



FRED Modules

V_{RRM} 600V

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		600	V
V_{RRM}		600	V
$I_{F(AV)}$	$T_C=90^{\circ}\text{C}$,	400	A
$I_{F(RMS)}$	$T_C=90^{\circ}\text{C}$,	560	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	4000	A
	1/2 Cycle , 60Hz, Sine	4400	A
I^2t	$T_J=45^{\circ}\text{C}$, t=10ms, 50Hz, Sine	80000	A^2s
	$T_J=45^{\circ}\text{C}$, t=8.3ms, 60Hz, Sine	96800	
P_D		1130	W
T_J		-40 to +150	$^{\circ}\text{C}$
T_{STG}	Module-to-Sink Recommended (M6)	-40 to +125	$^{\circ}\text{C}$
Torque	Module Electrodes Recommended (M6)	4.5	N·m
Torque		4.5	N·m
Weight		160	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per Module	0.11	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=600V$	--	--	1	mA
	$V_R=600V, T_J=125^{\circ}C$	--	--	5	mA
V_F	$I_F=400A$	--	1.30	1.50	V
	$I_F=400A, T_J=125^{\circ}C$	--	1.25	1.45	V
t_{rr}	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	85	--	ns
t_{rr}	$V_R=300V, I_F=400A, di_F/dt=-200A/\mu s, T_J=25^{\circ}C$	--	160	--	ns
I_{RRM}		--	16	--	A
t_{rr}	$V_R=300V, I_F=400A, di_F/dt=-200A/\mu s, T_J=125^{\circ}C$	--	400	--	ns
I_{RRM}		--	32	--	A

