

International IOR Rectifier

MT..KB SERIES

THREE PHASE BRIDGE

Power Modules

Features

- Package fully compatible with the industry standard INT-A-pak power modules series
- High thermal conductivity package, electrically insulated case
- Outstanding number of power encapsulated components
- Excellent power volume ratio, outline for easy connections to power transistor and IGBT modules
- 4000 V_{RMS} isolating voltage
- UL E78996 approved 

90 A
110 A

Description

A range of extremely compact, encapsulated three phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and heavy duty applications.

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Major Ratings and Characteristics

Parameters	90MT.KB	110MT.KB	Units
I_O	90 (120)	110 (150)	A
@ T_C	90 (61)	90 (57)	°C
I_{FSM}	770	950	A
@ 50Hz	770	950	A
@ 60Hz	810	1000	A
I^2t	3000	4500	A ² s
@ 50Hz	3000	4500	A ² s
@ 60Hz	2700	4100	A ² s
$I^2\sqrt{t}$	30000	45000	A ² √s
V_{RRM} range	800 to 1600		V
T_{STG} range	-40 to 150		°C
T_J range	-40 to 150		°C

90-110MT..KB Series

Bulletin I27501 rev. A 05/03

International
IR Rectifier

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
90-110MT..KB	80	800	900	10
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

Forward Conduction

Parameter		90MT.KB	110MT.KB	Units	Conditions			
I _O	Maximum DC output current @ Case temperature	90 (120)	110 (150)	A	120° Rect conduction angle			
		90 (61)	90 (57)	°C				
I _{FSM}	Maximum peak, one-cycle forward, non-repetitive surge current	770	950	A	t = 10ms	No voltage	Initial T _J = T _J max.	
		810	1000		t = 8.3ms	reapplied		
		650	800		t = 10ms	100% V _{RRM}		
		680	840		t = 8.3ms	reapplied		
I ² t	Maximum I ² t for fusing	3000	4500	A ² s	t = 10ms	No voltage		
		2700	4100		t = 8.3ms	reapplied		
		2100	3200		t = 10ms	100% V _{RRM}		
		1900	2900		t = 8.3ms	reapplied		
I ² √t	Maximum I ² √t for fusing	30000	45000	A ² √s	t = 0.1 to 10ms, no voltage reapplied			
V _{F(TO)1}	Low level value of threshold voltage	0.89	0.81	V	(16.7% × π × I _{F(AV)}) < I < π × I _{F(AV)} , @ T _J max.			
V _{F(TO)2}	High level value of threshold voltage	1.05	0.99		(I > π × I _{F(AV)}), @ T _J max.			
r _{f1}	Low level value of forward slope resistance	5.11	4.37	mΩ	(16.7% × π × I _{F(AV)}) < I < π × I _{F(AV)} , @ T _J max.			
r _{f2}	High level value of forward slope resistance	4.64	4.64		(I > π × I _{F(AV)}), @ T _J max.			
V _{FM}	Maximum forward voltage drop	1.6	1.4	V	I _{pk} = 150A, T _J = 25°C, t _p = 400μs single junction			
V _{INS}	RMS isolation voltage	4000	4000	V	T _J = 25°C, all terminal shorted f = 50Hz, t = 1s			

Thermal and Mechanical Specifications

Parameter	90MT.KB	110MT.KB	Units	Conditions
T_J Max. junction operating temperature range	-40 to 150		°C	
T_{stg} Max. storage temperature range	-40 to 150		°C	
R_{thJC} Max. thermal resistance, junction to case	0.21 1.26 0.25 1.47	0.18 1.07 0.21 1.25	K/W	DC operation per module DC operation per junction 120° Rect conduction angle per module 120° Rect conduction angle per junction
R_{thCS} Max. thermal resistance, case to heatsink	0.03		K/W	Per module Mounting surface smooth, flat and greased
T Mounting torque $\pm 10\%$	to heatsink to terminal	4 to 6 3 to 4	Nm	A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound. Lubricated threads.
wt Approximate weight	176		g	

