MMD240S160B

1600V 240A Rectifier Diode Module

RoHS Compliant

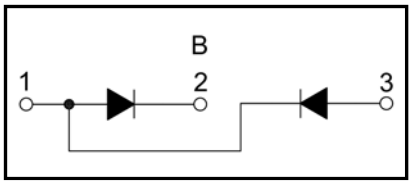
March 2013 PRELIMINARY

PRODUCT FEATURES

- Glass Passivated Chip
- Aluminum Oxide Ceramic Isolated Metal Baseplate
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

APPLICATIONS

- Field Supply For DC Motors
- Line Rectifiers For Transistorized AC Motor Controllers
- Non-controllable Rectifiers For AC/DC Converter



ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Max.	Unit
V_{RRM}	Repetitive Reverse Voltage		1600	V
$I_{F(AV)}$	Average Forward Current	T_C=75°C Rectangular, d=0.5	240	A
$I_{F(RMS)}$	RMS Forward Current	T_C=75°C Rectangular, d=0.5	340	A
I_{FSM}	Non-Repetitive Surge Forward Current	T_J=45°C, t=10ms, 50Hz, Sine	10000	A
		T_J=45°C,t=8.3ms, 60Hz, Sine	10700	A
I^2t	I^2t (For Fusing)	T_J=45°C, t=10ms, 50Hz, Sine	352	KA^2s
		T_J=45°C,t=8.3ms, 60Hz, Sine	351	KA^2s
P_D	Power Dissipation		890	W
T_J	Junction Temperature		-40 to +150	°C
T_{STG}	Storage Temperature Range		-40 to +125	°C
V_{isol}	Insulation Test Voltage	AC, 50Hz, t=1min	3000	V
Weight			165	g

ELECTRICAL AND THERMAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	V_R=1600V	--	--	500	μA
		V_R=1600V, T_J=125°C	--	--	10	mA
V_F	Forward Voltage	I_F=500A	--	1.3	1.40	V
		I_F=500A, T_J=125°C	--	1.25	--	V
V_{T0}	For power-loss calculations only				0.8	V
r_T					1.2	mΩ
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	--	--	0.14	°C /W

MacMic Science & Technology Co., Ltd. Version: 1

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

MECHANICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Torque	Module-to-Sink	Recommended（M6）	3		5	N · m
Torque	Module Electrodes	Recommended（M6）	3		5	N · m

