


## MB & JB 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 

10 A  
 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       | 100JB-L    | 26MB-A<br>250JB-L | 36MB-A<br>35MB-A | Units            |
|------------------|------------|-------------------|------------------|------------------|
| $I_O$            | 10         | 25                | 35               | A                |
| @ $T_C$          | 65         | 65                | 60               | °C               |
| $I_{FSM}$ @ 50Hz | 148        | 400               | 475              | A                |
| @ 60Hz           | 155        | 420               | 500              | A                |
| $I^2t$ @ 50Hz    | 110        | 790               | 1130             | A <sup>2</sup> s |
| @ 60Hz           | 100        | 725               | 1030             | A <sup>2</sup> s |
| $V_{RRM}$ range  | 50 to 1600 |                   |                  | V                |
| $T_J$            | -40 to 150 |                   |                  | °C               |

**ELECTRICAL SPECIFICATIONS**

Voltage Ratings

| Typenumber  | Voltage Code | V <sub>RRM</sub> , maximum repetitive peak reverse voltage<br>V | V <sub>RSM</sub> , maximum non-repetitive peak rev. voltage<br>V | I <sub>RRM</sub> max.<br>@ T <sub>J</sub> max.<br>mA |
|---|--------------|---|--|--|
| 100JB..L<br>26MB..A<br>250JB..L<br>36MB..A<br>35MB..A | 5            | 50  | 75   | 2  |
|   | 10           | 100   | 150  |  |
|   | 20           | 200   | 275  |  |
|   | 40           | 400   | 500  |  |
|   | 60           | 600   | 725  |  |
|   | 80           | 800   | 900  |  |
|   | 100          | 1000  | 1100   |  |
|   | 120          | 1200  | 1300   |  |
|   | 140          | 1400  | 1500   |  |
|   | 160          | 1600  | 1700   |  |

Forward Conduction

| Parameters  | 100JB-L | 26MB-A<br>250JB-L | 36MB-A<br>35MB-A | Units              | Conditions  |
|---|---------|-------------------|------------------|--------------------|---|
| I <sub>O</sub> Maximum DC output current<br><br>@ Case temperature      | 10      | 25                | 35               | A                  | Resistive or inductive load   |
|   | 8       | 20                | 28               | A                  | Capacitive load   |
|   | 65      | 65                | 60               | °C                 |   |
| I <sub>FSM</sub> Maximum peak, one-cycle non-repetitive forward current | 148     | 400               | 475              | A                  | t = 10ms No voltage reappplied  |
|   | 155     | 420               | 500              |                    | t = 8.3ms 100% V <sub>RRM</sub> reappplied  |
|   | 125     | 335               | 400              |                    | t = 10ms 100% V <sub>RRM</sub> reappplied   |
|   | 130     | 350               | 420              |                    | t = 8.3ms 100% V <sub>RRM</sub> reappplied  |
| I <sup>2</sup> t Maximum I <sup>2</sup> t for fusing                    | 110     | 790               | 1130             | A <sup>2</sup> s   | t = 10ms No voltage reappplied  |
|   | 100     | 725               | 1030             |                    | t = 8.3ms 100% V <sub>RRM</sub> reappplied  |
|   | 78      | 560               | 800              |                    | t = 10ms 100% V <sub>RRM</sub> reappplied   |
|   | 71      | 512               | 730              |                    | t = 8.3ms 100% V <sub>RRM</sub> reappplied  |
| I <sup>2</sup> /t Maximum I <sup>2</sup> /t for fusing                  | 1.1     | 5.6               | 11.3             | KA <sup>2</sup> /s | I <sup>2</sup> t for time t <sub>x</sub> = I <sup>2</sup> √t x √t <sub>x</sub> ; 0.1 ≤ t <sub>x</sub> ≤ 10ms, V <sub>RRM</sub> = 0V |
| V <sub>F(TO)1</sub> Low-level of threshold voltage                      | 1.00    | 0.76              | 0.79             | V                  | (16.7% x π x I <sub>F(AV)</sub> ) < I < π x I <sub>F(AV)</sub> , @ T <sub>J</sub> max.  |
| V <sub>F(TO)2</sub> High-level of threshold voltage                     | 1.17    | 0.92              | 0.96             |                    | (I > π x I <sub>F(AV)</sub> ), @ T <sub>J</sub> max.  |
| r <sub>t1</sub> Low-level forward slope resistance                      | 15.4    | 6.8               | 5.8              | mΩ                 | (16.7% x π x I <sub>F(AV)</sub> ) < I < π x I <sub>F(AV)</sub> , @ T <sub>J</sub> max.  |
| r <sub>t2</sub> High-level forward slope resistance                     | 10.8    | 5.0               | 4.5              |                    | (I > π x I <sub>F(AV)</sub> ), @ T <sub>J</sub> max.  |
| V <sub>FM</sub> Maximum forward voltage drop                            | 1.3     | 1.11              | 1.14             | V                  | T <sub>J</sub> = 25°C, I <sub>FM</sub> = I <sub>Favg</sub> (arm) x π, tp = 400μs  |
| I <sub>RRM</sub> Max. DC reverse current                                | 10      | 10                | 10               | μA                 | T <sub>J</sub> = 25°C, per diode at V <sub>RRM</sub>  |
| V <sub>INS</sub> RMS isolation voltage base plate                       | 2700    | 2700              | 2700             | V                  | f = 50 Hz, t = 1s   |

