



FRED Modules

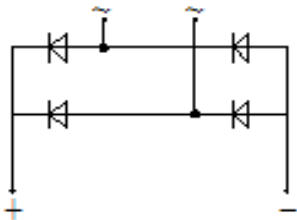
V_{RRM} 700V

I_{FAV} 100A

Applications

- Cutting Machine
- High Speed & High Power Converters, Inverter Welders
- Various Switching
- Telecommunication Power Supply

Circuit



Features

- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- 150 Operating Junction Temperature
- Built in Full Bridge FRD Construction

Maximum Ratings

Symbol	Conditions	Values	Units
V _{RRM}	Repetitive Peak Reverse Voltage	700	V
I _D	Single phase ,half wave 180°conduction T _c =25°C	200	A
	Single phase ,half wave 180°conduction T _c =100°C	100	A
I _{FSM}	1/2 Cycle , 50Hz, Sine	1750	A
I ² t	T _J =45°C, t=10ms, 50Hz, Sine	15312	A ² s
P _D	T _c =25°C	360	W
T _J		-40 to +150	°C
T _{STG}		-40 to +150	°C
Visol	3000V AC 1min	1	mA
Torque	To Sink Recommended (M5)	2.5~3.5	N·m
Torque	To Terminal Recommended (M5)	2.5~3.5	N·m
Weight		142	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Per module	0.3	°C/W
R _{th(c-s)}	Per module	0.07	°C/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	$V_R=700V$	--	--	0.1	mA
	$V_R=700V, T_J=125^{\circ}C$	--	--	2	mA
V_F	$I_F=100A$	--	1.2	1.4	V
	$I_F=100A, T_J=125^{\circ}C$	--	1.1	--	V
trr	$I_F=1A, V_R=30V, di_F/dt=-200A/\mu s$	--	40	--	ns
trr	$I_F=100A, di/dt=-200A/\mu s$	--	150	--	ns
Irr	$I_F=100A, di/dt=-200A/\mu s$	--	16	--	A
trr	$I_F=100A, di/dt=-200A/\mu s, T_J=125^{\circ}C$	--	300	--	ns
Irr	$I_F=100A, di/dt=-200A/\mu s, T_J=125^{\circ}C$	--	28	--	A

