MF120DU12FJ

RoHS COMPLIANT

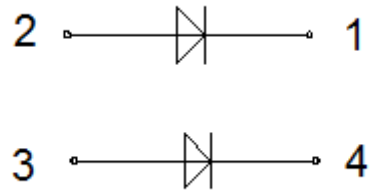
FRED Modules

V_{RRM} 1200V
I_{FAV} 2×60A

Applications

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

Circuit



Features

- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Popular SOT-227 Package

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		1200	V
V_{RRM}		1200	V
$I_{F(AV)}$	T_C=90°C, Per Leg	60	A
	T_C=90°C, Per Module	120	A
$I_{F(RMS)}$	T_C=90°C, Per Leg	84	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	500	A
	1/2 Cycle , 60Hz, Sine	550	A
I^2t	T_J=45°C, t=10ms, 50Hz, Sine	1250	A^2s
	T_J=45°C, t=8.3ms, 60Hz, Sine	1512	A^2s
P_D	Tc=25°C	208	W
T_J		-40 to +150	°C
T_{STG}		-40 to +125	°C
Visol	3600V AC 1s	1	mA
Torque	To Sink Recommended（M4）	0.7~1.1	N·m
Torque	To Terminal Recommended（M4）	0.7~1.1	N·m
Weight		26.5	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per diode	0.6	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=1200V	--	--	0.5	mA
	V_R=1200V, T_J=125°C	--	--	5	mA
V_F	I_F=60A	--	1.95	2.15	V
	I_F=60A, T_J=125°C	--	1.65	1.85	V
trr	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	60	80	ns
trr	V_R=600V, I_F=60A, di_F/dt=-200A/μs, T_J=25°C	--	90	--	ns
I_{RRM}		--	7.5	--	A
trr	V_R=600V, I_F=60A, di_F/dt=-200A/μs, T_J=125°C	--	320	--	ns
I_{RRM}		--	14	--	A

