



## Glass Passivated Three Phase Rectifier Bridge

**VRRM** 800 to 1800V

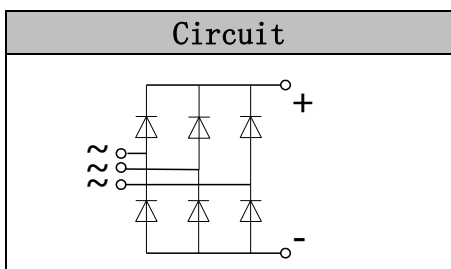
**ID** 60 A

### 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> |
|-----------|-------|------------------|
| MD60S08M2 | 800V  | 900V             |
| MD60S12M2 | 1200V | 1300V            |
| MD60S16M2 | 1600V | 1700V            |
| MD60S18M2 | 1800V | 1900V            |

### Maximum Ratings

| Symbol           | Conditions                                   | Values      | Units            |
|------------------|----------------------------------------------|-------------|------------------|
| ID               | Three phase, full wave T <sub>c</sub> =110°C | 60          | A                |
| IFSM             | t=10mS T <sub>vj</sub> =45°C                 | 460         | A                |
| i <sup>2</sup> t | t=10mS T <sub>vj</sub> =45°C                 | 1050        | A <sup>2</sup> s |
| Visol            | 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               |
| Mt               | To terminals(M5)                             | 3±15%       | Nm               |
| Ms               | To heatsink(M5)                              | 3±15%       | Nm               |
| Weight           | Module (Approximately)                       | 130         | g                |

### Thermal Characteristics

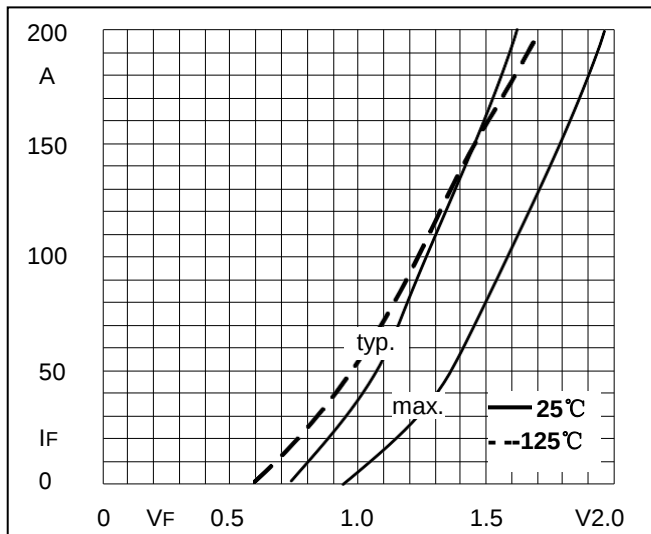
| Symbol               | Conditions | Values | Units |
|----------------------|------------|--------|-------|
| R <sub>th(j-c)</sub> | Per diode  | 1.45   | °C/W  |
| R <sub>th(c-s)</sub> | Module     | 0.07   | °C/W  |

