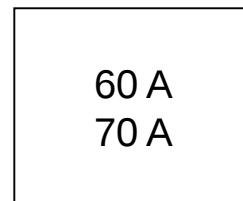


THREE PHASE BRIDGE

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 



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.

Major Ratings and Characteristics

Parameters	60MT.KB	70MT.KB	Units
I_O	60 (75)	70 (90)	A
@ T_C	85 (61)	85 (57)	°C
I_{FSM} @ 50Hz	420	480	A
@ 60Hz	440	500	A
I^2t @ 50Hz	870	1150	A ² s
@ 60Hz	790	1050	A ² s
$I^2\sqrt{t}$	8700	11500	A ² √s
V_{RRM} range	800 to 1600		V
T_{STG} range	- 40 to 150		°C
T_J range	- 40 to 150		°C

60-70MT..KB Series

Bulletin I27500 rev. A 05/03

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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
60-70MT..KB	80	800	900	10
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

Forward Conduction

Parameter	60MT.KB	70MT.KB	Units	Conditions				
I _O	Maximum DC output current @ Case temperature	60 (75)	70 (90)	A	120° Rect conduction angle			
		85 (61)	85 (57)	°C				
I _{FSM}	Maximum peak, one-cycle forward, non-repetitive surge current	420	480	A	t = 10ms	No voltage	Initial T _J = T _J max.	
		440	500		t = 8.3ms	reapplied		
		350	400		t = 10ms	100% V _{RRM}		
		370	420		t = 8.3ms	reapplied		
I ² t	Maximum I ² t for fusing	870	1150	A ² s	t = 10ms	No voltage		
		790	1050		t = 8.3ms	reapplied		
		610	800		t = 10ms	100% V _{RRM}		
		560	730		t = 8.3ms	reapplied		
I ² √t	Maximum I ² √t for fusing	8700	11300	A ² √s	t = 0.1 to 10ms, no voltage reapplied			
V _{F(TO)1}	Low level value of threshold voltage	0.85	0.86	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	1.07	1.08		(I > π × I _{F(AV)}), @ T _J max.			
r _{f1}	Low level value of forward slope resistance	8.04	7.35	mΩ	(16.7% × π × I _{F(AV)}) < I < π × I _{F(AV)} , @ T _J max.			
r _{f2}	High level value of forward slope resistance	7.08	6.53		(I > π × I _{F(AV)}), @ T _J max.			
V _{FM}	Maximum forward voltage drop	1.75	1.55	V	I _{pk} = 100A, 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		60MT.KC	70MT.KC	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	0.37	0.29	K/W	DC operation per module
		2.22	1.75		DC operation per junction
		0.40	0.34		120° Rect conduction angle per module
		2.42	2.01		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 ± 10% to heatsink to terminal	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. Lubricated threads.
		3 to 4			
wt	Approximate weight	176		g	

