



Micro Commercial Components



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 130 W Cochran St, Unit B
 Simi Valley, CA 93065
 USA
 Tel:818-701-4933

MF300U12F2

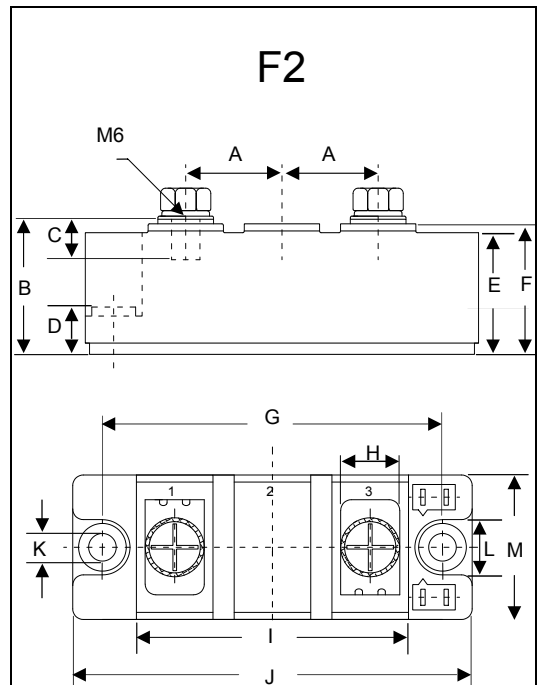
300 Amp FRED Modules 1200 Volts

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

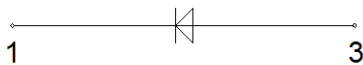
Applications

- 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	0.886	0.925	22.50	23.50	
B	1.161	1.201	29.50	30.50	
C	0.335	0.374	8.50	9.50	
D	0.315	0.350	8.00	8.90	
E	1.043	1.083	26.50	27.50	
F	1.122	1.161	28.50	29.50	
G	3.130	3.169	79.50	80.50	
H	0.492	0.531	12.50	13.50	
I	2.500	2.539	63.50	64.50	
J	3.681	3.720	93.50	94.50	
K	0.256		6.50		∅
L	0.492	0.531	12.50	13.50	
M	1.319	1.358	33.50	34.50	

Circuit



MF300U12F2

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		1200	V
V_{RRM}		1200	V
$I_{F(AV)}$	$T_C=100^{\circ}C$	300	A
	$T_C=110^{\circ}C, 20KHz$	210	A
$I_{F(RMS)}$	$T_C=110^{\circ}C$	420	A
I_{FSM}	$T_J=45^{\circ}C, 1/2$ Cycle , 50Hz, Sine	2500	A
	$T_J=45^{\circ}C, 1/2$ Cycle , 60Hz, Sine	2800	A
I^2t	$T_J=45^{\circ}C, t=10ms, 50Hz, Sine$	312500	A^2s
	$T_J=45^{\circ}C, t=8.3ms, 60Hz, Sine$	325000	A^2s
P_D		890	W
Visol	AC, $T_{on}=1min$	3000	V
T_J		-40 to +150	$^{\circ}C$
T_{STG}		-40 to +125	$^{\circ}C$
Torque	Recommended (M6)	$5\pm 15\%$	N·m
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Weight		160	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Junction - to - Case	0.14	$^{\circ}C/W$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=1200V$	--	--	5	mA
	$V_R=1200V, T_J=125^{\circ}C$	--	--	10	mA
V_F	$I_F=300A$	--	2.7	--	V
	$I_F=300A, T_J=125^{\circ}C$	--	1.8	--	V
trr	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	75	--	ns
trr	$V_R=600V, I_F=300A, di_F/dt=-200A/\mu s, T_J=25^{\circ}C$	--	150	--	ns
I_{RRM}		--	12	--	A
trr	$V_R=600V, I_F=300A, di_F/dt=-200A/\mu s, T_J=125^{\circ}C$	--	450	--	ns
I_{RRM}		--	27	--	A

