



Micro Commercial Components



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MF300K06F3

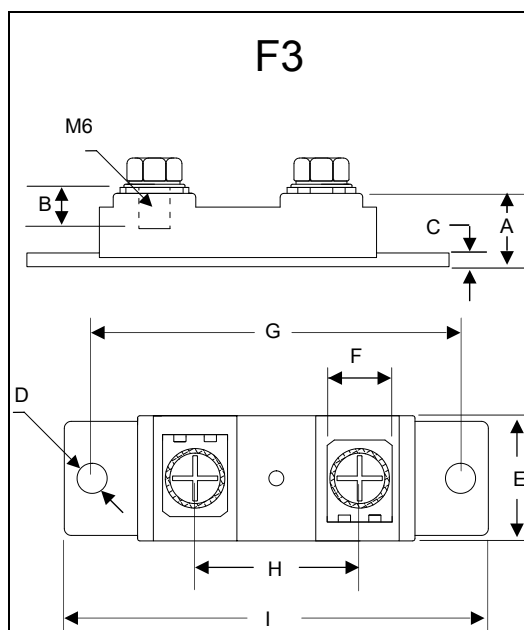
300 Amp FRED Modules 600 Volts

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

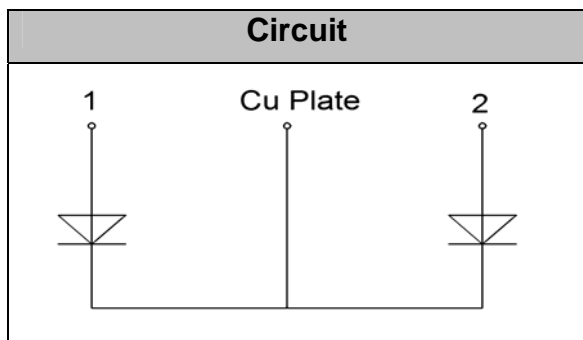
Applications

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



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	

Circuit



MF300K06F3

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		600	V
V_{RRM}		600	V
$I_{F(AV)}$	$T_C=125^{\circ}C$, Per Diode	150	A
	$T_C=125^{\circ}C$, Per Moudle	300	A
	$T_C=125^{\circ}C$, 20KHz, Per Moudle	200	A
$I_{F(RMS)}$	$T_C=125^{\circ}C$, Per Diode	220	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	3500	A
	1/2 Cycle , 60Hz, Sine	4000	A
I^2t	$T_J=45^{\circ}C$, t=10ms, 50Hz, Sine	61250	A ² s
	$T_J=45^{\circ}C$, t=8.3ms, 60Hz, Sine	80000	A ² s
P_D		2080	W
T_J		-40 to +150	$^{\circ}C$
T_{STG}		-40 to +125	$^{\circ}C$
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 diode	0.06	$^{\circ}C/W$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=600V$	--	--	1	mA
	$V_R=600V$, $T_J=125^{\circ}C$	--	--	20	mA
V_F	$I_F=150A$	--	1.1	1.4	V
	$I_F=150A$, $T_J=125^{\circ}C$	--	--	1.25	V
trr	$I_F=1A$, $V_R=30V$, $di_F/dt=-200A/\mu s$	--	50	--	ns
trr	$V_R=300V$, $I_F=150A$, $di_F/dt=-200A/\mu s$, $T_J=25^{\circ}C$	--	130	--	ns
I_{RRM}		--	14	--	A
trr	$V_R=300V$, $I_F=150A$, $di_F/dt=-200A/\mu s$, $T_J=125^{\circ}C$	--	220	--	ns
I_{RRM}		--	22	--	A