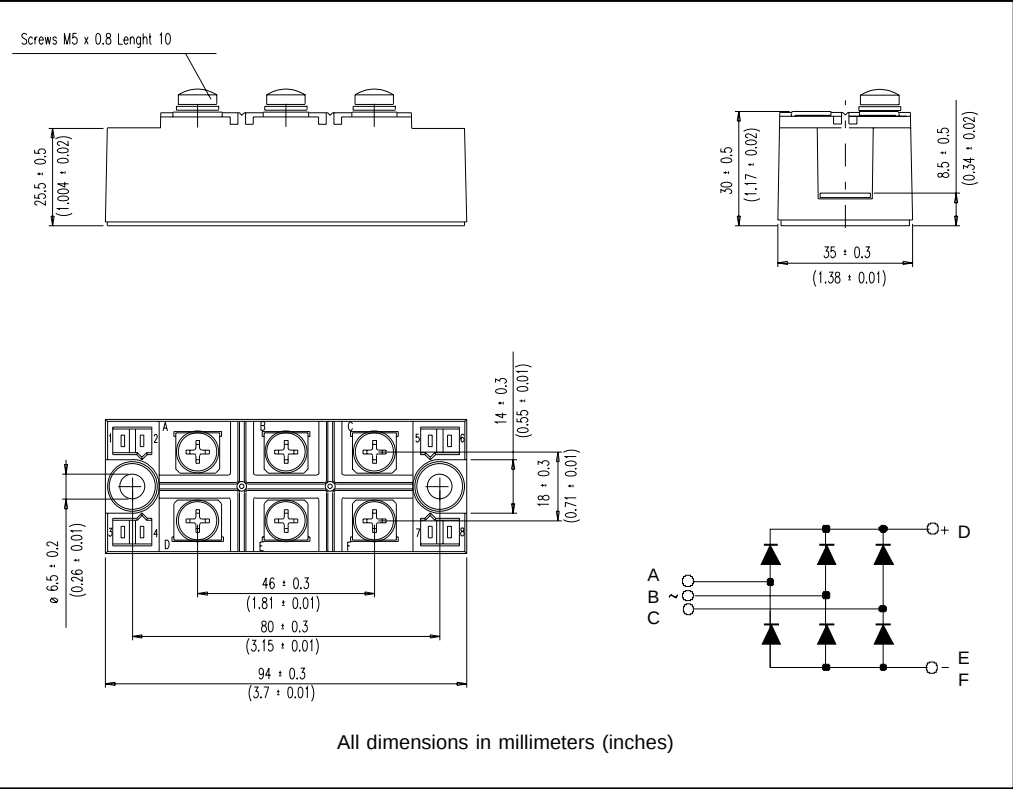
Ordering Information Table

Device Code

7	0	MT	160	K	B
①	②	③	④	⑤	

- 1** - Current rating code: 6 = 60 A Avg.
7 = 70 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

60-70MT..KB Series

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Outline Table (with optional barriers)

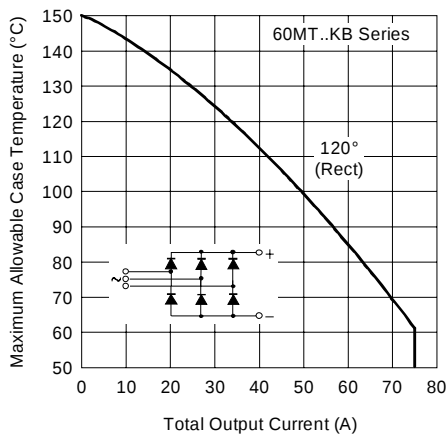
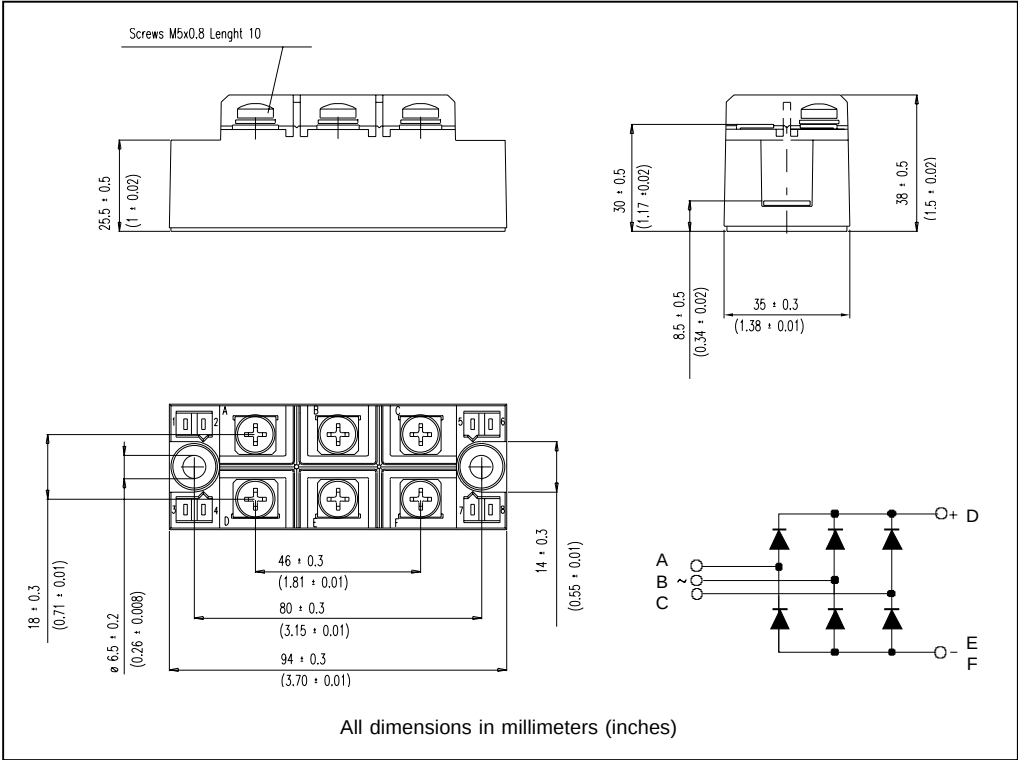


