

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

|              |             |               |
|--------------|-------------|---------------|
| ▶ Domestic   | Part Number | BR50xx Series |
| ▶ Overseas   | Part Number | BR50xx Series |
| ▶ Equivalent | Part Number | BR50xx Series |

EV is the abbreviation of name EVVO

## Single Phase Rectifier Bridge

$V_{RRM}$  200 to 1200V

$I_D$  50 Amp

### Features

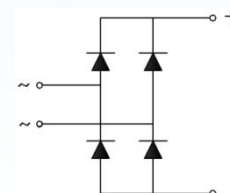
- Very low forward voltage drop
- High surge current capability
- Low thermal resistance
- High thermal conductivity

### Applications

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



### Circuit



### Module Type

| Type   | $V_{RRM}$ | $V_{RSM}$ |
|--------|-----------|-----------|
| BR5002 | 200V      | 300V      |
| BR5004 | 400V      | 500V      |
| BR5006 | 600V      | 700V      |
| BR5008 | 800V      | 900V      |
| BR5010 | 1000V     | 1100V     |
| BR5012 | 1200V     | 1300V     |

### Maximum Ratings

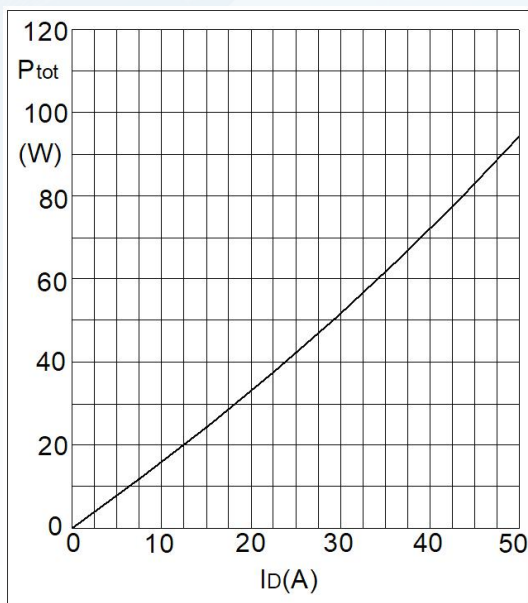
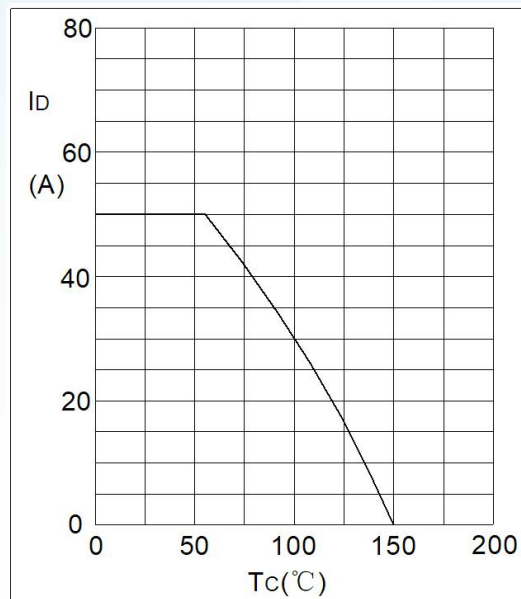
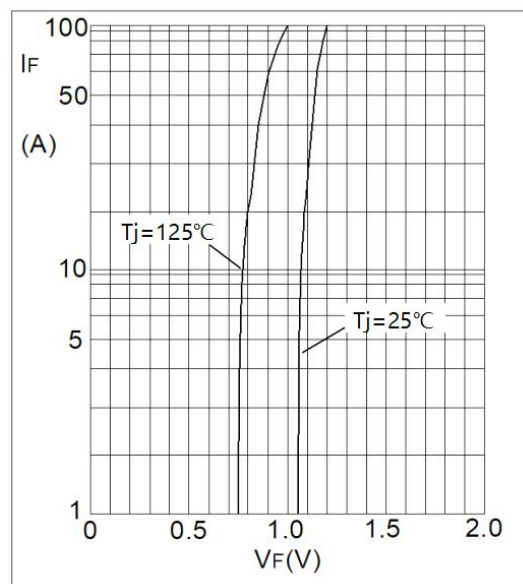
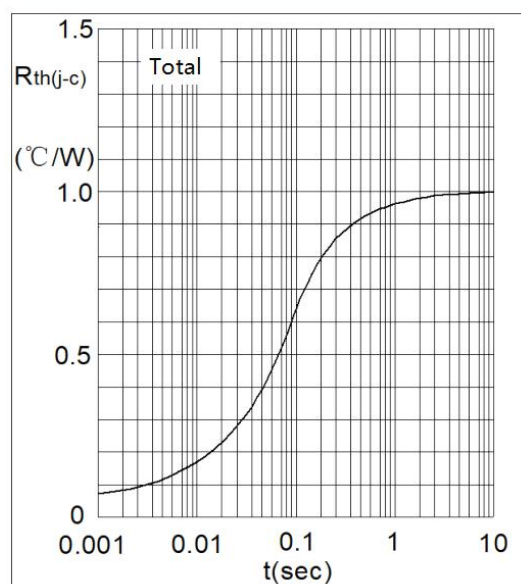
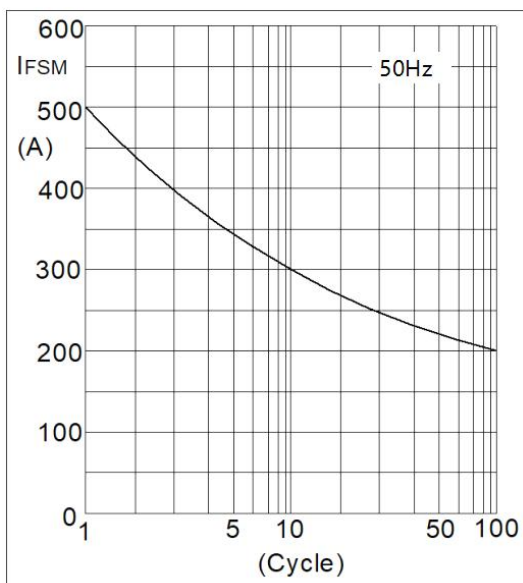
| Symbol    | Item                           | Conditions                                                                    | Values      | Unit                 |
|-----------|--------------------------------|-------------------------------------------------------------------------------|-------------|----------------------|
| $I_D$     | Output Current                 | Single Phase, Sin Full Wave $T_c = 55^\circ\text{C}$                          | 50          | A                    |
| $I_{FSM}$ | Surge Forward Current          | $T_j = 25^\circ\text{C}$ , $t = 50\text{Hz}(10\text{ms})$ , $V_R = 0\text{V}$ | 500         | A                    |
| $I^2t$    | Circuit Fusing Consideration   | $t = 10\text{ms}$ $T_j = 25^\circ\text{C}$                                    | 1250        | $\text{A}^2\text{s}$ |
| $V_{ISO}$ | Isolation Breakdown Voltage    | AC 50Hz/60Hz; R.M.S; 1min                                                     | 2000        | V                    |
| $T_j$     | Operating Junction Temperature |                                                                               | -40 to +150 | $^\circ\text{C}$     |
| $T_{stg}$ | Storage Temperature            |                                                                               | -40 to +125 | $^\circ\text{C}$     |
| $M_s$     | Mounting Torque                | To Heatsink(M5)                                                               | 2.5~3       | N·m                  |
| Weight    | Module (Approximately)         |                                                                               | 16          | g                    |

