

## FEATURES

- Small surface mounting type
- Low reverse current and low forward voltage
- High reliability

## VOLTAGE RANGE

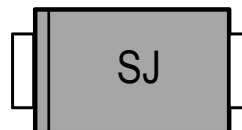
40.0 Volts

## CURRENT

0.03Ampere

## APPLICATION

- High speed switching



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Parameter                                         | Symbol          | Limit    | Unit |
|---------------------------------------------------|-----------------|----------|------|
| Peak reverse voltage                              | $V_{RM}$        | 40       | V    |
| DC reverse voltage                                | $V_R$           | 30       | V    |
| Mean rectifying current                           | $I_O$           | 0.03     | A    |
| Non-repetitive Peak Forward Surge Current@t=8.3ms | $I_{FSM}$       | 0.2      | A    |
| Power dissipation                                 | $P_D$           | 200      | mW   |
| Thermal Resistance Junction to Ambient            | $R_{\theta JA}$ | 500      | °C/W |
| Junction temperature                              | $T_J$           | 125      | °C   |
| Storage temperature                               | $T_{stg}$       | -55~+150 | °C   |

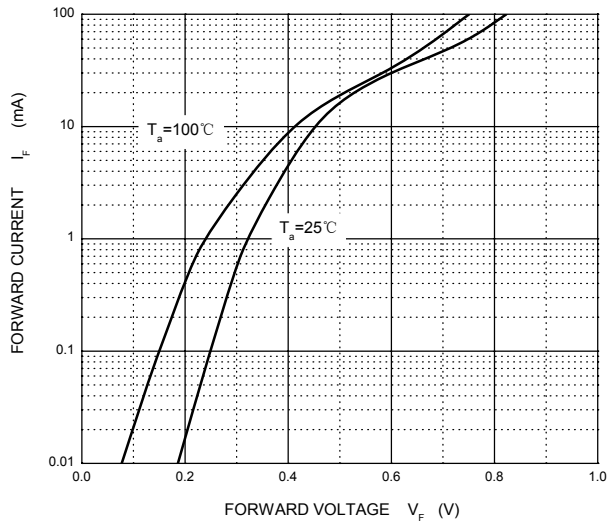
### Characteristics at $T_a = 25^\circ\text{C}$

| Parameter                                                                   | Symbol | Typ. | Max. | Unit          |
|-----------------------------------------------------------------------------|--------|------|------|---------------|
| Forward Voltage<br>at $I_F = 1\text{ mA}$                                   | $V_F$  | -    | 0.37 | V             |
| Reverse Current<br>at $V_R = 30\text{ V}$                                   | $I_R$  | -    | 0.5  | $\mu\text{A}$ |
| Capacitance Between Terminals<br>at $V_R = 1\text{ V}$ , $f = 1\text{ MHz}$ | $C_T$  | 2    | -    | pF            |

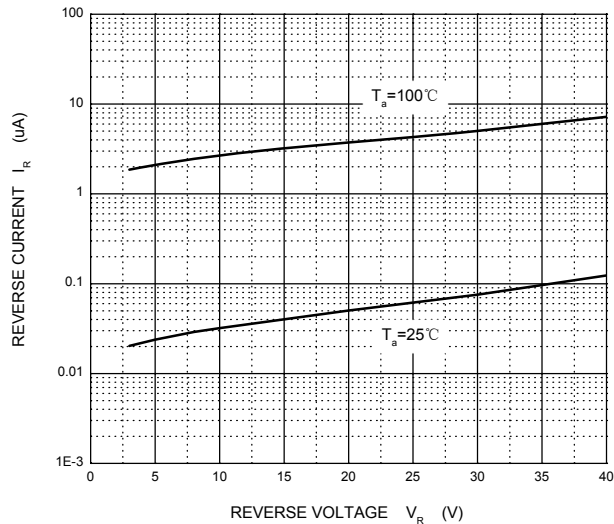
Note: ESD sensitive product handling required.

