MMF2×100J120D6B

1200V 200A FRED Module

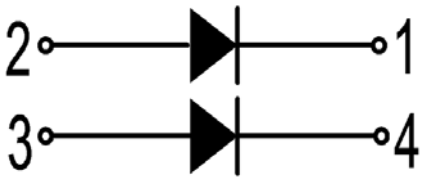
January 2015 **Version 01** **RoHS Compliant**

PRODUCT FEATURES

- Ultrafast Recovery Time
- Low Recovery Loss
- Soft Reverse Recovery Characteristics
- Low Leakage Current
- Popular SOT-227 Package

APPLICATIONS

- Inversion Welder
- Uninterruptible Power Supply
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- PFC



ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter/Test Conditions		Values	t
V_R	Maximum D.C. Reverse Voltage		1200	V
V_{RRM}	Maximum Repetitive Reverse Voltage			
$I_{F(AV)}$	Average Forward Current	T_C=50°C, Per Diode	100	A
$I_{F(RMS)}$	RMS Forward Current	T_C=50°C, Per Diode	140	
I_{FSM}	Non-Repetitive Surge Forward Current	T_J=45°C, 1/2 Cycle, 50Hz,	950	
		T_J=45°C, 1/2 Cycle, 60Hz,	1050	
I^2t	For Fusing	T_J=45°C, t=10ms, 50Hz, Sine	4510	A^2S
		T_J=45°C, t=10ms, 60Hz, Sine	4570	
P_D	Power Dissipation		280	W
V_{isol}	Insulation Test Voltage	AC, t=1min	3000	V
T_J	Junction Temperature		-40 to +150	°C
T_{STG}	Storage Temperature Range		-40 to +125	°C
Torque	Module to Sink	Recommended（M4）	0.7～1.1	Nm
Torque	Module Electrodes	Recommended（M4）	0.7～1.1	Nm
R_{thJC}	Junction to Case Thermal Resistance		0.44	°C/W
Weight			26.5	g

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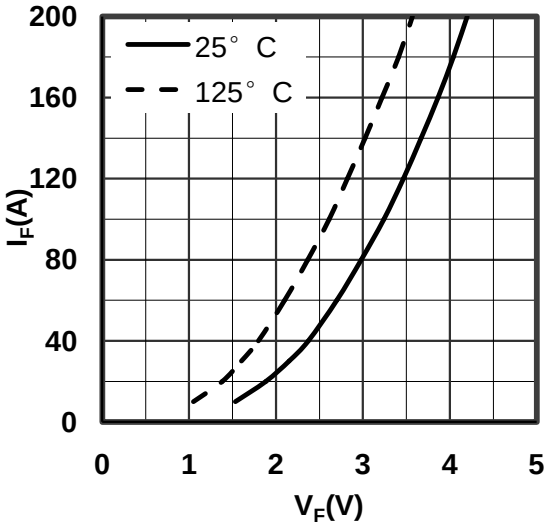
ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter/Test Conditions		Min	Typ	Max	t
I_{RM}	Maximum Reverse Leakage Current	V_R = 1200V			1	mA
		V_R = 1200V, T_J = 125°C			20	
V_F	Forward Voltage	I_F=100A		3.25		V
		I_F=100A,T_J=125°C		2.55		
trr	Reverse Recovery Time (I_F = 1A, dI_F/dt = -200A/μs, V_R = 30V)			55		ns
trr	Reverse Recovery Time	I_F =100A,V_R =600V,		150		ns
I_{RRM}	Maximum Reverse Recovery Current	dI_F/dt = -200A/μs		16		A
trr	Reverse Recovery Time	I_F = 100A,V_R = 600V,		320		ns
I_{RRM}	Maximum Reverse Recovery Current	dI_F/dt = -200A/μs ,T_J=125		30		A
trr	Reverse Recovery Time	I_F = 100A,V_R = 600V,		200		ns
I_{RRM}	Maximum Reverse Recovery Current	dI_F/dt = -1000A/μ		105		A



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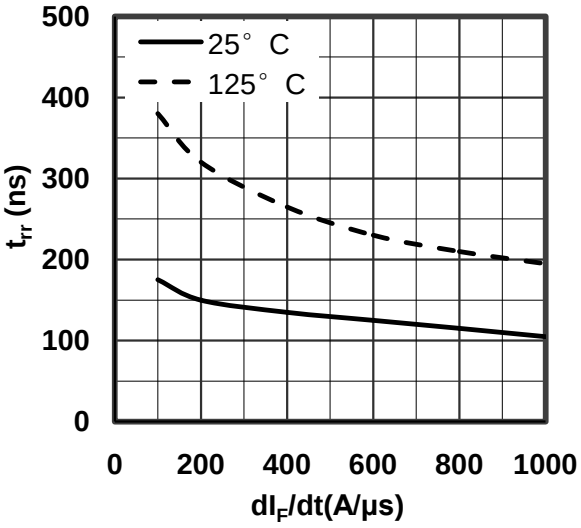


