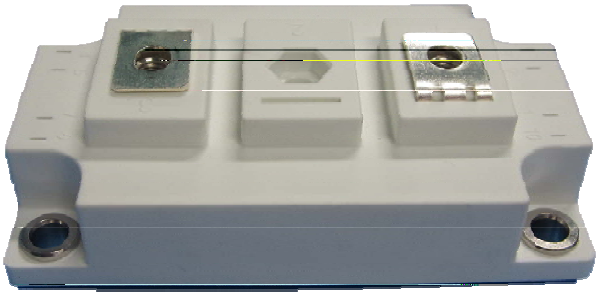
MF400U12FD

RoHS COMPLIANT



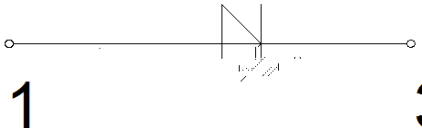
FRED Modules

VRRM 1200V
IFAV 400 A

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
Low Inductance Package

Maximum Ratings

Symbol	Conditions	Values	Units
V_R		1200	V
V_{RRM}		1200	V
$I_{F(AV)}$	T_C=90°C,	400	A
$I_{F(RMS)}$	T_C=90°C,	560	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	3200	A
	1/2 Cycle , 60Hz, Sine	3500	A
I^2t	T_J=45°C, t=10ms, 50Hz, Sine	51200	A^2s
	T_J=45°C, t=8.3ms, 60Hz, Sine	51000	A^2s
P_D		1130	W
T_J			°C
T_{STG}		-40 to +125	°C
Torque	Module-to-Sink Recommended M6	4.5	N·m
Torque	Module Electrodes Recommended M6	4.5	N·m
Weight		275	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Per Module	0.11	/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=1200V	--	--	1	mA
	V_R=1200V, T_J=125°C	--	--	5	mA
V_F	I_F=400A	--	1.8	1.85	V
	I_F=400A, T_J=125°C	--	1.65	1.7	V
trr	I_F=1A, V_R=30V, di_F/dt=-200A/ s	--	76	--	ns
trr	V_R=600V, I_F=400A, di_F/dt=-200A/ s, T_J=25°C	--	180	--	ns
I_{RRM}		--	15	--	A
trr	V_R=600V, I_F=400A, di_F/dt=-200A/ s, T_J=125°C	--	500	--	ns
I_{RRM}		--	35	--	A