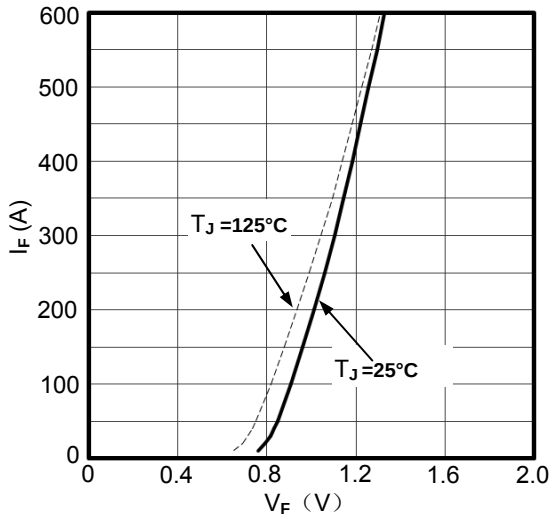


Figure1. Forward current vs.voltage drop per diode

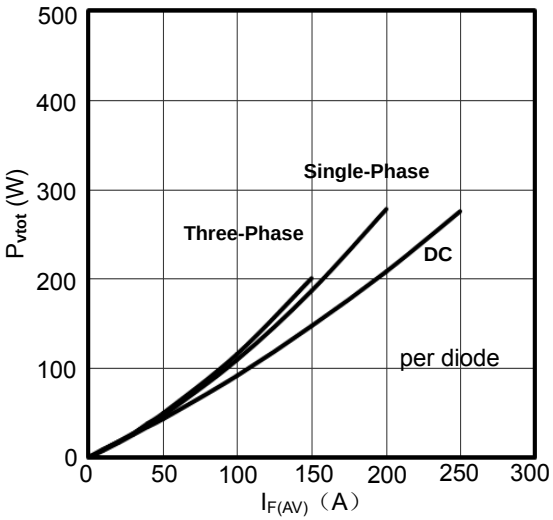


Figure2. Power dissipation vs. $I_{F(AV)}$

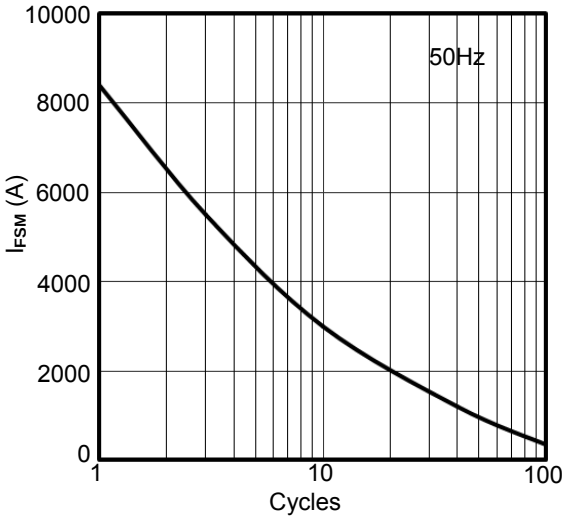


Figure3. Max Non-Repetitive Forward Surge Current

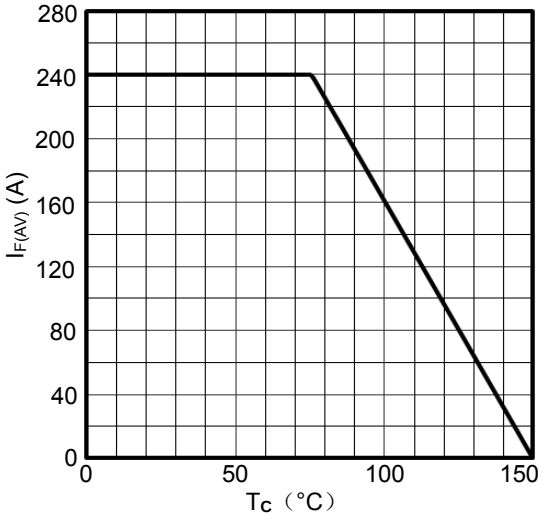


Figure4. Forward current vs.Case temperature

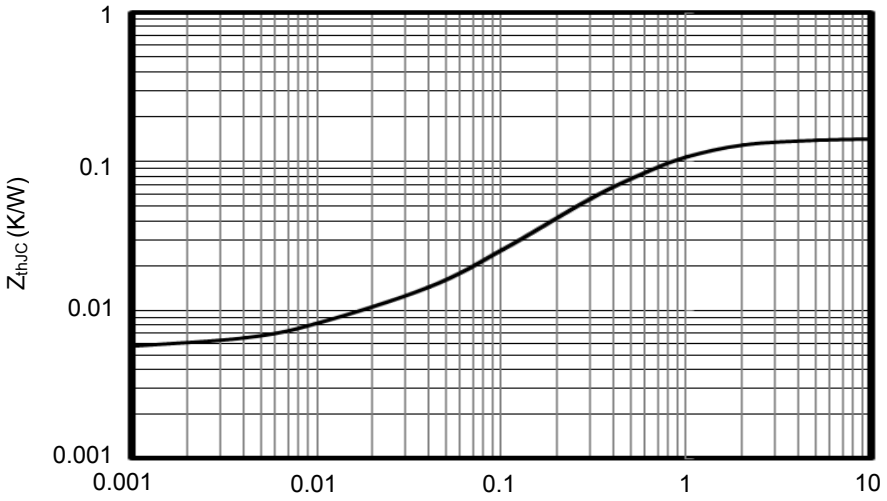


Figure5. Transient Thermal Impedance

Package Outline (Dimensions in mm)