



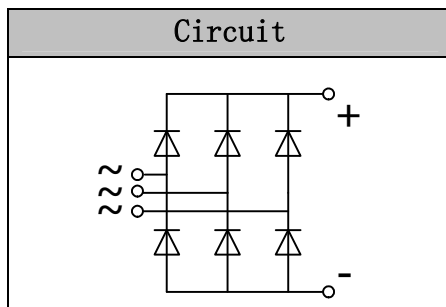
## Glass Passivated Three Phase Rectifier Bridge

**VRRM** 800 to 1800V

**ID** 50 Amp

### 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

### Module Type

| TYPE      | VRRM  | VRS   |
|-----------|-------|-------|
| MSDM50-08 | 800V  | 900V  |
| MSDM50-12 | 1200V | 1300V |
| MSDM50-16 | 1600V | 1700V |
| MSDM50-18 | 1800V | 1900V |

### Maximum Ratings

| Symbol           | Item                               | Conditions           | Values      | Units            |
|------------------|------------------------------------|----------------------|-------------|------------------|
| ID               | Output current (D.C)               | Tc=110°C             | 50          | A                |
| IFSM             | Forward surge current, max.        | t=10mS Tvj =45°C     | 460         | A                |
| i <sup>2</sup> t | Value for fusing                   |                      | 1050        | A <sup>2</sup> S |
| Visol            | Isolation Breakdown Voltage(R.M.S) | a.c.50HZ;r.m.s.;1min | 3000        | V                |
| Tvj              | Operating Junction Temperature     |                      | -40 to +150 | °C               |
| Tstg             | Storage Temperature                |                      | -40 to +150 | °C               |
| Mounting Torque  | To terminals(M5)                   |                      | 3±15%       | Nm               |
|                  | To heatsink(M5)                    |                      | 5±15%       | Nm               |
| Weight           | Approximate Weight                 | Module               | 145         | g                |

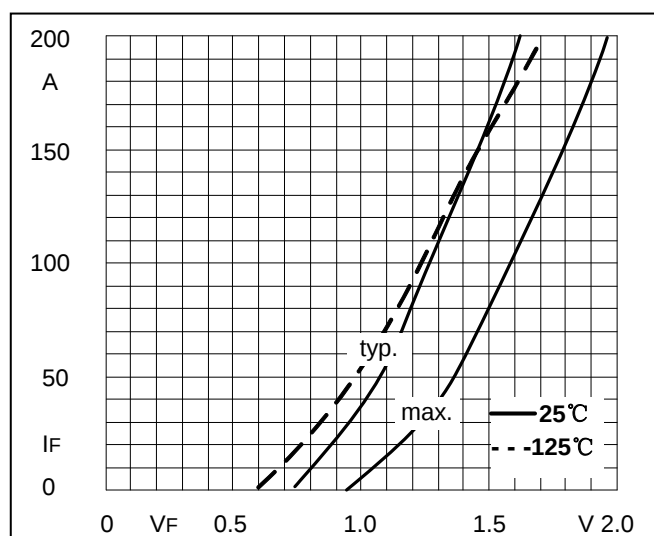
### Thermal Characteristics

| Symbol   | Item                    | Conditions | Values | Units |
|----------|-------------------------|------------|--------|-------|
| Rth(j-c) | Thermal Impedance, max. | Per Module | 0.28   | °C/W  |

