


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-202E Method  
208C; 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	50 to 1600		V
$T_J$	-40 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 36MB..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	26MB-A	36MB-A	Units	Conditions
$I_O$ Maximum DC output current	25	35	A	Resistive or inductive load
	20	28	A	Capacitive load
	65	60	°C	@ Case temperature
$I_{FSM}$ Maximum peak, one-cycle non-repetitive forward current	400	475	A	t = 10ms No voltage reappplied
	420	500		t = 8.3ms
	335	400		t = 10ms 100% $V_{RRM}$ reappplied
	350	420		t = 8.3ms
$I^2t$ Maximum $I^2t$ for fusing	790	1130	A <sup>2</sup> s	t = 10ms No voltage reappplied
	725	1030		t = 8.3ms
	560	800		t = 10ms 100% $V_{RRM}$ reappplied
	512	730		t = 8.3ms
$I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing	5.6	11.3	KA <sup>2</sup> √s	$I^2t$ for time $t_x = I^2\sqrt{t_x\sqrt{t_x}}$ ; $0.1 \leq t_x \leq 10ms, V_{RRM} = 0V$
$V_{F(TO)1}$ Low-level of threshold voltage	0.76	0.79	V	$(16.7\% \times \pi \times I_{F(AV)}) < I < \pi \times I_{F(AV)}, @ T_J \text{ max.}$
$V_{F(TO)2}$ High-level of threshold voltage	0.92	0.96		$(I > \pi \times I_{F(AV)}), @ T_J \text{ max.}$
$r_{t1}$ Low-level forward slope resistance	6.8	5.8	mΩ	$(16.7\% \times \pi \times I_{F(AV)}) < I < \pi \times I_{F(AV)}, @ T_J \text{ max.}$
$r_{t2}$ High-level forward slope resistance	5.0	4.5		$(I > \pi \times I_{F(AV)}), @ T_J \text{ max.}$
$V_{FM}$ Maximum forward voltage drop	1.11	1.14	V	$T_J = 25^\circ C, I_{FM} = I_{Favg(arm)} \times \pi, tp = 400\mu s$
$I_{RRM}$ Max. DC reverse current	10	10	μA	$T_J = 25^\circ C, \text{ per diode at } V_{RRM}$
$V_{INS}$ RMS isolation voltage base plate	2700	2700	V	f = 50 Hz, t = 1 s

**Thermal and Mechanical Specifications**

Parameters	26MB-A	36MB-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	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

