GRFN200F600A

GL Silicon Fast Recovery Epitaxial Diode

General Description:

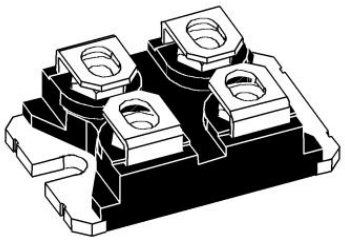
FRED from GL utilizes advanced processing techniques to achieve ultrafast recovery times and higher forward current. Its soft recovery characteristics and high reliability suit for wide industrial applications.

V_{RRM}	600	V
I_{FAVM}	2×100	A
$P_D(T_C=25℃)$	250	W
t_{rr}	35	nS

Features:

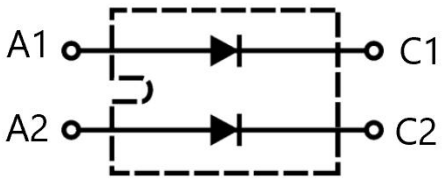
- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

TO-227B



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	100	A
		T_C=110°C, Per Package	192	A
$I_{F(RMS)}$	RMS Forward Current	T_C=110°C, Per Diode	150	A
I_{FSM}	Non-Repetitive Surge Forward Current	T_J=45°C, t=10ms, 50Hz, Sine	1200	A
P_D	Power Dissipation		250	W
T_J	Junction Temperature		-40 to +150	°C
T_{STG}	Storage Temperature Range		-40 to +150	°C
Torque	Module-to-Sink	Recommended (M4)	1.5	Nm
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	0.5	°C /W

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

Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
I_{RM}	Reverse Leakage Current	V_R=600V	--	--	3	mA
		V_R=480V,T_J=125°C	--	--	20	mA
V_F	Forward Voltage	I_F=100A	--	--	2.0	V
		I_F=100A,T_J=125°C	--	--	1.8	V
t_{rr}	Reverse Recovery Time	I_F=1A, V_R=30V, di_F/dt=-400A/μs	--	80	100	ns
I_{RRM}	Max. Reverse Recovery Current	V_R=100V, I_F=80A di_F/dt=-200A/μs, T_J=25°C L ≤0.05 mH; T_{VJ} = 100°C	--	19	24	A

Characteristics Curve:

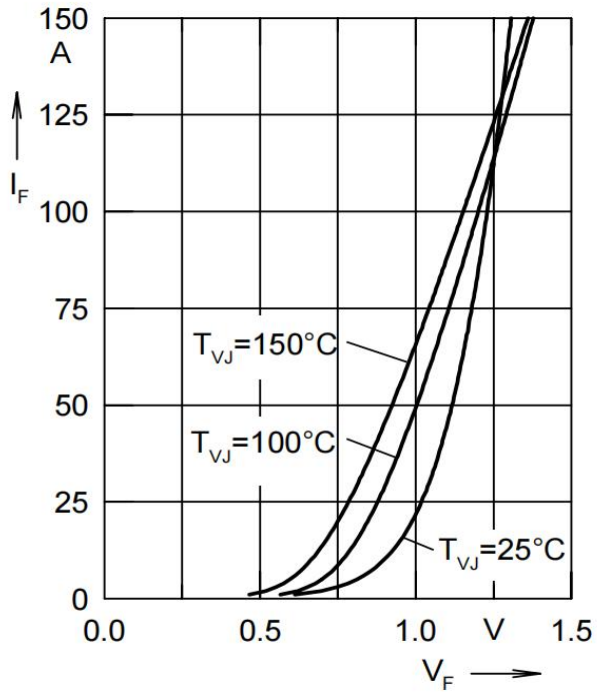

Fig. 1 Forward current I_F versus V_F

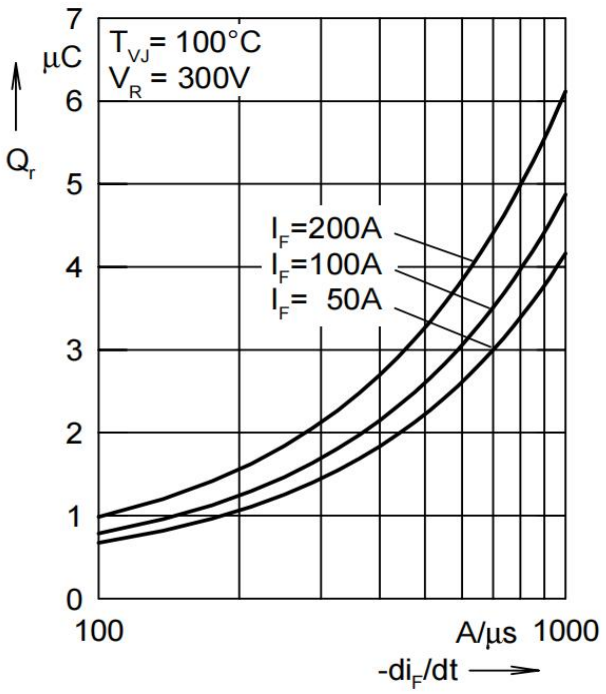

Fig. 2 Reverse recovery charge Q_r versus -di_F/dt

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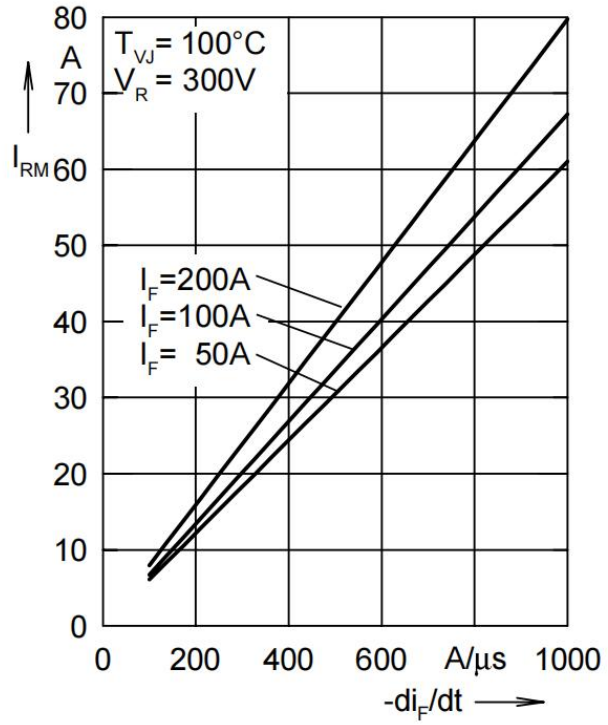

Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

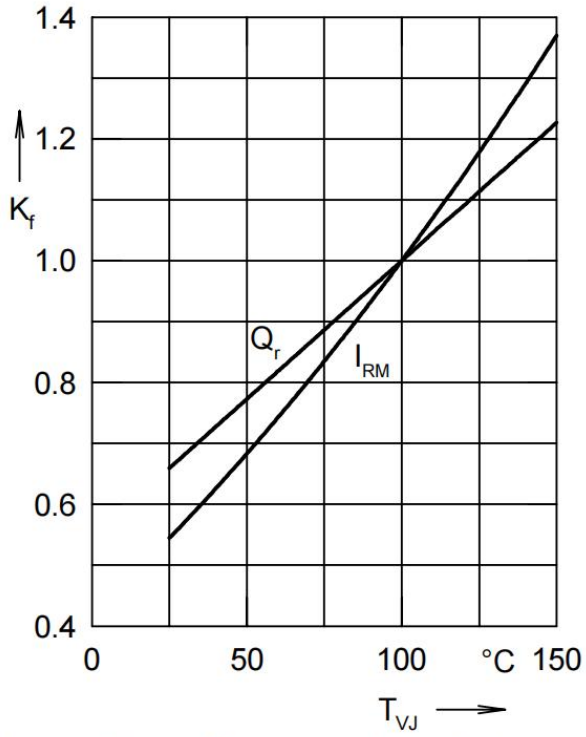

Fig. 4 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

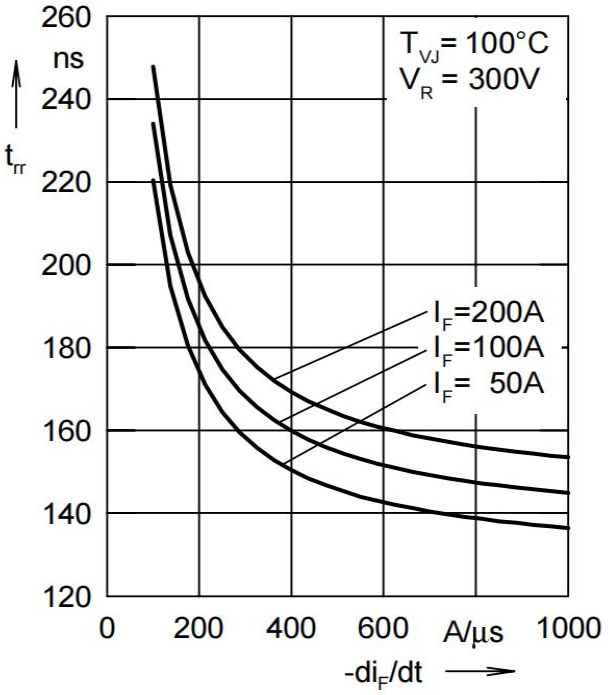

Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

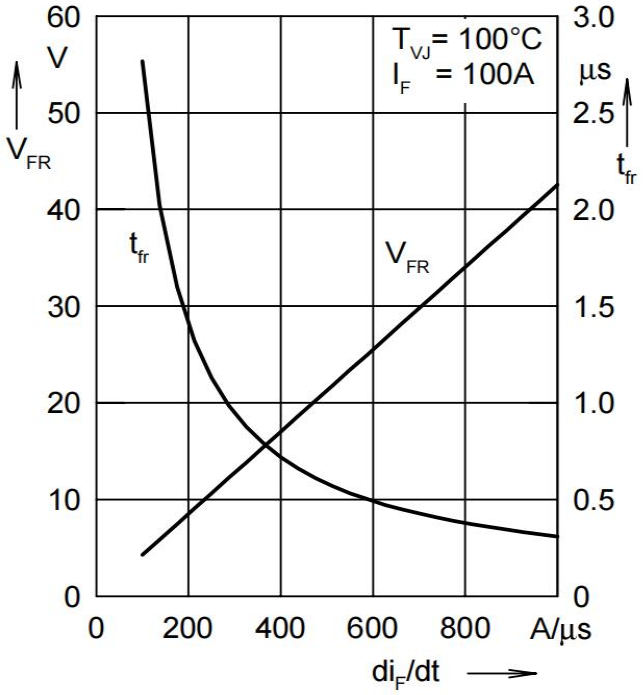

Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

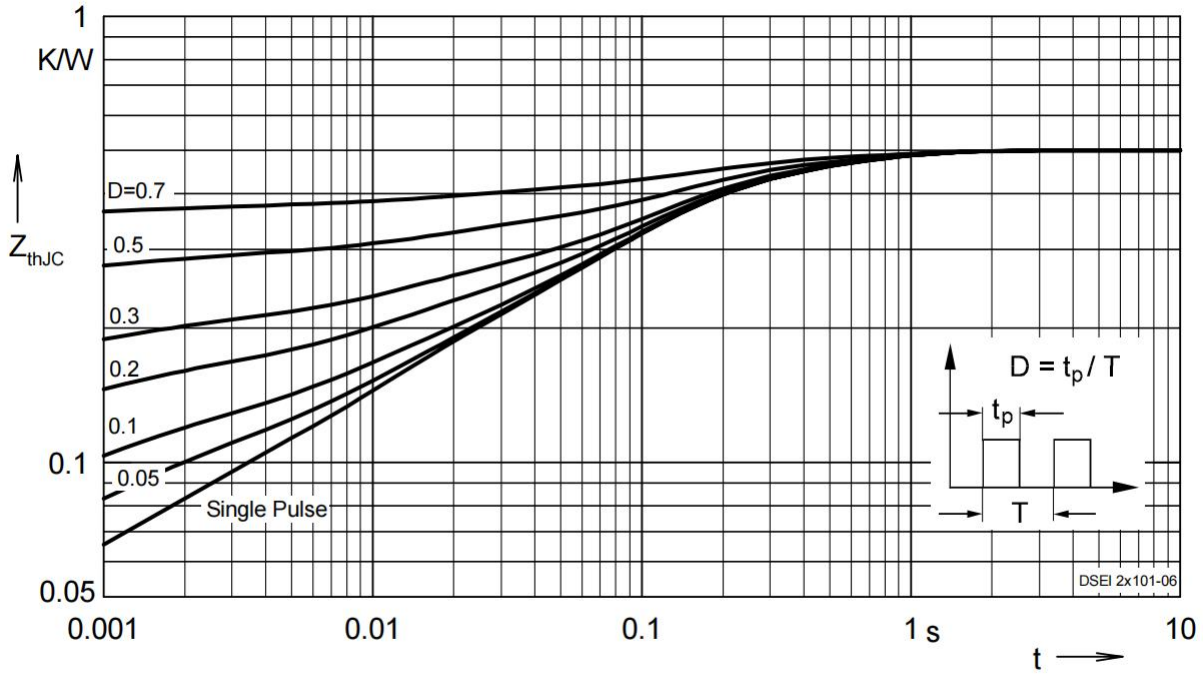

Fig. 7 Transient thermal impedance junction to case at various duty cycles