Fast Recovery Diode Module

Reverse Voltage 1200V

Forward Current 200 Amp

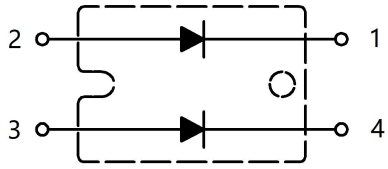
Features

- Ultrafast Reverse RecoveryTime
- Soft Reverse Recovery Characteris
- 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

Circuit



■ Maximum Ratings

Symbol	Item	Conditions	Values	Unit
V_R	Maximum D.C. Reverse Voltage		1200	V
V_{RRM}	Maximum Repetitive Reverse Voltage			
I_{FAV}	Average Forward Current	Rectangular， d=0.5， Tc=73℃， Per Leg	100	A
		Rectangular， d=0.5， Tc=73℃， Per Module	200	
I_{FRMS}	RMS Forward Current	Tc=73℃， Per Leg	141	A
I_{FSM}	Non-Repetitive Peak Surge Current	T_j = 25℃, t = 50Hz(10ms), V_R = 0V， Per Leg	1400	A
I^2t	Circuit Fusing Consideration	t = 10ms T_j =25℃	9800	A^2s
P_{tot}	Total Power Dissipation	T_j =25℃	357	W
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	3000	V
T_j	Operating Junction Temperature		-40 to +150	℃
T_{stg}	Storage Temperature		-40 to +125	℃
M_t	Mounting Torque	To Terminals(M4)	0.7~1.1	N·m
M_s		To Heatsink(M4)	0.7~1.1	
Weight	Module (Approximately)		34	g

■ Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Leg)	0.35	℃/W
$R_{th(c-s)}$	Thermal Impedance, Max	Case to Heat Sink	0.1	℃/W

■ Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop Per Leg, Max	T_j = 25℃， I_F=100A	—	—	2.1	V
I_{RRM}	Repetitive Peak Reverse Current Per Leg, Max	T_j = 25℃ $V_R = V_{RRM}$	—	—	0.5	mA
		T_j = 150℃ $V_R = V_{RRM}$	—	—	10	

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
t_{rr}	Typical Reverse Recovery Time Per Leg	I_F = 0.5A, I_R = -1A, I_{RR} = -0.25A	—	90	—	ns
t_{rr}	Reverse Recovery Time	I_F=100A,V_R=600V, di_F/dt =-200A/μs, T_j = 25℃	—	130	—	ns
I_{RM}	Maximum Reverse Recovery Current		—	10	—	A
t_{rr}	Reverse Recovery Time	I_F=100A,V_R=600V, di_F/dt =-200A/μs, T_j =125℃	—	260	—	ns
I_{RM}	Maximum Reverse Recovery Current		—	25	—	A
V_{T0}	Threshold Voltage, for power loss calculation only	T_j = 125℃	1.20			V
r_T	Slope Resistance, for power loss calculation only	T_j = 125℃	5.0			mΩ

