GL SiC Schottky Diode

General Description :

GL10G1200B47 Schottky Diode 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	1200	V
I_F	15	A
$P_D(T_C=25℃)$	110	W
$V_{F.type.}$	1.3	V

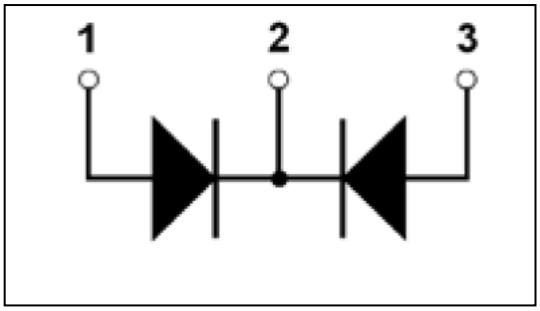
Features :

- Revolutionary semiconductor material - **SiC**
- No reverse recovery current / No forward recovery
- Temperature independent switching behavior
- Low forward voltage even at high operating temperature
- Tight forward voltage distribution
- Excellent thermal performance
- Extended surge current capability
- Specified dv/dt ruggedness

TO-247

Applications:

- Solar inverters
- PFC
- Plating Power Supply
- Motor drives
- 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		1200	V
V_{RRM}	Maximum Repetitive Reverse Voltage		1200	V
$I_{F(AV)}$	Average Forward Current	T_C=155°C, Per Diode	5	A
		T_C=135°C, Per Diode	8	A
		T_C=25°C, Per Package	18	A
$I_{F(RMS)}$	RMS Forward Current	T_C=25°C,tp=10ms, Half Sine Wave,D=0.3	50	A
I_{FSM}	Non-Repetitive Surge Forward Current	T_C =25°C , tp=10ms , Half Sine Wave	100	A
P_D	Power Dissipation	T_C=25°C	110	W
T_J	Junction Temperature		-55 to +175	°C
T_{STG}	Storage Temperature Range		-55 to +175	°C
Torque	Module-to-Sink	Recommended (M3)	1.1	Nm
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	1.37	°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=1200V	--	--	100	μA
		V_R=1200V,T_J=175°C	--	--	200	μA
V_F	Forward Voltage	I_F=5A	--	1.5	1.8	V
		I_F=5A,T_J=175°C	--	2.0	--	V
Q_C	Total capacitive charge	V_R = 800 V, T_j=150°C $Qc=\int_0^{VR} C(V)dV$		38		nC
C	Total Capacitance	V_R=1 V, f=1 MHz	480		550	pF
		V_R=400 V, f=1 MHz	35		45	pF
		V_R=800 V, f=1 MHz	34		40	pF

Characteristics Curve :

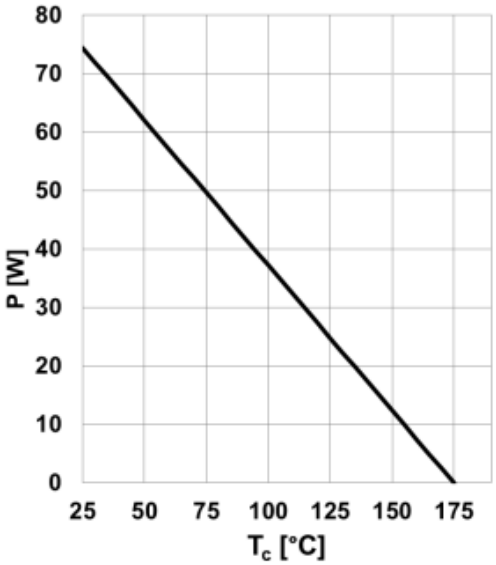


Figure 1. **Power dissipation per leg as function of case temperature,** $P_{tot}=f(T_C)$, $R_{th(j-c),max}$

