

Bulletin I27129 rev. C 05/03

International IOR Rectifier

200MT40KB

THREE PHASE BRIDGE

Power Module

Features

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

200 A

Description

It extends the existing range of MT...KB bridges an extremely compact, encapsulated three phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and heavy duty applications.

Major Ratings and Characteristics

Parameters	200MT40KB	Units
I _O	200	A
@ T _C	85	°C
I _{FSM} @ 50Hz	1800	A
@ 60Hz	1880	
i ² t @ 50Hz	16.2	KA ² s
@ 60Hz	14.7	
i ² √t	162	KA ² √s
V _{RRM}	400	V
T _{STG} range	- 40 to 150	°C
T _J range	- 40 to 150	



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ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	V_{RRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non-repetitive peak reverse voltage V	I_{RRM} max. @ $T_J = 150^\circ\text{C}$ mA
200MT40KB	400	500	6

Forward Conduction

Parameter		200MT40KB	Units	Conditions		
I _O	Maximum RMS output current @ Case temperature	200	A	120° Rect conduction angle		
		85	°C			
I _{TSM}	Maximum peak, one-cycle forward, non-repetitive on state surge current	1800	A	t = 10ms	No voltage	Initial T _J = T _J max.
		t = 8.3ms		reapplied		
		t = 10ms		100% V _{RRM}		
		t = 8.3ms		reapplied		
I ² t	Maximum I ² t for fusing	16.2	KA ² s	t = 10ms	No voltage	
		14.7		t = 8.3ms	reapplied	
		11.6		t = 10ms	100% V _{RRM}	
		12.6		t = 8.3ms	reapplied	
I ² √t	Maximum I ² √t for fusing	162	KA ² /s	t = 0.1 to 10ms, no voltage reapplied		
V _{F(TO)}	Value of threshold voltage	0.76	V	@ T _J max.		
r _t	Slope resistance	2.4	mΩ			
V _{FM}	Maximum forward voltage drop	1.40	V	I _{pk} = 200A, T _J = 25°C, t _p = 400μs single junction		
V _{INS}	Insulation voltage	4000	V	T _J = 25°C all terminal shorted, f = 50Hz, t = 1s		

Thermal and Mechanical Specifications

Parameter	200MT40KB	Units	Conditions
T_J Maximum junction operating temperature range	- 40 to 150	$^\circ\text{C}$	
T_{stg} Maximum storage temperature range	-40 to 150	$^\circ\text{C}$	
R_{thJC} Maximum thermal resistance, junction to case	0.12 0.69 0.14 0.82	K/W	DC operation per module DC operation per junction 120° Rect conduction angle per module 120° Rect conduction angle per junction
R_{thCS} Maximum thermal resistance, case to heatsink	0.033	K/W	Per module. Mounting surface smooth, flat and greased. Heatsink compound thermal conductivity = 0.42W/mK
T Mounting torque $\pm 10\%$ to heatsink	4 to 6	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.
wt Approximate weight	176	g	Lubricated threads.

