Bulletin I27177 03/03

International
IOR Rectifier

MB High Voltage SERIES

SINGLE PHASE BRIDGE **Power Modules**

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
- 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

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^2s
	@ 60Hz	725	1030	A^2s
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 reapplied	Initial $T_J = T_J$ max.
		420	500		t=8.3ms		
		335	400		t=10ms	100% V_{RRM} reapplied	
		350	420		t=8.3ms		
I^2t	Maximum I^2t for fusing	790	1130	A^2s	t=10ms	No voltage reapplied	
		725	1030		t=8.3ms		
		560	800		t=10ms	100% V_{RRM} reapplied	
		512	730		t=8.3ms		
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	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	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		$(I > \pi \times I_{F(AV)})$, @ 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		$(I > \pi \times I_{F(AV)})$, @ T_J max.		
V_{FM}	Maximum forward voltage drop	1.25	1.3	V	T_J = 25°C, $I_{FM} = 40A_{PK}$ (26MB)	tp = 400µs	
					T_J = 25°C, $I_{FM} = 55A_{PK}$ (36MB)		
I_{RRM}	Max. DC reverse current	10	10	µA	T_J = 25°C, per diode at V_{RRM}		
V_{INS}	RMS isolation voltage base plate	2700	2700	V	f=50Hz, 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

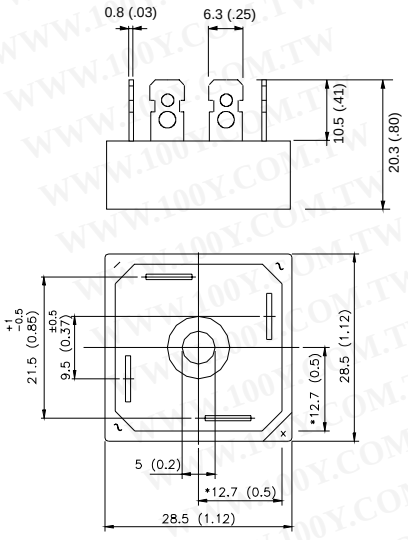
1 - Current rating code:
- 26 = 25A (Avg)
- 36 = 35A (Avg)

2 - Circuit configuration:
MB = Single phase european coding

3 - Voltage code: MB series = code x 10 = V_{RRM}

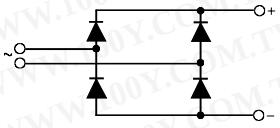
4 - Diode bridge rectifier:
A = 26MB, 36MB Series

Outline Table



Not To Scale

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



All dimensions in millimetres (inches)

