

## FRED Modules

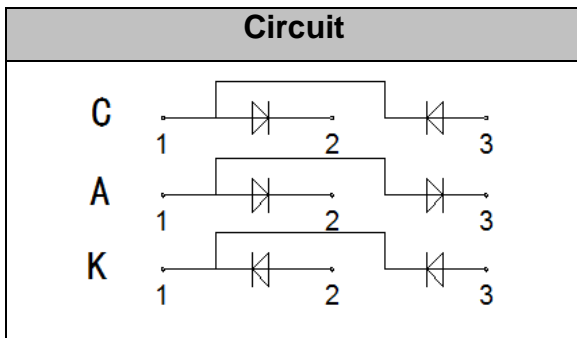


**V<sub>RRM</sub>** 600V

**I<sub>FAV</sub>** 100 A

### Applications

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



### Features

- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

### Module Type

TYPE			V <sub>RRM</sub>	V <sub>RSM</sub>
MF100C06F1	MF100A06F1	MF100K06F1	600V	660V

### Maximum Ratings

Symbol	Conditions	Values	Units
V <sub>R</sub>		600	V
V <sub>RRM</sub>		600	V
I <sub>F(AV)</sub>	T <sub>C</sub> =90°C, Per Diode	100	A
I <sub>F(RMS)</sub>	T <sub>C</sub> =95°C, Per Diode	150	A
I <sub>FSM</sub>	1/2 Cycle, 50Hz, Sine	1300	A
	1/2 Cycle, 60Hz, Sine	1500	A
I <sup>2</sup> t	T <sub>J</sub> =45°C, t=10ms, 50Hz, Sine	8450	A <sup>2</sup> s
	T <sub>J</sub> =45°C, t=8.3ms, 60Hz, Sine	11250	A <sup>2</sup> s
P <sub>D</sub>		280	W
Visol	AC, Ton=1min	3000	V
T <sub>J</sub>		-40 to +150	°C
T <sub>STG</sub>		-40 to +125	°C
Torque	Recommended (M5)	3 ± 15%	N·m
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Weight		100	g

### Thermal Characteristics

Symbol	Conditions	Values	Units
R <sub>th(j-c)</sub>	Per diode	0.4	°C/W



## Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
$I_{RM}$	$V_R=600V$	--	--	50	$\mu A$
	$V_R=600V, T_J=125^\circ C$	--	--	1	mA
$V_F$	$I_F=100A$	--	1.25	1.4	V
	$I_F=100A, T_J=125^\circ C$	--	1.1	1.3	V
trr	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	45	50	ns
trr	$V_R=300V, I_F=100A, di_F/dt=-200A/\mu s, T_J=25^\circ C$	--	105	--	ns
$I_{RRM}$		--	10	--	A
trr	$V_R=300V, I_F=100A, di_F/dt=-200A/\mu s, T_J=125^\circ C$	--	200	--	ns
$I_{RRM}$		--	18	--	A