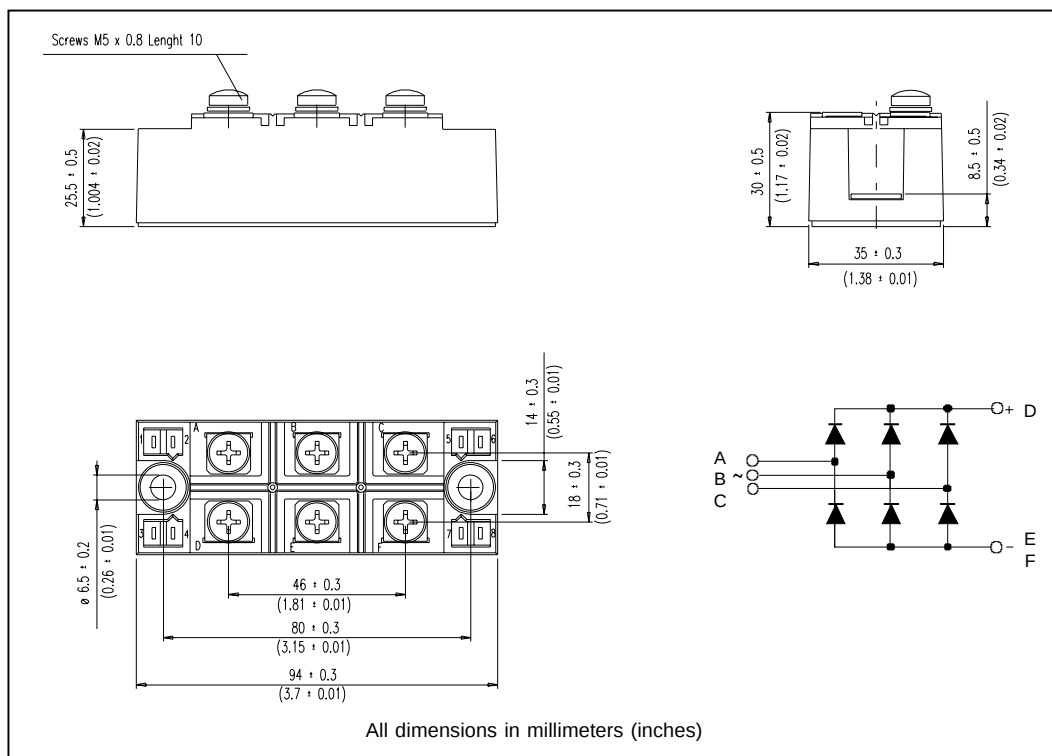
Ordering Information Table

Device Code

20	0	MT	40	K	B
1	2	3	4	5	

- 1** - Current rating code: 20 = 200 A (Avg)
- 2** - Three phase diodes bridge
- 3** - Essential part number
- 4** - Voltage code: Code x 10 = V_{RRM} (40 = 400V)
- 5** - Generation II

Outline Table (without optional barriers)



NOTE: To order the Optional Hardware see Bulletin I27900

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Outline Table (with optional barriers)

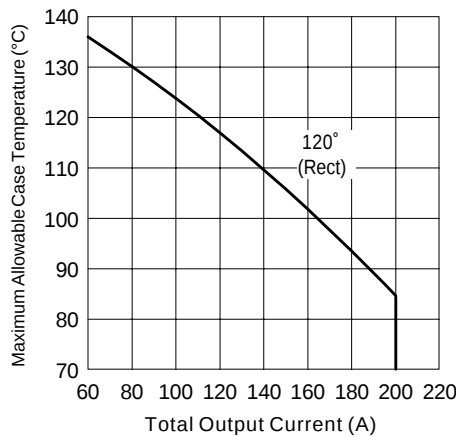
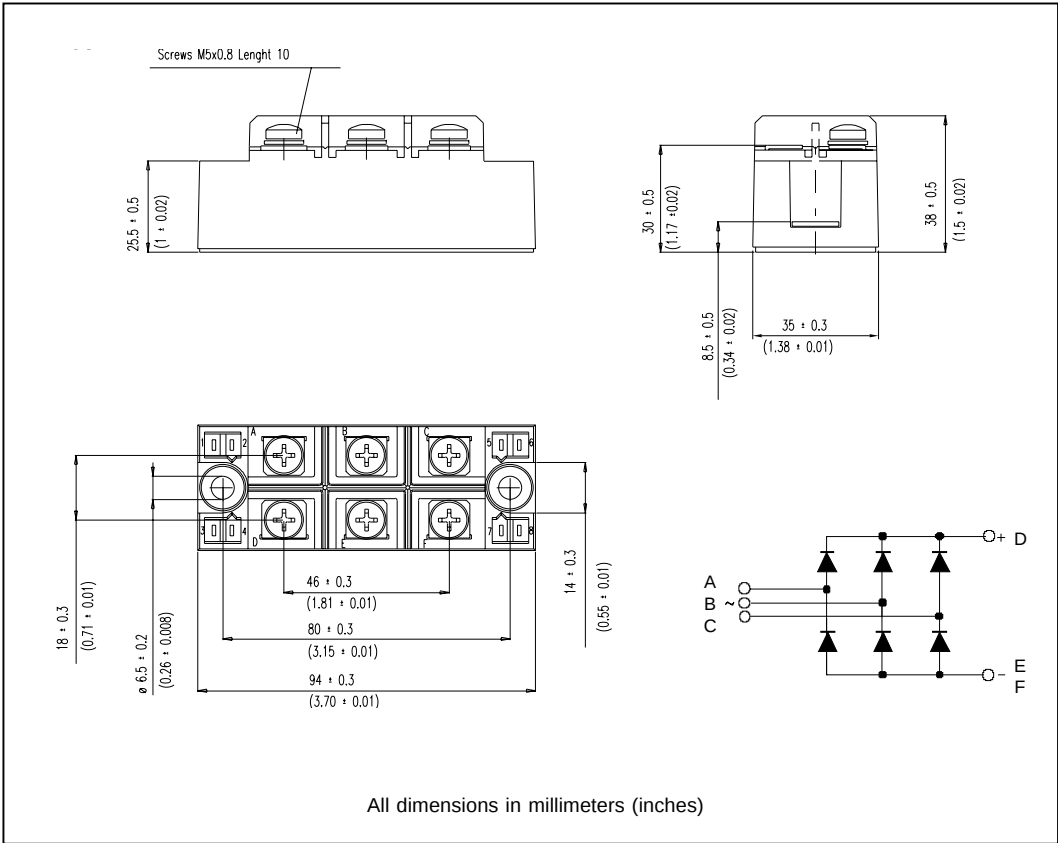


