

FRED Modules



V_{RRM} 1200V

I_{FAV} 300 A

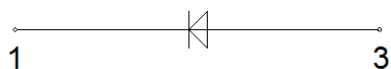
Applications

- 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

Circuit



Maximum Ratings

Symbol	Conditions	Values	Units
V _R		1200	V
V _{RRM}		1200	V
I _{F(AV)}	T _C =100°C	300	A
	T _C =110°C, 20KHz	210	A
I _{F(RMS)}	T _C =110°C	420	A
I _{FSM}	T _J =45°C, 1/2 Cycle, 50Hz, Sine	2500	A
	T _J =45°C, 1/2 Cycle, 60Hz, Sine	2800	A
I ² t	T _J =45°C, t=10ms, 50Hz, Sine	312500	A ² s
	T _J =45°C, t=8.3ms, 60Hz, Sine	325000	A ² s
P _D		890	W
Visol	AC, Ton=1min	3000	V
T _J		-40 to +150	°C
T _{STG}		-40 to +125	°C
Torque	Recommended (M6)	5±15%	N·m
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Weight		160	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Junction - to - Case	0.14	°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

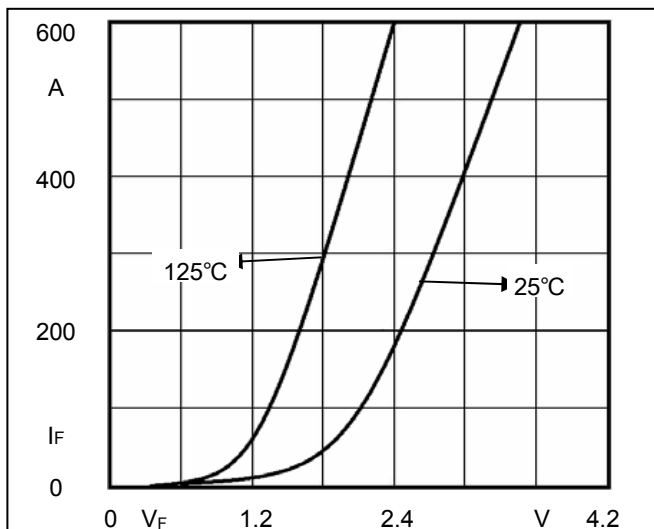


Fig1. Forward Voltage Drop vs Forward Current

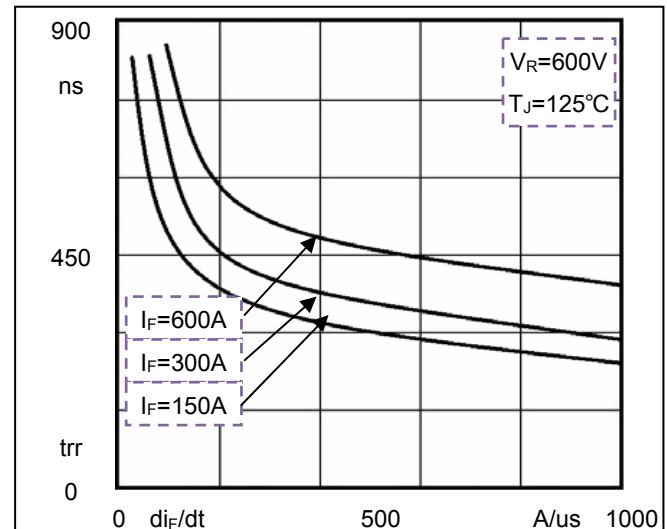


Fig2. Reverse Recovery Time vs di_F/dt

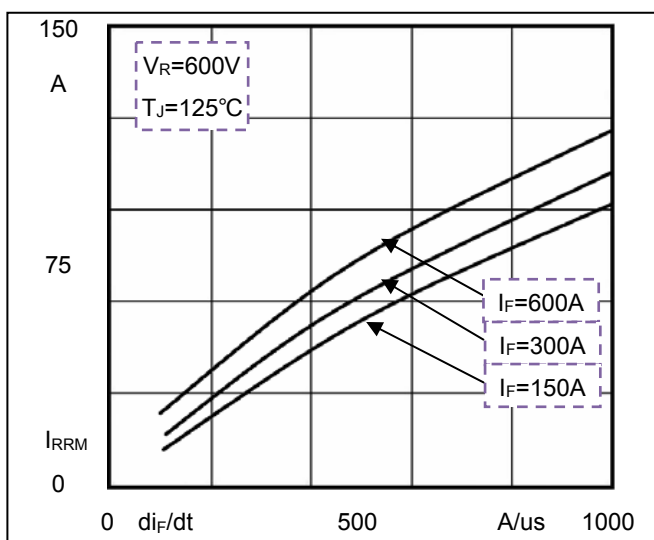


Fig3. Reverse Recovery Current vs di_F/dt

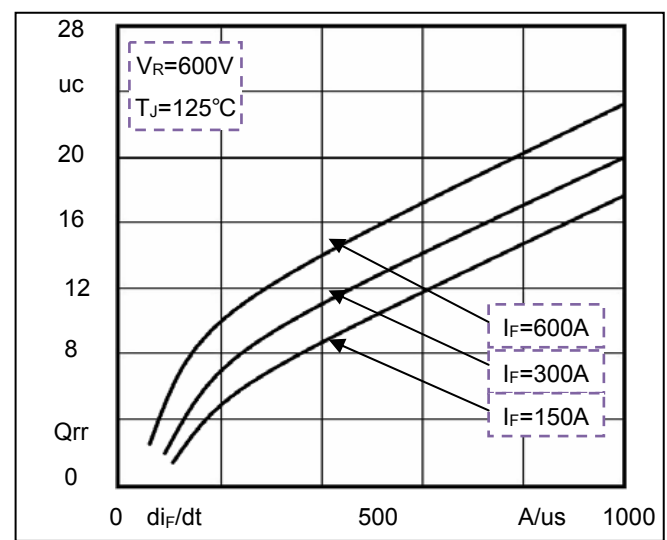
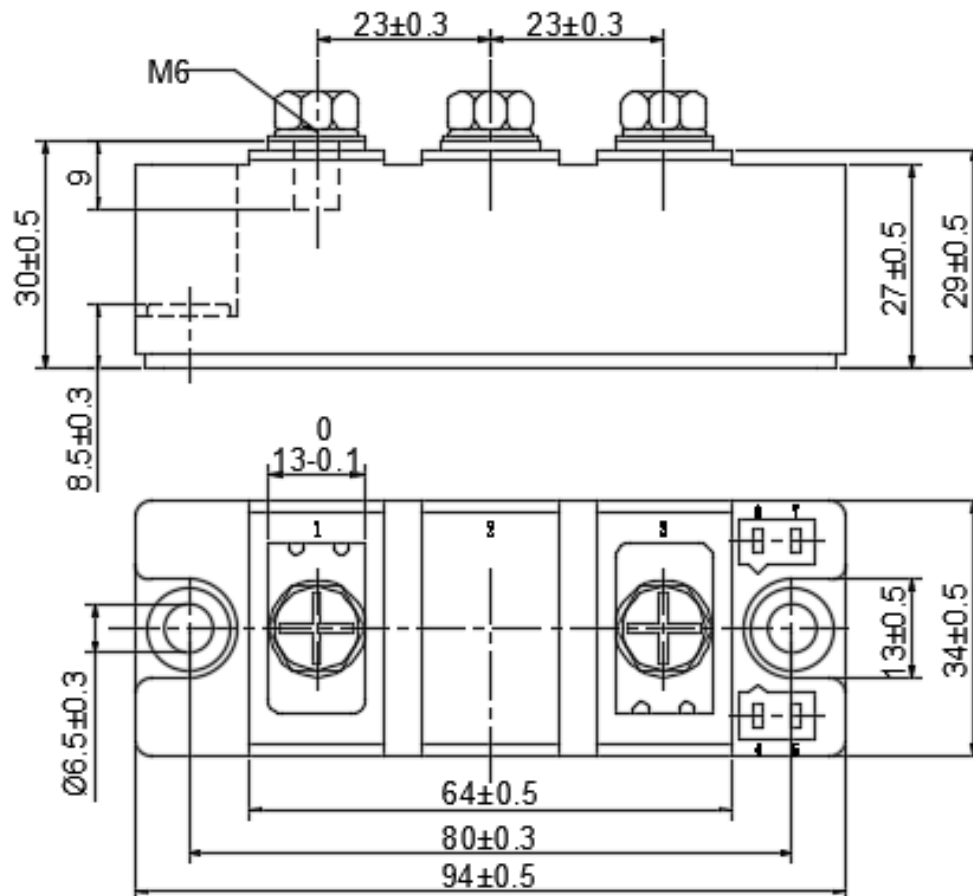


Fig4. Reverse Recovery Charge vs di_F/dt

CASE: F2



Dimensions in mm