Bulletin I2715 rev. E 08/97

International
IOR Rectifier

MB & JB SERIES

SINGLE PHASE BRIDGE **Power Modules**

10 A
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

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		100JB-L	26MB-A 250JB-L	36MB-A 35MB-A	Units
I_O		10	25	35	A
	@T_C	65	65	60	°C
I_{FSM}	@50Hz	148	400	475	A
	@60Hz	155	420	500	A
I^2t	@50Hz	110	790	1130	A^2s
	@60Hz	100	725	1030	A^2s
V_{RRM} range		50 to 1600			V
T_J		-40 to 150			°C

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Typenumber	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
	5	50	75	
	10	100	150	
100JB..L	20	200	275	
26MB..A	40	400	500	
250JB..L	60	600	725	2
36MB..A	80	800	900	
35MB..A	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

Forward Conduction

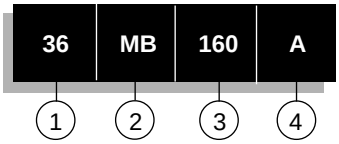
	Parameters	100JB-L	26MB-A 250JB-L	36MB-A 35MB-A	Units	Conditions		
I_O	Maximum DC output current	10	25	35	A	Resistive or inductive load		
		8	20	28	A	Capacitive load		
	@ Case temperature	65	65	60	°C			
I_{FSM}	Maximum peak, one-cycle	148	400	475	A	t = 10ms	No voltage	
	non-repetitive forward current	155	420	500		t = 8.3ms	reapplied	
		125	335	400		t = 10ms	100% V_{RRM}	
		130	350	420		t = 8.3ms	reapplied	Initial $T_J = T_J$ max.
I^2t	Maximum I^2t for fusing	110	790	1130	A^2s	t = 10ms	No voltage	
		100	725	1030		t = 8.3ms	reapplied	
		78	560	800		t = 10ms	100% V_{RRM}	
		71	512	730		t = 8.3ms	reapplied	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	1.1	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	1.00	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	1.17	0.92	0.96		$(I > \pi \times I_{F(AV)})$, @ T_J max.		
r_{t1}	Low-level forward slope resistance	15.4	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	10.8	5.0	4.5		$(I > \pi \times I_{F(AV)})$, @ T_J max.		
V_{FM}	Maximum forward voltage drop	1.3	1.11	1.14	V	$T_J = 25°C$, $I_{FM} = I_{Favg\ (arm)} \times \pi$, tp = 400µs		
I_{RRM}	Max. DC reverse current	10	10	10	µA	$T_J = 25°C$, per diode at V_{RRM}		
V_{INS}	RMS isolation voltage base plate	2700	2700	2700	V	f = 50 Hz, t = 1s		

Thermal and Mechanical Specifications

Parameters		100JB-L	26MB-A 250JB-L	36MB-A 35MB-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	3.5	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



1 - Current rating code:

26	&	100	= 10A (Avg)
36	&	250	= 25A (Avg)
		35	= 35A (Avg)

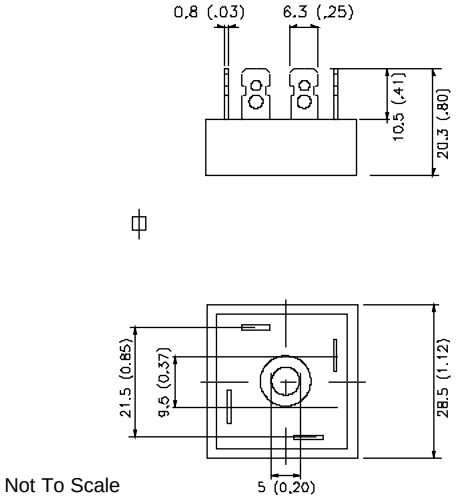
American coding
European coding

2 - Circuit configuration:
JB = Single phase american coding
MB = Single phase european coding

3 - Voltage code: MB series = code x 10 = V_{RRM}
JB series = code x 100 = V_{RRM}

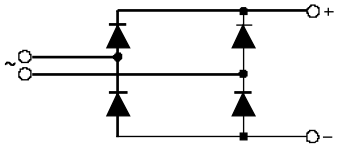
4 - Diode bridge rectifier:
A = 26MB, 36MB, 35MB Series
L = 100JB and 250JB Series

