

FRED Modules

VRRM 600V
ID 60 A

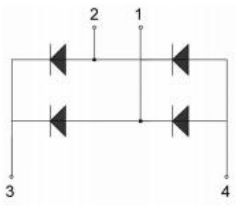
Applications

- 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
- Popular SOT-227 Package

Circuit



Maximum Ratings

Symbol	Conditions	Values	Units
VR		600	V
I_D	Single phase,halfwave180°conduction Tc=85℃	60	A
I_{FSM}	t=10ms T_J=25℃	380	A
I^2t	t=10ms T_J=25℃	720	A2s
P_D		156	W
V_{ISO}	AC 50Hz/60Hz; R.M.S; 1min	3000	V
T_J		-40 to +150	℃
Tstg		-40 to +125	℃
Mt	To Terminals(M4)	1±15%	N·m
Ms	To Heatsink(M4)	1±15%	N·m
Weight		27	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Junction to Case(Per Leg)	0.8	℃/W
Rth(c-h)	Case to Heat Sink	0.2	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=600V	--	--	0.5	mA
	V_R=600V, T_J=125°C	--	--	5	mA
V_F	I_F=30A	--	1.6	1.8	V
	I_F=30A, T_J=125°C	--	1.5	1.7	V
trr	I_F=1A, V_R=30V, d_{iF}/dt=-200A/μs	--	25	--	ns
trr	V_R=300V, I_F=30A, d_{iF}/dt=-200A/μs, T_J=25°C	--	15	--	ns
I_{RRM}		--	3	--	A
trr	V_R=300V, I_F=30A, d_{iF}/dt=-200A/μs, T_J=125°C	--	24	--	ns
I_{RRM}		--	5	--	A

