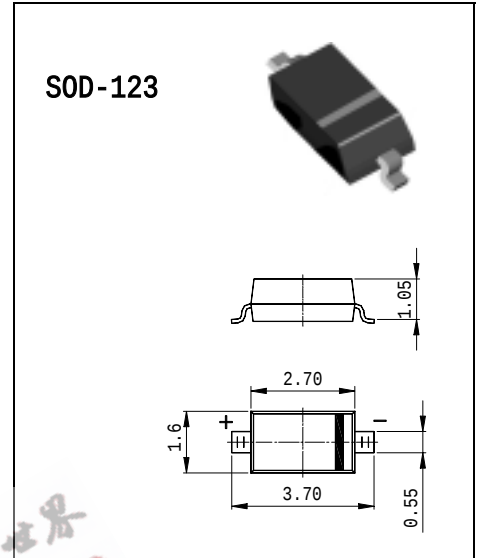


# SUN RISE ELECTRONICS TECHNOLOGY CO., LTD

## SOD-123 Plastic-Encapsulate Diode

### Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance



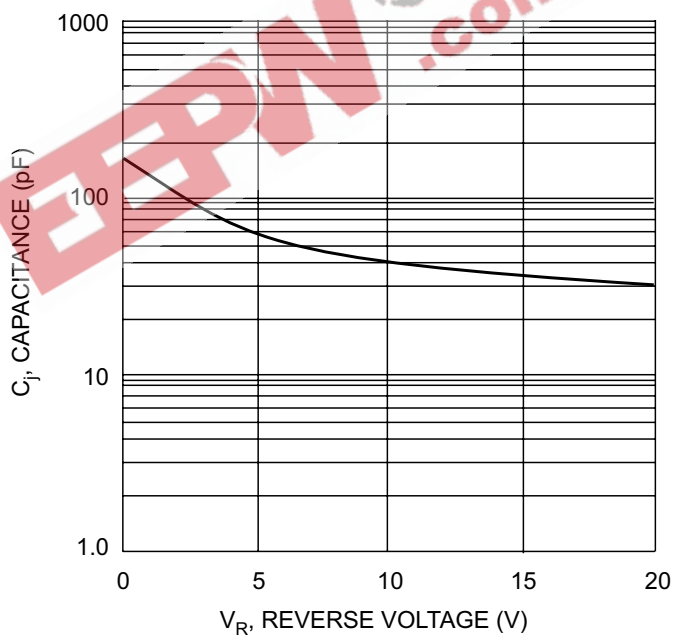
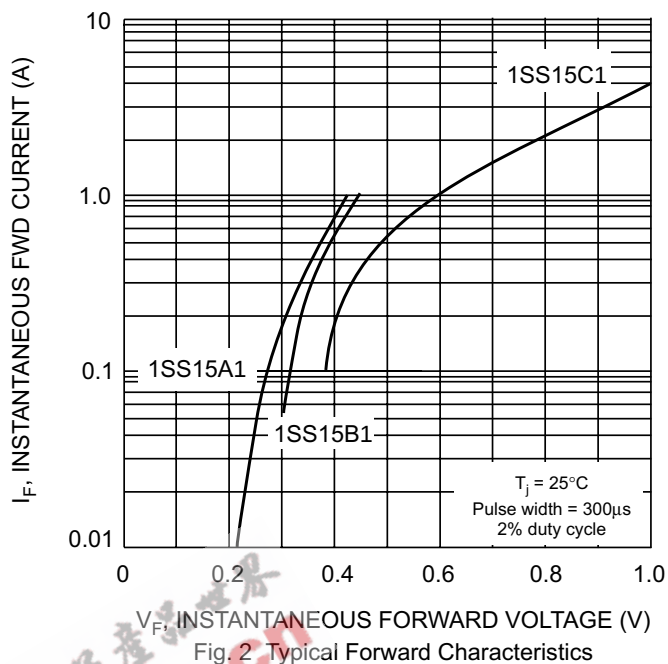
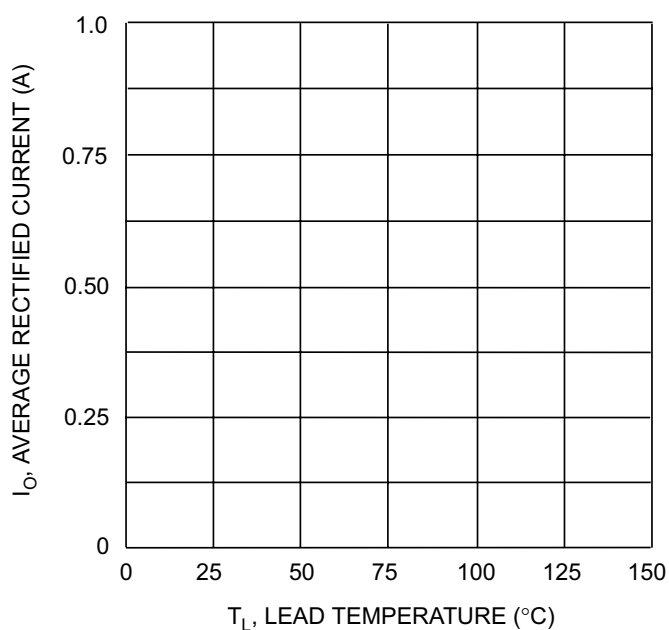
### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                                                                        | Symbol                          | 1SS15A1     | 1SS15B1 | 1SS15C1 | Unit               |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|---------|---------|--------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 20          | 30      | 40      | V                  |
| RMS Reverse Voltage                                                                                                   | $V_{R(RMS)}$                    | 14          | 21      | 28      | V                  |
| Average Rectified Output Current @ $T_A = 100^\circ\text{C}$                                                          | $I_O$                           | 1.0         |         |         | A                  |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms single half sine-wave superimposed on rated load<br>(JEDEC Method) | $I_{FSM}$                       | 20          |         |         | A                  |
| Power Dissipation (Note 1)                                                                                            | $P_d$                           | 450         |         |         | mW                 |
| Typical Thermal Resistance Junction to Ambient (Note 1)                                                               | $R_{\theta JA}$                 | 244         |         |         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                                                                               | $T_j, T_{STG}$                  | -65 to +125 |         |         | $^\circ\text{C}$   |
| Voltage Rate of Change                                                                                                | $dv/dt$                         | 1000        |         |         | V/ $\mu\text{s}$   |