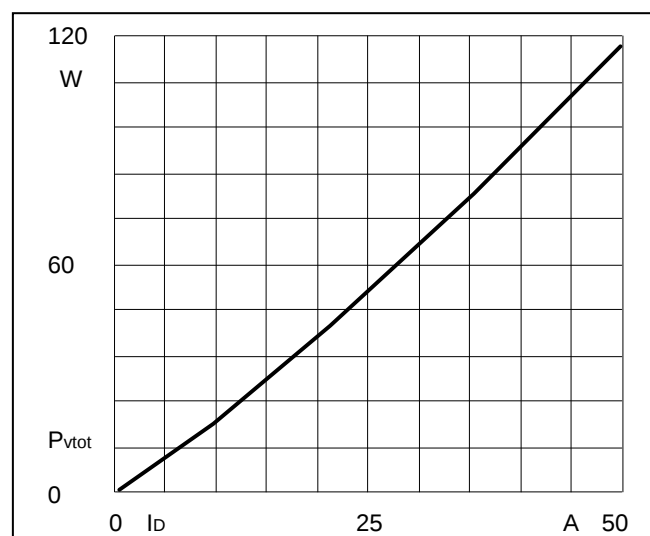
### Electrical Characteristics

| Symbol | Item                                  | Conditions                                | Values |      |          | Units    |
|--------|---------------------------------------|-------------------------------------------|--------|------|----------|----------|
|        |                                       |                                           | Min.   | Typ. | Max.     |          |
| VFM    | Forward Voltage Drop, max.            | T=25°C IF =150A                           |        | 1.45 | 1.80     | V        |
| IRRM   | Repetitive Peak Reverse Current, max. | Tvj =25°C VRD=VRRM<br>Tvj =150°C VRD=VRRM |        |      | 0.3<br>5 | mA<br>mA |

