


International
IR Rectifier

MB High Voltage 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 | 70 | 55 | °C |
| I_{FSM} @ 50Hz | 400 | 475 | A |
| @ 60Hz | 420 | 500 | A |
| I^2t @ 50Hz | 790 | 1130 | A ² s |
| @ 60Hz | 725 | 1030 | A ² s |
| V_{RRM} range | 1400 to 1600 | | V |
| T_J | -55 to 150 | | °C |

ELECTRICAL SPECIFICATIONS

Voltage Ratings

| Type number | 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 |
|-------------|--------------|--|---|--------------------------------------|
| 26MB..A | 140 | 1400 | 1500 | 2 |
| 36MB..A | 160 | 1600 | 1700 | |

Forward Conduction

| Parameters | | 26MB-A | 36MB-A | Units | Conditions |
|---------------|--|--------|--------|--------------------|---|
| I_O | Maximum DC output current | 25 | 35 | A | Resistive or inductive load |
| | | 20 | 28 | A | Capacitive load |
| | @ Case temperature | 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 ² 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 ² √s | I^2t for time $t_x = I^2\sqrt{t} \sqrt{t_x}$; $0.1 \leq t_x \leq 10ms, V_{RRM} = 0V$ |
| $V_{F(TO)1}$ | Low-level of threshold voltage | 0.70 | 0.74 | 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 | 0.75 | 0.79 | V | $(I > \pi \times I_{F(AV)})$, @ T_J max. |
| r_{t1} | Low-level forward slope resistance | 7.0 | 5.5 | 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 | 6.4 | 5.2 | mΩ | $(I > \pi \times I_{F(AV)})$, @ T_J max. |
| V_{FM} | Maximum forward voltage drop | 1.25 | 1.3 | V | $T_J = 25^\circ C, I_{FM} = 40A_{PK}(26MB)$ $T_J = 25^\circ C, I_{FM} = 55A_{PK}(36MB)$ tp = 400μs |
| | | | | | |
| 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_J | Junction temperature range | -55 to 150 °C | | | |
| T_{stg} | Storage temperature range | -55 to 150 °C | | | |
| R_{thJC} | Max. thermal resistance junction to case | 1.7 | 1.35 | 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 | | | |
|-------------|-----------|------------|----------|
| 36 | MB | 160 | A |
| ① | ② | ③ | ④ |

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

Outline Table

Not To Scale

All dimensions in millimetres (inches)

