


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 V	$V_{RSM}$ , maximum non-repetitive peak rev. voltage V	$I_{RRM}$ max. @ $T_J$ max.
26MB..A 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	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 <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
$I^2/t$	Maximum $I^2/t$ for fusing	5.6	11.3	KA <sup>2</sup> /s	$I^2t$ for time $t_x = I^2/t_x \sqrt{t_x}$ ; $0.1 \leq t_x \leq 10ms, V_{RRM} = 0V$
$V_{F(TO)1}$	Low-level of threshold voltage	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	0.92	0.96	V	$I > \pi \times I_{F(AV)}$ , @ $T_J$ max.
$r_{t1}$	Low-level forward slope resistance	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	5.0	4.5	mΩ	$I > \pi \times I_{F(AV)}$ , @ $T_J$ max.
$V_{FM}$	Maximum forward voltage drop	1.11	1.14	V	$T_J = 25^\circ C, I_{FM} = 40A_{PK}$ (26MB) $T_J = 25^\circ C, I_{FM} = 55A_{PK}$ (36MB) $t_p = 400\mu s$
$I_{RRM}$	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

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

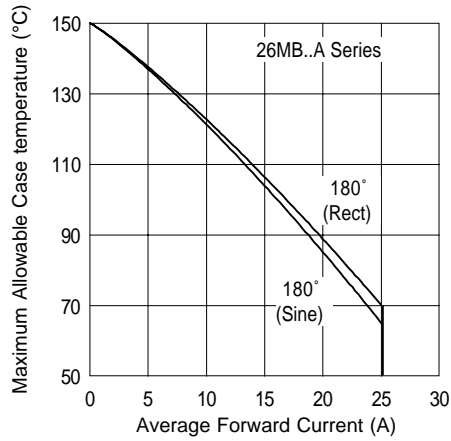


Fig. 1 - Current Ratings Characteristics

