

### Single Phase Bridge Rectifier

#### Features

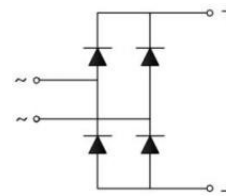
- Very low forward voltage drop
- High surge current capability
- Low thermal resistance
- High thermal conductivity
- Reverse Voltage : 600 to 1200V
- Forward Current : 50A



BR-L

#### Applications

- Single phase rectifiers for power supplies
- Rectifiers for DC motor field supplies
- Industrial automation equipment
- Input rectifiers for inverter
- Electric welder



#### Module Type

| Type    | VRRM  | VRSM  |
|---------|-------|-------|
| BR5006L | 600V  | 700V  |
| BR5008L | 800V  | 900V  |
| BR5010L | 1000V | 1100V |
| BR5012L | 1200V | 1300V |

#### Maximum Ratings

| Item                           | Conditions   | Symbol    | Values      | Unit                 |
|--------------------------------|--|-----------|-------------|----------------------|
| Output Current                 | Single Phase, Sin Full Wave<br>$T_c=75^{\circ}\text{C}$            | $I_D$     | 50          | A                    |
| Surge Forward Current          | $T_j=25^{\circ}\text{C}$ , $t=50\text{Hz}$ (10ms), $V_R=0\text{V}$ | $I_{FSM}$ | 500         | A                    |
| Circuit Fusing Consideration   | $t=10\text{ms}$ $T_j=25^{\circ}\text{C}$                           | $I^2t$    | 1250        | $\text{A}^2\text{s}$ |
| Isolation Breakdown Voltage    | AC 50Hz/60Hz; R.M.S; 1min  | $V_{ISO}$ | 2000        | V                    |
| Operating Junction Temperature |  | $T_j$     | -40 to +150 | $^{\circ}\text{C}$   |
| Storage Temperature            |  | $T_{stg}$ | -40 to +125 | $^{\circ}\text{C}$   |
| Mounting Torque                | To Heatsink(M5)  | $M_s$     | 2.5~3       | N·m                  |
| Module (Approximately)         |  | Weight    | 18          | g                    |

**Thermal Characteristics**

| Item                   | Conditions                  | Symbol        | Values | Unit          |
|------------------------|-----------------------------|---------------|--------|---------------|
| Thermal Impedance, Max | Junction to Case(Per Total) | $R_{th(j-c)}$ | 0.8    | $^{\circ}C/W$ |
|                        | Junction to Case(Per Diode) |               | 3.2    | $^{\circ}C/W$ |

**Electrical Characteristics**

| Item   | Conditions                          | Symbol    | Values |     |     | Unit       |
|--|-------------------------------------|-----------|--------|-----|-----|------------|
|  |                                     |           | Min    | Typ | Max |            |
| Forward Voltage Drop, Max                          | $T_j = 25^{\circ}C, I_F = 25A$      | $V_{FM}$  | -      | -   | 1.1 | V          |
| Repetitive Peak Reverse Current, Max               | $T_j = 25^{\circ}C, V_R = V_{RRM}$  | $I_{RRM}$ | -      | -   | 0.1 | mA         |
|  | $T_j = 150^{\circ}C, V_R = V_{RRM}$ |           | -      | -   | 3   |            |
| Threshold Voltage, for power loss calculation only | $T_j = 125^{\circ}C$                | $V_{T0}$  | 0.75   |     |     | V          |
| Slope Resistance, for power loss calculation only  | $T_j = 125^{\circ}C$                | $r_T$     | 2.55   |     |     | m $\Omega$ |

