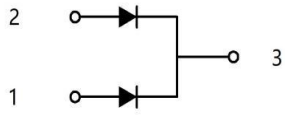
Fast Recovery Diode Module

Symbol	Value	Unit
V_R	400	V
I_{FAV}	300	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
VR	Maximum D.C. Reverse Voltage		400	V
VRRM	Maximum Repetitive Reverse Voltage			
IFAV	Average Forward Current	Rectangular， d=0.5， Tc=102℃, Per Leg	150	A
		Rectangular， d=0.5， Tc=102℃, Per Module	300	
IFRMS	RMS Forward Current	Tc=102℃, Per Leg	210	A
IFSM	Non-Repetitive Peak Surge Current	Tj = 25℃， t = 50Hz(10ms), VR = 0V， Per Leg	2250	A
I^2t	Circuit Fusing Consideration	t = 10ms Tj =25℃	25310	A^2s
Ptot	Total Power Dissipation	Tj =25℃	625	W
Tj	Operating Junction Temperature		-40 to +150	℃
Tstg	Storage Temperature		-40 to +125	℃
Mt	Mounting Torque	To Terminals(M6)	5±15%	N·m
Ms		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		65	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
Rth(j-c)	Thermal Impedance, Max	Junction to Case(Per Leg)	0.20	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop Per Leg, Max	Tj=25℃, I_F=150A	–	–	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, IRR=-0.25A	–	90	–	ns
t_{rr}	Reverse Recovery Time	IF=150A,VR=200V, diF/dt=-200A/μs, Tj=25℃	–	83	–	ns
I_{RM}	Maximum Reverse Recovery Current	IF=150A,VR=200V, diF/dt=-200A/μs, Tj=125℃	–	9.5	–	A
t_{rr}	Reverse Recovery Time	T_j = 125℃	–	145	–	ns
I_{RM}	Maximum Reverse Recovery Current	T_j = 125℃	–	16	–	A
V_{T0}	Threshold Voltage, for power loss calculation only	IF=0.5A, IR=-1A, IRR=-0.25A		0.7		V
r_T	Slope Resistance, for power loss calculation only	IF=150A,VR=200V, diF/dt=-200A/μs, Tj=25℃		3.0		mΩ

