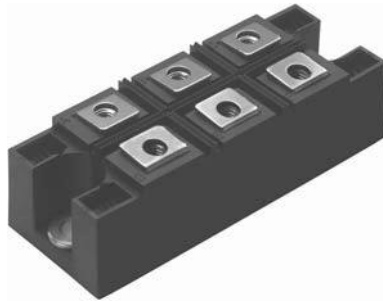


Three Phase Bridge (Power Module), 200 A



MTK

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
- Totally lead (Pb)-free
- Designed and qualified for industrial level


RoHS
COMPLIANT

PRODUCT SUMMARY

I_o	200 A
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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

SYMBOL	CHARACTERISTICS	VALUES	UNITS
I_o		200	A
	T_c	85	°C
I_{FSM}	50 Hz	1800	A
	60 Hz	1880	
I^2t	50 Hz	16.2	kA ² s
	60 Hz	14.7	
$I^2\sqrt{t}$		162	kA ² √s
V_{RRM}		400	V
T_{Stg}	Range	- 40 to 150	°C
T_J			

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} MAXIMUM AT $T_J = 150\text{ °C}$ mA
200MT40KPbF	400	500	6

FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum RMS output current at case temperature	I_O	120° rect. conduction angle		200	A
				85	°C
Maximum peak, one-cycle forward, non-repetitive on state surge current	I_{TSM}	t = 10 ms	No voltage reapplied	1800	A
		t = 8.3 ms			
		t = 10 ms	100 % V_{RRM} reapplied	1520	
		t = 8.3 ms		1590	
Maximum I^2t for fusing	I^2t	t = 10 ms	No voltage reapplied	16.2	kA ² s
		t = 8.3 ms			
		t = 10 ms	100 % V_{RRM} reapplied	11.6	
		t = 8.3 ms		12.6	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied		162	kA ² √s
Value of threshold voltage	$V_{F(TO)}$	T_J maximum		0.76	V
Slope resistance	r_t			2.4	mΩ
Maximum forward voltage drop	V_{FM}	$I_{pk} = 200$ A, $T_J = 25$ °C, $t_p = 400$ μs single junction		1.40	V
Isolation voltage	V_{ISOL}	$T_J = 25$ °C all terminal shorted, f = 50 Hz, t = 1 s		4000	

THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction operating and storage temperature range	T_J, T_{Stg}			- 40 to 150	°C
Maximum thermal resistance, junction to case	R_{thJC}	DC operation per module		0.12	K/W
		DC operation per junction		0.69	
		120° rect. conduction angle per module		0.14	
		120° rect. conduction angle per junction		0.82	
Maximum thermal resistance, case to heatsink per module	R_{thCS}	Mounting surface smooth, flat and greased. Heatsink compound thermal conductivity = 0.42 W/mK		0.033	
Mounting torque ± 10 % to heatsink		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.		4 to 6	Nm
Approximate weight				176	g