RATING AND CHARACTERISTIC CURVES

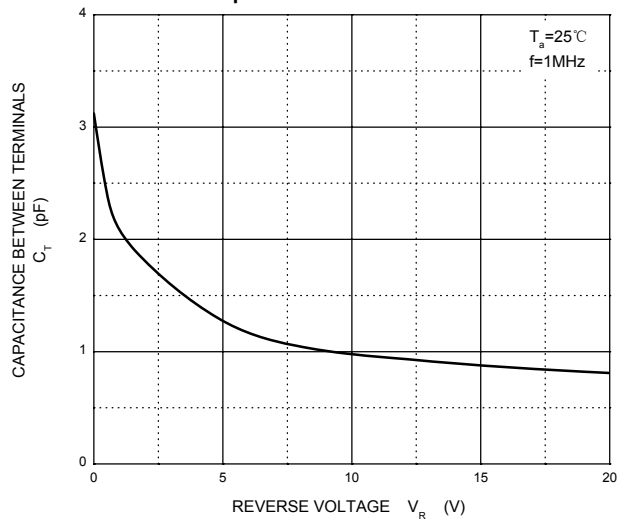
Forward Characteristics



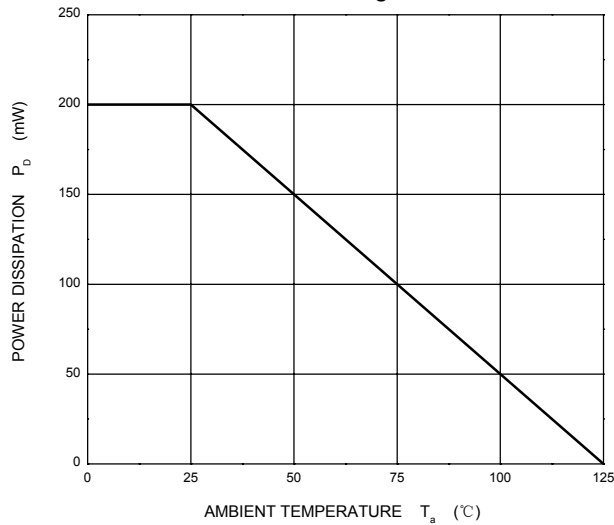
Reverse Characteristics



Capacitance Characteristics

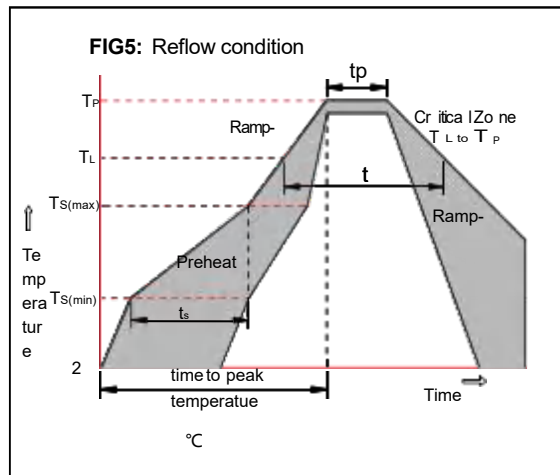


Power Derating Curve



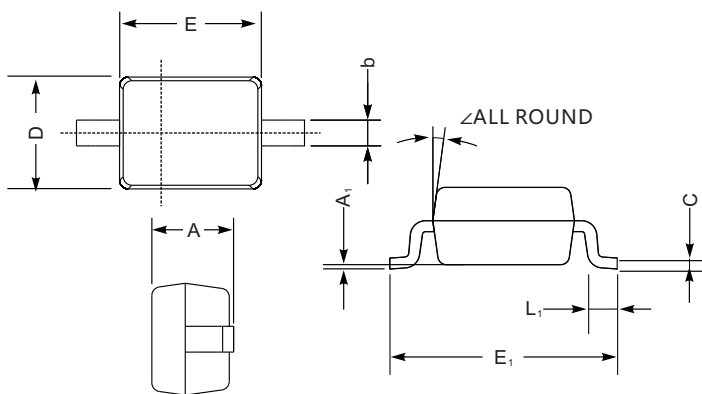
## Soldering parameters

| 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                             |



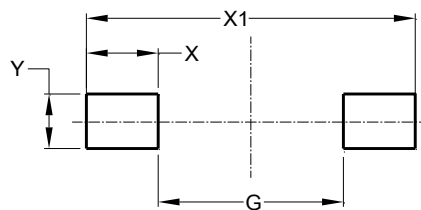
## Package Dimensions & Suggested Pad Layout

### SOD323



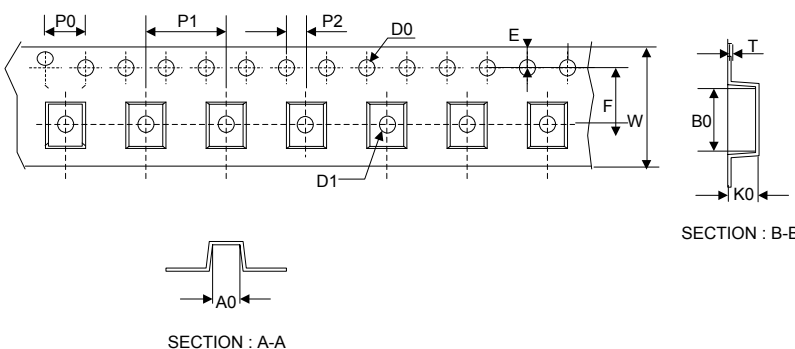
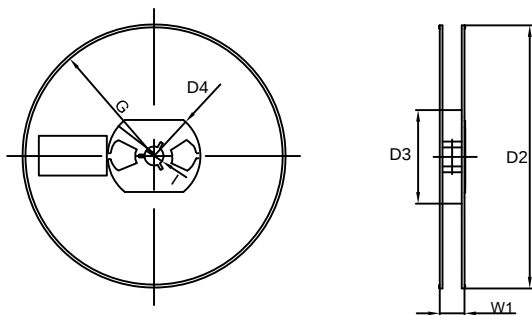
SOD-323 mechanical data

| 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 |                |