MMD100E160X

100A Three-Phase Rectifier Bridge Module

February 2017 Version 5 RoHS Compliant

PRODUCT FEATURES

☐ Low Forward Voltage

☐ High Surge Current Capability

☐ Low Leakage Current

☐ Low Inductance Package

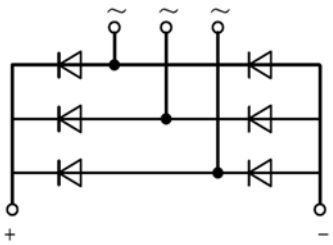
APPLICATIONS

☐ Field Supply For DC Motors

☐ Line Rectifiers For Transistorized AC Motor Controllers

☐ Non-controllable Rectifiers For AC/DC Converter

☐ UL:E332185



Module Type

Module Type	V_{RRM} Repetitive Peak Reverse Voltage	V_{RSM} Non-Repetitive Peak Reverse Voltage	Unit
MMD100E160X	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= 95℃	100	A
I_{FSM}	Non-Repetitive Surge Forward Current	1/2 cycle, 50HZ, peak value, T_J =45℃	1000	A
		1/2 cycle, 60HZ, peak value, T_J =45℃	1100	A
I^2t	For Fusing	1/2 cycle, 50HZ, peak value ,T_J =45℃	5.0	KA^2S
		1/2 cycle, 60HZ, peak value, T_J =45℃	5.1	KA^2S
P_D	Power Dissipation		830	W
T_J	Junction Temperature		-40 to +150	℃
T_{STG}	Storage Temperature Range		-40 to +125	℃
V_{ISO}	Isolation Breakdown Voltage	AC, 50Hz(R.M.S), t=1minute	3000	V
Torque	Module to Sink	Recommended（M5）	2.5～5	Nm
Torque	Module Electrodes	Recommended（M5）	2.5～5	Nm
R_{thJC}	Junction to Case Thermal Resistance	per diode	0.9	K /W
		per module	0.15	K /W
Weight			150	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 = 125℃			10	
V_F	Forward Voltage Drop	I_F=100A			1.35	V
V_{TO}	For power loss calculations only , T_J = 125℃				0.92	V
r_T					3.8	mΩ

