# DEVICE SPECIFICATION

GBU2506L

## Low $V_F$ Single-Phase Bridge Rectifier

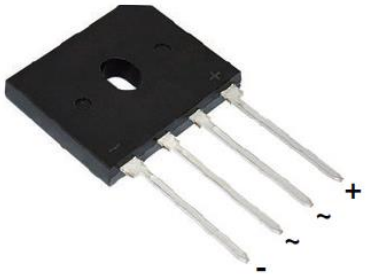
## 1. Description

This has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 150 ℃ junction temperature.

These devices are well suited for high efficiency switched mode power supplies, UPS, converters, output rectification, solar inverter, data center.

## 2. Features

- Higher efficiency
- Low Forward Voltage Drop
- Softest, fast switching capability
- Reliable High Temperature Operation
- 150℃ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant
- Green Molding Compound (No Br, Sb).

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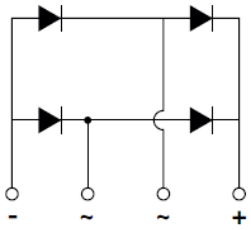


## 3. Maximum Ratings TC = 25℃ unless otherwise noted

| Parameter | | Symbol | Value | Units |
|---|---|---|---|---|
| DC Blocking Voltage | | $V_{RM}$ | 600 | V |
| Working Peak Reverse Voltage | | $V_{RWM}$ | | |
| Peak Repetitive Reverse Voltage | | $V_{RRM}$ | | |
| Average Rectified Forward Current | With heatsink | $I_{F(AV)}$ | 25 | A |
| | Without heatsink | $I_{F(AV)}$ | 3.8 | A |
| Peak Forward Surge Current - 1/2 60hz | | $I_{FSM}$ | 300 | A |
| $i^2t$ value $T_C$=25℃, $t_p$=8.3ms | | $\int i^2dt$ | 373 | $A^2s$ |
| Typical Junction Capacitance at 1MHz, $V_R$=4V | | $C_J$ | 100 | pF |
| Operating and Storage Temperature Range | | $T_J$, $T_{STG}$ | -55 to +150 | °C |

## 4. Thermal Characteristics

| Parameter | Symbol | Typ. | Max. | Units |
|---|---|---|---|---|
| Thermal Resistance, Junction to Case ② | $R_{\theta JC}$ | 1.2 | --- | °C / W |
| Thermal Resistance, Junction to Ambient ② | $R_{\theta JA}$ | --- | 6 | |
| Soldering Temperature, wave soldering only allowed at leads (1.6mm from case for 10s) | $T_{solder}$ | | 260 | °C |

## Low $V_F$ Single-Phase Bridge Rectifier

## 5. Electrical Characteristics TC = 25°C unless otherwise noted

| Parameter | Test Conditions | | Symbol | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Breakdown Voltage ① | $I_R$ = 0.5mA | $T_J$ = 25 °C | $V_B$ | 600 | ----- | ----- | V |
| Instantaneous Forward Voltage ① | $I_F$ = 12.5 A | $T_J$ = 25 °C | VF | ----- | 0.89 | 0.92 | Volts |
| Instantaneous Reverse Current ① | At $V_{RM}$ | $T_J$ = 25 °C | IR | ----- | ----- | 10 | uA |
| | | $T_J$ = 125 °C | | ----- | ----- | 1 | mA |

**Notes:**
1. Pulse Test: Pulse width ≤300μs, Duty cycle ≤ 2%.
2. Thermal Resistance Junction to case and lead, device mounted on 200 x 200 x 20 mm copper plate.

