

Features

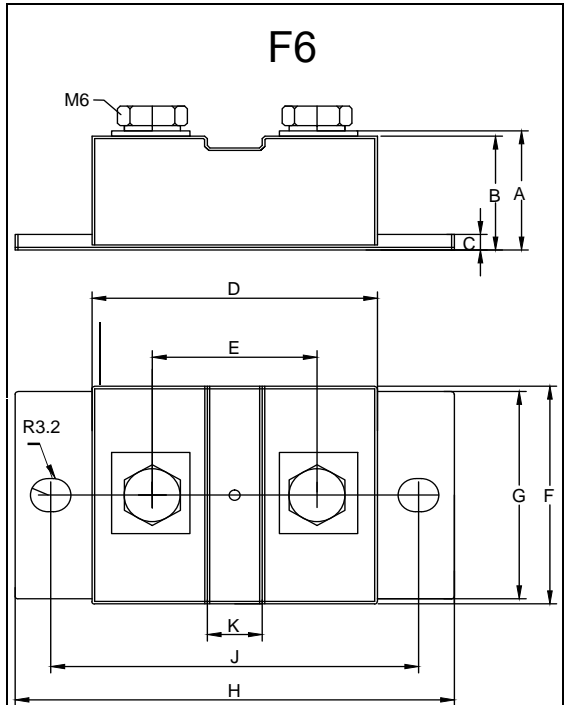
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

Applications

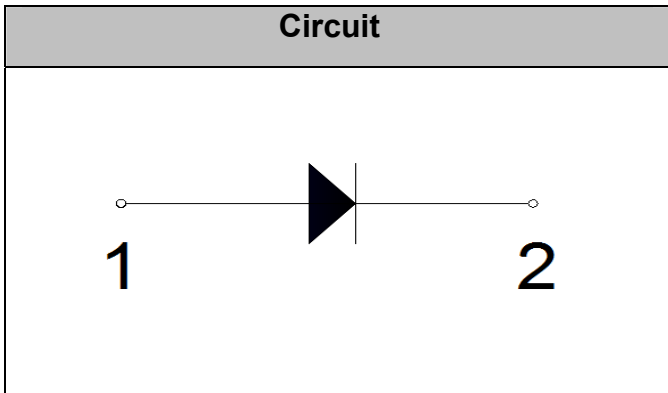
- Inversion Welder
- Uninterruptible Power Supply (UPS)
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Power Factor Correction (PFC) Circuit
- Converter & Chopper



**300 Amp
FRED Modules
600 Volts**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.886	0.925	22.50	23.50	
B	0.846	0.886	21.50	22.50	
C	0.114	0.120	2.90	3.05	
D	2.028	2.067	51.50	52.50	
E	1.173	1.189	29.80	30.20	
F	1.634	1.673	41.50	42.50	
G	1.555	1.594	39.50	40.50	
H	3.130	3.169	79.50	80.50	
J	2.630	2.669	66.80	67.80	
K	0.394		10.0		
R	0.126		3.20		Ø



Maximum Ratings

Symbol	Conditions	Values	Units
V_R		600	V
V_{RRM}		600	V
$I_{F(AV)}$	$T_C=110^{\circ}\text{C}$	300	A
$I_{F(RMS)}$	$T_C=110^{\circ}\text{C}$	420	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	3500	A
	1/2 Cycle , 60Hz, Sine	4000	A
I^2t	$T_J=45^{\circ}\text{C}$, t=10ms, 50Hz, Sine	61250	A^2s
	$T_J=45^{\circ}\text{C}$, t=8.3ms, 60Hz, Sine		
P_D		1136	W
T_J		-40 to +150	$^{\circ}\text{C}$
T_{STG}		-40 to +125	$^{\circ}\text{C}$
Torque	Module-to-Sink Recommended (M6)	3~4.7	N·m
Torque	Module Electrodes Recommended (M6)	3~4.7	N·m
Weight		92	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per Module	0.10	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=600\text{V}$	--	--	0.5	mA
	$V_R=600\text{V}$, $T_J=125^{\circ}\text{C}$	--	--	5	mA
V_F	$I_F=300\text{A}$	--	1.15	--	V
	$I_F=300\text{A}$, $T_J=125^{\circ}\text{C}$	--	0.9	--	V
trr	$I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$	--	55	--	ns
trr	$V_R=300\text{V}$, $I_F=300\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^{\circ}\text{C}$	--	145	--	ns
I_{RRM}		--	17	--	A
trr	$V_R=300\text{V}$, $I_F=300\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^{\circ}\text{C}$	--	240	--	ns
I_{RRM}		--	30	--	A