## Performance Curves

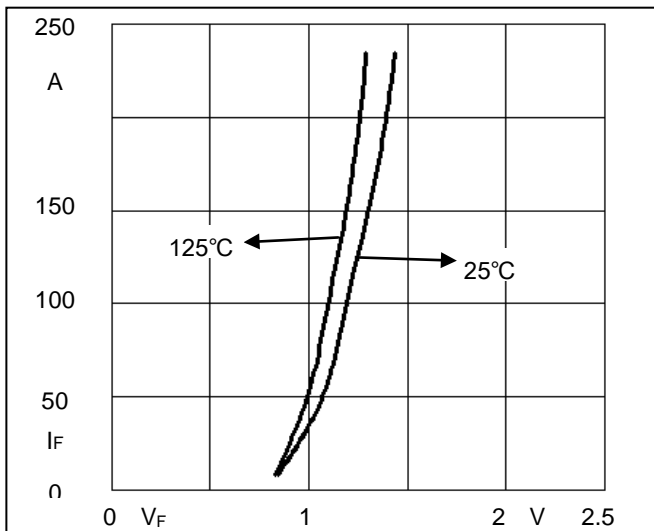


Fig1. Forward Voltage Drop vs Forward Current

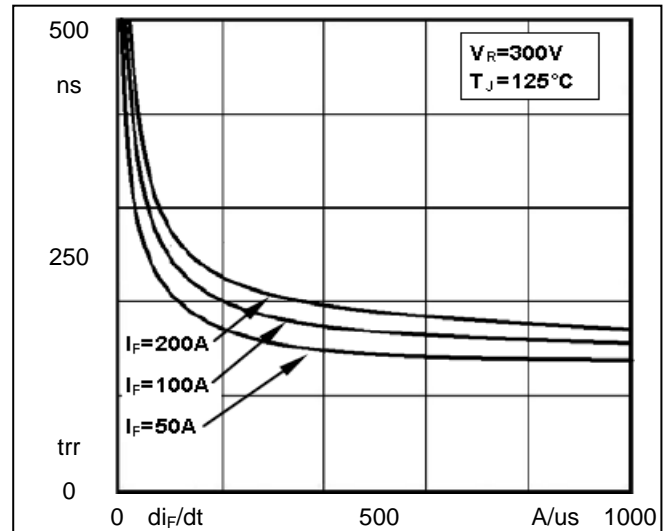


Fig2. Reverse Recovery Time vs  $di_F/dt$

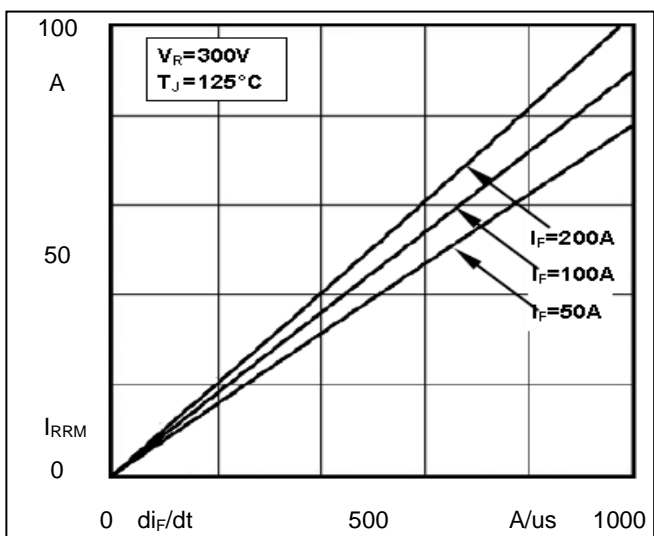


Fig3. Reverse Recovery Current vs  $di_F/dt$

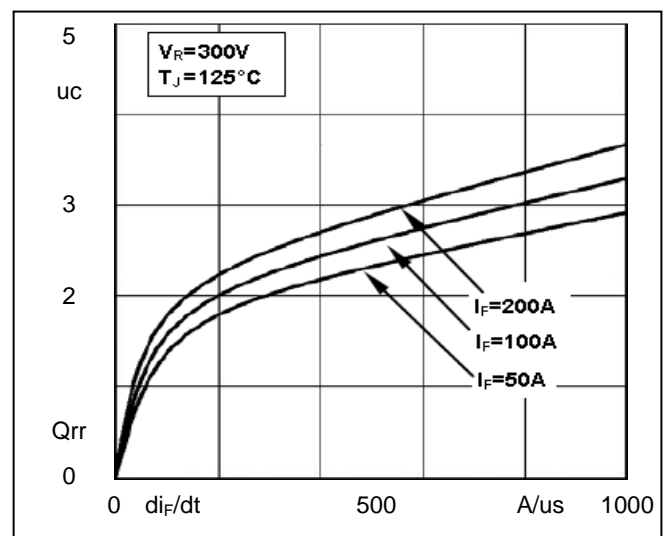
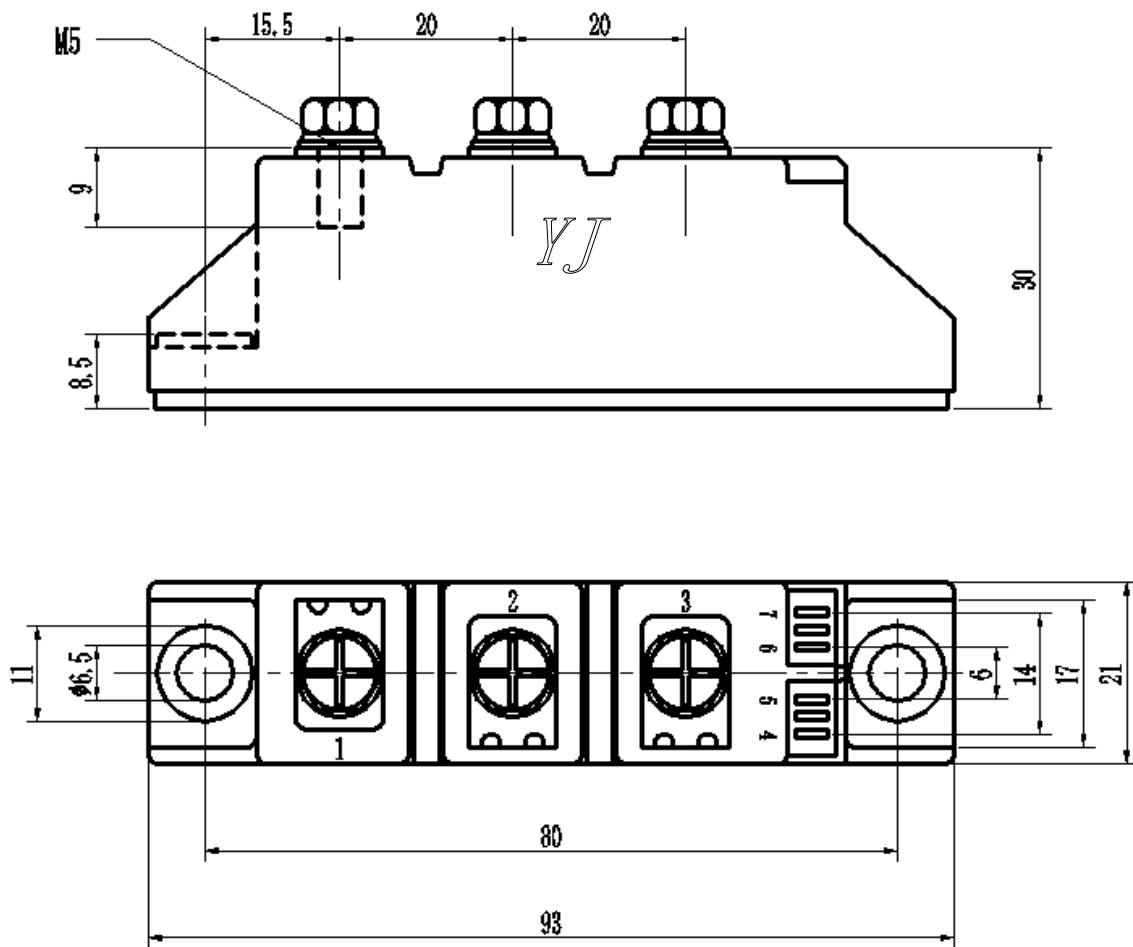


Fig4. Reverse Recovery Charge vs  $di_F/dt$



Package Outline Information

CASE: F1



Dimensions in mm