### Electrical Characteristics

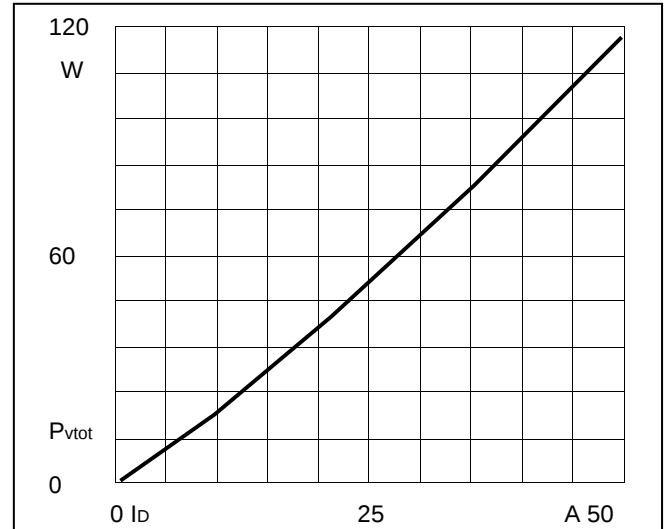
| Symbol          | Conditions                                               | Values |      |      | Units |
|-----------------|----------------------------------------------------------|--------|------|------|-------|
|                 |                                                          | Min.   | Typ. | Max. |       |
| V <sub>FM</sub> | T=25°C I <sub>F</sub> =150A                              | —      | 1.45 | 1.80 | V     |
| I <sub>RD</sub> | T <sub>vj</sub> =25°C V <sub>RD</sub> =V <sub>RRM</sub>  | —      | —    | 0.3  | mA    |
|                 | T <sub>vj</sub> =150°C V <sub>RD</sub> =V <sub>RRM</sub> | —      | —    | 5    | mA    |



