

FRED Modules

VRRM 1200V
IFAV 300 A

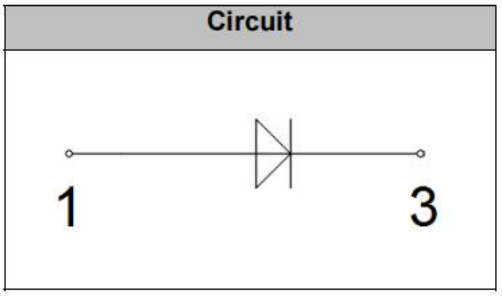
Applications

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

Features

- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability

Circuit



Maximum Ratings

Symbol	Conditions	Values	Units
V_R		1200	V
V_{RRM}		1200	V
I_{FAV}	T_C=100°C, Per Module	300	A
I_{FRMS}	T_C=100°C, Per Module	420	A
I_{FSM}	t=10ms T_J=25℃	2800	A
I^2t	t=10ms T_J=25℃	39200	A^2s
P_D		694	W
V_{ISO}	AC 50Hz/60Hz; R.M.S; 1min	3000	V
T_J		-40 to +150	℃
Tstg		-40 to +125	℃
Mt	To Terminals(M6)	5±15%	N·m
Ms	To Heatsink(M6)	5±15%	N·m
Weight		150	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Junction to Case(Per Module)	0.18	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=1200V	--	--	0.5	mA
	V_R=1200V, T_J=125°C	--	--	5	mA
V_F	I_F=300A	--	1.9	2.2	V
	I_F=300A, T_J=125°C	--	1.7	2.0	V
trr	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	65	--	ns
trr	V_R=600V, I_F=300A, di_F/dt=-200A/μs, TJ=25°C	--	135	--	ns
I_{RRM}		--	10	--	A
trr	V_R=600V, I_F=300A, di_F/dt=-200A/μs, TJ=125°C	--	385	--	ns
I_{RRM}		--	25	--	A