Three Phase Bridge
 (Power Module), 200 A

Vishay High Power Products

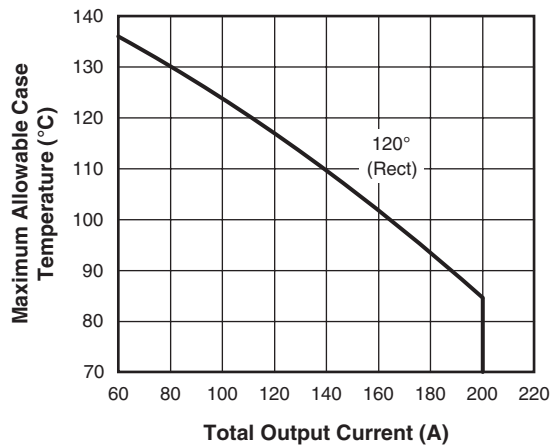


Fig. 1 - Current Rating Characteristics

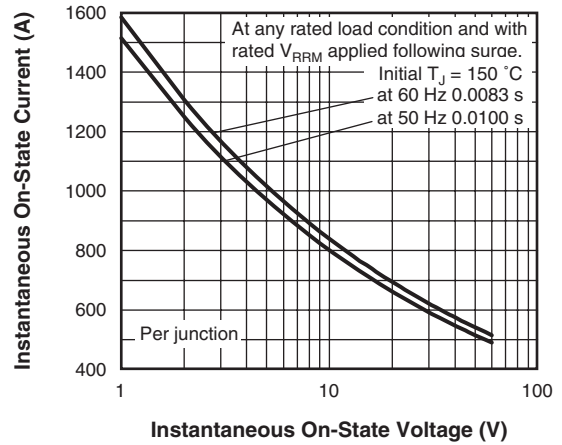


Fig. 3 - Maximum Non-Repetitive Surge Current

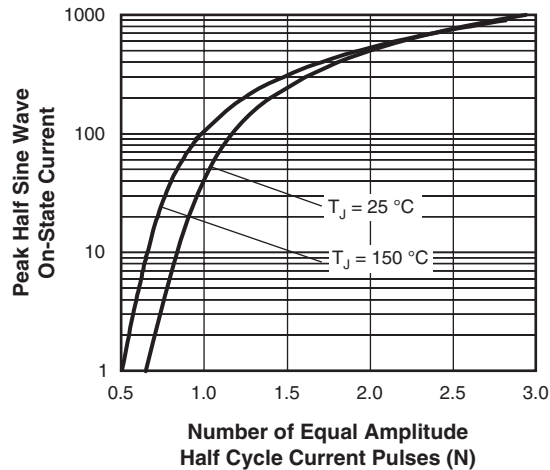


Fig. 2 - On-State Voltage Drop Characteristics

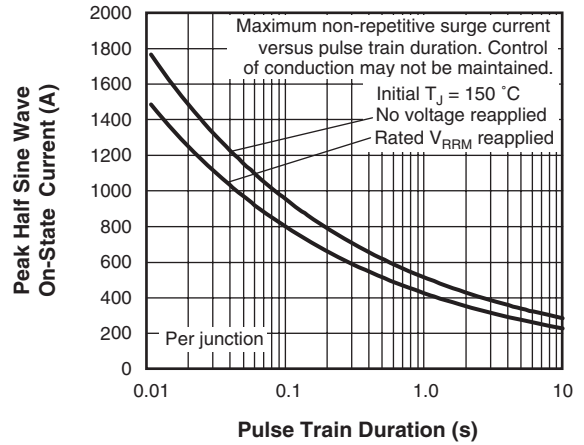


Fig. 4 - Maximum Non-Repetitive Surge Current

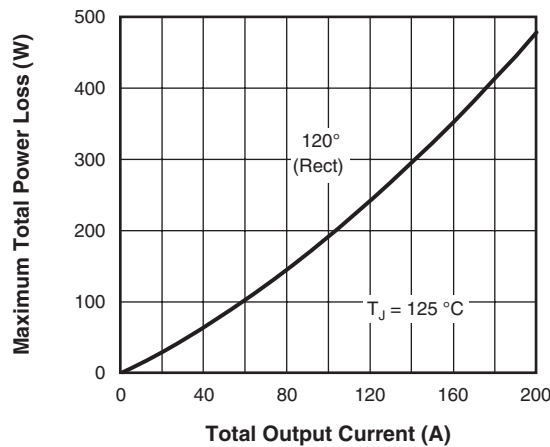
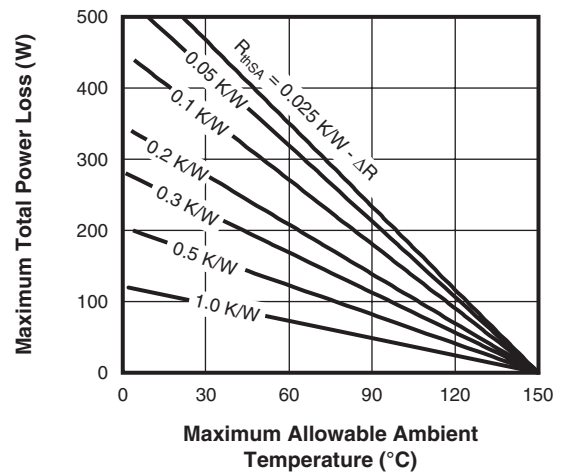


