MF300U07F6

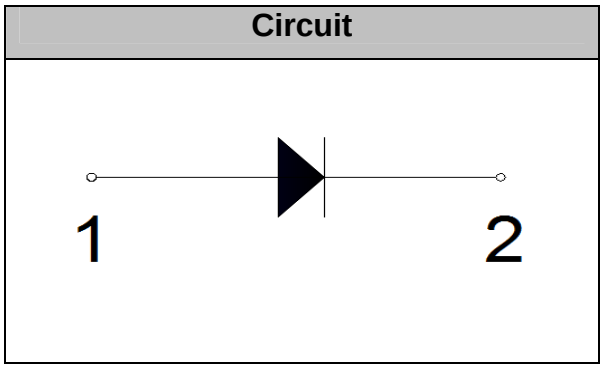
FRED Modules

V_{RRM} 700V
I_{FAV} 300 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		700	V
V_{RRM}		700	V
$I_{F(AV)}$	T_C=110°C,	300	A
$I_{F(RMS)}$	T_C=110°C,	420	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	5000	A
	1/2 Cycle , 60Hz, Sine	5500	A
I^2t	T_J=45°C, t=10ms, 50Hz, Sine	12500	A^2s
	T_J=45°C, t=8.3ms, 60Hz, Sine	15120	A^2s
P_D		1136	W
T_J		-40 to +150	°C
T_{STG}		-40 to +125	°C
Torque	Module-to-Sink Recommended（M6）	3～4.7	N·m
Torque	Module Electrodes Recommended（M6）	3～4.7	N·m
Weight		130	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per Module	0.12	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=700V	--	--	0.5	mA
	V_R=700V, T_J=125°C	--	--	2	mA
V_F	I_F=300A	--	1.2	1.6	V
	I_F=300A, T_J=125°C	--	1.1	1.45	V
trr	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	72	--	ns
trr	V_R=350V, I_F=300A, di_F/dt=-200A/μs, T_J=25°C	--	180	--	ns
I_{RRM}		--	15	--	A
trr	V_R=350V, I_F=300A, di_F/dt=-200A/μs, T_J=125°C	--	440	--	ns
I_{RRM}		--	35	--	A

