



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Micro Commercial Components



Micro Commercial Components  
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# MF300K04F3

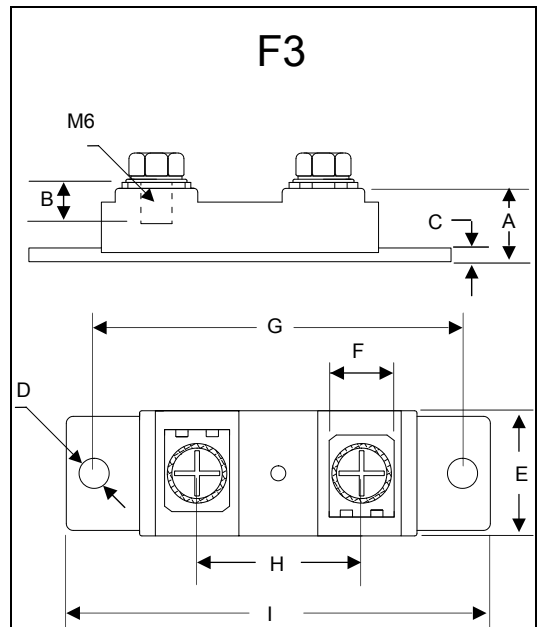
## 300 Amp FRED Modules 400 Volts

### Features

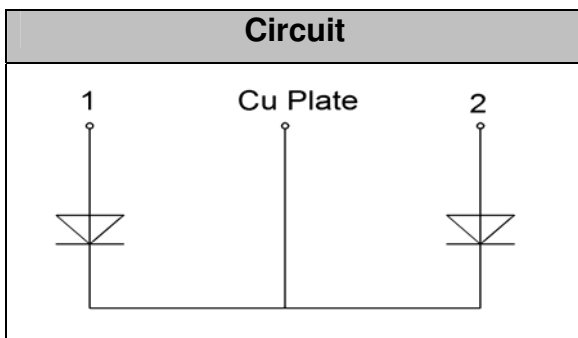
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

### 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	.618	.642	15.70	16.30	
B	.343	.366	8.70	9.30	
C	.118	.130	3.00	3.30	
D	.256		6.50		∅
E	1.051	1.075	26.70	27.30	
F	.539	.563	13.70	14.30	
G	3.138	3.161	79.70	80.30	
H	1.366	1.390	34.70	35.30	
I	3.610	3.634	91.70	92.30	



# MF300K04F3

## Maximum Ratings

Symbol	Conditions	Values	Units
$V_R$		400	V
$V_{RRM}$		400	V
$I_{F(AV)}$	$T_C=125^{\circ}\text{C}$ , Per Diode	150	A
	$T_C=125^{\circ}\text{C}$ , Per Moudle	300	A
	$T_C=125^{\circ}\text{C}$ , 20KHz, Per Moudle	200	A
$I_{F(RMS)}$	$T_C=125^{\circ}\text{C}$ , Per Diode	210	A
$I_{FSM}$	1/2 Cycle , 50Hz, Sine	2700	A
	1/2 Cycle , 60Hz, Sine	3000	A
$I^2t$	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	36450	$\text{A}^2\text{s}$
	$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	37350	$\text{A}^2\text{s}$
$P_D$		1250	W
$T_J$		-40 to +150	$^{\circ}\text{C}$
$T_{STG}$		-40 to +125	$^{\circ}\text{C}$
Torque	Recommended (M6)	3~4.7	N·m
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Weight		90	g

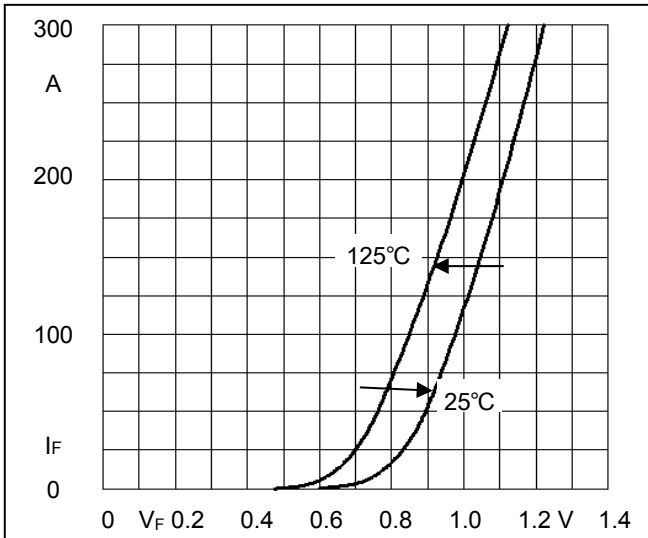
## Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$		0.10	$^{\circ}\text{C/W}$

