


International  
**IR** Rectifier

**MB SERIES**

**SINGLE PHASE BRIDGE**

**Power Modules**

### Features

- Universal, 3 way terminals:  
push-on, wrap around or solder
- High thermal conductivity package,  
electrically insulated case
- Center hole fixing
- Excellent power/volume ratio
- UL E 62320 approved 
- Nickel plated terminals solderable as per MIL-STD-202 Method  
208; solder: Sn/Pb (60/40); solder temperature: 235-260°C  
max. time: 8-10 secs

25 A  
35 A

### Description

A range of extremely compact, encapsulated single phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and instrumentation applications.

### Major Ratings and Characteristics

| Parameters       | 26MB-A      | 36MB-A | Units            |
|------------------|-------------|--------|------------------|
| $I_O$            | 25          | 35     | A                |
| @ $T_C$          | 65          | 60     | °C               |
| $I_{FSM}$ @ 50Hz | 400         | 475    | A                |
| @ 60Hz           | 420         | 500    | A                |
| $I^2t$ @ 50Hz    | 790         | 1130   | A <sup>2</sup> s |
| @ 60Hz           | 725         | 1030   | A <sup>2</sup> s |
| $V_{RRM}$ range  | 200 to 1200 |        | V                |
| $T_J$            | -55 to 150  |        | °C               |

**ELECTRICAL SPECIFICATIONS**

Voltage Ratings

| Type number        | Voltage Code | $V_{RRM}$ , maximum repetitive peak reverse voltage<br>V | $V_{RSM}$ , maximum non-repetitive peak rev. voltage<br>V | $I_{RRM}$ max.<br>@ $T_J$ max. |
|--------------------|--------------|--|---|--------------------------------|
| 26MB..A<br>36MB..A | 20           | 200  | 275   | 2                              |
|                    | 40           | 400  | 500   |                                |
|                    | 60           | 600  | 725   |                                |
|                    | 80           | 800  | 900   |                                |
|                    | 100          | 1000   | 1100  |                                |
|                    | 120          | 1200   | 1300  |                                |

Forward Conduction

| Parameters   | 26MB-A | 36MB-A | Units              | Conditions  |
|--|--------|--------|--------------------|---|
| $I_O$ Maximum DC output current<br><br>@ Case temperature        | 25     | 35     | A                  | Resistive or inductive load   |
|  | 20     | 28     | A                  | Capacitive load   |
|  | 65     | 60     | °C                 |   |
| $I_{FSM}$ Maximum peak, one-cycle non-repetitive forward current | 400    | 475    | A                  | t = 10ms No voltage reappplied  |
|  | 420    | 500    |                    | t = 8.3ms 100% $V_{RRM}$ reappplied   |
|  | 335    | 400    |                    | t = 10ms 100% $V_{RRM}$ reappplied  |
|  | 350    | 420    |                    | t = 8.3ms 100% $V_{RRM}$ reappplied   |
| $I^2t$ Maximum $I^2t$ for fusing                                 | 790    | 1130   | A <sup>2</sup> s   | t = 10ms No voltage reappplied  |
|  | 725    | 1030   |                    | t = 8.3ms 100% $V_{RRM}$ reappplied   |
|  | 560    | 800    |                    | t = 10ms 100% $V_{RRM}$ reappplied  |
|  | 512    | 730    |                    | t = 8.3ms 100% $V_{RRM}$ reappplied   |
| $I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing                   | 5.6    | 11.3   | KA <sup>2</sup> √s | $I^2t$ for time $t_x = I^2\sqrt{t_x}\sqrt{t_x}$ ;<br>0.1 ≤ $t_x$ ≤ 10ms, $V_{RRM} = 0V$ |
| $V_{F(TO)1}$ Low-level of threshold voltage                      | 0.76   | 0.79   | V                  | (16.7% × π × $I_{F(AV)}$ ) < I < π × $I_{F(AV)}$ , @ $T_J$ max.                         |
| $V_{F(TO)2}$ High-level of threshold voltage                     | 0.92   | 0.96   |                    | (I > π × $I_{F(AV)}$ ), @ $T_J$ max.  |
| $r_{t1}$ Low-level forward slope resistance                      | 6.8    | 5.8    | mΩ                 | (16.7% × π × $I_{F(AV)}$ ) < I < π × $I_{F(AV)}$ , @ $T_J$ max.                         |
| $r_{t2}$ High-level forward slope resistance                     | 5.0    | 4.5    |                    | (I > π × $I_{F(AV)}$ ), @ $T_J$ max.  |
| $V_{FM}$ Maximum forward voltage drop                            | 1.11   | 1.14   | V                  | $T_J = 25^\circ C$ , $I_{FM} = 40A_{PK}$ (26MB) tp = 400μs                              |
|  |        |        |                    | $T_J = 25^\circ C$ , $I_{FM} = 55A_{PK}$ (36MB)   |
| $I_{RRM}$ Max. DC reverse current                                | 10     | 10     | μA                 | $T_J = 25^\circ C$ , per diode at $V_{RRM}$   |
| $V_{INS}$ RMS isolation voltage base plate                       | 2700   | 2700   | V                  | f = 50 Hz, t = 1s   |

