MMD50L160X

50A Three-Phase Rectifier Bridge Module

May 2018 Version 4 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

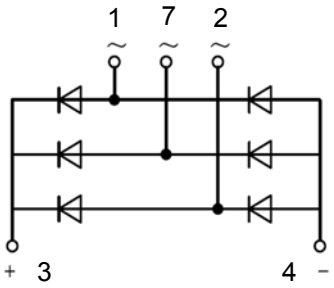
APPLICATIONS

☐ 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	
		1/2 cycle, 60HZ, peak value, T_J =45℃	550	
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	
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, 50/60Hz(R.M.S), 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	
Weight			78	g

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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			1.4	V
V_{TO}	For power loss calculations only , T_J = 150℃				0.95	V
r_T					7.2	mΩ

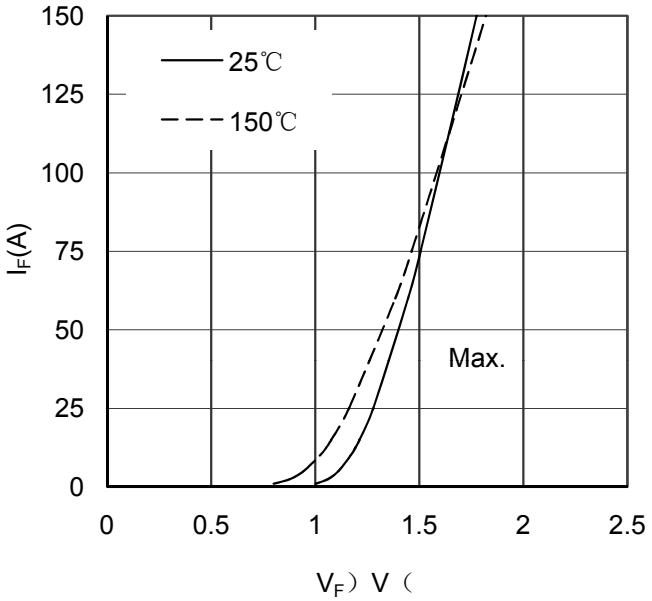


Figure 1. Forward Voltage Drop vs Forward Current

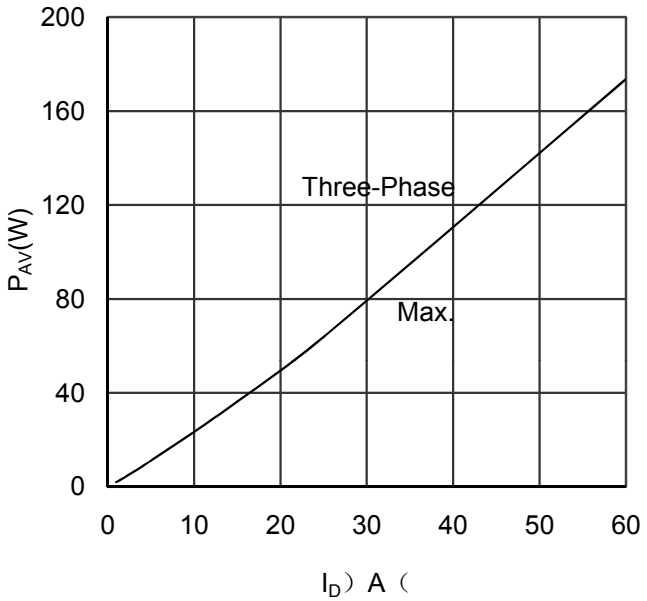


Figure 2. Power dissipation vs Output Current

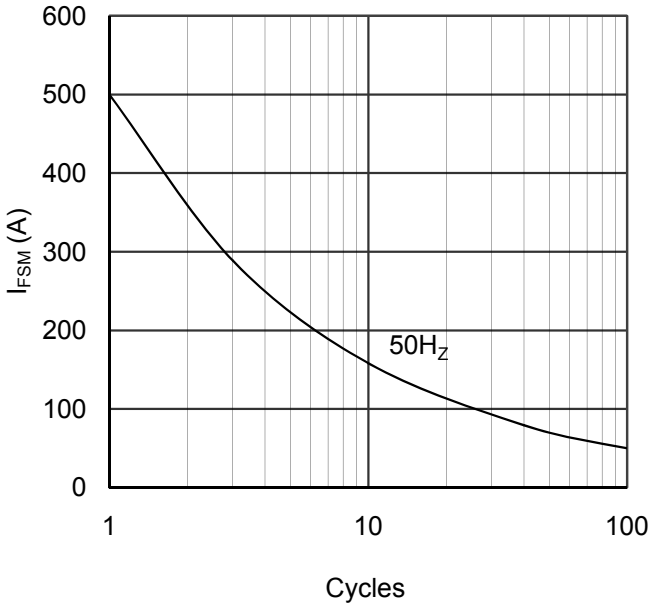


Figure 3. Max Non-Repetitive Forward Surge Current

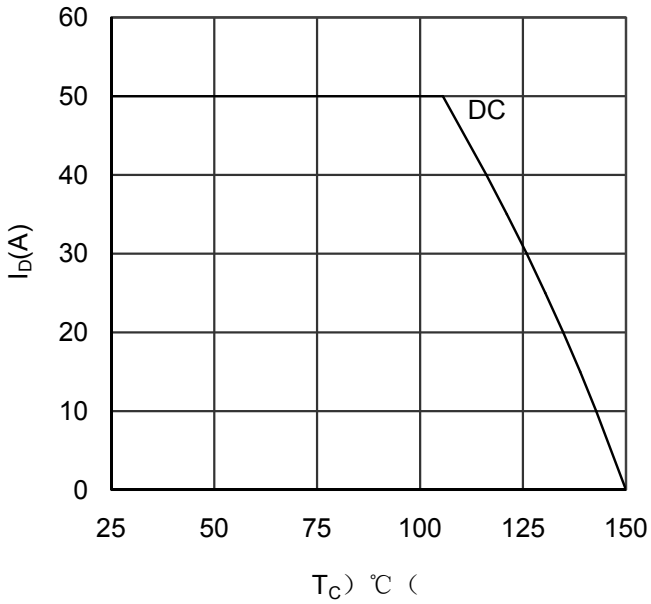


Figure 4. Output current vs Case temperature

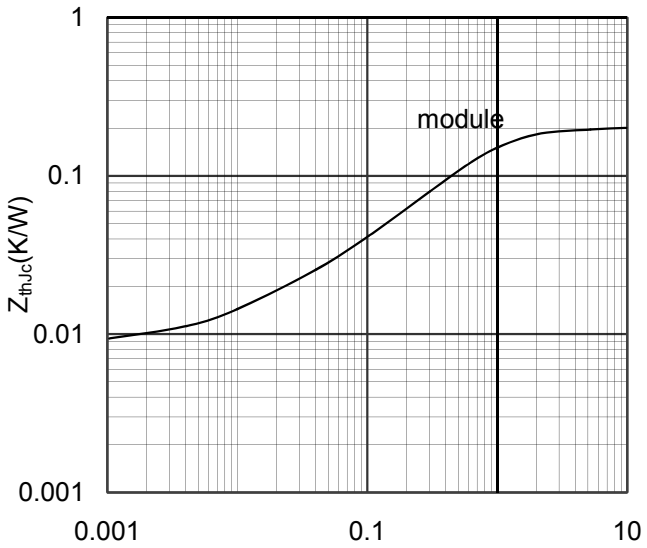
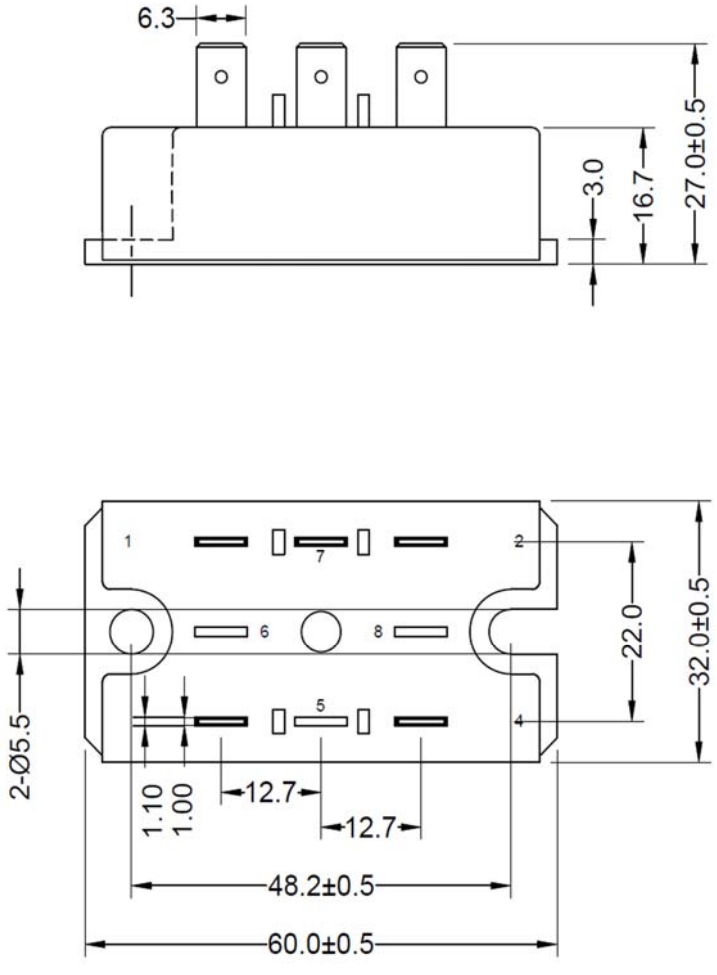


Figure 5. Transient Thermal Impedance



Dimensions in (mm)

Figure 6. Package Outline