MMD50L160X

50A Three-Phase Rectifier Bridge Module

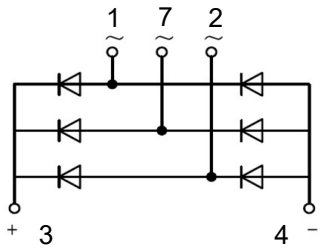
April 2025 Version 06 RoHS Compliant

PRODUCT FEATURES

- ☐ Low Forward Voltage,High Surge Current Capability
- ☐ Package With Screw Terminals
- ☐ Isolation Voltage 3000 V~
- ☐ Blocking Voltage Up to 1600 V

APPLICATIONS

- ☐ Field Supply For DC Motors
- ☐ Supplies For DC Power Equipmenters
- ☐ Input Rectifiers For PWM Inverter
- ☐ Battery DC Power Supplies



Module Type

Module Type	V_{RRM} Repetitive Peak Reverse Voltage	V_{RSM} Non-Repetitive Peak Reverse Voltage	Unit
MMD50L160X	1600	1700	V

ABSOLUTE MAXIMUM RATINGS(T_C =25°C *unless otherwise specified*)

Symbol	Parameter/Test Conditions		Values	Unit
I_D	Output Current(D.C.)	Three phase, full wave, Tc= 105℃	50	A
I_{FSM}	Non-Repetitive Surge Forward Current	1/2 cycle, 50HZ, peak value, T_J =45℃	500	A
		1/2 cycle, 60HZ, peak value, T_J =45℃	550	A
I^2t	For Fusing	1/2 cycle, 50HZ, peak value ,T_J =45℃	1250	A^2s
		1/2 cycle, 60HZ, peak value, T_J =45℃	1255	A^2s
P_D	Power Dissipation		625	W
T_{jmax}	Max. Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-40 to +150	℃
V_{ISO}	Isolation Breakdown Voltage	AC, t=1minute,I_{ISOL}≤1mA	3000	V
Torque	Module to Sink	Recommended（M5）	2.5～5	Nm
R_{thJC}	Junction to Case Thermal Resistance	per diode(DC current)	1.2	K /W
		per module	0.2	K /W
Weight			78	g

MacMic Science & Technology Co., Ltd.

Add：#18, Hua Shan Zhong Lu, New District, Changzhou City, Jiangsu Province, P. R .of China

Tel.：+86-519-85163708 Fax：+86-519-85162291 Post Code：213022 Website：www.macmicst.com

ELECTRICAL CHARACTERISTICS *(T_C =25°C unless otherwise specified)*

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
I_{RM}	Maximum Reverse Leakage Current	$V_R = V_{RRM}$			0.5	mA
		$V_R = V_{RRM}$, T_J = 150℃			3	
V_F	Forward Voltage Drop	I_F=50A, T_J = 25℃		1.09	1.4	V
		I_F=50A, T_J = 150℃		1.00		V
V_{TO}	For power loss calculations only , T_J = 150℃				0.95	V
r_T					7.2	mΩ

