

## FEATURES

- \* Ideal for surface mount applications
- \* Easy pick and place
- \* Built-in strain relief
- \* Super fast recovery time for high speed switching

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Metallurgically bonded construction
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.063 gram

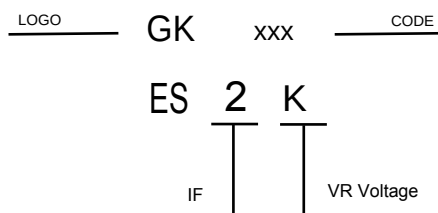
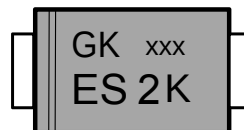


## VOLTAGE RANGE

800 Volts

## CURRENT

2.0 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                                                                                        | ES2K       | UNITS |
|----------------------------------------------------------------------------------------------------|------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                             | 800        | V     |
| Maximum RMS Voltage                                                                                | 560        | V     |
| Maximum DC Blocking Voltage                                                                        | 800        | V     |
| Maximum Average Forward Rectified Current                                                          | 2.0        | A     |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 60         | A     |
| Maximum Instantaneous Forward Voltage at 2.0A                                                      | 1.9        | V     |
| Maximum DC Reverse Current      Ta=25°C                                                            | 5.0        | uA    |
| at Rated DC Blocking Voltage      Ta=100°C                                                         | 50         | uA    |
| Maximum Reverse Recovery Time (Note 1)                                                             | 35         | nS    |
| Typical Junction Capacitance (Note 2)                                                              | 40         | pF    |
| Operating and Storage Temperature Range T <sub>J</sub> , T <sub>STG</sub>                          | -65 — +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

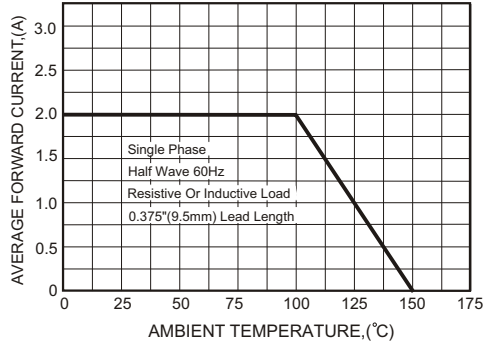
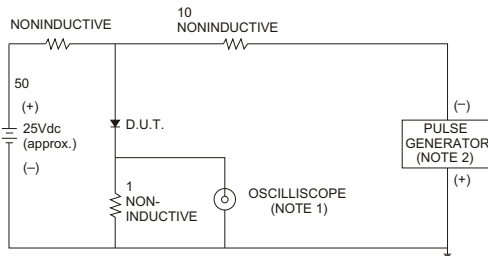