Performance Curves

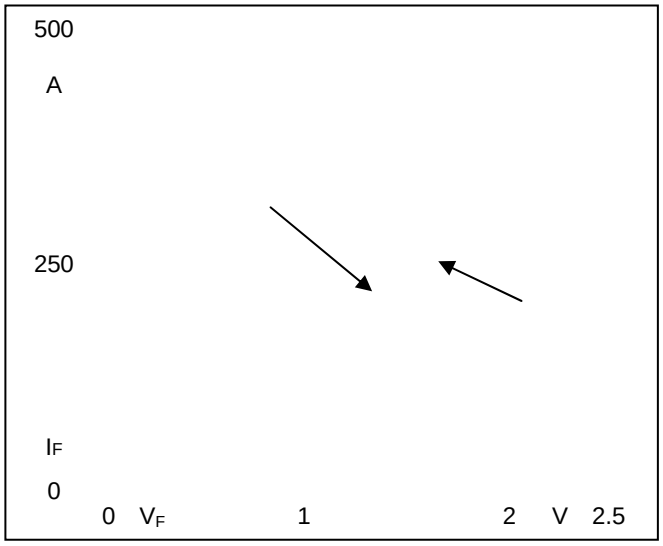


Fig1. Forward Volta ge Drop vs Forward Current

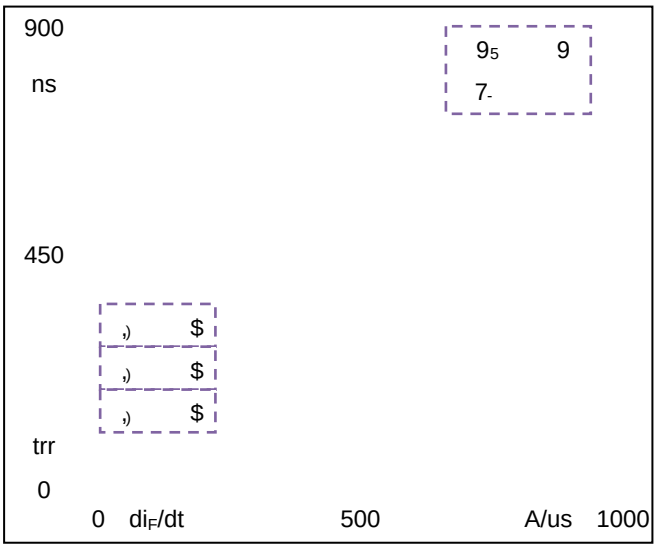


Fig2. Reverse Recovery Time vs di F/dt

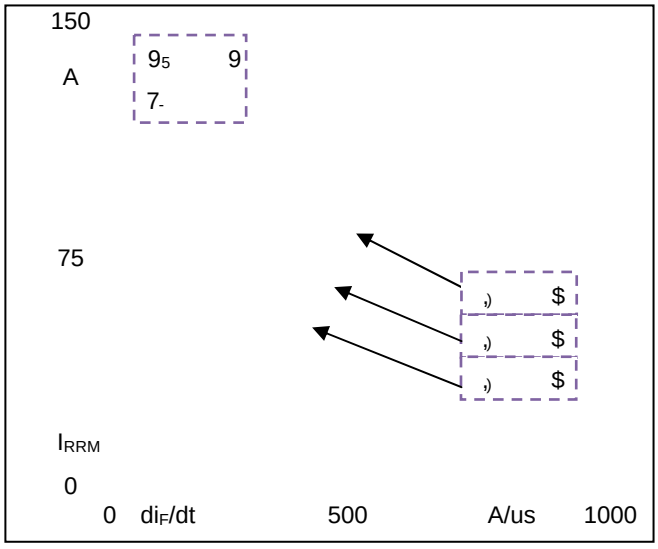


Fig3. Reverse Recovery Current vs di F/dt

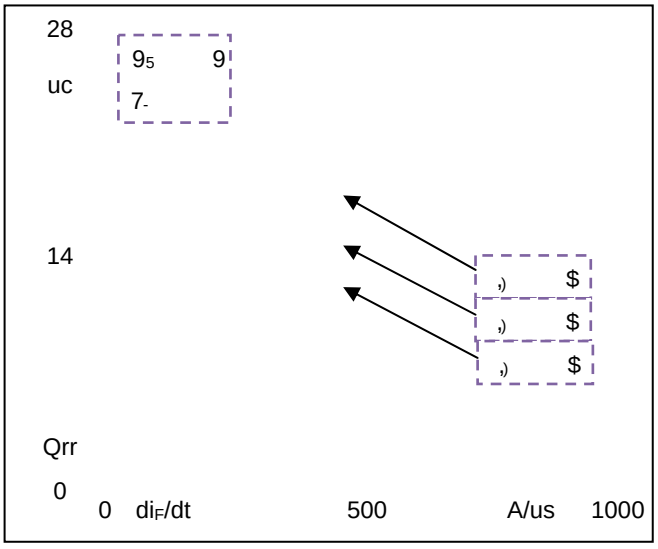
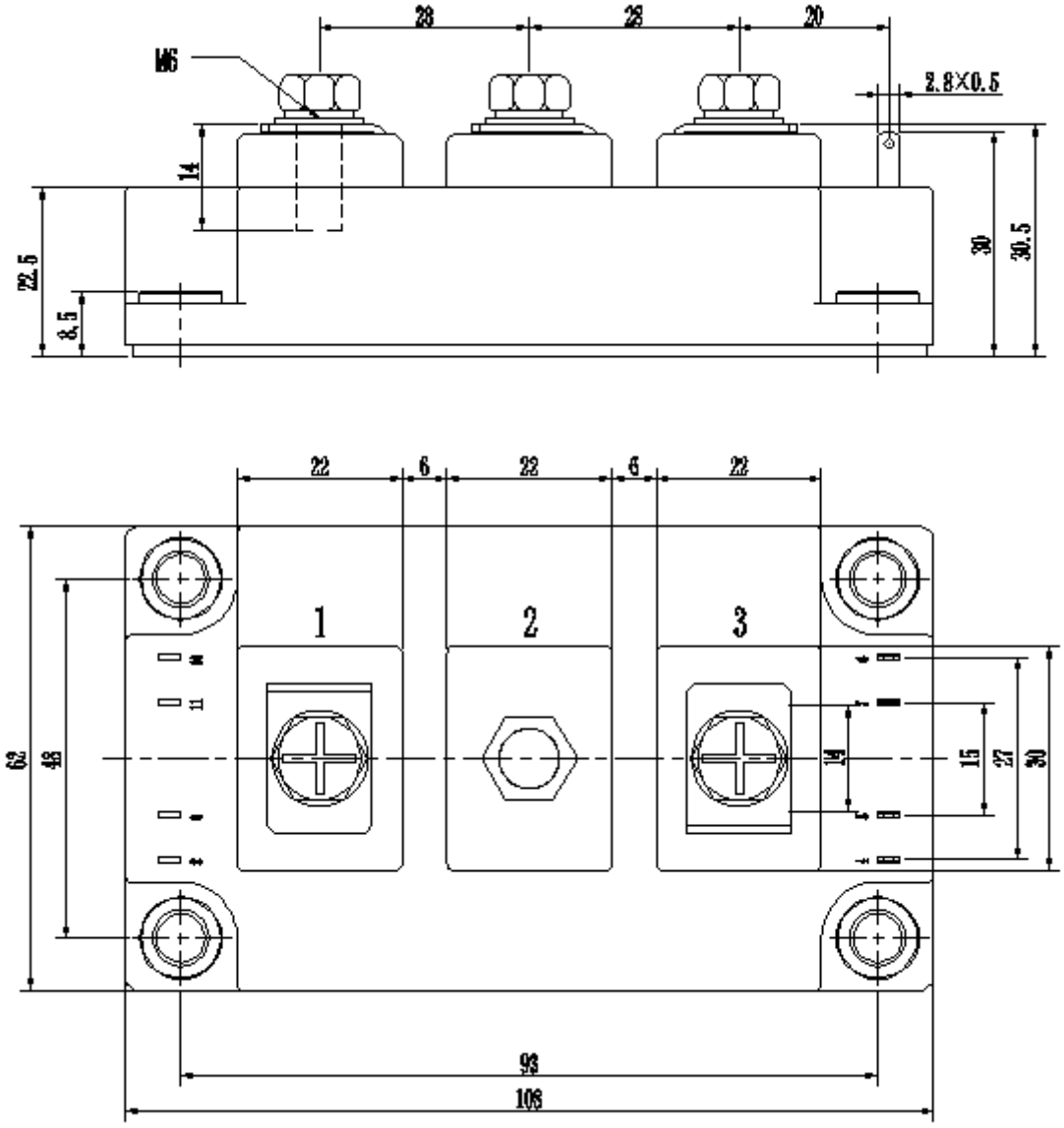


Fig4. Reverse Recovery Charge vs di F/dt

Package Outline Information

CASE: FD



Dimensions in mm