Fig. 5 - Current Rating Nomogram (1 Module Per Heatsink)



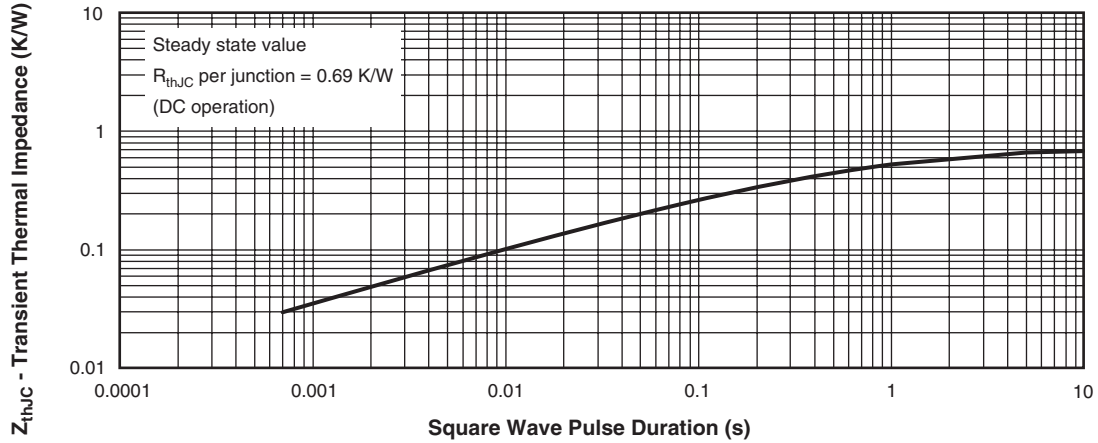


Fig. 6 - Thermal Impedance Z_{thJC} Characteristics

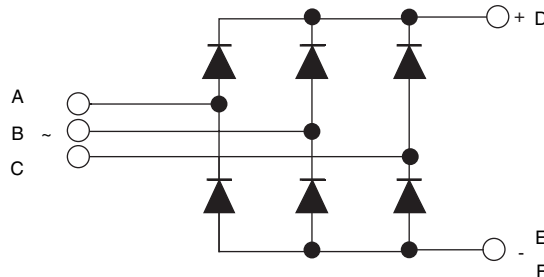
ORDERING INFORMATION TABLE

Device code	20	0	MT	40	K	PbF
	①	②	③	④	⑤	
	1	-	Current rating code: 20 = 200 A (average)			
	2	-	Three phase diodes bridge			
	3	-	Essential part number			
	4	-	Voltage code x 10 = V_{RRM} (40 = 400 V)			
	5	-	PbF = Lead (Pb)-free			