Performance Curves

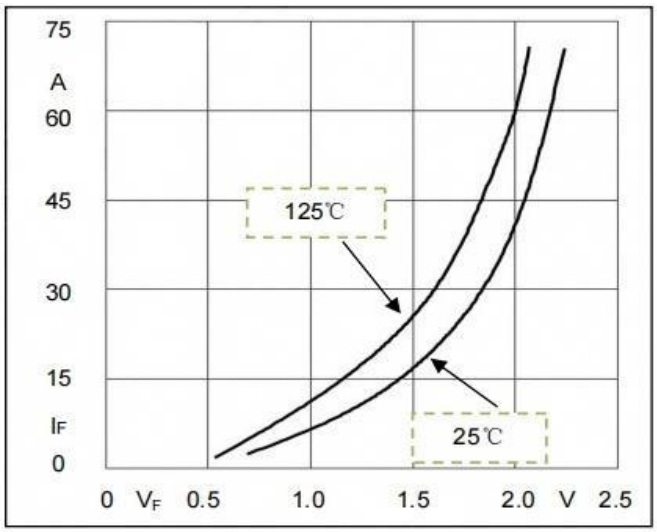


Fig1. Forward Voltage Drop vs Forward Current

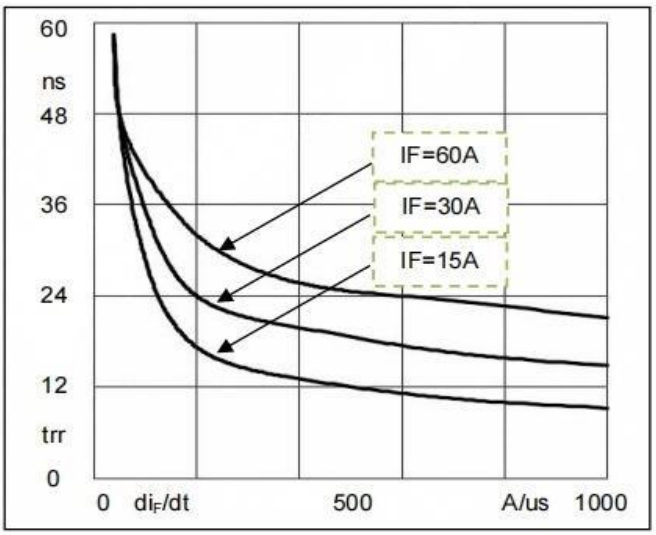


Fig2. Reverse Recovery Time vs diF/dt

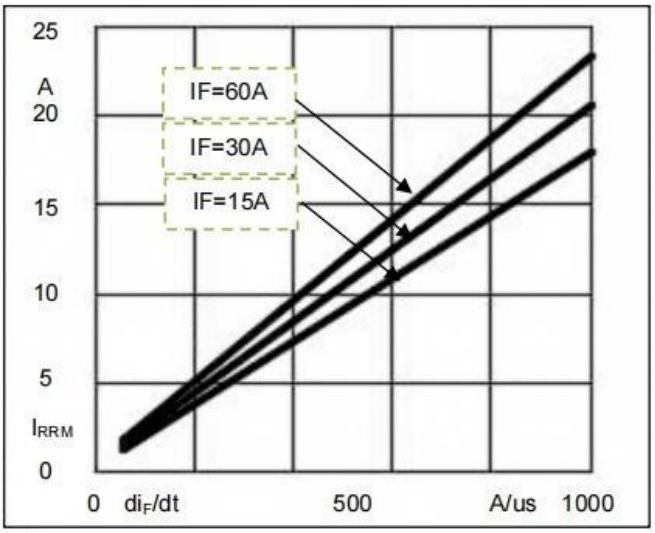


Fig3. Transient thermal impedance

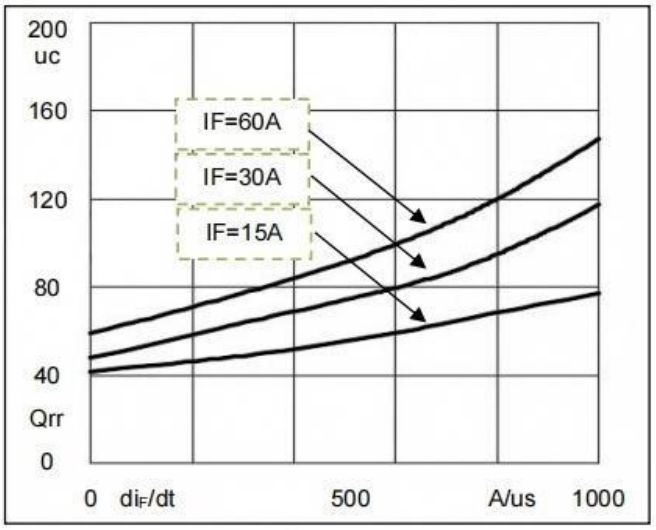
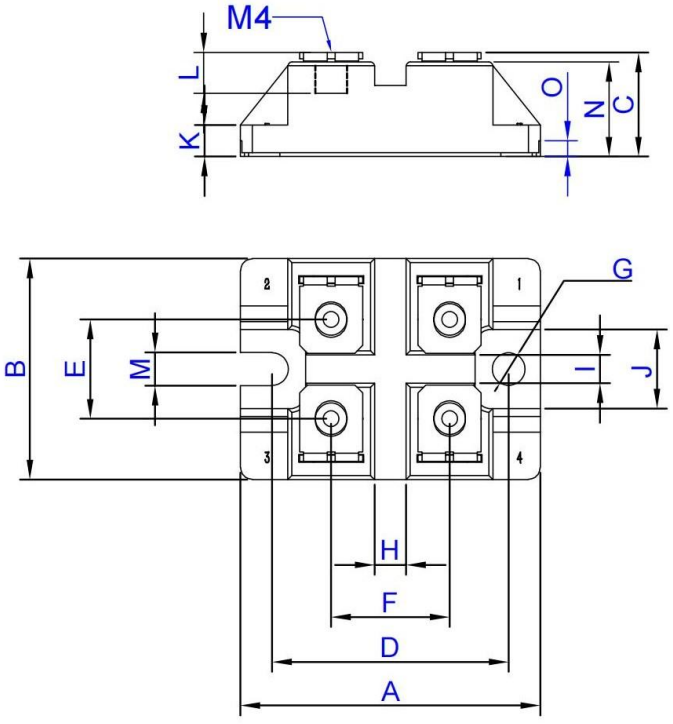


Fig4. Max Non-Repetitive Forward Surge Curr

Package Outline Information

CASE: FJ



DIM	Min (mm)	Max (mm)	Note
A	37.5	38.5	
B	27.5	28.5	
C	12.8	13.5	
D	29.5	30.5	
E	12.1	13.1	
F	14.5	15.5	
G	4.0	4.4	Ø
H	3.7	4.3	
I	3.3	3.9	
J	9.5	10.5	
K	3.7	4.3	
L	5.0	5.5	
M	4.0	4.4	
N	11.7	12.3	
O	1.8	2.2	

Packing Standard

Item	Length: A (mm)	Width: B (mm)	Height: C (mm)	Quantity (PCS)
Inner Box	290	252	40	25
Outer Carton	300	270	280	150

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