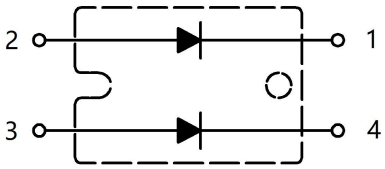
Fast Recovery Diode Module

Symbol	Value	Unit
V_R	600	V
I_{FAV}	200	A



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	-	600	V
V_{RRM}	Maximum Repetitive Reverse Voltage	-		
I_{FAV}	Average Forward Current	Rectangular, d=0.5, T_C=93℃, Per Leg	100	A
		Rectangular, d=0.5, T_C=93℃, Per Module	200	
I_{FRMS}	RMS Forward Current	T_C=93℃, Per Leg	141	A
I_{FSM}	Non-Repetitive Peak Surge Current	t=50Hz(10ms), V_R=0V, Per Leg, T_j= 25℃	1500	A
I^2t	Circuit Fusing Consideration	t=10ms, T_j=25℃	11250	A^2s
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz/60Hz, R.M.S, 1min	3000	V
P_{tot}	Total Power Dissipation	T_j=25℃	417	W
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)	0.3	℃/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	-	-	1.35	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	-	80	-	ns
t_{rr}	Reverse Recovery Time	I_F=100A, V_R=300V, di_F/dt=-200A/μs, T_j=25℃	-	80	-	ns
I_{RM}	Maximum Reverse Recovery Current		-	12	-	A
t_{rr}	Reverse Recovery Time	I_F=100A, V_R=300V, di_F/dt=-200A/μs, T_j=125℃	-	170	-	ns
I_{RM}	Maximum Reverse Recovery Current		-	18	-	A
V_{T0}	Threshold Voltage, for power loss calculation only	T_j=125℃		0.6		V
r_T	Slope Resistance, for power loss calculation only	T_j=125℃		6.5		mΩ