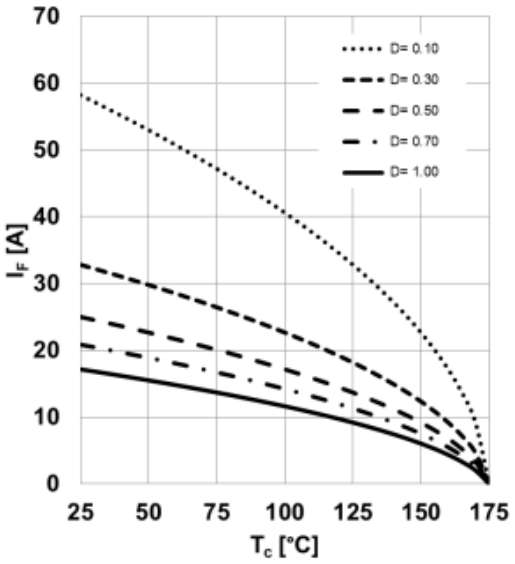


Figure 2. **Diode forward current per leg as function of case temperature,** $I_F=f(T_C)$, $T_j \leq 175°C$, $R_{th(j-c),max}$, parameter D=duty cycle, V_{th}, R_{diff} @ T_j=175°C

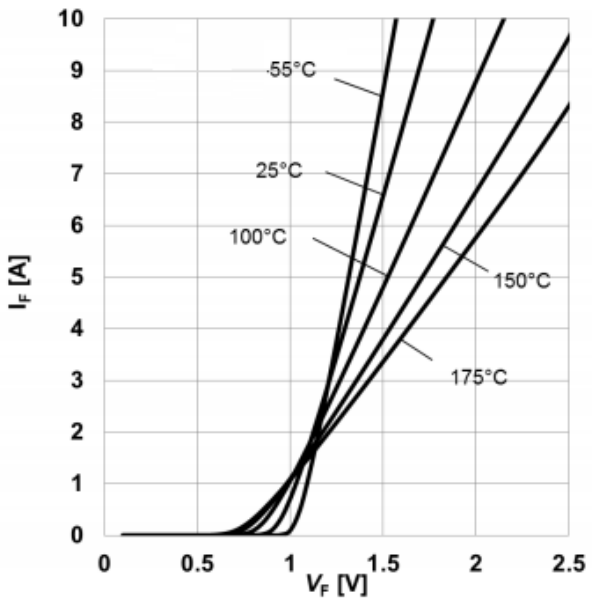


Figure 3. **Typical forward characteristics per leg,** $I_F=f(V_F)$, t_p= 10 µs, parameter: T_j

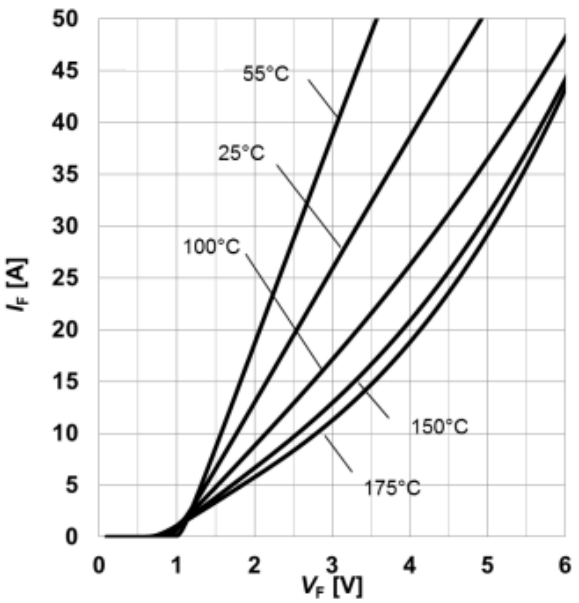


Figure 4. **Typical forward characteristics in surge current per leg,** $I_F=f(V_F)$, t_p= 10 µs, parameter: T_j