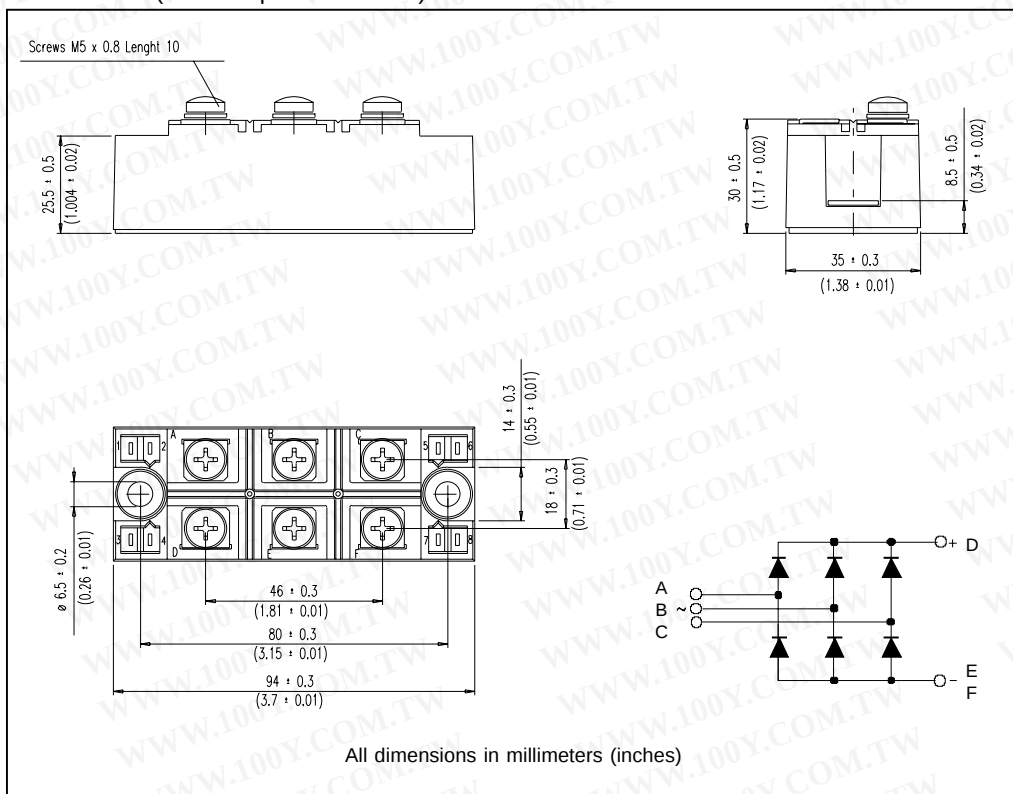
Ordering Information Table

Device Code

11	0	MT	160	K	B
①	②	③	④	⑤	

- 1** - Current rating code: 9 = 90 A (Avg)
11 = 110 A (Avg)
- 2** - Three phase diodes bridge
- 3** - Essential part number
- 4** - Voltage code: Code x 10 = V_{RRM} (See Voltage Ratings Table)
- 5** - Generation II

Outline Table (without optional barriers)



NOTE: To order the Optional Hardware see Bulletin I27900

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Bulletin 127501 rev. A 05/03

International
IOR Rectifier

Outline Table (with optional barriers)

