



FRED Modules

V_{RRM} 400V

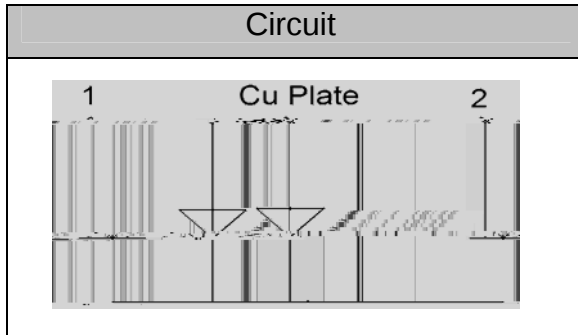
I_{FAV} 200 A

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

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



Maximum Ratings

Symbol	Conditions	Values	Units
V _R		400	V
V _{RRM}		400	V
I _{F(AV)}	T _C =125°C, Per Diode	100	A
	T _C =125°C, Per Module	200	A
I _{F(RMS)}	T _C =125°C, Per Diode	150	A
I _{FSM}	1/2 Cycle, 50Hz, Sine	1500	A
	1/2 Cycle, 60Hz, Sine	1800	A
I ² t	T _J =45°C, t=10ms, 50Hz, Sine	11250	A ² s
	T _J =45°C, t=8.3ms, 60Hz, Sine	16200	A ² s
T _J		-40 to +150	°C
T _{STG}		-40 to +125	°C
Torque	RecommendedHM6H	3H 4 .7	N·m
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Weight		68	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Per Leg	0.22	/W
R _{th(j-c)}	Per Module	0.11	/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=400V$	--	--	0.5	mA
	$V_R=400V, T_J=125^{\circ}C$	--	--	1	mA
V_F	$I_F=100A$	--	1.1	1.35	V
	$I_F=100A, T_J=125^{\circ}C$	--	1.0	1.25	V
trr	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	38	--	ns
trr	$V_R=200V, I_F=100A, di_F/dt=-200A/\mu s, T_J=25^{\circ}C$	--	95	--	ns
I_{RRM}		--	8.5	--	A
trr	$V_R=200V, I_F=100A, di_F/dt=-200A/\mu s, T_J=125^{\circ}C$	--	150	--	ns
I_{RRM}		--	14	--	A

