MMD70EC

70A Three-Phase Rectifier Bridge Module

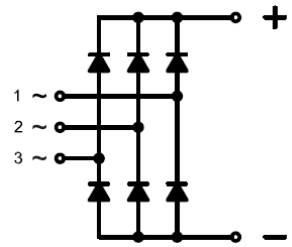
December 2013 **PRELIMINARY** Version 01 **RoHS Compliant**

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



MODULE TYPE

Module Type	V_{RRM} (Repetitive Peak Reverse Voltage)	V_{RSM} (Non-Repetitive Peak Reverse Voltage)	Unit
MMD70EC120X	1200	1300	V
MMD70EC140X	1400	1500	
MMD70EC160X	1600	1700	
MMD70EC180X	1800	1900	

ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
I_D	Output Current(D.C.)	Three phase, half wave, Tc= 95°C	70	A
I_{FSM}	Non-Repetitive Surge Forward Current	1/2 cycle, 50HZ, peak value Tc =45°C	700	
		1/2 cycle, 60HZ, peak value Tc =45°C	750	
I^2t	I^2t (For Fusing)	1/2 cycle, 50HZ, peak value Tc =45°C	2.45	KA^2s
		1/2 cycle, 60HZ, peak value Tc =45°C	2.33	KA^2s
P_D	Power Dissipation		690	W
T_J	Junction Temperature		-40 to +150	°C
T_{STG}	Storage Temperature Range		-40 to +125	°C
V_{ISO}	Isolation Breakdown Voltage	AC, 50Hz(R.M.S), t=1minute	3000	V
Torque	Module-to-Sink	Recommended（M5）	2.5～5	N.m
Torque	Module Electrodes	Recommended（M5）	2.5～5	N.m
$R_{th\ (J-C)}$	Junction-to-Case Thermal Resistance	Per diode	1.1	K /W
		Per module	0.18	
Weight			130	g

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ELECTRICAL AND THERMAL CHARACTERISTICS *T_C=25°C unless otherwise specified*

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Max.Reverse Leakage Current	V_R= V_{RRM}			500	μA
		V_R= V_{RRM} , T_J=125°C			10	mA
V_F	Forward Voltage	I_F=70A			1.35	V
V_{T0}	For power-loss calculations only				0.95	V
r_T	T_J=125°C				4.7	mΩ

