

## MF120DU06FJ

### Features

- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Popular SOT-227 Package

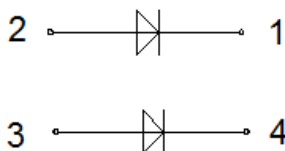
**120 Amp  
FRED Modules  
600 Volts**

### Applications

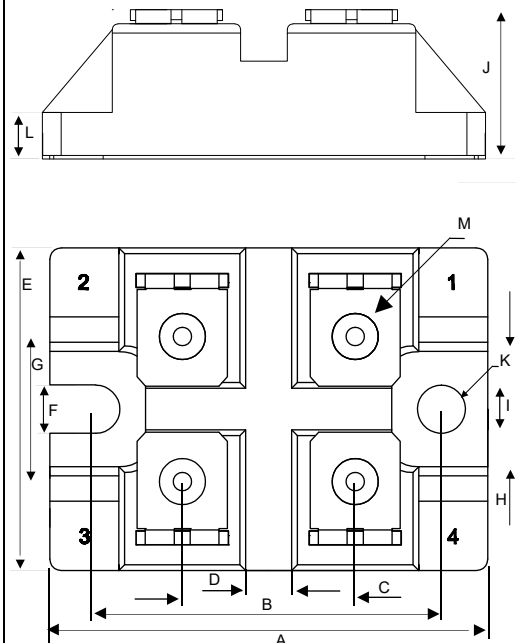
- Uninterruptible Power Supply (UPS)
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Power Factor Correction (PFC) Circuit
- Converter & Chopper
- Inversion Welder



#### Circuit



FJ



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	1.484	1.508	37.50	38.50	
B	1.169	1.193	29.50	30.50	
C	0.579	0.602	14.50	15.50	
D	0.146	0.169	3.50	4.50	
E	1.091	1.114	27.50	28.50	
F	0.154	0.177	3.70	4.70	
G	0.484	0.508	12.10	13.10	
H	0.382	0.406	9.50	10.50	
I	0.130	0.154	3.10	4.10	
J	0.492	0.516	12.30	13.30	
K	0.165		4.20		Ø
L	0.146	0.169	3.50	4.50	
	0.157		4.00		

# MF120DU06FJ

## Maximum Ratings

Symbol	Conditions	Values	Units
$V_R$		600	V
$V_{RRM}$		600	V
$I_{F(AV)}$	$T_C=90^{\circ}\text{C}$ , Per Leg	60	A
	$T_C=90^{\circ}\text{C}$ , Per Moudle	120	A
	$T_C=90^{\circ}\text{C}$ , 20KHz, Per Moudle	80	A
$I_{F(RMS)}$	$T_C=90^{\circ}\text{C}$ , Per Leg	85	A
$I_{FSM}$	1/2 Cycle , 50Hz, Sine	550	A
	1/2 Cycle , 60Hz, Sine	600	A
$I^2t$	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	1510	$\text{A}^2\text{s}$
	$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	1490	$\text{A}^2\text{s}$
$P_D$	$T_C=25^{\circ}\text{C}$	208	W
$T_J$		-40 to +150	$^{\circ}\text{C}$
$T_{STG}$		-40 to +125	$^{\circ}\text{C}$
Visol	3600V AC 1s	1	mA
Torque	To Sink Recommended (M4)	0.7~1.5	N·m
Torque	To Terminal Recommended (M4)	0.7~1.1	N·m
Weight		27	g