Thermal and Mechanical Specifications

| Parameters  | 26MB-A        | 36MB-A | Units | Conditions                                  |
|---|---------------|--------|-------|---|
| T <sub>J</sub> Junction temperature range                   | -55 to 150 °C |        |       |   |
| T <sub>stg</sub> Storage temperature range                  | -55 to 150 °C |        |       |   |
| R <sub>thJC</sub> Max. thermal resistance junction to case  | 1.7           | 1.2    | K/W   | Per bridge                                  |
| R <sub>thCS</sub> Max. thermal resistance, case to heatsink | 0.2           |        | K/W   | Mounting surface , smooth, flat and greased |
| wt Approximate weight                                       | 20            |        | g     |   |
| T Mounting Torque ± 10%                                     | 2.0           |        | Nm    | Bridge to heatsink                          |

Ordering Information Table

**Device Code**

36

MB

120

A

①

②

③

④

- 1** - Current rating code: 26 = 25A (Avg)  
36 = 35A (Avg)
- 2** - Circuit configuration:  
MB = Single phase european coding
- 3** - Voltage code: MB series = code x 10 = V<sub>RRM</sub>
- 4** - Diode bridge rectifier:  
A = 26MB, 36MB Series

Outline Table

0.8 (.03) 6.3 (.25) 10.5 (.41) 20.3 (.80)

21.5 (0.85) 9.5 (0.375) 28.5 (1.12) 5 (0.2) 12.7 (0.5)

Not To Scale

Suggested plugging force:  
200 N max; axially applied to faston terminals

All dimensions in millimetres (inches)

