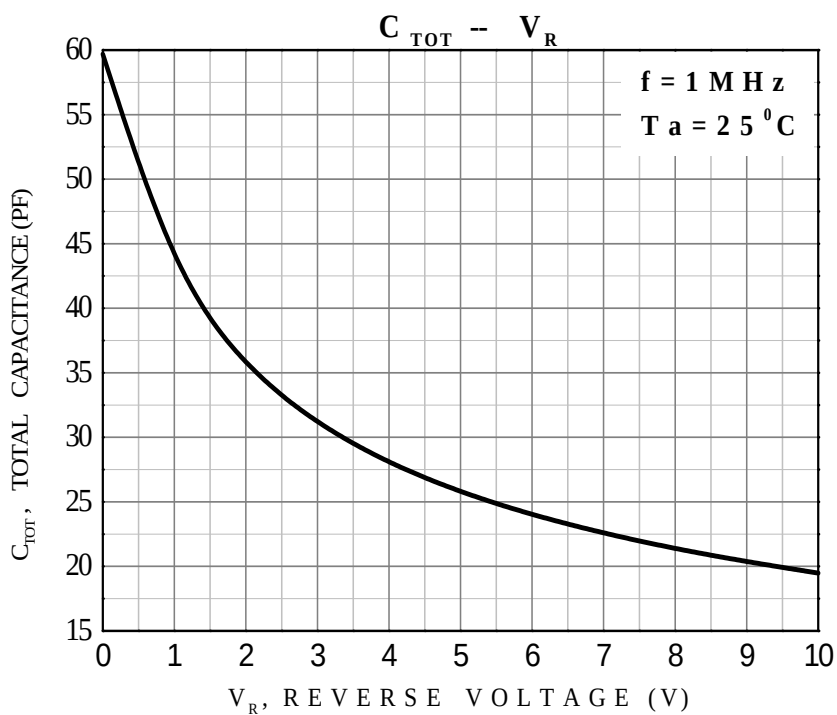
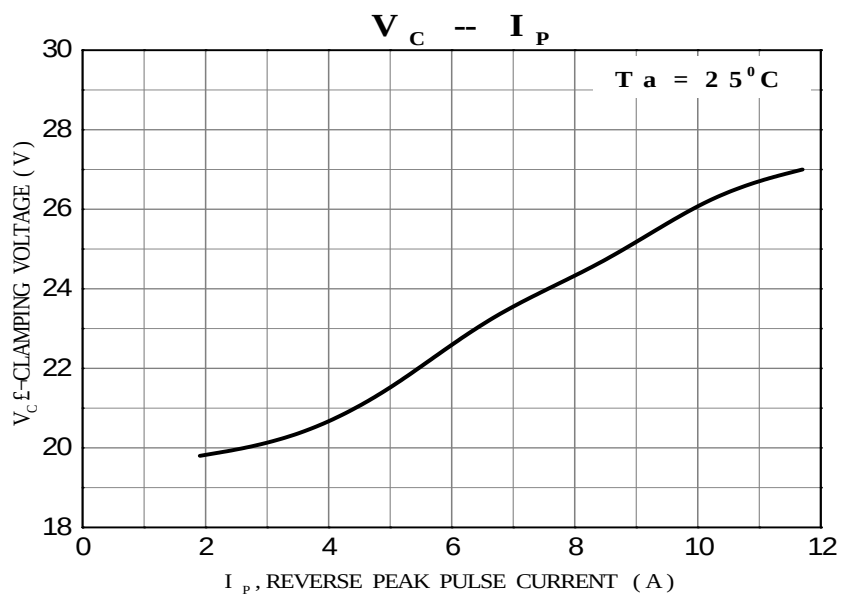
8/20 $\mu\text{s}$  pulse waveform according to IEC 61000-4-5

## Electrical Parameters (TA = 25°C unless otherwise noted)

| Symbol    | Parameter                                   |
|-----------|---------------------------------------------|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$ |
| $I_T$     | Test Current                                |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                   |
| $I_F$     | Forward Current                             |
| $V_F$     | Forward Voltage @ $I_F$                     |

