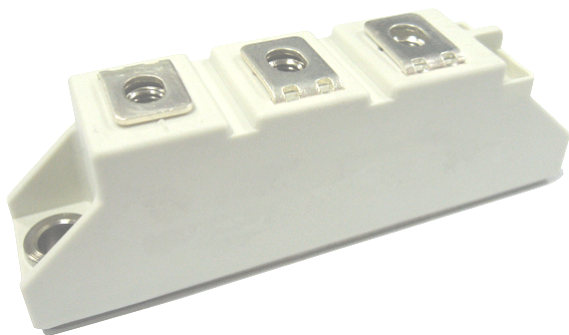




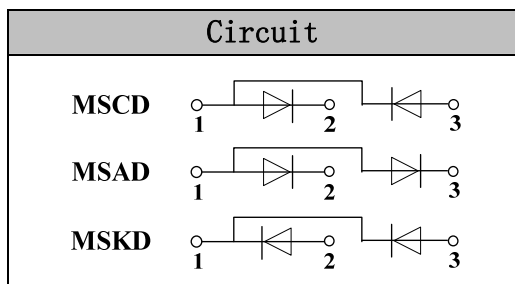
## Glass Passivated Rectifier Diode Modules

**VRRM** 800 to 1800V

**IFAV** 120 Amp

### Applications

- Non-controllable rectifiers for AC/AC converters
- Line rectifiers for transistorized AC motor controllers
- Field supply for DC motors



### Features

- Blocking voltage: 800 to 1800V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- UL E243882 approved

### Module Type

| TYPE       |            |            | VRRM  | VRS   |
|------------|------------|------------|-------|-------|
| MSCD120-08 | MSAD120-08 | MSKD120-08 | 800V  | 900V  |
| MSCD120-12 | MSAD120-12 | MSKD120-12 | 1200V | 1300V |
| MSCD120-16 | MSAD120-16 | MSKD120-16 | 1600V | 1700V |
| MSCD120-18 | MSAD120-18 | MSKD120-18 | 1800V | 1900V |

### Maximum Ratings

| Symbol            | Conditions                                       | Values      | Units            |
|-------------------|--------------------------------------------------|-------------|------------------|
| IFAV              | Single phase ,half wave 180° conduction Tc=106°C | 120         | A                |
| IF(RMS)           | Single phase ,half wave 180° conduction Tc=97°C  | 180         | A                |
| IFSM              | t=10mS Tvj =45°C                                 | 2800        | A                |
| i <sup>2</sup> t  | t=10mS Tvj =45°C                                 | 39200       | A <sup>2</sup> S |
| V <sub>isol</sub> | a.c.50HZ;r.m.s.;1min                             | 3000        | V                |
| Tvj               |                                                  | -40 to +150 | °C               |
| T <sub>stg</sub>  |                                                  | -40 to +125 | °C               |
| Mt                | To terminals(M5)                                 | 3 ± 15%     | Nm               |
| Ms                | To heatsink(M6)                                  | 5 ± 15%     | Nm               |
| Weight            | Module (Approximately)                           | 100         | g                |

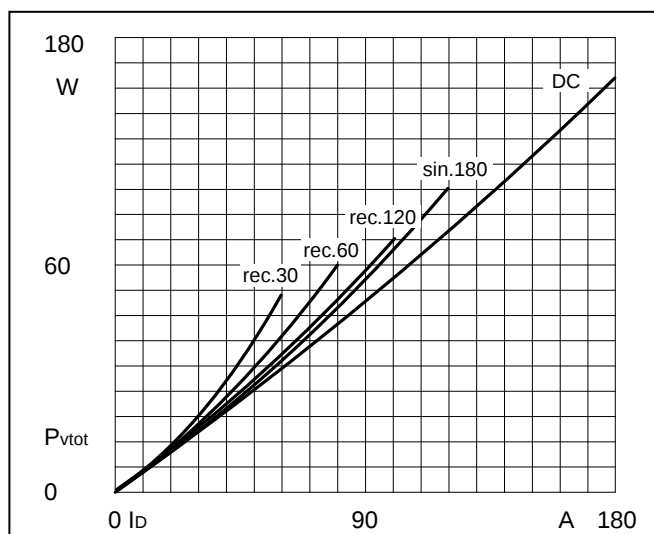
### Thermal Characteristics

| Symbol               | Conditions | Values | Units |
|----------------------|------------|--------|-------|
| R <sub>th(j-c)</sub> | Per diode  | 0.26   | °C/W  |
| R <sub>th(c-s)</sub> | Module     | 0.1    | °C/W  |