### Thermal Characteristics

| Symbol        | Item                   | Conditions                  | Values | Unit               |
|---------------|------------------------|-----------------------------|--------|--------------------|
| $R_{th(j-c)}$ | Thermal Impedance, Max | Junction to Case(Per Total) | 1.0    | $^\circ\text{C/W}$ |
|               |                        | Junction to Case(Per Diode) | 4.0    | $^\circ\text{C/W}$ |

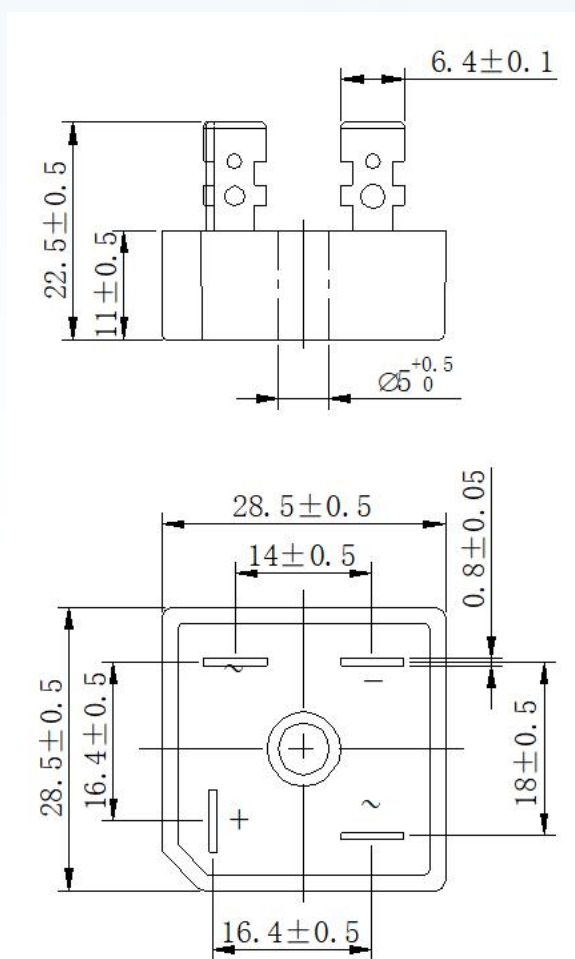
### Electrical Characteristics

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

**Fig1. Power Dissipation****Fig2. Forward Current Derating Curve****Fig3. Forward Characteristics****Fig4. Transient Thermal impedance****Fig5. Max Non-Repetitive Forward Surge Current**

## Performance Curves

## CASE: BR



**Dimensions in mm**

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