



## Glass Passivated Three Phase Rectifier Bridge

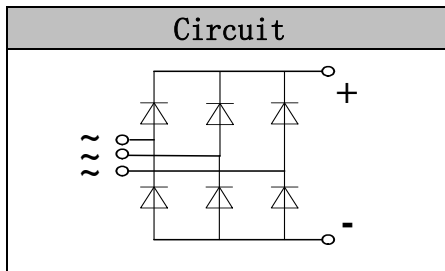
**VRRM** 800 to 2400V  
**ID** 50 A

### 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 2400V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip



### Module Type

| TYPE      | VRRM  | VRSM  |
|-----------|-------|-------|
| MD50S08M4 | 800V  | 900V  |
| MD50S12M4 | 1200V | 1300V |
| MD50S16M4 | 1600V | 1700V |
| MD50S18M4 | 1800V | 1900V |
| MD50S20M4 | 2000V | 2100V |
| MD50S22M4 | 2200V | 2300V |
| MD50S24M4 | 2400V | 2500V |

### Maximum Ratings

| Symbol           | Conditions                      | Values      | Units            |
|------------------|---------------------------------|-------------|------------------|
| ID               | Three phase, full wave Tc=110°C | 50          | A                |
| IFSM             | t=10mS Tvj =45°C                | 460         | A                |
| i <sup>2</sup> t | t=10mS Tvj =45°C                | 1050        | A <sup>2</sup> s |
| Visol            | a.c.50HZ;r.m.s.;1min            | 3000        | V                |
| Tvj              |                                 | -40 to +125 | °C               |
| Tstg             |                                 | -40 to +125 | °C               |
| Mt               | To terminals(M5)                | 5±15%       | Nm               |
| Ms               | To heatsink(M5)                 | 5±15%       | Nm               |
| Weight           | Module (Approximately)          | 146         | g                |

### Thermal Characteristics

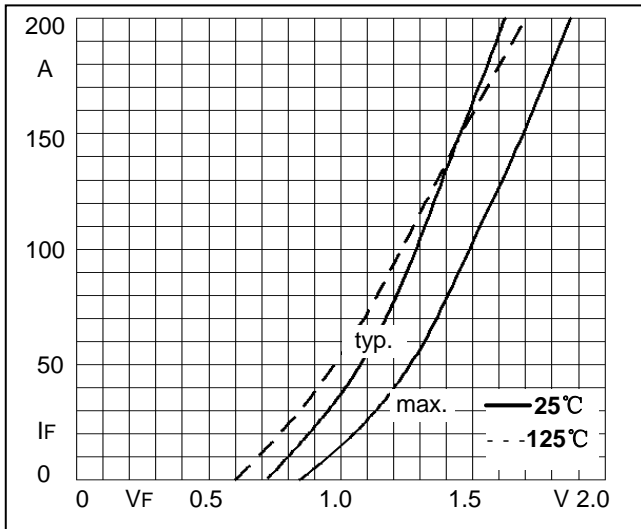
| Symbol   | Conditions | Values | Units |
|----------|------------|--------|-------|
| Rth(j-c) | Per diode  | 1.45   | °C/W  |
| Rth(c-s) | Module     | 0.07   | °C/W  |



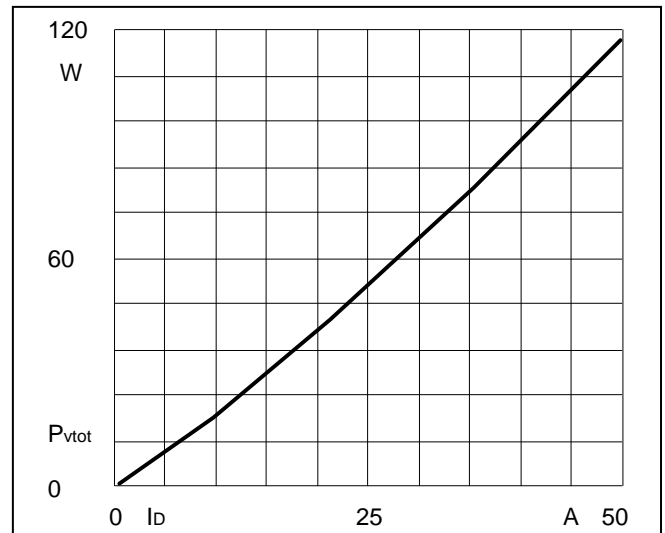
**Electrical Characteristics**

| Symbol          | Conditions                                                                                                            | Values |      |          | Units    |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|--------|------|----------|----------|
|                 |                                                                                                                       | Min.   | Typ. | Max.     |          |
| V <sub>FM</sub> | T=25°C I <sub>F</sub> =150A                                                                                           | —      | 1.45 | 1.7      | V        |
| I <sub>RD</sub> | T <sub>vj</sub> =25°C V <sub>RD</sub> =V <sub>R</sub> RM<br>T <sub>vj</sub> =150°C V <sub>RD</sub> =V <sub>R</sub> RM | —      | —    | 0.3<br>5 | mA<br>mA |