Performance Curves

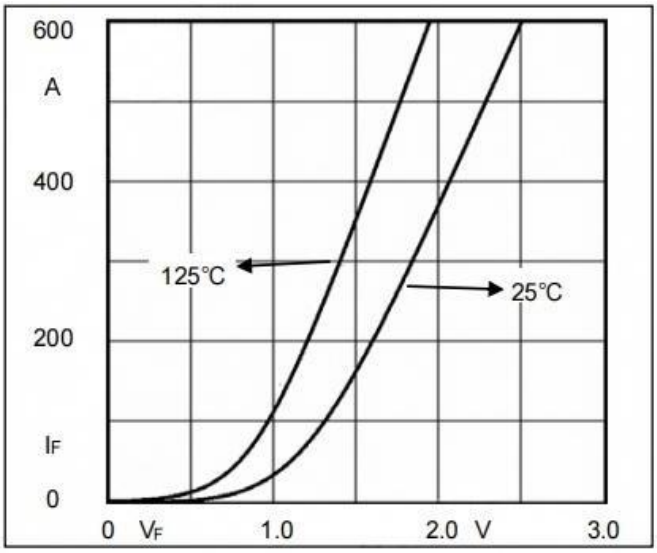


Fig1. Forward Characteristics

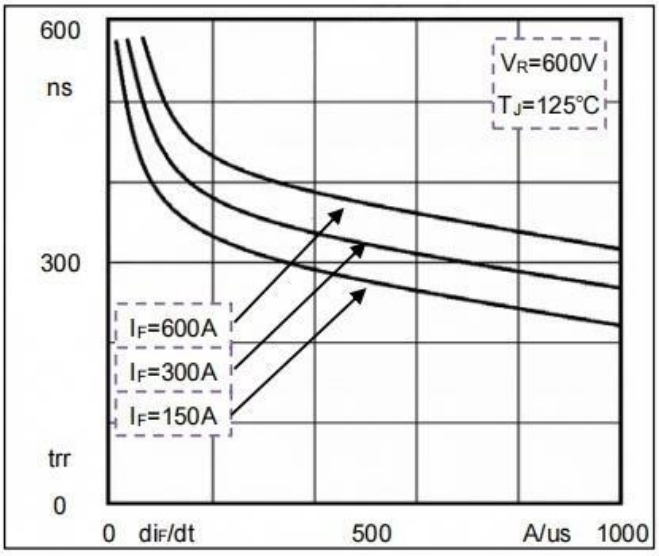


Fig2.Reverse Recovery Time vs di_F/dt

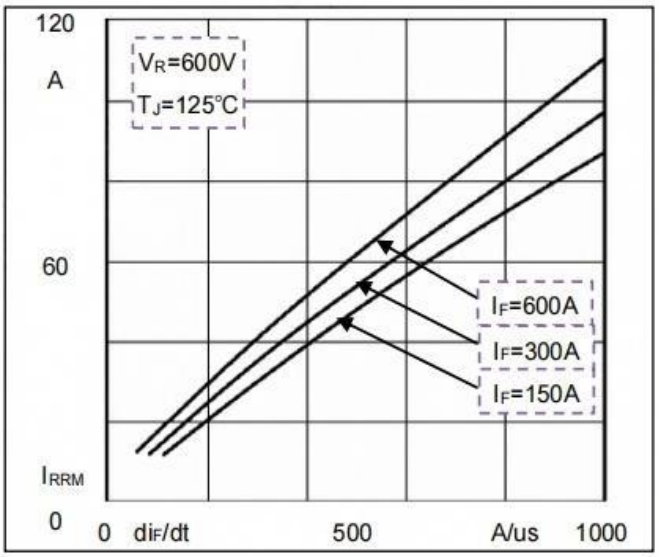


Fig3. Reverse Recovery Current vs di_F/dt

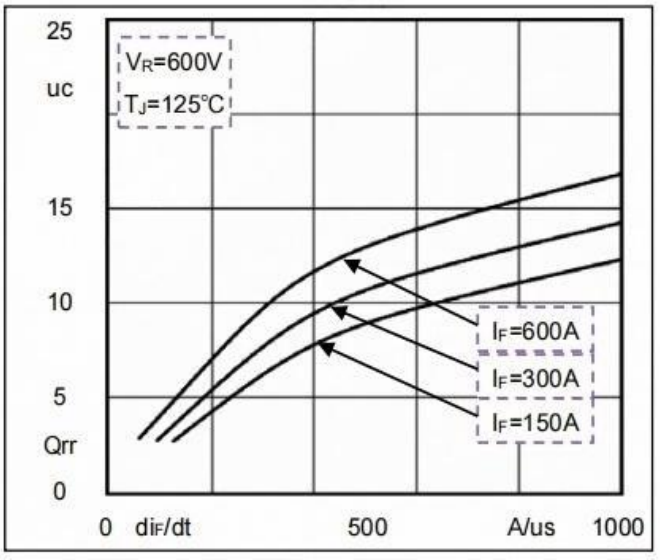
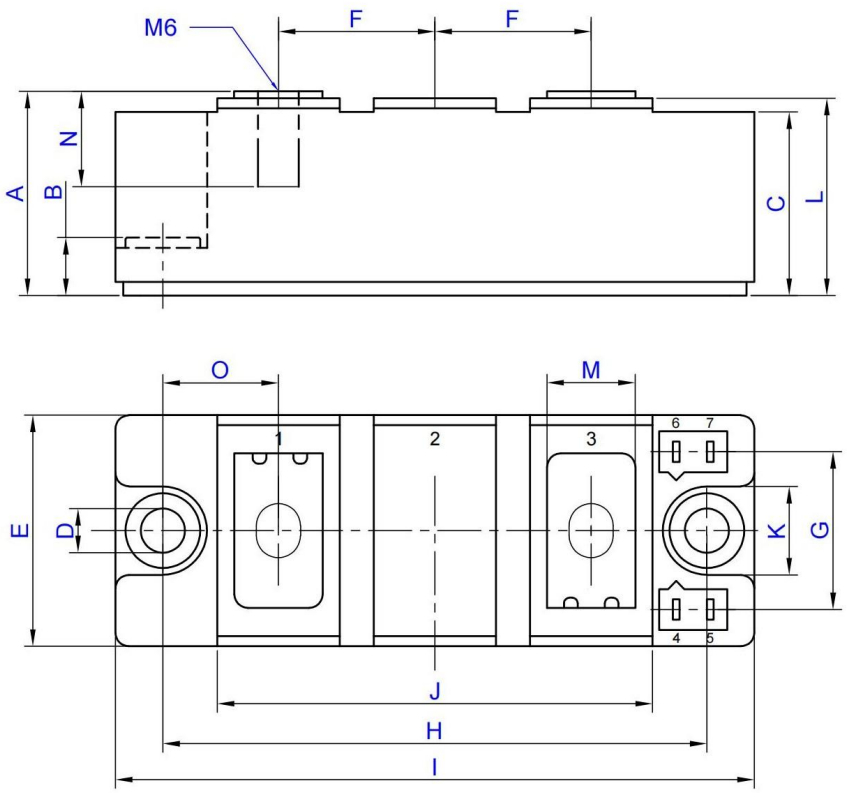


Fig4. Reverse Recovery Charge vs diF/dt

Package Outline Information

CASE: F2



DIM	Min (mm)	Max (mm)	Note
A	29.5	30.5	
B	8.0	9.0	
C	26.5	27.5	
D	6.3	6.7	Ø
E	33.5	34.5	
F	22.8	23.2	
G	22.7	23.7	
H	79.5	80.5	
I	93.5	94.5	
J	63.5	64.5	
K	12.5	13.5	
L	28.5	29.5	
M	12.9	13.1	
N	13.5	14.5	
O	16.5	17.5	

Packing Standard

Item	Length: A(mm)	Width: B(mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	48	8
Outer Carton	545	295	240	80

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