Performance Curves

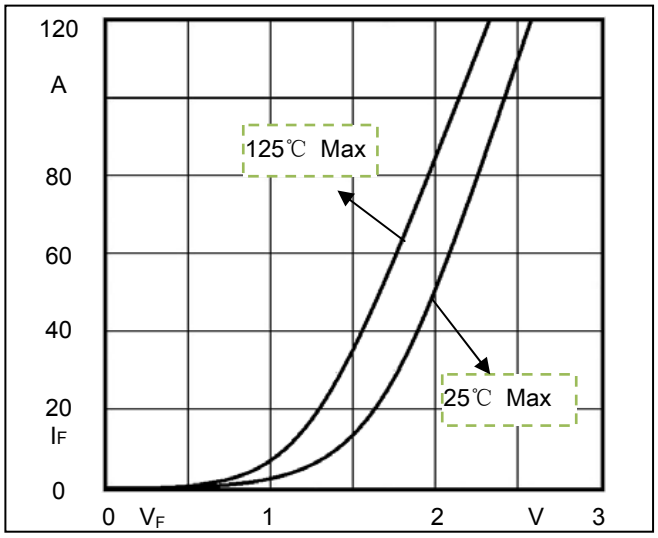


Fig1. Forward Voltage Drop vs Forward Current

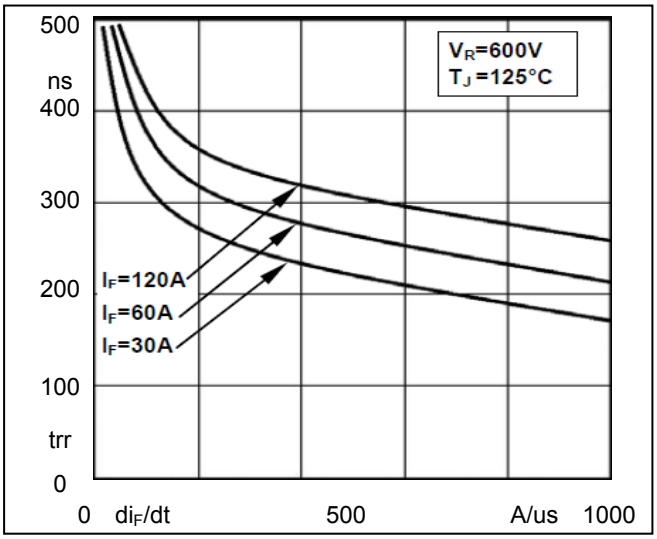


Fig2. Reverse Recovery Time vs di_F/dt

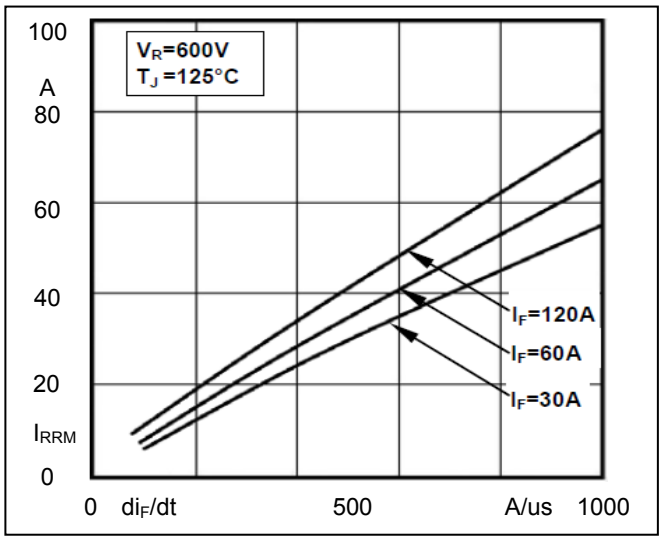


Fig3. Reverse Recovery Current vs di_F/dt

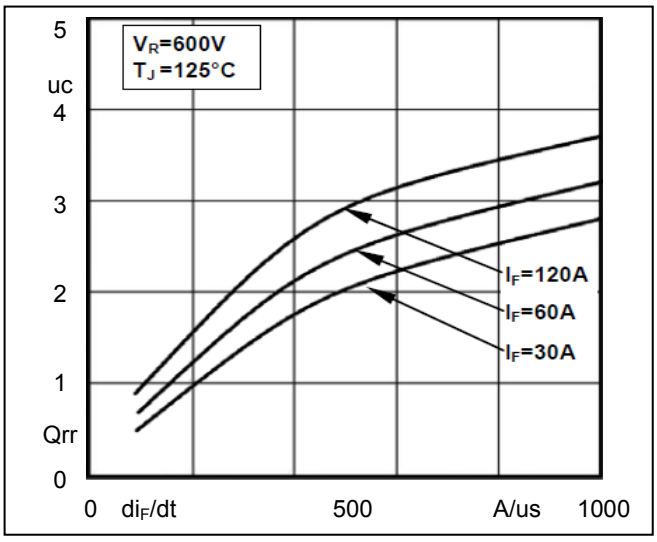