Performance Curves

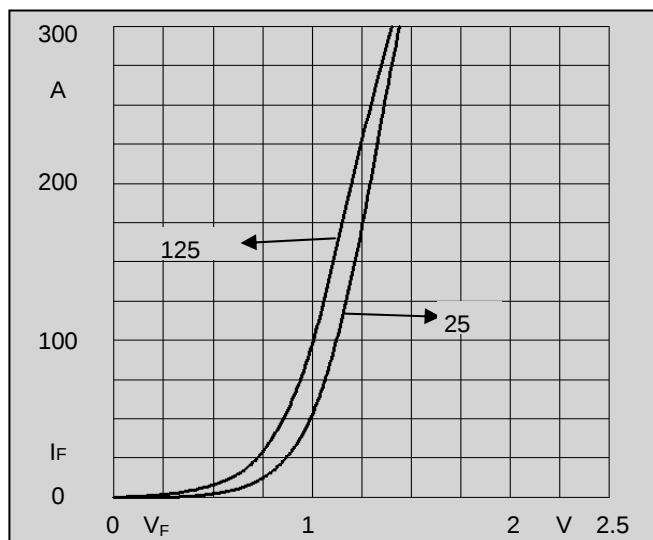


Fig1. Forward Voltage Drop vs Forward Current

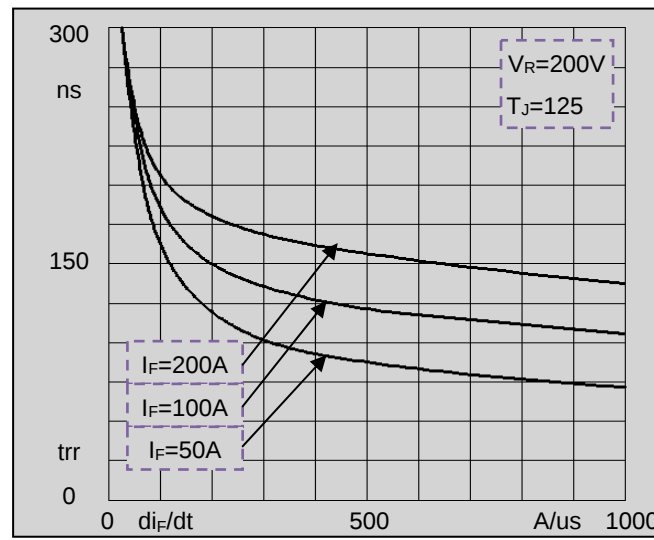


Fig2. Reverse Recovery Time vs di_F/dt

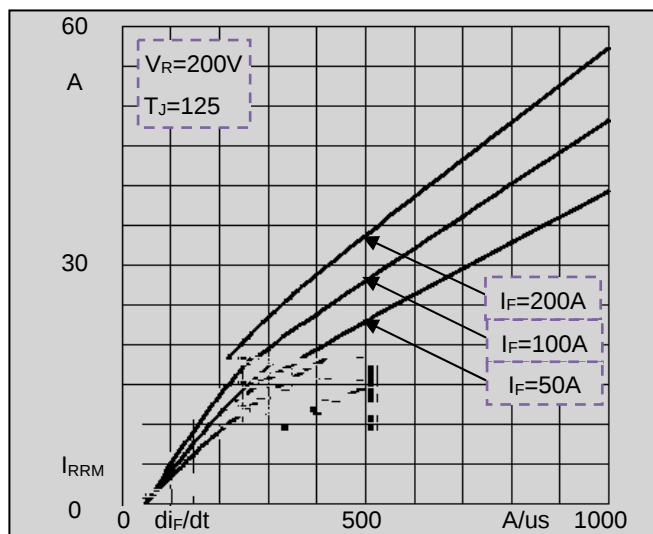


Fig3. Reverse Recovery Current vs di_F/dt

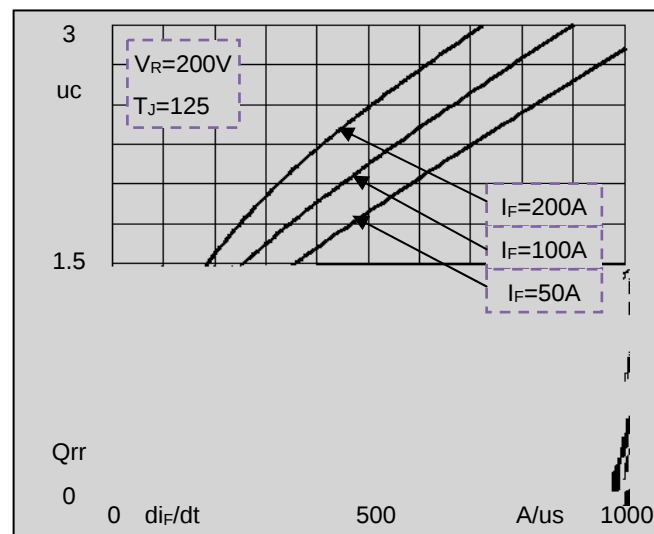
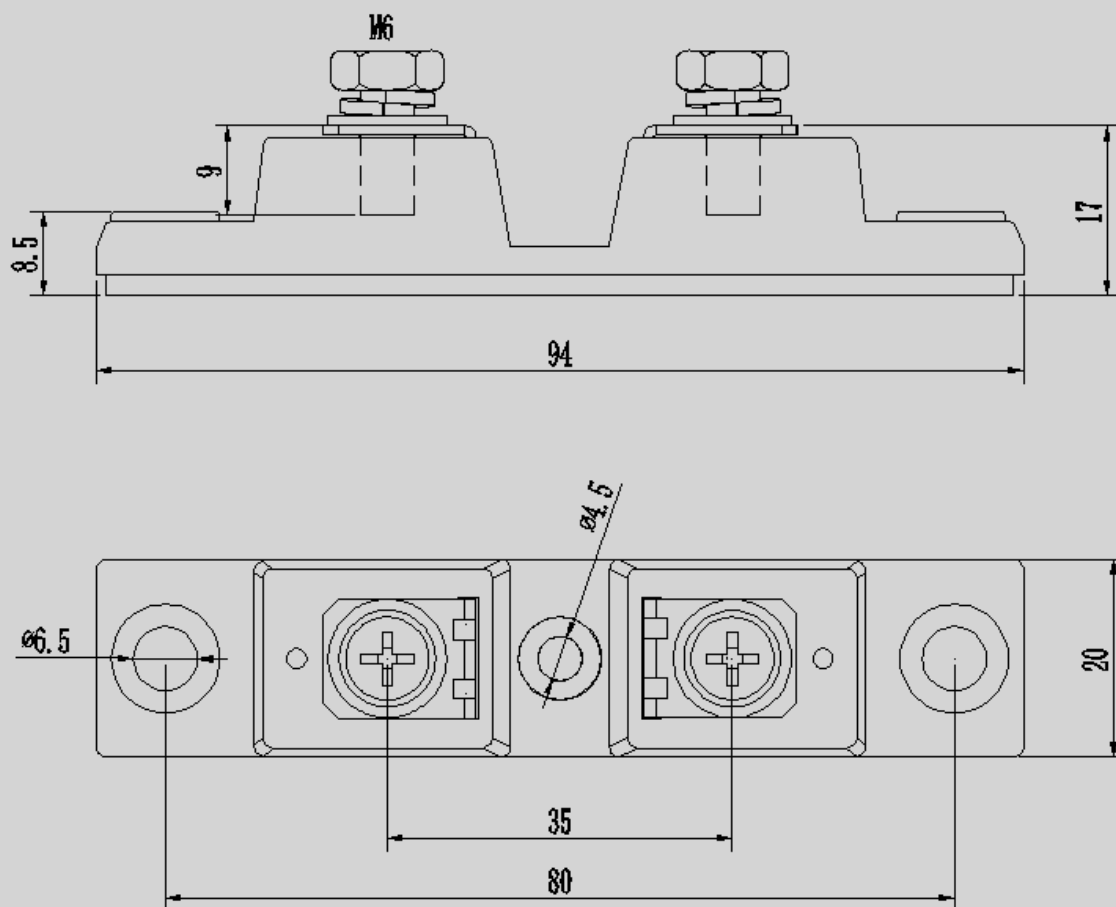


Fig4. Reverse Recovery Charge vs di_F/dt



Package Outline Information

CASE: F4N



Dimensions in mm