

MF100U12F2

100 Amp FRED Modules 1200 Volts

Features

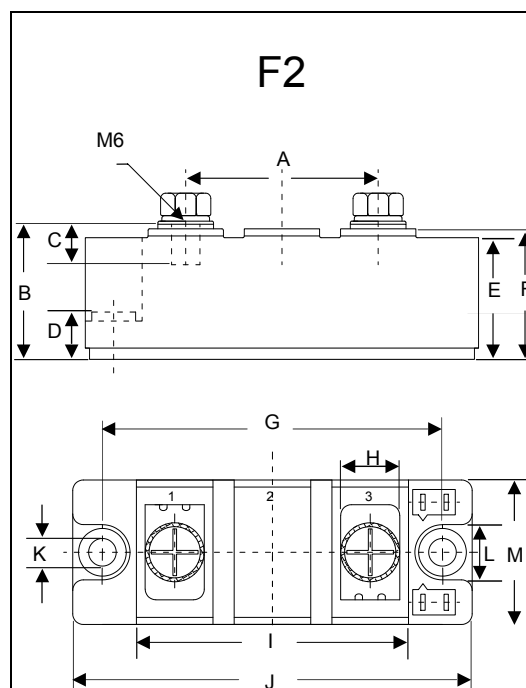
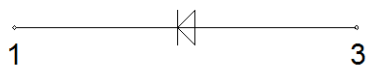
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

Applications

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



Circuit



DIMENSIONS

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		Ø
L	0.492	0.531	12.50	13.50	
M	1.319	1.358	33.50	34.50	

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		1200	V
V_{RRM}		1200	V
$I_{F(AV)}$	$T_C=110^{\circ}\text{C}$, Per Diode	100	A
$I_{F(RMS)}$	$T_C=110^{\circ}\text{C}$, Per Diode	140	A
I_{FSM}	1/2 Cycle, 50Hz, Sine	1100	A
	1/2 Cycle, 60Hz, Sine	1200	A
I^2t	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	6050	A^2s
P_D		140	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 (M6)	4.5	N·m
Torque	Recommended (M6)	4.5	N·m
Weight		140	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Junction - to - Case	0.22	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=1200\text{V}$	--	--	1	mA
	$V_R=1200\text{V}$, $T_J=125^{\circ}\text{C}$	--	--	5	mA
V_F	$I_F=100\text{A}$	--	1.58		V
	$I_F=100\text{A}$, $T_J=125^{\circ}\text{C}$	--	1.35		V
t_{rr}	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$	--	55	--	ns
t_{rr}	$V_R=600\text{V}$, $I_F=100\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^{\circ}\text{C}$	--	135	--	ns
I_{RRM}		--	10	--	A
t_{rr}	$V_R=600\text{V}$, $I_F=100\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^{\circ}\text{C}$	--	380	--	ns
I_{RRM}		--	21	--	A