Performance Curves

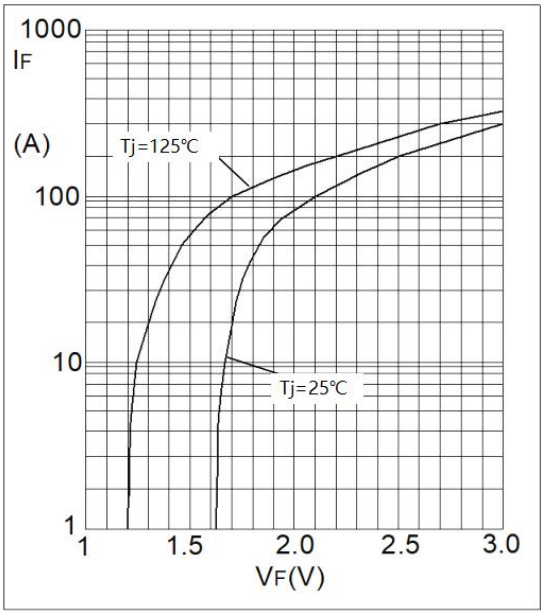


Fig1. Forward Characteristics

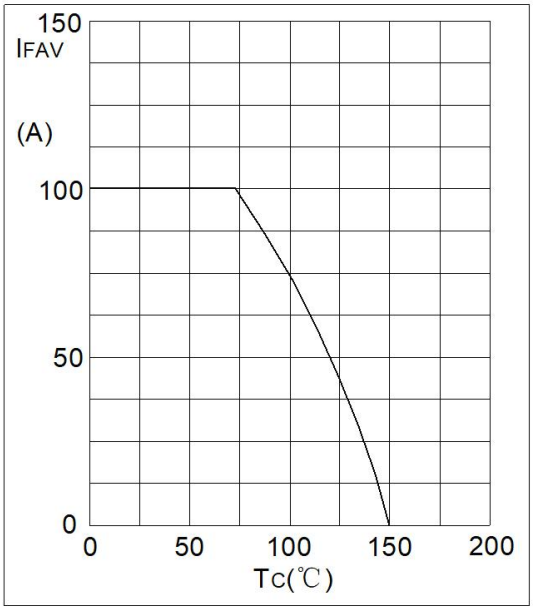


Fig2. Forward Current Derating Curve

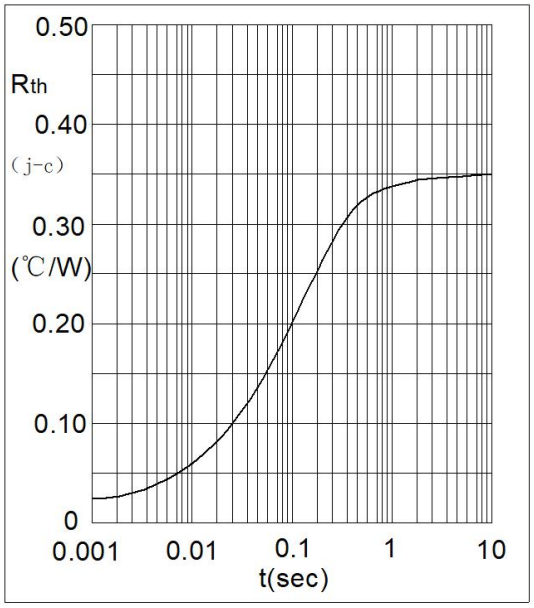


Fig3. Transient Thermal Impedance

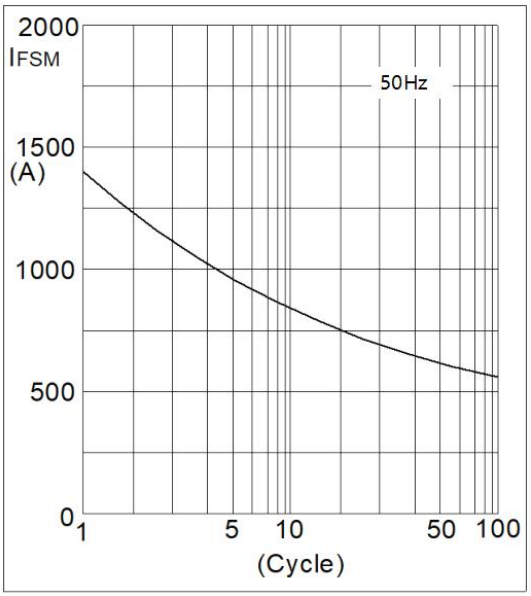


Fig4. Max Non-Repetitive Forward Surge Current

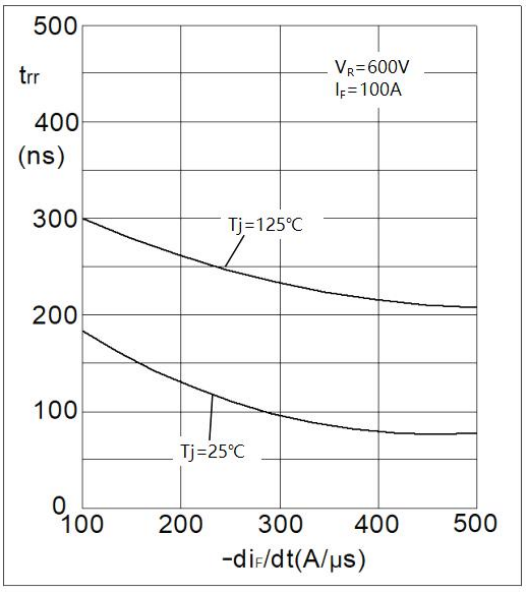


