



Micro Commercial Components



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# MF200DU12FJ

**200 Amp  
 FRED Modules  
 1200 Volts**

## Features

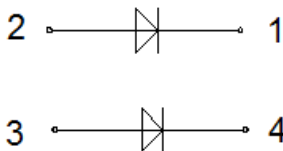
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Popular SOT-227 Package

## Applications

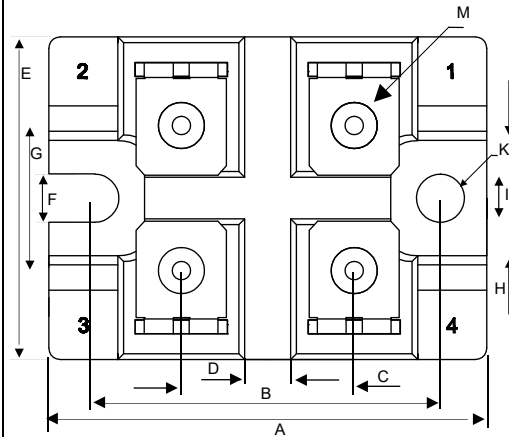
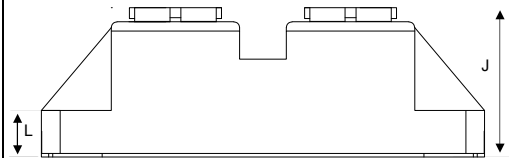
- Uninterruptible Power Supply (UPS)
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Power Factor Correction (PFC) Circuit
- Converter & Chopper
- Inversion Welder



### Circuit



### FJ



### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	1.484	1.508	37.70	38.30	
B	1.169	1.193	29.70	30.30	
C	.579	.602	14.70	15.30	
D	.146	.169	3.70	4.30	
E	1.091	1.114	27.70	28.30	
F	.154	.177	3.90	4.50	
G	.484	.508	12.30	12.90	
H	.382	.406	9.70	10.30	
I	.130	.154	3.30	3.90	
J	.492	.516	12.50	13.10	
K		.165		4.20	∅
L	.146	.169	3.70	4.30	
M		.157		4.00	∅

# MF200DU12FJ

## Maximum Ratings

Symbol	Conditions	Values	Units
$V_R$		1200	V
$V_{RRM}$		1200	V
$I_{F(AV)}$	$T_C=90^\circ\text{C}$ , Per Leg	100	A
	$T_C=90^\circ\text{C}$ , Per Moudle	200	A
	$T_C=100^\circ\text{C}$ , 20KHz, Per Moudle	120	A
$I_{F(RMS)}$	$T_C=90^\circ\text{C}$ , Per Leg	141	A
$I_{FSM}$	1/2 Cycle , 50Hz, Sine	1450	A
	1/2 Cycle , 60Hz, Sine	1600	A
$i^2t$	$T_J=45^\circ\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	10512	$\text{A}^2\text{s}$
	$T_J=45^\circ\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	12800	$\text{A}^2\text{s}$
$P_D$	$T_C=25^\circ\text{C}$	320	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)	0.6~1.2	N·m
Torque	To Terminal Recommended (M4)	0.6~1	N·m
Weight		27	g

## Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Juntion To-Case	0.32	$^\circ\text{C/W}$

## Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
$I_{RM}$	$V_R=1200\text{V}$	--	--	0.5	mA
	$V_R=1200\text{V}$ , $T_J=125^\circ\text{C}$	--	--	5	mA
$V_F$	$I_F=100\text{A}$	--	1.6		V
	$I_F=100\text{A}$ , $T_J=125^\circ\text{C}$	--	1.38		V
trr	$I_F=1\text{A}$ , $V_R=30\text{V}$ , $di_F/dt=-200\text{A}/\mu\text{s}$	--	45	--	ns
trr	$V_R=600\text{V}$ , $I_F=100\text{A}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_J=25^\circ\text{C}$	--	135	--	ns
$I_{RRM}$		--	10	--	A
trr	$V_R=600\text{V}$ , $I_F=100\text{A}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_J=125^\circ\text{C}$	--	380	--	ns
$I_{RRM}$		--	21	--	A

