



MACMIC

December 2009

PRELIMINARY

MMD200S160B

1600V 200A Rectifier Diode Module
RoHS Compliant

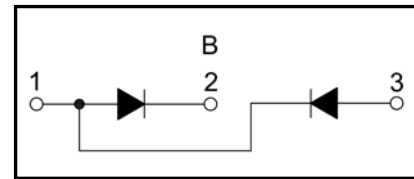
PRODUCT FEATURES

- 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

$T_C=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Test Conditions	Max.	Unit
V_{RRM}	Repetitive Reverse Voltage		1600	V
$I_{F(AV)}$	Average Forward Current	$T_C=85^{\circ}\text{C}$ Rectangular, $d=0.5$	200	A
$I_{F(RMS)}$	RMS Forward Current	$T_C=85^{\circ}\text{C}$ Rectangular, $d=0.5$	290	A
I_{FSM}	Non-Repetitive Surge Forward Current	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	6500	A
		$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	7000	A
I^2t	I^2t (For Fusing)	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	211	KA^2s
		$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	203	KA^2s
P_D	Power Dissipation		781	W
T_J	Junction Temperature		-40 to +150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range		-40 to +125	$^{\circ}\text{C}$
V_{isol}	Insulation Test Voltage	AC, 50Hz, $t=1\text{min}$	3000	V
Weight			161	g

ELECTRICAL AND THERMAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	$V_R=1600\text{V}$	--	--	500	μA
		$V_R=1600\text{V}$, $T_J=125^{\circ}\text{C}$	--	--	10	mA
V_F	Forward Voltage	$I_F=500\text{A}$	--	1.3	1.45	V
		$I_F=500\text{A}$, $T_J=125^{\circ}\text{C}$	--	1.25	--	V
V_{T0}	For power-loss calculations only				0.8	V
r_T					1.3	m Ω
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	--	--	0.16	$^{\circ}\text{C}/\text{W}$

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

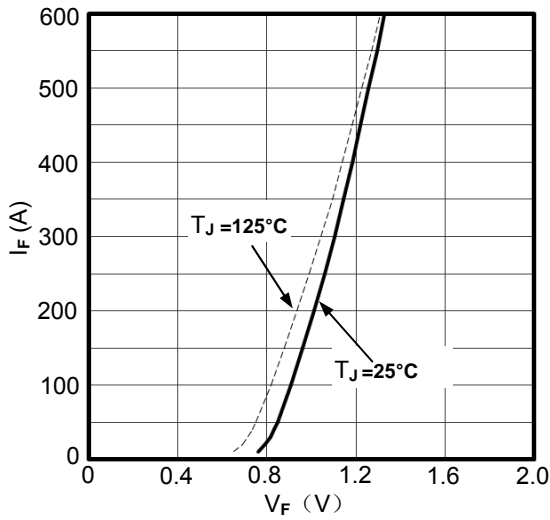


Figure1. Forward current vs.voltage drop per diode

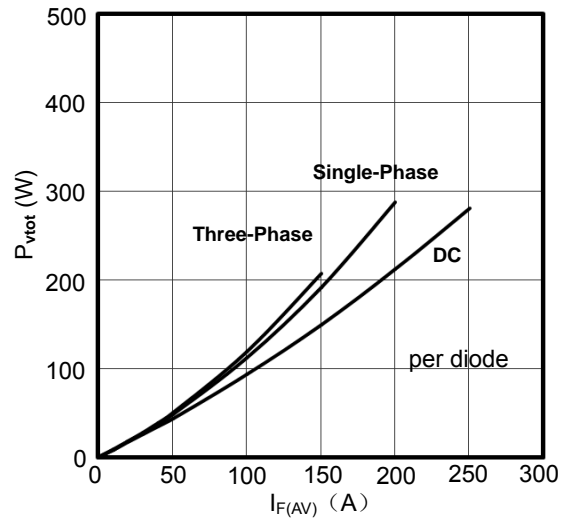


Figure2. Power dissipation vs. $I_{F(AV)}$

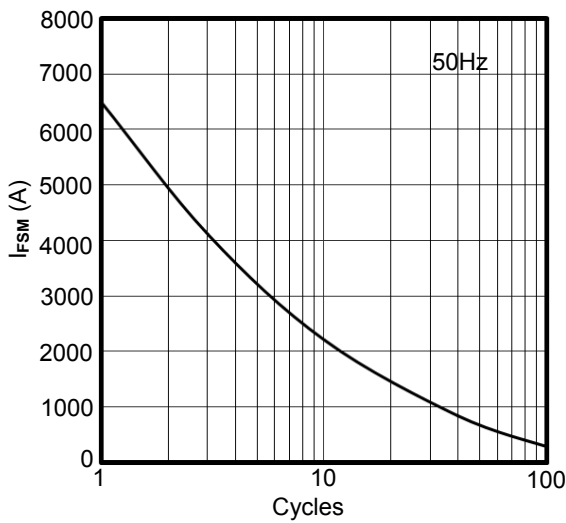


Figure3. Max Non-Repetitive Forward Surge Current

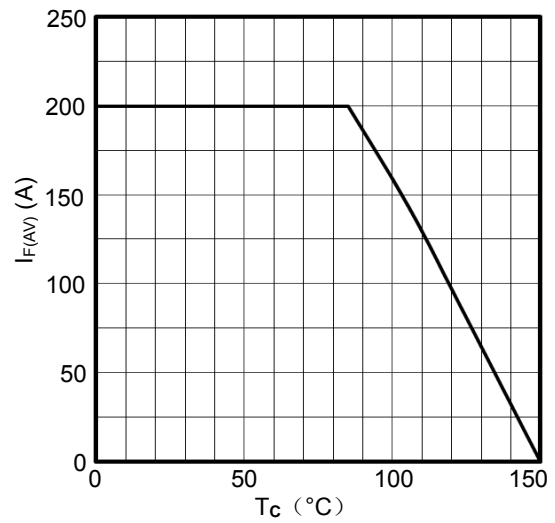


Figure4. Forward current vs. Case temperature

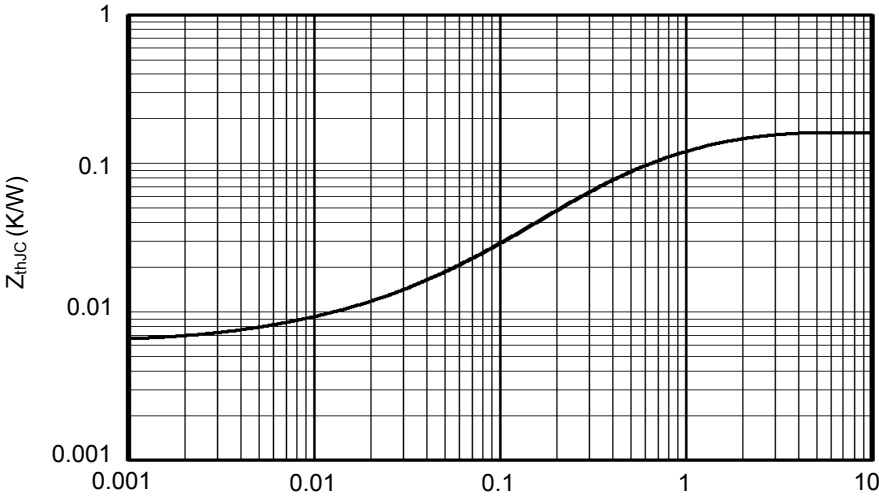


Figure5. Transient Thermal Impedance

Package Outline (Dimensions in mm)