Performance Curves

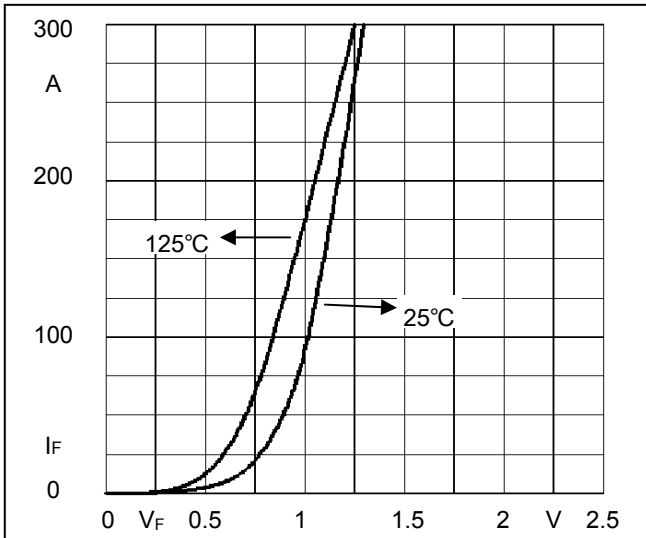


Fig1. Forward Voltage Drop vs Forward Current

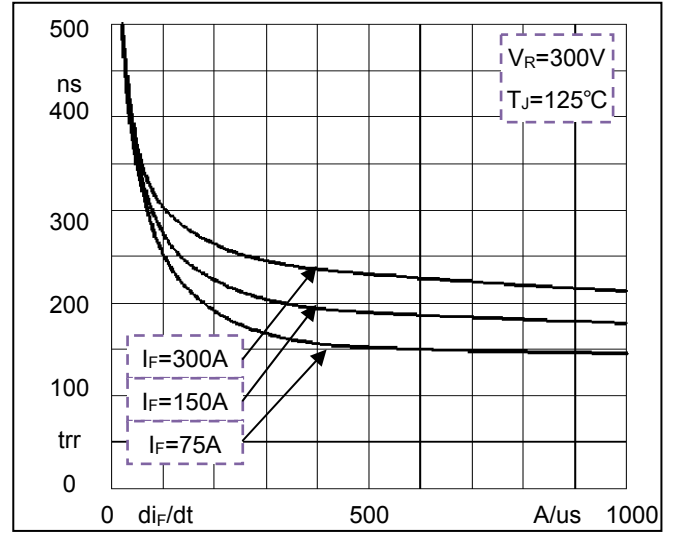


Fig2. Reverse Recovery Time vs di_F/dt

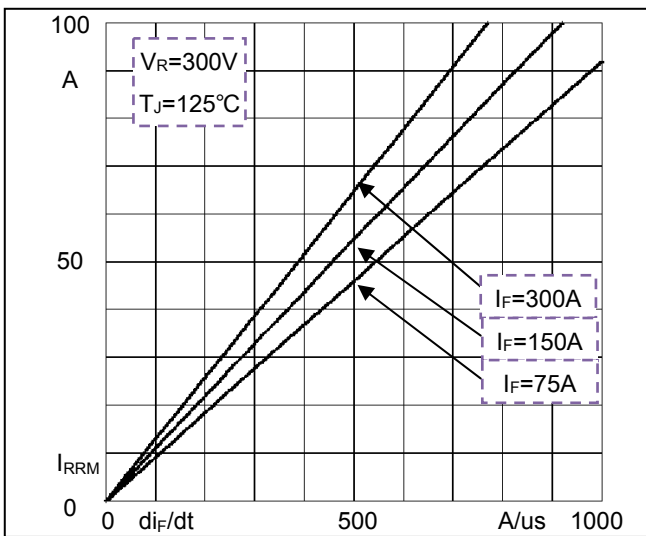


Fig3. Reverse Recovery Current vs di_F/dt

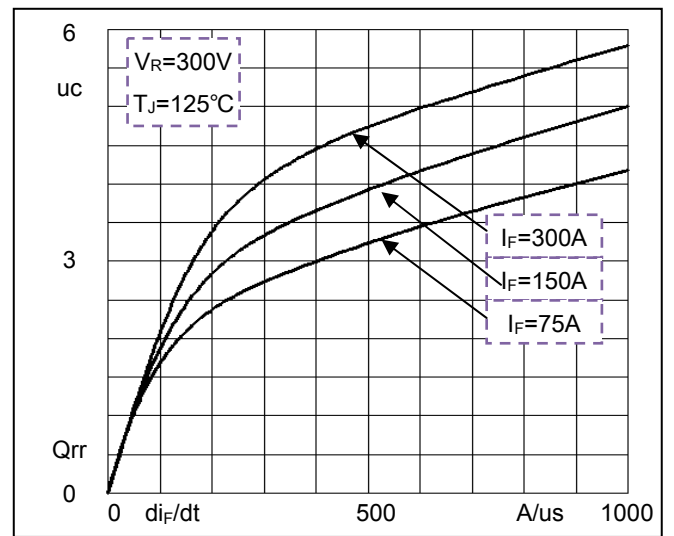


Fig4. Reverse Recovery Charge vs di_F/dt