Fig4. Reverse Recovery Charge vs di_F/dt

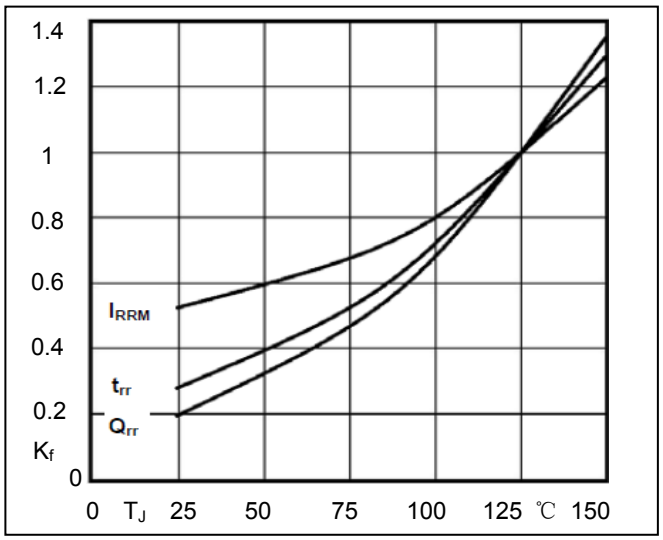


Fig5. Dynamic Parameters vs Junction Temperature

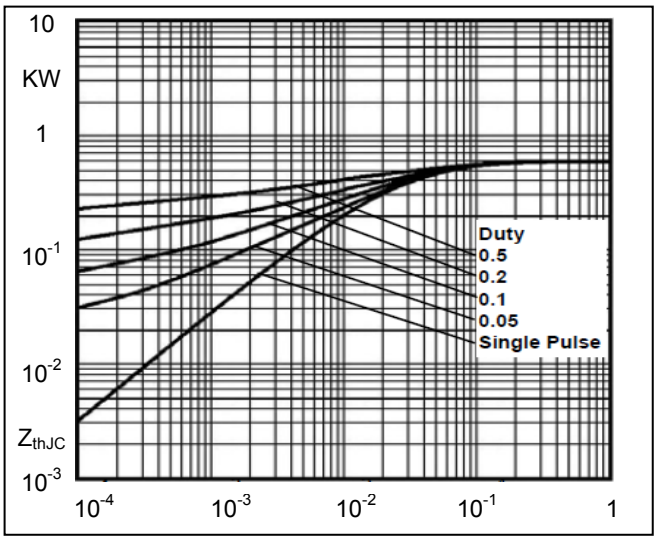
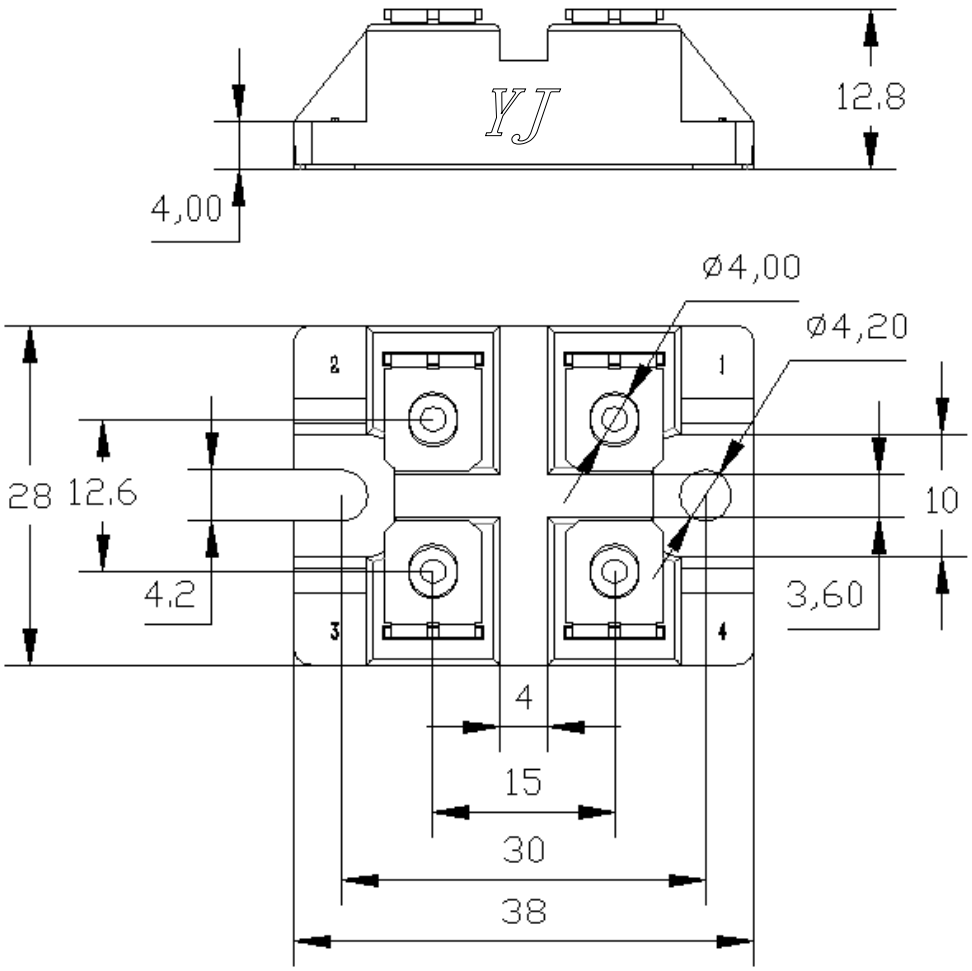


Fig6. Transient Thermal Impedance

Package Outline Information

CASE: FJ



Dimensions in mm