

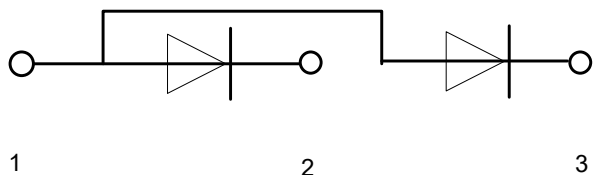
**Features**

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Heat Transfer Through Aluminum Oxide DBC Ceramic Isolated Metal Baseplate
- Blocking voltage:800 to 1800V
- Glass passivated chip

**Applications**

- Non-Controllable Rectifiers for AC/AC Converters
- Line Rectifiers for Transistorized AC Motor Controllers
- Field Supply for DC Motors

| MCC Part Number | V <sub>RRM</sub> | V <sub>RSM</sub> |
|-----------------|------------------|------------------|
| MD120A08D1      | 800V             | 900V             |
| MD120A12D1      | 1200V            | 1300V            |
| MD120A16D1      | 1600V            | 1700V            |
| MD120A18D1      | 1800V            | 1900V            |



**120 Amp  
GLASS PASSIVATED  
RECTIFIER DIODE  
MODULES  
800~1800 Volts**

**D1**

| DIMENSIONS |        |       |       |       |      |
|------------|--------|-------|-------|-------|------|
| DIM        | INCHES |       | MM    |       | NOTE |
|            | MIN    | MAX   | MIN   | MAX   |      |
| A          | 0.768  | 0.807 | 19.50 | 20.50 |      |
| B          | 1.161  | 1.201 | 29.50 | 30.50 |      |
| C          | 0.335  | 0.374 | 8.50  | 9.50  |      |
| D          | 0.315  | 0.354 | 8.00  | 9.00  |      |
| E          | 0.594  | 0.630 | 15.10 | 16.00 |      |
| F          | 0.217  | 0.256 | 5.50  | 6.50  |      |
| G          | 0.531  | 0.571 | 13.50 | 14.50 |      |
| H          | 0.650  | 0.689 | 16.50 | 17.50 |      |
| I          | 3.130  | 3.169 | 79.50 | 80.50 |      |
| J          | 3.642  | 3.681 | 92.50 | 93.50 |      |
| K          |        | 0.256 |       | 6.50  | Φ    |
| L          | 0.413  | 0.453 | 10.50 | 11.50 |      |
| M          | 0.807  | 0.846 | 20.50 | 21.50 |      |

Note:1. High Temperature Solder Exemptions Applied, See EU Directive Annex 7a.

### Maximum Ratings

| Symbol           | Conditions                                       | Values      | Units            |
|------------------|--------------------------------------------------|-------------|------------------|
| IFAV             | Single phase ,half wave 180° conduction Tc=106°C | 120         | 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 |
| Visol            | a.c.50HZ;r.m.s.;1min                             | 3000        | V                |
| Tvj              |                                                  | -40 to +150 | °C               |
| Tstg             |                                                  | -40 to +125 | °C               |
| Mt               | To terminals(M5)                                 | 3 ± 15%     | Nm               |
| Ms               | To heatsink(M6)                                  | 5 ± 15%     | Nm               |
| Weight           | Module (Approximately)                           | 100         | g                |

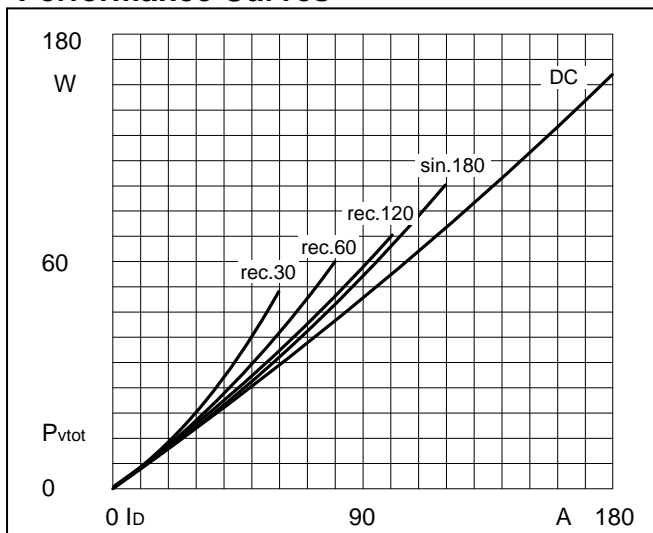
### Thermal Characteristics

| Symbol   | Conditions | Values | Units |
|----------|------------|--------|-------|
| Rth(j-c) | Per diode  | 0.26   | °C/W  |
| Rth(c-s) | Module     | 0.1    | °C/W  |

