



FRED Modules

V_{RRM} 1200V
I_{FAV} 2×100 A

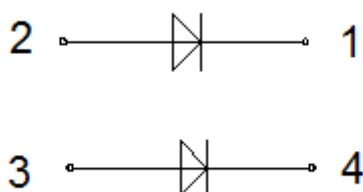
Applications

- 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
- Popular SOT-227 Package

Circuit



Maximum Ratings

Symbol	Conditions	Values	Units
V _R		1200	V
V _{RRM}		1200	V
I _{F(AV)}	T _C =90°C, Per Leg	100	A
	T _C =90°C, Per Module	200	A
	T _C =100°C, 20KHz, Per Module	120	A
I _{F(RMS)}	T _C =90°C, Per Leg	141	A
I _{FSM}	1/2 Cycle, 50Hz, Sine	1450	A
	1/2 Cycle, 60Hz, Sine	1600	A
I ² t	T _J =45°C, t=10ms, 50Hz, Sine	10512	A ² s
	T _J =45°C, t=8.3ms, 60Hz, Sine	12800	A ² s
P _D	T _C =25°C	320	W
T _J		-40 to +150	°C
T _{STG}		-40 to +125	°C
Visol	3600V AC 1s	1	mA
Torque	To Sink Recommended (M4)	0.6~1.2	N·m
Torque	To Terminal Recommended (M4)	0.6~1	N·m
Weight		27	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Junction-To-Case	0.32	°C/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=1200V$	--	--	0.5	mA
	$V_R=1200V, T_J=125^{\circ}C$	--	--	5	mA
V_F	$I_F=100A$	--	1.6		V
	$I_F=100A, T_J=125^{\circ}C$	--	1.38		V
t_{rr}	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	45		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