Thermal and Mechanical Specifications

| Parameters  | 100JB-L    | 26MB-A<br>250JB-L | 36MB-A<br>35MB-A | Units | Conditions                                 |
|---|------------|-------------------|------------------|-------|--|
| T <sub>J</sub> Junction temperature range                   | -40 to 150 |                   |                  | °C    |  |
| T <sub>stg</sub> Storage temperature range                  | -40 to 150 |                   |                  | °C    |  |
| R <sub>thJC</sub> Max. thermal resistance junction to case  | 3.5        | 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**

|           |           |            |          |
|-----------|-----------|------------|----------|
| <b>36</b> | <b>MB</b> | <b>160</b> | <b>A</b> |
| 1         | 2         | 3          | 4        |

**1** - Current rating code:   
 26 & 36 = 10A (Avg)   
 100 & 250 = 25A (Avg)   
 35 = 35A (Avg)   
 American coding   
 European coding

**2** - Circuit configuration:   
 JB = Single phase american coding   
 MB = Single phase european coding

**3** - Voltage code: MB series = code x 10 = V<sub>RRM</sub>   
 JB series = code x 100 = V<sub>RRM</sub>

**4** - Diode bridge rectifier:   
 A = 26MB, 36MB, 35MB Series   
 L = 100JB and 250JB Series

Outline Table

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

All dimensions in millimetres (inches)