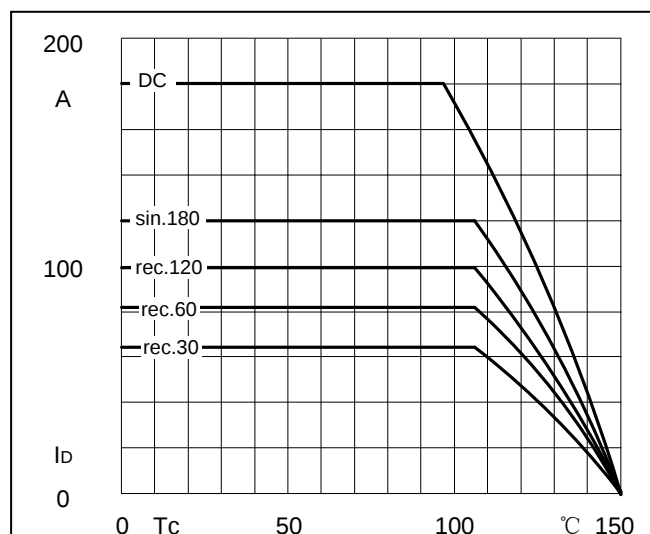
### Electrical Characteristics

| Symbol          | Conditions         | Values |      |      | Units |
|-----------------|--------------------|--------|------|------|-------|
|                 |                    | Min.   | Typ. | Max. |       |
| V <sub>FM</sub> | T=25°C IF =300A    | —      | 1.22 | 1.43 | V     |
| IRD             | Tvj=150°C VRD=VRRM | —      | —    | 6    | mA    |