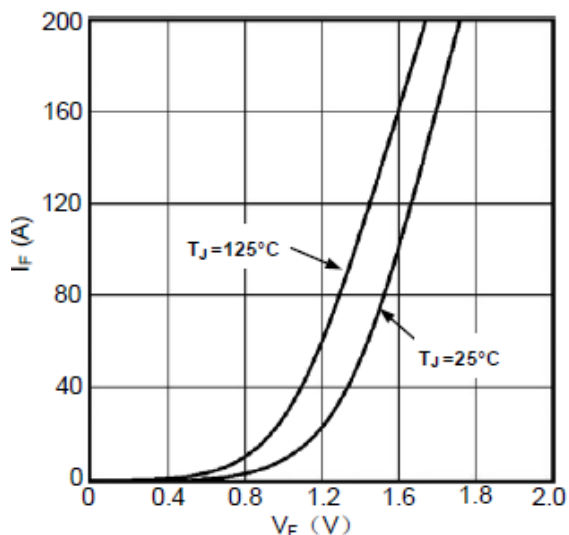


Fig1. Forward Voltage Drop vs Forward Current

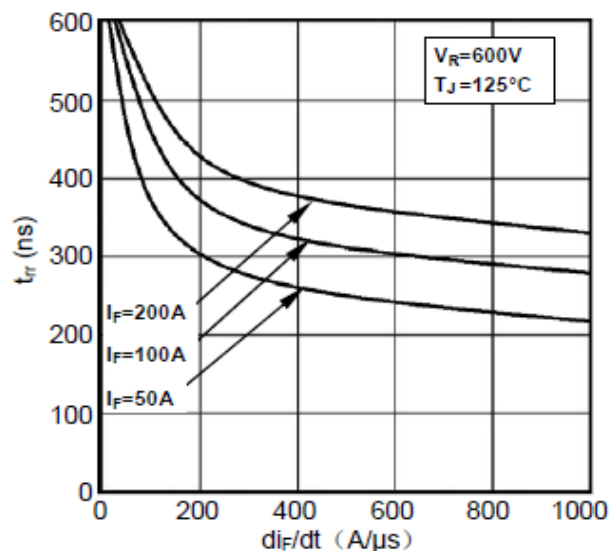


Fig2. Reverse Recovery Time vs di_F/dt

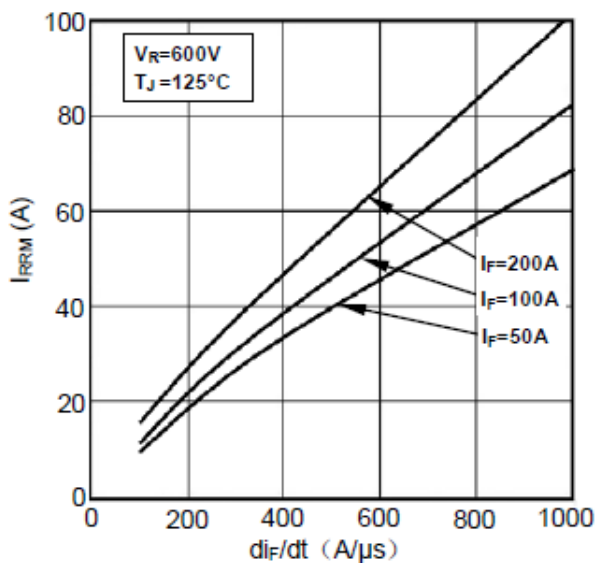


Fig3. Reverse Recovery Current vs di_F/dt

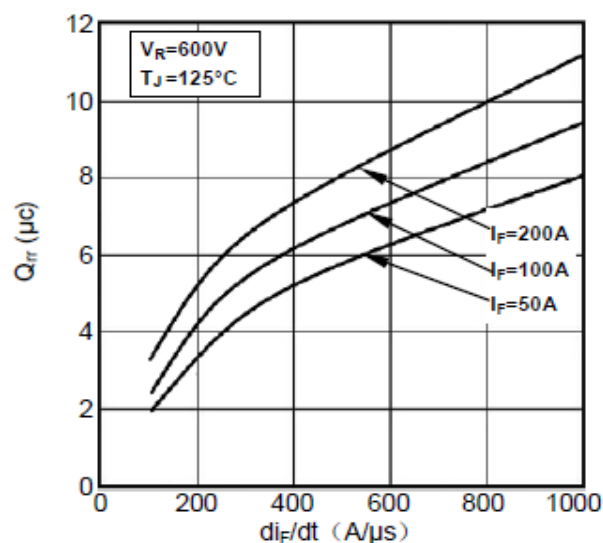