Characteristics Diagram

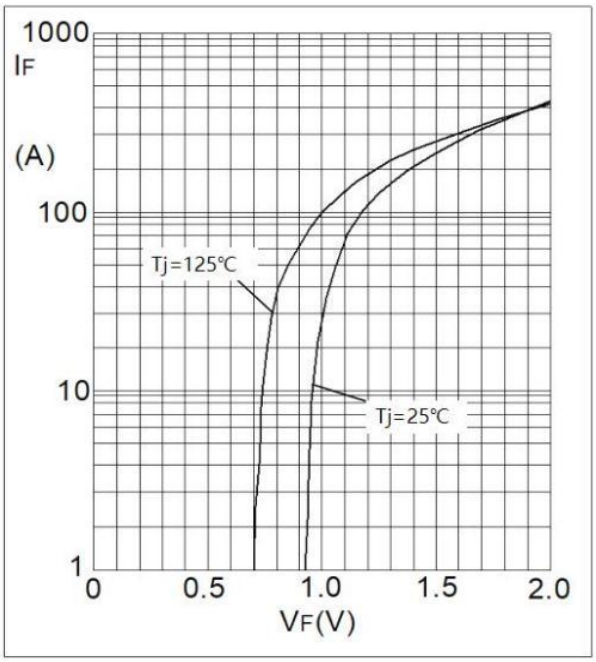


Fig1. Forward Characteristics

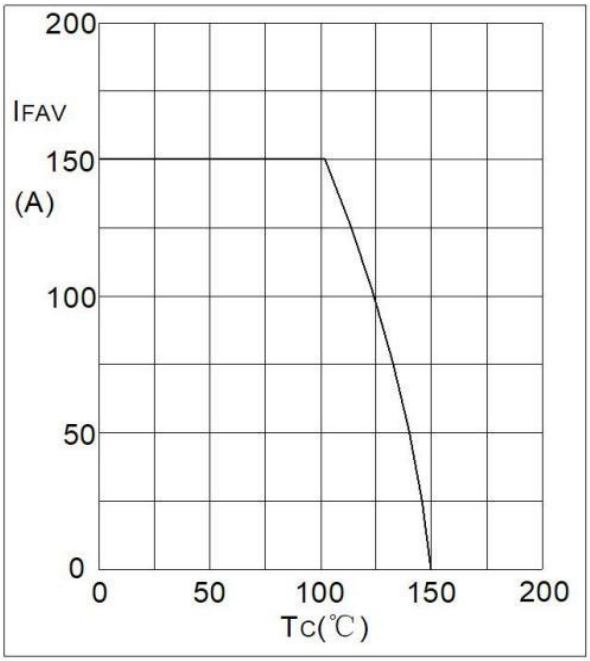


Fig2. Forward Current Derating Curve

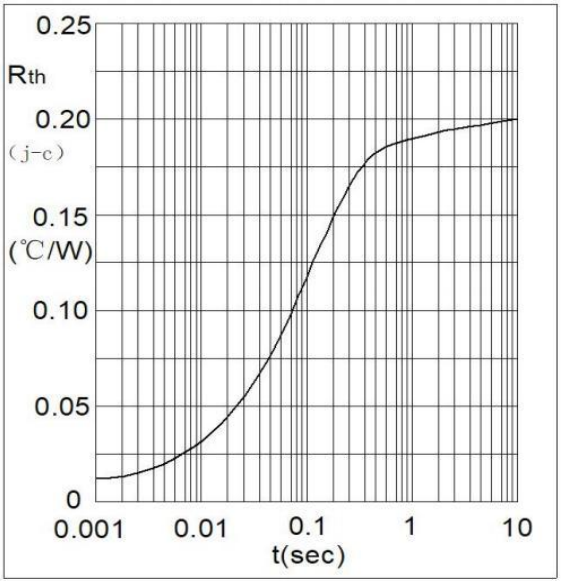


Fig3. Transient Thermal Impedance

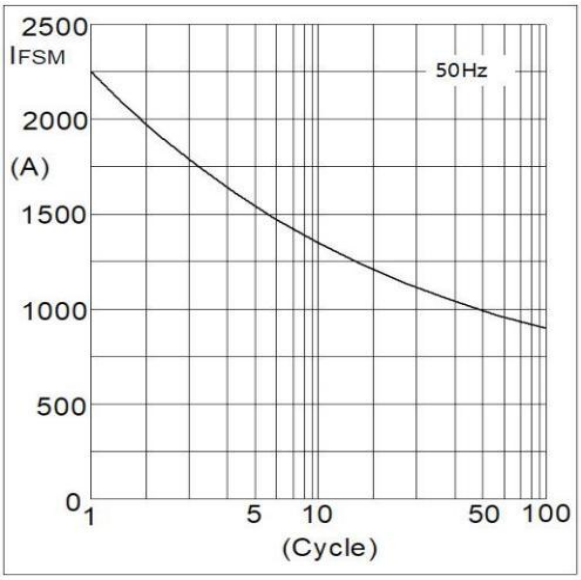


Fig4. Max Non-Repetitive Forward Surge Current

