



## Glass Passivated Three Phase Rectifier Bridge

**VRRM** 800 to 1800V  
**ID** 100 A

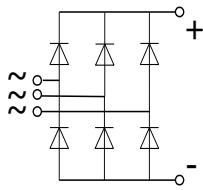
### Applications

- 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

**Circuit**



### Module Type

| TYPE       | VRRM  | VRSM  |
|------------|-------|-------|
| MD100S08M3 | 800V  | 900V  |
| MD100S12M3 | 1200V | 1300V |
| MD100S16M3 | 1600V | 1700V |
| MD100S18M3 | 1800V | 1900V |

### Maximum Ratings

| Symbol | Conditions                      | Values      | Units |
|--------|---------------------------------|-------------|-------|
| ID     | Three phase, full wave Tc=100°C | 100         | A     |
| IFSM   | t=10mS Tvj =45°C                | 1300        | A     |
| i²t    | t=10mS Tvj =45°C                | 8450        | A²s   |
| Visol  | a.c.50HZ;r.m.s.;1min            | 3000        | V     |
| Tvj    |                                 | -40 to +150 | °C    |
| Tstg   |                                 | -40 to +125 | °C    |
| Mt     | To terminals(M6)                | 5±15%       | Nm    |
| Ms     | To heatsink(M6)                 | 5±15%       | Nm    |
| Weight | Module (Approximately)          | 230         | g     |

### Thermal Characteristics

| Symbol   | Conditions | Values | Units |
|----------|------------|--------|-------|
| Rth(j-c) | Per diode  | 0.9    | °C/W  |
| Rth(c-s) | Module     | 0.03   | °C/W  |



## Electrical Characteristics

| Symbol   | Conditions                                    | Values |      |      | Units            |
|----------|-----------------------------------------------|--------|------|------|------------------|
|          |                                               | Min.   | Typ. | Max. |                  |
| $r_f$    | $T_J=150^{\circ}\text{C}$                     | -      | 3    | -    | $\text{m}\Omega$ |
| $V_{f0}$ | $T_J=150^{\circ}\text{C}$                     | -      | 0.79 | -    | V                |
| $V_{FM}$ | $T=25^{\circ}\text{C}$ $I_F=100\text{A}$      | —      | 1.15 | 1.30 | V                |
|          | $T=25^{\circ}\text{C}$ $I_F=300\text{A}$      | —      | 1.61 | 1.76 | V                |
| $I_{RD}$ | $T_{vj}=25^{\circ}\text{C}$ $V_{RD}=V_{RRM}$  | —      | —    | 0.1  | mA               |
|          | $T_{vj}=150^{\circ}\text{C}$ $V_{RD}=V_{RRM}$ | —      | —    | 3    | mA               |