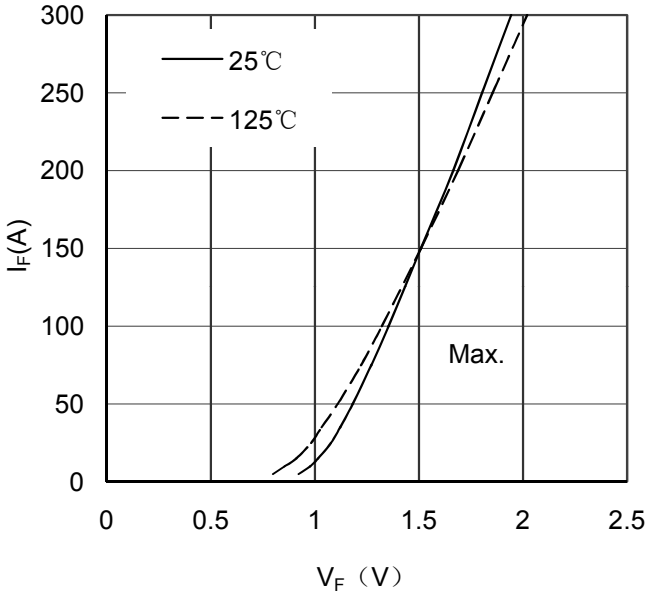


Figure 1. Forward Voltage Drop vs Forward Current

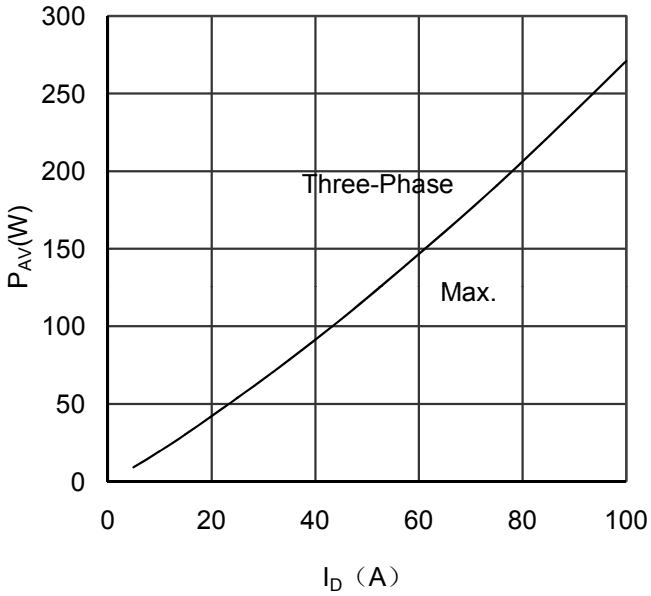


Figure 2. Power dissipation vs Output Current

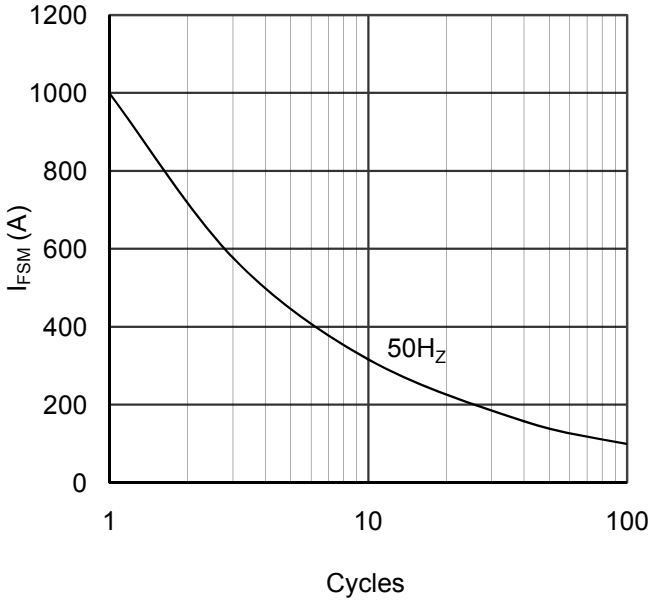


Figure 3. Max Non-Repetitive Forward Surge Current

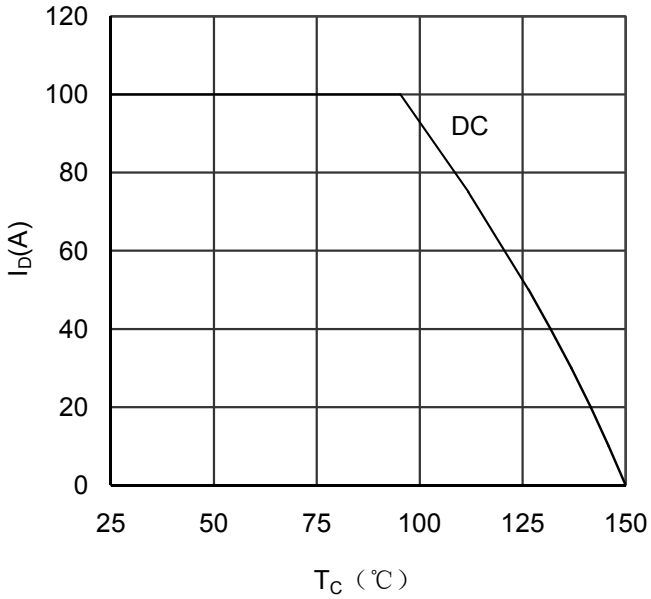


Figure 4. Output current vs Case temperature

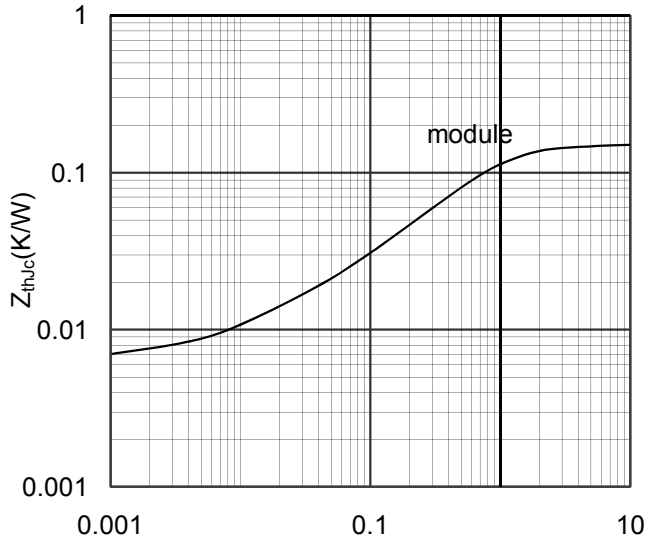
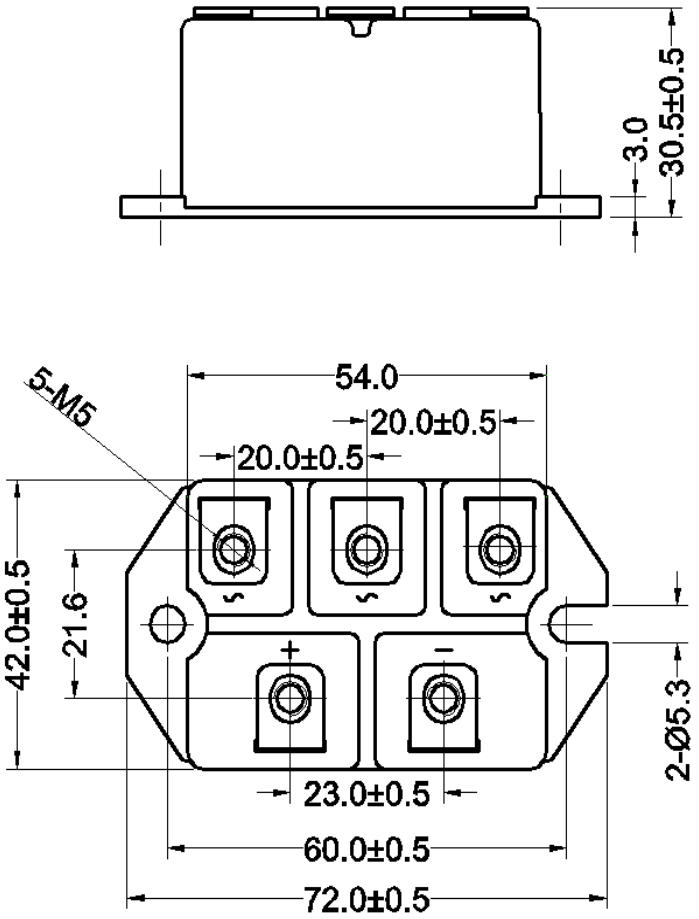


Figure 5. Transient Thermal Impedance



Dimensions in (mm)

Figure 6. Package Outline