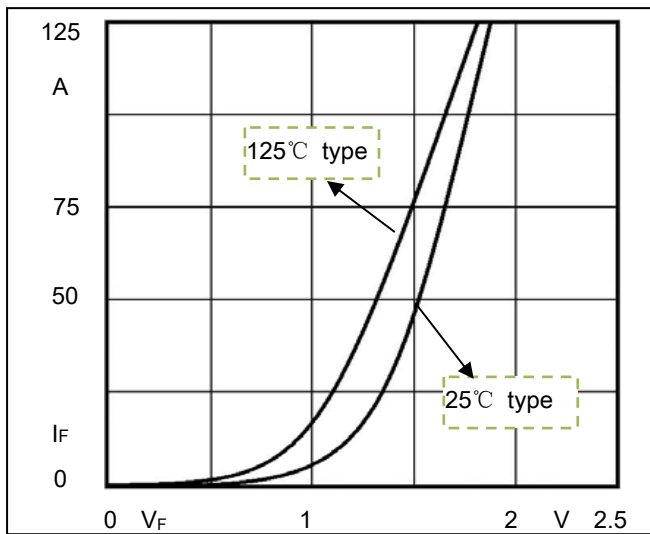
## Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per diode	0.6	$^{\circ}\text{C/W}$

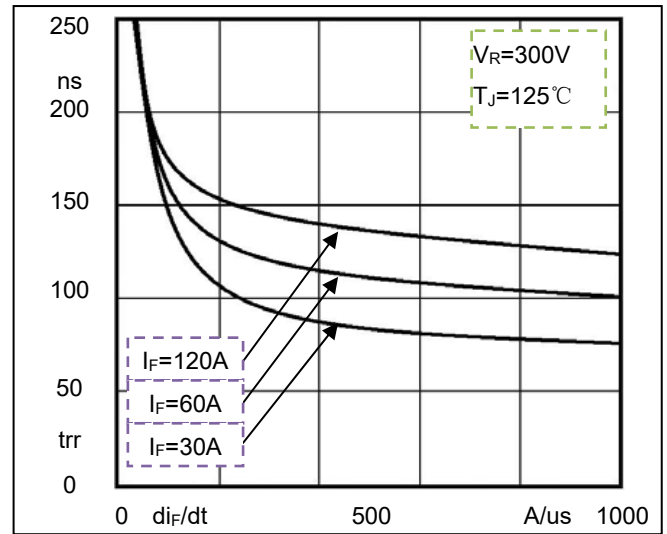
## Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
$I_{RM}$	$V_R=600\text{V}$	--	--	0.1	mA
	$V_R=600\text{V}$ , $T_J=125^{\circ}\text{C}$	--	--	1	mA
$V_F$	$I_F=60\text{A}$	--	1.55	1.9	V
	$I_F=60\text{A}$ , $T_J=125^{\circ}\text{C}$	--	1.35	1.7	V
trr	$I_F=1\text{A}$ , $V_R=30\text{V}$ , $di_F/dt=-200\text{A}/\mu\text{s}$	--	35	50	ns
trr	$V_R=300\text{V}$ , $I_F=60\text{A}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_J=25^{\circ}\text{C}$	--	75	--	ns
$I_{RRM}$		--	7.2	--	A
trr	$V_R=300\text{V}$ , $I_F=60\text{A}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_J=125^{\circ}\text{C}$	--	135	--	ns
$I_{RRM}$		--	16	--	A