Performance Curves

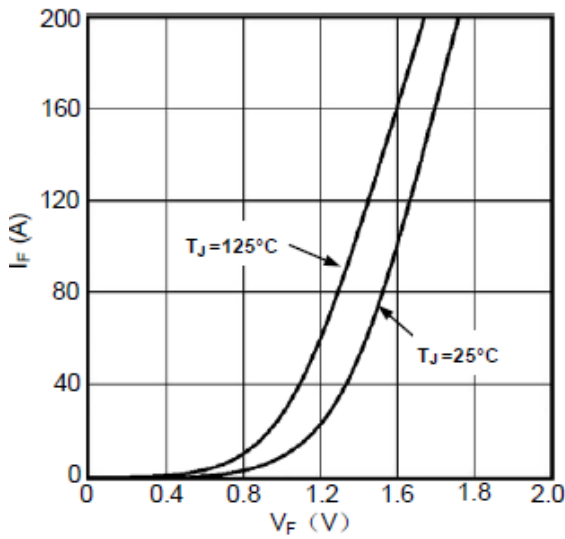


Fig1. Forward Voltage Drop vs Forward Current

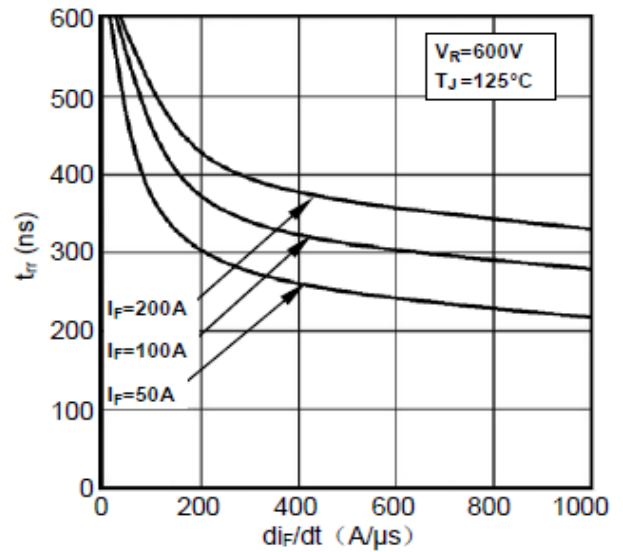


Fig2. Reverse Recovery Time vs  $di_F/dt$

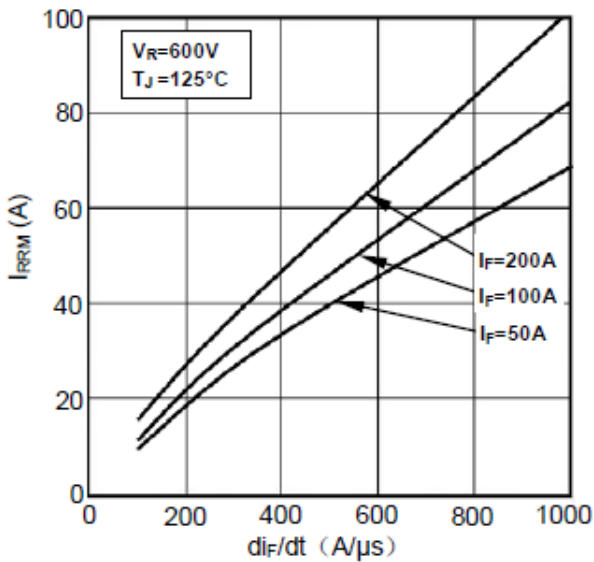


Fig3. Reverse Recovery Current vs  $di_F/dt$

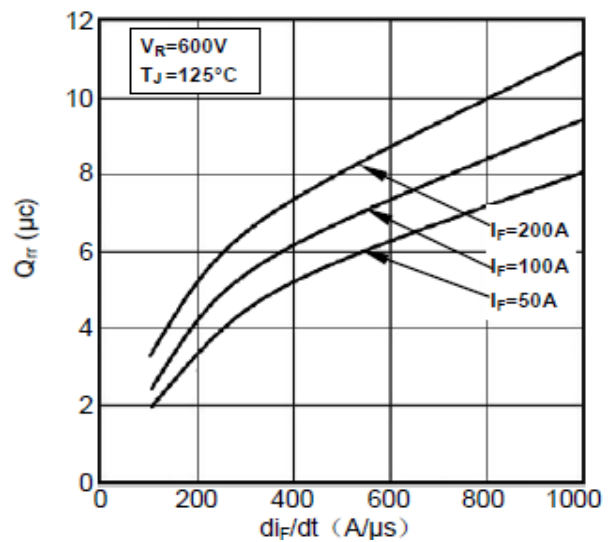


Fig4. Reverse Recovery Charge vs  $di_F/dt$

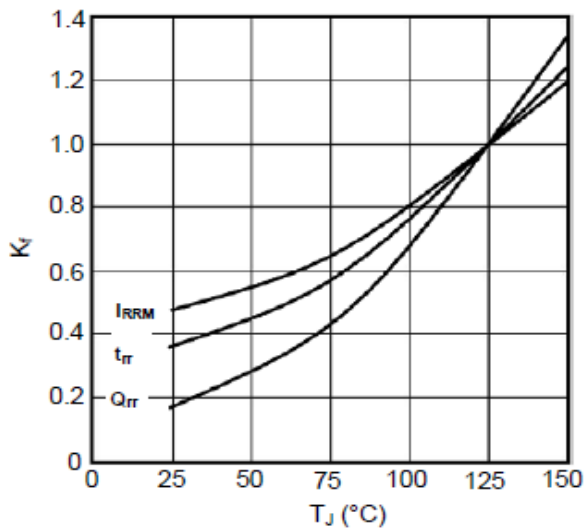


Fig5. Dynamic Parameters vs Junction Temperature

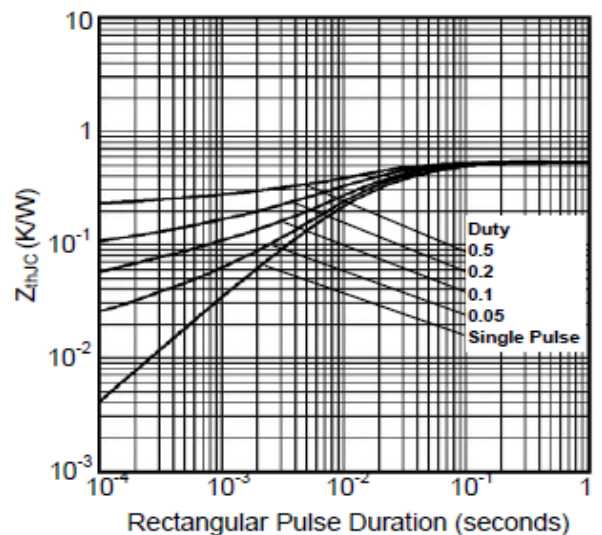


Fig6. Transient Thermal Impedance



**Ordering Information :**

Device	Packing
Part Number-BP	Bulk: 125pcs/Carton

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