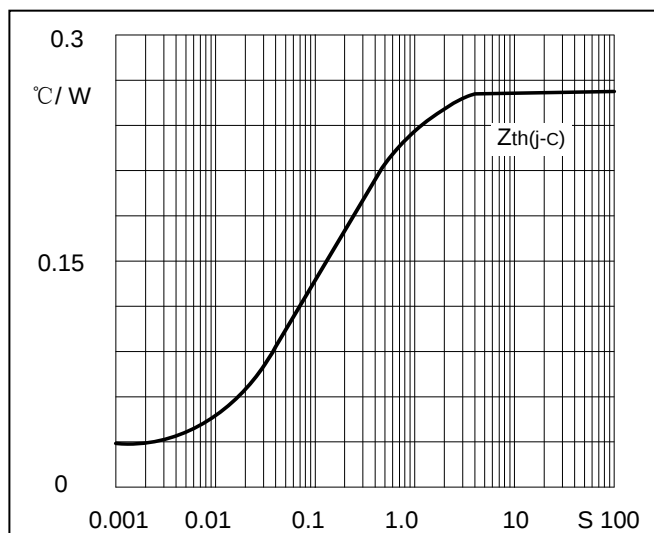
## Performance Curves



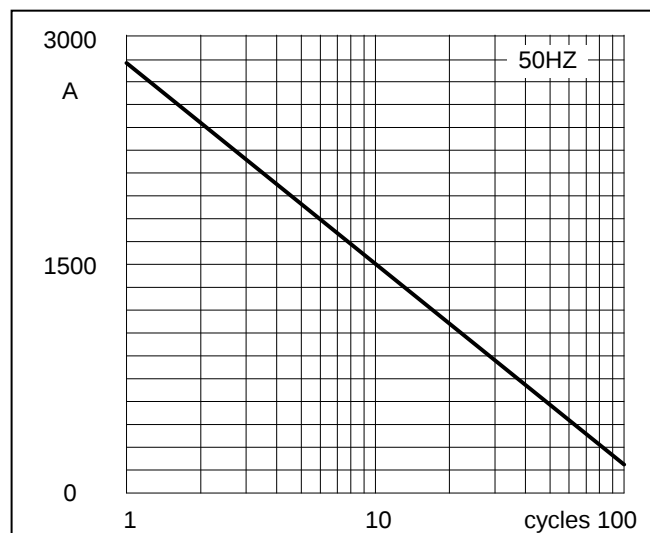
**Fig1. Power dissipation**



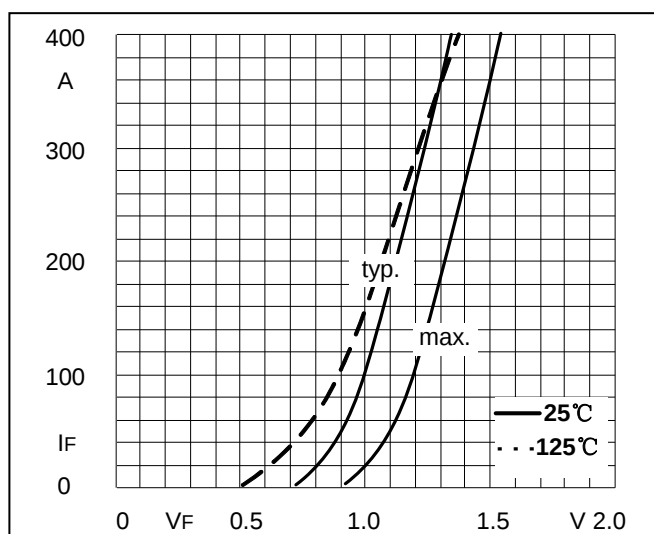
**Fig2. Forward Current Derating Curve**



**Fig3. Transient thermal impedance**



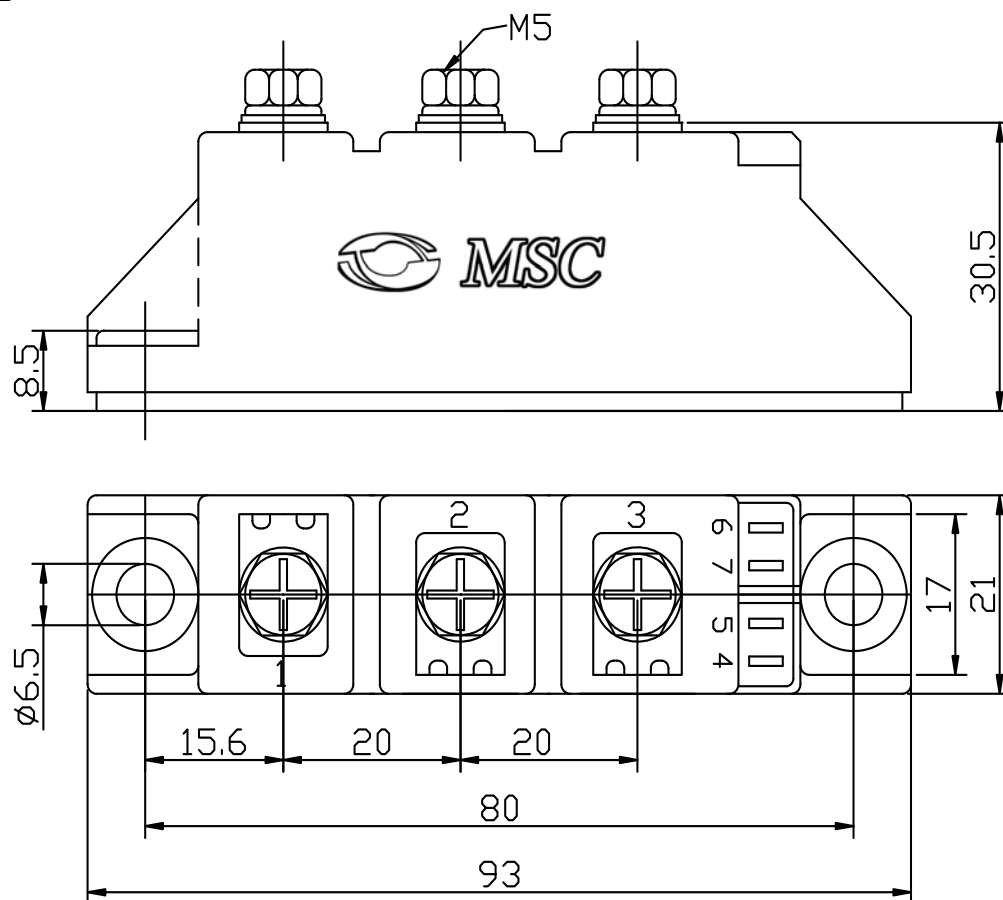
**Fig4. Max Non-Repetitive Forward Surge Current**



**Fig5. Forward Characteristics**

## Package Outline Information

CASE: D1



Dimensions in mm