

FRED Modules



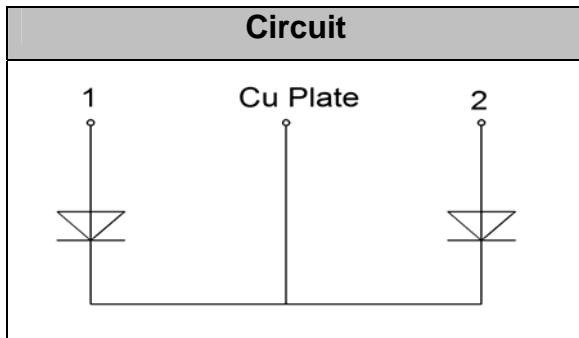
V_{RRM} 600V
I_{FAV} 200 A

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



Maximum Ratings

Symbol	Conditions	Values	Units
V _R		600	V
V _{R_{RM}}		600	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	141	A
I _{FSM}	1/2 Cycle, 50Hz, Sine	2100	A
	1/2 Cycle, 60Hz, Sine	2350	A
I ² t	T _J =45°C, t=10ms, 50Hz, Sine	22000	A ² s
	T _J =45°C, t=8.3ms, 60Hz, Sine	27600	A ² s
P _D		1400	W
T _J		-40 to +150	°C
T _{STG}		-40 to +125	°C
Torque	Recommended (M6)	3~4.7	N·m
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Weight		92	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Per diode	0.2	°C/W
R _{th(j-c)}	Per module	0.1	°C/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=600V$	--	--	0.5	mA
	$V_R=600V, T_J=125^\circ C$	--	--	1	mA
V_F	$I_F=100A$	--	1.15		V
	$I_F=100A, T_J=125^\circ C$	--	1.0		V
t_{rr}	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	48	--	ns
t_{rr}	$V_R=300V, I_F=100A, di_F/dt=-200A/\mu s, T_J=25^\circ C$	--	105	--	ns
I_{RRM}		--	10	--	A
t_{rr}	$V_R=300V, I_F=100A, di_F/dt=-200A/\mu s, T_J=125^\circ C$	--	200	--	ns
I_{RRM}		--	18	--	A

