

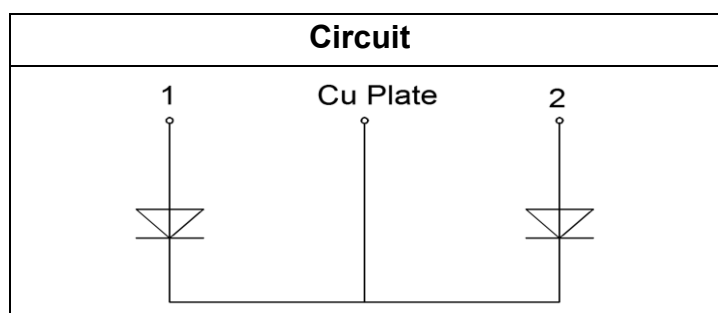
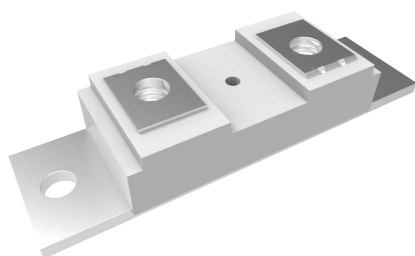
Features

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

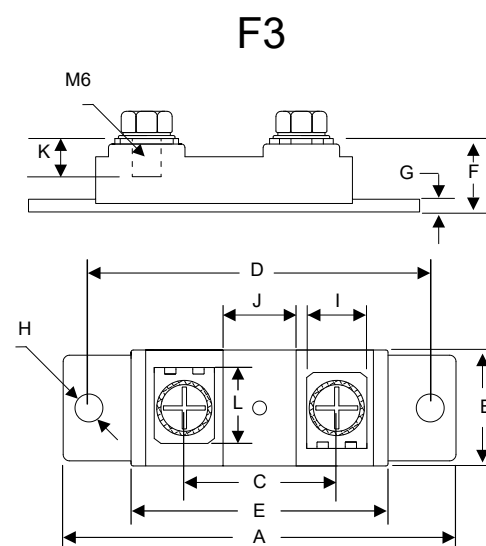
Applications

- 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}
MF400K04F3LG	400A	400V



**400 Amp
FRED Modules
400 Volts**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	3.602	3.642	91.50	92.50	
B	1.043	1.083	26.50	27.50	
C	1.358	1.398	34.50	35.50	
D	3.130	3.169	79.50	80.50	
E	2.343	2.382	59.50	60.50	
F	0.650	0.689	16.50	17.50	
G	0.110	0.126	2.80	3.20	
H	0.244	0.268	6.20	6.80	Ø
I	0.543	0.559	13.80	14.20	
J	0.650	0.689	16.50	17.50	
K	0.335	0.374	8.50	9.50	
L	0.717	0.740	18.20	18.80	

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		400	V
V_{RRM}		400	V
$I_{F(AV)}$	$T_C=125^{\circ}\text{C}$, Per Diode	200	A
	$T_C=125^{\circ}\text{C}$, Per Module	400	A
$I_{F(RMS)}$	$T_C=125^{\circ}\text{C}$, Per Diode	285	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	6000	A
	1/2 Cycle , 60Hz, Sine	6580	A
I^2t	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	180000	A^2s
P_D		2000	W
T_J		-40 to +150	$^{\circ}\text{C}$
T_{STG}		-40 to +125	$^{\circ}\text{C}$
Torque	Recommended (M6)	3~4.7	N·m
Torque	Recommended (M6)	3~4.7	N·m
Weight		92	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per Module	0.06	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=400\text{V}$	--	--	1	mA
	$V_R=400\text{V}$, $T_J=125^{\circ}\text{C}$	--	--	2	mA
V_F	$I_F=200\text{A}$	--	1.1	1.2	V
	$I_F=200\text{A}$, $T_J=125^{\circ}\text{C}$	--	0.92	1	V
trr	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$	--	80	--	ns
trr	$V_R=200\text{V}$, $I_F=200\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^{\circ}\text{C}$	--	140	--	ns
I_{RRM}		--	16	--	A
trr	$V_R=200\text{V}$, $I_F=200\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^{\circ}\text{C}$	--	240	--	ns
I_{RRM}		--	30	--	A

