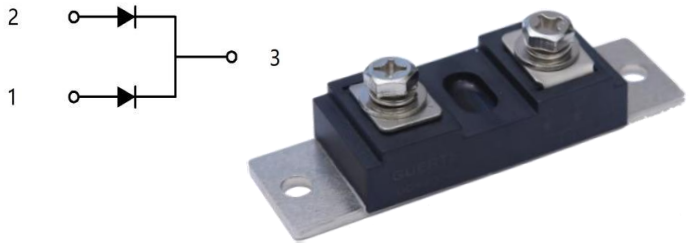
Fast Recovery Diode Module

Symbol	Value	Unit
V_R	400	V
I_{FAV}	400	Amp



Features

- Ultra-fast reverse recovery time
- Soft reverse recovery characteristics
- Low reverse recovery loss
- High system power density

Applications

- Inversion welder
- Power factor correction(PFC)circuit
- Plating power supply
- Ultrasonic cleaner and welder
- Converter & chopper

Maximum Ratings

Symbol	Item	Conditions	Values	Unit
V_R	Maximum D.C. Reverse Voltage		400	V
V_{RRM}	Maximum Repetitive Reverse Voltage			
I_{FAV}	Average Forward Current	Rectangular, d=0.5 Tc=102℃, Per Leg	200	A
		Rectangular , d=0.5,Tc=102℃, Per Module	400	
I_{FRMS}	RMS Forward Current	Tc=102℃, Per Leg	280	A
I_{FSM}	Non-Repetitive Peak Surge Current	T_j= 25, t= 50Hz(10ms), V_R = 0V, Per Leg	3000	A
I^2t	Circuit Fusing Consideration	t = 10ms, T_j =25℃	45000	A^2s
P_{tot}	Total Power Dissipation	T_j =25℃	833	W
T_j	Operating Junction Temperature		-40 to +150	℃
T_{stg}	Storage Temperature		-40 to +125	℃
M_t	Mounting Torque	To Terminals(M6)	5±15%	N·m
M_s		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		85	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
Rth(j-c)	Thermal Impedance, Max	Junction to Case(Per Leg)	0.15	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop Per Leg, Max	Tj=25℃, I_F=200A	–	–	1.3	V
I_{RRM}	Repetitive Peak Reverse Current Per Leg, Max	T_j = 25℃ V_R = V_{RRM}	–	–	0.2	mA
		T_j = 150℃ V_R = V_{RRM}	–	–	5	
t_{rr}	Typical Reverse Recovery Time Per Leg	I_F = 0.5A, I_R = -1A, I_{RR} = -0.25A	–	115	–	ns
t_{rr}	Reverse Recovery Time	I_F=200A, V_R=200V, di_F/dt =-200A/ μs, T_j = 25℃	–	85	–	ns
I_{RM}	Maximum Reverse Recovery Current	I_F=200A, V_R=200V, di_F/dt =-200A/ μs, T_j =125℃	–	9	–	A
t_{rr}	Reverse Recovery Time	T_j = 125℃	–	150	–	ns
I_{RM}	Maximum Reverse Recovery Current	T_j = 125℃	–	17	–	A
V_{T0}	Threshold Voltage, for power loss calculation only	I_F = 0.5A, I_R = -1A, I_{RR} = -0.25A	0.7			V
r_T	Slope Resistance, for power loss calculation only	I_F=200A, V_R=200V, di_F/dt =-200A/ μs, T_j = 25℃	2.25			mΩ