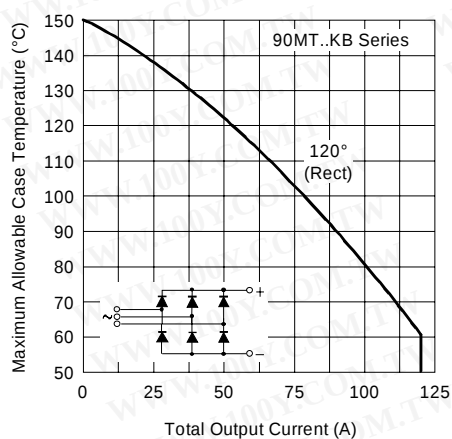
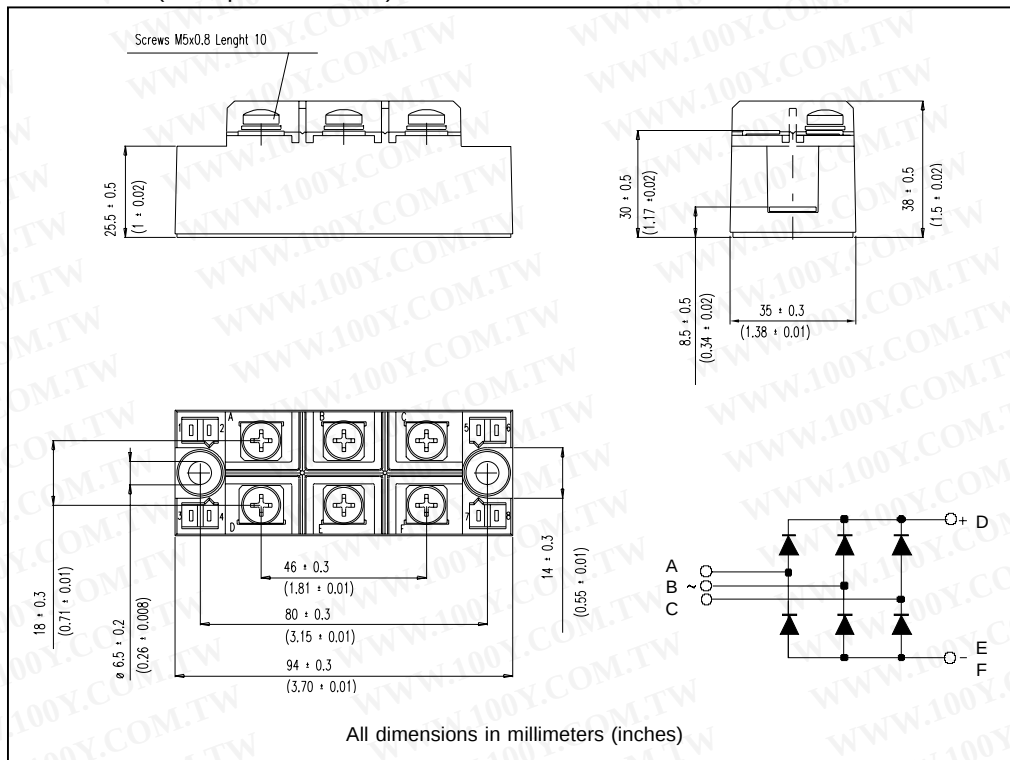