Characteristics Diagram

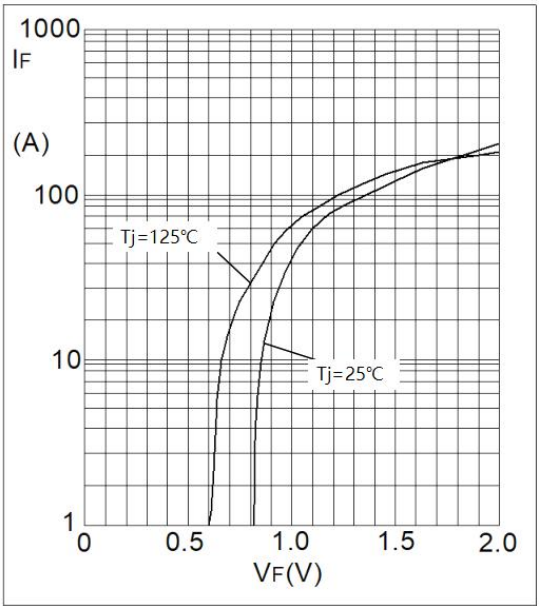


Fig1. Forward Characteristics

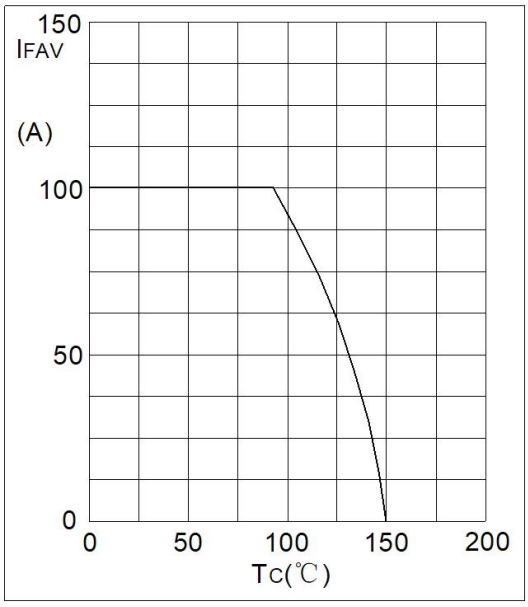


Fig2. Forward Current Derating Curve

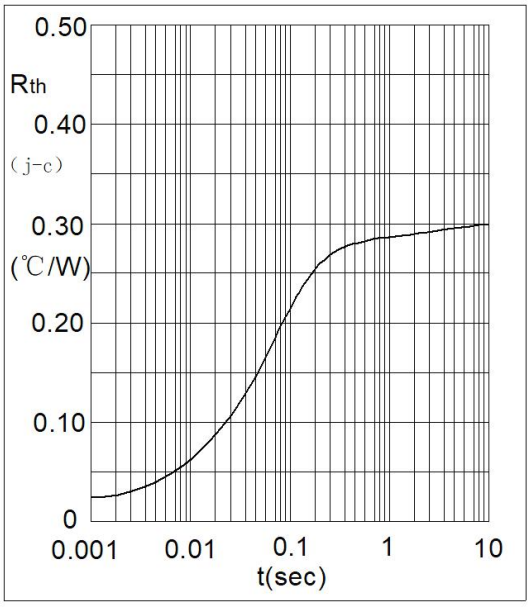


Fig3. Transient Thermal Impedance

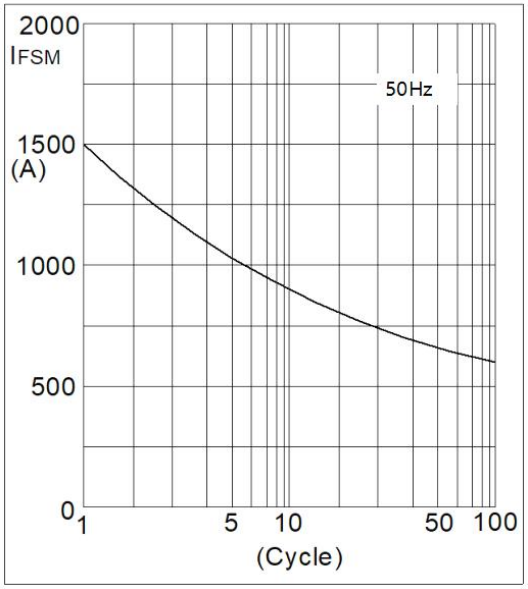


Fig4. Max Non-Repetitive Forward Surge Current