Performance Curves

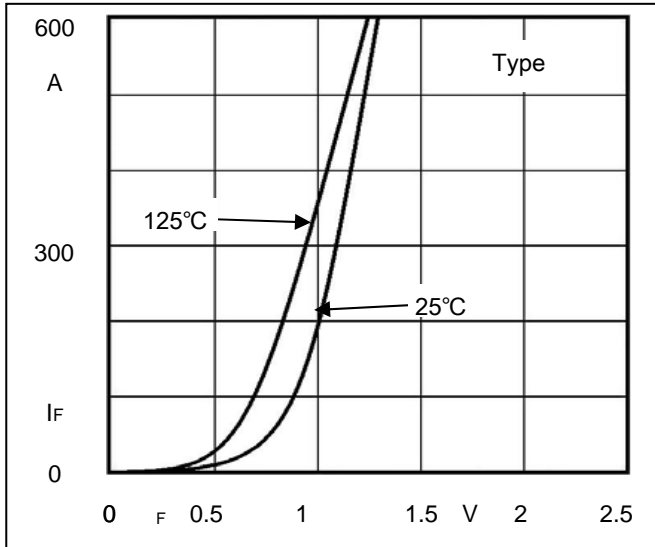


Fig1. Forward Voltage Drop vs Forward Current

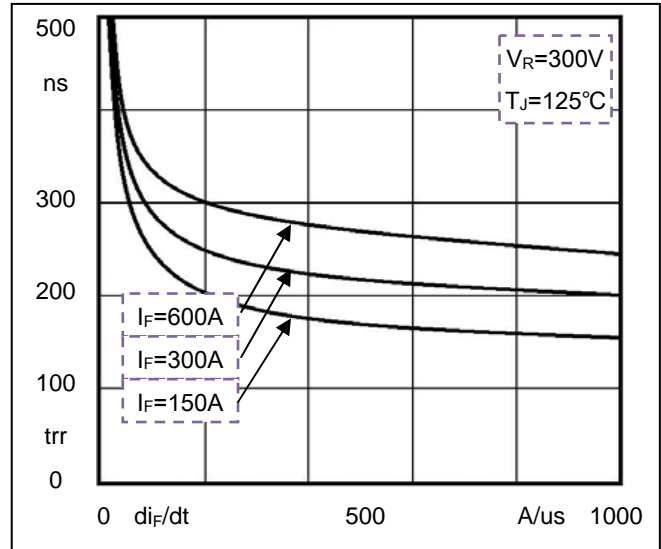


Fig2. Reverse Recovery Time vs di_F/dt

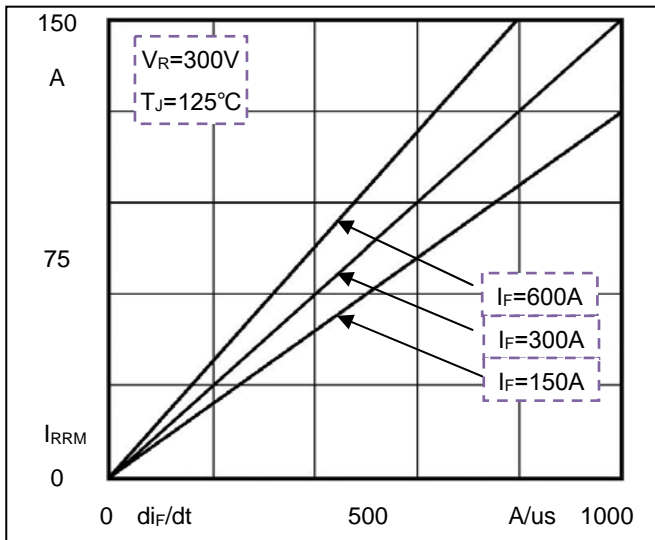


Fig3. Reverse Recovery Current vs di_F/dt

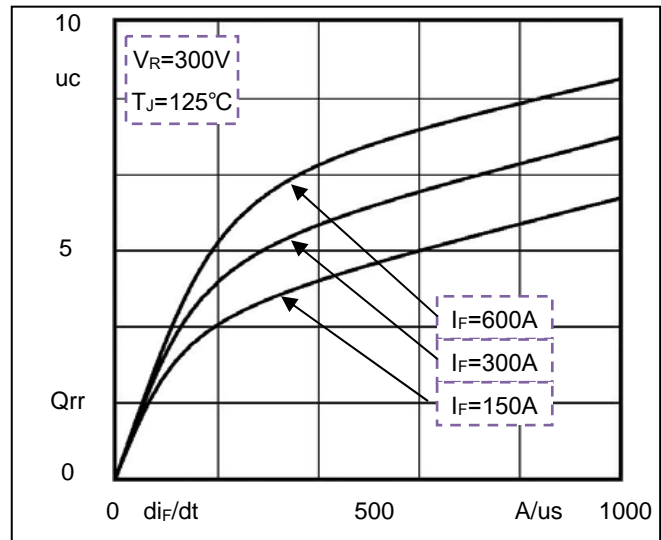


Fig4. Reverse Recovery Charge vs di_F/dt