

MF400K04F3

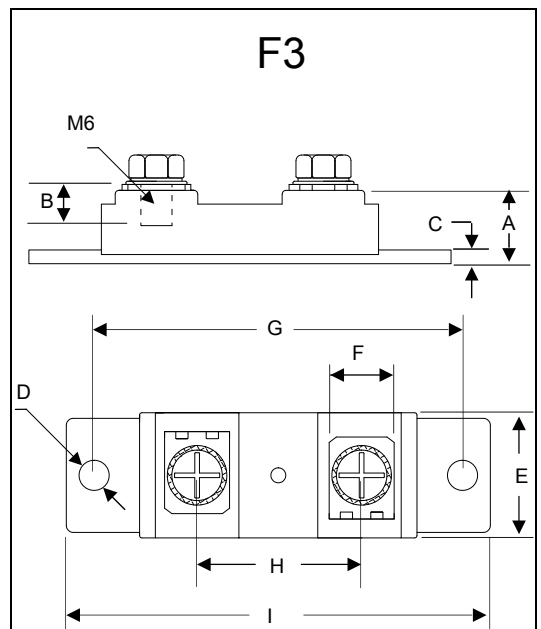
400 Amp FRED Modules 400 Volts

Features

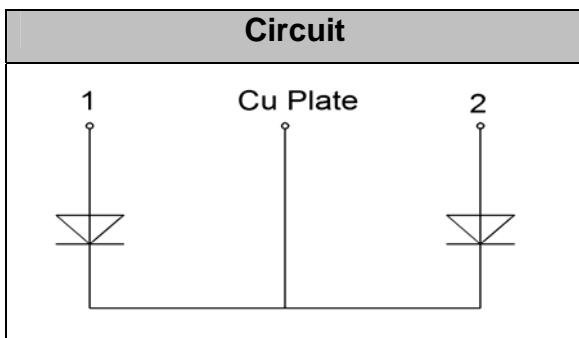
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

Applications

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



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.618	0.642	15.50	16.50	
B	0.343	0.366	8.50	9.50	
C	0.118	0.130	2.80	3.50	
D	0.256		6.50		∅
E	1.051	1.075	26.50	27.50	
F	0.539	0.563	13.50	14.50	
G	3.138	3.161	79.50	80.50	
H	1.366	1.390	34.50	35.50	
I	3.610	3.634	91.50	92.50	



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 Moudle	400	A
	$T_C=125^\circ\text{C}$, 20KHz, Per Moudle	300	A
$I_{F(RMS)}$	$T_C=125^\circ\text{C}$, Per Diode	285	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	4000	A
	1/2 Cycle , 60Hz, Sine	4500	A
I^2t	$T_J=45^\circ\text{C}$, $t=10\text{ms}$, 50Hz, Sine	80000	A^2s
	$T_J=45^\circ\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	101250	A^2s
P_D		2080	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
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Weight		92	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$		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	1.35	V
	$I_F=200\text{A}$, $T_J=125^\circ\text{C}$	--	1.0	1.25	V
t_{rr}	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$	--	45	--	ns
t_{rr}	$V_R=200\text{V}$, $I_F=200\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^\circ\text{C}$	--	135	--	ns
I_{RRM}		--	12	--	A
t_{rr}	$V_R=200\text{V}$, $I_F=200\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^\circ\text{C}$	--	210	--	ns
I_{RRM}		--	20	--	A