Note

- To order the optional hardware go to www.vishay.com/doc?95172

CIRCUIT CONFIGURATION



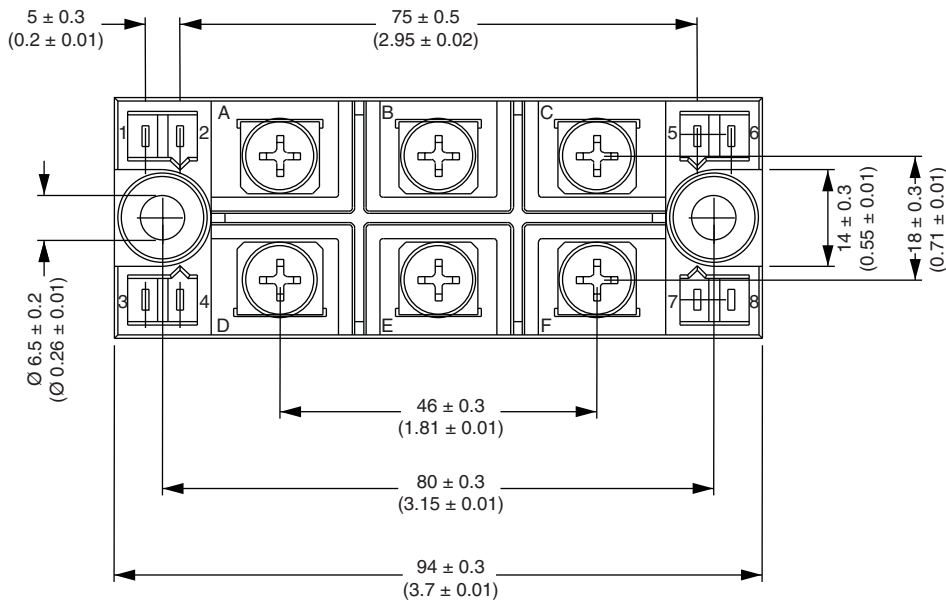
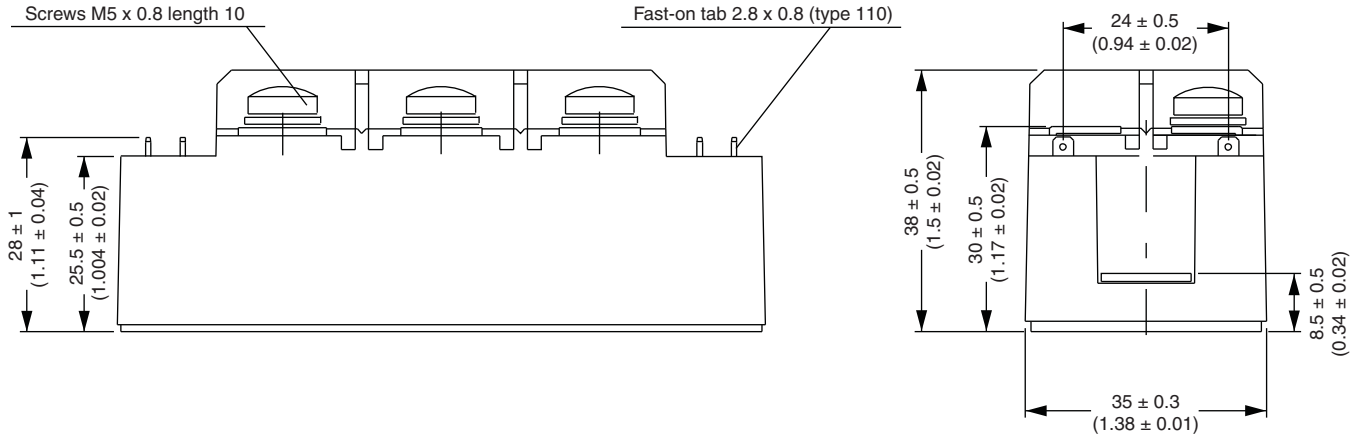
LINKS TO RELATED DOCUMENTS

Dimensions

<http://www.vishay.com/doc?95004>

MTK (with and without optional barrier)

DIMENSIONS WITH OPTIONAL BARRIERS in millimeters (inches)

