


## MB & JB 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 

10 A  
 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	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 <sup>2</sup> s
@ 60Hz	100	725	1030	A <sup>2</sup> s
$V_{RRM}$ range	50 to 1600			V
$T_J$	-40 to 150			°C

**ELECTRICAL SPECIFICATIONS**

Voltage Ratings

Typenumber	Voltage Code	V <sub>RRM</sub> , maximum repetitive peak reverse voltage V	V <sub>RSM</sub> , maximum non-repetitive peak rev. voltage V	I <sub>RRM</sub> max. @ T <sub>J</sub> max. mA
100JB..L 26MB..A 250JB..L 36MB..A 35MB..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	100JB-L	26MB-A 250JB-L	36MB-A 35MB-A	Units	Conditions
I <sub>O</sub> Maximum DC output current  @ Case temperature	10	25	35	A	Resistive or inductive load
	8	20	28	A	Capacitive load
	65	65	60	°C	
I <sub>FSM</sub> Maximum peak, one-cycle non-repetitive forward current	148	400	475	A	t = 10ms No voltage reappplied
	155	420	500		t = 8.3ms 100% V <sub>RRM</sub> reappplied
	125	335	400		t = 10ms 100% V <sub>RRM</sub> reappplied
	130	350	420		t = 8.3ms 100% V <sub>RRM</sub> reappplied
I <sup>2</sup> t Maximum I <sup>2</sup> t for fusing	110	790	1130	A <sup>2</sup> s	t = 10ms No voltage reappplied
	100	725	1030		t = 8.3ms 100% V <sub>RRM</sub> reappplied
	78	560	800		t = 10ms 100% V <sub>RRM</sub> reappplied
	71	512	730		t = 8.3ms 100% V <sub>RRM</sub> reappplied
I <sup>2</sup> /t Maximum I <sup>2</sup> /t for fusing	1.1	5.6	11.3	KA <sup>2</sup> /s	I <sup>2</sup> t for time t <sub>x</sub> = I <sup>2</sup> √t x √t <sub>x</sub> ; 0.1 ≤ t <sub>x</sub> ≤ 10ms, V <sub>RRM</sub> = 0V
V <sub>F(TO)1</sub> Low-level of threshold voltage	1.00	0.76	0.79	V	(16.7% x π x I <sub>F(AV)</sub> ) < I < π x I <sub>F(AV)</sub> , @ T <sub>J</sub> max.
V <sub>F(TO)2</sub> High-level of threshold voltage	1.17	0.92	0.96		(I > π x I <sub>F(AV)</sub> ), @ T <sub>J</sub> max.
r <sub>t1</sub> Low-level forward slope resistance	15.4	6.8	5.8	mΩ	(16.7% x π x I <sub>F(AV)</sub> ) < I < π x I <sub>F(AV)</sub> , @ T <sub>J</sub> max.
r <sub>t2</sub> High-level forward slope resistance	10.8	5.0	4.5		(I > π x I <sub>F(AV)</sub> ), @ T <sub>J</sub> max.
V <sub>FM</sub> Maximum forward voltage drop	1.3	1.11	1.14	V	T <sub>J</sub> = 25°C, I <sub>FM</sub> = I <sub>Favg</sub> (arm) x π, tp = 400μs
I <sub>RRM</sub> Max. DC reverse current	10	10	10	μA	T <sub>J</sub> = 25°C, per diode at V <sub>RRM</sub>
V <sub>INS</sub> 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 <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	3.5	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**

<b>36</b>	<b>MB</b>	<b>160</b>	<b>A</b>
1	2	3	4

**1** - Current rating code:   
 26 & 36 = 10A (Avg)   
 100 & 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<sub>RRM</sub>   
 JB series = code x 100 = V<sub>RRM</sub>

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

Outline Table

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

All dimensions in millimetres (inches)