Not To Scale

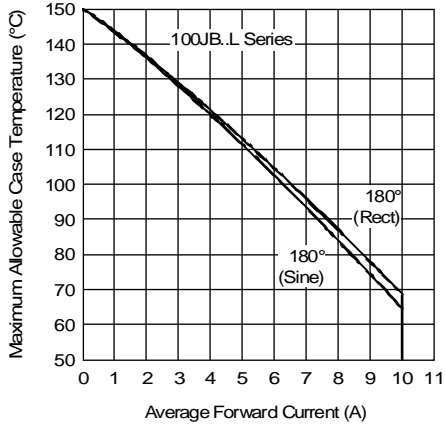


Fig. 1 - Current Ratings Characteristics

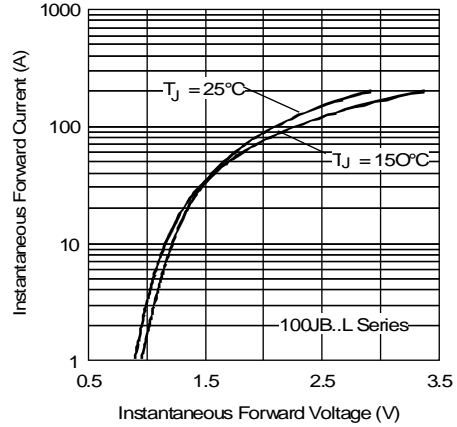


Fig. 2 - Forward Voltage Drop Characteristics

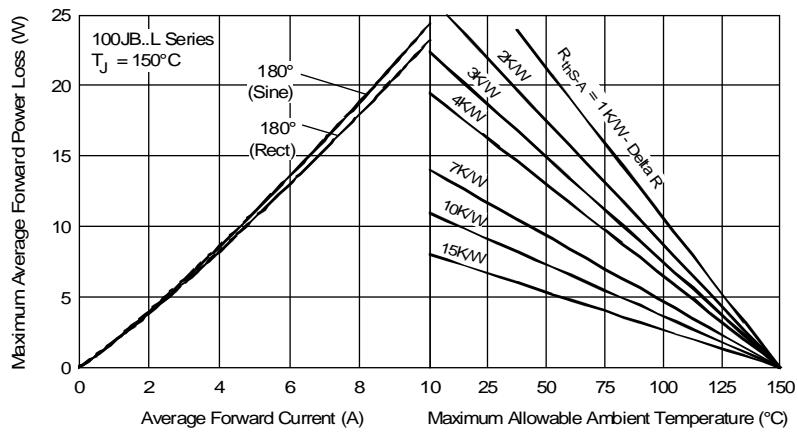


Fig. 3 - Total Power Loss Characteristics

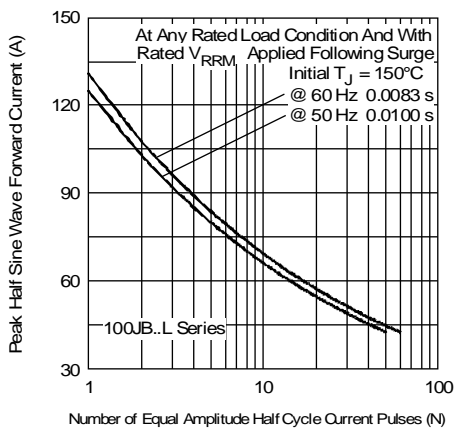


Fig. 4 - Maximum Non-Repetitive Surge Current

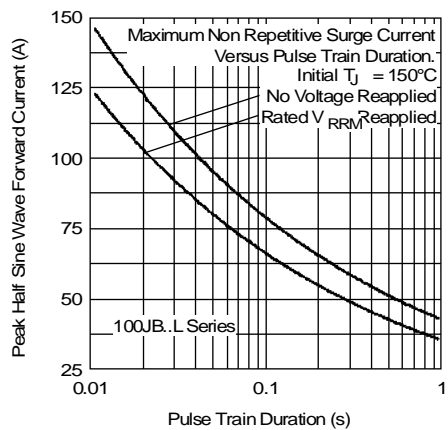


Fig. 5 - Maximum Non-Repetitive Surge Current

