SCH6060DN

60A, 600V SiC Schottky Barrier Diode

Features

- Low Forward Voltage Drop: V_F=1.47V (typical @ I_F=30A)
- Reverse Voltage: V_{RRM}=600V
- Rated Avalanche Energy
- High Surge Capability
- Low Power Loss and High Efficiency
- SiC Substrate

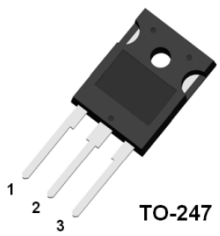
Applications

- Switching Power Supply
- Freewheeling Diode

Description

The SCH6060DN is a SiC schottky barrier diode. This device has superfast recovery property and lower forward voltage drop, it can be used in switching power supply and freewheeling Diode.

Package Type & internal Circuit



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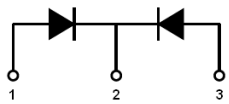


1. Anode 2.Cathode 3.Anode

Absolute Maximum Ratings per diode at T_C=25 ℃ unless otherwise noted

Symbol	Parameter		Ratings	Unit
V_{RRM}	Peak Repetitive Reverse Voltage		600	V
V_{RWM}	Working Peak Reverse Voltage		600	V
V_R	DC Blocking Voltage		600	V
$I_{F(AV)}$	Average Rectified Forward Current	per device at T_C=125℃	30	A
I_{FSM}	Non-repetitive Peak Surge Current		150	A
P_D	Power Dissipation		160	W
T_J	Operating Junction Temperature Range		-55~+150	℃
T_{STG}	Storage Temperature Range		-55~+150	℃

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th\ (J-C)}$	Thermal Resistance, Junction to case	0.78	℃/W

Electrical Characteristics per diode at T_C=25 ℃ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	I_F=30A	-	1.47	1.8	V
		I_F=30A, T_J=125℃	-	1.6	2.0	V
I_R	Reverse Leakage Current	V_R=600V,	-		10	uA
Q_C	Total Capacitive Charge	V_R=300V, I_F=30A, di/dt=-=200A/us	-	40	-	nC
C	Total Capacitive Charge	V_R=0V, f=1MHz	-	870	-	pF
		V_R=200V, f=1MHz	-	80	-	
		V_R=400V, f=1MHz	-	64	-	
t_C	Switching Time	V_R=300V, I_F=30A, di/dt=-200A/us	-	25	-	ns

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

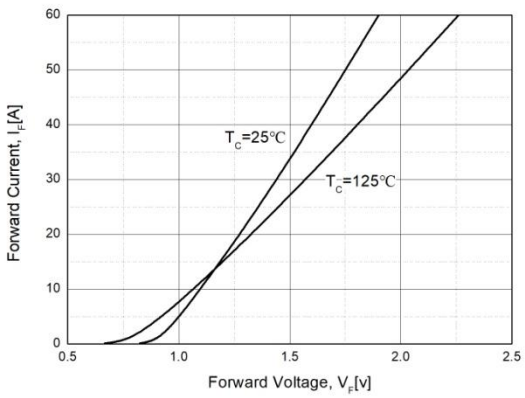


Fig. 3. Typical Characteristics: V_R vs. I_R

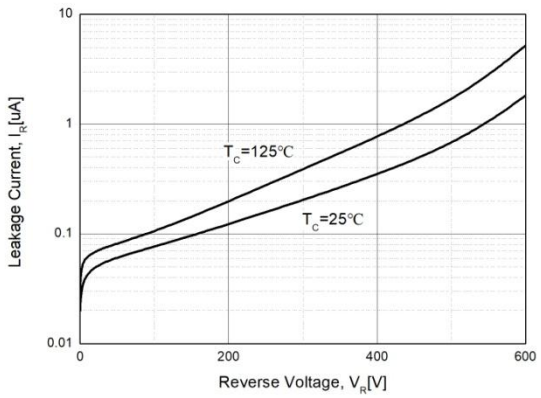


Fig. 3. Typical Characteristics: Q_C vs. V_R

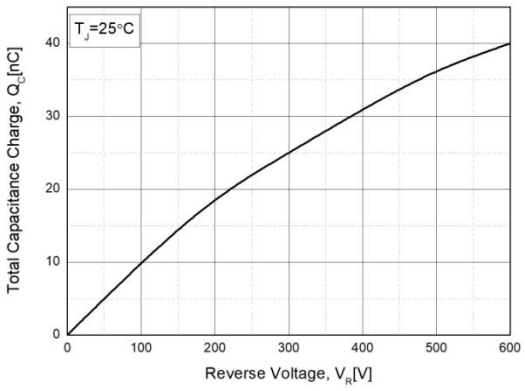
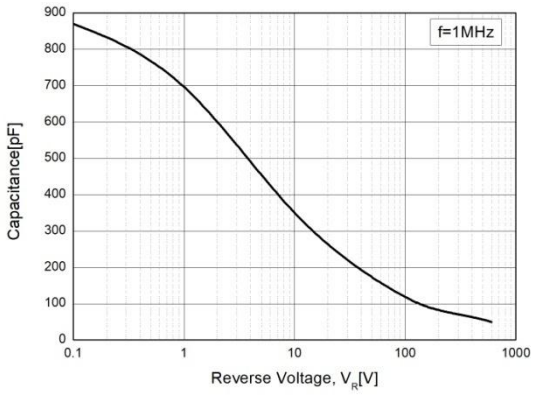


Fig. 4. Typical Characteristics: V_R vs. C_t



Package Dimensions

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(Dimensions in Millimeters)