# MB Series

Bulletin I2715 rev. I 03/03

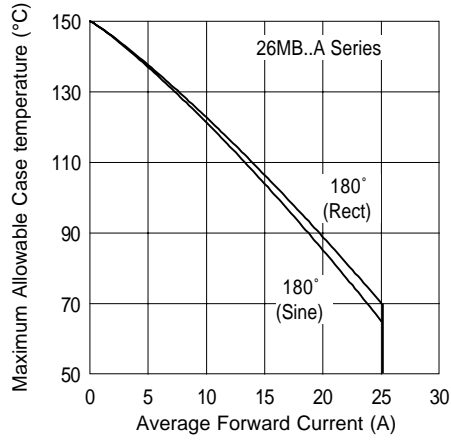


Fig. 1 - Current Ratings Characteristics

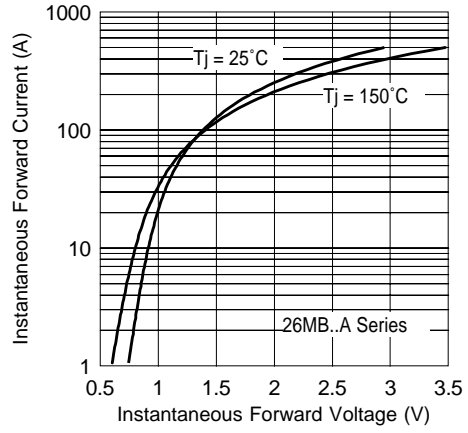


Fig. 2 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient Te

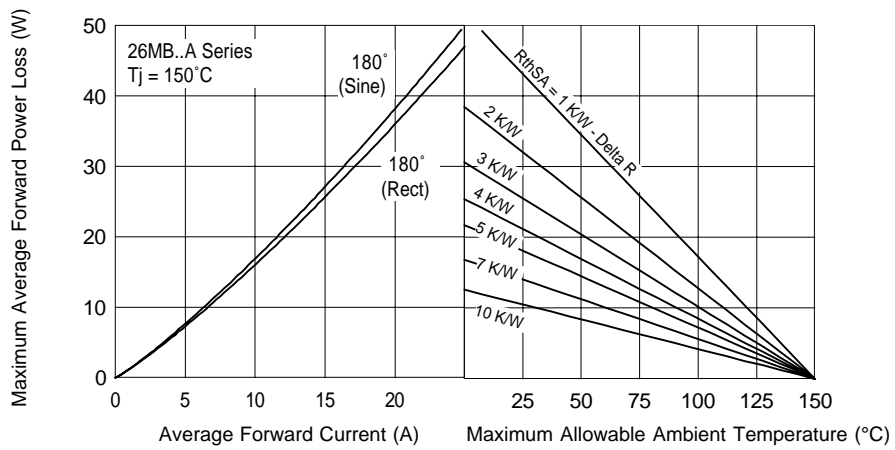


Fig. 3 - Total Power Loss Characteristics

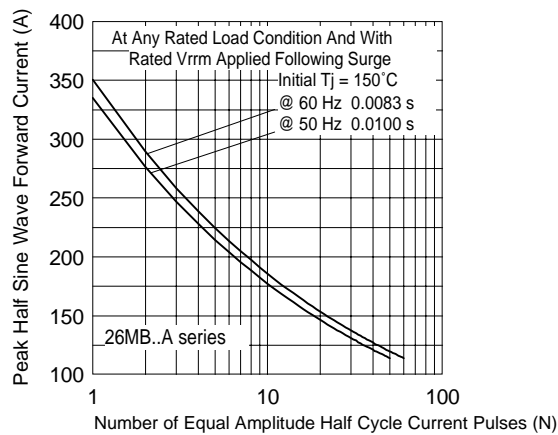


Fig. 4 - Maximum Non-Repetitive Surge Current

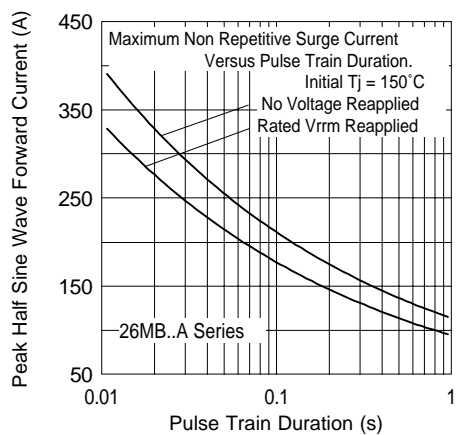


Fig. 5 - Maximum Non-Repetitive Surge Current

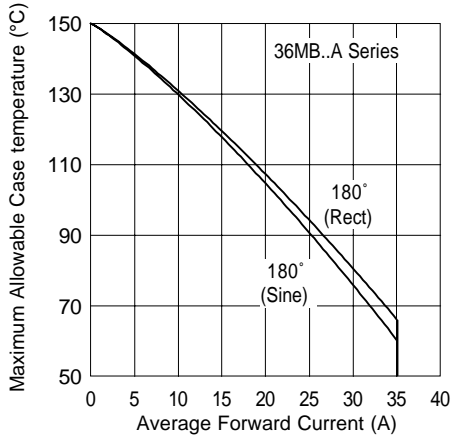


Fig. 6 - Current Ratings Characteristics

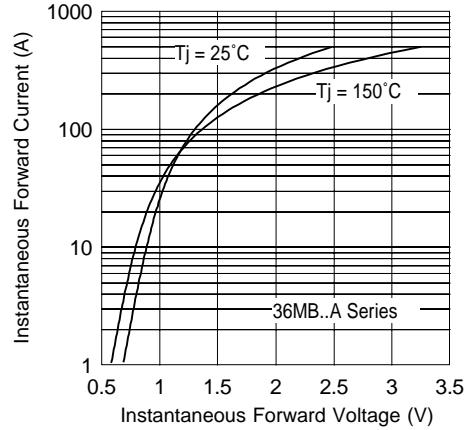


Fig. 7 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient Te