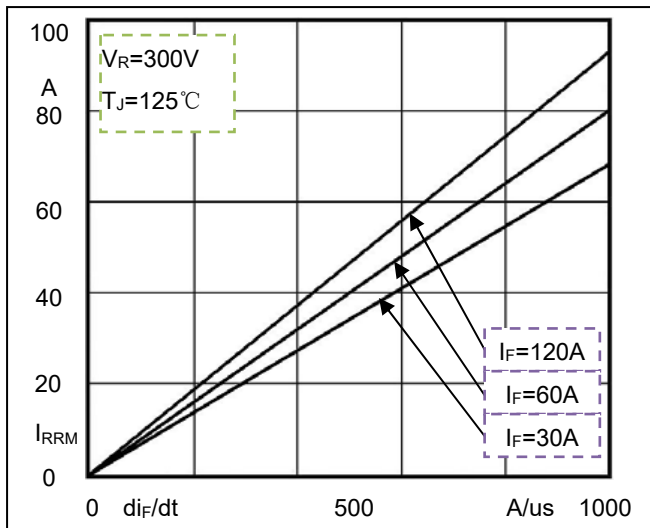
## Performance Curves



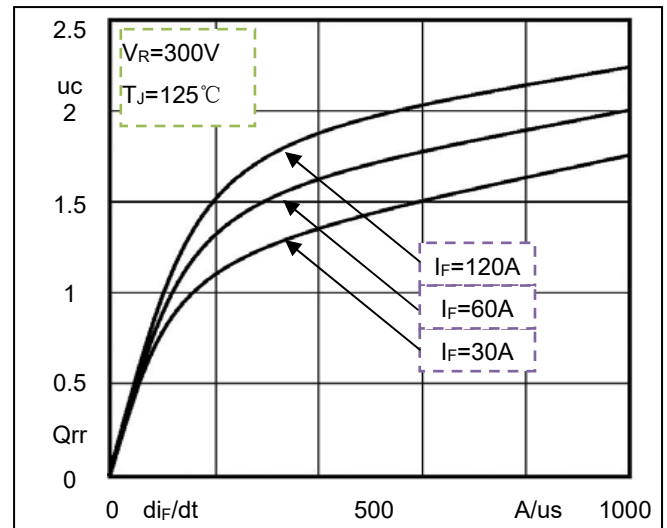
**Fig1. Forward Voltage Drop vs Forward Current**



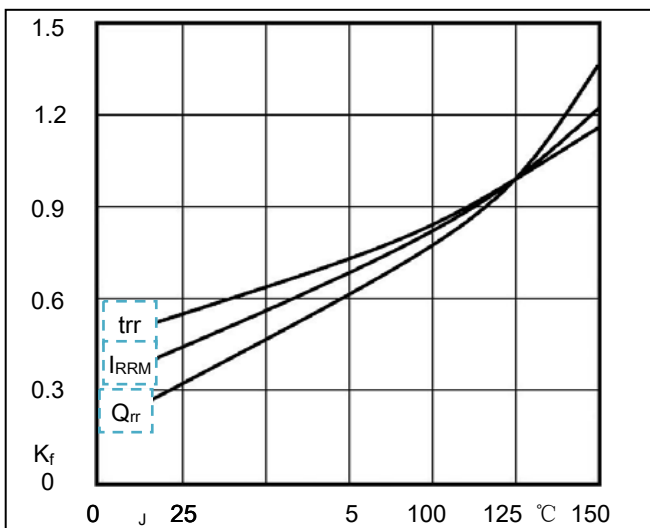
**Fig2. Reverse Recovery Time vs  $di_F/dt$**



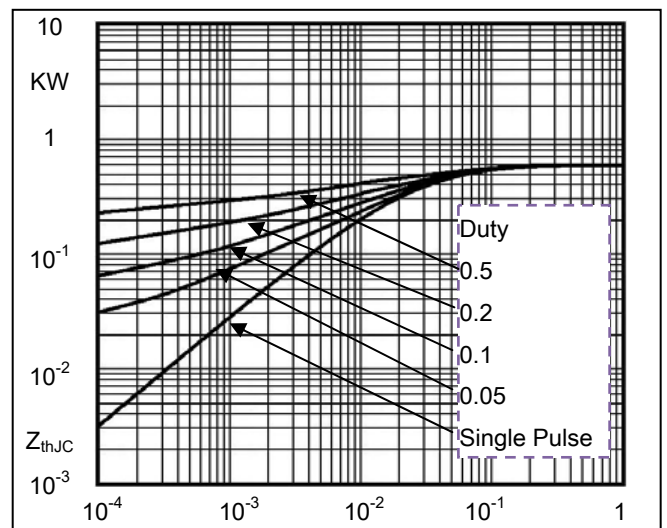
**Fig3. Reverse Recovery Current vs  $di_F/dt$**



**Fig4. Reverse Recovery Charge vs  $di_F/dt$**



**Fig5. Dynamic Parameters vs Junction Temperature**



**Fig6. Transient Thermal Impedance**

## Ordering Information :

Device	Packing
Part Number-BP	Bulk: 25PCS/BOX;125PCS/CTN

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