160

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. H 08/02

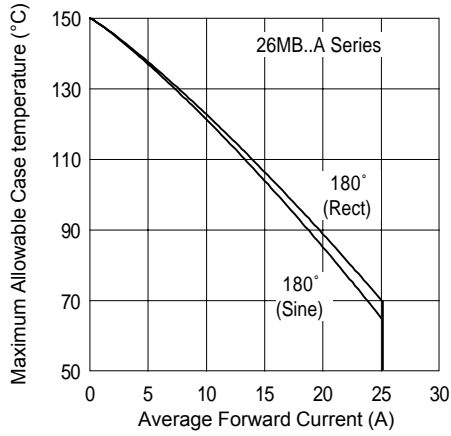


Fig. 1 - Current Ratings Characteristics

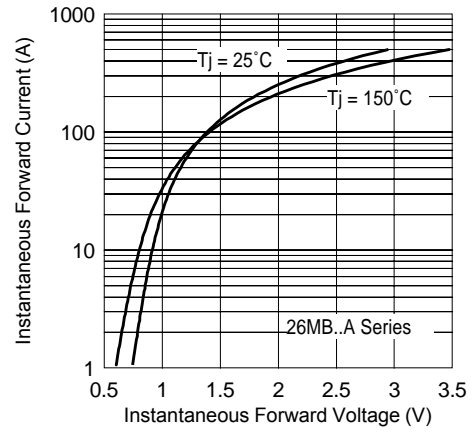


Fig. 2 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient  $T_e$

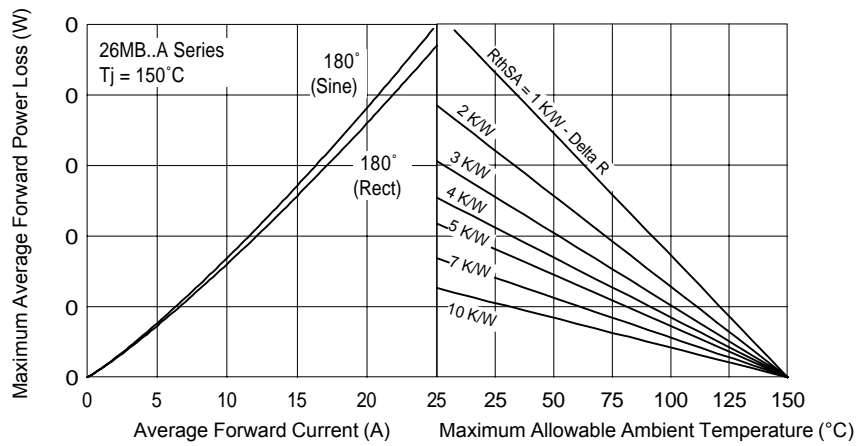


Fig. 3 - Total Power Loss Characteristics

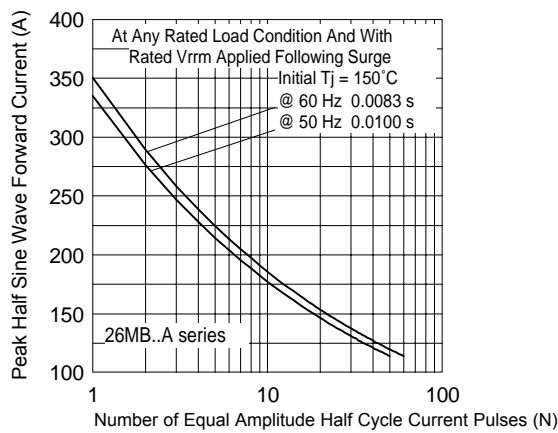


Fig. 4 - Maximum Non-Repetitive Surge Current

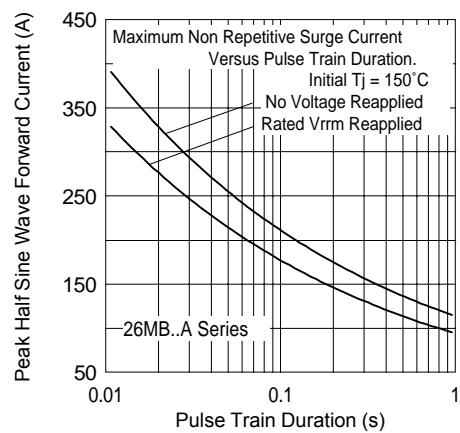


Fig. 5 - Maximum Non-Repetitive Surge Current

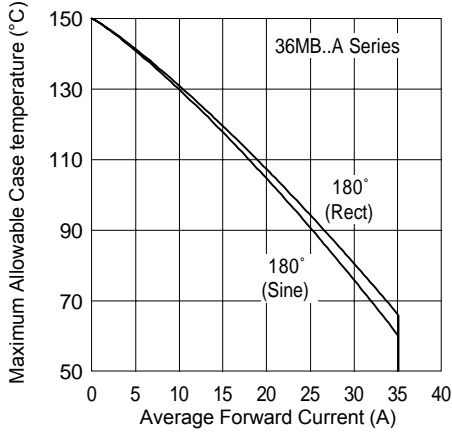


Fig. 6 - Current Ratings Characteristics

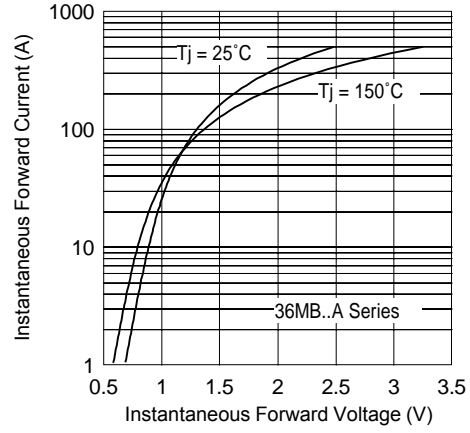


Fig. 7 - Forward Voltage Drop Characteristics

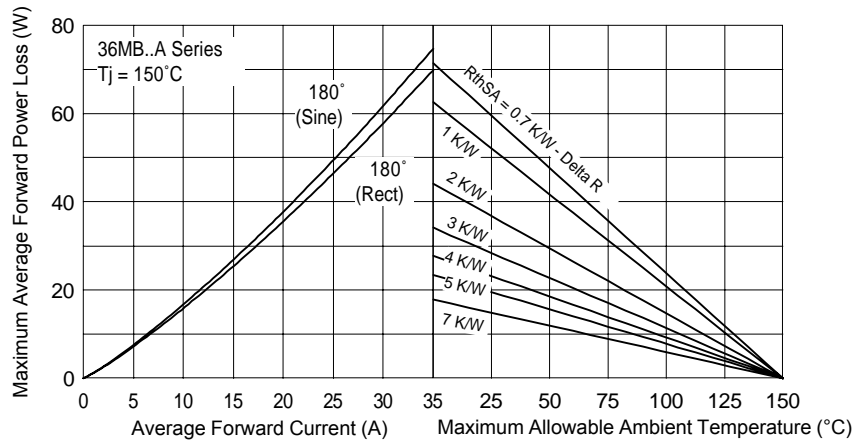


Fig. 3 - Total Power Loss Characteristics

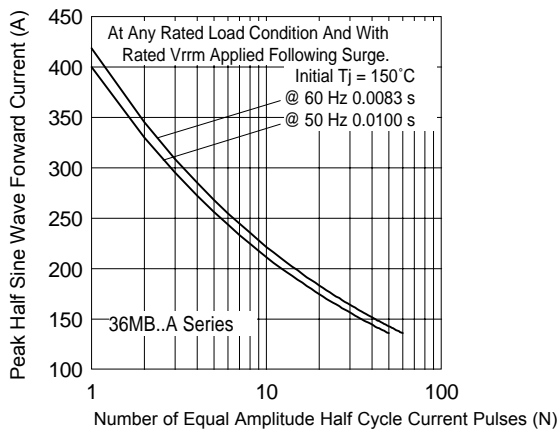


Fig. 9 - Maximum Non-Repetitive Surge Current

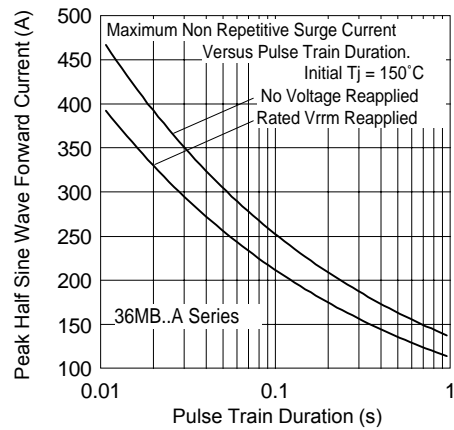


Fig. 10 - Maximum Non-Repetitive Surge Current

**MB Series**

Bulletin I2715 rev. H 08/02

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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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