Not To Scale

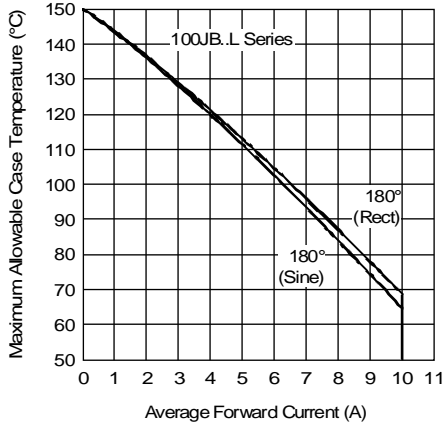


Fig. 1 - Current Ratings Characteristics

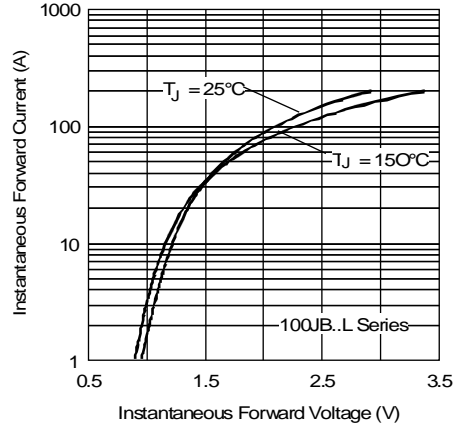


Fig. 2 - Forward Voltage Drop Characteristics

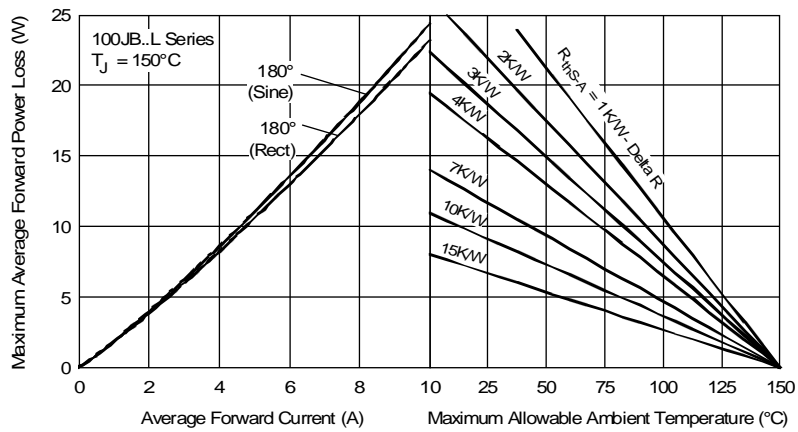


Fig. 3 - Total Power Loss Characteristics

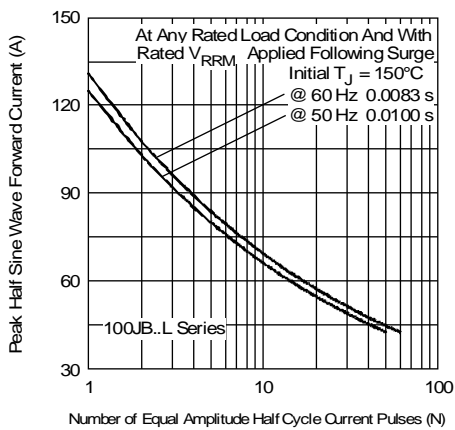


Fig. 4 - Maximum Non-Repetitive Surge Current

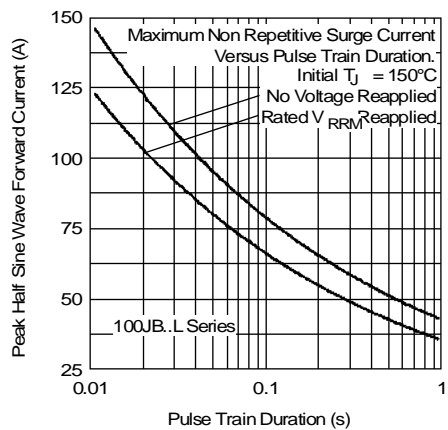


Fig. 5 - Maximum Non-Repetitive Surge Current