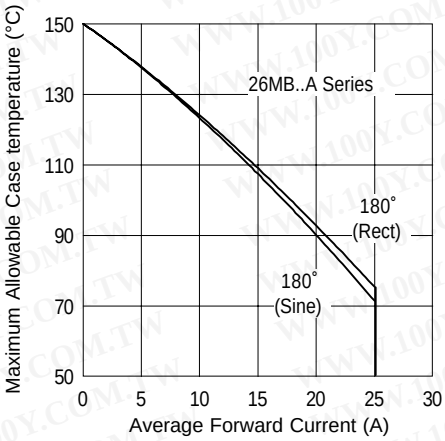


Fig. 1 - Current Ratings Characteristics

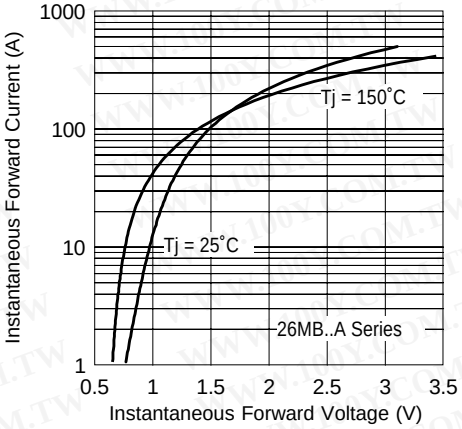


Fig. 2 - Forward Voltage Drop Characteristics

Maximum Allowable Ambient Te

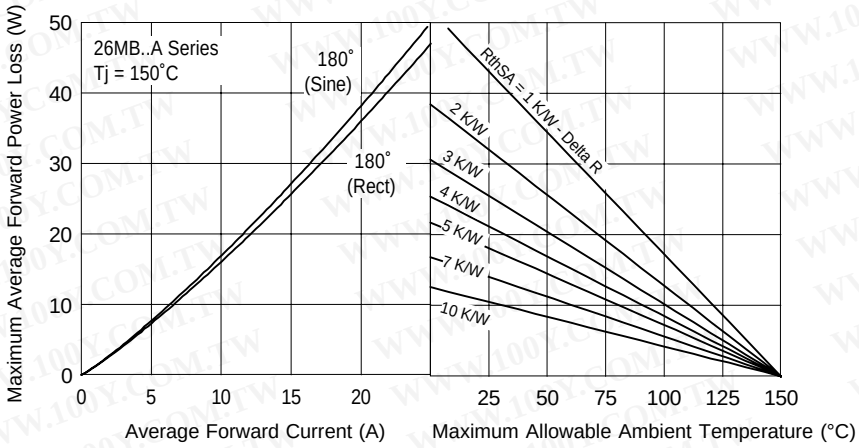


Fig. 3 - Total Power Loss Characteristics

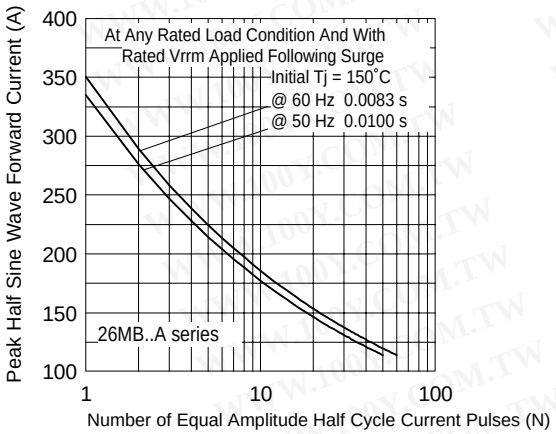


Fig. 4 - Maximum Non-Repetitive Surge Current

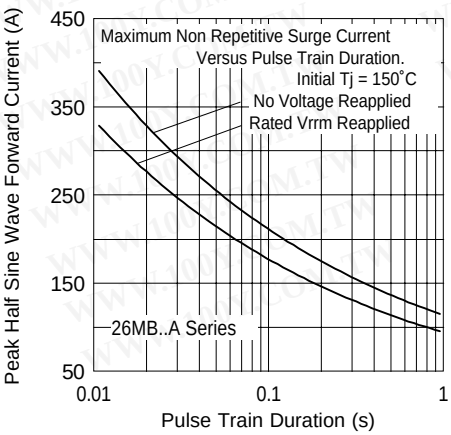


Fig. 5 - Maximum Non-Repetitive Surge Current