Performance Curves

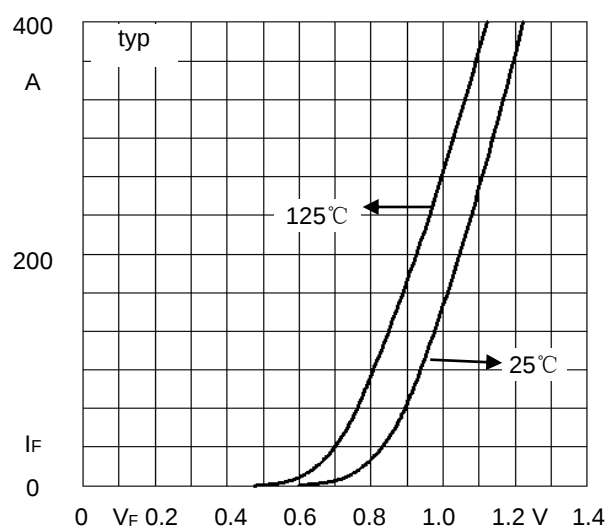


Fig1. Forward Voltage Drop vs Forward Current

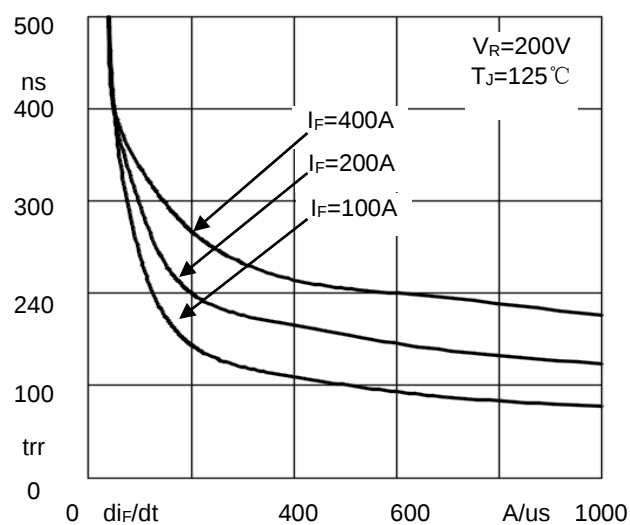


Fig2. Reverse Recovery Time vs di_F/dt

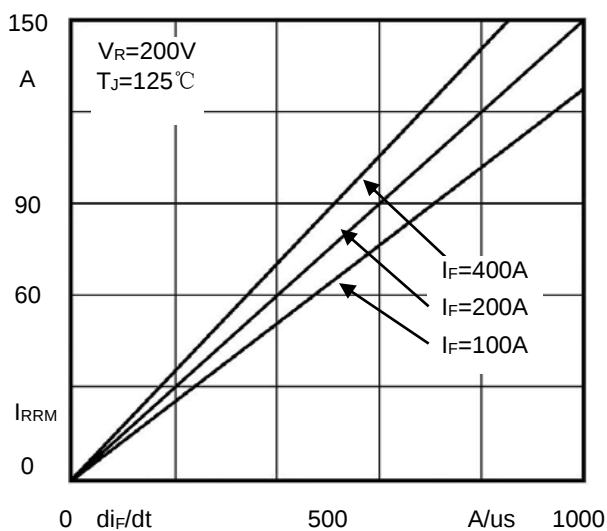


Fig3. Reverse Recovery Current vs di_F/dt

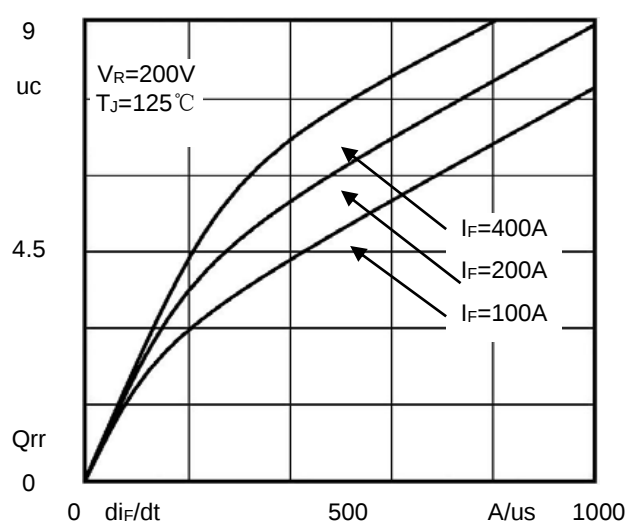


Fig4. Reverse Recovery Charge vs di_F/dt

Ordering Information

Device	Packing
Part Number-BP	Bulk:10pcs/Box,100pcs/Carton

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