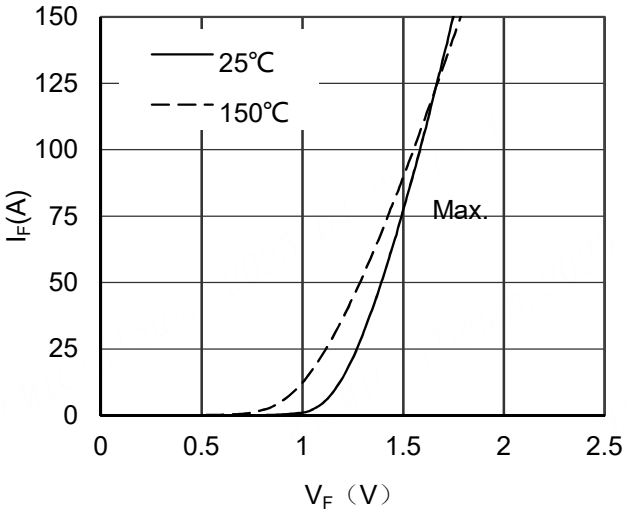


Figure 1. Forward Voltage Drop vs Forward Current

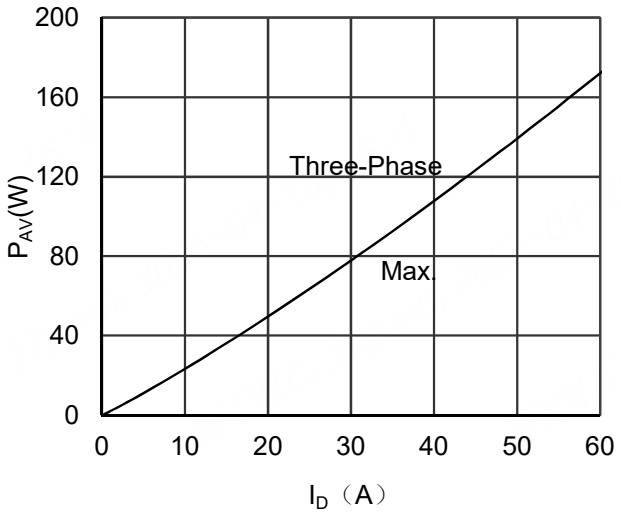


Figure 2. Power dissipation vs Output Current

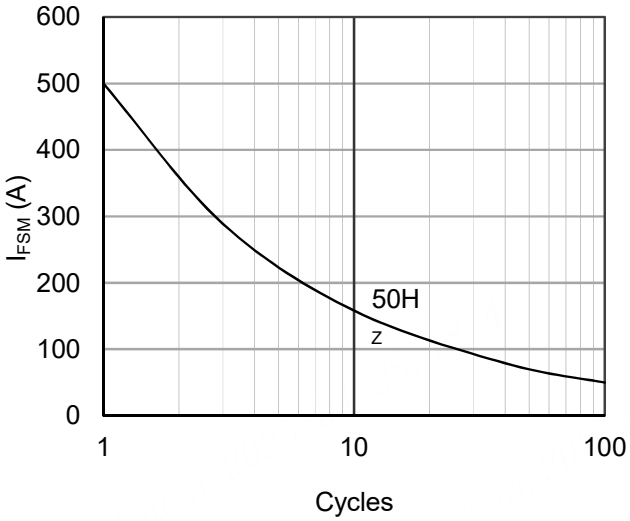


Figure 3. Max Non-Repetitive Forward Surge Current

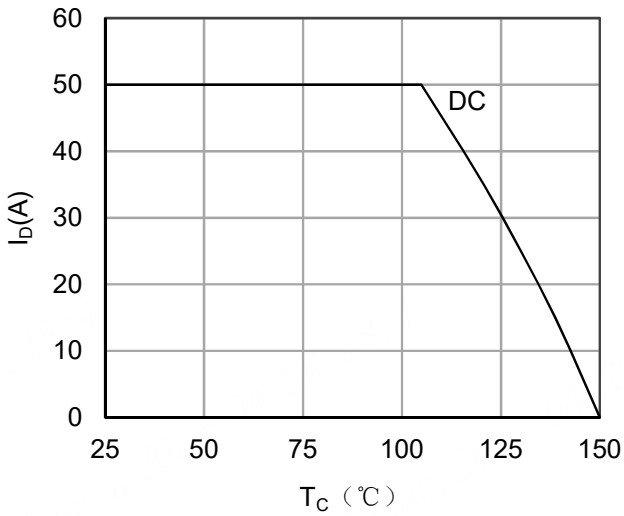


Figure 4. Output current vs Case temperature

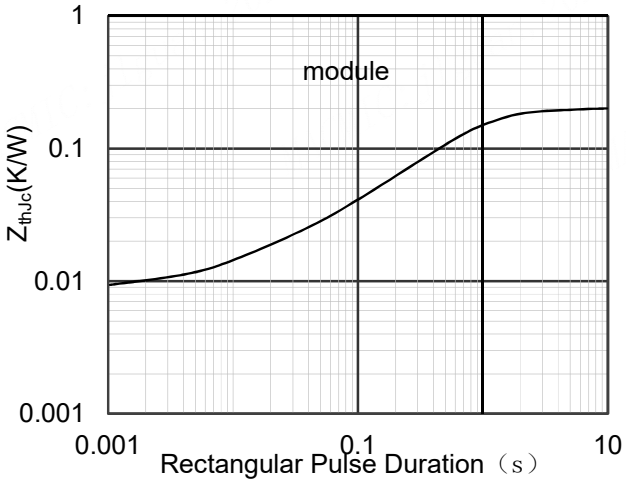
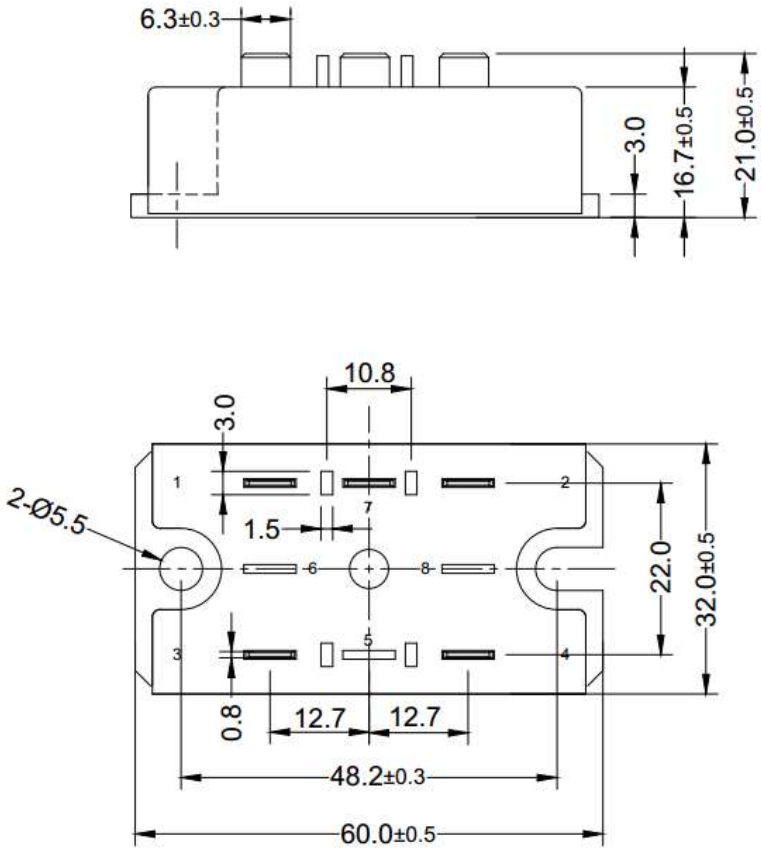


Figure 5. Transient Thermal Impedance



Dimensions in (mm)

Figure 6. Package Outline