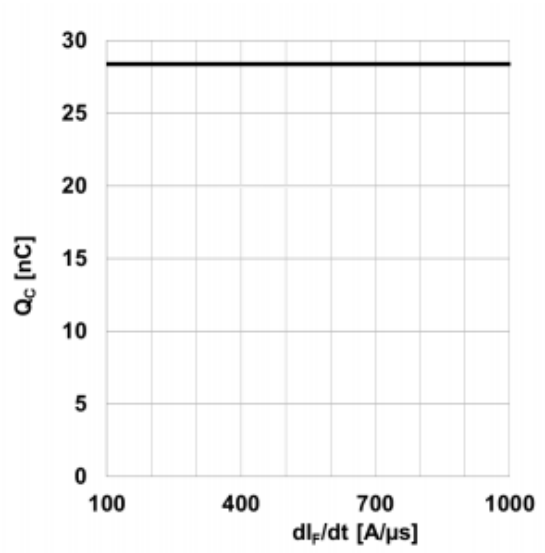


Figure 5. **Typical capacitive charge per leg as function of current slope**[1], $Q_C=f(dI_F/dt)$, $T_j=150°C$

1) guaranteed by design.

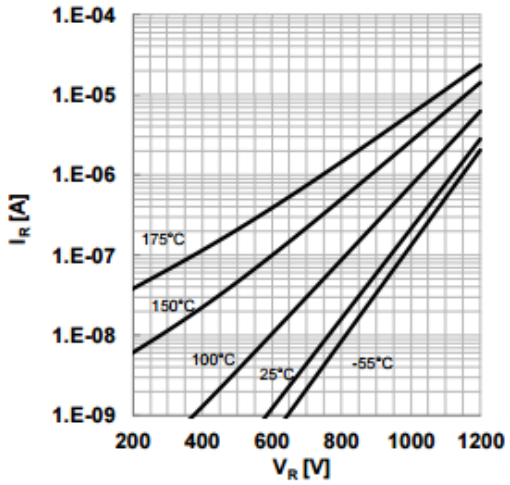


Figure 6. **Typical reverse characteristics per leg,** $I_R=f(V_R)$, parameter: T_j

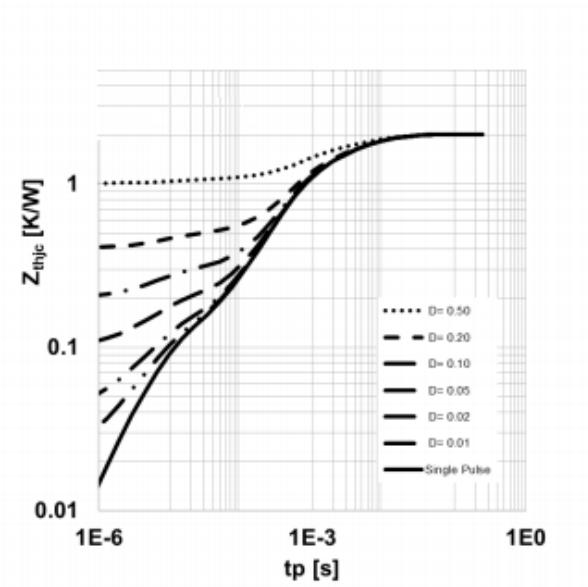


Figure 7. **Max. transient thermal impedance per leg,** $Z_{th,j-c}=f(t_P)$, parameter: $D=t_P/T$

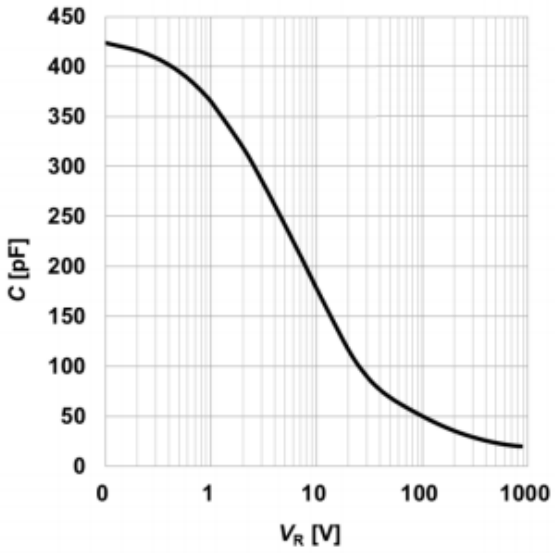


Figure 8. **Typical capacitance per leg as function of reverse voltage,** $C=f(V_R)$; $T_j=25°C$; $f=1$ MHz

Company : Wuxi Guang Lei electronic technology co., LTD

TEL : 13961734102Mr.yuan