Fig. 1 - Current Ratings Characteristics

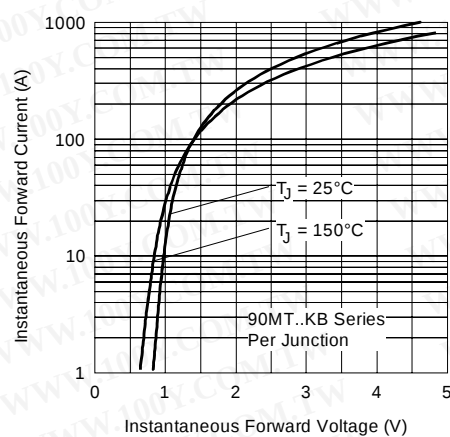


Fig. 2 - Forward Voltage Drop Characteristics

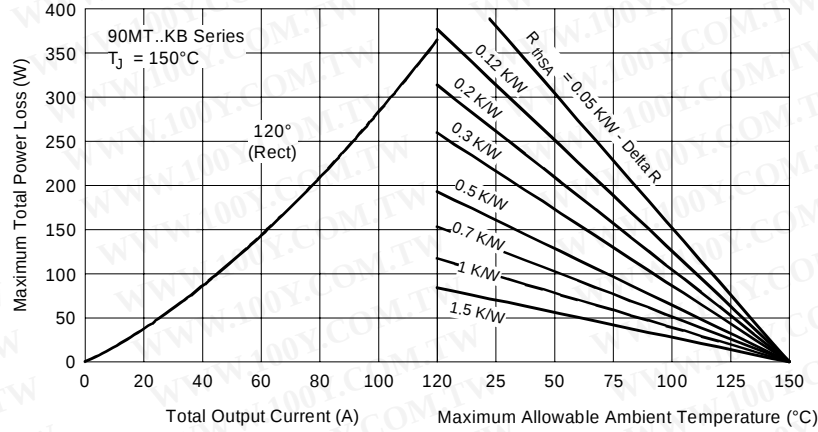


Fig. 3 - Total Power Loss Characteristics

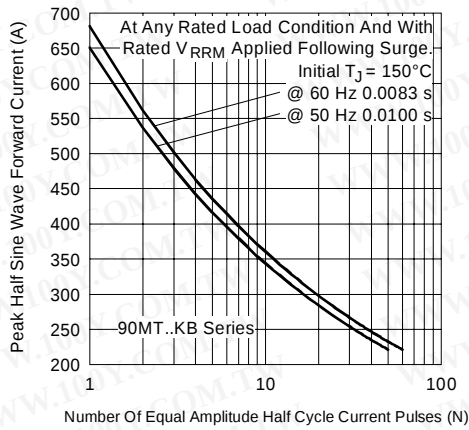


Fig. 4 - Maximum Non-Repetitive Surge Current

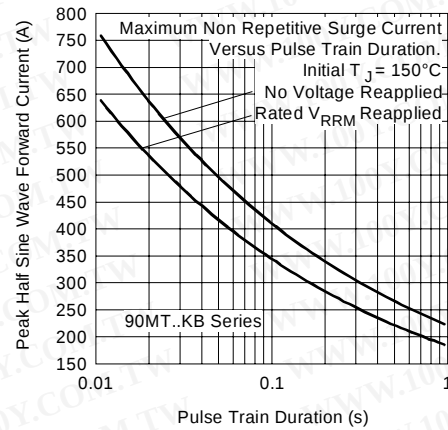


Fig. 5 - Maximum Non-Repetitive Surge Current

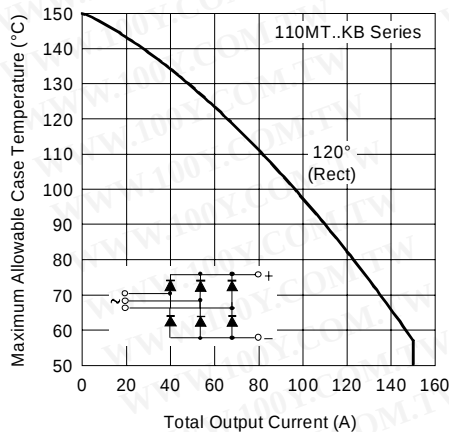


Fig. 6 - Current Ratings Characteristics

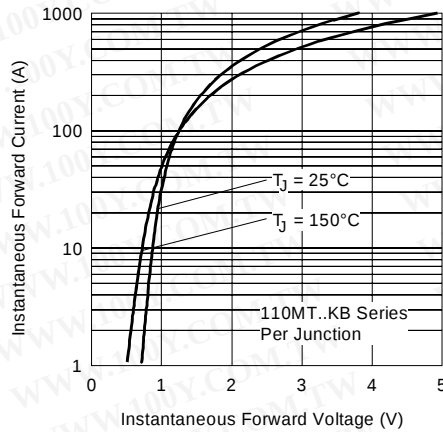


Fig. 7 - Forward Voltage Drop Characteristics

90-110MT..KB Series

Bulletin I27501 rev. A 05/03