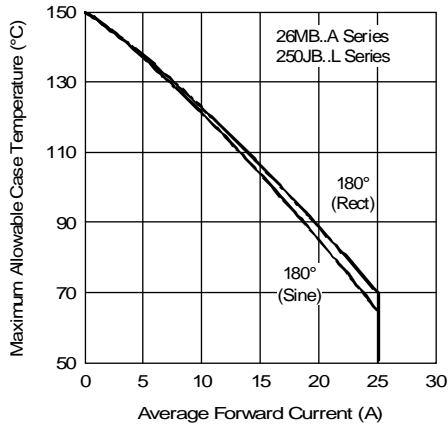


Fig. 6 - Current Ratings Characteristics

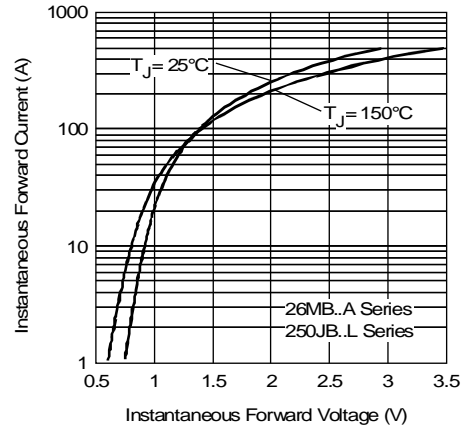


Fig. 7 - Forward Voltage Drop Characteristics

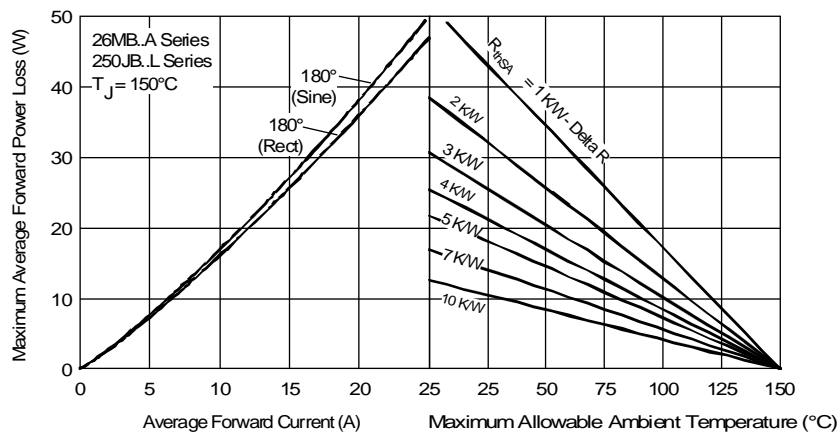


Fig. 8 - Total Power Loss Characteristics

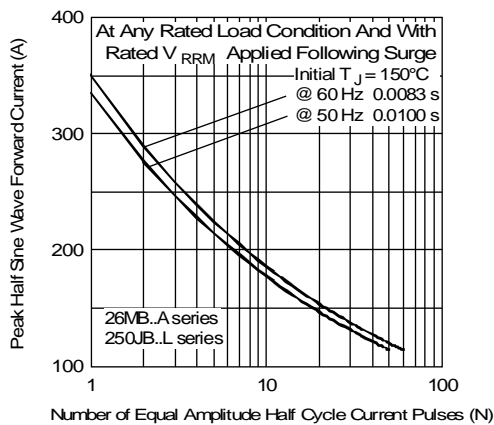


Fig. 9 - Maximum Non-Repetitive Surge Current

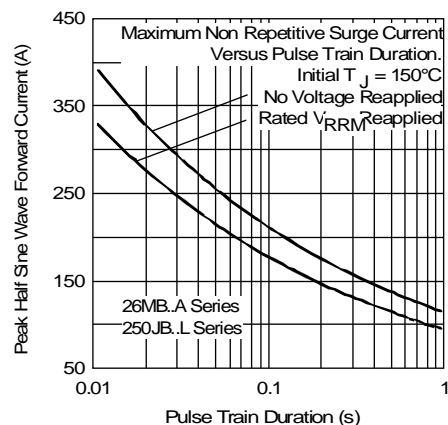


Fig. 10 - Maximum Non-Repetitive Surge Current

**MB & JB Series**

Bulletin I2715 rev. E 08/97

