

FRED Modules



V_{RRM} 1200V

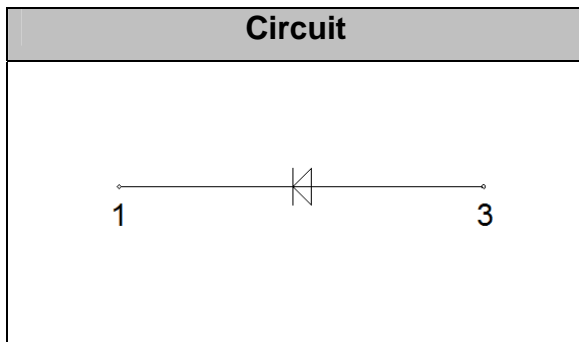
I_{FAV} 300 A

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		1200	V
V_{RRM}		1200	V
$I_{F(AV)}$	$T_C=100^\circ\text{C}$	300	A
	$T_C=110^\circ\text{C}, 20\text{KHz}$	210	A
$I_{F(RMS)}$	$T_C=110^\circ\text{C}$	420	A
I_{FSM}	$T_J=45^\circ\text{C}, 1/2 \text{ Cycle}, 50\text{Hz}, \text{Sine}$	2500	A
	$T_J=45^\circ\text{C}, 1/2 \text{ Cycle}, 60\text{Hz}, \text{Sine}$	2800	A
I^2t	$T_J=45^\circ\text{C}, t=10\text{ms}, 50\text{Hz}, \text{Sine}$	312500	A^2s
	$T_J=45^\circ\text{C}, t=8.3\text{ms}, 60\text{Hz}, \text{Sine}$	325000	A^2s
P_D		890	W
Visol	AC, $T_{on}=1\text{min}$	3000	V
T_J		-40 to +150	$^\circ\text{C}$
T_{STG}		-40 to +125	$^\circ\text{C}$
Torque	Recommended (M6)	$5\pm 15\%$	N·m
Torque	Recommended (M6)	$5\pm 15\%$	N·m
Weight		160	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Junction - to - Case	0.14	$^\circ\text{C/W}$



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=1200V$	--	--	5	mA
	$V_R=1200V, T_J=125^\circ C$	--	--	10	mA
V_F	$I_F=300A$	--	2.7		V
	$I_F=300A, T_J=125^\circ C$	--	1.8		V
t_{rr}	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	57	--	ns
t_{rr}	$V_R=600V, I_F=300A, di_F/dt=-200A/\mu s, T_J=25^\circ C$	--	150	--	ns
I_{RRM}		--	12	--	A
t_{rr}	$V_R=600V, I_F=300A, di_F/dt=-200A/\mu s, T_J=125^\circ C$	--	450	--	ns
I_{RRM}		--	27	--	A