Performance Curves

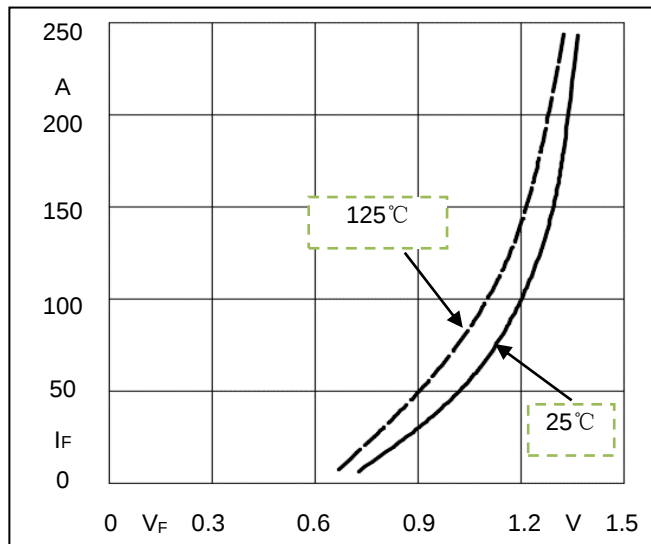


Fig1. Forward Voltage Drop vs Forward Current

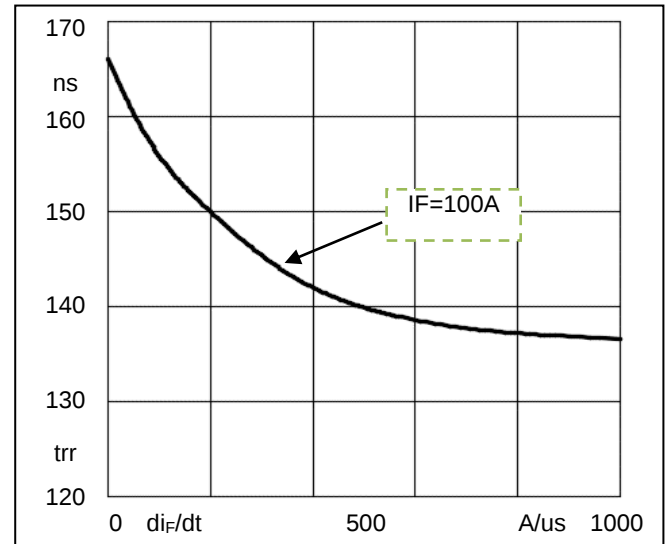


Fig2. Reverse Recovery Time vs di_F/dt

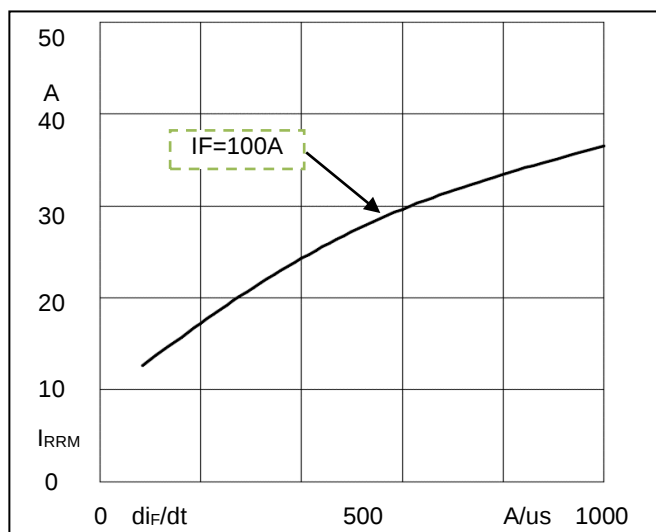


Fig3. Reverse Recovery Current vs di_F/dt

