

Bulletin I2715 rev. G 08/01

International IOR 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
flux: Alpha 6295H
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 ² s
@ 60Hz	725	1030	A ² s
V_{RRM} range	50 to 1600		V
T_J	-40 to 150		°C

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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	
I_{FSM} Maximum peak, one-cycle non-repetitive forward current	400	475	A	t = 10ms No voltage
	420	500		t = 8.3ms reapplied
	335	400		t = 10ms 100% V_{RRM}
	350	420		t = 8.3ms reapplied
I^2t Maximum I^2t for fusing	790	1130	A ² s	t = 10ms No voltage
	725	1030		t = 8.3ms reapplied
	560	800		t = 10ms 100% V_{RRM}
	512	730		t = 8.3ms reapplied
$I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing	5.6	11.3	KA ² √s	I^2t for time $t_x = I^2\sqrt{t_x}\sqrt{t_x}$; $0.1 \leq t_x \leq 10ms$, $V_{RRM} = 0V$
$V_{F(TO)1}$ 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		$I > \pi \times I_{F(AV)}$, @ 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		$I > \pi \times I_{F(AV)}$, @ T_J max.
V_{FM} Maximum forward voltage drop	1.11	1.14	V	$T_J = 25^\circ C$, $I_{FM} = I_{Favg(arm)} \times \pi$, $t_p = 400\mu s$
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

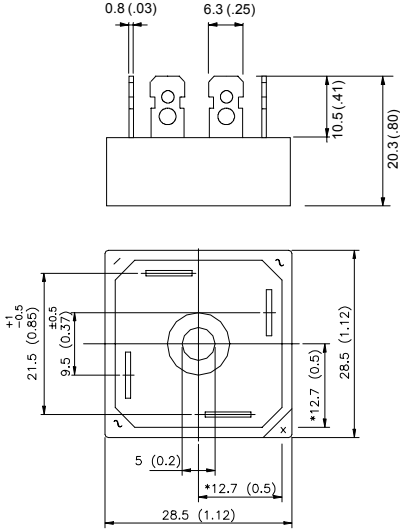
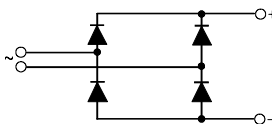
Thermal and Mechanical Specifications

Parameters	26MB-A	36MB-A	Units	Conditions
T _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	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			
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 _{RRM}		
4	Diode bridge rectifier: A = 26MB, 36MB Series		

Outline Table

 0.8 (.03) 6.3 (.25) 10.5 (.41) 20.3 (.80) 21.5 (0.85) 9.5 (0.37) 5 (0.2) 28.5 (1.12) 12.7 (0.5) 12.7 (0.5) 28.5 (1.12) Not To Scale	Suggested plugging force: 200 N max; axially applied to faston terminals  All dimensions in millimetres (inches)
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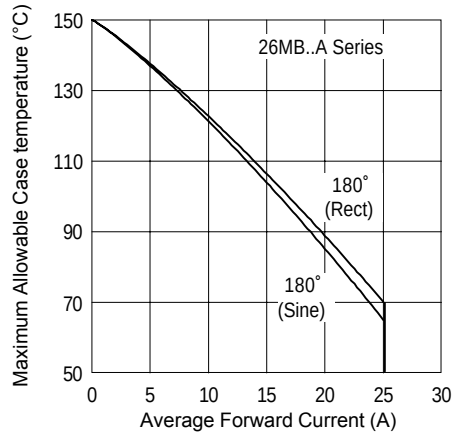