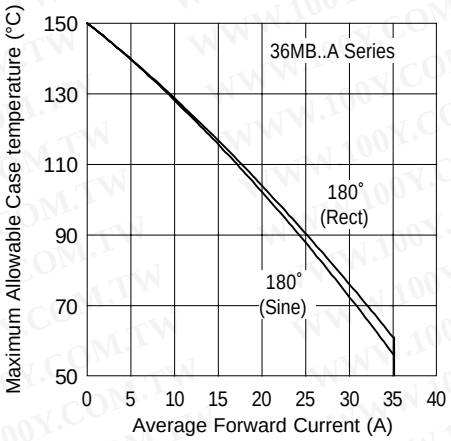


Fig. 6 - Current Ratings Characteristics

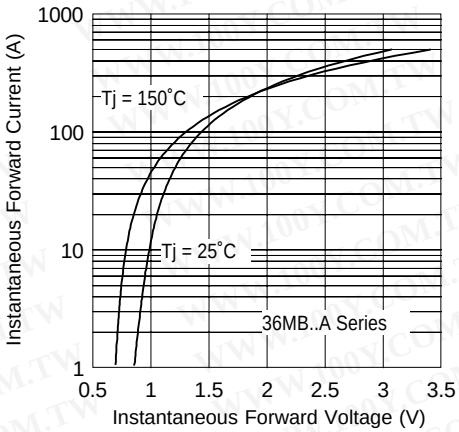


Fig. 7 - Forward Voltage Drop Characteristics

Maximum Allowable Ambient Te

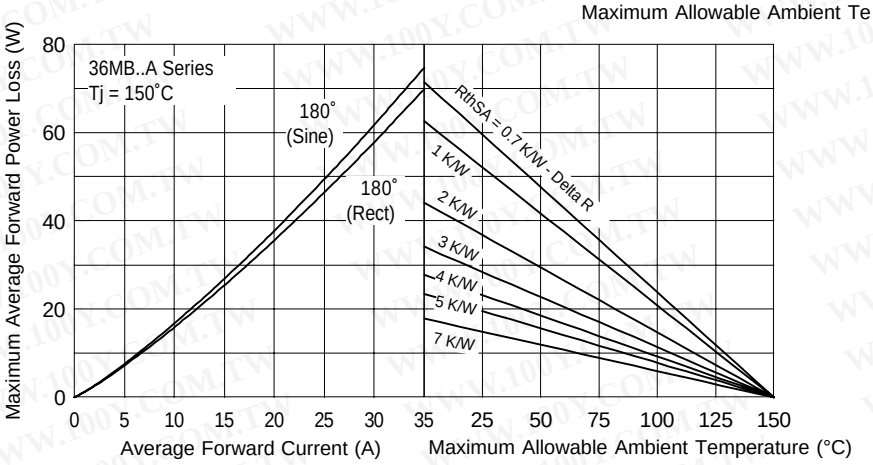


Fig. 3 - Total Power Loss Characteristics

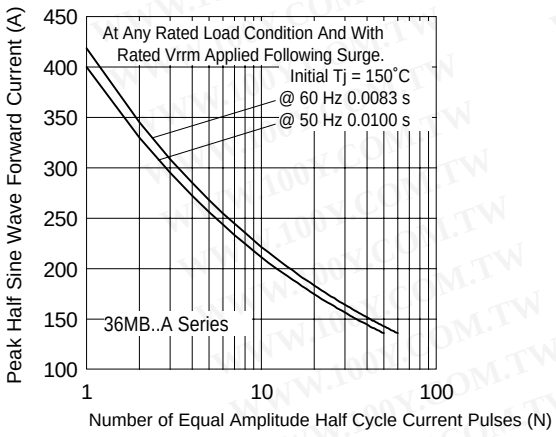


Fig. 9 - Maximum Non-Repetitive Surge Current

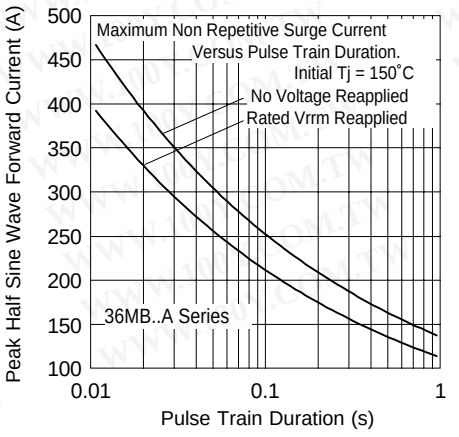


Fig. 10 - Maximum Non-Repetitive Surge Current