

Fast Recovery Diode Module

Parameter	Value	Unit
Reverse Voltage	1200	V
Forward Current	120	A

Features

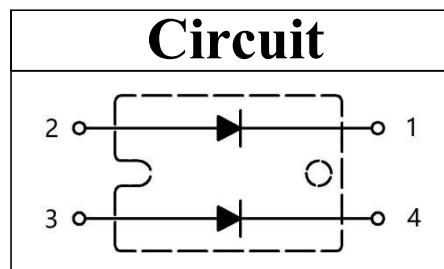
- Ultra fast Reverse Recovery Time
- Soft Reverse Recovery Characteris
- Low Reverse Recovery Loss
- High System Power Density

Applications

- Inversion Welder
- Power Factor Correction(PFC)Circuit
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper



Circuit



Maximum Ratings

Symbol	Description	Conditions	Value	Unit
VR	Maximum D.C. Reverse Voltage		1200	V
VRRM	Maximum Repetitive Reverse Voltage			
IFAV	Average Forward Current	Rectangular, d=0.5, Tc=71℃, Per Leg	60	A
		Rectangular, d=0.5, Tc=71℃, Per Module	120	
IFRMS	RMS Forward Current	Tc=71℃, Per Leg	84	A
IFSM	Non-Repetitive Peak Surge Current	Tj=25℃, t=50Hz(10ms), VR=0V, Per Leg	550	A
i ² t	Circuit Fusing Consideration	t=10ms Tj=25℃	1510	A ² s
Ptot	Total Power Dissipation	Tj=25℃	208	W
VISO	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	3000	V
Tj	Operating Junction Temperature		-40 to+150	℃
Tstg	Storage Temperature		-40 to+125	℃
Mt	Mounting Torque	To Terminals(M4)	0.7~1.1	N·m
Ms		To Heatsink(M4)	0.7~1.1	
Weight	Module (Approximately)		34	g

Thermal Characteristics

Symbol	Description	Conditions	Value	Unit
Rth(j-c)	Thermal Impedance, Max	Junction to Case(Per Leg)	0.6	℃/W
Rth(c-s)	Thermal Impedance, Max	Case to Heat Sink	0.1	℃/W

Electrical Characteristics

Symbol	Description	Conditions	Value			Unit
			Min.	Typ.	Max.	
V _{FM}	Forward Voltage Drop Per Leg, Max	T _j =25°C, I _F =60A	-	-	2.1	V
I _{RRM}	Repetitive Peak Reverse Current Per Leg, Max	T _j =25°C, V _R =V _{RRM}	-	-	0.5	mA
		T _j =150°C V _R =V _{RRM}	-	-	10	
t _{rr}	Typical Reverse Recovery Time Per Leg	I _F =0.5A, I _R = -1A, I _{RR} = -0.25A	-	50	-	ns
t _{rr}	Reverse Recovery Time	I _F =60A, V _R =600V, diF/dt = -200A/μs, T _j =25°C	-	150	-	ns
I _{RM}	Maximum Reverse Recovery Current	I _F =60A, V _R =600V, diF/dt = -200A/μs, T _j =25°C	-	15	-	A
t _{rr}	Reverse Recovery Time	I _F =60A, V _R =600V, diF/dt = -200A/μs, T _j =125°C	-	340	-	ns
I _{RM}	Maximum Reverse Recovery Current	I _F =60A, V _R =600V, diF/dt = -200A/μs, T _j =125°C	-	28	-	A
V _{T0}	Threshold Voltage, for power loss calculation only	T _j =125°C	1.2			V
r _T	Slope Resistance, for power loss calculation only	T _j =125°C	8.3			mΩ

