



Micro Commercial Components



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MF100C06F1

**100 Amp
 FRED Modules
 600 Volts**

Features

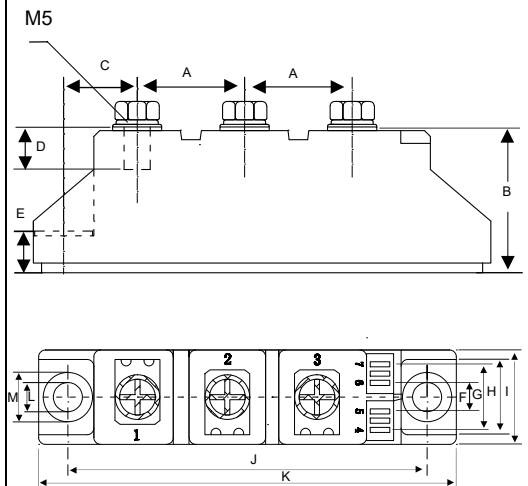
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

Applications

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

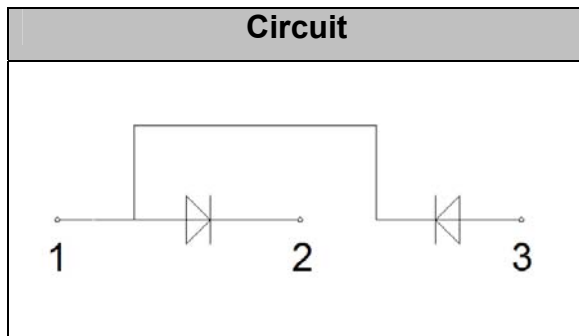


F1



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.768	0.807	19.50	20.50	
B	1.161	1.201	29.50	30.50	
C	0.591	0.630	15.00	16.00	
D	0.335	0.374	8.50	9.50	
E	0.315	0.354	8.00	9.00	
F	0.217	0.256	5.50	6.50	
G	0.531	0.571	13.50	14.50	
H	0.650	0.689	16.50	17.50	
I	0.807	0.846	20.50	21.50	
J	3.130	3.169	79.50	80.50	
K	3.642	3.681	92.50	93.50	
L	0.236	0.276	6.00	7.00	∅
M	0.413	0.453	10.50	11.50	

Circuit



Maximum Ratings

Symbol	Conditions	Values	Units
V_R		600	V
V_{RRM}		600	V
$I_{F(AV)}$	$T_C=90^\circ\text{C}$, Per Diode	100	A
	$T_C=90^\circ\text{C}$, 20KHz, Per Module	150	A
$I_{F(RMS)}$	$T_C=95^\circ\text{C}$, Per Diode	150	A
I_{FSM}	1/2 Cycle, 50Hz, Sine	1300	A
	1/2 Cycle, 60Hz, Sine	1500	A
I^2t	$T_J=45^\circ\text{C}$, $t=10\text{ms}$, 50Hz, Sine	8450	A^2s
	$T_J=45^\circ\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	11250	A^2s
P_D		280	W
Visol	AC, $T_{on}=1\text{min}$	3000	V
T_J		-40 to +150	$^\circ\text{C}$
T_{STG}		-40 to +125	$^\circ\text{C}$
Torque	Recommended (M5)	$3 \pm 15\%$	N·m
Torque	Recommended (M5)	$3 \pm 15\%$	N·m
Weight		100	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per diode	0.4	$^\circ\text{C/W}$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=600\text{V}$	--	--	50	μA
	$V_R=600\text{V}$, $T_J=125^\circ\text{C}$	--	--	1	mA
V_F	$I_F=100\text{A}$	--	1.25	1.4	V
	$I_F=100\text{A}$, $T_J=125^\circ\text{C}$	--	1.1	1	V
trr	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$	--	45	50	ns
trr	$V_R=300\text{V}$, $I_F=100\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^\circ\text{C}$	--	105	--	ns
I_{RRM}		--	10	--	A
trr	$V_R=300\text{V}$, $I_F=100\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^\circ\text{C}$	--	200	--	ns
I_{RRM}		--	18	--	A

