# RB551V-30

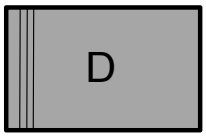
## SILICON EPITAXIAL PLANAR SCHOTTKY BARRIER DIODE

VOLTAGE RANGE
30 Volts
CURRENT
0.5 Ampere

## FEATURES

- Small surface mounting type
- Ultra low $V_F$
- High reliability






## APPLICATIONS

- High frequency rectification switching regulation

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

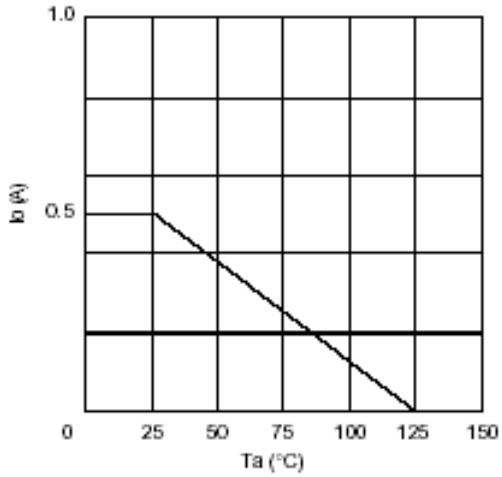
### Absolute Maximum Ratings ($T_a$ = 25 °C)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Reverse Voltage | $V_{RM}$ | 30 | V |
| DC Reverse Voltage | $V_R$ | 20 | V |
| Mean Rectifying Current | $I_O$ | 0.5 | A |
| Peak Forward Surge Current (60 Hz for 1 Cyc.) | $I_{FSM}$ | 2 | A |
| Junction Temperature | $T_j$ | 125 | °C |
| Storage Temperature Range | $T_{stg}$ | - 40 to + 125 | °C |
| Forward Voltage<br>at $I_F$ = 100 mA<br>at $I_F$ = 500 mA | $V_F$ | <br>0.36<br>0.47 | V |
| Reverse Current<br>at $V_R$ = 20 V | $I_R$ | 100 | µA |

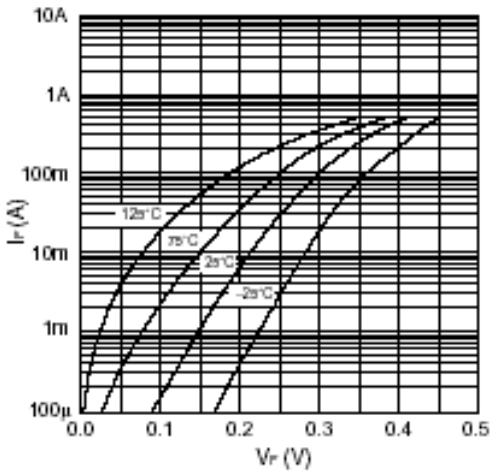
Note: ESD sensitive product handling required.

## RATING AND CHARACTERISTIC CURVES

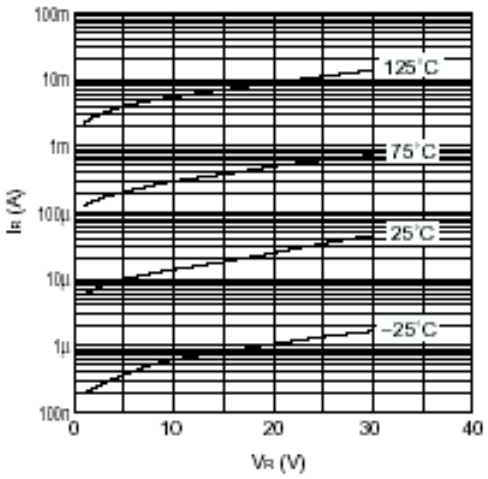
### FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE



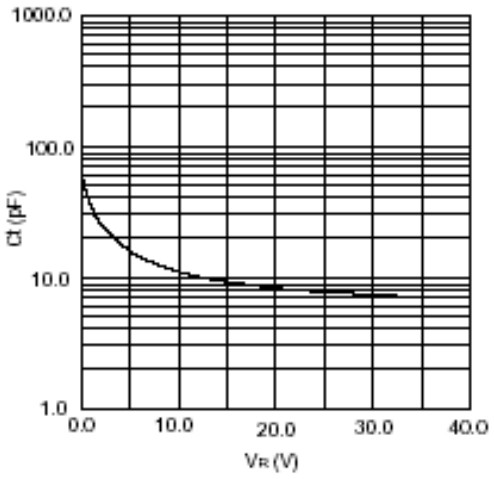

### FIG.2-TYPICAL FORWARD CHARACTERISTICS




### FIG.3 - TYPICAL REVERSE CHARACTERISTICS



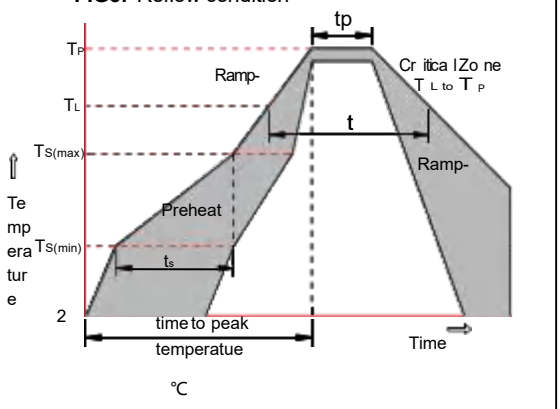

### FIG.4-TYPICAL JUNCTION CAPACITANCE



## Soldering parameters

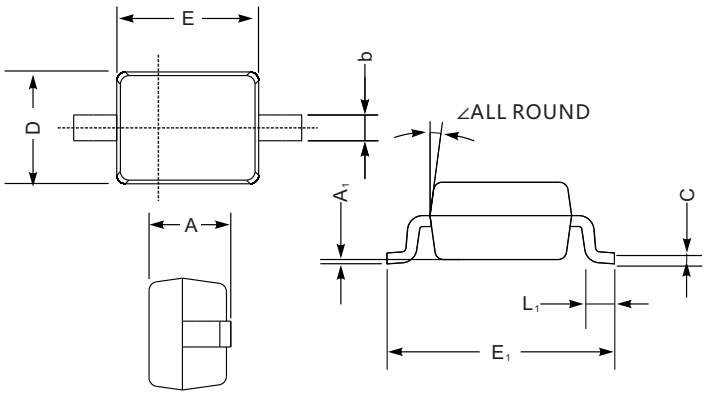
| Reflow Condition | | Pb-Free assembly (see as bellow) |
|---|---|---|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150℃ |
| | -Temperature Max($T_{s(max)}$) | +200℃ |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp ($T_L$) to peak) | | 3℃/sec. Max |
| $T_{s(max)}$ 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℃ |

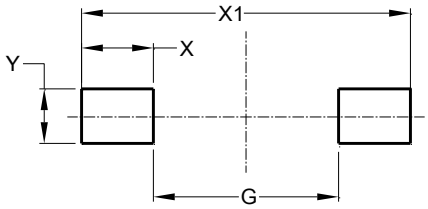
**FIG5:** Reflow condition




## Package Dimensions & Suggested Pad Layout

**SOD323**



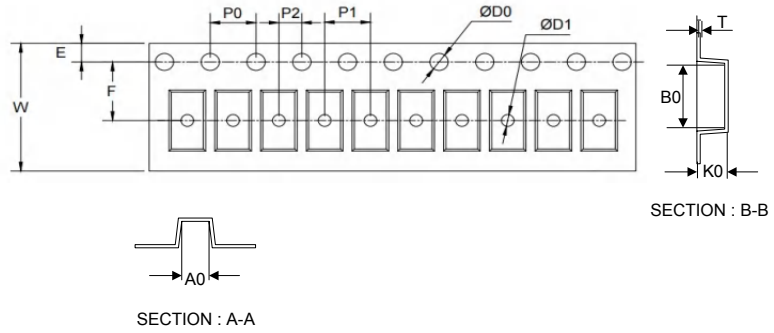

SOD-323 mechanical data

| 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 |

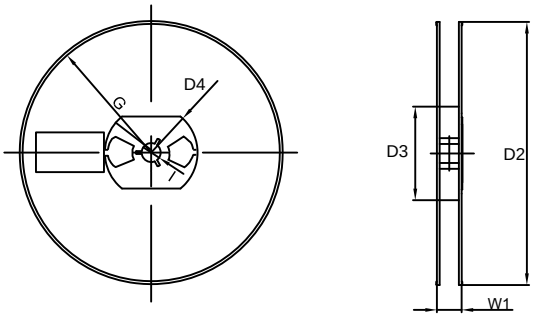
## Tape & rell specification

Tape




| 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