



## Glass Passivated Three Phase Rectifier Bridge

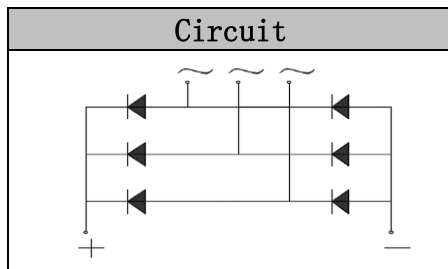
**VRRM** 800 to 1800V  
**ID** 75 A

### Applications

- Three phase rectifiers for power supplies
- Rectifiers for DC motor field supplies
- Battery charger rectifiers
- Input rectifiers for variable frequency drives

### Features

- Three phase bridge rectifier
- Blocking voltage: 800 to 1800V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- UL recognized applied for file no. E230084



### Module Type

| TYPE      | VRRM  | V <sub>RSM</sub> |
|-----------|-------|------------------|
| MD75S08M4 | 800V  | 900V             |
| MD75S12M4 | 1200V | 1300V            |
| MD75S16M4 | 1600V | 1700V            |
| MD75S18M4 | 1800V | 1900V            |

### Maximum Ratings

| Symbol            | Conditions                                   | Values      | Units            |
|-------------------|----------------------------------------------|-------------|------------------|
| ID                | Three phase, full wave T <sub>c</sub> =110°C | 75          | A                |
| I <sub>FSM</sub>  | t=10mS T <sub>vj</sub> =45°C                 | 1020        | A                |
| i <sup>2</sup> t  | t=10mS T <sub>vj</sub> =45°C                 | 5500        | A <sup>2</sup> s |
| V <sub>isol</sub> | a.c.50HZ;r.m.s.;1min                         | 3000        | V                |
| T <sub>vj</sub>   |                                              | -40 to +150 | °C               |
| T <sub>stg</sub>  |                                              | -40 to +125 | °C               |
| M <sub>t</sub>    | To terminals(M5)                             | 3±15%       | Nm               |
| M <sub>s</sub>    | To heatsink(M5)                              | 3±15%       | Nm               |
| Weight            | Module (Approximately)                       | 146         | g                |

### Thermal Characteristics

| Symbol               | Conditions             | Values | Units |
|----------------------|------------------------|--------|-------|
| R <sub>th(j-c)</sub> | Per diode              | 1.1    | °C/W  |
| R <sub>th(j-c)</sub> | Per Module             | 0.183  | °C/W  |
| R <sub>th(c-s)</sub> | Module (Approximately) | 0.07   | °C/W  |



## Electrical Characteristics

| Symbol   | Conditions                                                                                    | Values |       |          | Units                      |
|----------|-----------------------------------------------------------------------------------------------|--------|-------|----------|----------------------------|
|          |                                                                                               | Min.   | Typ.  | Max.     |                            |
| $V_{FM}$ | $T=25^{\circ}\text{C}$ $I_F=150\text{A}$                                                      | —      | 1.25  | 1.45     | V                          |
| $r_f$    | $T_J=25^{\circ}\text{C}$                                                                      | -      | 3.5   | -        | $\text{m}\Omega$           |
| $V_{fO}$ | $T_J=25^{\circ}\text{C}$                                                                      | -      | 0.855 | -        | V                          |
| $I_{RD}$ | $T_{vj}=25^{\circ}\text{C}$ $V_{RD}=V_{RRM}$<br>$T_{vj}=150^{\circ}\text{C}$ $V_{RD}=V_{RRM}$ | —      | —     | 0.3<br>5 | $\text{mA}$<br>$\text{mA}$ |