Fig. 1 - Current Rating Characteristics

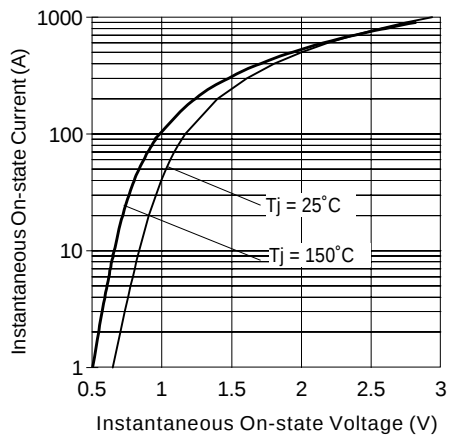


Fig. 2 - On-state Voltage Drop Characteristics

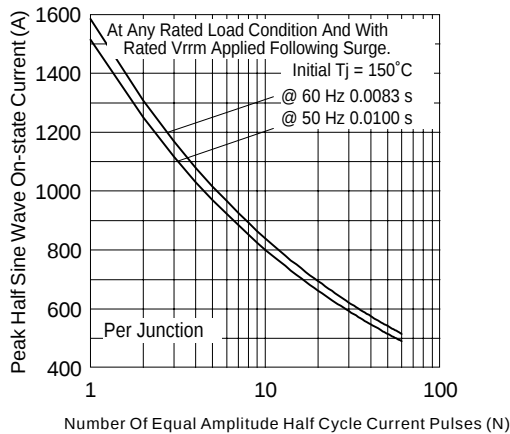


Fig. 3 - Maximum Non-Repetitive Surge Current

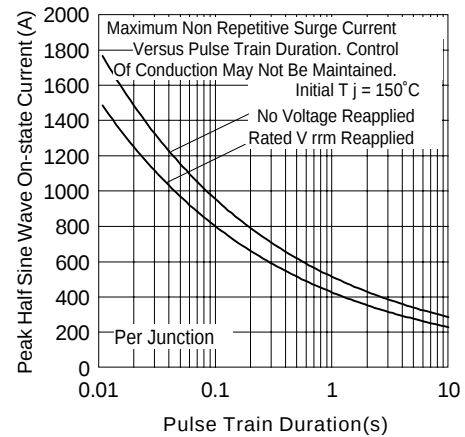


Fig. 4 - Maximum Non-Repetitive Surge Current

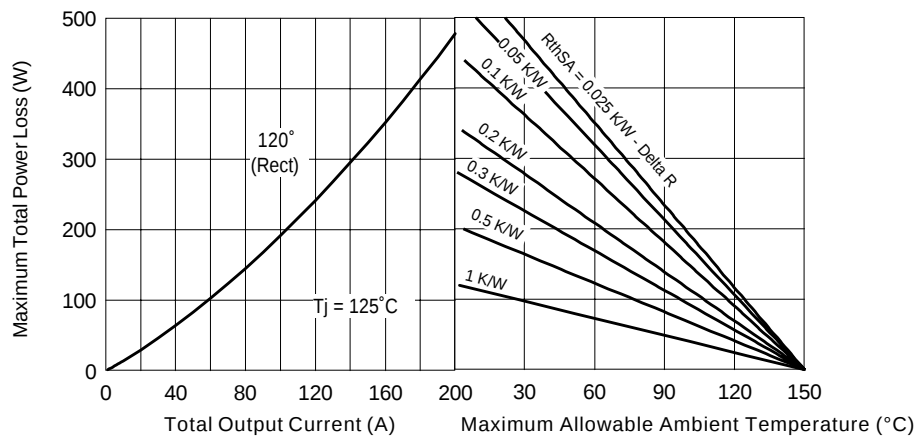


Fig. 5 - Current Rating Nomogram (1 Module Per Heatsink)

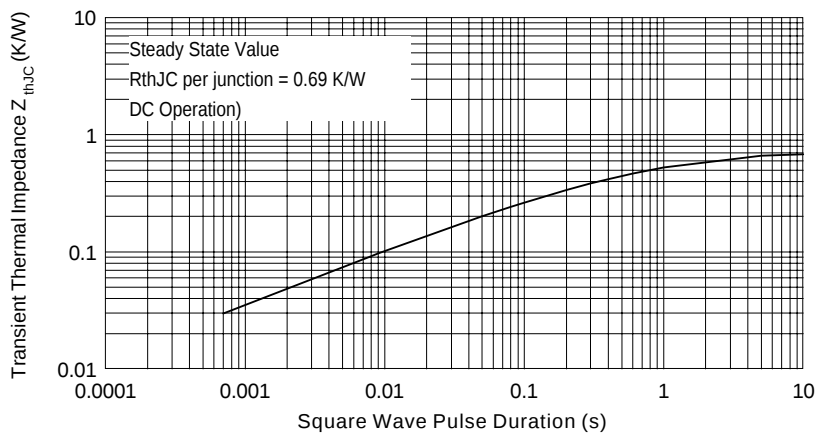


Fig. 6 - Thermal Impedance Z_{thJC} Characteristics

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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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