## 6. Curves Characteristics

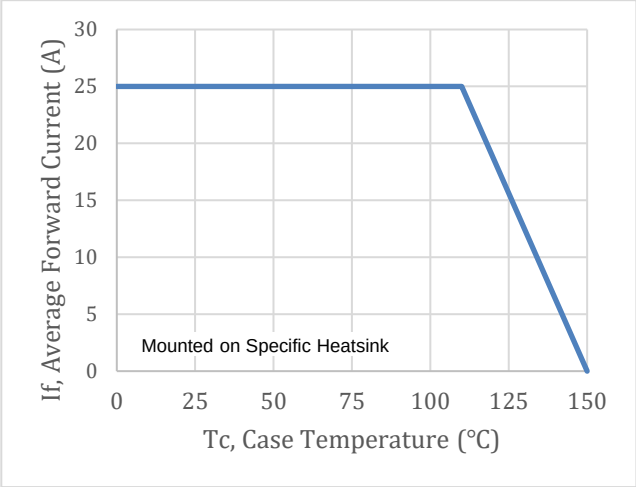


Figure 1: Forward Current Derating Curve

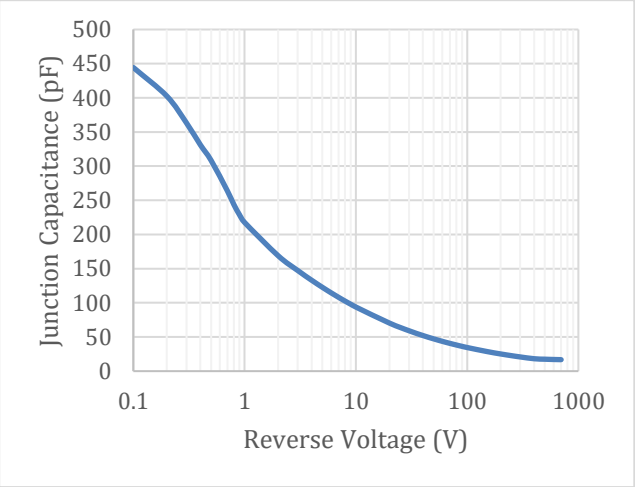


Figure 2: Typical Junction Capacitance

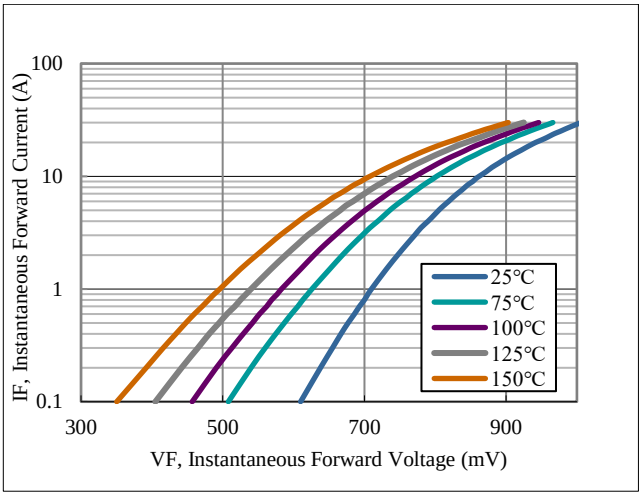


Figure 3: Typical Instantaneous Forward Voltage

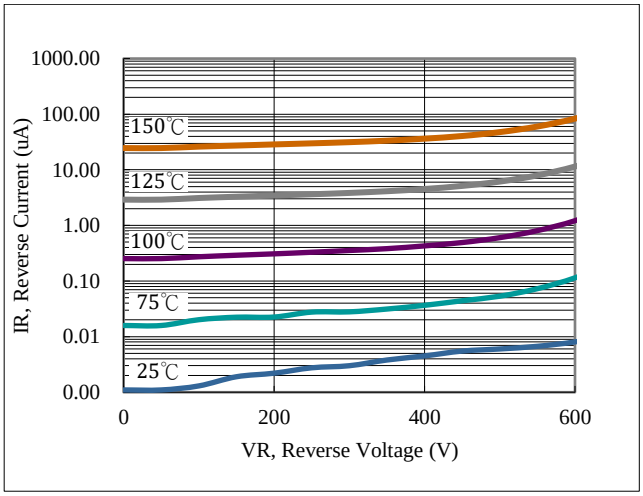


Figure 4: Typical Reverse Current

## 7. Package Dimensions

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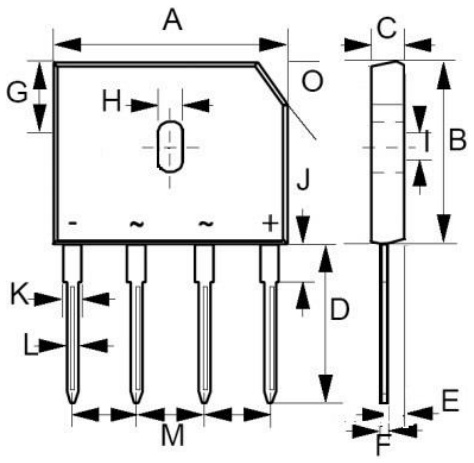


| DIM | Min. | Max. |
|---|---|---|
| A | 21.60 | 22.30 |
| B | 18.30 | 19.10 |
| C | 3.30 | 3.70 |
| D | 17.40 | 18.30 |
| E | 1.90 | 2.70 |
| F | 0.40 | 0.64 |
| G | 7.40 | 7.90 |
| H | 3.50 | 4.10 |
| I | 1.60 | 2.20 |
| J | 1.50 | 2.70 |
| K | 2.00 | 2.50 |
| L | 0.90 | 1.30 |
| M | 4.83 | 5.33 |
| O | 3.2 * 45° | |
| All dimensions in millimeter | | |



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