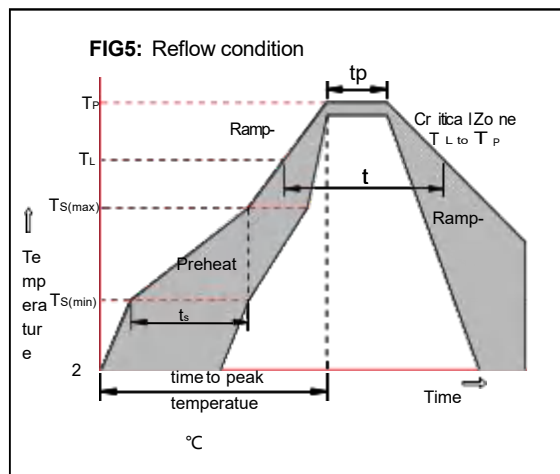


RATING AND CHARACTERISTIC CURVES



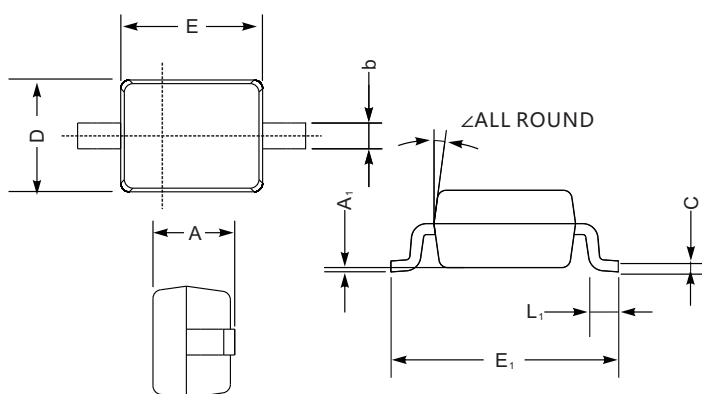
## Soldering parameters

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



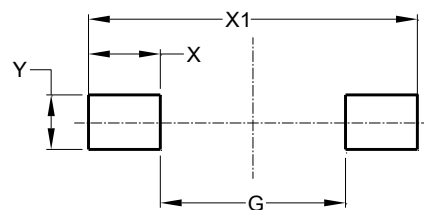
## Package Dimensions & Suggested Pad Layout

### SOD323



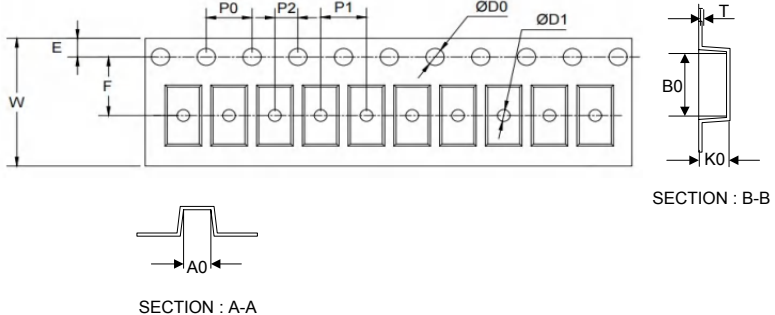
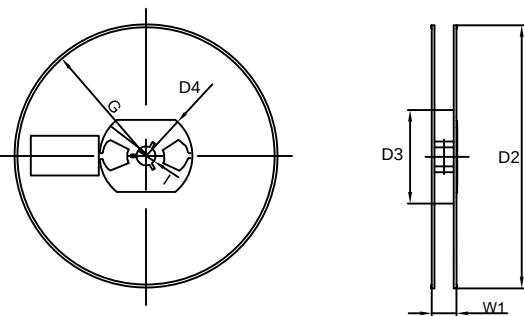
SOD-323 mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | b    | L <sub>1</sub> | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| 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 & reel specification

| Tape                                                                               |  | 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      |
|                                                                                    |  | D2                | 177.0±5.0      |
|                                                                                    |  | D3                | 55Min.         |
|                                                                                    |  | D4                | R24.6±2.0      |
| 7" Reel                                                                            |  | G                 | R82.0±2.0      |
|  |  | I                 | 13.0±2.0       |
|                                                                                    |  | W1                | 10.20±3.0      |
|                                                                                    |  | Quantity: 3000PCS |                |