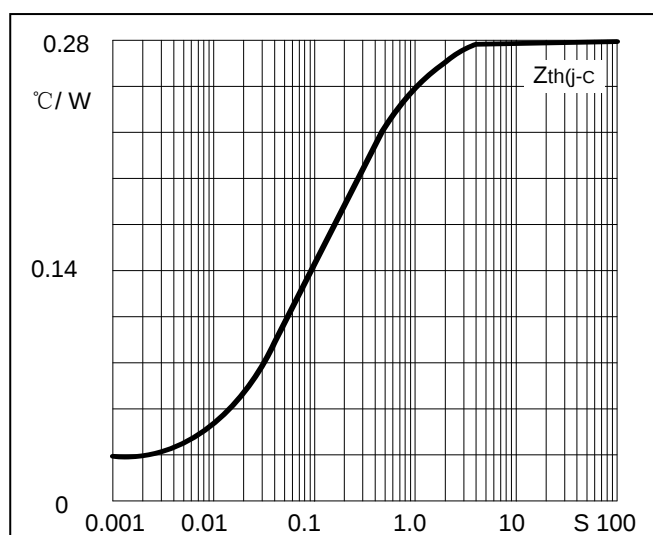
## Performance Curves



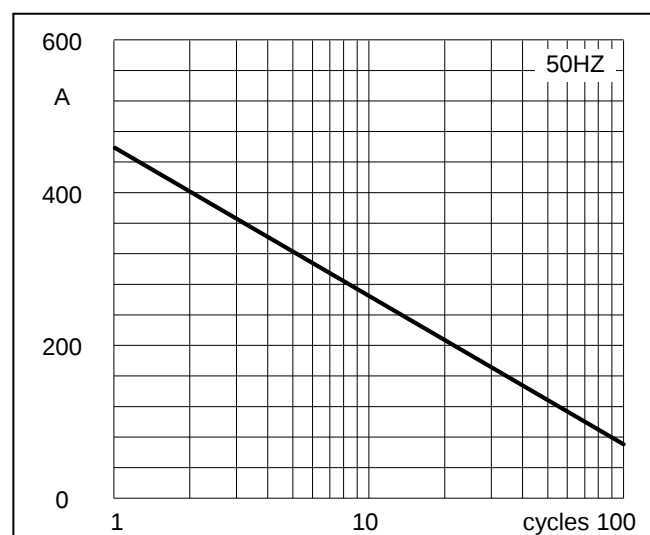
**Fig1. Forward Characteristics**



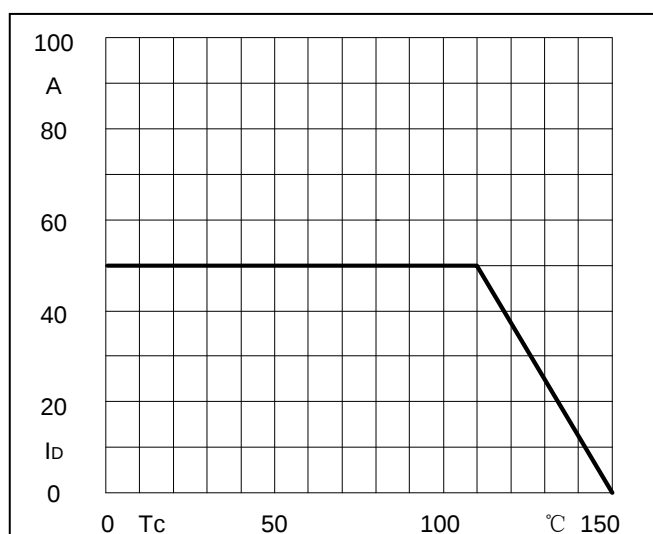
**Fig2. Power dissipation**



**Fig3. Transient thermal impedance**



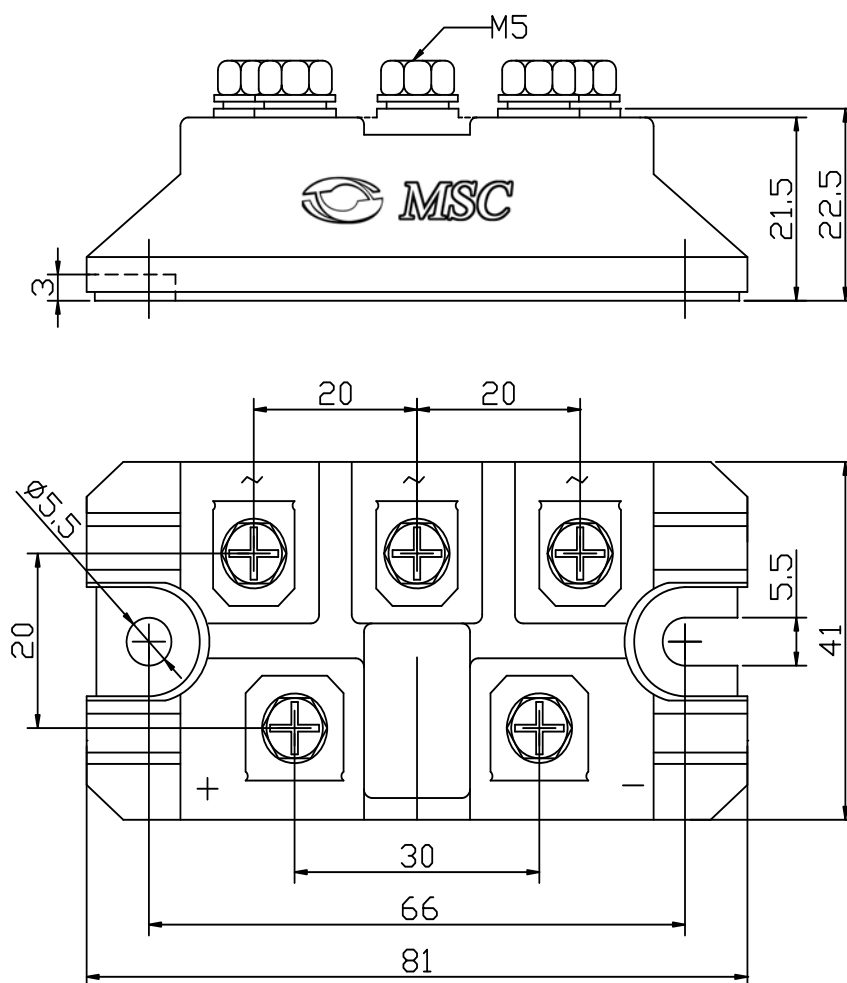
**Fig4. Max Non-Repetitive Forward Surge Current**



**Fig5. Forward Current Derating Curve**

## Package Outline Information

CASE: M2-1



Dimensions in mm