Fig. 1 - Current Ratings Characteristics

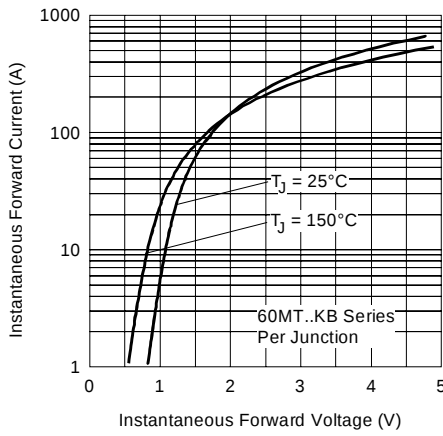
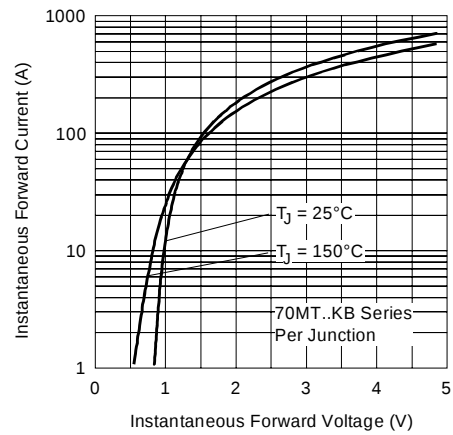
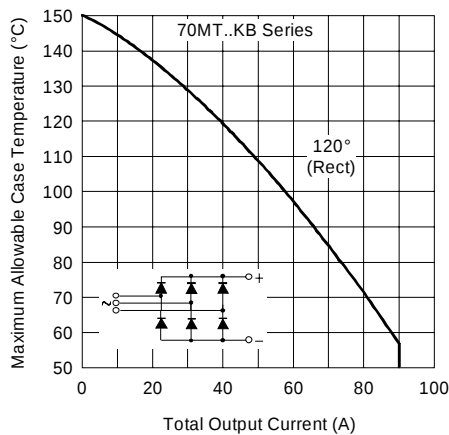
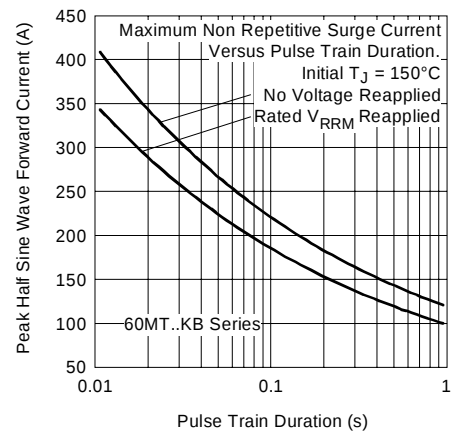
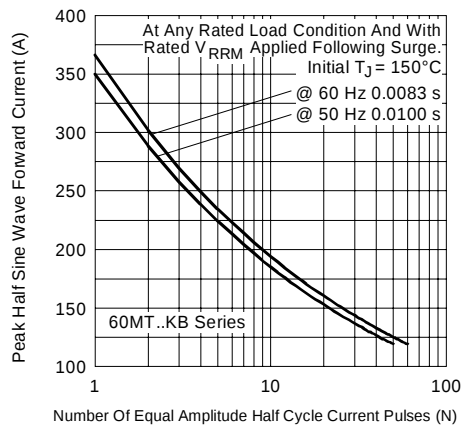
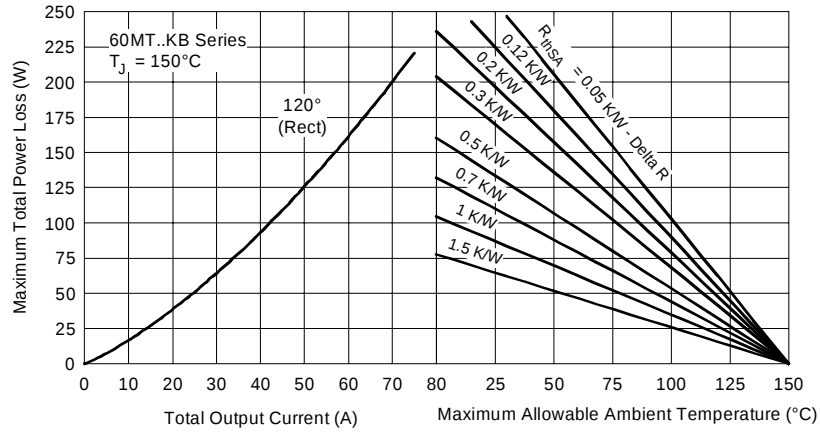