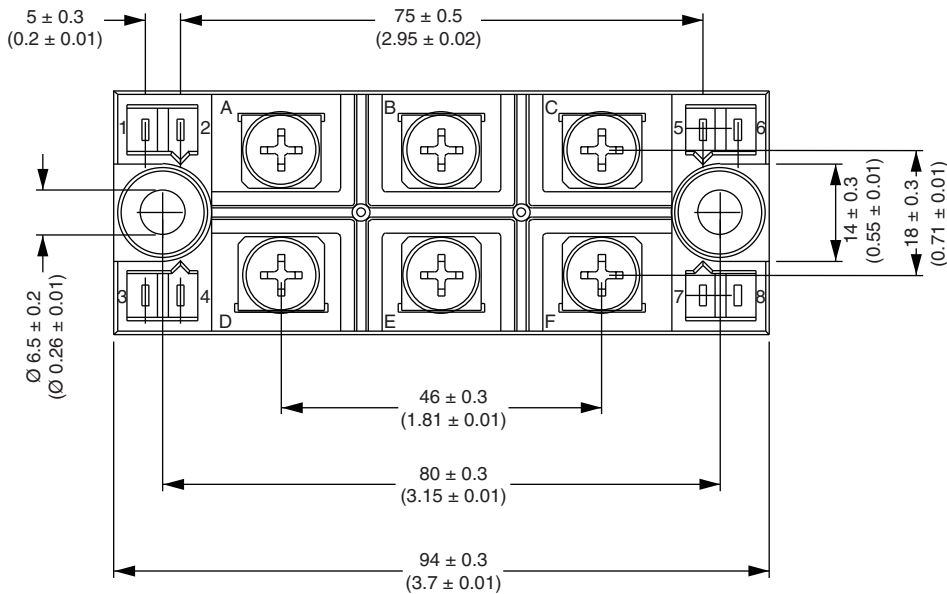
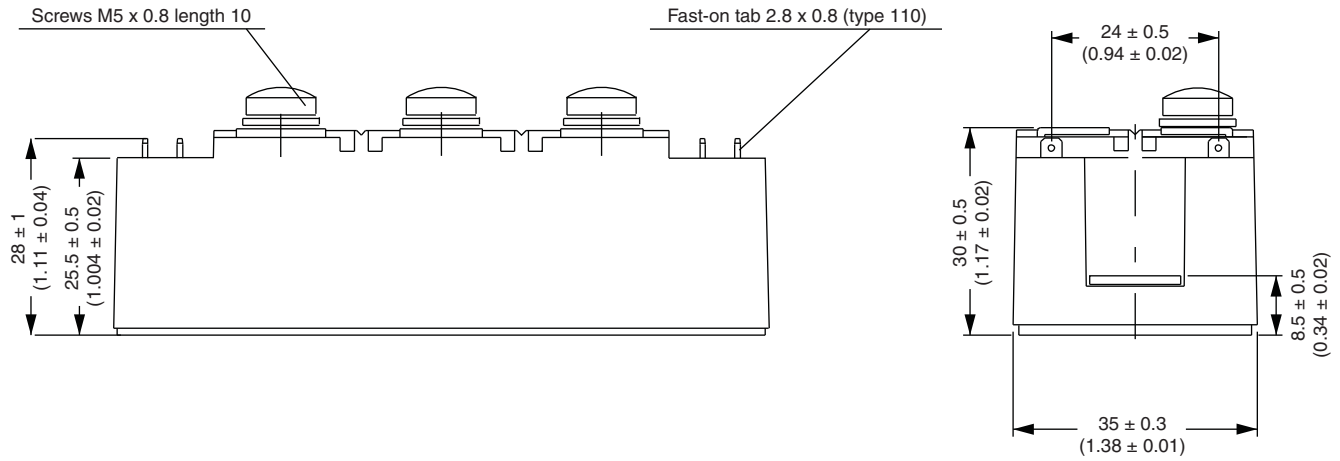


Outline Dimensions

Vishay Semiconductors MTK (with and without optional barrier)



DIMENSIONS WITHOUT OPTIONAL BARRIERS in millimeters (inches)





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