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

MB High Voltage Series

Bulletin I27177 03/03

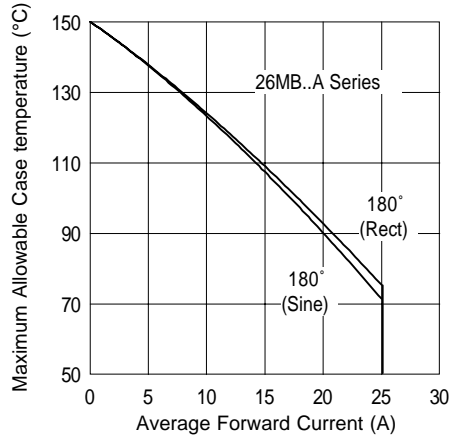


Fig. 1 - Current Ratings Characteristics

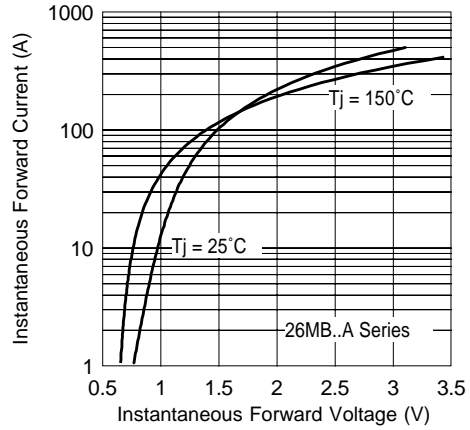


Fig. 2 - Forward Voltage Drop Characteristics
Maximum Allowable Ambient Te

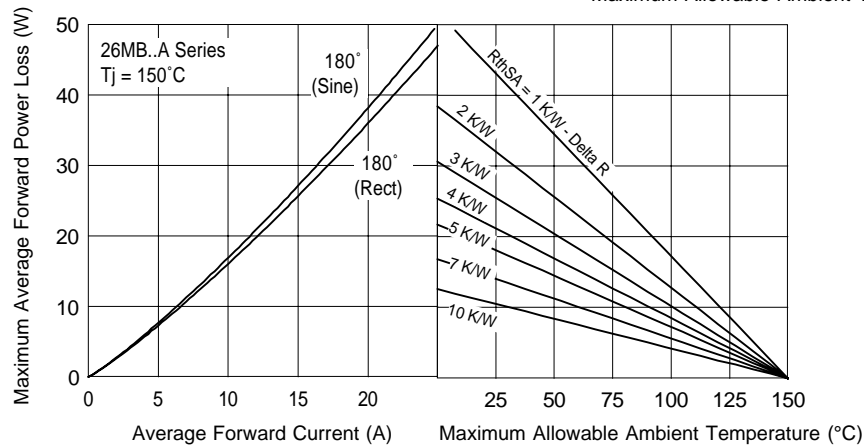


Fig. 3 - Total Power Loss Characteristics

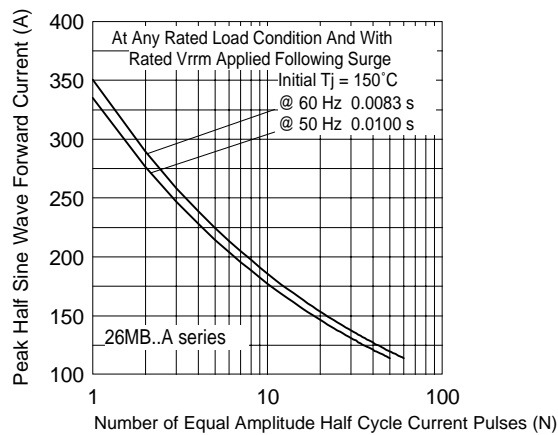


Fig. 4 - Maximum Non-Repetitive Surge Current

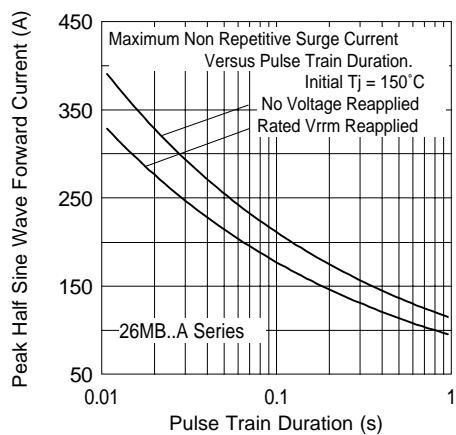


Fig. 5 - Maximum Non-Repetitive Surge Current

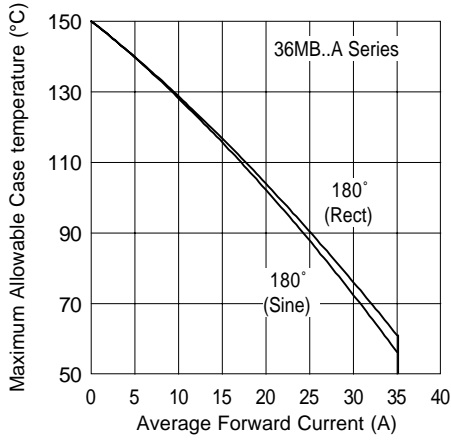


Fig. 6 - Current Ratings Characteristics

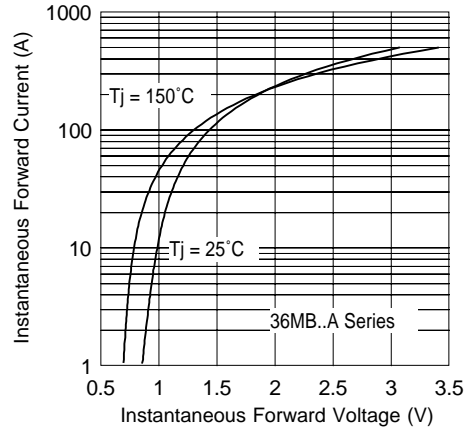


Fig. 7 - Forward Voltage Drop Characteristics
Maximum Allowable Ambient T_e

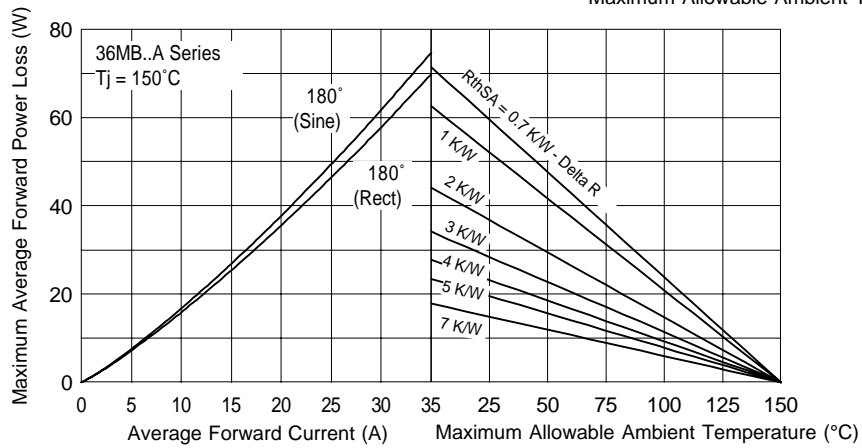


Fig. 3 - Total Power Loss Characteristics

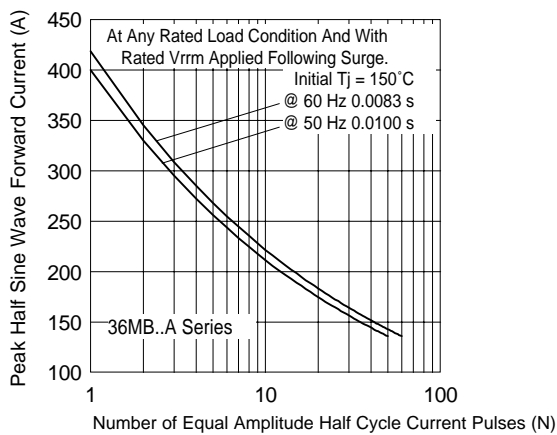


Fig. 9 - Maximum Non-Repetitive Surge Current

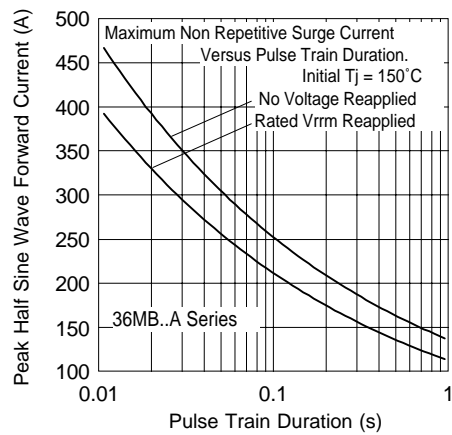


Fig. 10 - Maximum Non-Repetitive Surge Current

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Bulletin I27177 03/03

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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.

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