Fig. 2 - Forward Voltage Drop Characteristics



60-70MT..KB Series

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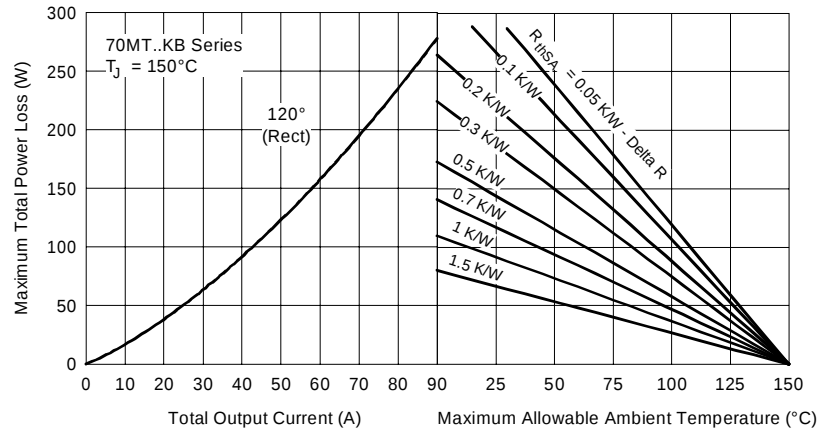


Fig. 8 - Total Power Loss Characteristics

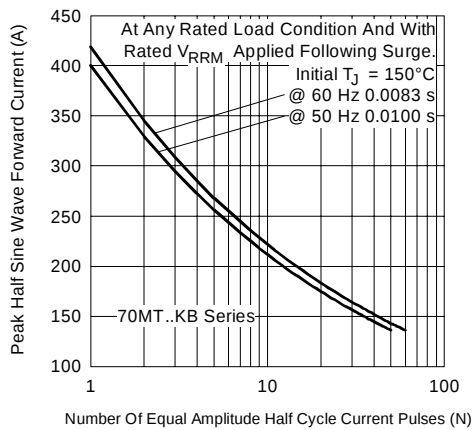


Fig. 9 - Maximum Non-Repetitive Surge Current

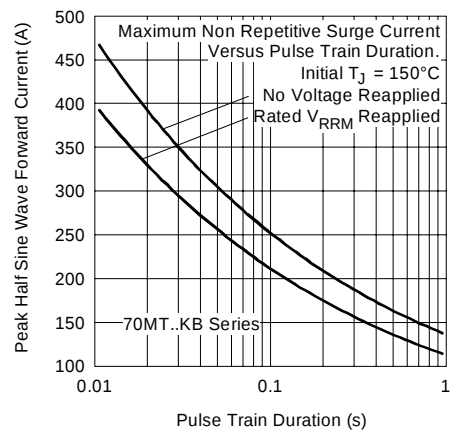


Fig. 10 - Maximum Non-Repetitive Surge Current

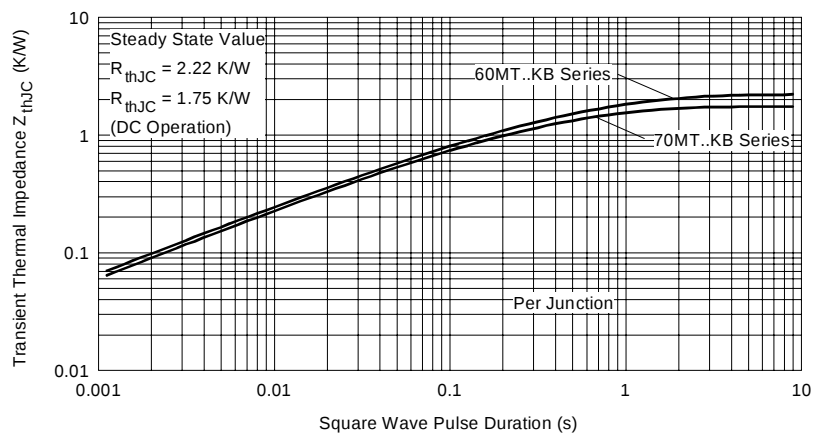


Fig. 11 - Thermal Impedance Z_{thJC} Characteristic

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.

International
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TAC Fax: (310) 252-7309
05 /03



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