Outline Table



Not To Scale

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



All dimensions in millimetres (inches)

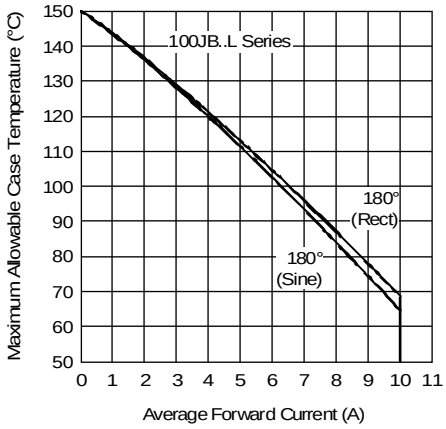


Fig. 1 - Current Ratings Characteristics

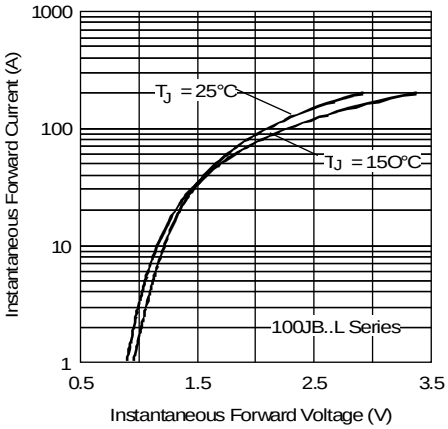


Fig. 2 - Forward Voltage Drop Characteristics

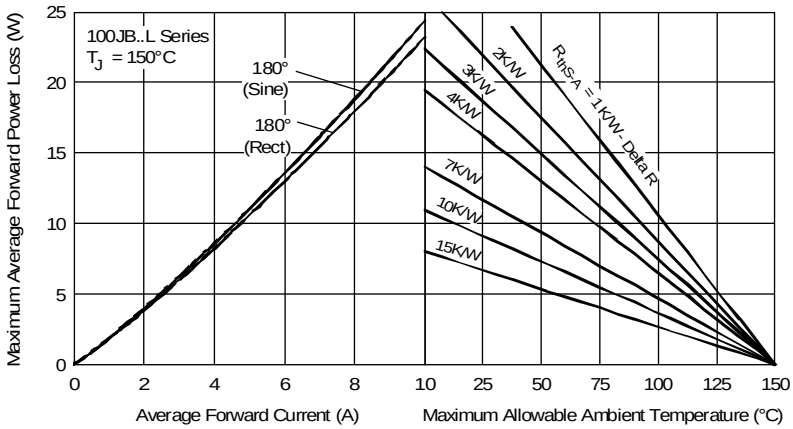


Fig. 3 - Total Power Loss Characteristics

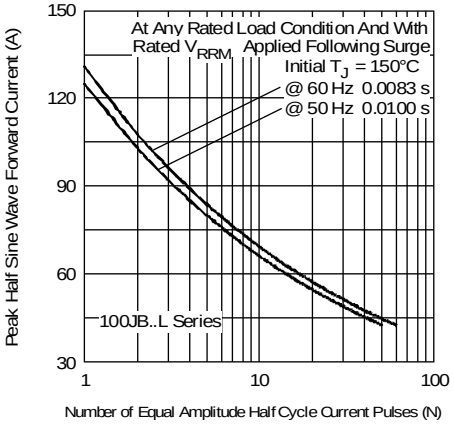


Fig. 4 - Maximum Non-Repetitive Surge Current