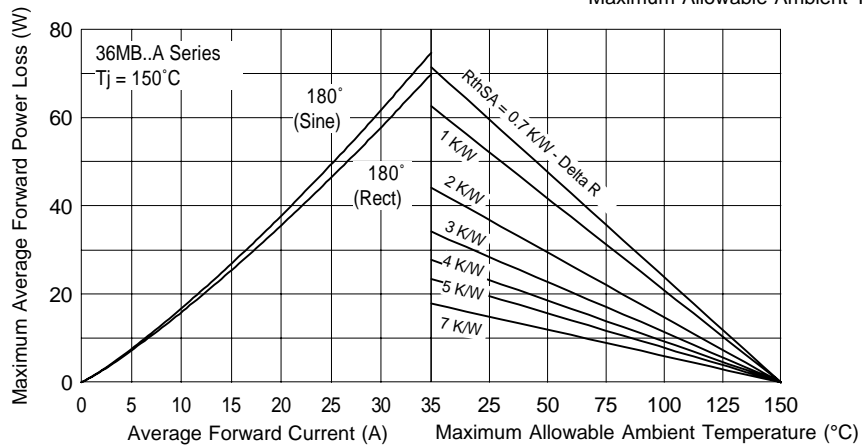


Fig. 3 - Total Power Loss Characteristics

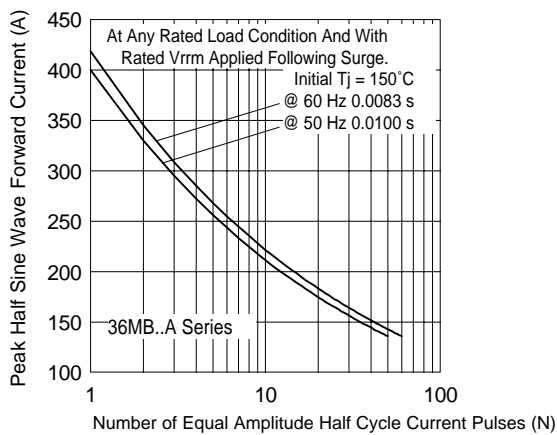


Fig. 9 - Maximum Non-Repetitive Surge Current

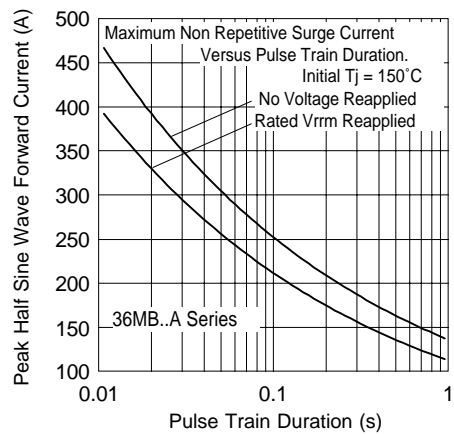


Fig. 10 - Maximum Non-Repetitive Surge Current

## **MB Series**

Bulletin I2715 rev. I 03/03

International  
**IOR** Rectifier

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Data and specifications subject to change without notice.  
This product has been designed and qualified for Industrial and Consumer Level.  
Qualification Standards can be found on IR's Web site.

International  
**IOR** Rectifier

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