

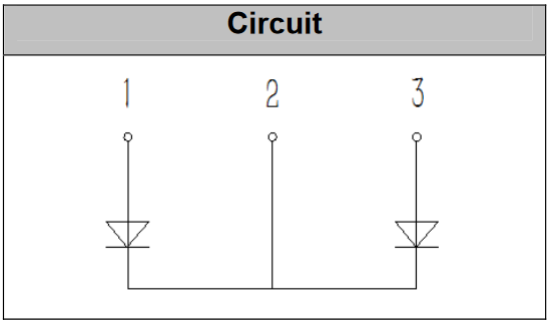
FRED Modules

V_{RRM} 1200V
I_{FAV} 400 A

Applications

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

Circuit



Features

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

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		1200	V
V_{RRM}		1200	V
$I_{F(AV)}$	T_C=90°C,	400	A
$I_{F(RMS)}$	T_C=90°C,	560	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	3200	A
	1/2 Cycle , 60Hz, Sine	3500	A
I^2t	T_J=45°C, t=10ms, 50Hz, Sine	51200	A^2s
	T_J=45°C, t=8.3ms, 60Hz, Sine		
P_D		1130	W
Visol	a.c.50HZ;r.m.s.;1min	3000	V
T_J		-40 to +150	°C
T_{STG}		-40 to +125	°C
Torque	Module-to-Sink Recommended（M6）	4.5	N·m
Torque	Module Electrodes Recommended（M6）	4.5	N·m
Weight		160	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per Diode	0.44	℃/W
$R_{th(j-c)}$	Per Module	0.22	℃/W
$R_{th(c-s)}$	Per Module	0.05	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=1200V	--	--	1	mA
	V_R=1200V, T_J=125°C	--	--	5	mA
V_F	I_F=400A	--	1.8	2.0	V
	I_F=400A, T_J=125°C	--	1.7	1.9	V
V_{FO}	T_J=25℃	—	1.07	—	V
	T_J=125℃	—	0.90	—	V
r_F	T_J=25℃	—	1.83	—	mΩ
	T_J=125℃	—	2.00	—	mΩ
trr	V_R=600V, I_F=400A, di_F/dt=-200A/μs, T_J=25°C	--	190	--	ns
I_{RRM}		--	15	--	A
trr	V_R=600V, I_F=400A, di_F/dt=-200A/μs, T_J=125°C	--	500	--	ns
I_{RRM}		--	35	--	A