Fig. 1 - Current Ratings Characteristics

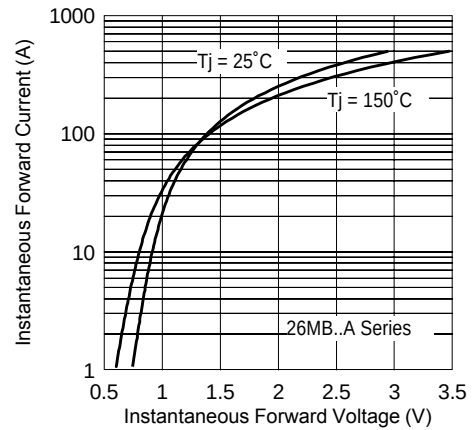


Fig. 2 - Forward Voltage Drop Characteristics
Maximum Allowable Ambient T_e

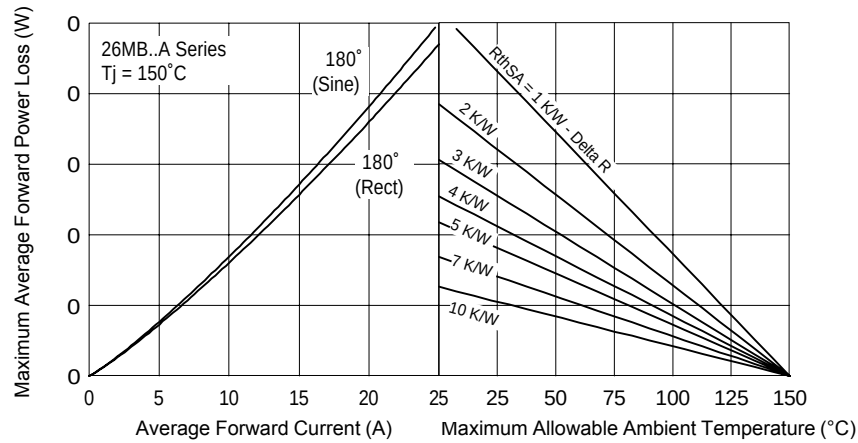


Fig. 3 - Total Power Loss Characteristics

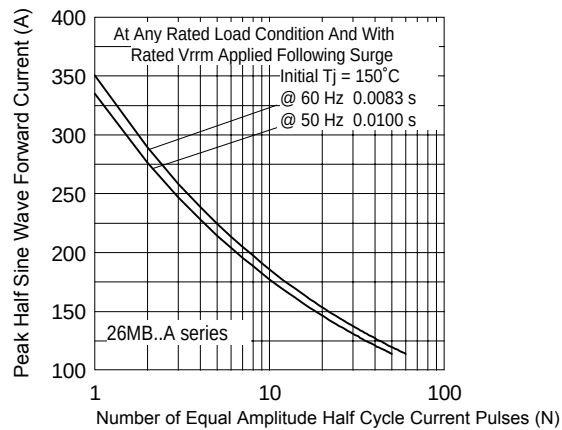


Fig. 4 - Maximum Non-Repetitive Surge Current

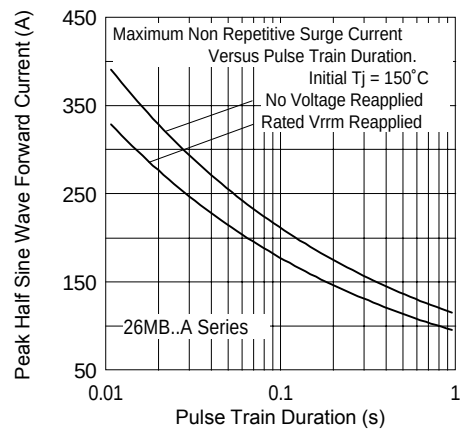


Fig. 5 - Maximum Non-Repetitive Surge Current

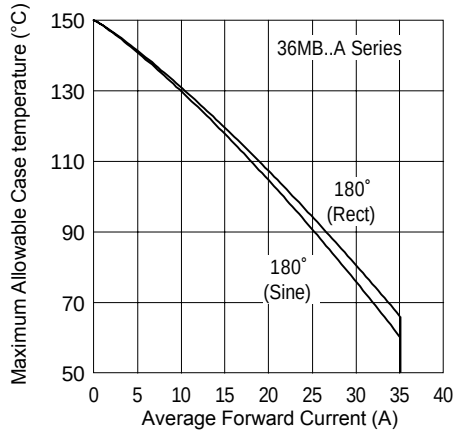


Fig. 6 - Current Ratings Characteristics