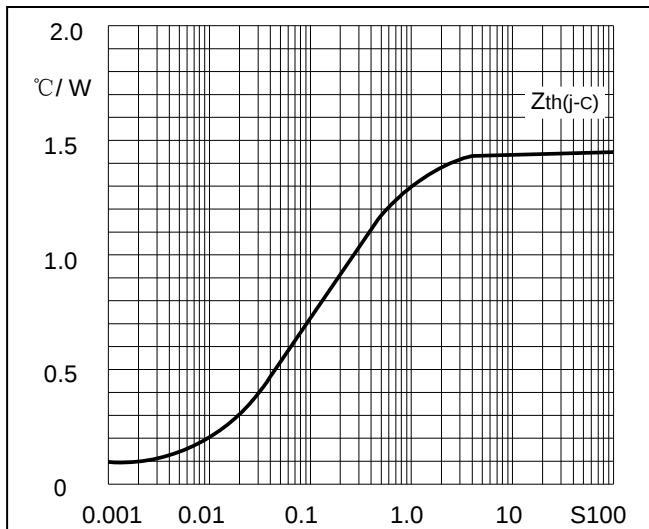
## Performance Curves



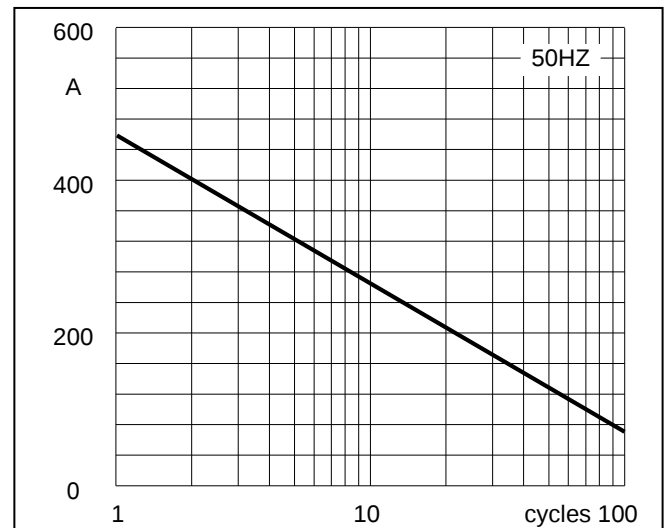
**Fig1. Forward Characteristics**



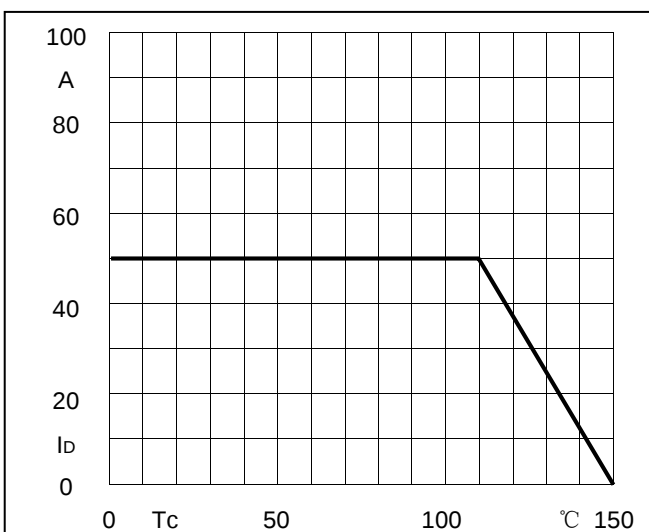
**Fig2. Power dissipation**



**Fig3. Transient thermal impedance**



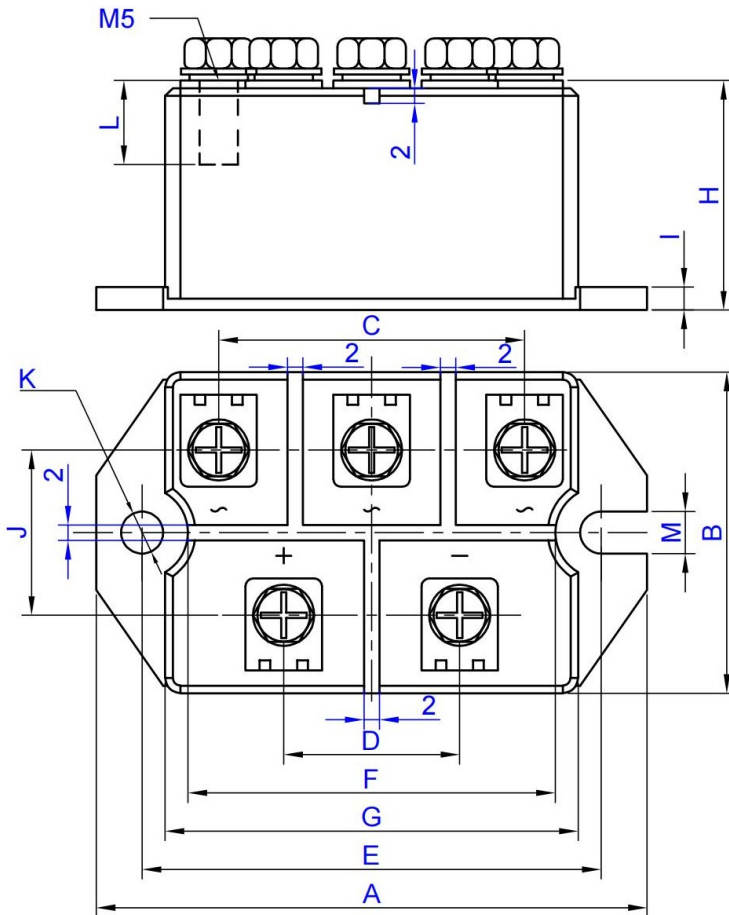
**Fig4. Max Non-Repetitive Forward Surge Current**



**Fig5. Forward Current Derating Curve**

## Package Outline Information

### CASE:M2



| DIM | Min (mm) | Max (mm) | Note |
|-----|----------|----------|------|
| A   | 71.5     | 72.5     |      |
| B   | 41.5     | 42.5     |      |
| C   | 39.5     | 40.5     |      |
| D   | 22.7     | 23.3     |      |
| E   | 59.5     | 60.5     |      |
| F   | 47.5     | 48.5     |      |
| G   | 53.5     | 54.5     |      |
| H   | 29.5     | 30.5     |      |
| I   | 2.9      | 3.1      |      |
| J   | 21.3     | 21.9     |      |
| K   | 5.4      | 5.6      | Ø    |
| L   | 10       | 11       |      |
| M   | 5.2      | 5.8      |      |

## Packing Standard

| Item         | Length: A (mm) | Width: B (mm) | Height: C (mm) | Quantity (PCS) |
|--------------|----------------|---------------|----------------|----------------|
| Inner Box    | 276            | 258           | 48             | 8              |
| Outer Carton | 545            | 295           | 240            | 80             |



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