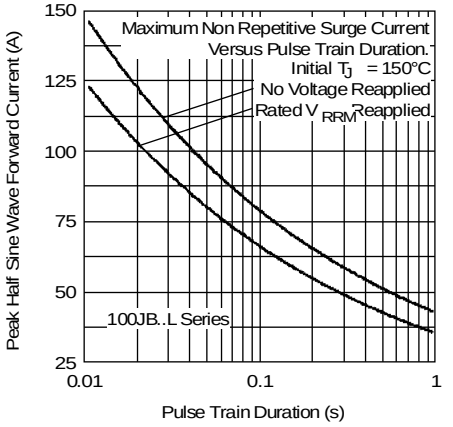


Fig. 5 - Maximum Non-Repetitive Surge Current

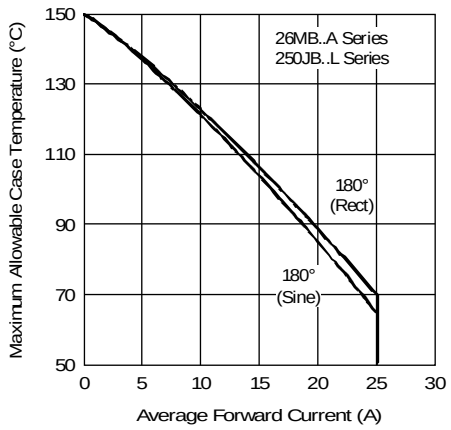


Fig. 6 - Current Ratings Characteristics

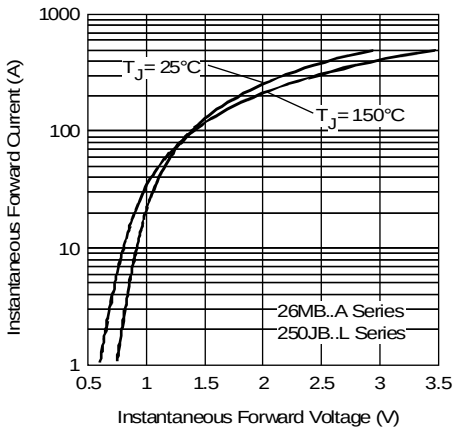


Fig. 7 - Forward Voltage Drop Characteristics

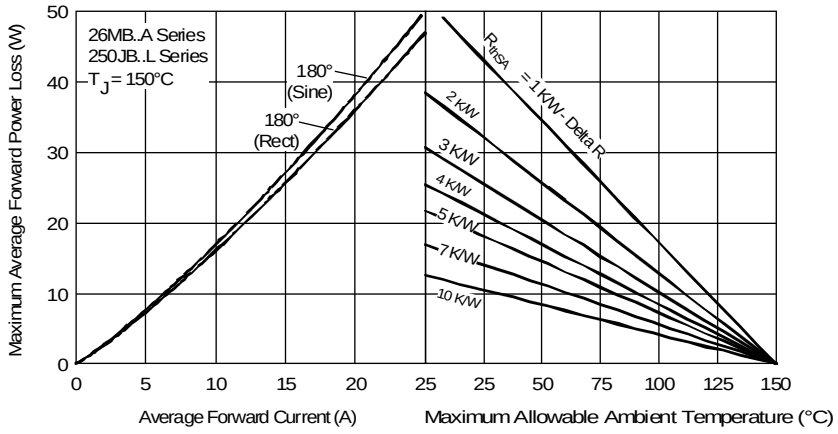


Fig. 8 - Total Power Loss Characteristics

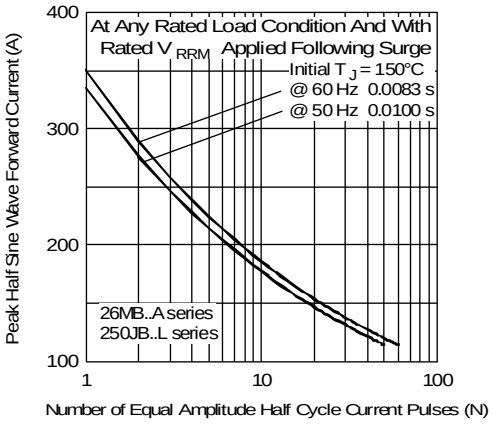


Fig. 9 - Maximum Non-Repetitive Surge Current

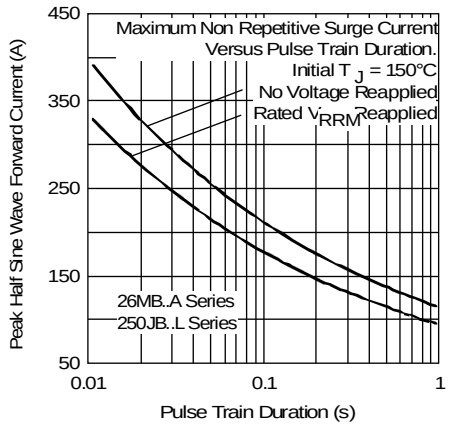