Fig5. Reverse Recovery Time VS di_F/dt

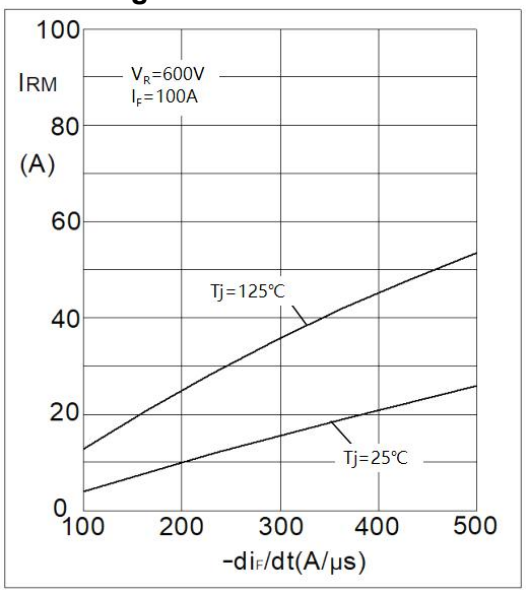


Fig6. Reverse Recovery Current VS di_F/dt

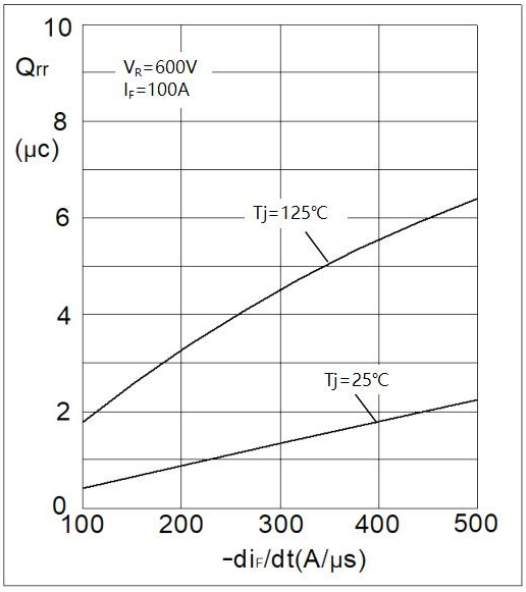
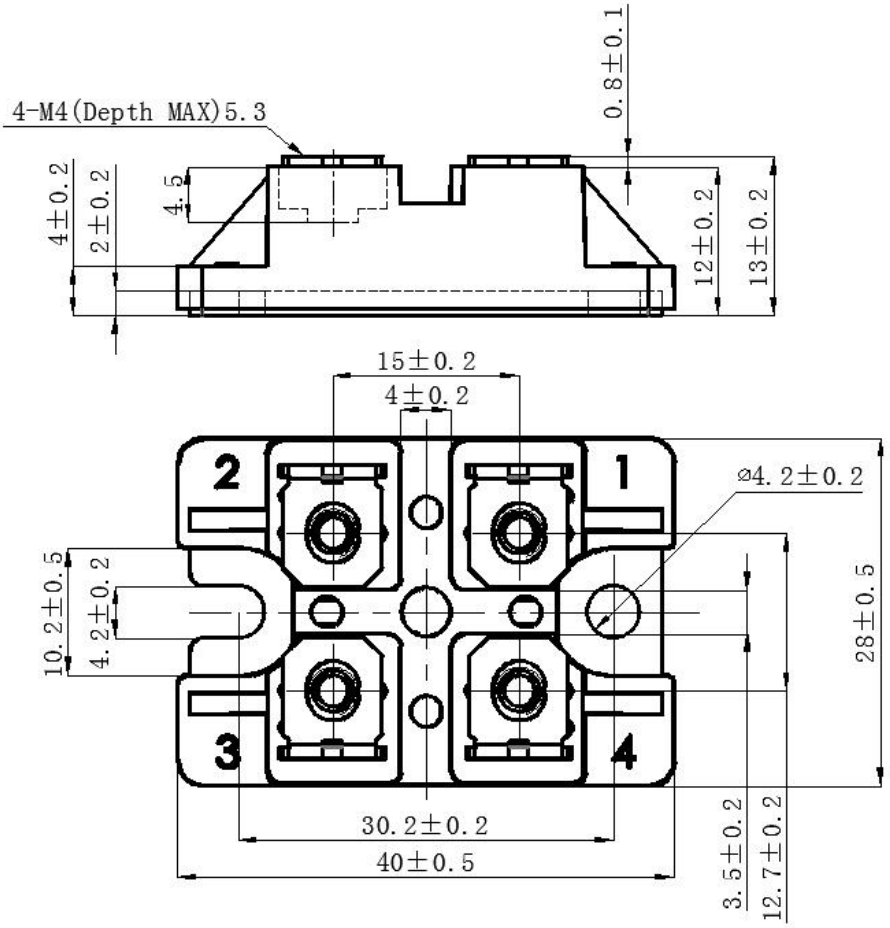


Fig7. Reverse Recovery Charge VS di_F/dt

Package Outline Information

CASE: M58



Dimensions in mm

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