

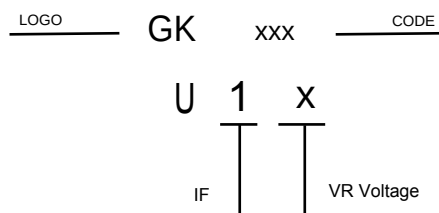
## FEATURES

- \* Ideal for surface mount applications
- \* Easy pick and place
- \* Built-in strain relief
- \* Fast switching speed

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Metallurgically bonded construction
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any

**VOLTAGE RANGE**  
50 to 1000 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                                                                                        | U1A        | U1B | U1D | U1G | U1J | U1K | U1M  | UNITS |
|----------------------------------------------------------------------------------------------------|------------|-----|-----|-----|-----|-----|------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                             | 50         | 100 | 200 | 400 | 600 | 800 | 1000 | V     |
| Maximum RMS Voltage                                                                                | 35         | 70  | 140 | 280 | 420 | 560 | 700  | V     |
| Maximum DC Blocking Voltage                                                                        | 50         | 100 | 200 | 400 | 600 | 800 | 1000 | V     |
| Maximum Average Forward Rectified Current                                                          | 1.0        |     |     |     |     |     |      | A     |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 30         |     |     |     |     |     |      | A     |
| Maximum Instantaneous Forward Voltage at 1.0A                                                      | 1.0        |     |     | 1.3 | 1.7 |     |      | V     |
| Maximum DC Reverse Current Ta=25°C                                                                 | 5.0        |     |     |     |     |     |      | μA    |
| at Rated DC Blocking Voltage Ta=100°C                                                              | 100        |     |     |     |     |     |      | μA    |
| Maximum Reverse Recovery Time (Note 1)                                                             | 50         |     |     |     | 75  |     |      | nS    |
| Typical Junction Capacitance (Note 2)                                                              | 15         |     |     |     |     |     |      | pF    |
| Operating and Storage Temperature Range Tj, Tstg                                                   | -50 — +150 |     |     |     |     |     |      | °C    |

### NOTES:

1. Reverse Recovery Time test condition: IF=0.5A, IR=1.0A, IRR=0.25A
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

## RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

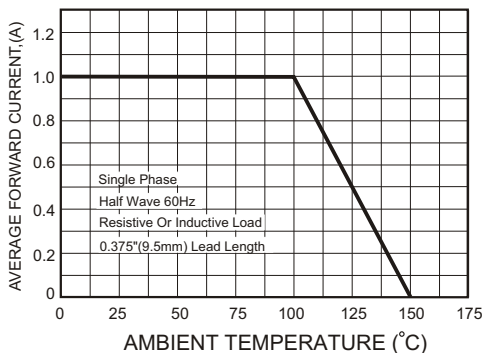
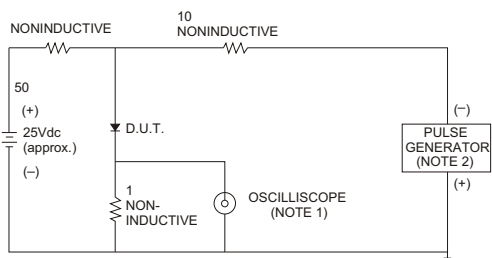
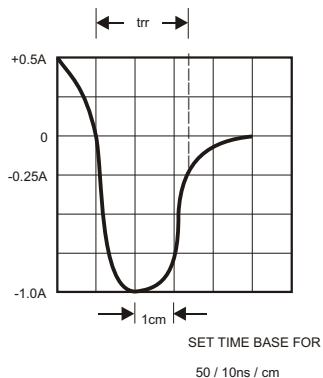


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm, 22pF.  
2. Rise Time= 10ns max., Source Impedance= 50 ohms.