Characteristics diagrams

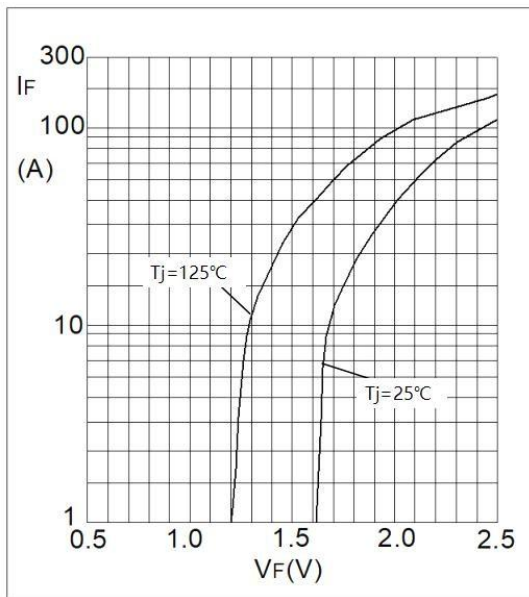


Fig1. Forward Characteristics

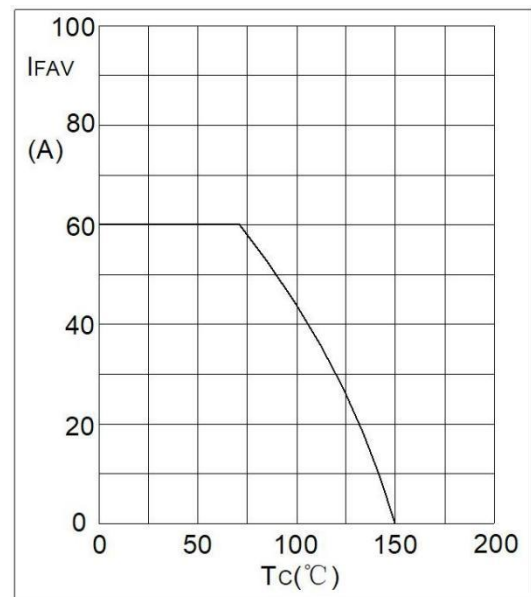


Fig2. Forward Current Derating Curve

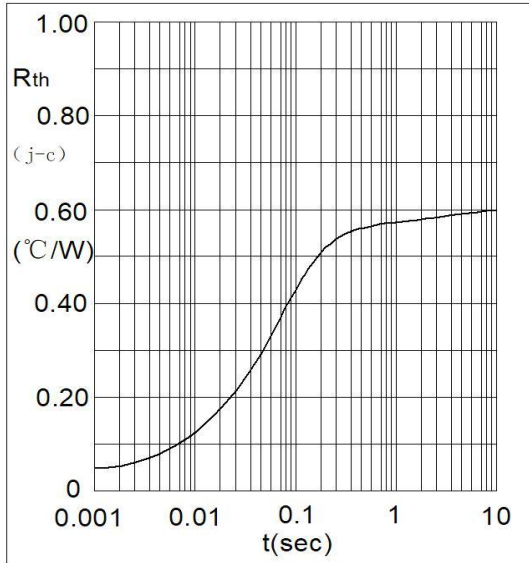


Fig3. Transient Thermal Impedance

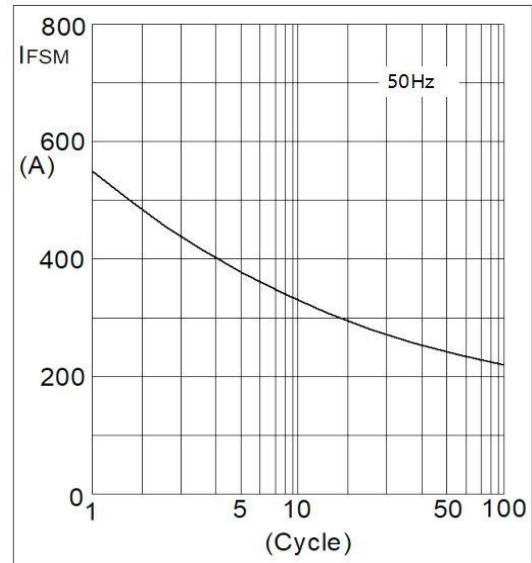


Fig4. Max Non-Repetitive Forward Surge Current

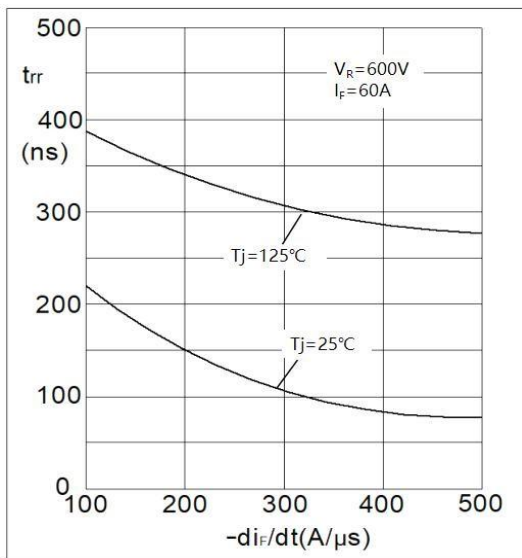