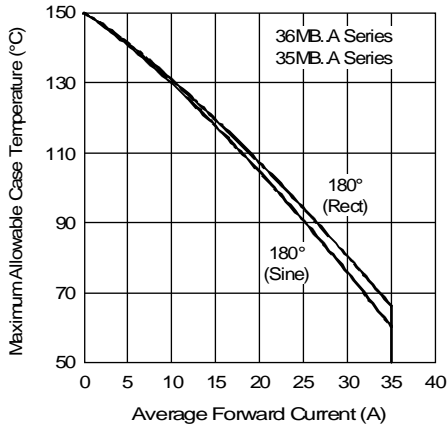


Fig. 11 - Current Ratings Characteristics

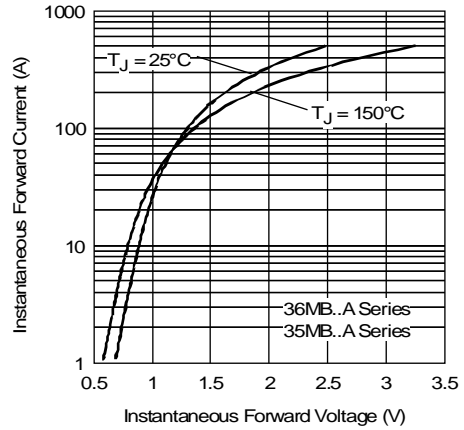


Fig. 12 - Forward Voltage Drop Characteristics

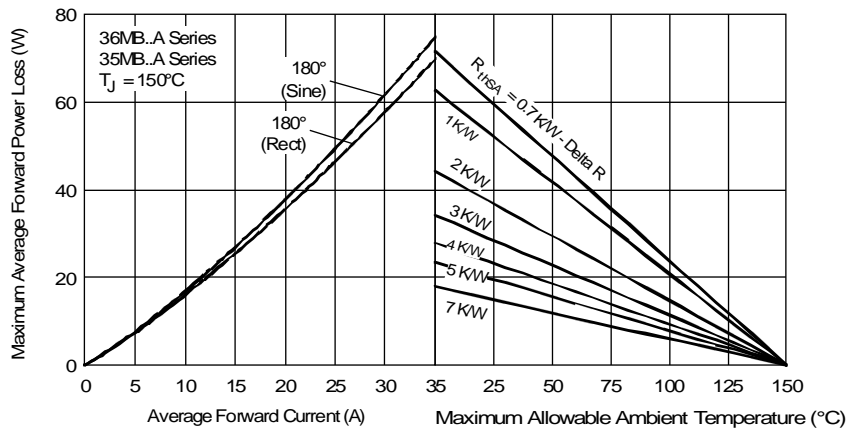


Fig. 13 - Total Power Loss Characteristics

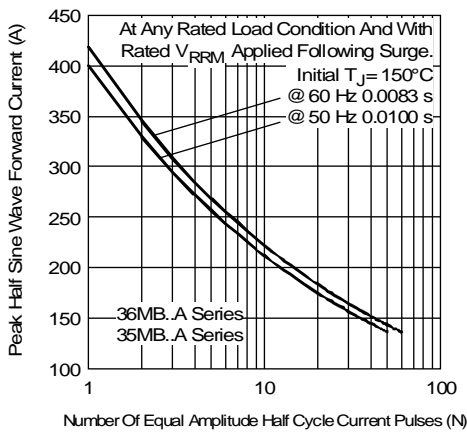


Fig. 14 - Maximum Non-Repetitive Surge Current

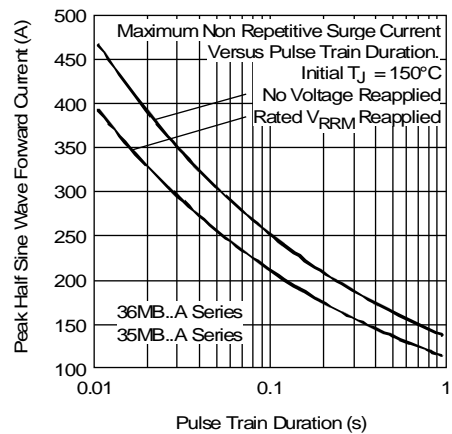


Fig. 15 - Maximum Non-Repetitive Surge Current