

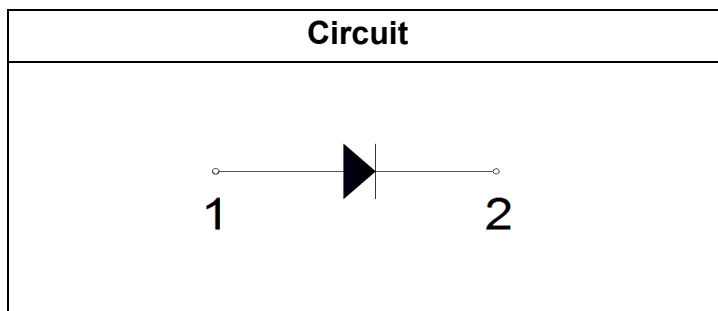
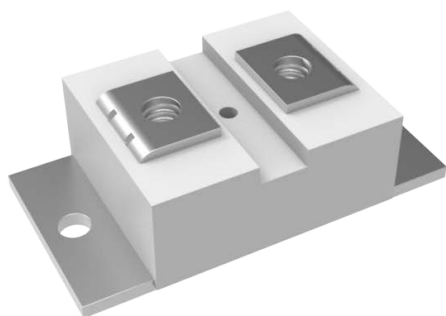
Features

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

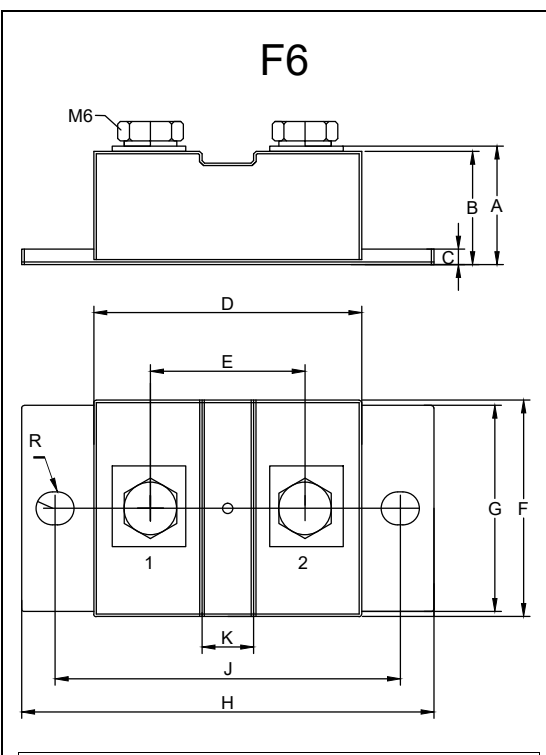
Applications

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

Part Number	$I_{F(AV)}$	V_{RRM}
MF300U05F6	300A	500V



**300 Amp
FRED Modules
500 Volts**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.886	0.925	22.50	23.50	
B	0.846	0.886	21.50	22.50	
C	0.098	0.138	2.50	3.50	
D	2.028	2.067	51.50	52.50	
E	1.161	1.201	29.50	30.50	
F	1.634	1.673	41.50	42.50	
G	1.555	1.594	39.50	40.50	
H	3.130	3.169	79.50	80.50	
J	2.618	2.657	66.50	67.50	
K	0.394		10.00		
R	0.126		3.20		Ø

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		500	V
V_{RRM}		500	V
$I_{F(AV)}$	$T_C=110^{\circ}\text{C}$,	300	A
$I_{F(RMS)}$	$T_C=110^{\circ}\text{C}$,	420	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	5000	A
	1/2 Cycle , 60Hz, Sine	5500	A
I^2t	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	12500	A^2s
	$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	15120	A^2s
P_D		1136	W
T_J		-40 to +150	$^{\circ}\text{C}$
T_{STG}		-40 to +125	$^{\circ}\text{C}$
Torque	Module-to-Sink Recommended (M6)	3~4.7	N·m
Torque	Module Electrodes Recommended (M6)	3~4.7	N·m
Weight		92	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}	$V_R=500\text{V}$	--	--	0.5	mA
	$V_R=500\text{V}$, $T_J=125^{\circ}\text{C}$	--	--	2	mA
V_F	$I_F=300\text{A}$	--	1.2	1.4	V
	$I_F=300\text{A}$, $T_J=125^{\circ}\text{C}$	--	1.1	1.25	V
trr	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$	--	65	--	ns
trr	$V_R=250\text{V}$, $I_F=300\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^{\circ}\text{C}$	--	155	--	ns
I_{RRM}		--	15	--	A
trr	$V_R=250\text{V}$, $I_F=300\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^{\circ}\text{C}$	--	335	--	ns
I_{RRM}		--	34	--	A