## Performance Curves

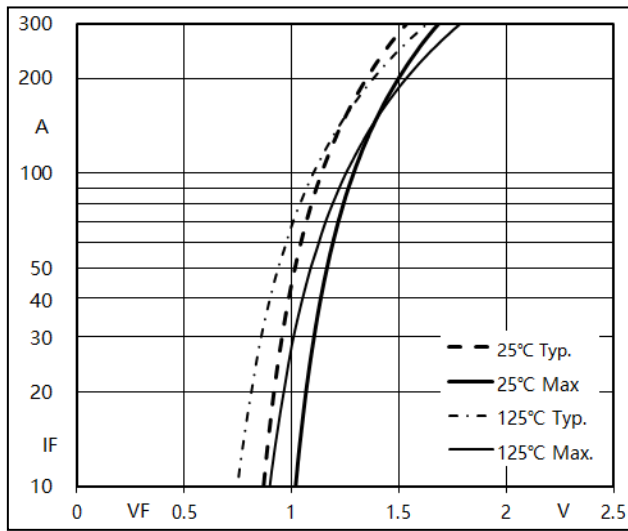


Fig1. Forward Characteristics

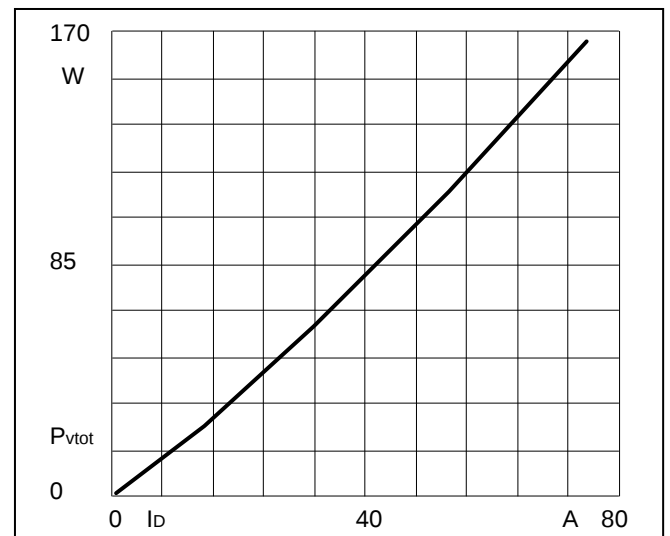


Fig2. Power dissipation

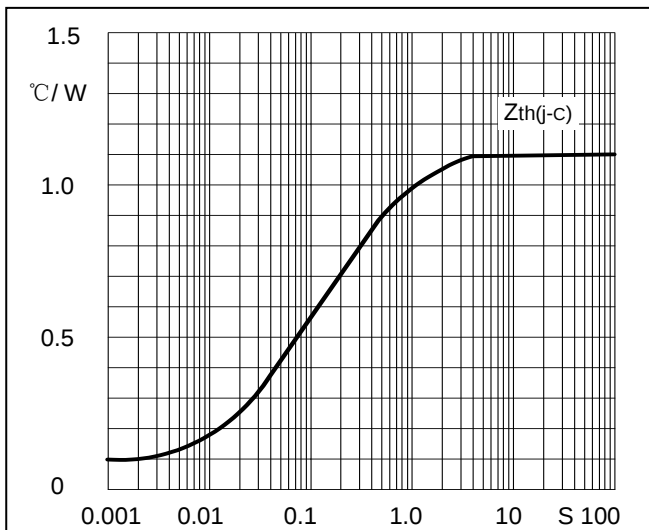


Fig3. Transient thermal impedance

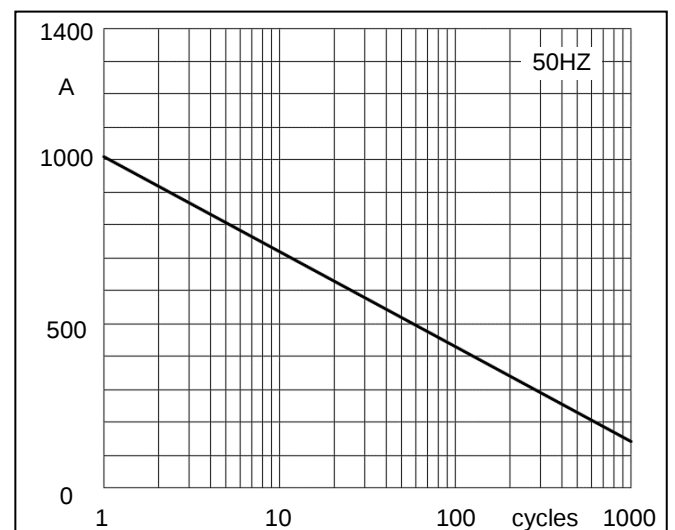


Fig4. Max Non-Repetitive Forward Surge Current

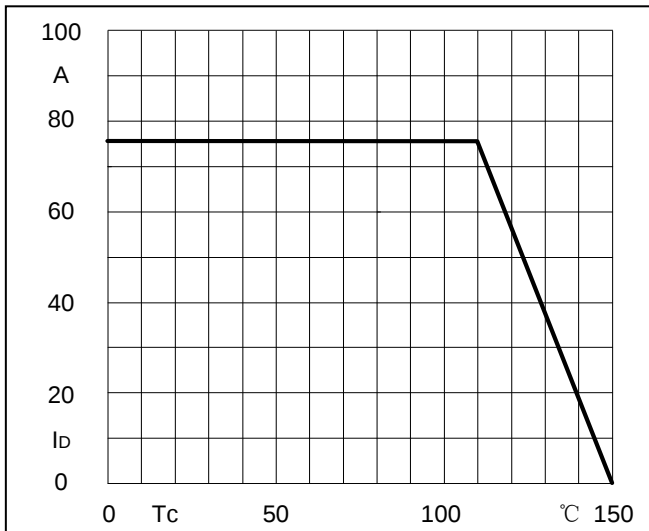
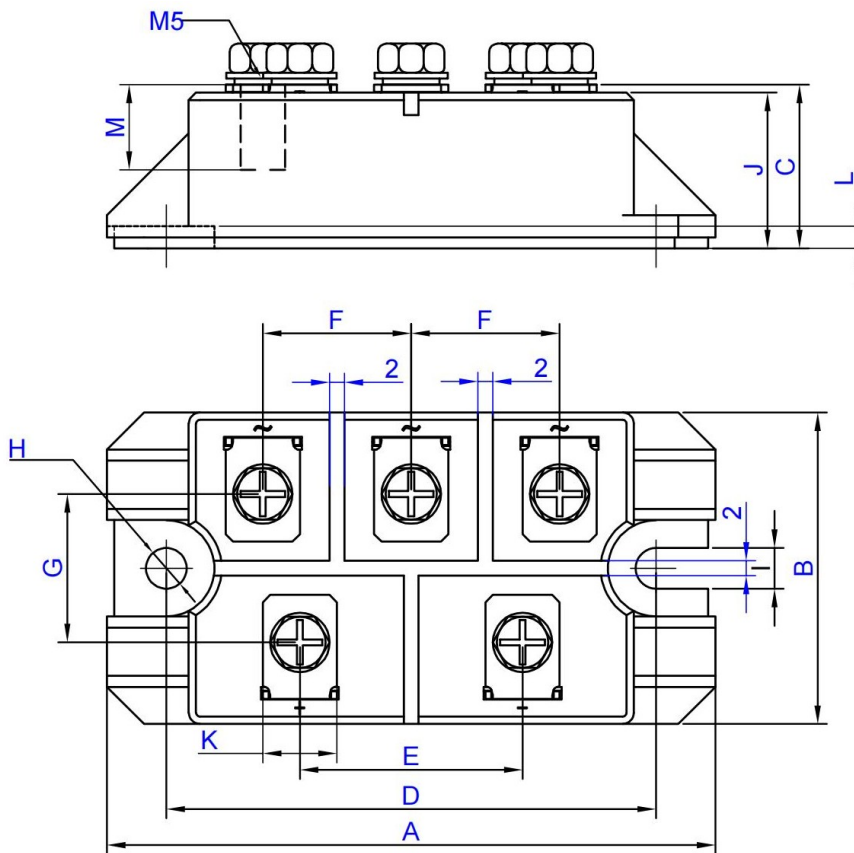


Fig5. Forward Current Derating Curve

## Package Outline Information

### CASE: M4



| DIM | Min (mm) | Max (mm) | Note |
|-----|----------|----------|------|
| A   | 81.5     | 82.5     |      |
| B   | 41.5     | 42.5     |      |
| C   | 21.5     | 22.5     |      |
| D   | 65.5     | 66.5     |      |
| E   | 29.7     | 30.3     |      |
| F   | 19.7     | 20.3     |      |
| G   | 19.7     | 20.3     |      |
| H   | 5.2      | 5.8      | Ø    |
| I   | 5.2      | 5.8      |      |
| J   | 20.5     | 21.5     |      |
| K   | 9.8      | 10.2     |      |
| L   | 2.8      | 3.2      |      |
| M   | 11       | 12       |      |



## Packing Standard

| Item         | Length: A<br>(mm) | Width: B<br>(mm) | Height: C<br>(mm) | Quantity<br>(PCS) |
|--------------|-------------------|------------------|-------------------|-------------------|
| Inner Box    | 276               | 258              | 48                | 6                 |
| Outer Carton | 545               | 295              | 240               | 60                |

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