

## FEATURES

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Lead: Axial leads, solderable per MIL-STD-750, method 2026
- \* Polarity: Polarity symbols marked on case
- \* Marking: SL

## VOLTAGE RANGE

40.0 Volts

## CURRENT

1.0 Ampere



## 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%.

| TYPE NUMBER                                                                                           | B5819W(SJ) | UNITS |
|-------------------------------------------------------------------------------------------------------|------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                | 40         | V     |
| Maximum RMS Voltage                                                                                   | 28         | V     |
| Maximum DC Blocking Voltage                                                                           | 40         | V     |
| Maximum Average Forward Rectified Current<br>See Fig. 1                                               | 1.0        | A     |
| Peak Forward Surge Current, 8.3 ms single half sine-wave<br>superimposed on rated load (JEDEC method) | 25         | A     |
| Maximum Instantaneous Forward Voltage at 1.0A                                                         | 0.58       | V     |
| Maximum DC Reverse Current Ta=25°C                                                                    | 0.05       | mA    |
| at Rated DC Blocking Voltage Ta=100°C                                                                 | 8          | mA    |
| Typical Junction Capacitance (Note1)                                                                  | 30         | pF    |
| Typical Thermal Resistance R JA (Note 2)                                                              | 400        | °C/W  |
| Operating Temperature Range Tj                                                                        | -65 — +125 | °C    |
| Storage Temperature Range Tstg                                                                        | -65 — +150 | °C    |

### NOTES:

1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2. Thermal Resistance Junction to Ambient.

## RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

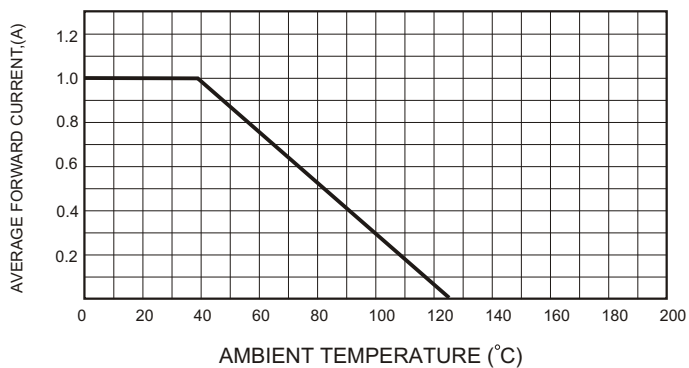


FIG.2-TYPICAL FORWARD CHARACTERISTICS

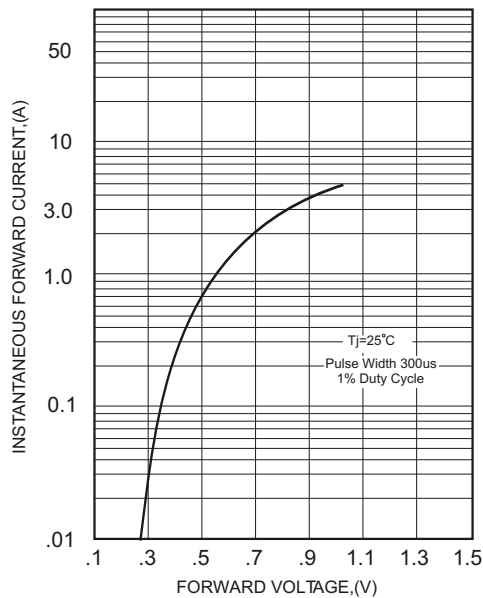


FIG.3-TYPICAL JUNCTION CAPACITANCE

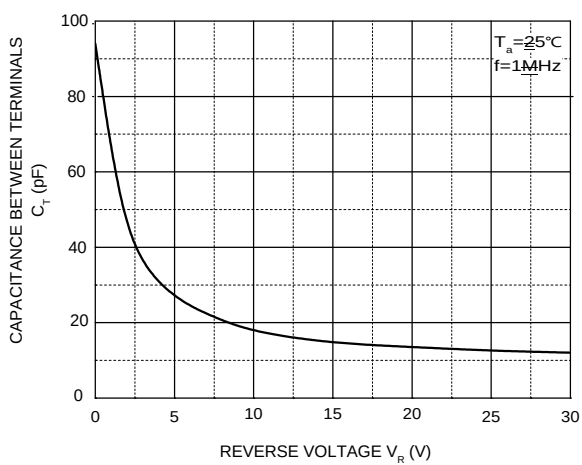
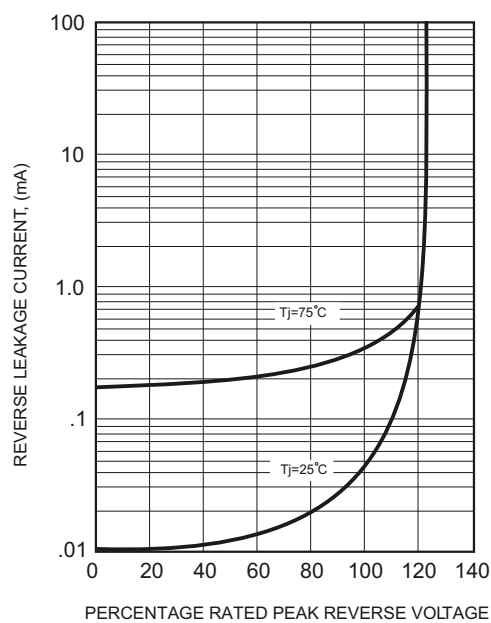
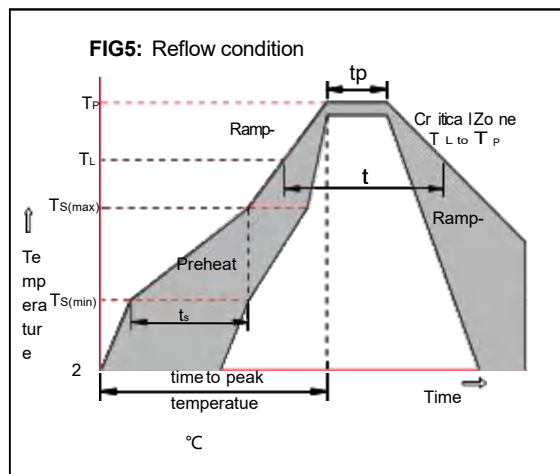