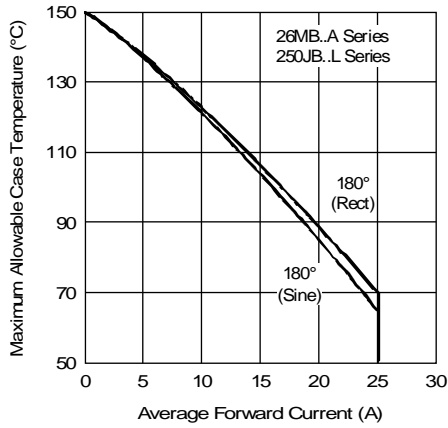


Fig. 6 - Current Ratings Characteristics

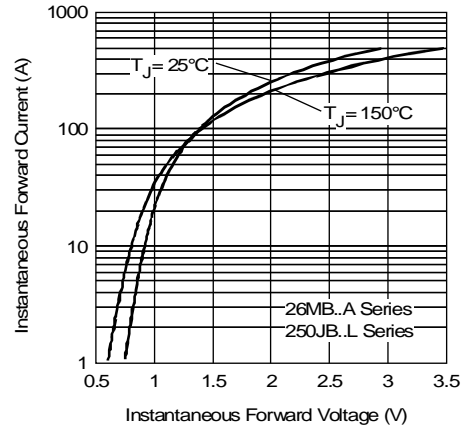


Fig. 7 - Forward Voltage Drop Characteristics

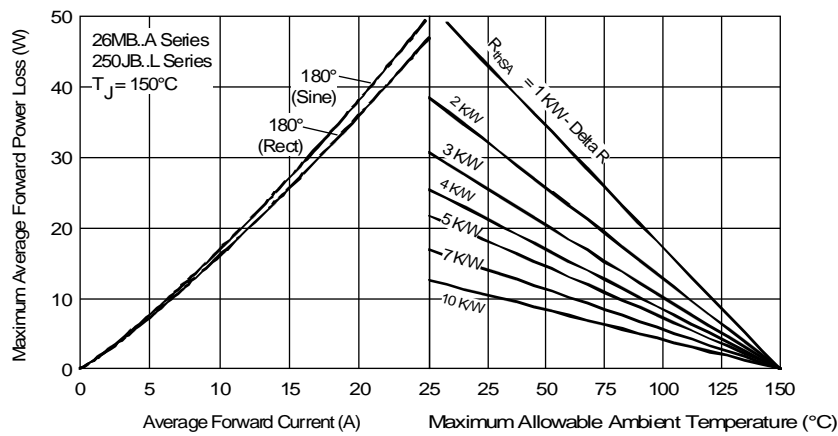


Fig. 8 - Total Power Loss Characteristics

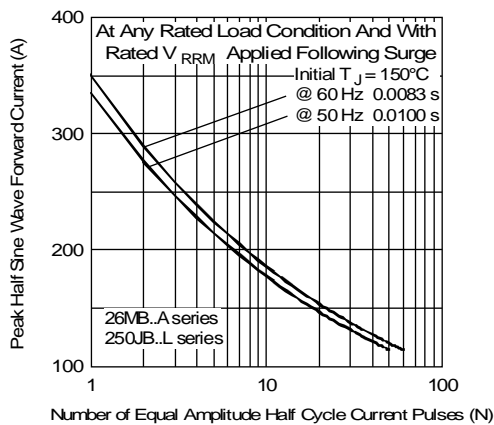


Fig. 9 - Maximum Non-Repetitive Surge Current

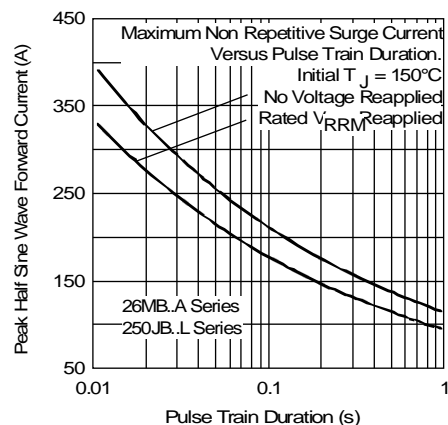


Fig. 10 - Maximum Non-Repetitive Surge Current

# MB & JB Series

Bulletin I2715 rev. E 08/97

