

FRED Modules

V_{RRM} 600V
I_{FAV} 100 A ×2

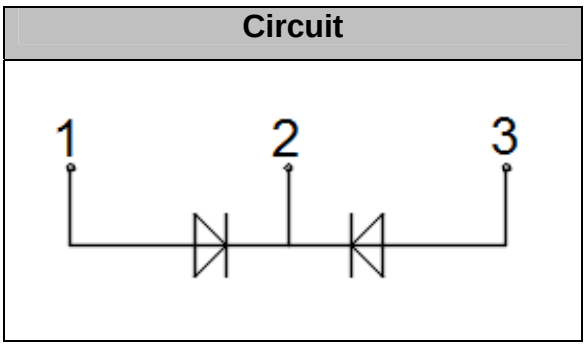
Applications

- 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
- Insulation Encapsulation

Circuit



Maximum Ratings

Symbol	Conditions	Values	Units
V_R		600	V
V_{RRM}		600	V
$I_{F(AV)}$	T_C=100°C, Per Diode	100	A
	T_C=100°C, Per Module	200	A
$I_{F(RMS)}$	T_C=100°C, Per Diode	150	A
I_{FSM}	1/2 Cycle , 50Hz, Sine	1300	A
	1/2 Cycle , 60Hz, Sine	1426	A
I^2t	T_J=45°C, t=10ms, 50Hz, Sine	8450	A^2s
	T_J=45°C, t=8.3ms, 60Hz, Sine		A^2s
P_D		280	W
Visol	AC, Ton=1min	3000	V
T_J		-40 to +150	°C
T_{STG}		-40 to +125	°C
Torque	Recommended（M5）	3±15%	N·m
Torque	Recommended（M6）	4.5±15%	N·m
Weight		160	g

Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Junction-to-Case, Per Diode	0.32	℃/W
$R_{th(j-c)}$	Junction-to-Case, Per Module	0.16	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
I_{RM}	V_R=600V	--	--	0.5	mA
	V_R=600V, T_J=125°C	--	--	5	mA
V_F	I_F=100A	--	1.25	1.4	V
	I_F=100A, T_J=125°C	--	1.1	1.3	V
trr	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	45	50	ns
trr	V_R=300V, I_F=100A, di_F/dt=-200A/μs, T_J=25°C	--	105	--	ns
I_{RRM}		--	10	--	A
trr	V_R=300V, I_F=100A, di_F/dt=-200A/μs, T_J=125°C	--	220	--	ns
I_{RRM}		--	18	--	A