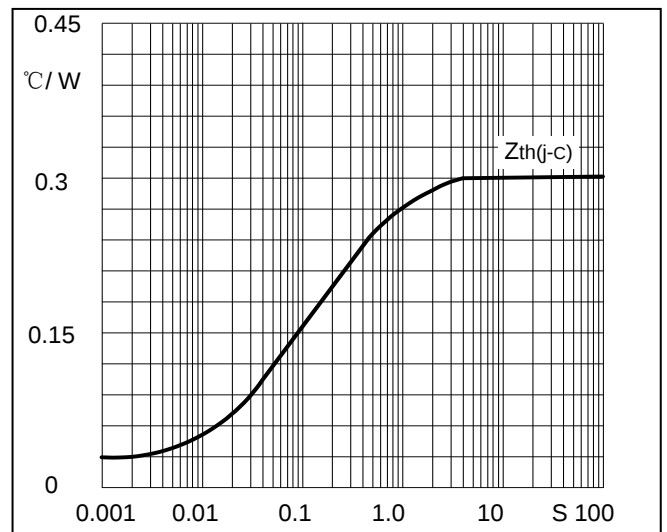


Fig4. Transient Thermal Impedance

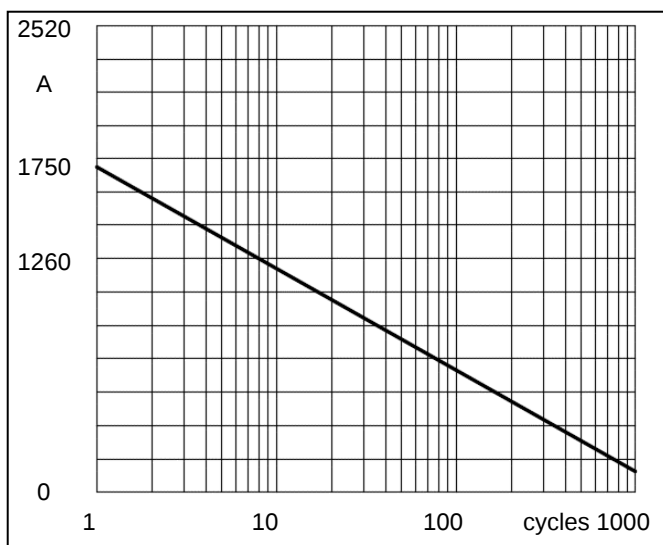
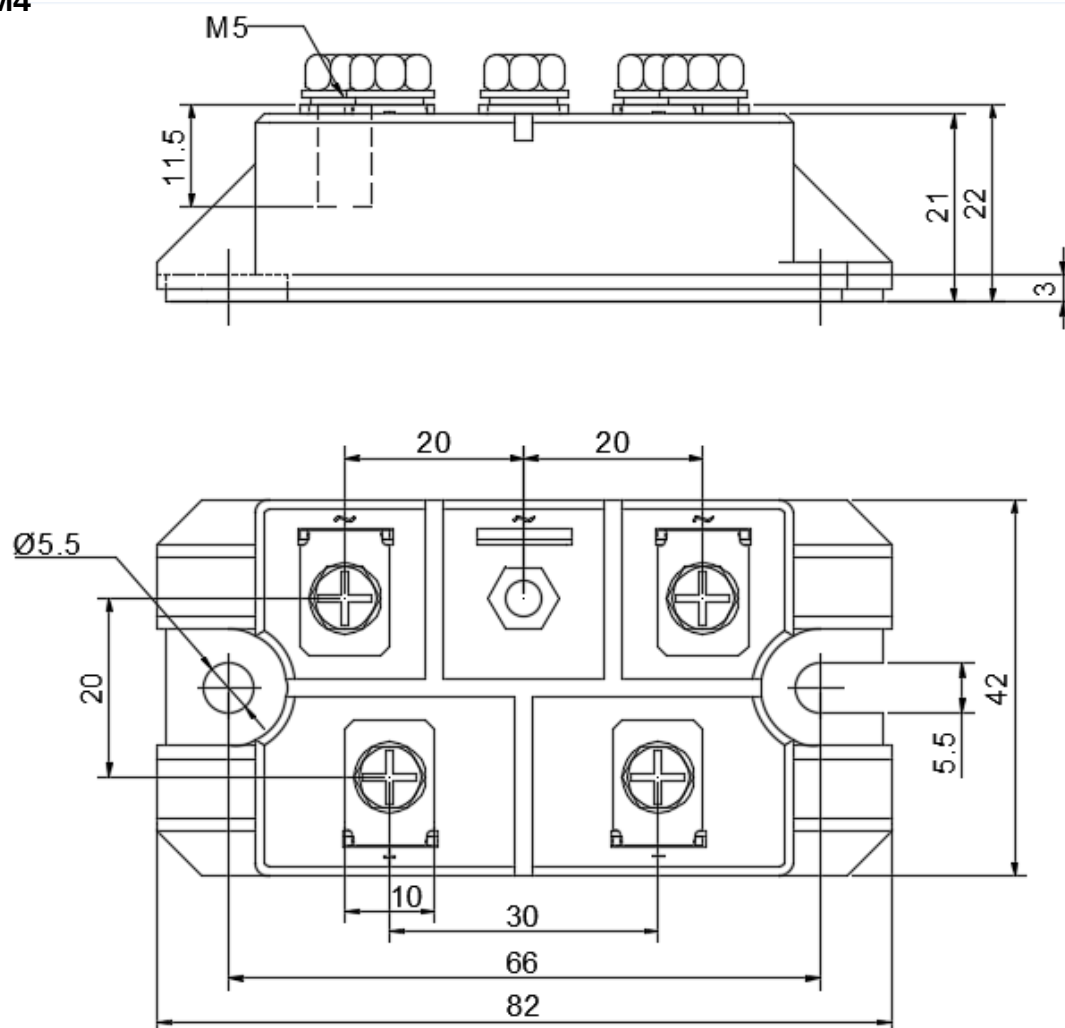


Fig5. Max Non-Repetitive Forward Surge Current

Package Outline Information

CASE: M4



Dimensions in mm