Performance Curves

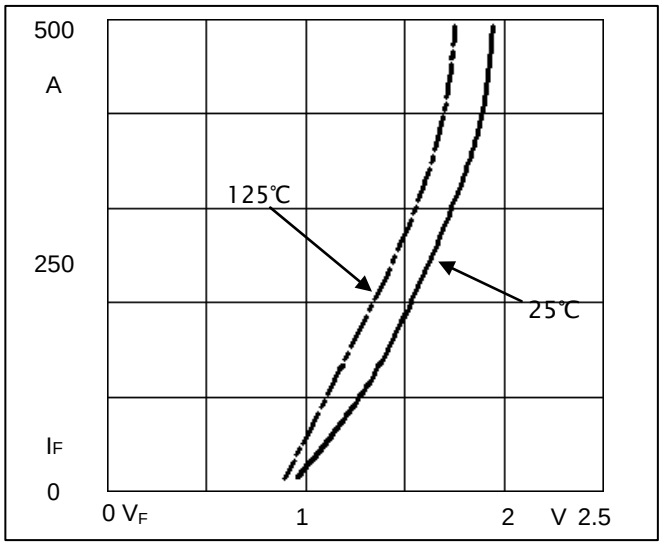


Fig1. Forward Voltage Drop vs Forward Current

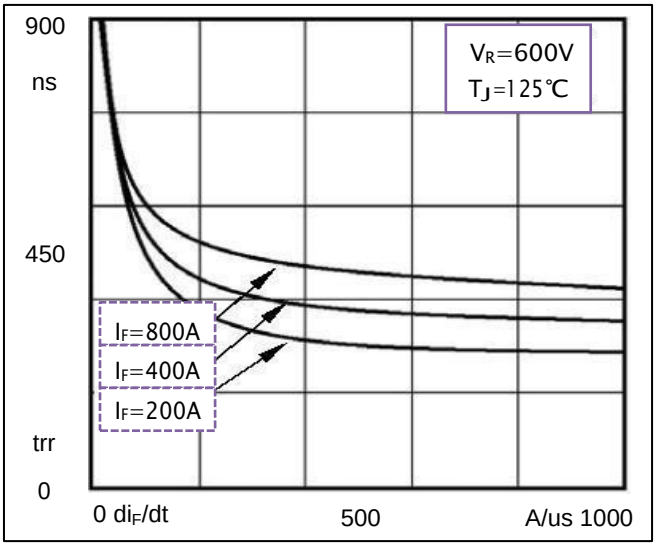


Fig2. Reverse Recovery Time vs di_F/dt

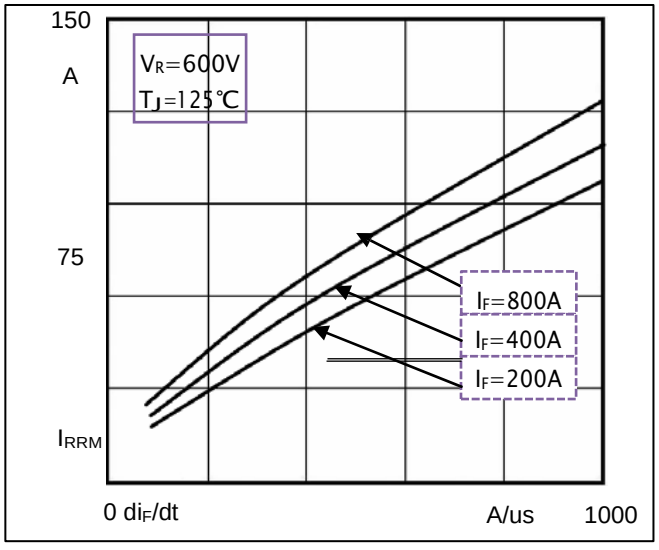


Fig3. Reverse Recovery Current vs di_F/dt

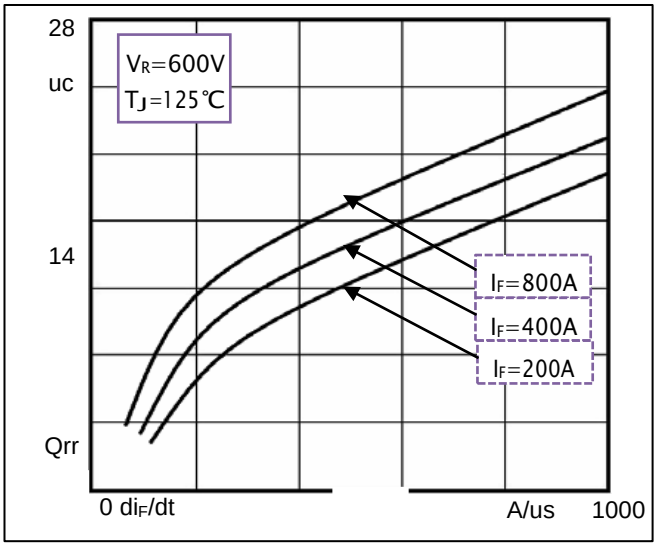
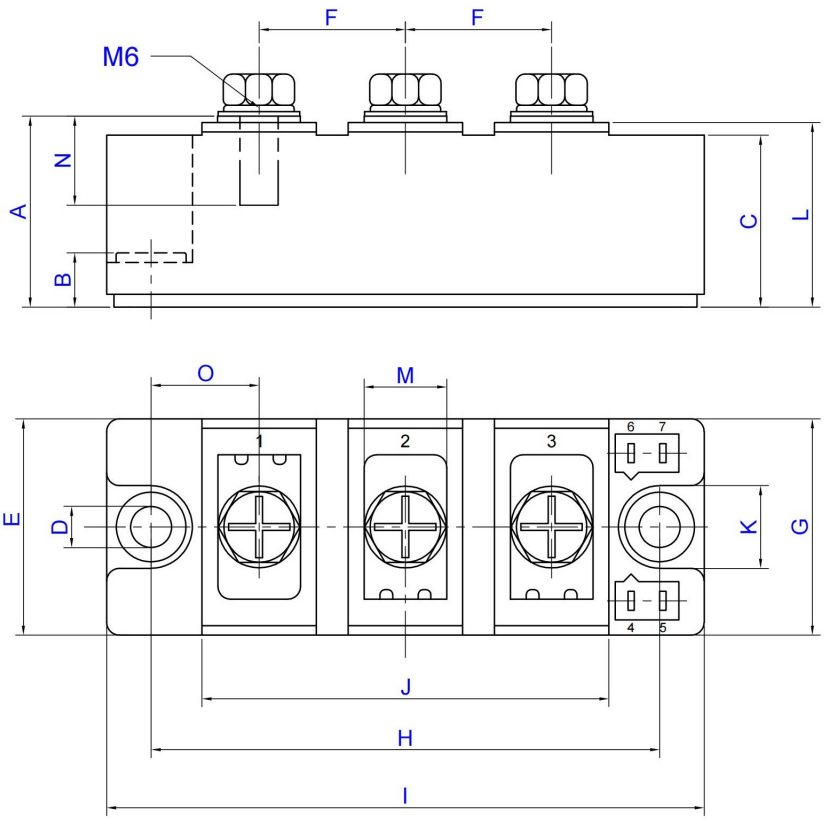


Fig4. Reverse Recovery Charge vs di_F/dt

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	6.2	6.8	Ø
E	33.5	34.5	
F	22.5	23.5	
G	12.9	13.1	
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	12.5	13.5	
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	40	8
Outer Carton	545	295	240	80

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