SET TIME BASE FOR  
50 / 10ns / cm

FIG.5 - TYPICAL REVERSE CHARACTERISTICS

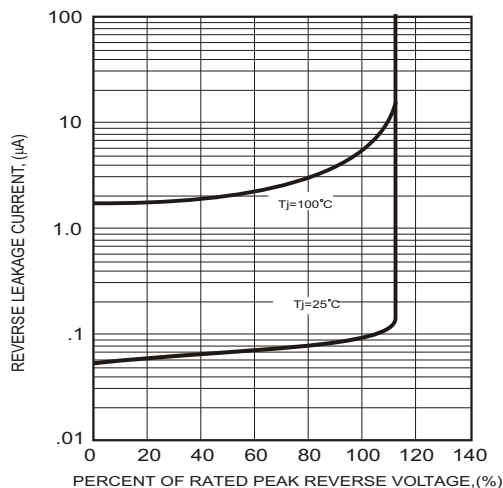


FIG.2-TYPICAL FORWARD CHARACTERISTICS

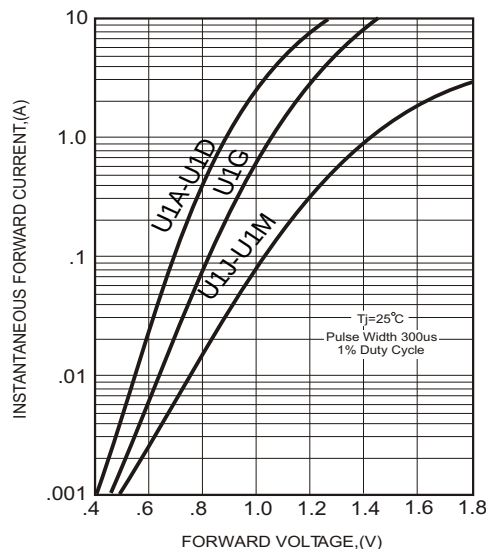


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

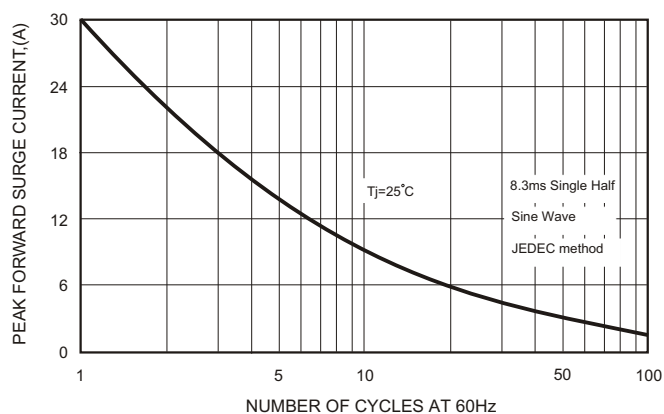
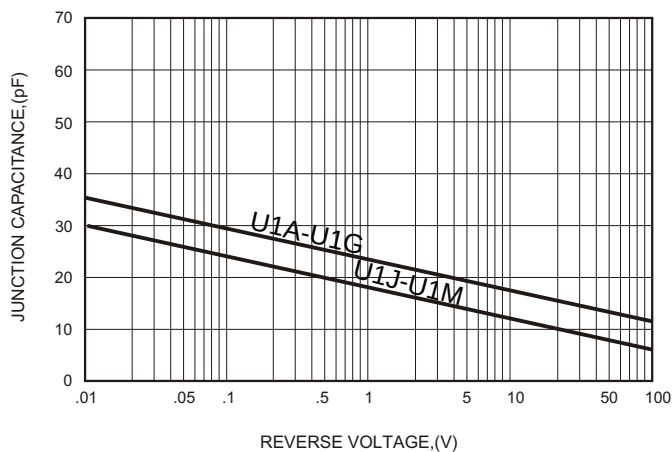
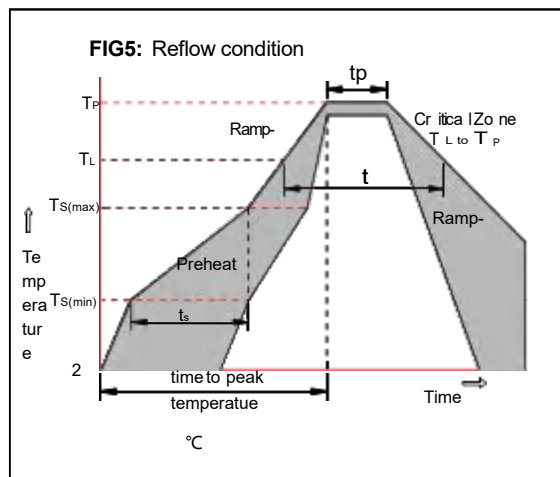