Performance Curves

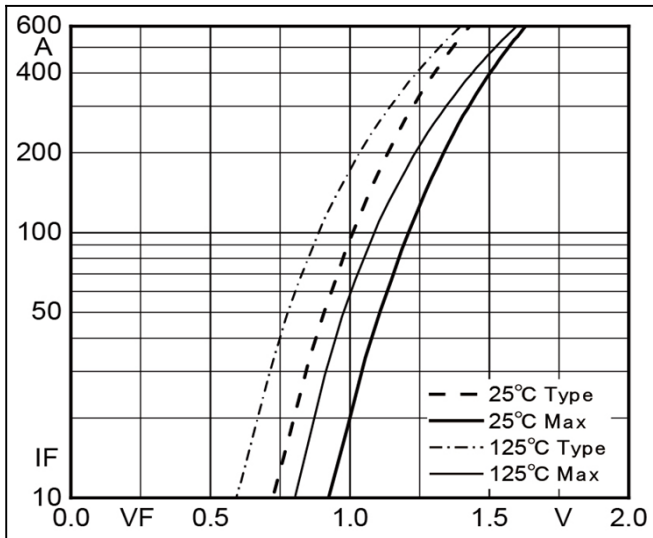


Fig1. Forward Voltage Drop vs Forward Current

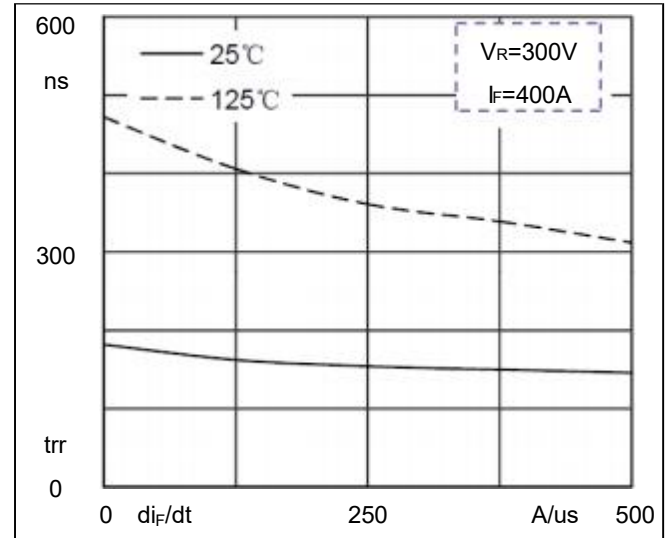


Fig2. Reverse Recovery Time vs di_F/dt

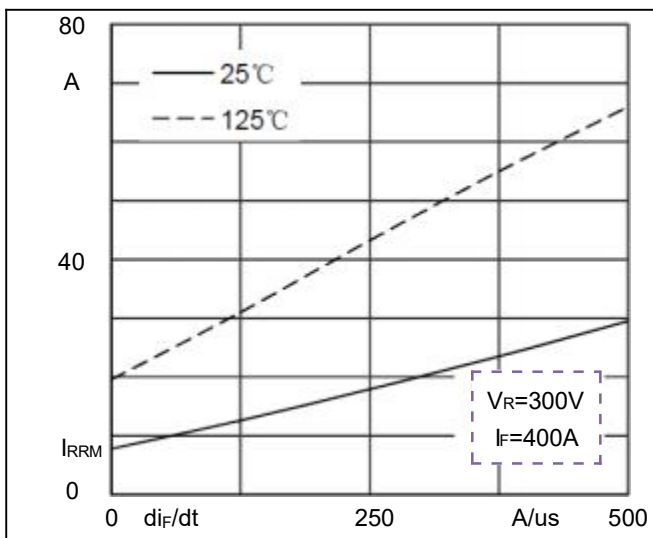


Fig3. Reverse Recovery Current vs di_F/dt

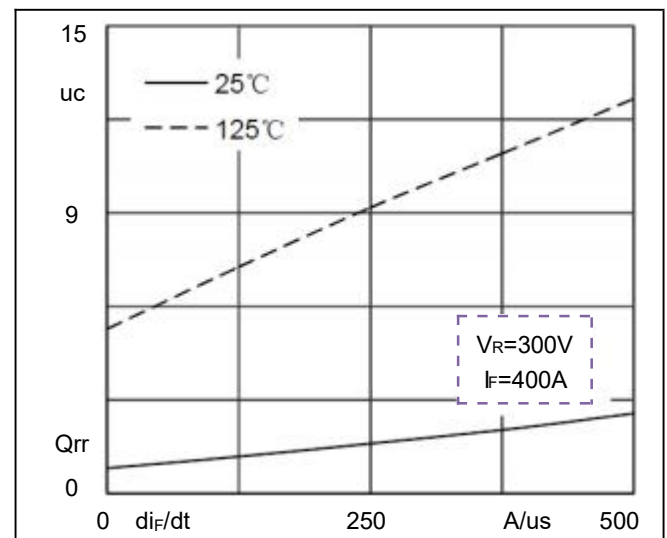
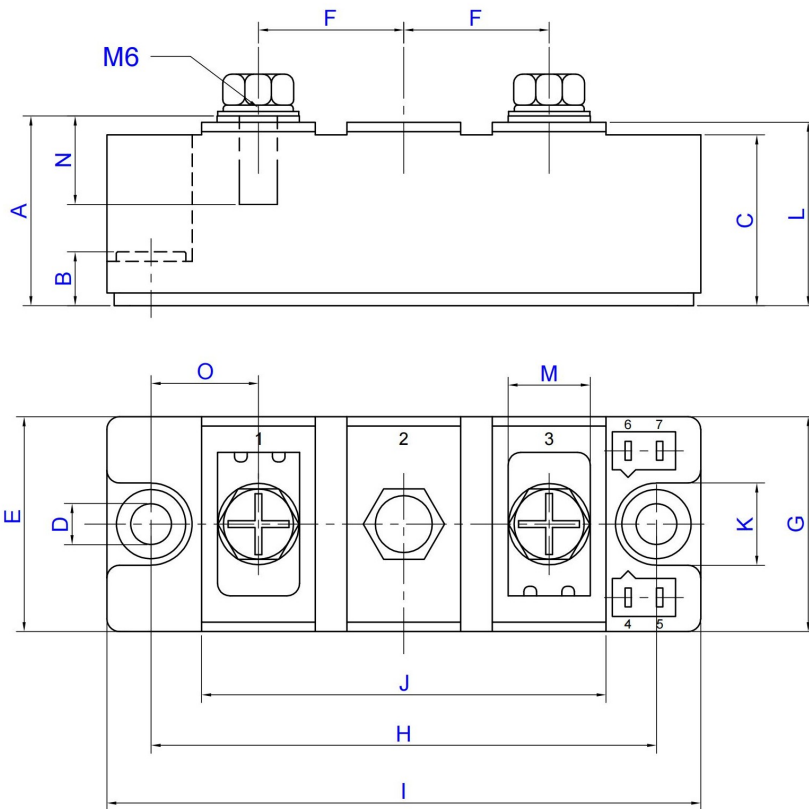


Fig4. Reverse Recovery Charge vs di_F/dt



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	48	8
Outer Carton	545	295	240	80



Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with automotive electronics, are not designed for use in medical, life-saving, lifesustaining, or military, Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.21yangjie.com>, or consult your nearest Yangjie's sales office for further assistance.