Characteristics Diagram

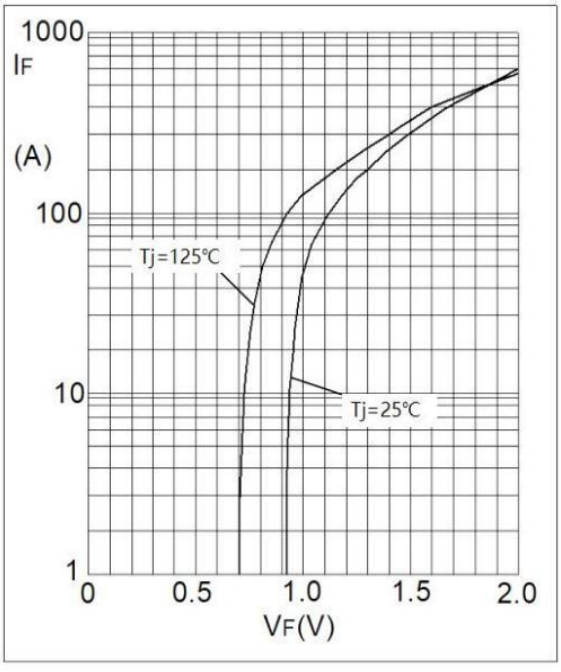


Fig1. Forward Characteristics

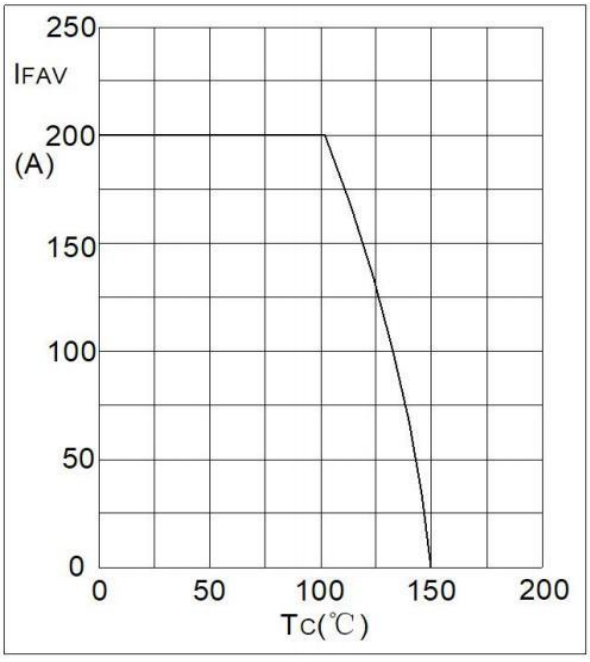


Fig2. Forward Current Derating Curve

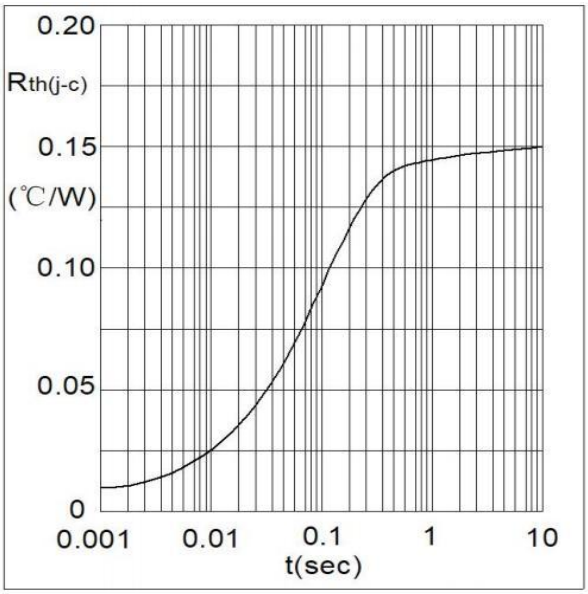


Fig3. Transient Thermal Impedance

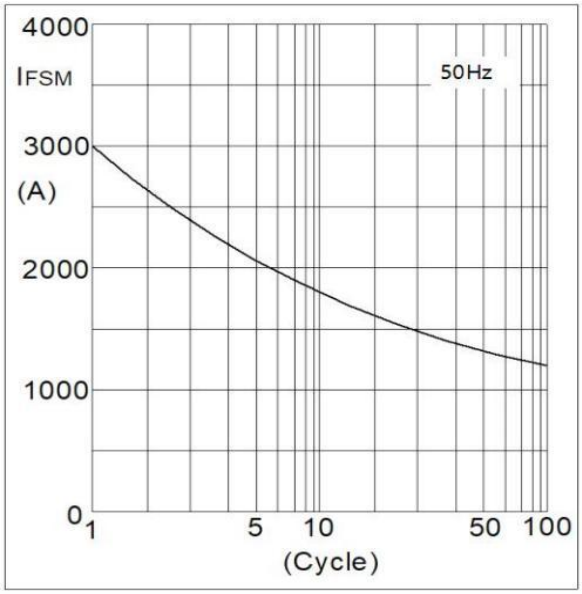


Fig4. Max Non-Repetitive Forward Surge Current

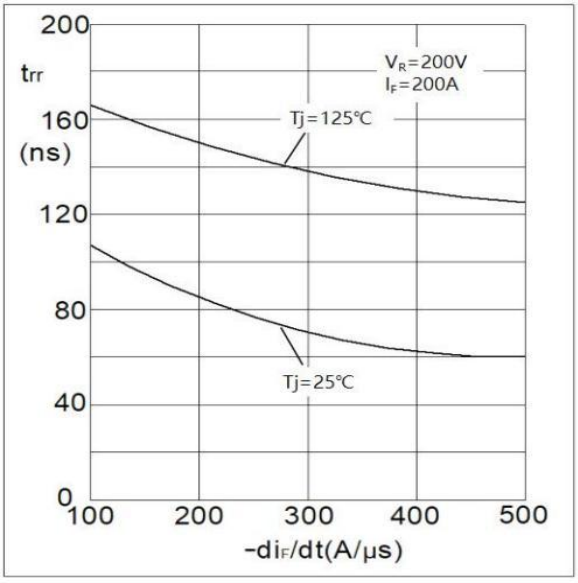


Fig5. Reverse Recovery Time VS diF/dt

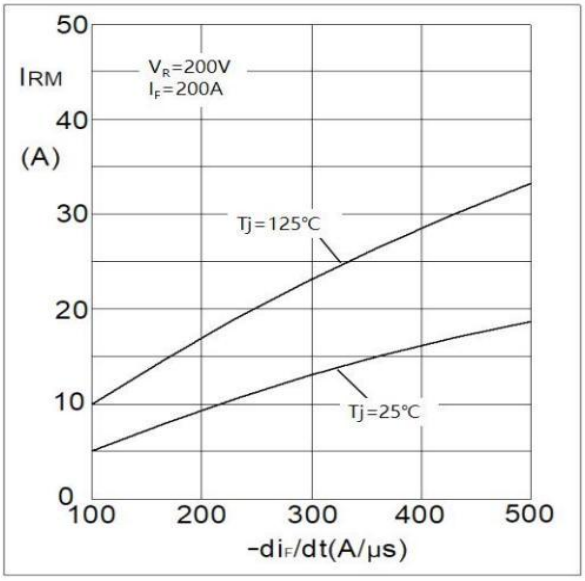


Fig6. Reverse Recovery Current VS diF/dt

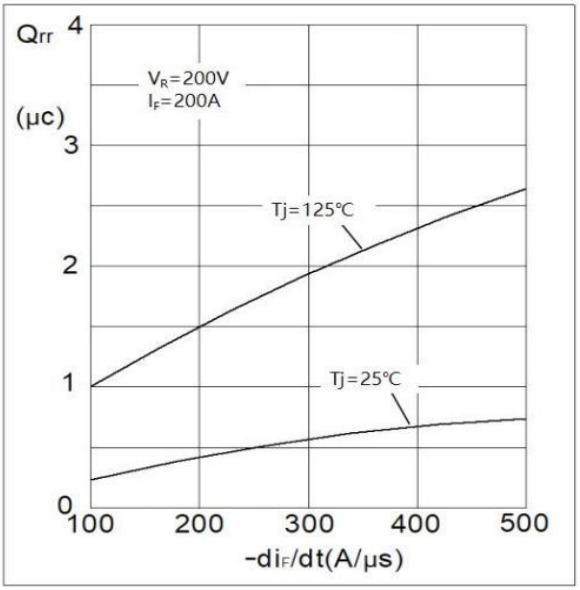
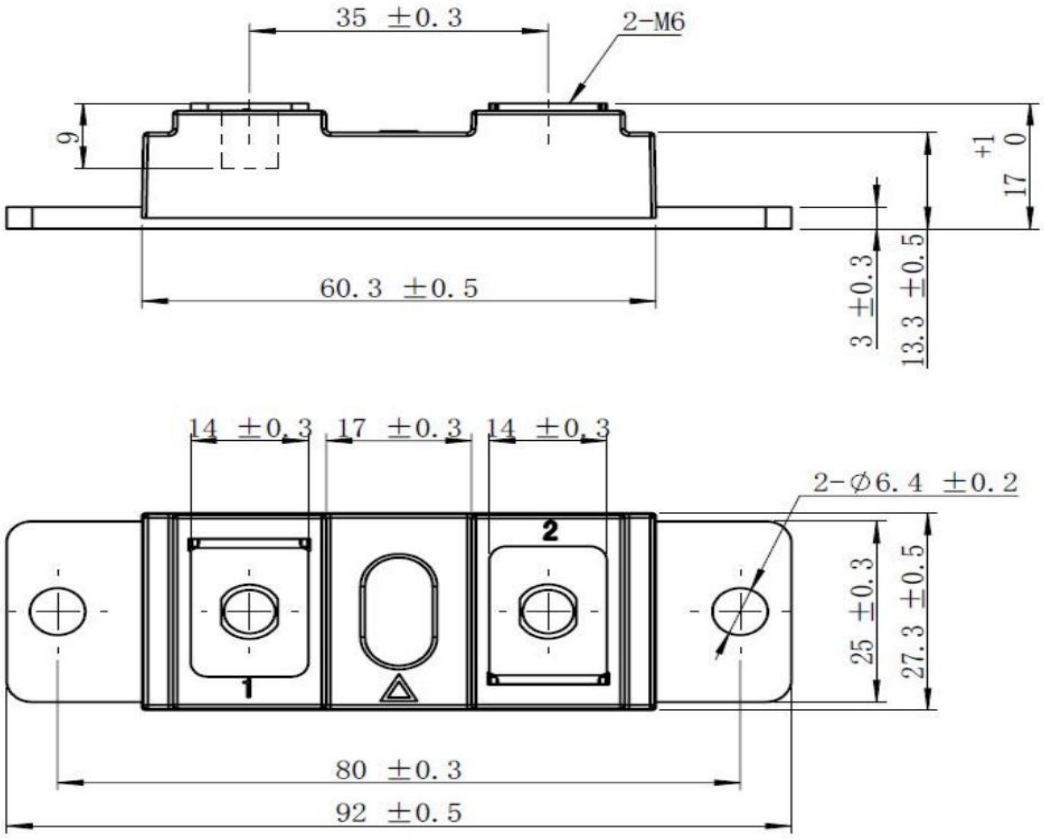


Fig7. Reverse Recovery Charge VS diF/dt

Package Outlines(Dimensions in mm)



*IMPORTANT INFORMATION AND NOTICE

The specifications of Zhuhai Hypersemi Co., Ltd. products may not be considered as a guarantee or assurance of product characteristics. The specifications describe only the usual characteristics of products expected in typical applications, which may still vary depending on the specific application.Therefore, products must be tested for the respective application in advance, and application adjustments may be necessary. The user of our products is responsible for the safety of their applications embedding our products and must take adequate safety measures to prevent the applications from causing physical injury, fire or other problems if any of our products become faulty. The user is responsible for ensuring that the application design complies with all applicable laws, regulations, norms, and standards. Except as otherwise explicitly approved by Zhuhai Hypersemi Co., Ltd. in a written document signed by authorized representatives, our products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.

No representation or warranty is given, and no liability is assumed with respect to the accuracy, completeness, and/or use of any information herein, including without limitation, warranties of non-infringement of intellectual property rights of any third party. Zhuhai Hypersemi Co., Ltd. does not assume any liability arising out of the applications or use of any product; neither does it convey any license under its patent rights, copyrights, trade secrets, or other intellectual property rights, nor the rights of others. We make no representation or warranty of non-infringement or alleged non-infringement of intellectual property rights of any third party which may arise from applications. Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact the nearest sales office. This document supersedes and replaces all information previously supplied and may be superseded by updates. We reserve the right to make changes.