Fig4. Reverse Recovery Charge vs di_F/dt

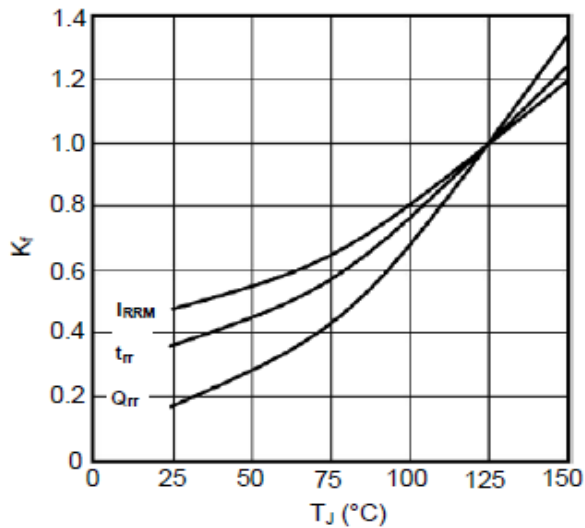


Fig5. Dynamic Parameters vs Junction Temperature

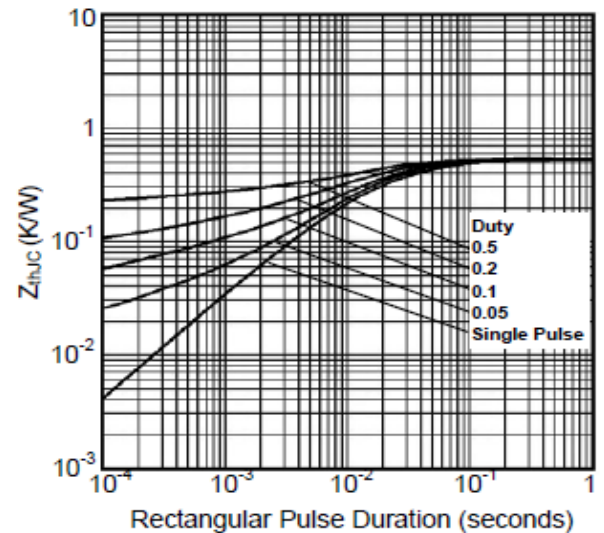
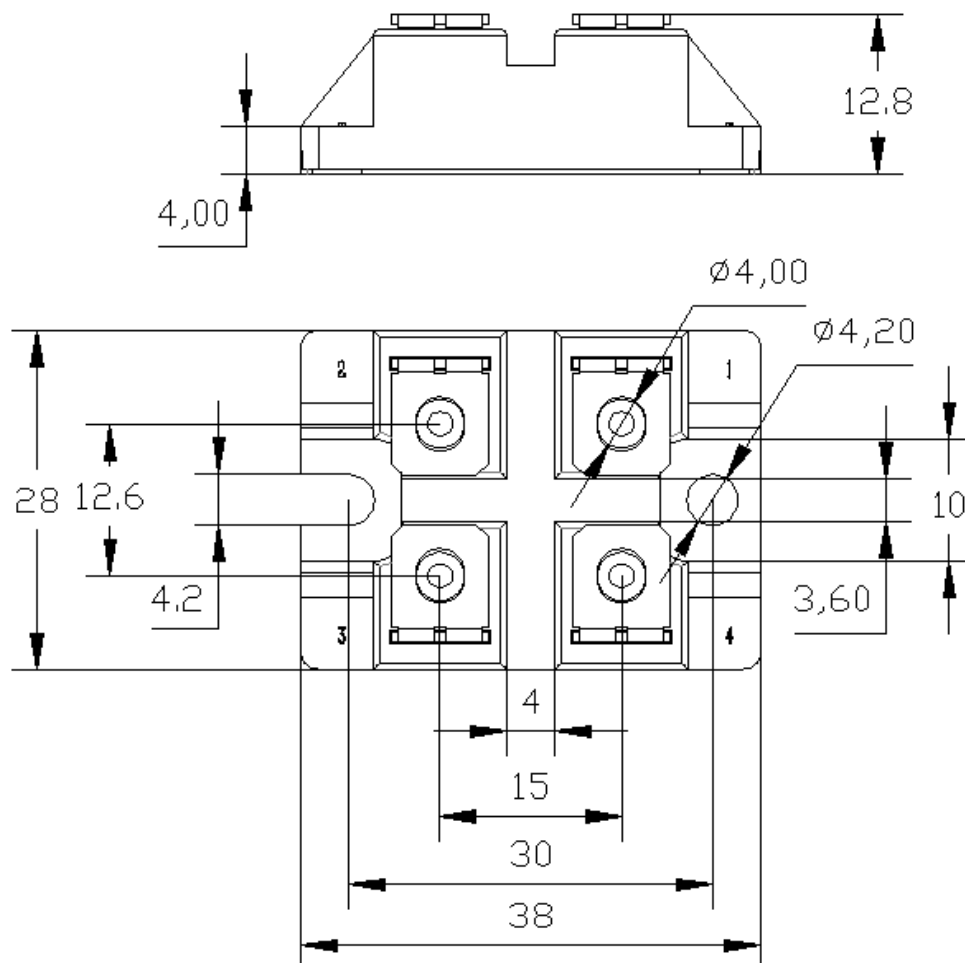


Fig6. Transient Thermal Impedance

Package Outline Information

CASE: FJ



Dimensions in mm