Performance Curves

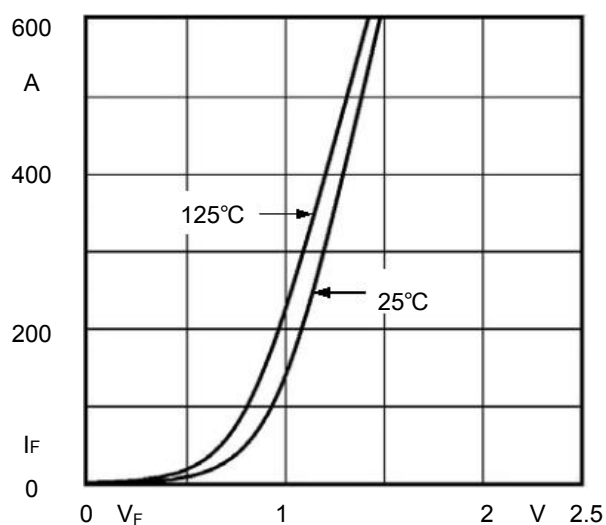


Fig1. Forward Voltage Drop vs Forward Current

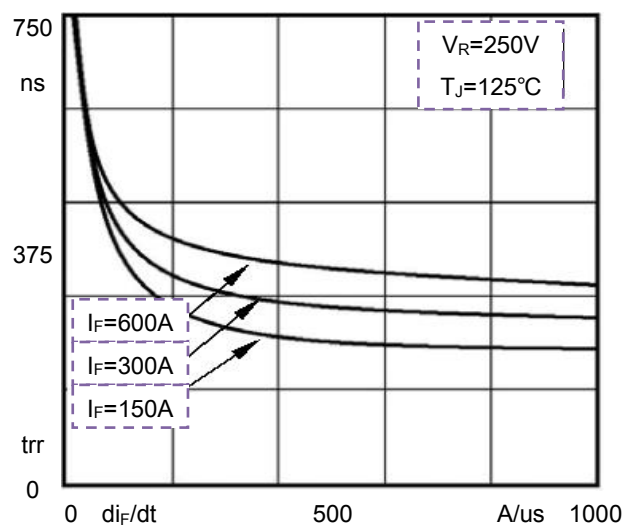


Fig2. Reverse Recovery Time vs di_F/dt

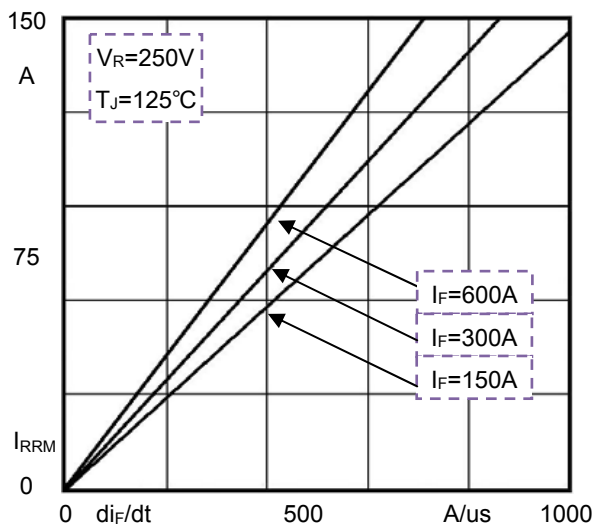


Fig3. Reverse Recovery Current vs di_F/dt

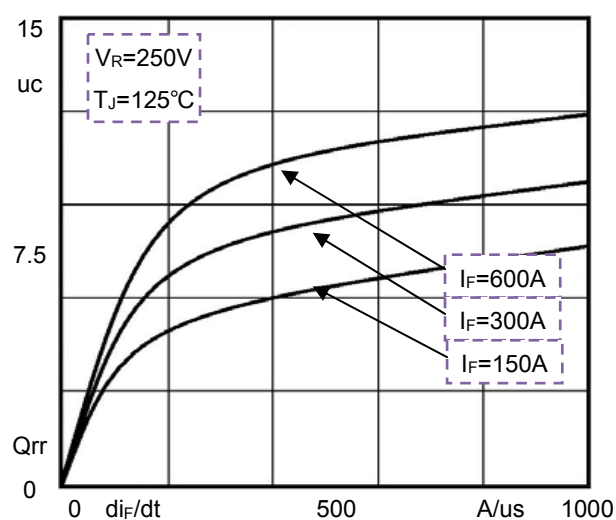


Fig4. Reverse Recovery Charge vs di_F/dt

Ordering Information

Device	Packing
Part Number-BP	Bulk:8pcs/Box,80pcs/Carton

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