Performance Curves

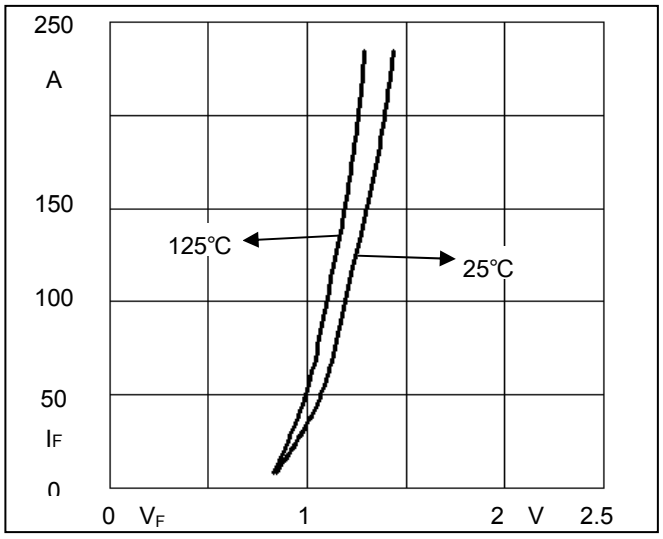


Fig1. Forward Voltage Drop vs Forward Current

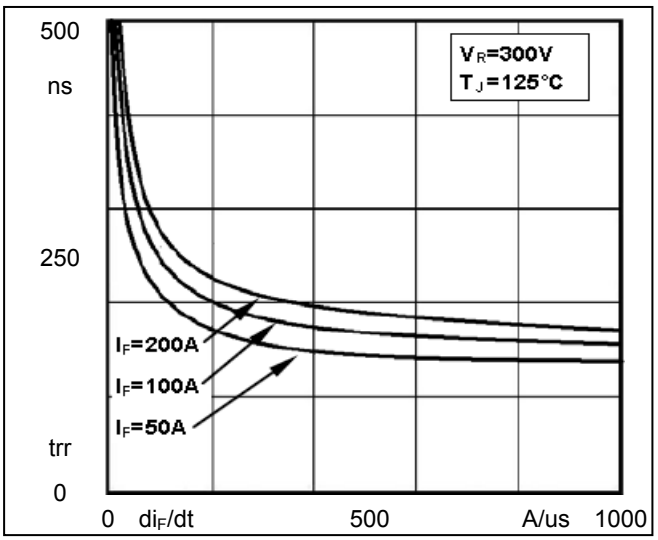


Fig2. Reverse Recovery Time vs di_F/dt

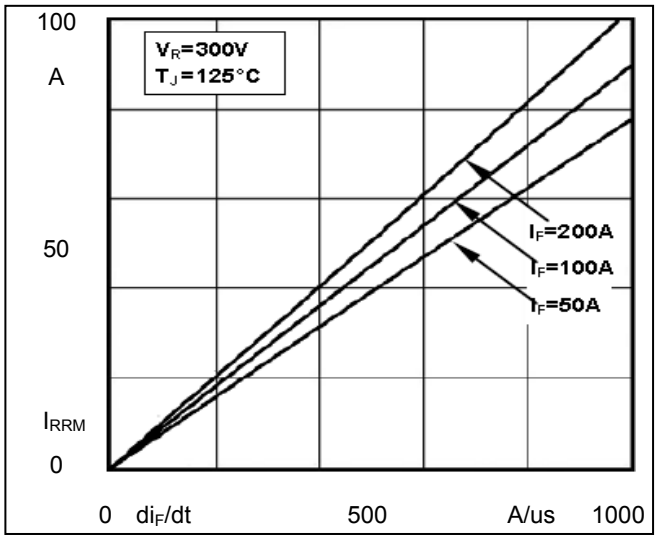


Fig3. Reverse Recovery Current vs di_F/dt

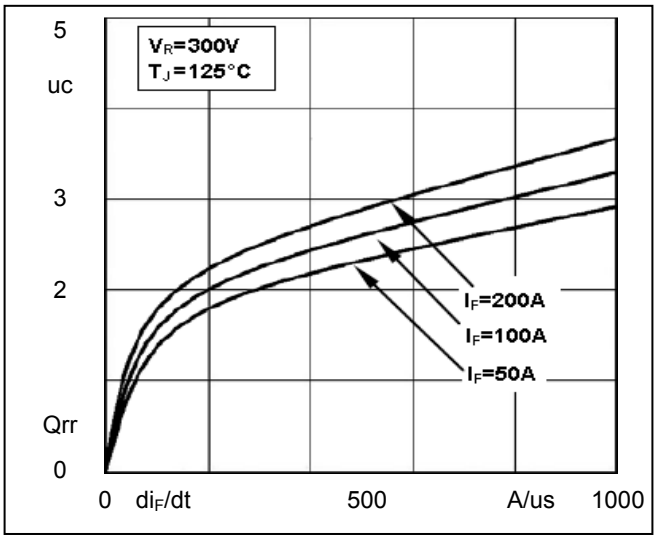
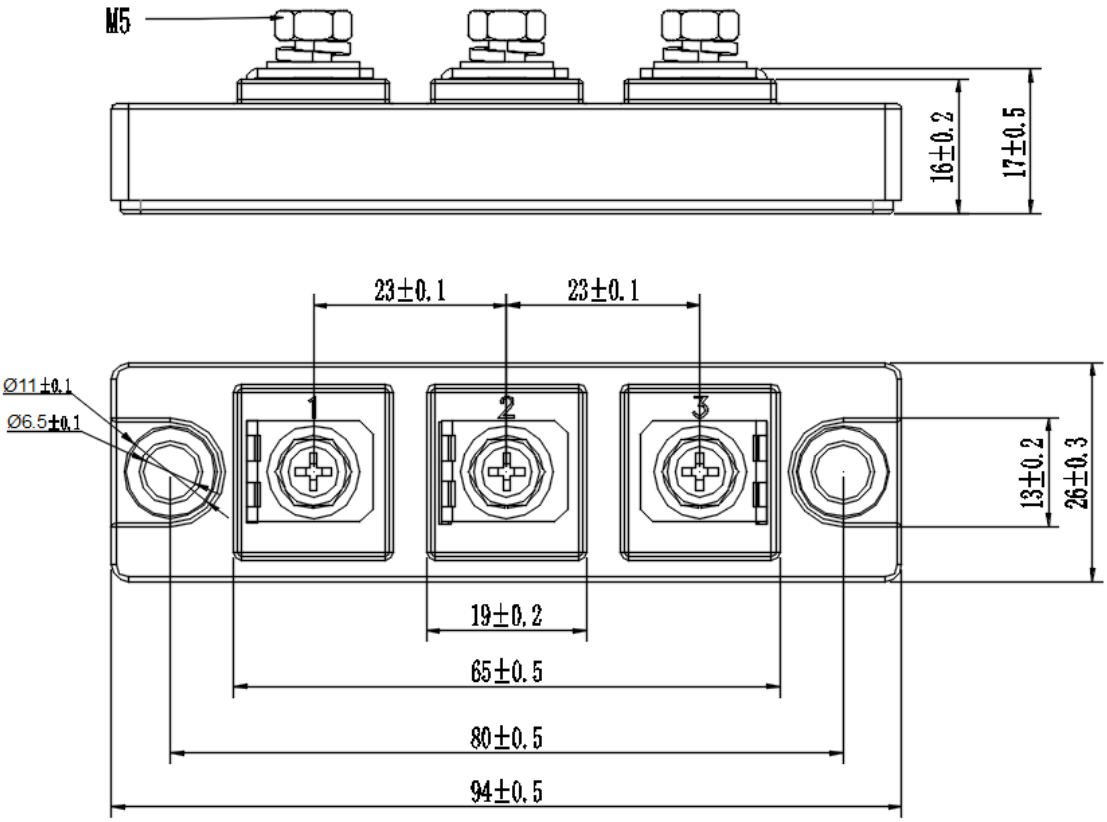


Fig4. Reverse Recovery Charge vs di_F/dt

Package Outline Information

CASE: F5



Dimensions in mm