Performance Curves

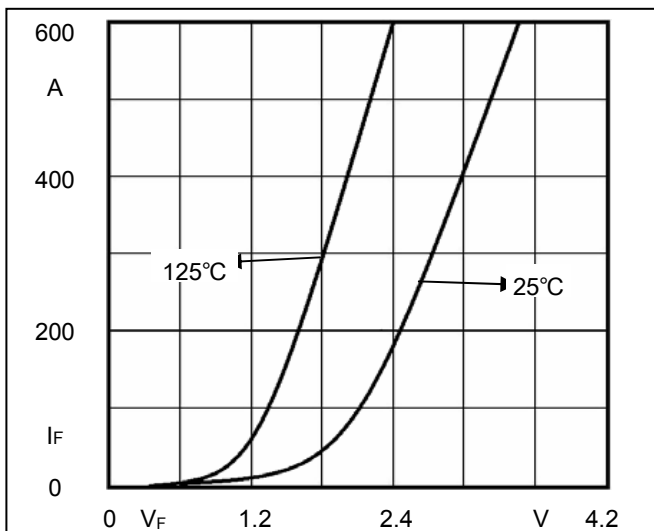


Fig1. Forward Voltage Drop vs Forward Current

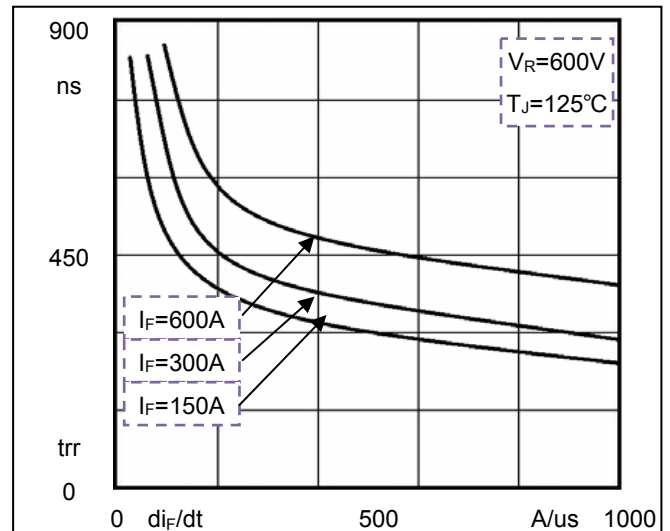


Fig2. Reverse Recovery Time vs di_F/dt

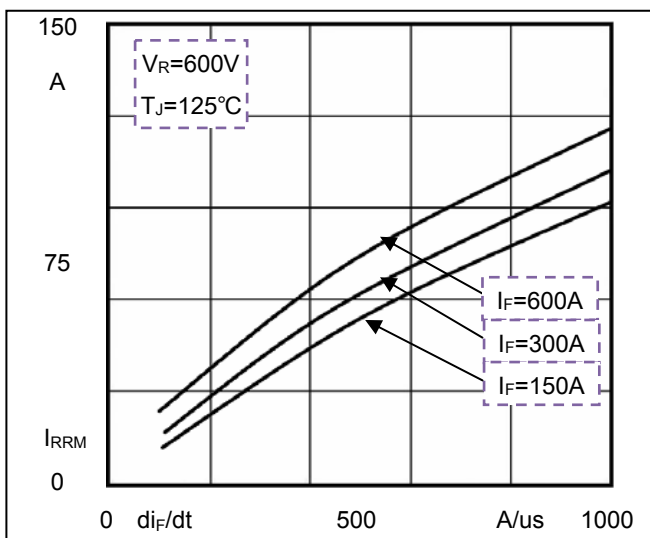


Fig3. Reverse Recovery Current vs di_F/dt

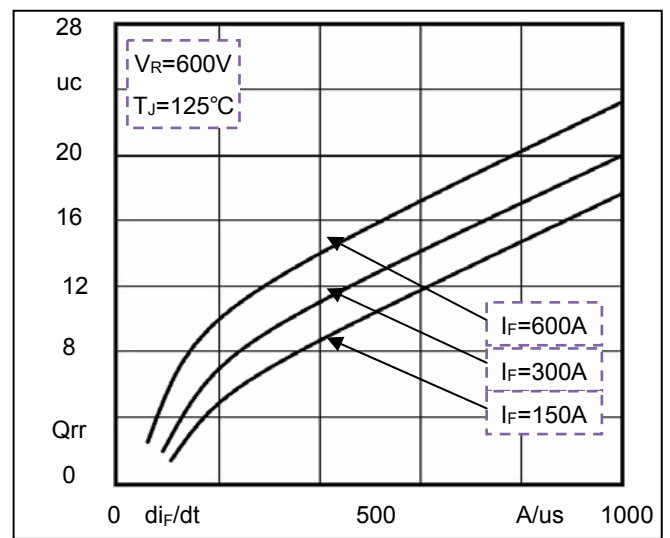
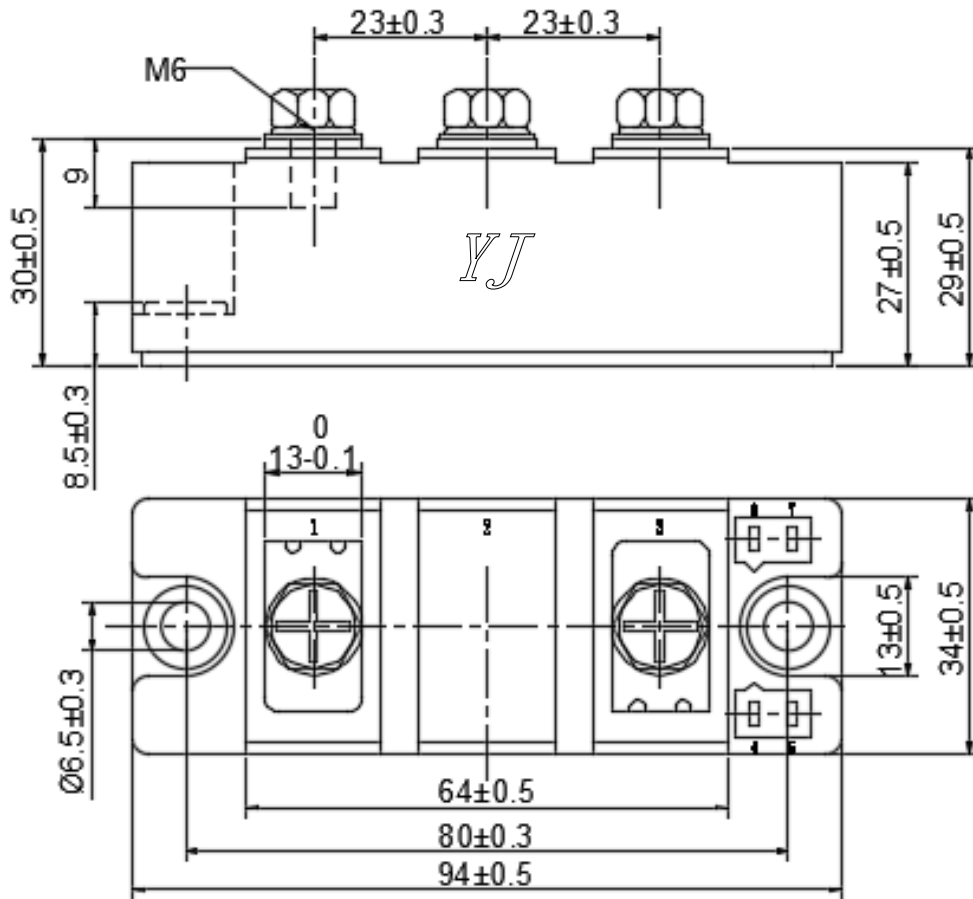


Fig4. Reverse Recovery Charge vs di_F/dt



Package Outline Information

CASE: F2



Dimensions in mm