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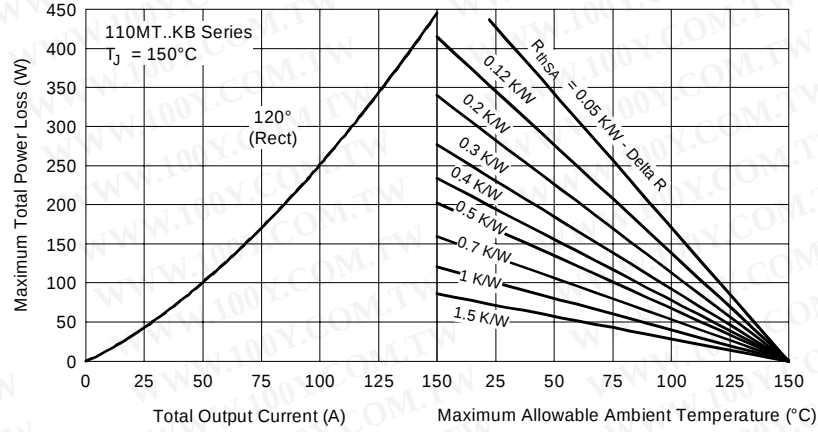


Fig. 8 - Total Power Loss Characteristics

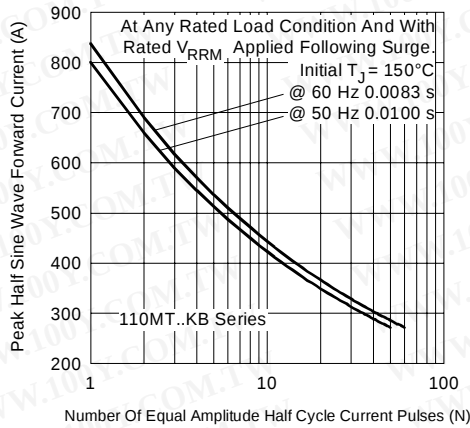


Fig. 9 - Maximum Non-Repetitive Surge Current

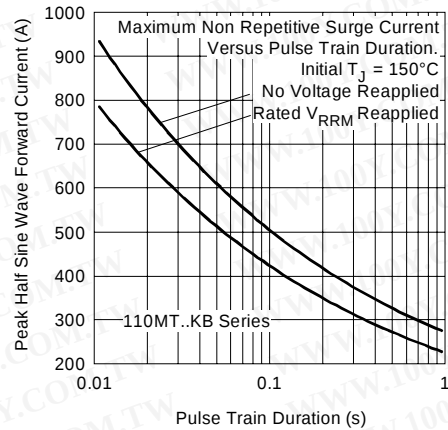


Fig. 10 - Maximum Non-Repetitive Surge Current

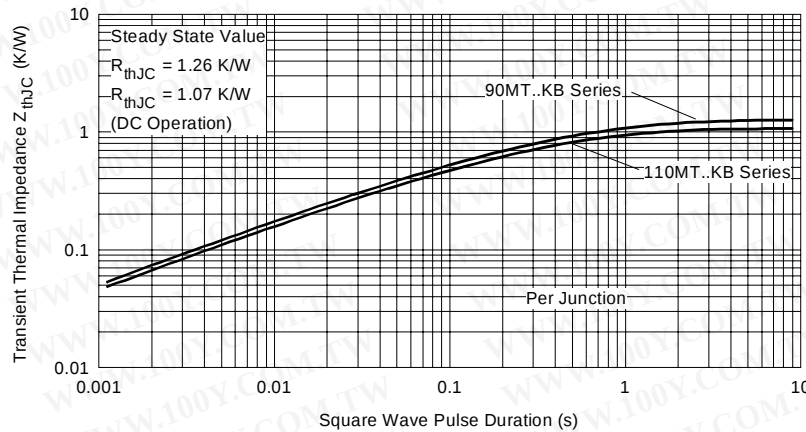


Fig. 11 - Thermal Impedance Z_{thJC} Characteristic

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Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level.
Qualification Standards can be found on IR's Web site.

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