



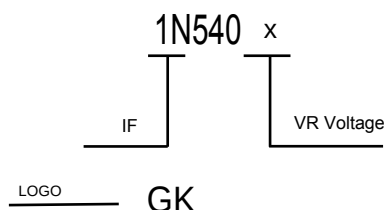
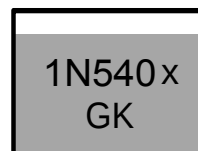
## FEATURES

- \* Low forward voltage drop
- \* High current capability
- \* High reliability
- \* High surge current capability

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any

**VOLTAGE RANGE**  
50 to 1000 Volts  
**CURRENT**  
3.0 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                                                                                        | 1N5400     | 1N5401 | 1N5402 | 1N5404 | 1N5406 | 1N5407 | 1N5408 | 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                                                          | 3.0        |        |        |        |        |        |        | A     |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 100        |        |        |        |        |        |        | A     |
| Maximum Instantaneous Forward Voltage at 3.0A                                                      | 0.98       |        |        |        |        |        |        | V     |
| Maximum DC Reverse Current Ta=25°C                                                                 | 5.0        |        |        |        |        |        |        | μA    |
| at Rated DC Blocking Voltage Ta=100°C                                                              | 50         |        |        |        |        |        |        | μA    |
| Typical Junction Capacitance (Note 1)                                                              | 40         |        |        |        |        |        |        | pF    |
| Typical Thermal Resistance R JA (Note 2)                                                           | 30         |        |        |        |        |        |        | °C/W  |
| Operating and Storage Temperature Range Tj, Tstg                                                   | -65 — +150 |        |        |        |        |        |        | °C    |

### NOTES:

1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2. Thermal Resistance from Junction to Ambient .375" (9.5mm) lead length.

## RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

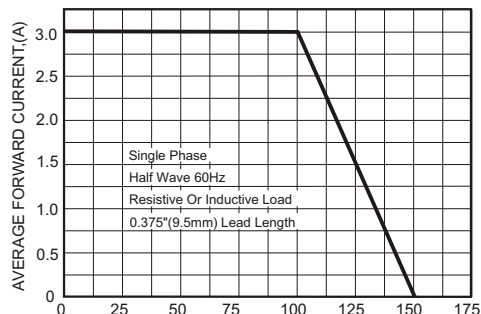


FIG.2-TYPICAL FORWARD CHARACTERISTICS

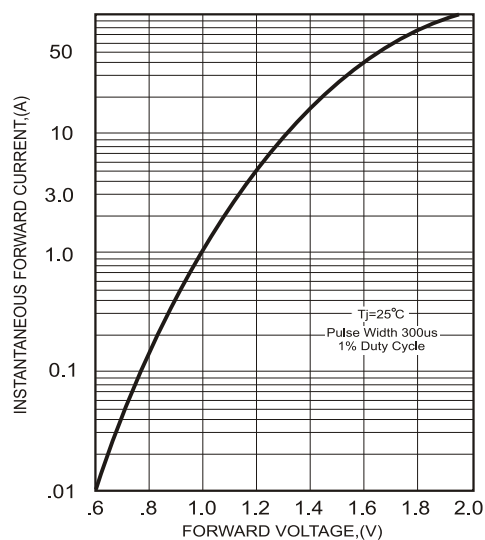


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

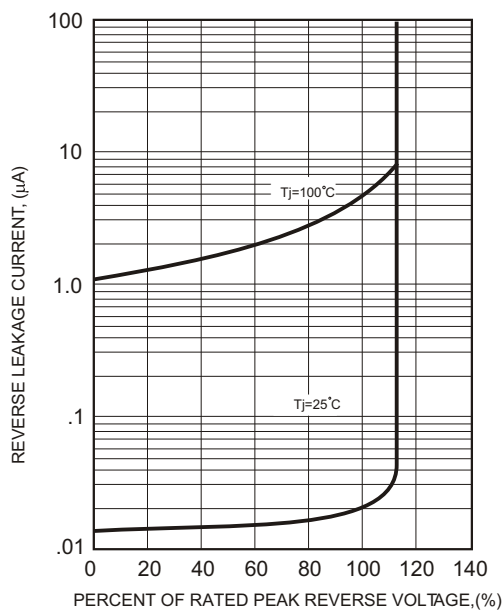


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

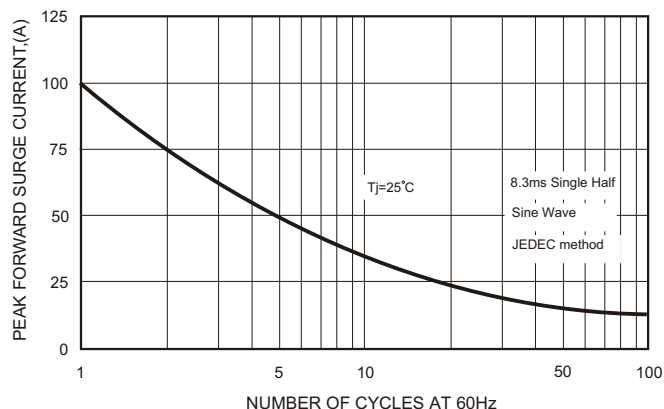
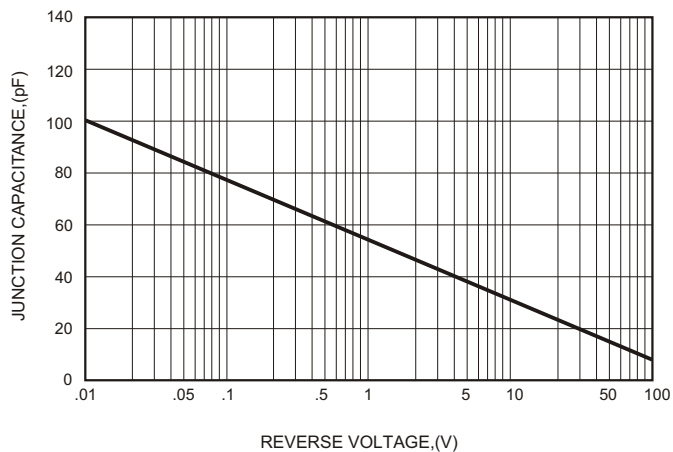
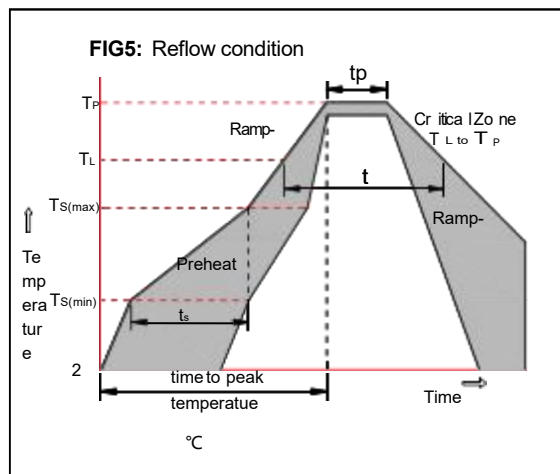


FIG.5-TYPICAL JUNCTION CAPACITANCE



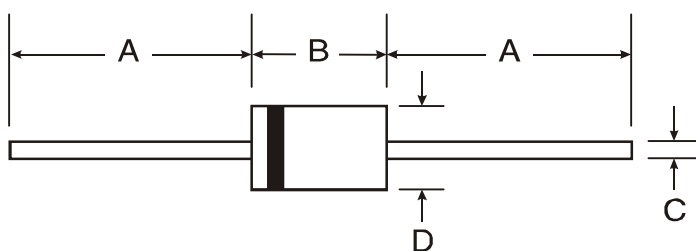
## Soldering parameters

| 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

DO-27



| DO-27                |       |      |
|----------------------|-------|------|
| Dim                  | Min   | Max  |
| A                    | 24.00 | -    |
| B                    | 7.20  | 9.50 |
| C                    | 1.15  | 1.25 |
| D                    | 5.00  | 5.60 |
| All Dimensions in mm |       |      |