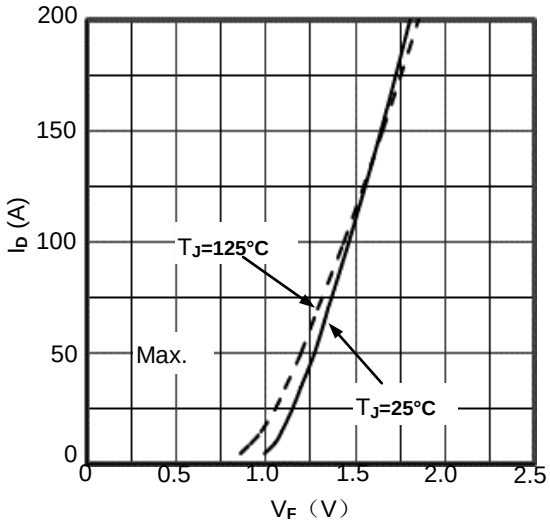


Figure1. Forward Voltage Drop vs Output Current

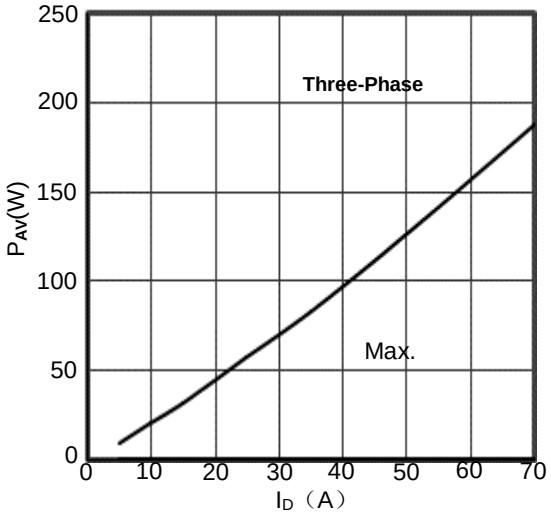


Figure2. Power dissipation vs. Output Current

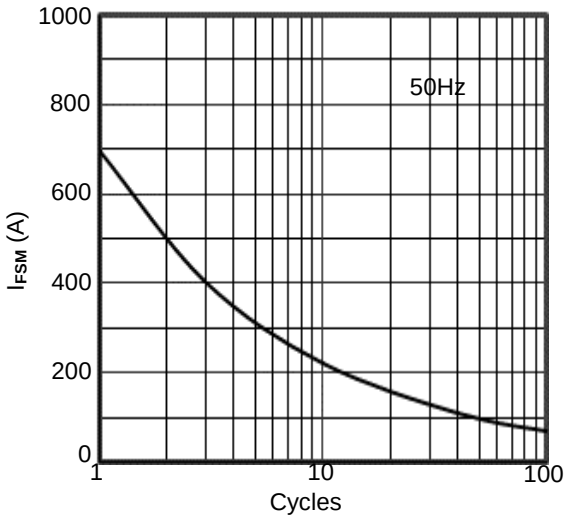


Figure3. Max Non-Repetitive Forward Surge Current

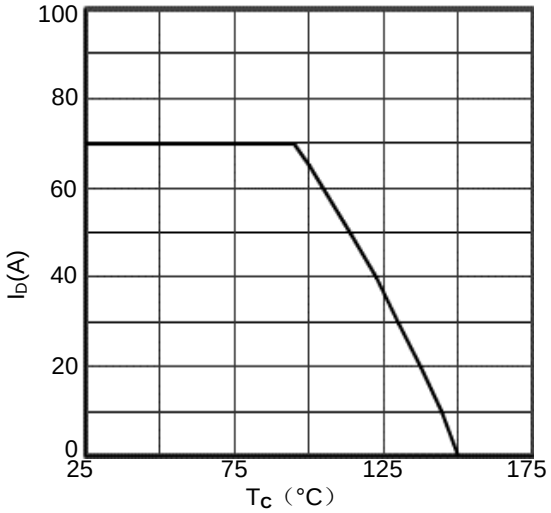


Figure4. Output Current vs.Case temperature

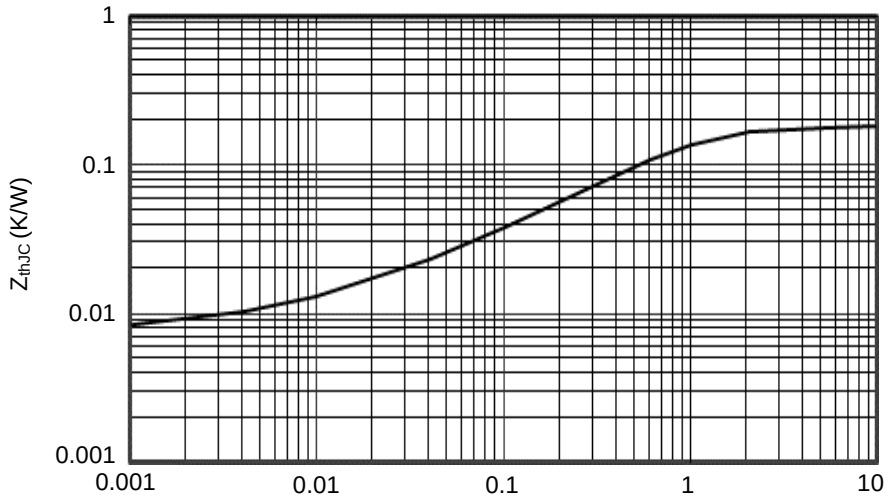
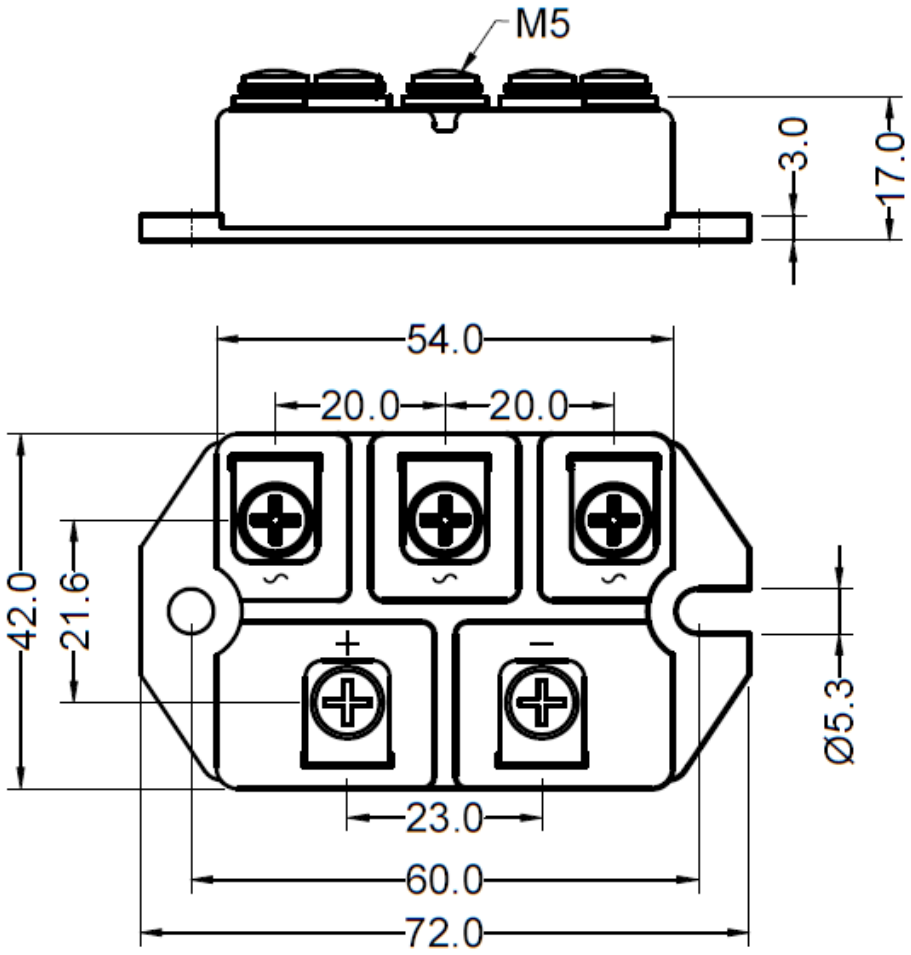


Figure5. Transient Thermal Impedance



Dimensions in Millimeters

Figure6. Package Outline