FRD3060AM

GL Silicon Ultrafast Recovery Diode

General Description :

FRED from MacMic utilizes advanced processing techniques to achieve ultrafast recovery times and higher forward current. Its soft recovery characteristics and high reliability suit for wide industrial applications.

V_R	600	V
I_F	15	A
$P_D(T_C=25℃)$	113	W
$V_{F.type.}$	1.3	V

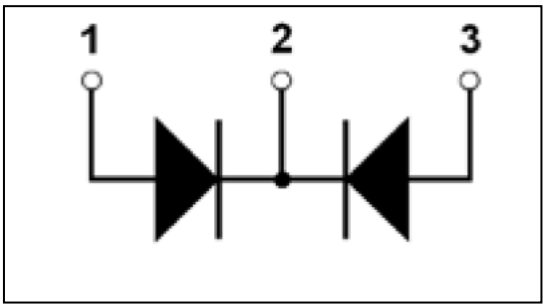
Features :

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

TO-247

Applications:

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS



Absolute (Tc=25℃ unless otherwise specified) :

Symbol	Parameter	Test conditions	Rating	Units
V_R	Maximum D.C. Reverse Voltage		600	V
V_{RRM}	Maximum Repetitive Reverse Voltage		600	V
$I_{F(AV)}$	Average Forward Current	T_C=110°C, Per Diode	15	A
		T_C=110°C, Per Package	30	A
$I_{F(RMS)}$	RMS Forward Current	T_C=110°C, Per Diode	21	A
I_{FSM}	Non-Repetitive Surge Forward Current	T_J=45°C, t=10ms, 50Hz, Sine	150	A
P_D	Power Dissipation		113	W
T_J	Junction Temperature		-55 to +150	°C
T_{STG}	Storage Temperature Range		-55 to +150	°C
Torque	Module-to-Sink	Recommended (M3)	1.1	Nm
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	1.1	°C /W

Electrical Characteristics (Tc= 25℃ unless otherwise specified) :

Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
I_{RM}	Reverse Leakage Current	V_R=600V	--	--	10	μA
		V_R=600V,T_J=125°C	--	--	250	μA
V_F	Forward Voltage	I_F=15A	--	1.3	1.8	V
		I_F=15A,T_J=125°C	--	1.1	--	V
t_{rr}	Reverse Recovery Time	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	30	--	ns
t_{rr}	Reverse Recovery Time	V_R=300V, I_F=15A	--	50	--	ns
I_{RRM}	Max. Reverse Recovery Current	di_F/dt=-200A/μs, T_J=25°C	--	4	--	A
t_{rr}	Reverse Recovery Time	V_R=300V, I_F=15A	--	125	--	ns
I_{RRM}	Max. Reverse Recovery Current	di_F/dt=-200A/μs, T_J=125°C	--	8	--	A

Characteristics Curve :