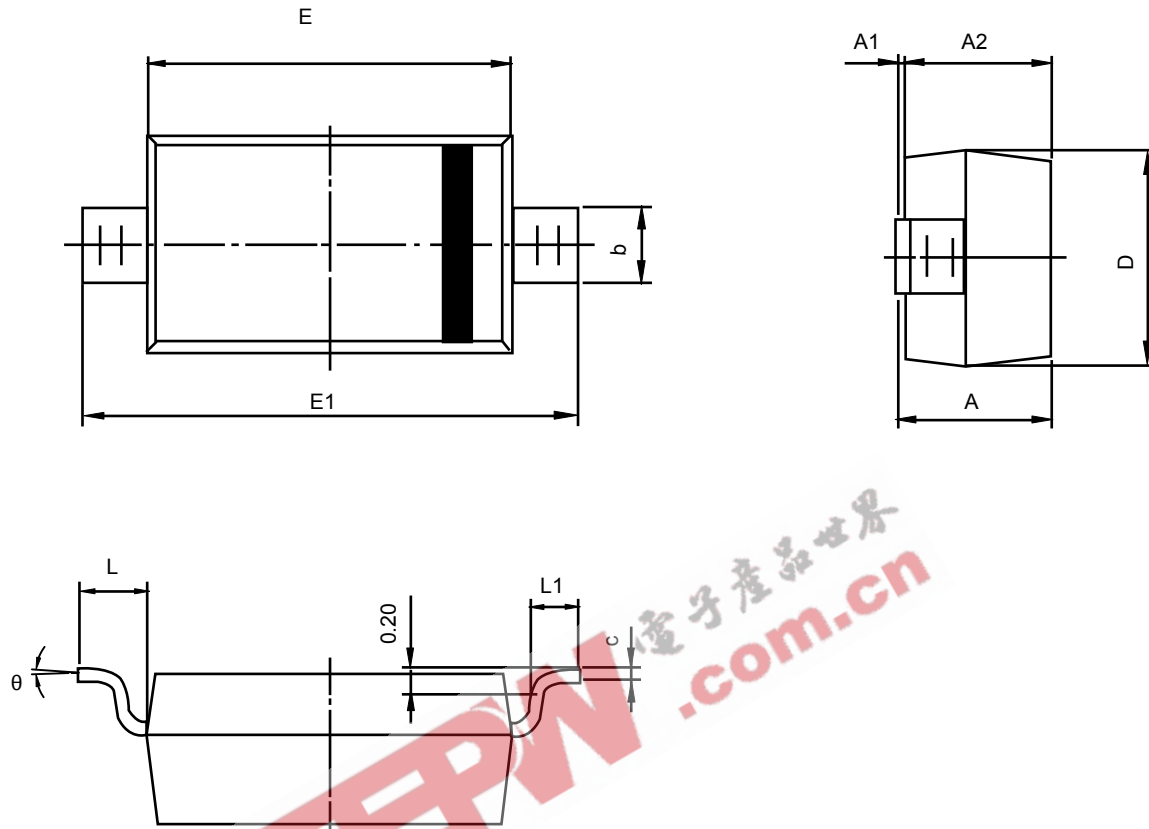
### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                             | Symbo       | 1SS15A1                 | 1SS15B1                 | 1SS15C1        | Unit          | Test Conditions                                                                                                                           |
|--------------------------------------------|-------------|-------------------------|-------------------------|----------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Minimum Reverse Breakdown Voltage (Note 2) | $V_{(BR)R}$ | 20<br>—<br>—            | 30<br>—<br>—            | 40<br>—<br>—   | V             | $I_R = 250\mu\text{A}$<br>$I_R = 130\mu\text{A}$<br>$I_R = 20\mu\text{A}$                                                                 |
| Maximum Forward Voltage Drop (Note 2)      | $V_{FM}$    | 0.300<br>0.385<br>0.500 | 0.375<br>0.430<br>0.525 | 0.480<br>0.550 | V             | $I_F = 0.1\text{A}, T_j = 25^\circ\text{C}$<br>$I_F = 0.5\text{A}, T_j = 25^\circ\text{C}$<br>$I_F = 1.0\text{A}, T_j = 25^\circ\text{C}$ |
| Maximum Leakage Current (Note 2)           | $I_{RM}$    | 100                     | 150                     | 200            | $\mu\text{A}$ | At rated DC blocking Voltage                                                                                                              |
| Junction Capacitance                       | $C_j$       | 120                     |                         |                | pF            | $f = 1\text{MHz}, V_R = 0\text{V DC}$                                                                                                     |

