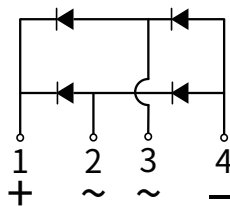


## FEATURES

- \* Ideal for printed circuit board
- \* Low forward voltage
- \* Low leakage current

## MECHANICAL DATA

- \* Polarity: marked on body
- \* Mounting position: Any
- \* Weight: 4.8 grams



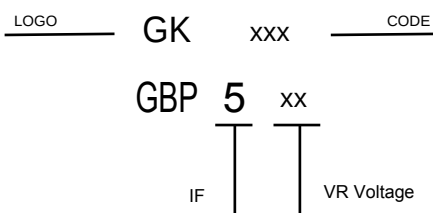
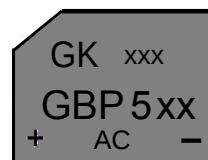
Internal Schematic

## VOLTAGE RANGE

600 to 1000 Volts

## CURRENT

5.0 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%.

|                                                                                                         | Symbols         | GBP506      | GBP508 | GBP510 | Units |
|---------------------------------------------------------------------------------------------------------|-----------------|-------------|--------|--------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                  | $V_{RRM}$       | 600         | 800    | 1000   | Volts |
| Maximum RMS Voltage                                                                                     | $V_{RMS}$       | 420         | 560    | 700    | Volts |
| Maximum DC Blocking Voltage                                                                             | $V_{DC}$        | 600         | 800    | 1000   | Volts |
| Maximum Average Forward Rectified Current                                                               | $I_{(AV)}$      | 5.0         |        |        | Amp   |
| Peak Forward Surge Current,<br>8.3ms single half-sine-wave<br>superimposed on rated load (JEDEC method) | $I_{FSM}$       | 120         |        |        | Amp   |
| Maximum Forward Voltage<br>at 5.0A DC and 25                                                            | $V_F$           | 1.1         |        |        | Volts |
| Maximum Reverse Current at $T_A=25$<br>at Rated DC Blocking Voltage $T_A=100$                           | $I_R$           | 10.0<br>500 |        |        | uAmp  |
| Typical Junction Capacitance (Note 1)                                                                   | $C_J$           | 25          |        |        | pF    |
| Typical Thermal Resistance (Note 2)                                                                     | $R_{\theta JA}$ | 25          |        |        | /W    |
| Typical Thermal Resistance (Note 2)                                                                     | $R_{\theta JL}$ | 16          |        |        | /W    |
| Operating and Storage Temperature Range                                                                 | $T_J, T_{stg}$  | -55 to +150 |        |        |       |

### NOTES:

- 1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
- 2- Thermal Resistance Junction to Ambient and from junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted.

## RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

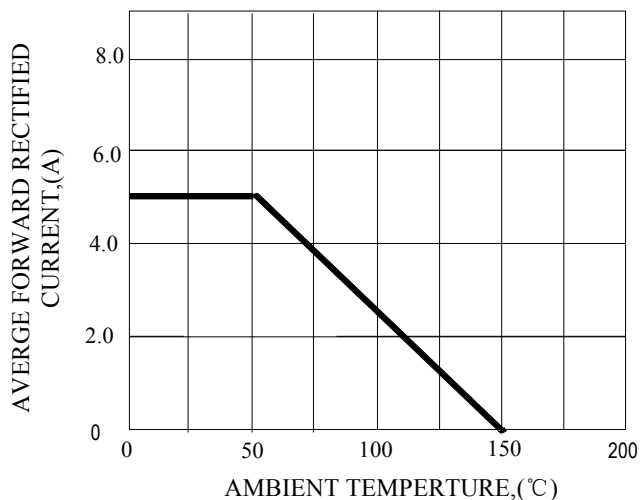


FIG.2-TYPICAL FORWARD CHARACTERISTICS

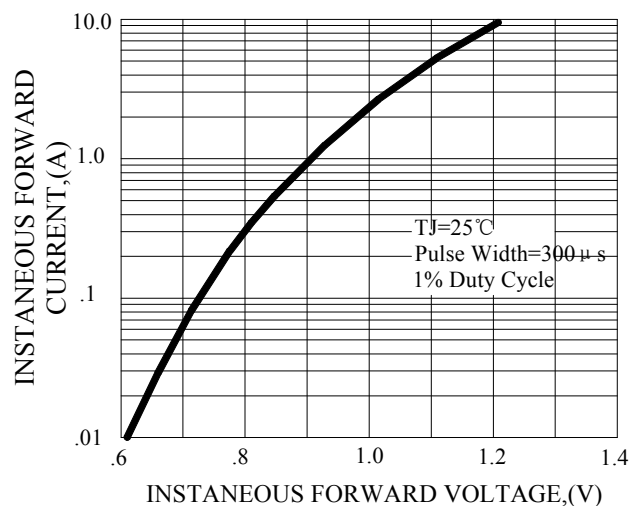


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

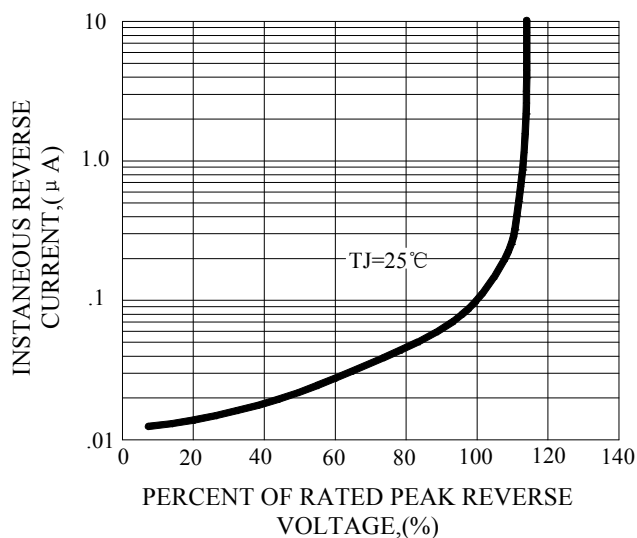
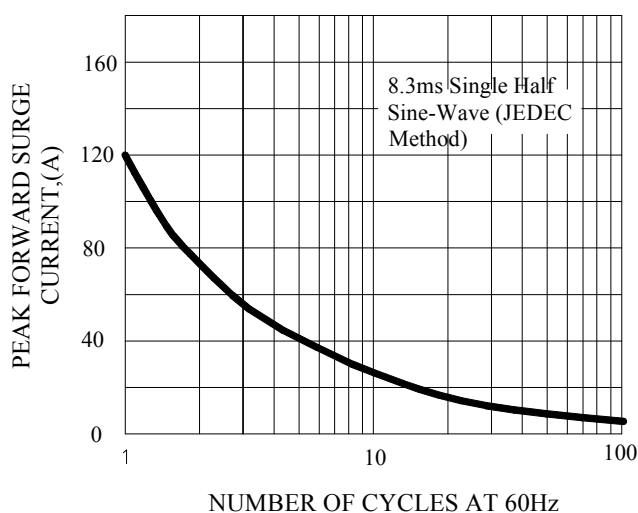
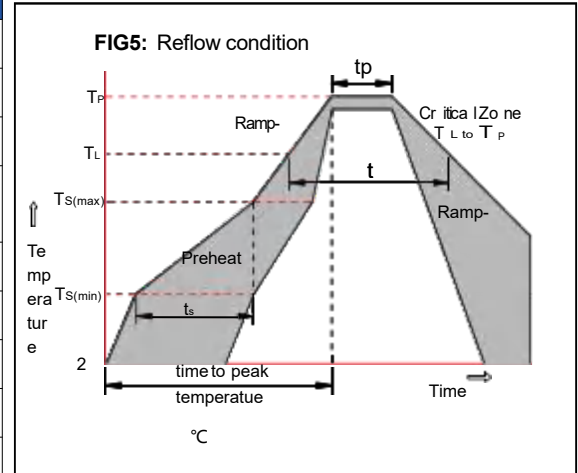


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

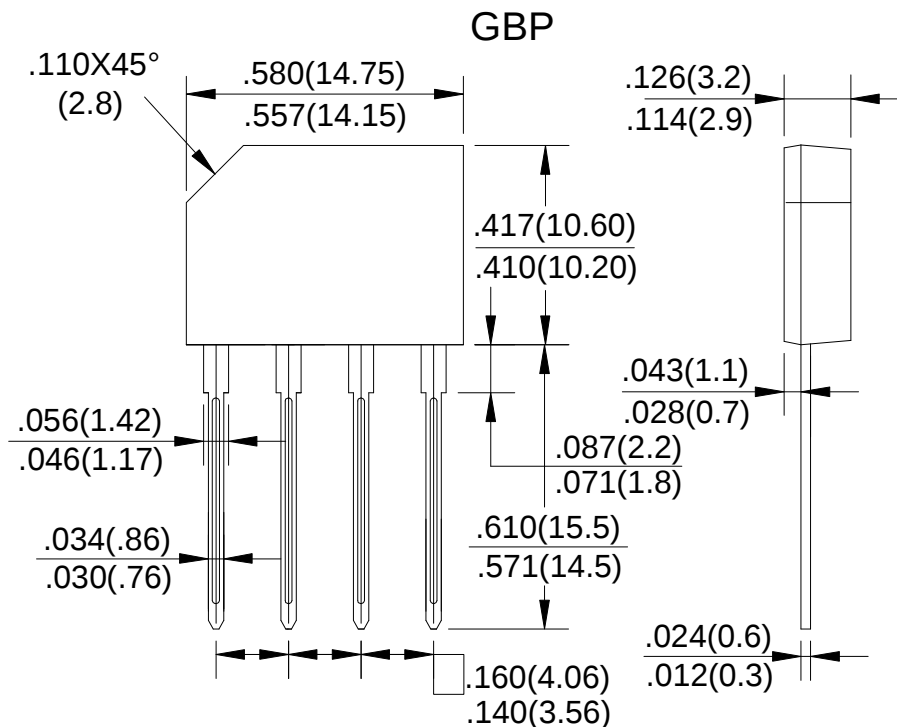


## Soldering parameters

| 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



Dimensions in millimeters