Fig. 10 - Maximum Non-Repetitive Surge Current

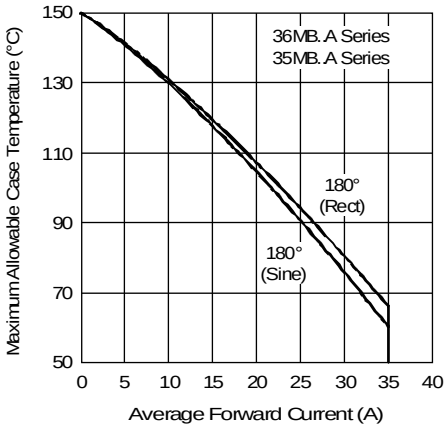


Fig. 11 - Current Ratings Chracteristics

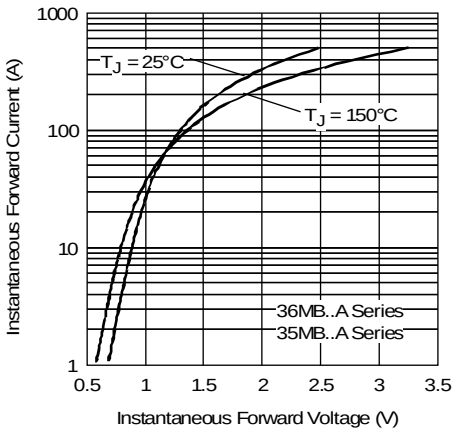


Fig. 12 - Forward Voltage Drop Characteristics

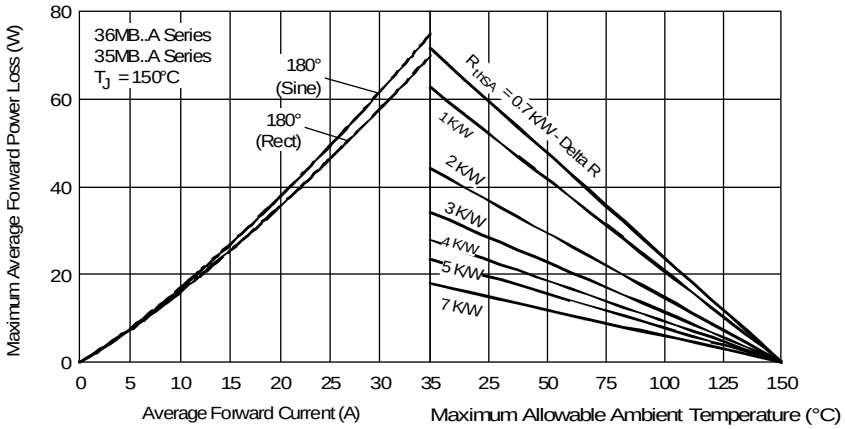


Fig. 13 - Total Power Loss Characteristics

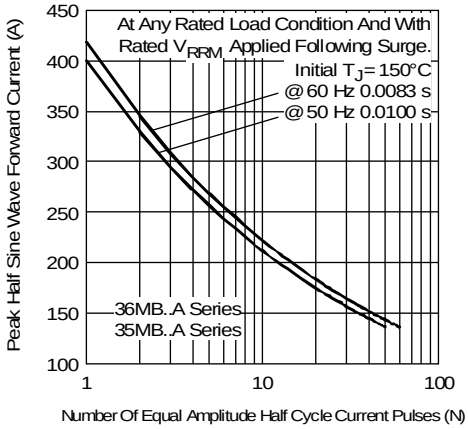


Fig. 14 - Maximum Non-Repetitive Surge Current

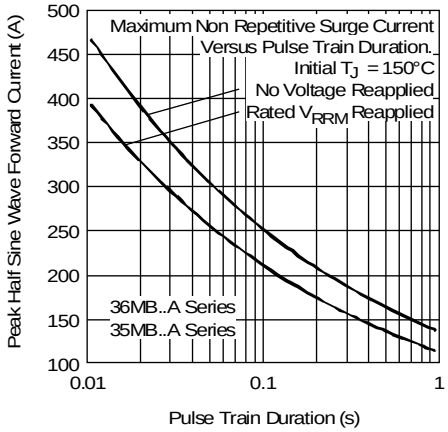


Fig. 15 - Maximum Non-Repetitive Surge Current