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Performance Curves

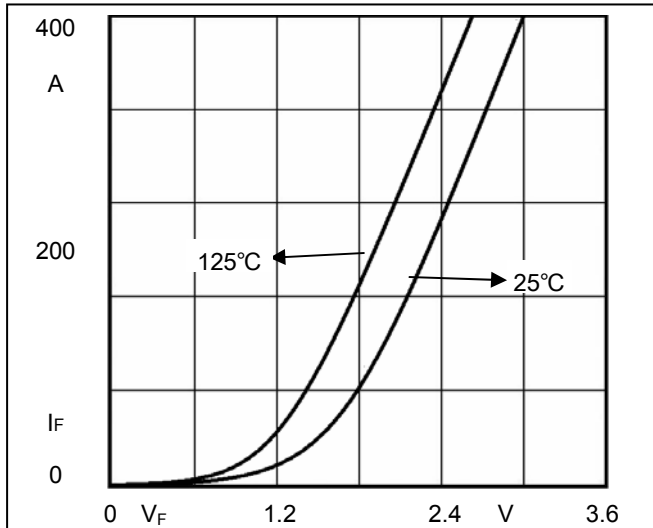


Fig1. Forward Voltage Drop vs Forward Current

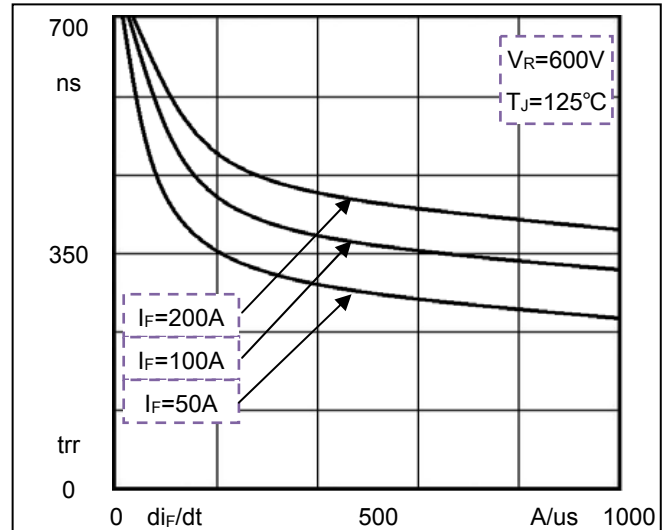


Fig2. Reverse Recovery Time vs di_F/dt

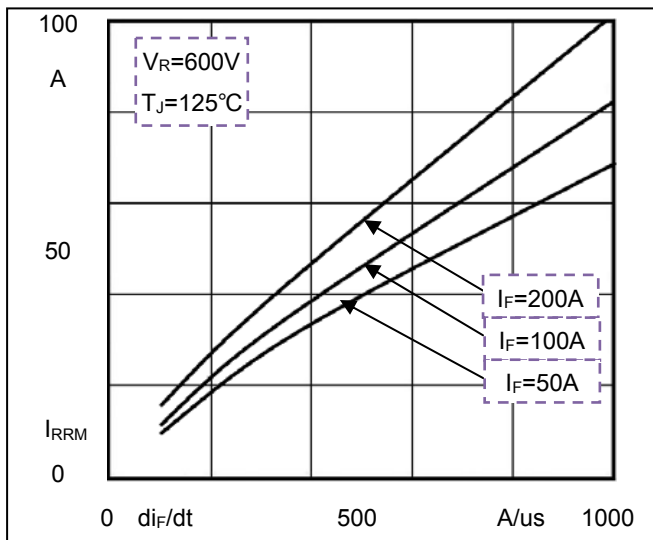


Fig3. Reverse Recovery Current vs di_F/dt

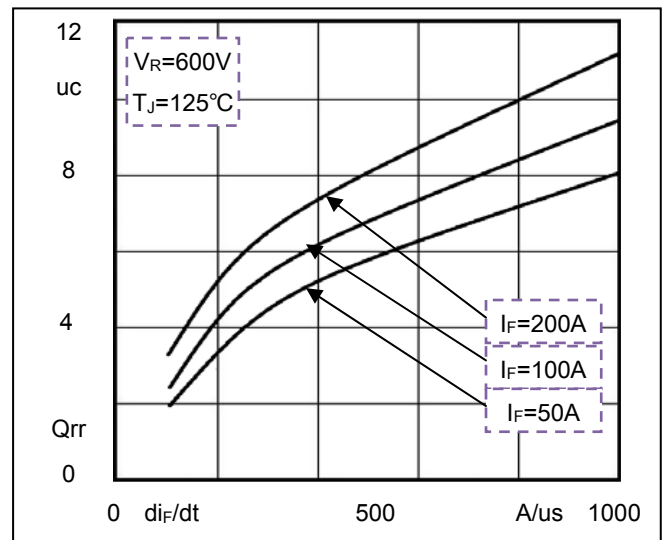


Fig4. Reverse Recovery Charge vs di_F/dt

Ordering Information :

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

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