**Ratings and Characteristic Curves ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

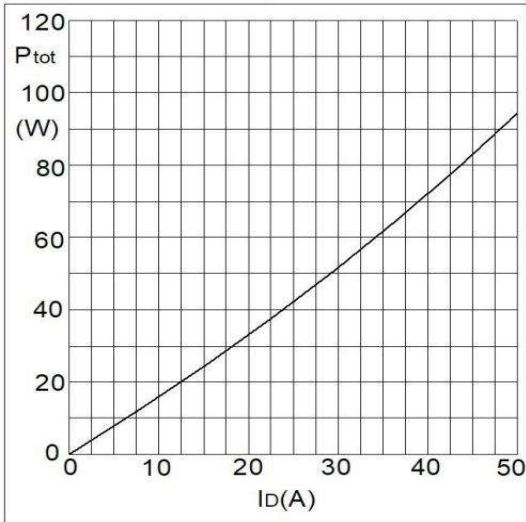


Fig1. Power Dissipation

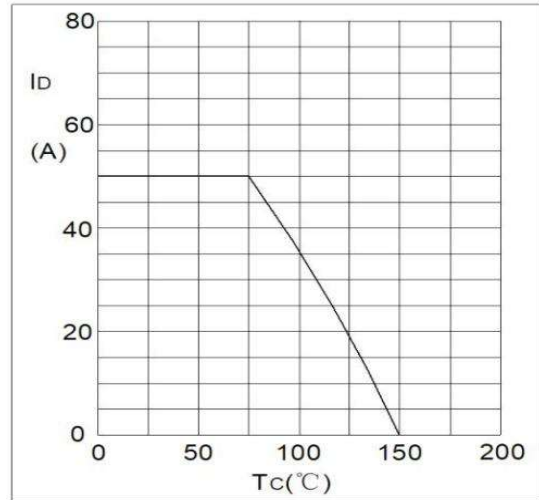


Fig2. Forward Current Derating Curve

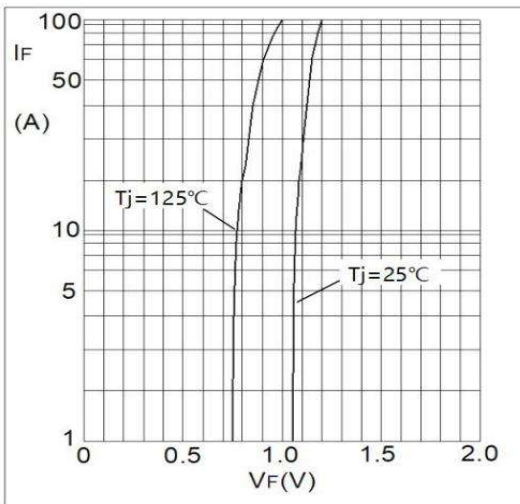


Fig3. Forward Characteristics

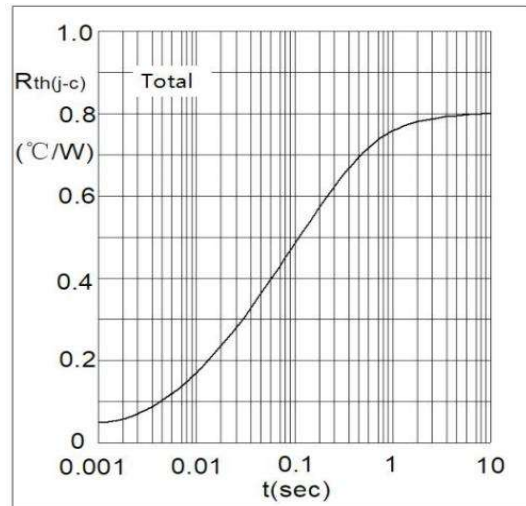


Fig4. Transient Thermal Impedance

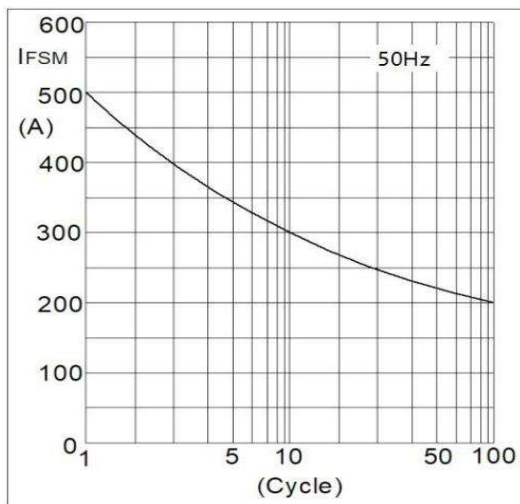
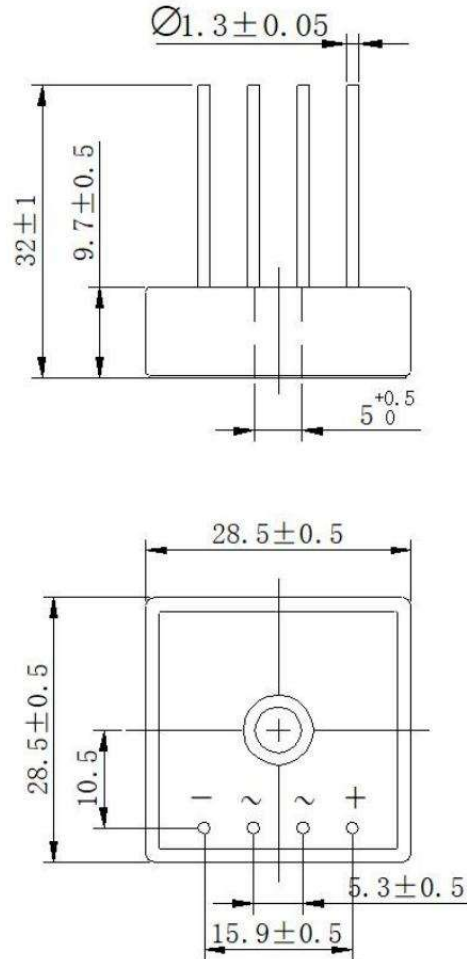


Fig5. Max Non-Repetitive Forward Surge Current

### Package Outlines (Dimensions in mm)

Plastic surface mounted package(BR-L)



**\*Important Usage Information and Disclaimer**

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