Bulletin I2715 rev. E 08/97

International
IOR Rectifier

# MB & JB SERIES

**SINGLE PHASE BRIDGE** **Power Modules**

10 A
25 A
35 A

## 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

## 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 250JB-L | 36MB-A 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 | $A^2s$ |
| | @60Hz | 100 | 725 | 1030 | $A^2s$ |
| $V_{RRM}$ range | | 50 to 1600 | | | V |
| $T_J$ | | -40 to 150 | | | °C |

## ELECTRICAL SPECIFICATIONS

### Voltage Ratings

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

### Forward Conduction

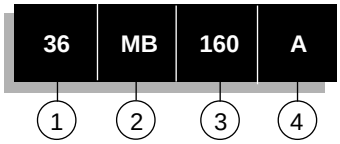
| | Parameters | 100JB-L | 26MB-A 250JB-L | 36MB-A 35MB-A | Units | Conditions | | |
|---|---|---|---|---|---|---|---|---|
| $I_O$ | Maximum DC output current | 10 | 25 | 35 | A | Resistive or inductive load | | |
| | | 8 | 20 | 28 | A | Capacitive load | | |
| | @ Case temperature | 65 | 65 | 60 | °C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

## Thermal and Mechanical Specifications

| Parameters | | 100JB-L | 26MB-A 250JB-L | 36MB-A 35MB-A | Units | Conditions |
|---|---|---|---|---|---|---|
| $T_J$ | Junction temperature range | -40 to 150 | | | °C | |
| $T_{stg}$ | Storage temperature range | -40 to 150 | | | °C | |
| $R_{thJC}$ | Max. thermal resistance junction to case | 3.5 | 1.7 | 1.2 | K/W | Per bridge |
| $R_{thCS}$ | 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**




**1** - Current rating code:

| | | | |
|---|---|---|---|
| 26 | & | 100 | = 10A (Avg) |
| 36 | & | 250 | = 25A (Avg) |
| | | 35 | = 35A (Avg) |

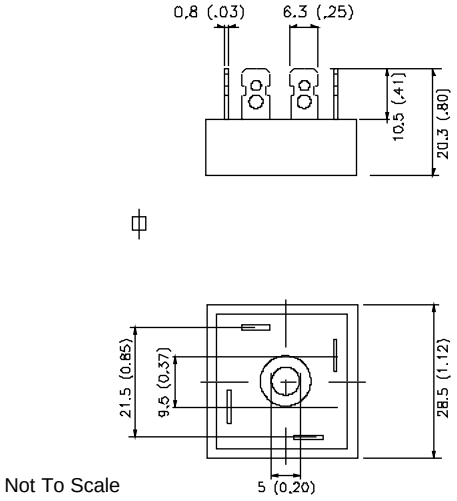
American coding
European coding

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

**3** - Voltage code: MB series = code x 10 = $V_{RRM}$
JB series = code x 100 = $V_{RRM}$

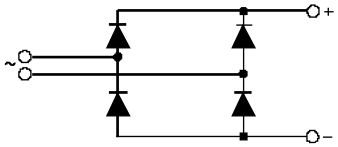
**4** - Diode bridge rectifier:
A = 26MB, 36MB, 35MB Series
L = 100JB and 250JB Series

## Outline Table




Not To Scale

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




All dimensions in millimetres (inches)