Performance Curves

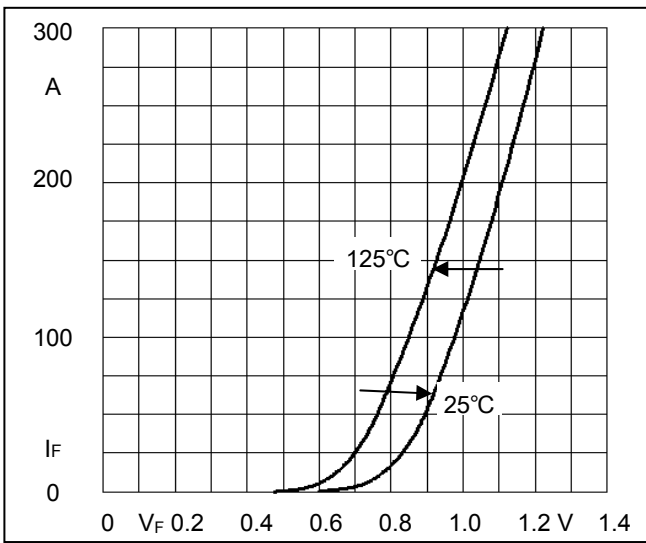


Fig1. Forward Voltage Drop vs Forward Current

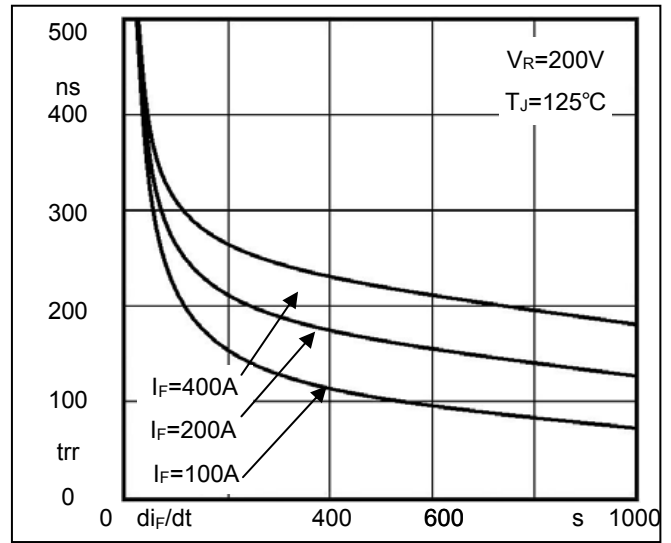


Fig2. Reverse Recovery Time vs di_F/dt

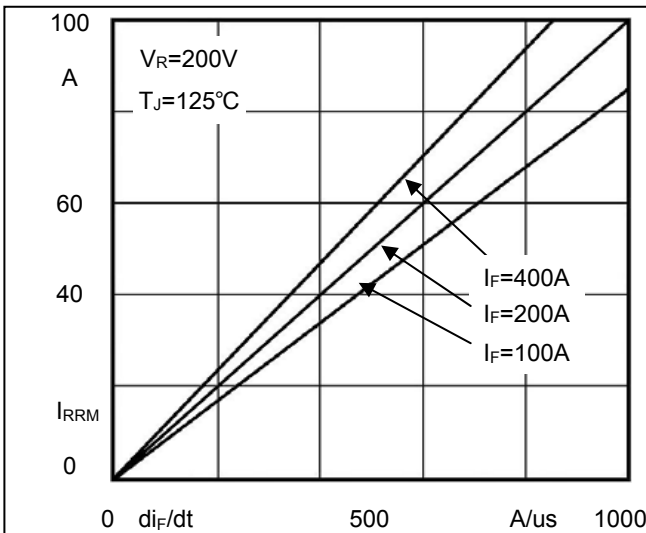


Fig3. Reverse Recovery Current vs di_F/dt

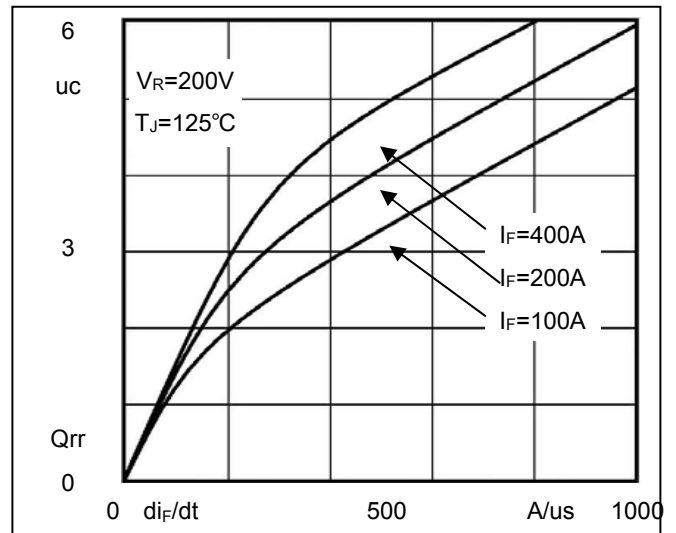


Fig4. Reverse Recovery Charge vs di_F/dt

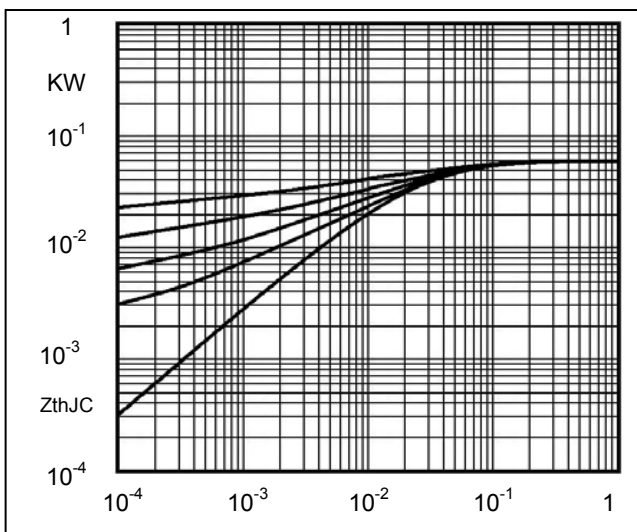


Fig5. Transient Thermal Impedance



Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-BP	Bulk: 10PCS/BOX ;100PCS/CTN

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