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



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

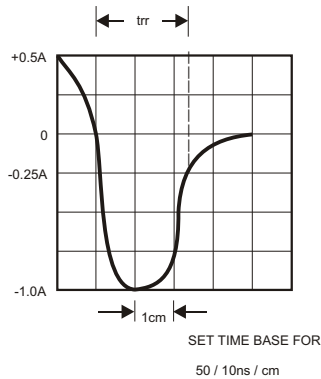


FIG.5- TYPICAL REVERSE CHARACTERISTICS

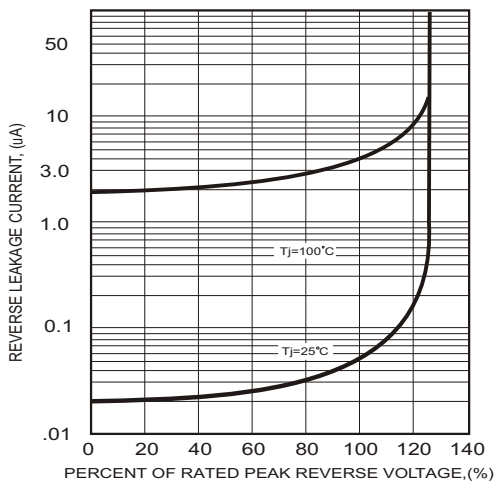


FIG.2-TYPICAL FORWARD CHARACTERISTICS

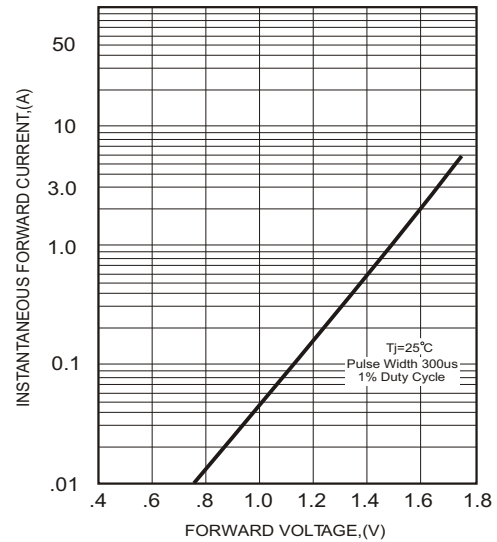


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

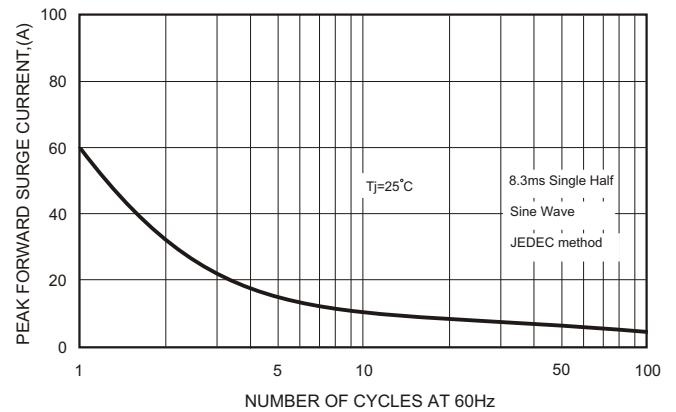
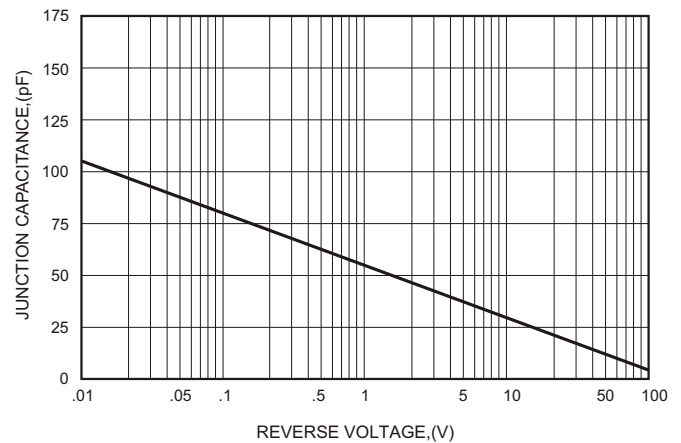
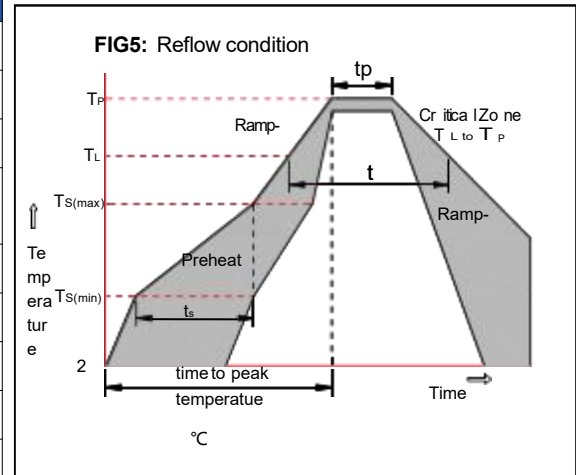


FIG.6-TYPICAL JUNCTION CAPACITANCE



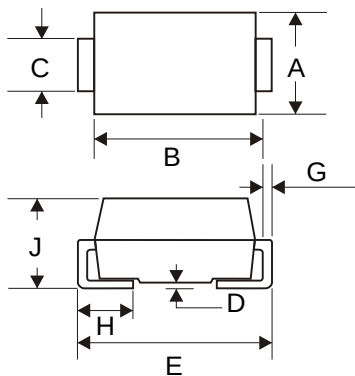
## Soldering parameters

| 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                            |