Performance Curves

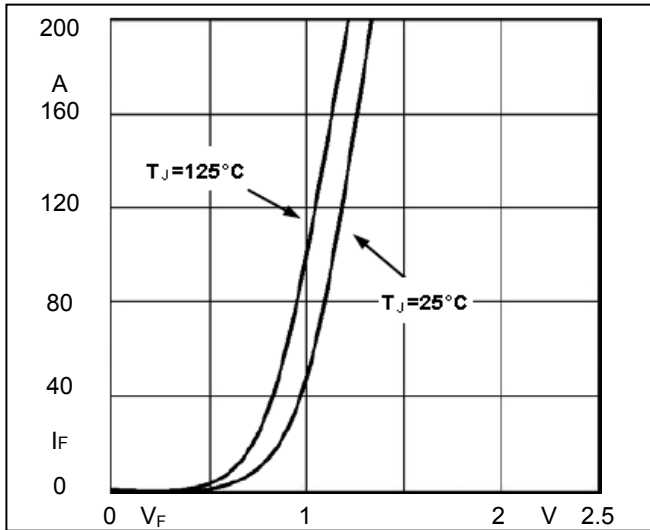


Fig1. Forward Voltage Drop vs Forward Current

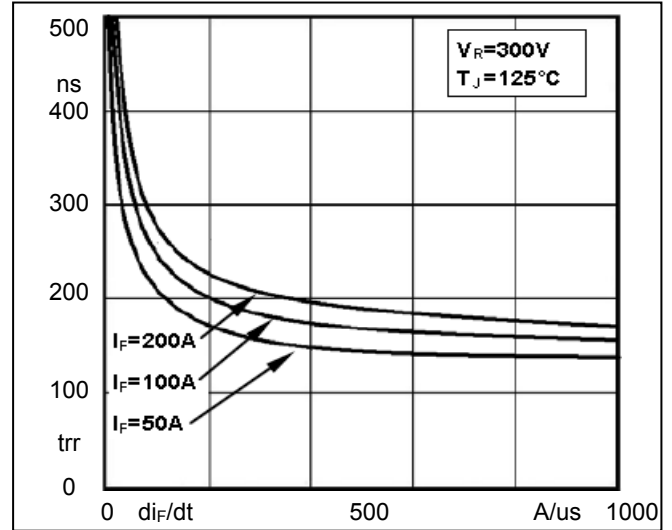


Fig2. Reverse Recovery Time vs di_F/dt

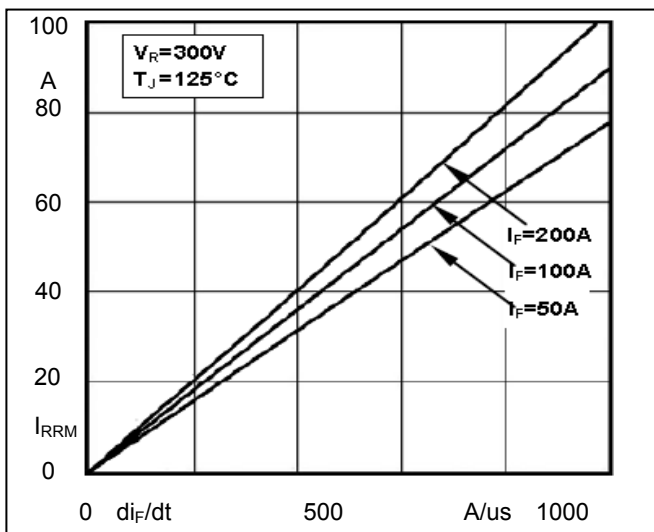


Fig3. Reverse Recovery Current vs di_F/dt

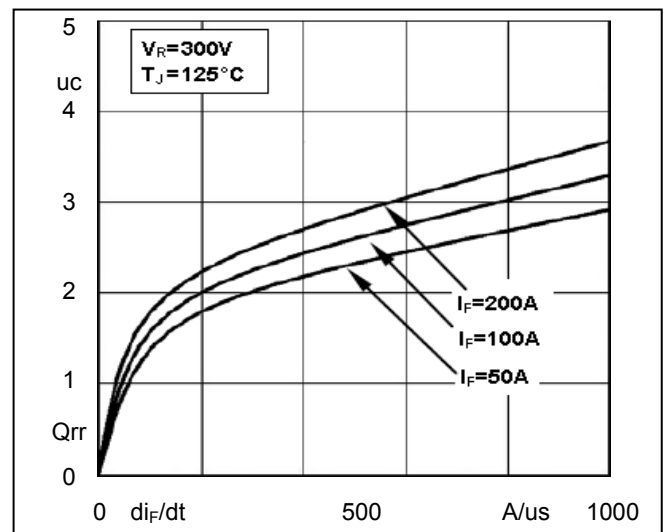
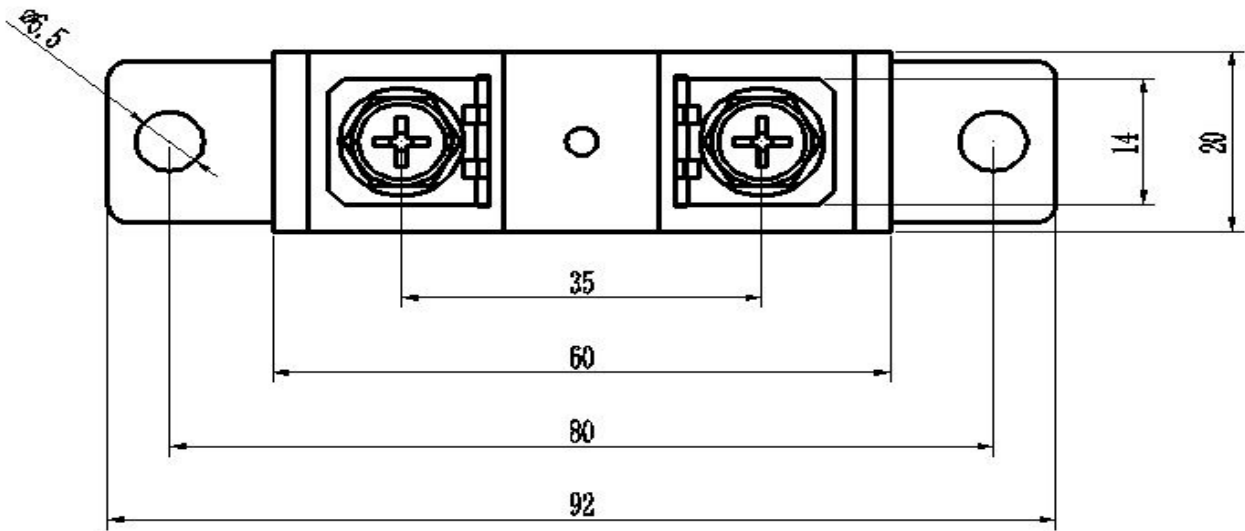
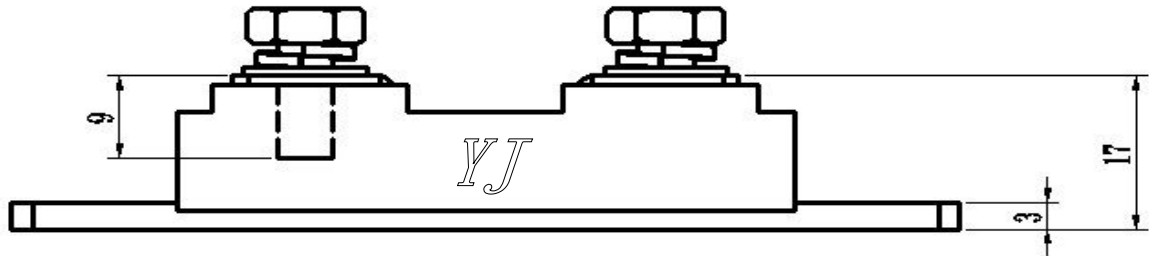


Fig4. Reverse Recovery Charge vs di_F/dt

Package Outline Information

CASE: F4



Dimensions in mm