FIG.4- TYPICAL REVERSE CHARACTERISTICS



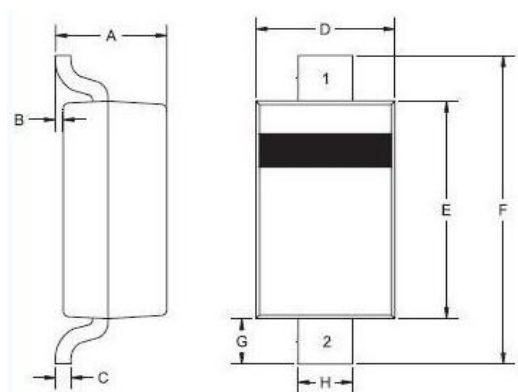
## Soldering parameters

| 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                            |

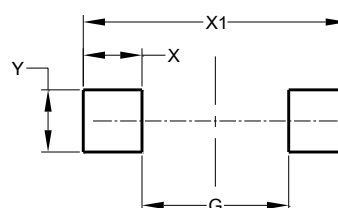


## Package Dimensions & Suggested Pad Layout

### SOD123

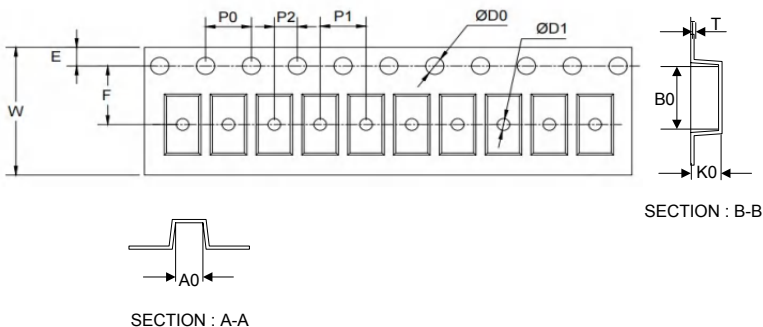
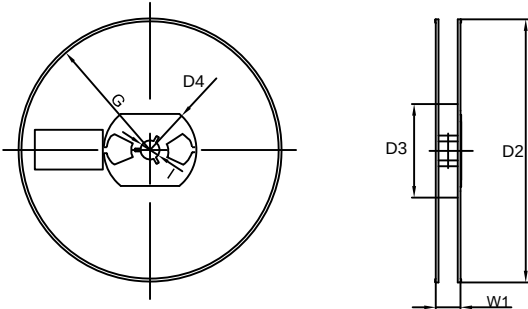


| SOD123               |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 0.95 | 1.35 |
| B                    | 0.00 | 0.12 |
| C                    | -    | 0.20 |
| D                    | 1.40 | 1.80 |
| E                    | 2.50 | 2.80 |
| F                    | 3.60 | 3.90 |
| G                    | 0.40 | -    |
| H                    | 0.50 | 0.70 |
| All Dimensions in mm |      |      |



| Dimensions | Value (in mm) |
|------------|---------------|
| G          | 2.20          |
| X          | 1.20          |
| X1         | 4.60          |
| Y          | 1.20          |

## 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±0.10      |
|                                                                                     |  | D1                | 1.00±0.20      |
|                                                                                     |  | E                 | 1.75±0.20      |
|                                                                                     |  | F                 | 3.60±0.20      |
|                                                                                     |  | W                 | 8.00±0.40      |
|                                                                                     |  | A0                | 2.30±0.40      |
|                                                                                     |  | B0                | 4.00±0.40      |
|                                                                                     |  | K0                | 1.50±0.40      |
|                                                                                     |  | T                 | 0.23±0.10      |
|                                                                                     |  | D2                | 177.0±3.0      |
|                                                                                     |  | D3                | 55Min.         |
| 7" Reel                                                                             |  | D4                | R24.0±3.0      |
|  |  | G                 | R82.0±3.0      |
|                                                                                     |  | I                 | 13.0±2.0       |
|                                                                                     |  | W1                | 11.0±3.0       |
|                                                                                     |  | Quantity: 3000PCS |                |