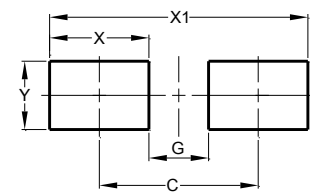


## Package Dimensions & Suggested Pad Layout

### SMA

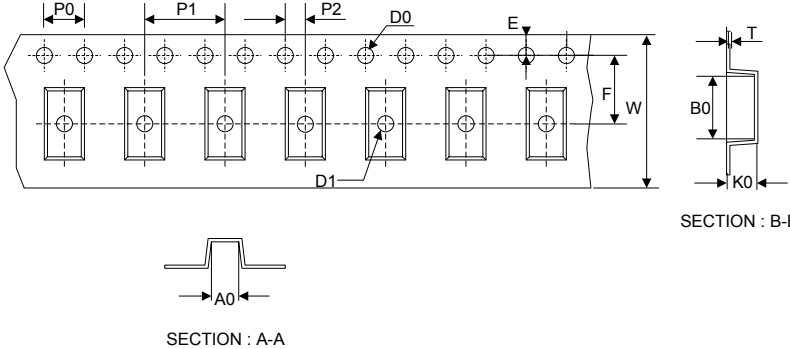
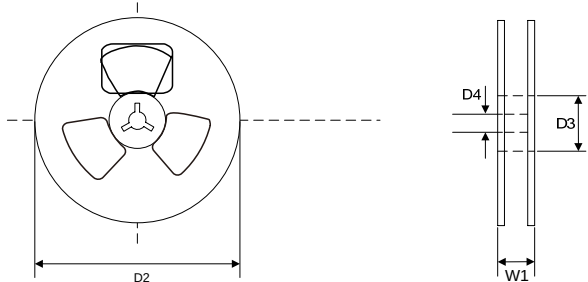
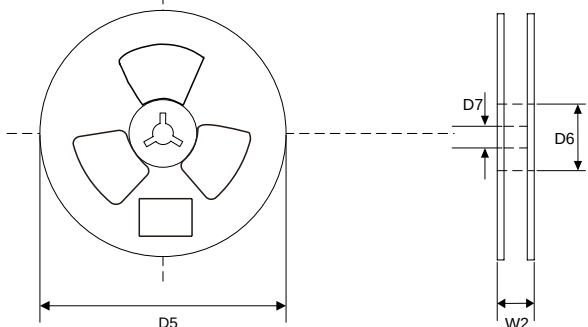
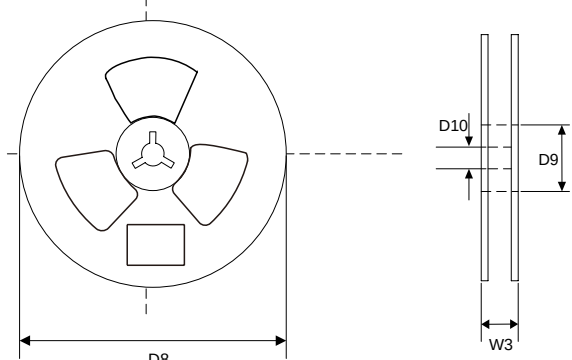


| SMA                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.40 | 2.79 |
| B                    | 3.99 | 4.50 |
| C                    | 1.32 | 1.47 |
| D                    | -    | 0.20 |
| E                    | 4.93 | 5.28 |
| G                    | 0.15 | 0.31 |
| H                    | 0.76 | 1.52 |
| J                    | 1.98 | 2.29 |
| All Dimensions in mm |      |      |



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.20          |
| G          | 1.90          |
| X          | 2.30          |
| X1         | 6.50          |
| Y          | 2.00          |

## Tape & reel specification

| Tape                                                                                |  | Symbol            | Dimension (mm) |
|-------------------------------------------------------------------------------------|--|-------------------|----------------|
|    |  | P0                | 4.00±0.20      |
|                                                                                     |  | P1                | 8.00±0.20      |
|                                                                                     |  | P2                | 2.00±0.20      |
|                                                                                     |  | D0                | 1.60±0.20      |
|                                                                                     |  | D1                | 1.60±0.20      |
|                                                                                     |  | E                 | 1.75±0.20      |
|                                                                                     |  | F                 | 5.50±0.15      |
|                                                                                     |  | W                 | 12.00±0.25     |
|                                                                                     |  | A0                | 2.75±0.20      |
|                                                                                     |  | B0                | 5.25±0.20      |
|                                                                                     |  | K0                | 2.45±0.25      |
|                                                                                     |  | T                 | 0.20±0.10      |
|                                                                                     |  | D2                | 176.0±5.0      |
|                                                                                     |  | D3                | 55.0Min.       |
| 7" Reel                                                                             |  | D4                | 14.0±2.5       |
|   |  | W1                | 14.0±2.5       |
|                                                                                     |  | Quantity: 2000PCS |                |
| 11" Reel                                                                            |  | D5                | 276.0±5.0      |
|  |  | D6                | 71.0Min.       |
|                                                                                     |  | D7                | 14.0±2.5       |
|                                                                                     |  | W2                | 14.0±2.5       |
|                                                                                     |  | Quantity: 5000PCS |                |
| 13" Reel                                                                            |  | D8                | 330.0±5.0      |
|  |  | D9                | 73.0Min.       |
|                                                                                     |  | D10               | 14.0±2.5       |
|                                                                                     |  | W3                | 14.0±2.5       |
|                                                                                     |  | Quantity: 5000PCS |                |