### Electrical Characteristics

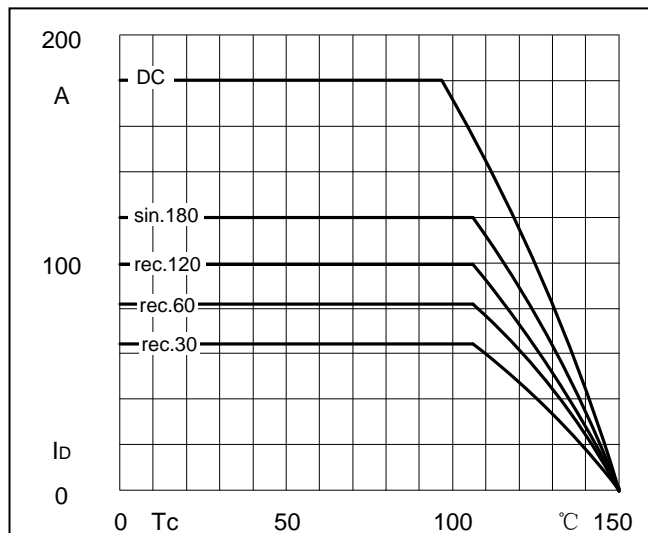
| Symbol | Conditions         | Values |      |      | Units |
|--------|--------------------|--------|------|------|-------|
|        |                    | Min.   | Typ. | Max. |       |
| VFM    | T=25°C IF =300A    | —      | 1.20 | 1.35 | V     |
| IRD    | Tvj=150°C VRD=VRRM | —      | —    | 6    | mA    |

**Performance Curves**

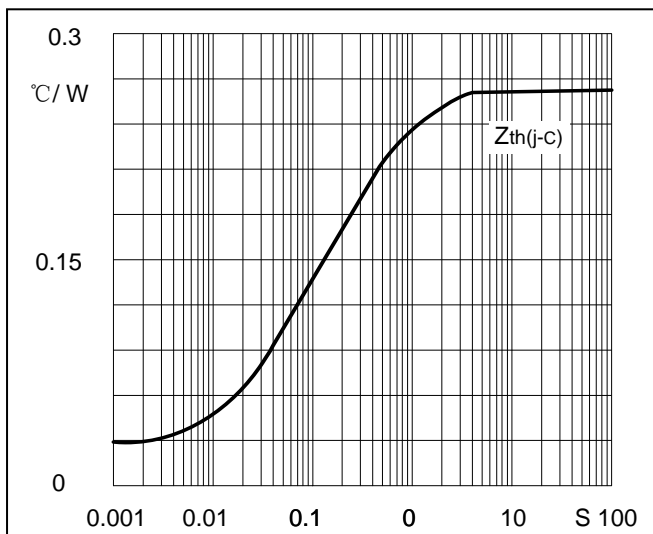


**Fig1. Power dissipation**

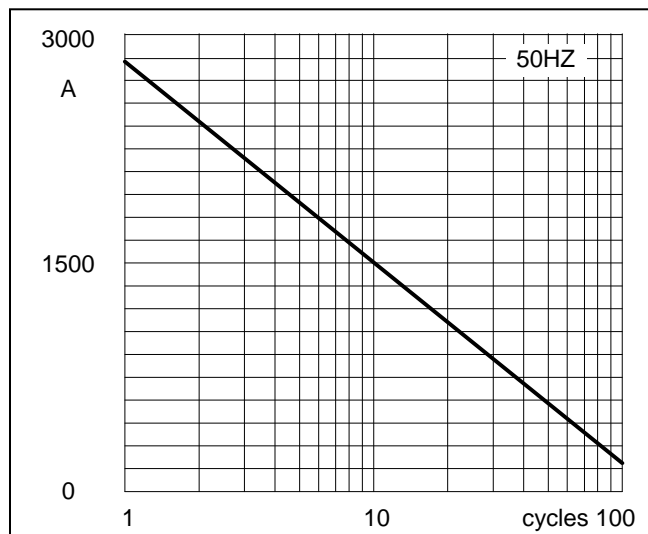
**Micro Commercial Components**



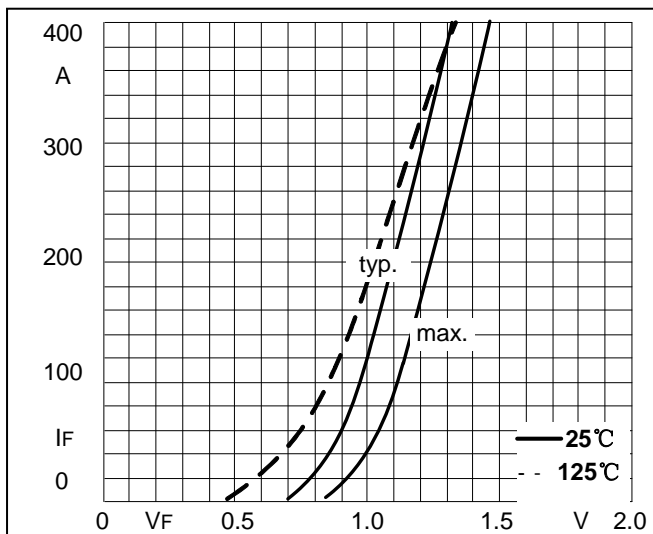
**Fig2. Forward Current Derating Curve**



**Fig3. Transient thermal impedance**



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



**Fig5. Forward Characteristics**

## Ordering Information

| Device         | Packing                     |
|----------------|-----------------------------|
| Part Number-BP | Bulk: 10PCS/BOX ;100PCS/CTN |

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