Performance Curves

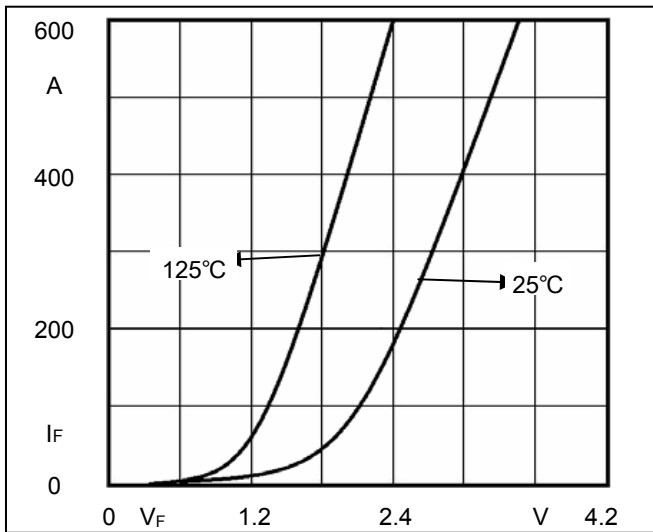


Fig1. Forward Voltage Drop vs Forward Current

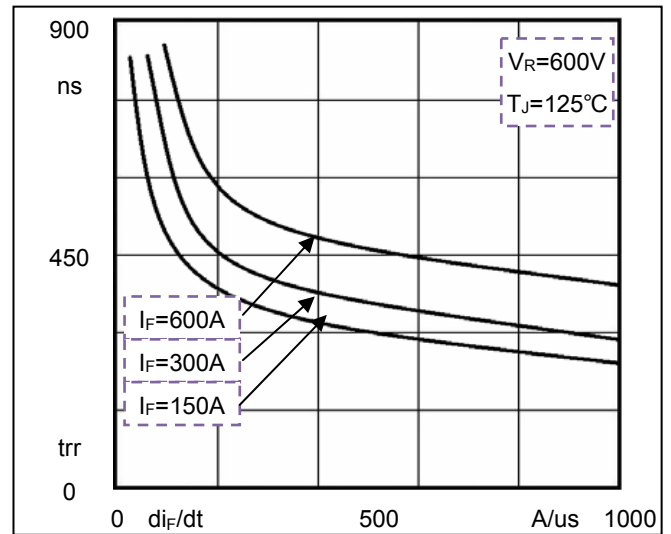


Fig2. Reverse Recovery Time vs di_F/dt

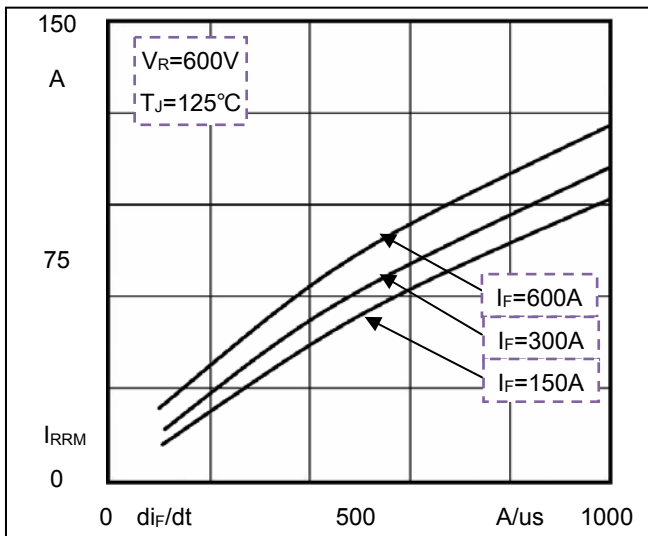


Fig3. Reverse Recovery Current vs di_F/dt

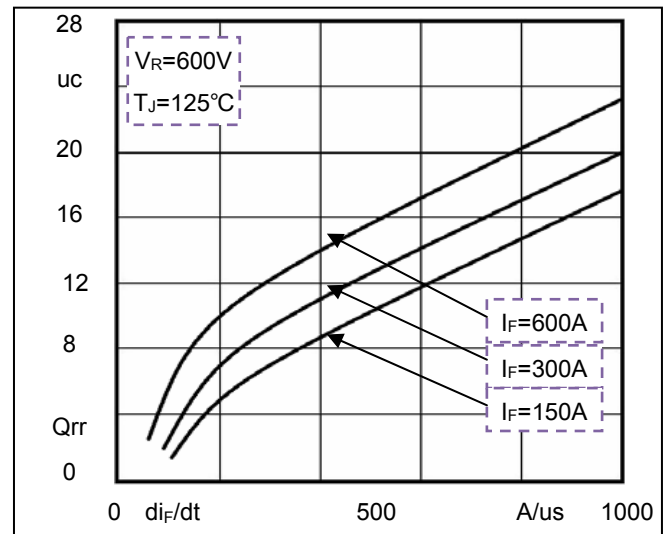


Fig4. Reverse Recovery Charge vs di_F/dt



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Ordering Information :

Device	Packing
Part Number-BP	Bulk: 8PCS/BOX ;80PCS/CTN

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