Performance Curves

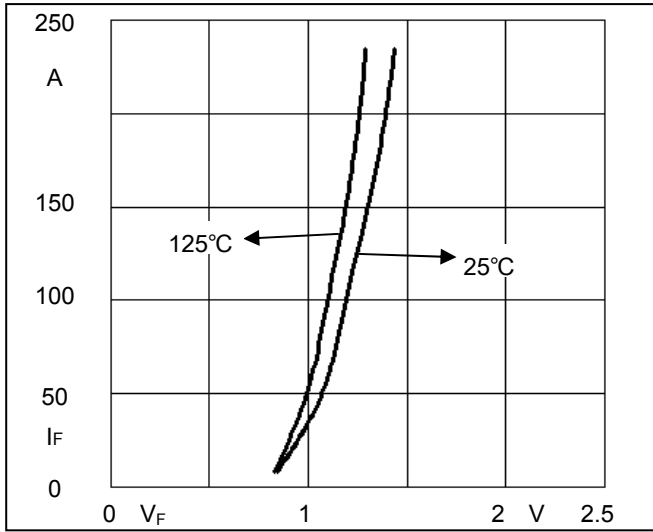


Fig1. Forward Voltage Drop vs Forward Current

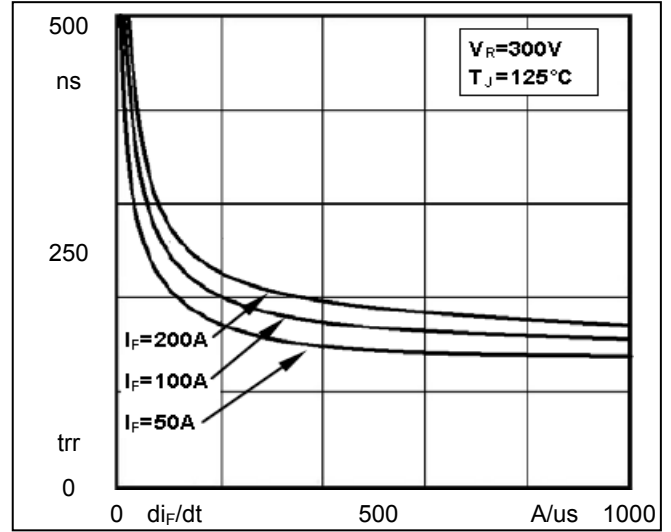


Fig2. Reverse Recovery Time vs di_F/dt

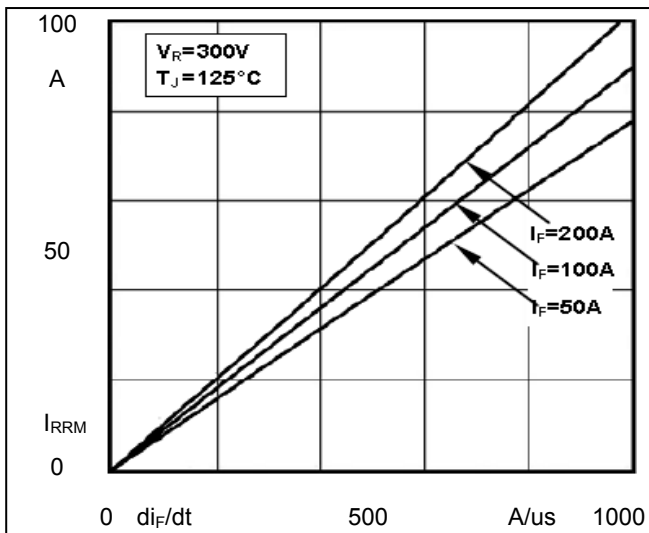


Fig3. Reverse Recovery Current vs di_F/dt

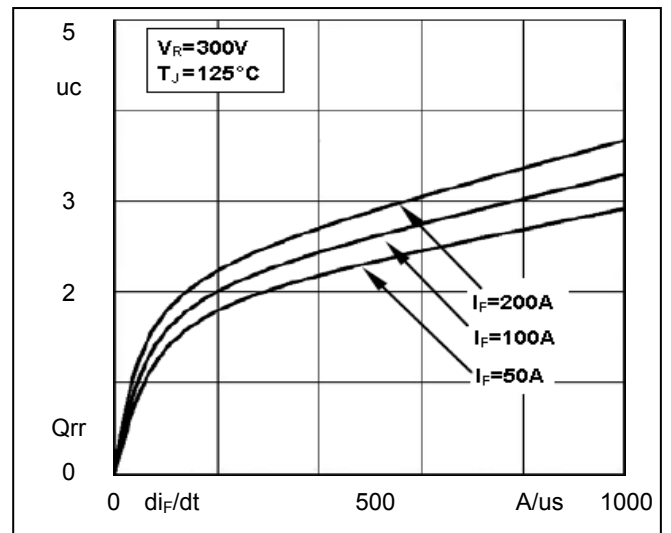


Fig4. Reverse Recovery Charge vs di_F/dt



Ordering Information :

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

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