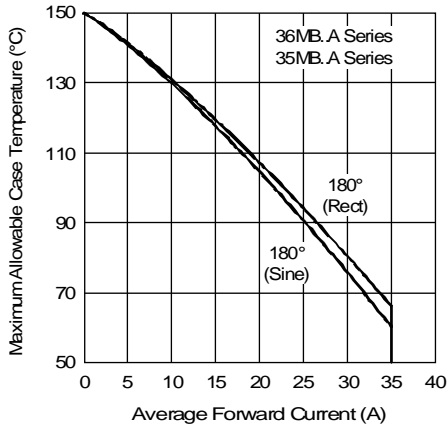


Fig. 11 - Current Ratings Characteristics

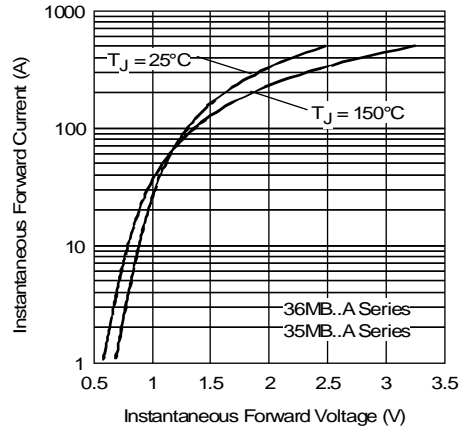


Fig. 12 - Forward Voltage Drop Characteristics

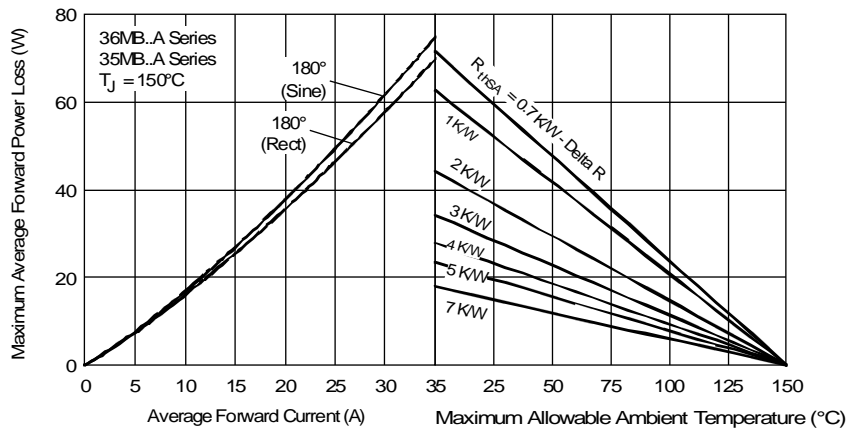


Fig. 13 - Total Power Loss Characteristics

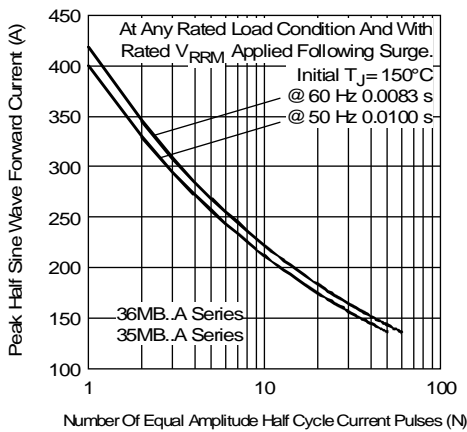


Fig. 14 - Maximum Non-Repetitive Surge Current

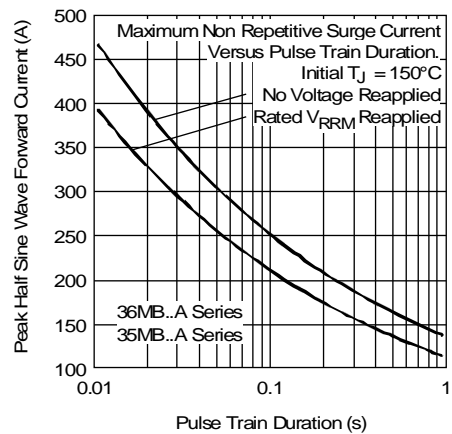


Fig. 15 - Maximum Non-Repetitive Surge Current