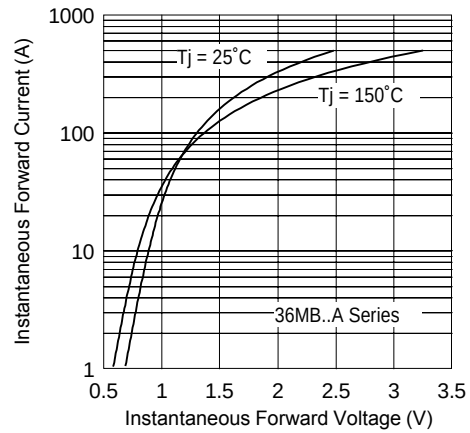


Fig. 7 - Forward Voltage Drop Characteristics

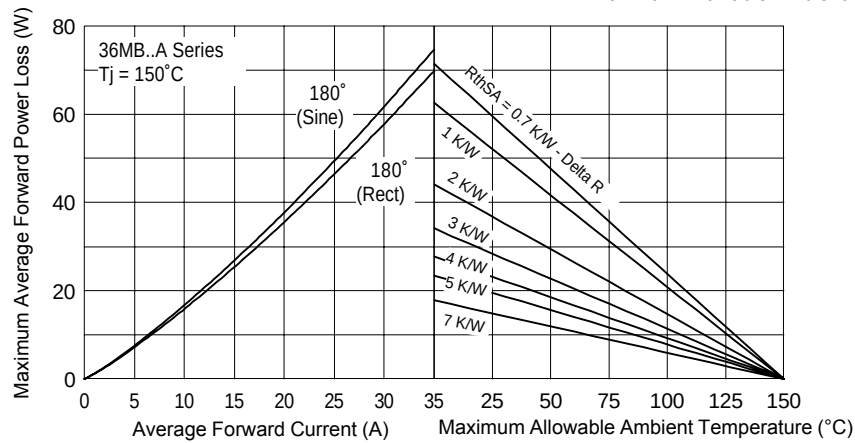


Fig. 3 - Total Power Loss Characteristics

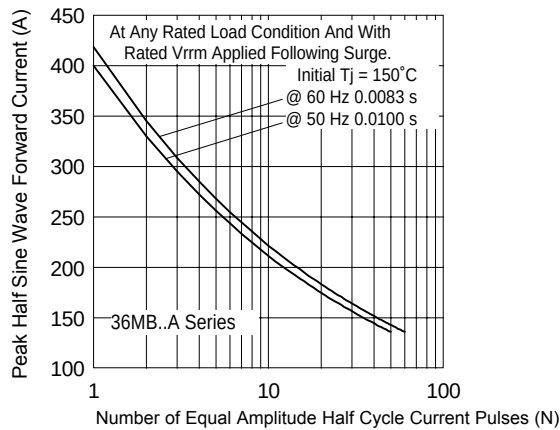


Fig. 9 - Maximum Non-Repetitive Surge Current

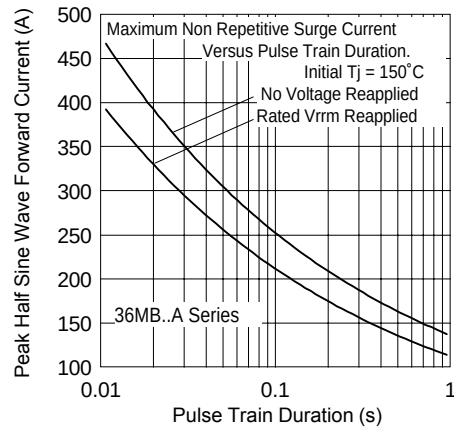


Fig. 10 - Maximum Non-Repetitive Surge Current

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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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