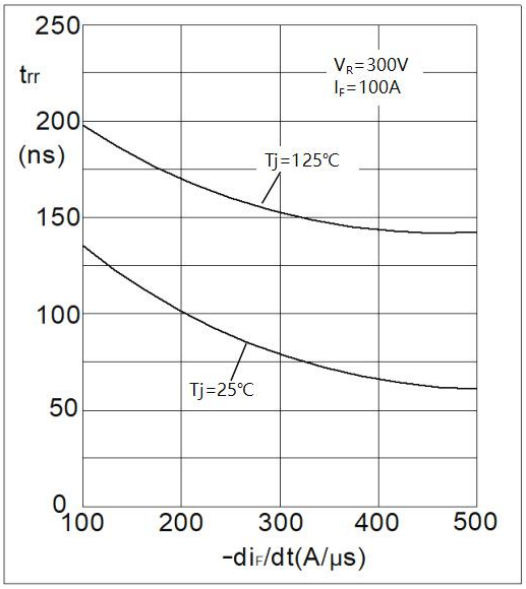


Fig5. Reverse Recovery Time VS diF/dt

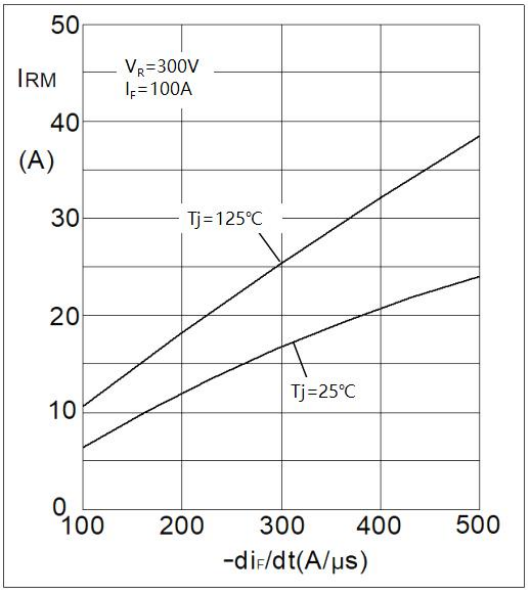


Fig6. Reverse Recovery Current VS diF/dt

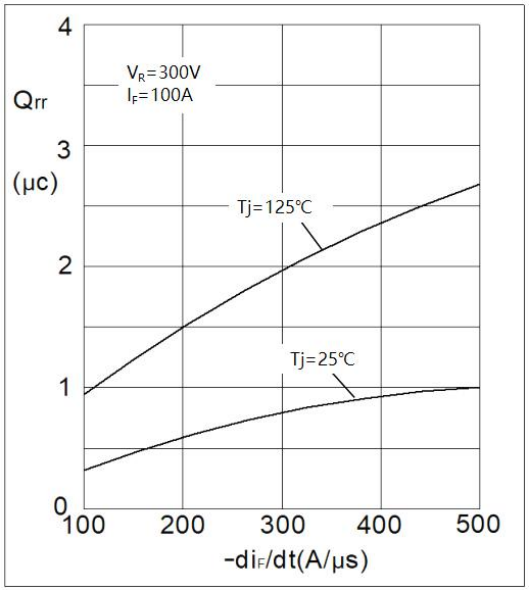
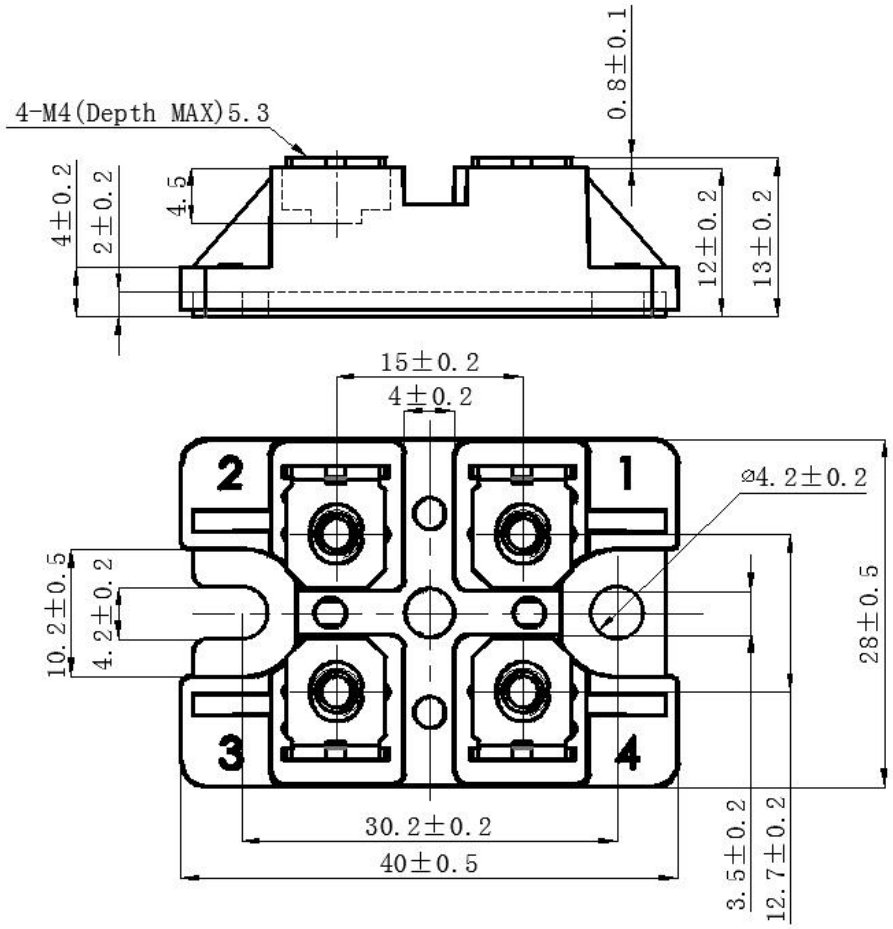


Fig7. Reverse Recovery Charge VS diF/dt

Package Outlines M58 (Dimensions in mm)



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