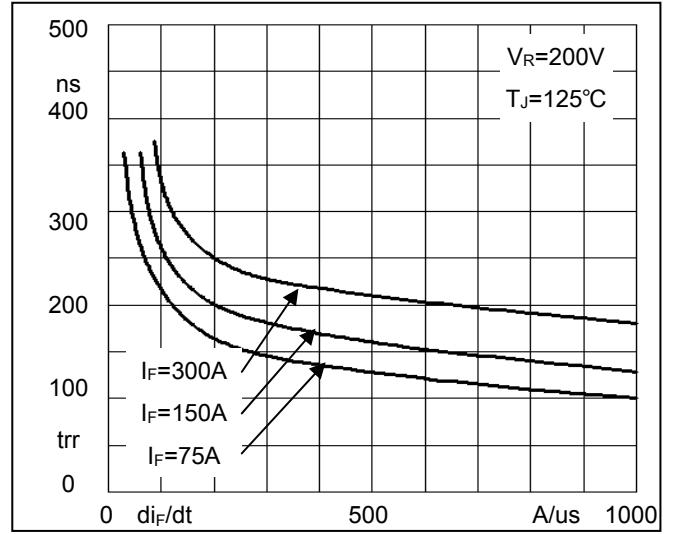
## Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
$I_{RM}$	$V_R=400\text{V}$	--	--	0.5	mA
	$V_R=400\text{V}$ , $T_J=125^{\circ}\text{C}$	--	--	2	mA
$V_F$	$I_F=150\text{A}$	--	1.05	--	V
	$I_F=150\text{A}$ , $T_J=125^{\circ}\text{C}$	--	0.90	--	V
trr	$I_F=1\text{A}$ , $V_R=30\text{V}$ , $di_F/dt=-200\text{A}/\mu\text{s}$	--	44	--	ns
trr	$V_R=200\text{V}$ , $I_F=150\text{A}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_J=25^{\circ}\text{C}$	--	90	--	ns
$I_{RRM}$		--	9	--	A
trr	$V_R=200\text{V}$ , $I_F=150\text{A}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_J=125^{\circ}\text{C}$	--	200	--	ns
$I_{RRM}$		--	17	--	A

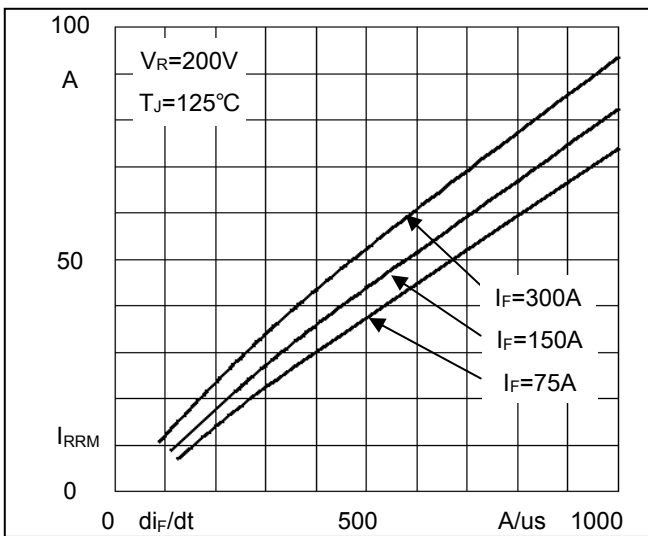
## Performance Curves



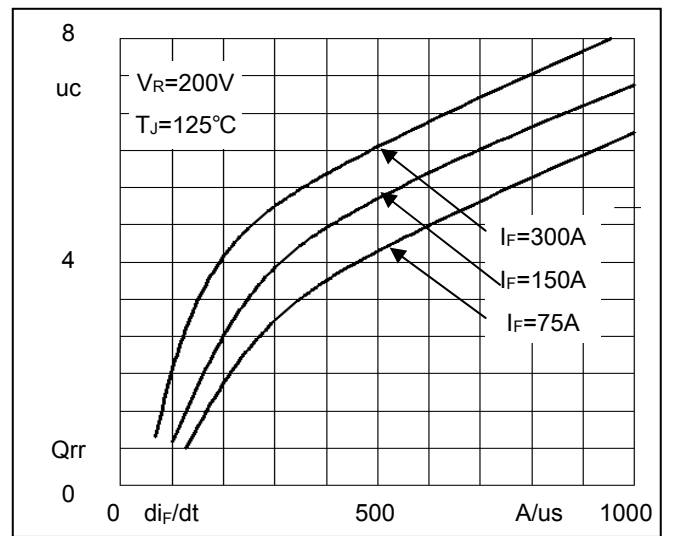
**Fig1. Forward Voltage Drop vs Forward Current**



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



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



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



Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-BP	Bulk: 10PCS/BOX ;100PCS/CTN

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