## Performance Curves

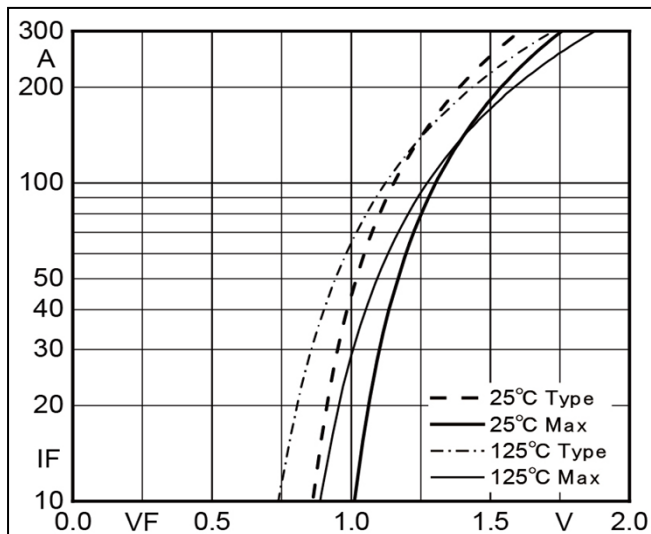


Fig1. Forward Characteristics

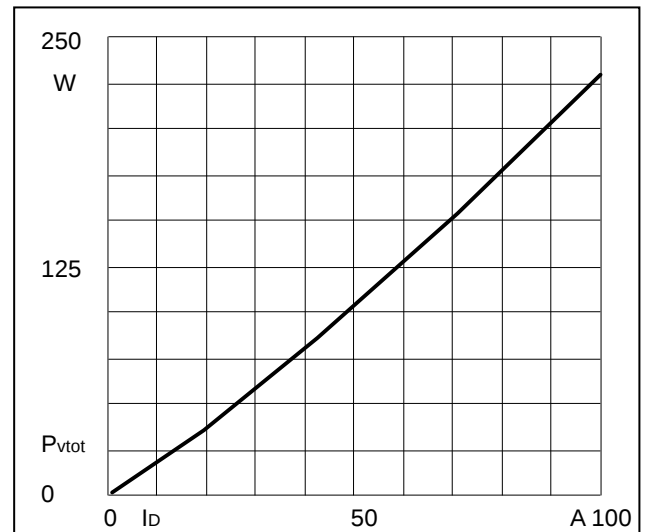


Fig2. Power dissipation

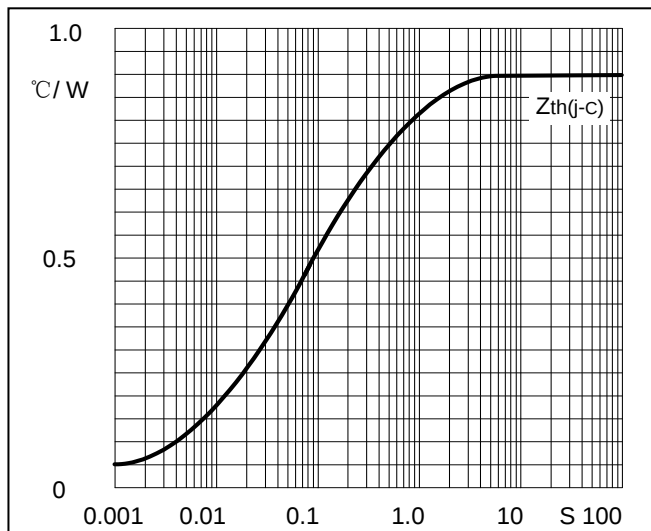


Fig3. Transient thermal impedance

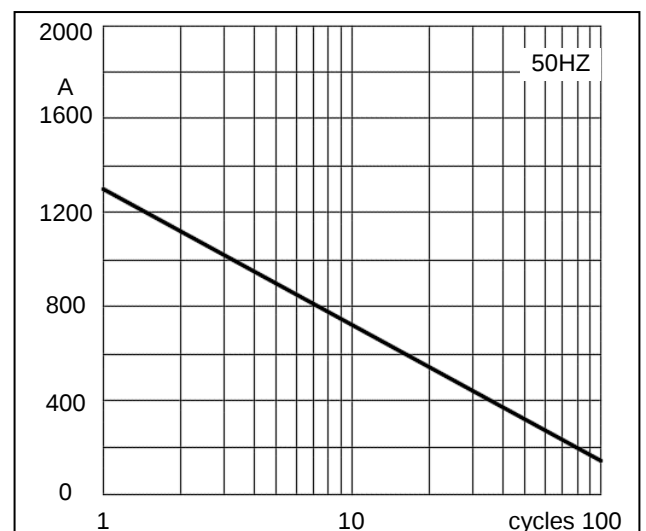


Fig4. Max Non-Repetitive Forward Surge Current

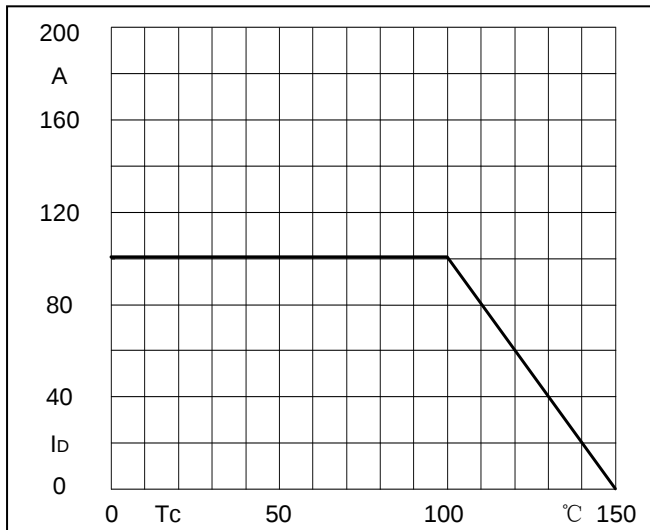
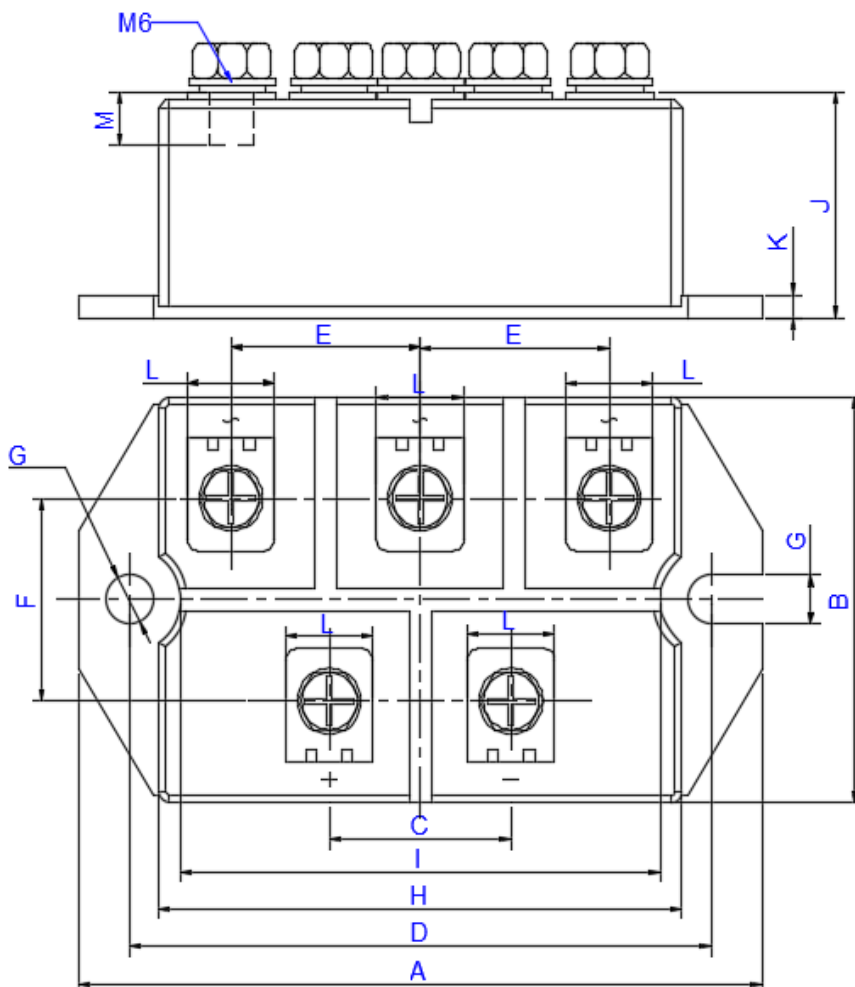


Fig5. Forward Current Derating Curve

## Package Outline Information

### CASE: M3



| DIM | Min (mm) | Max (mm) | Note |
|-----|----------|----------|------|
| A   | 93.5     | 94.5     |      |
| B   | 53.5     | 54.5     |      |
| C   | 24.5     | 25.5     |      |
| D   | 79.5     | 80.5     |      |
| E   | 25.5     | 26.5     |      |
| F   | 26.5     | 27.5     |      |
| G   | 6.2      | 6.8      | Ø    |
| H   | 71.5     | 72.5     |      |
| I   | 65.5     | 66.5     |      |
| J   | 29.5     | 30.5     |      |
| K   | 2.9      | 3.1      |      |
| L   | 11.9     | 12.1     |      |
| M   | 11.5     | 12.5     |      |



## 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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