Performance Curves

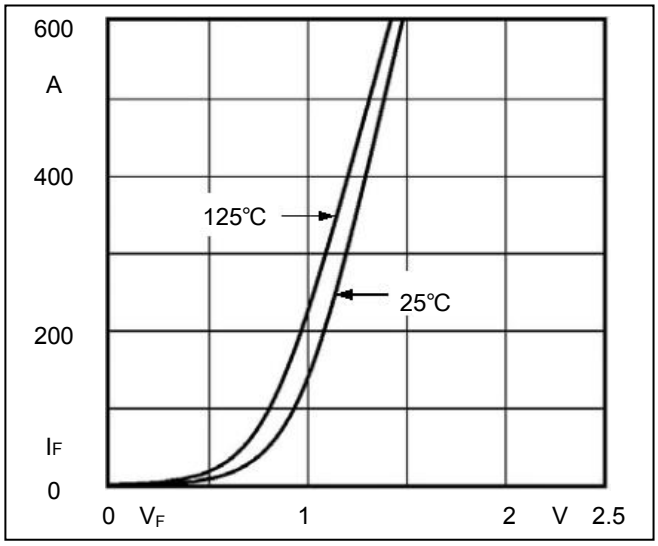


Fig1. Forward Voltage Drop vs Forward Current

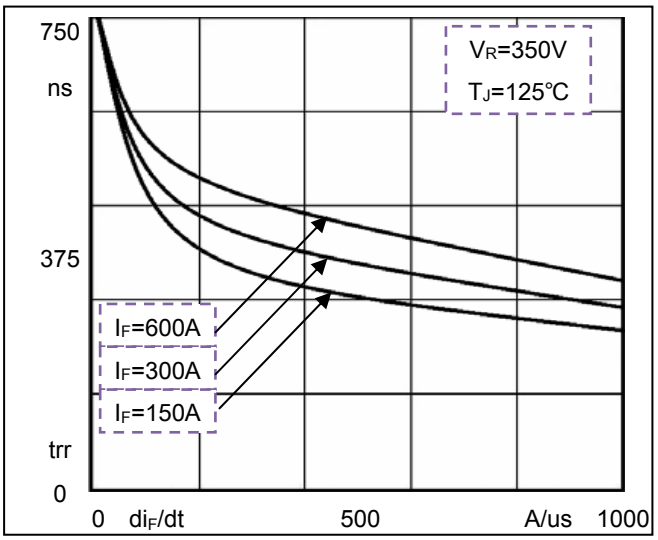


Fig2. Reverse Recovery Time vs di_F/dt

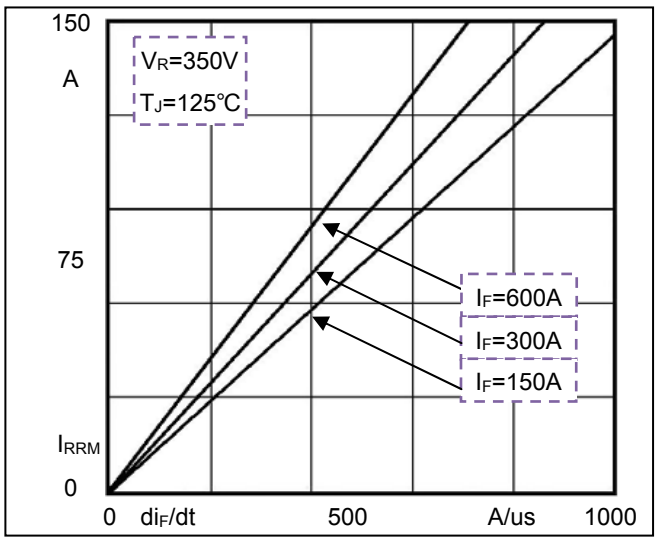


Fig3. Reverse Recovery Current vs di_F/dt

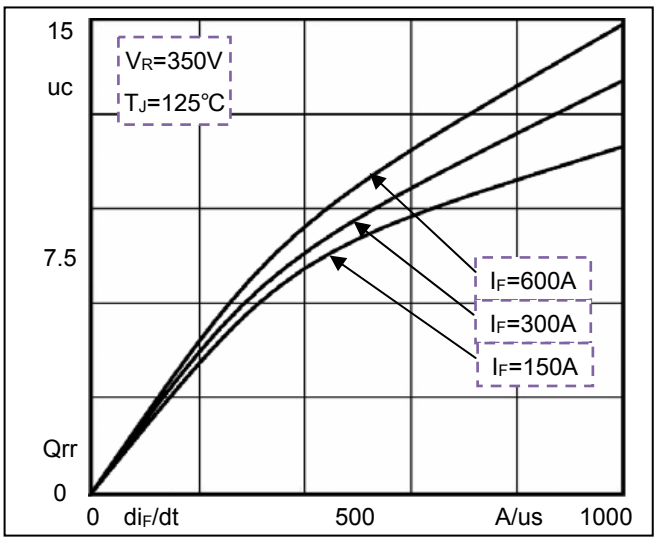
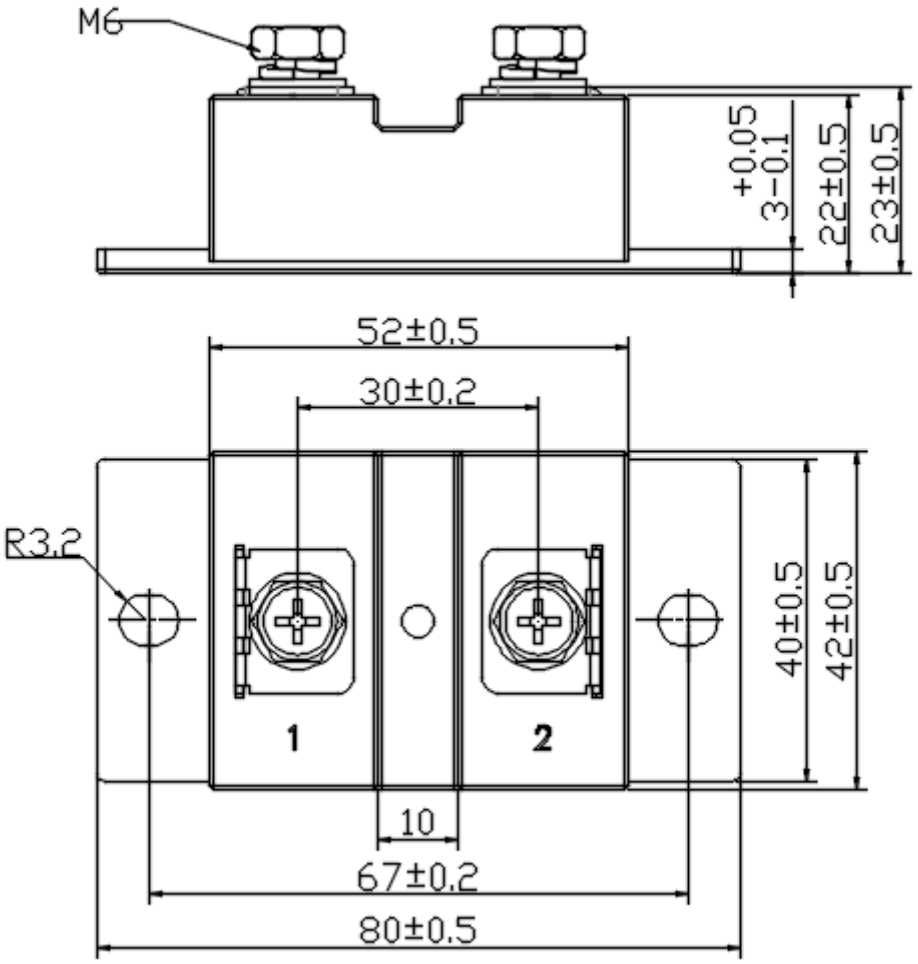


Fig4. Reverse Recovery Charge vs di_F/dt

Package Outline Information

CASE: F6



Dimensions in mm