FIG.6-TYPICAL JUNCTION CAPACITANCE

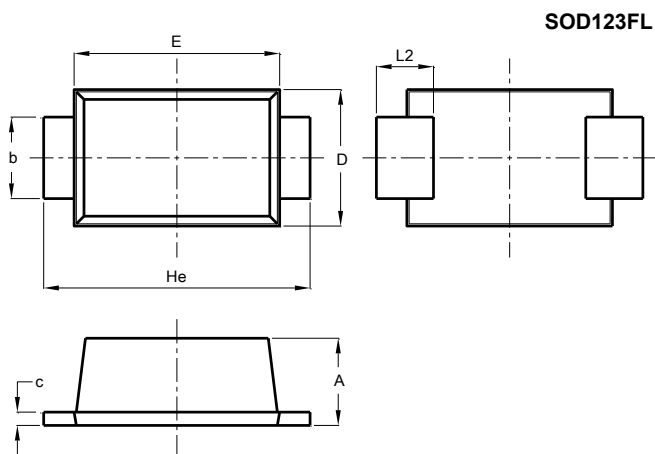


## Soldering parameters

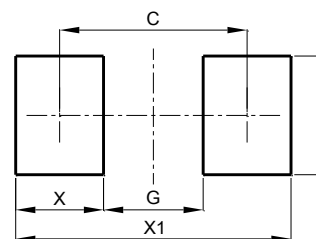
| Reflow Condition                                        |                                   | Pb-Free assembly<br>(see as below) |
|---------------------------------------------------------|-----------------------------------|------------------------------------|
| Pre Heat                                                | -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

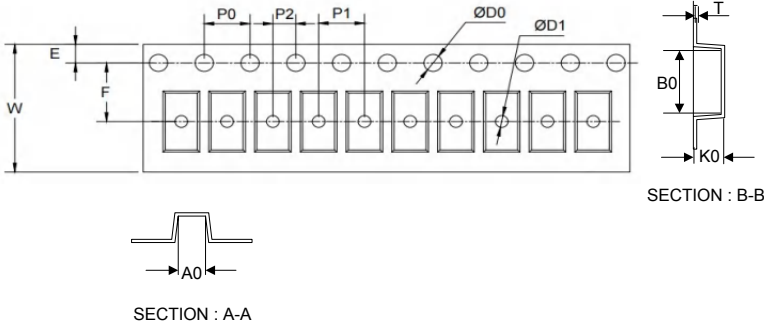
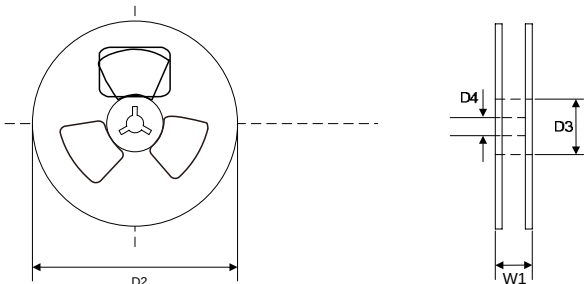


| SOD123FL             |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 1.00 | 1.20 |
| b                    | 0.80 | 1.10 |
| c                    | 0.12 | 0.20 |
| D                    | 1.75 | 1.95 |
| E                    | 2.60 | 2.90 |
| He                   | 3.55 | 3.80 |
| L2                   | 0.50 | 0.85 |
| All Dimensions in mm |      |      |



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 3.25          |
| G          | 2.00          |
| X          | 1.25          |
| X1         | 4.50          |
| Y          | 1.50          |

## Tape & reel specification

| Tape                                                                                                                        |  | Symbol            | Dimension (mm) |
|-----------------------------------------------------------------------------------------------------------------------------|--|-------------------|----------------|
|  <p>SECTION : A-A</p> <p>SECTION : B-B</p> |  | P0                | 4.00±0.20      |
|                                                                                                                             |  | P1                | 4.00±0.20      |
|                                                                                                                             |  | P2                | 2.00±0.20      |
|                                                                                                                             |  | D0                | 1.55±0.15      |
|                                                                                                                             |  | D1                | 1.00±0.20      |
|                                                                                                                             |  | E                 | 1.75±0.20      |
|                                                                                                                             |  | F                 | 3.50±0.25      |
|                                                                                                                             |  | W                 | 8.00±0.20      |
|                                                                                                                             |  | A0                | 1.85±0.20      |
|                                                                                                                             |  | B0                | 3.95±0.20      |
|                                                                                                                             |  | K0                | 1.30±0.20      |
|                                                                                                                             |  | T                 | 0.21±0.10      |
| 7" Reel                                                                                                                     |  | D2                | 178.0±5.0      |
|                                           |  | D3                | 55.0Min.       |
|                                                                                                                             |  | D4                | 10.0±2.5       |
|                                                                                                                             |  | W1                | 11.5±2.5       |
|                                                                                                                             |  | Quantity: 3000PCS |                |