- Notes:
1. Valid provided that leads are kept at ambient temperature.
  2. Pulse Test: Pulse width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .



## SOD-123 PACKAGE OUTLINE DIMENSIONS



| Symbol    | Dimensions In Millimeters |       | Dimensions In Inches |       |
|-----------|---------------------------|-------|----------------------|-------|
|           | Min                       | Max   | Min                  | Max   |
| <b>A</b>  | 1.050                     | 1.250 | 0.041                | 0.049 |
| <b>A1</b> | 0.000                     | 0.100 | 0.000                | 0.004 |
| <b>A2</b> | 1.050                     | 1.150 | 0.041                | 0.045 |
| <b>b</b>  | 0.450                     | 0.650 | 0.018                | 0.026 |
| <b>c</b>  | 0.080                     | 0.150 | 0.003                | 0.006 |
| <b>D</b>  | 1.500                     | 1.700 | 0.059                | 0.067 |
| <b>E</b>  | 2.600                     | 2.800 | 0.102                | 0.110 |
| <b>E1</b> | 3.550                     | 3.850 | 0.140                | 0.152 |
| <b>L</b>  | 0.500REF                  |       | 0.020REF             |       |
| <b>L1</b> | 0.250                     | 0.450 | 0.010                | 0.018 |
| <b>θ</b>  | 0°                        | 8°    | 0°                   | 8°    |