Fig5. Reverse Recovery Time VS di_F/dt

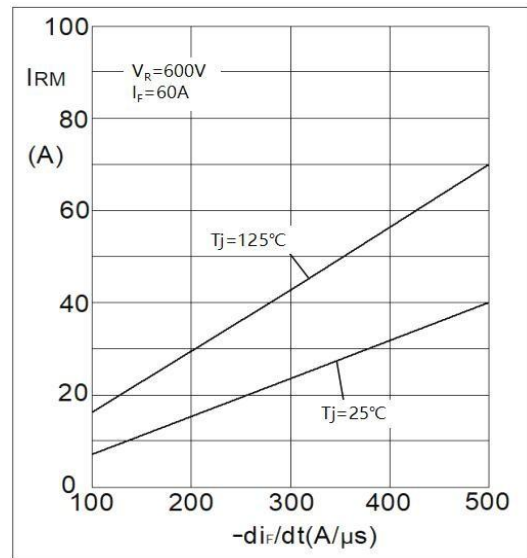


Fig6. Reverse Recovery Current VS di_F/dt

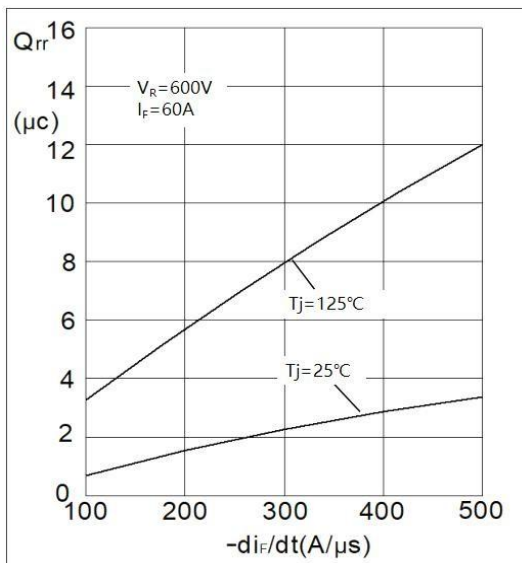
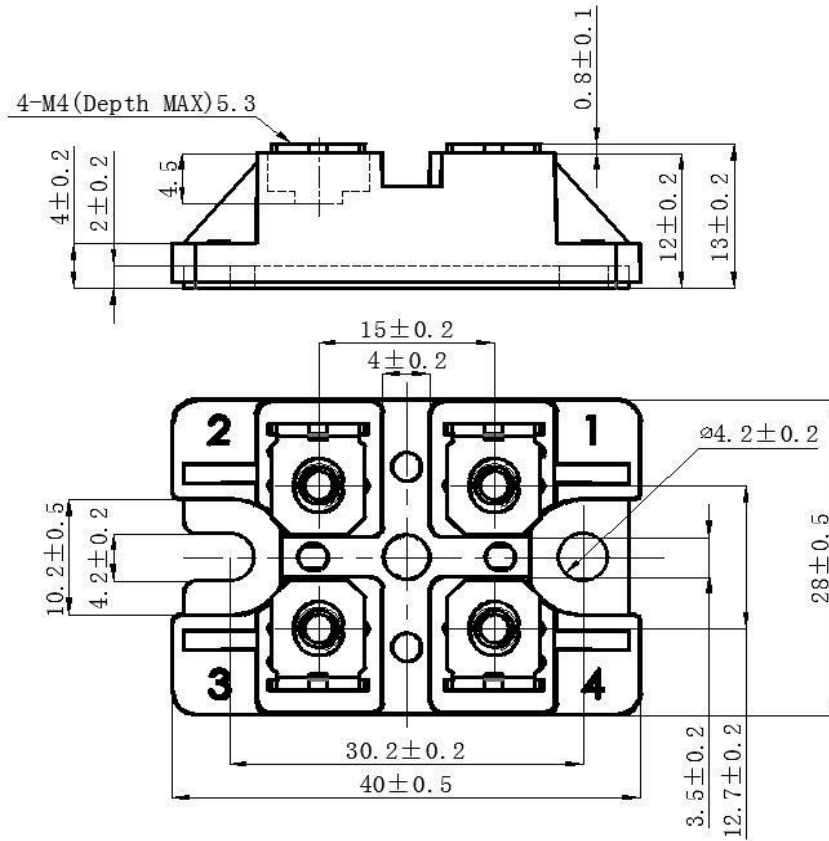


Fig7. Reverse Recovery Charge VS di_F/dt

Package Outline

CASE: SOT227B/M58



Dimensions in mm

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