Figure 2. Reverse Recovery Time vs dI_F/dt

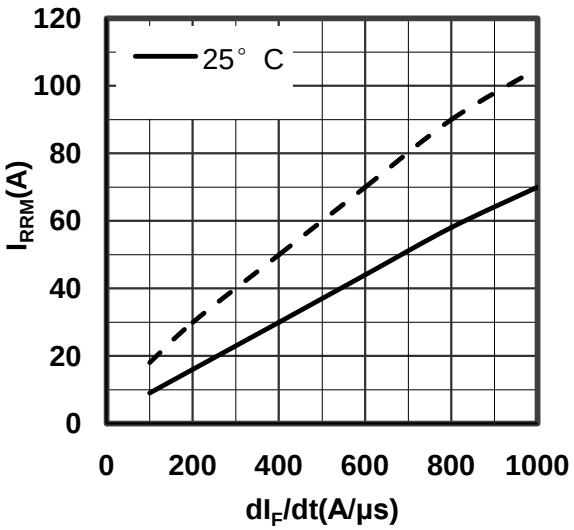


Figure 3. Reverse Recovery Current vs dI_F/dt

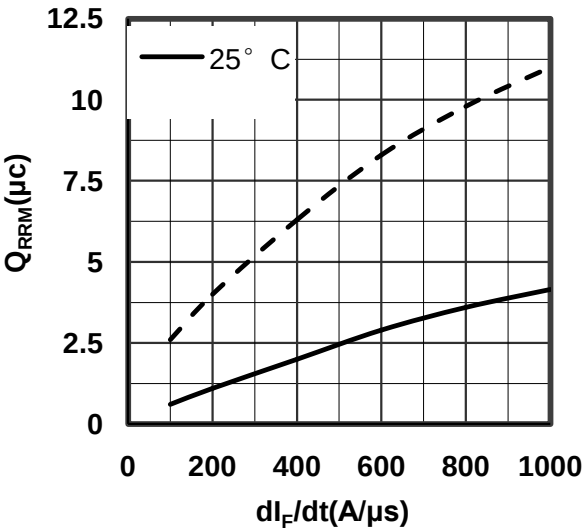


Figure 4. Reverse Recovery Charge vs dI_F/dt

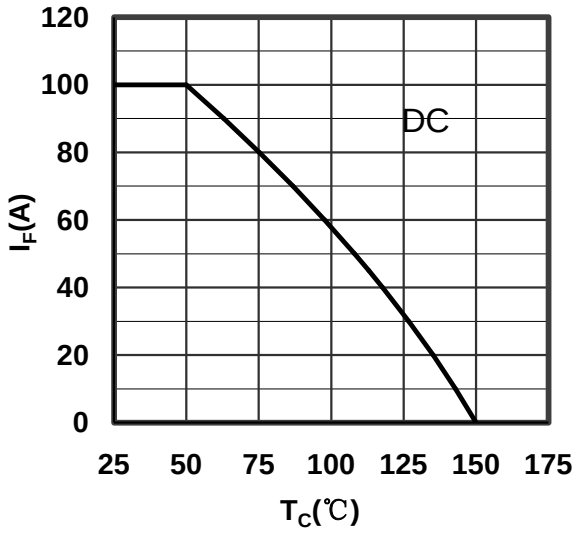


Figure 5.Forward current vs Case temperature

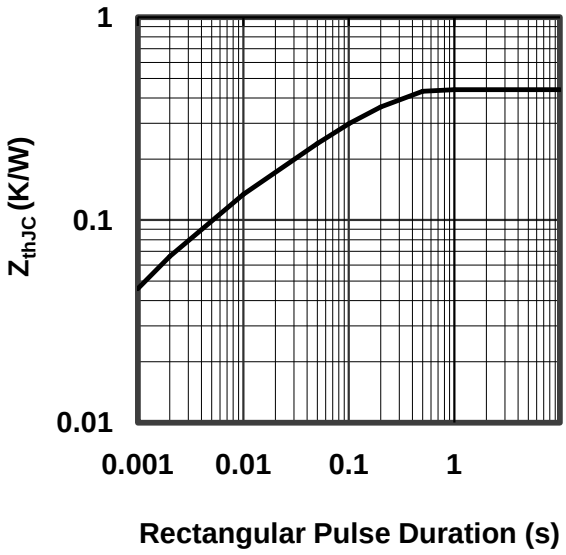
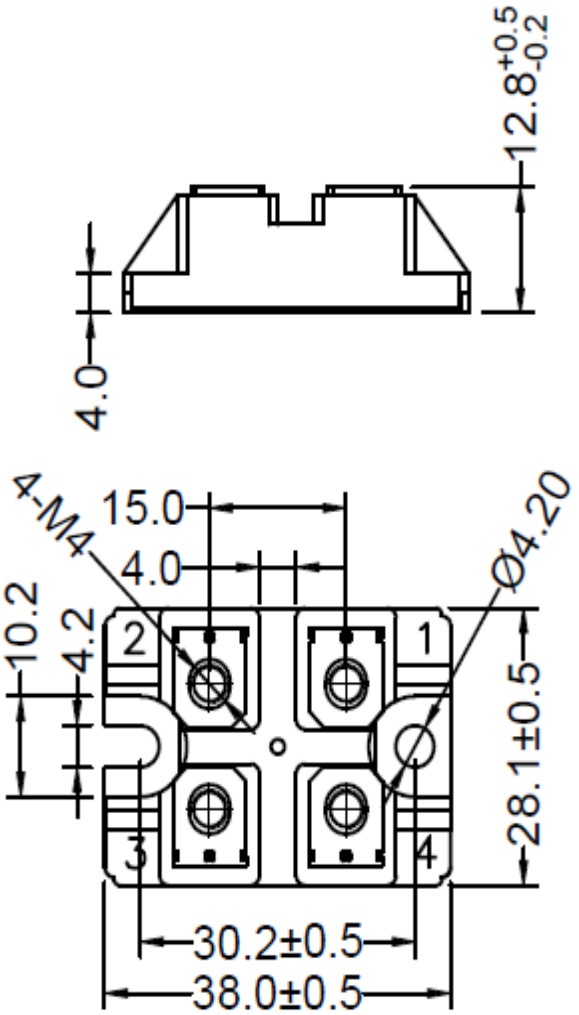


Figure 6. Transient Thermal Impedance



Dimensions in (mm)

Figure 7. Package Outline