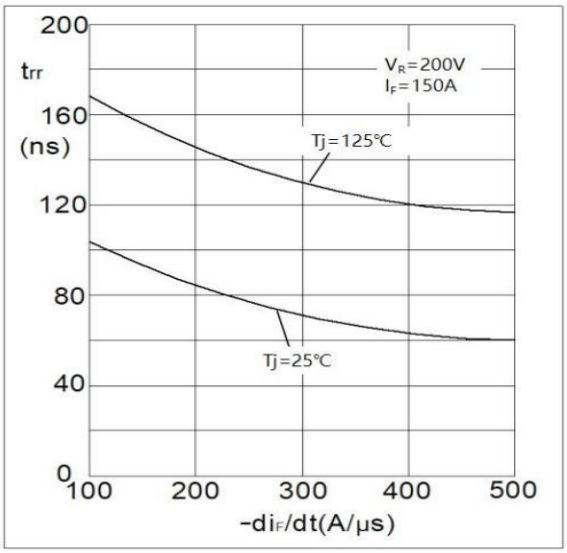


Fig5. Reverse Recovery Time VS diF/dt

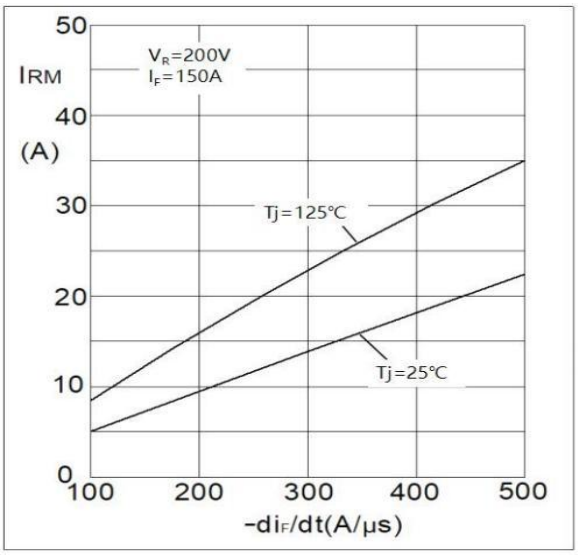


Fig6. Reverse Recovery Current VS diF/dt

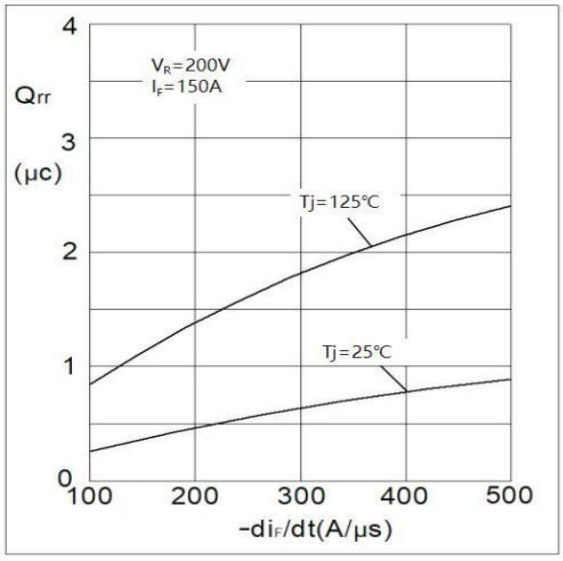
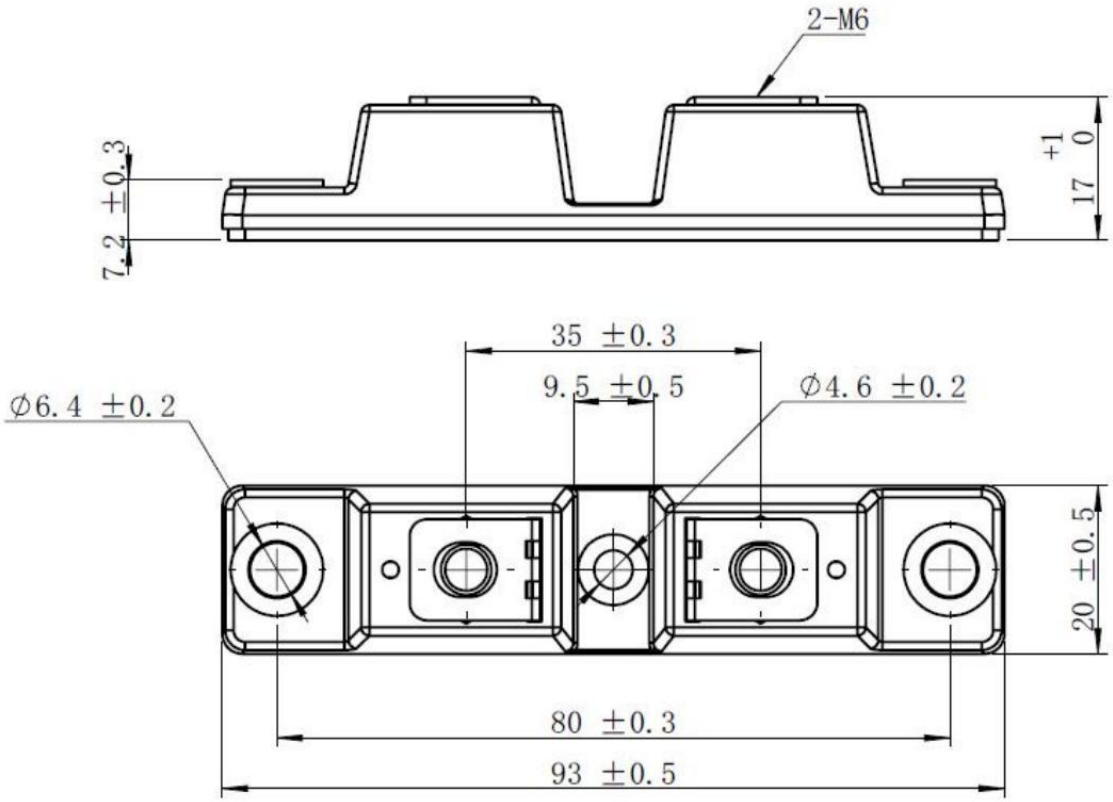


Fig7. Reverse Recovery Charge VS diF/dt

Package Outlines(Dimensions in mm)



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