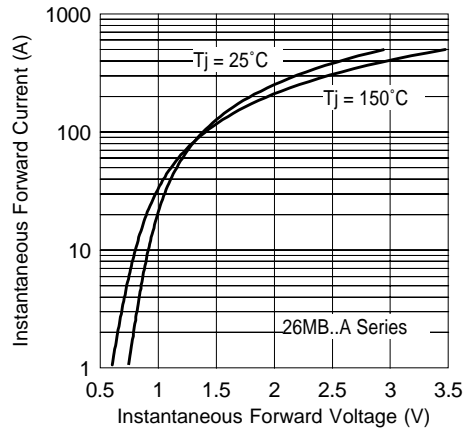


Fig. 2 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient Te

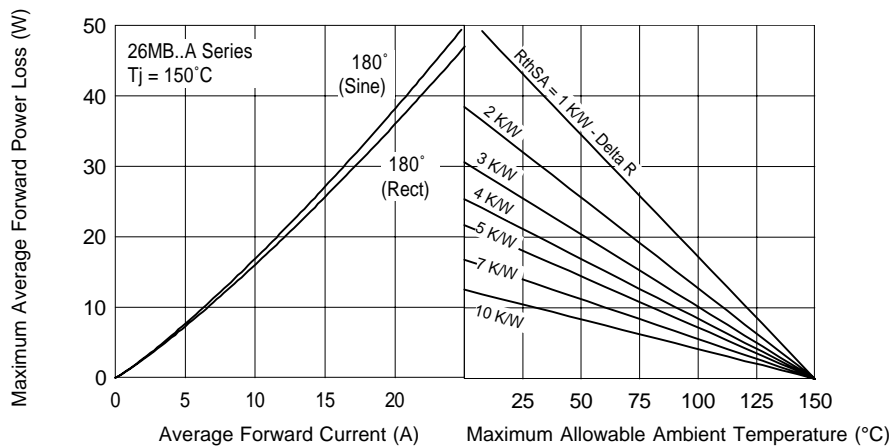


Fig. 3 - Total Power Loss Characteristics

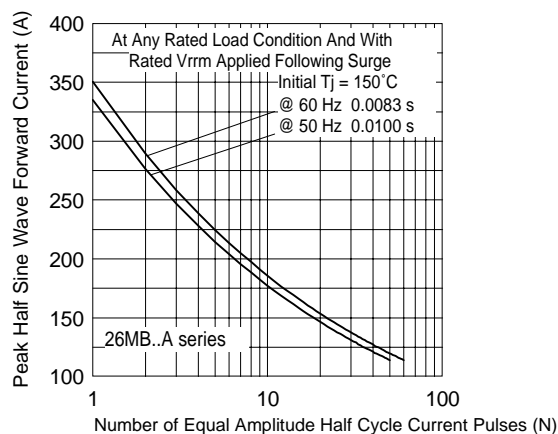


Fig. 4 - Maximum Non-Repetitive Surge Current

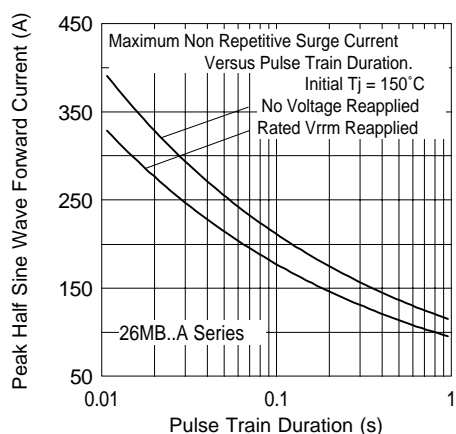


Fig. 5 - Maximum Non-Repetitive Surge Current

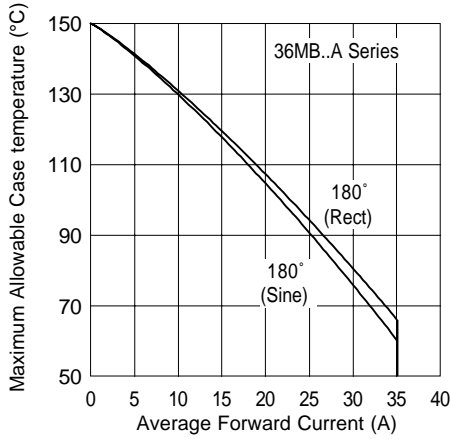


Fig. 6 - Current Ratings Characteristics

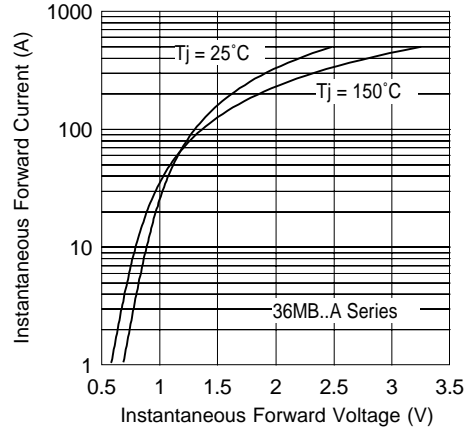


Fig. 7 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient  $T_e$

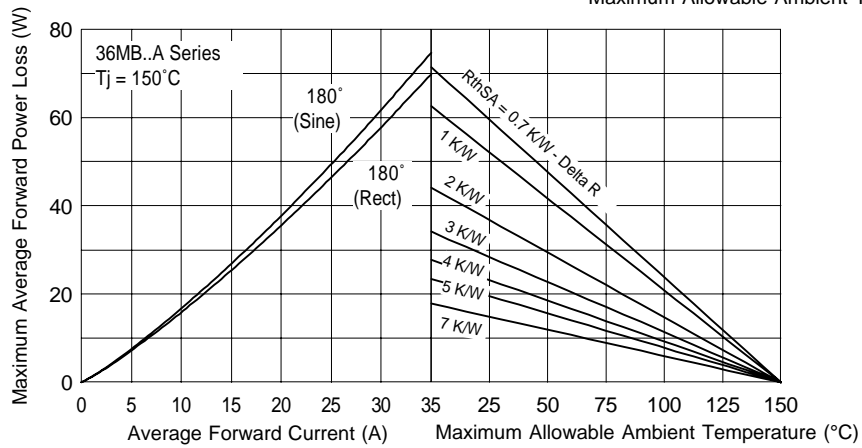


Fig. 3 - Total Power Loss Characteristics

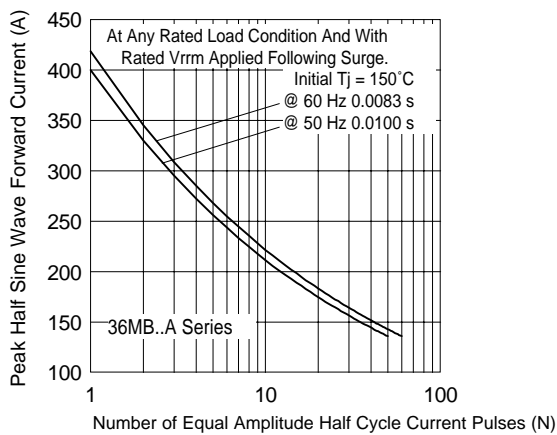


Fig. 9 - Maximum Non-Repetitive Surge Current

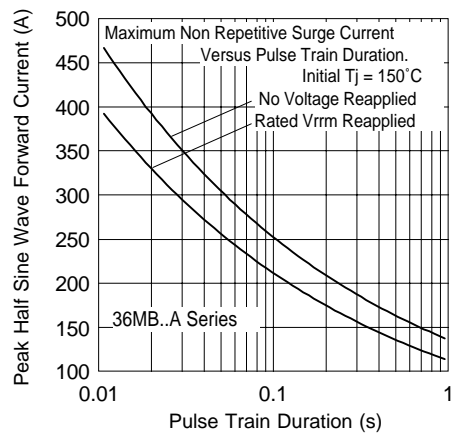


Fig. 10 - Maximum Non-Repetitive Surge Current

## MB Series

Bulletin I2715 rev. I 03/03

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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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**IOR** Rectifier

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