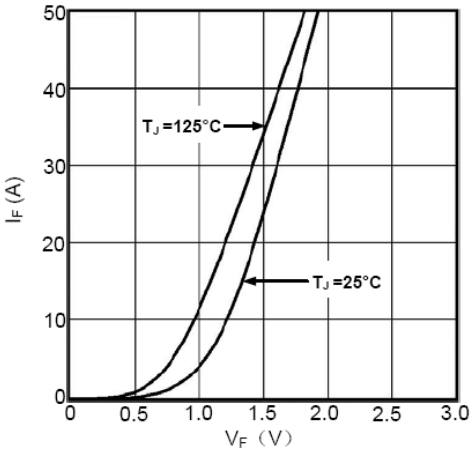


Fig1. Forward Voltage Drop vs Forward Current

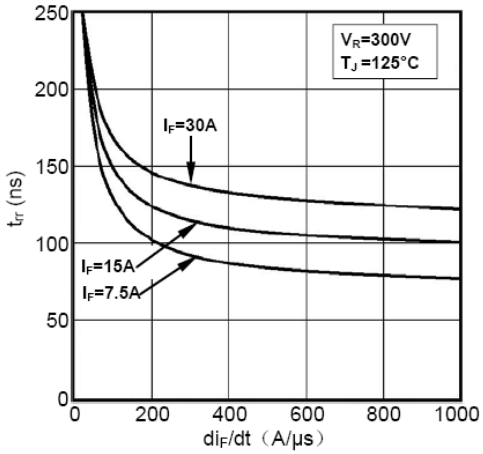


Fig2. Reverse Recovery Time vs di_F/dt

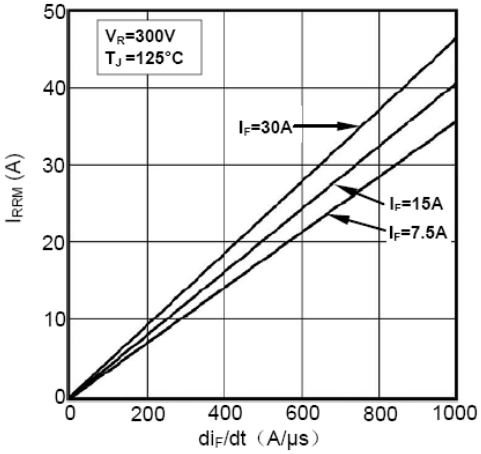


Fig3. Reverse Recovery Current vs di_F/dt

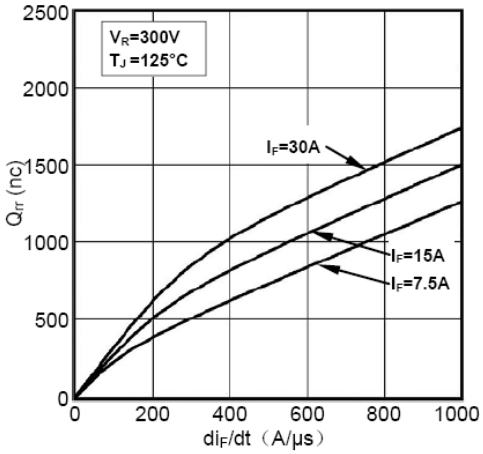


Fig4. Reverse Recovery Charge vs di_F/dt

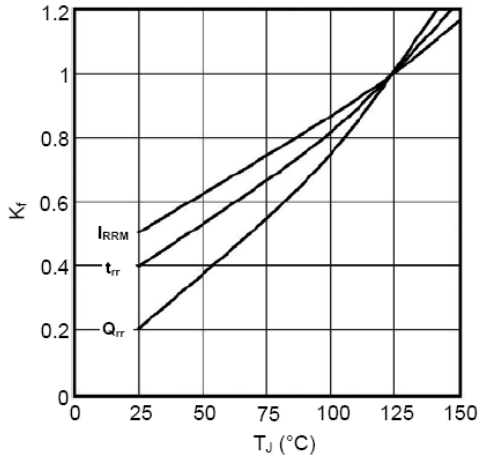


Fig5. Dynamic Parameters vs Junction Temperature

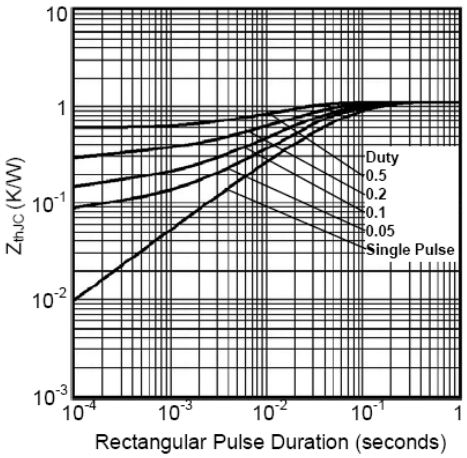


Fig6. Transient Thermal Impedance

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