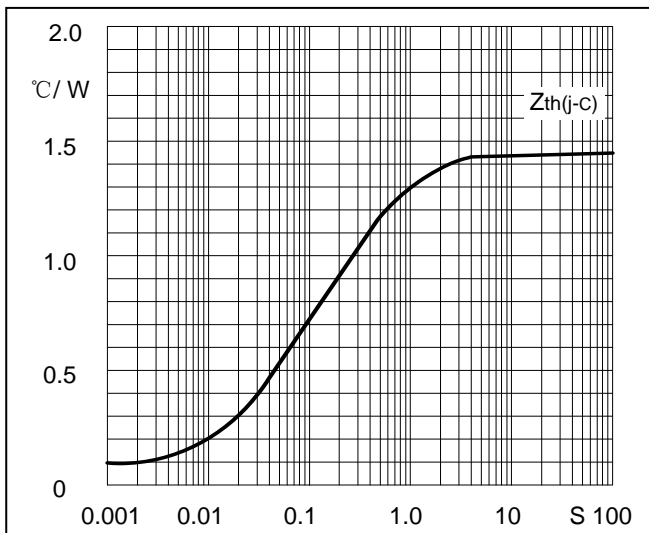
**Performance Curves**



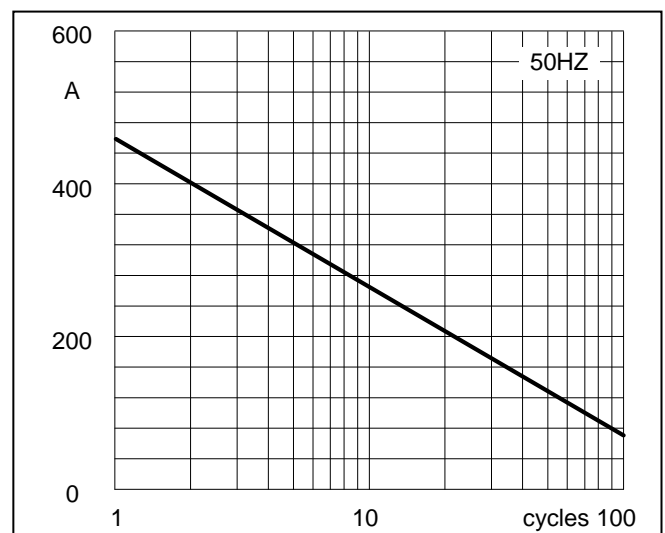
**Fig1. Forward Characteristics**



**Fig2. Power dissipation**



**Fig3. Transient thermal impedance**



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

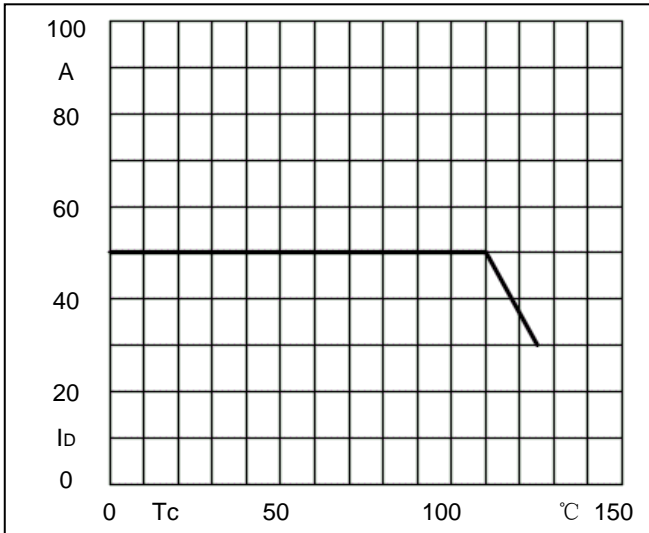


Fig5.Forward Current Derating Curve

### Package Outline Information

