

MF100K12F1

FRED Modules

V_{RRM} 1200V

I_{FAV} 100 A

Applications

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

Circuit

Features

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

Maximum Ratings

Symbol	Conditions	Values	Units
V _R		1200	V
V _{RRM}		1200	V
I _{F(AV)}	T _C =75°C, Per Diode	100	A
	T _C =85°C, 20KHz, Per Module	75	A
I _{F(RMS)}	T _C =75°C, Per Diode	150	A
I _{FSM}	1/2 Cycle , 50Hz, Sine	1100	A
	1/2 Cycle , 60Hz, Sine	1200	A
I ² t	T _J =45°C, t=10ms, 50Hz, Sine	6050	A ² s
	T _J =45°C, t=8.3ms, 60Hz, Sine	7200	A ² s
P _D		280	W
Visol	AC, Ton=1min	3000	V
T _J		-40 to +150	°C
T _{STG}		-40 to +125	°C
Torque	RecommendedHM6H	3 f 15%	N·m
Torque	RecommendedHM6H	5 f 15%	N·m
Weight		100	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Per diode	0.4	/W

Electrical Characteristics

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

Performance Curves

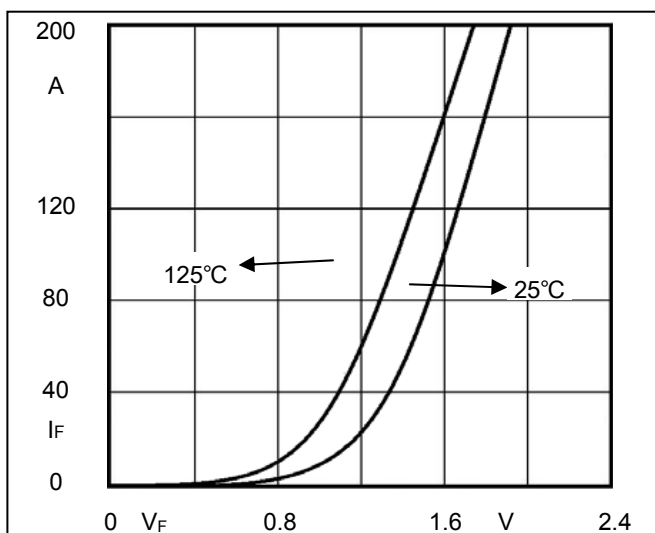


Fig1. Forward Voltage Drop vs Forward Current

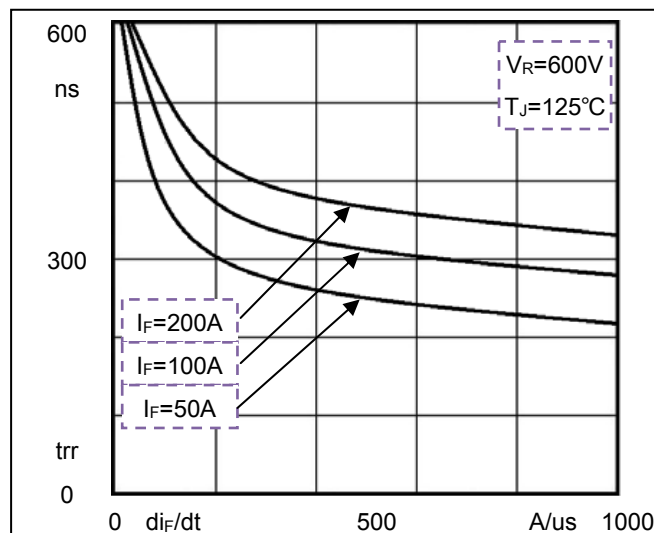


Fig2. Reverse Recovery Time vs di_F/dt

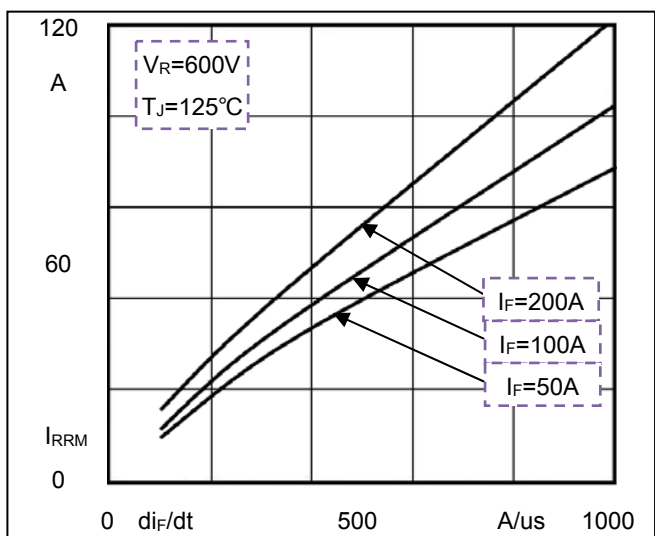


Fig3. Reverse Recovery Current vs di_F/dt

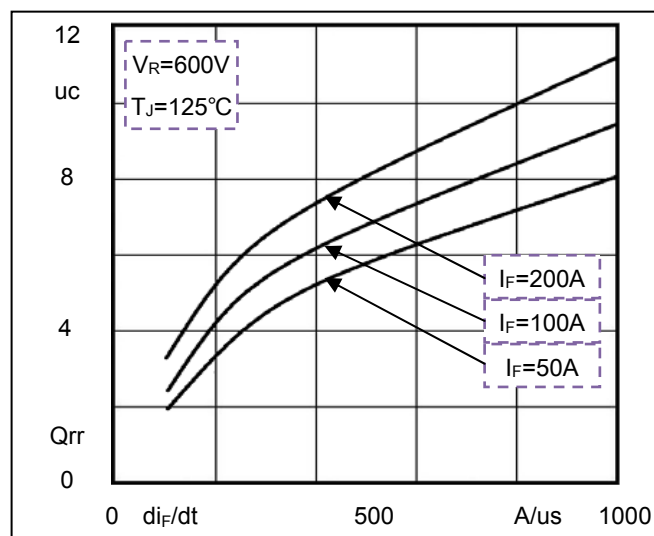
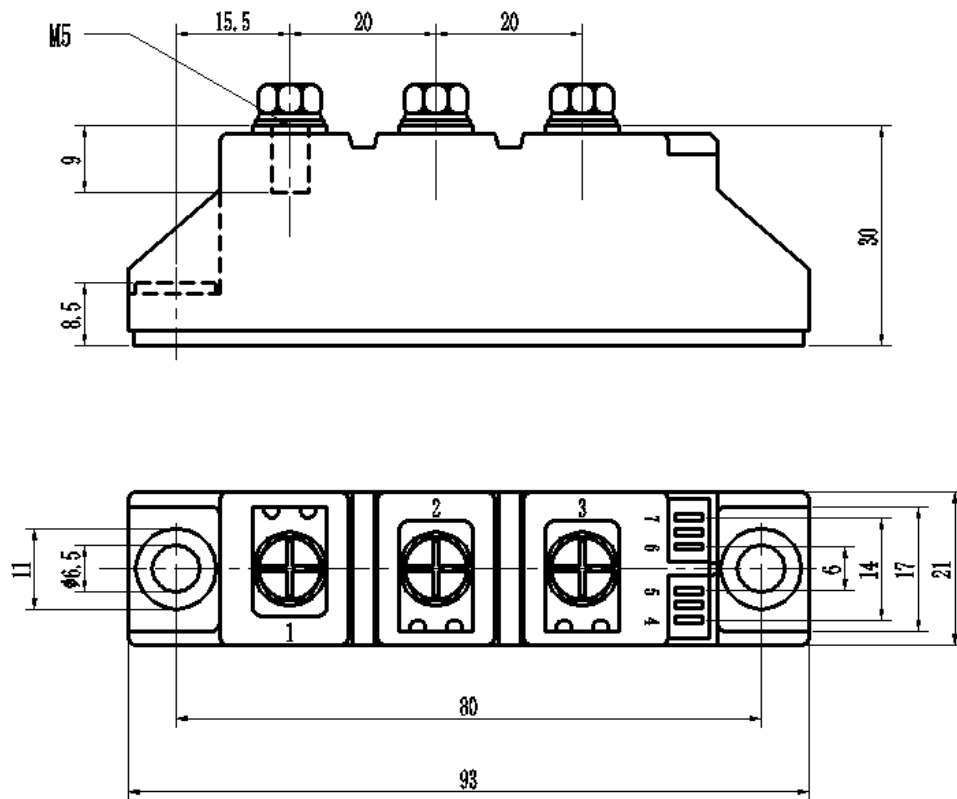


Fig4. Reverse Recovery Charge vs di_F/dt

Package Outline Information

CASE: F1



Dimensions in mm