

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

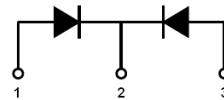
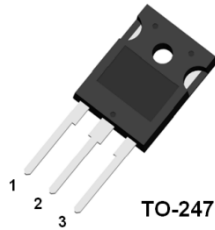
Applications

- 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



1. Anode 2. Cathode 3. Anode

Absolute Maximum Ratings per diode at $T_C=25\text{ }^{\circ}C$ 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 $T_C=125^{\circ}C$	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	$^{\circ}C$
T_{STG}	Storage Temperature Range		-55~+150	$^{\circ}C$

Thermal Characteristics

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

Electrical Characteristics per diode at $T_C=25^\circ\text{C}$ unless otherwise noted

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

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

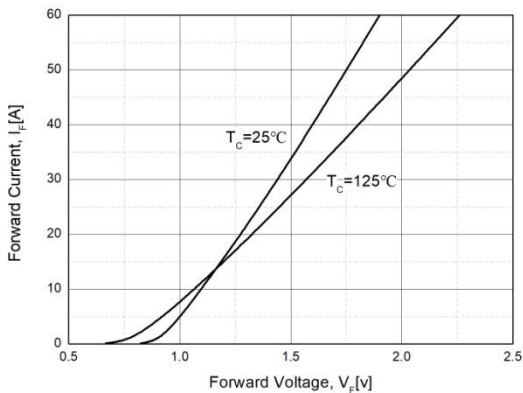


Fig. 3. Typical Characteristics: V_R vs. I_R

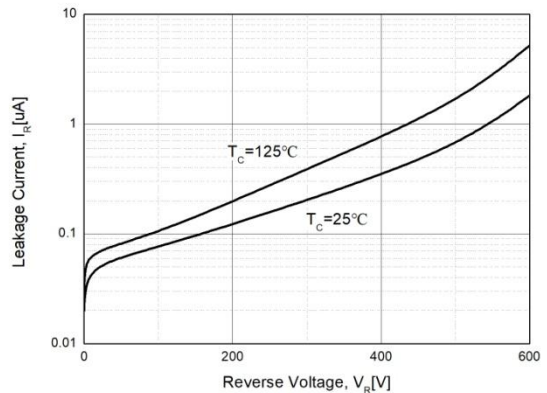


Fig. 3. Typical Characteristics: Q_C vs. V_R

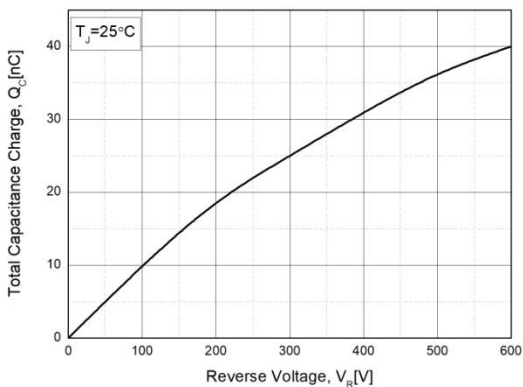
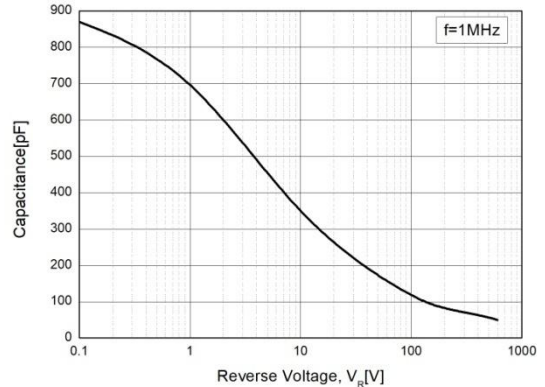


Fig. 4. Typical Characteristics: V_R vs. C_t

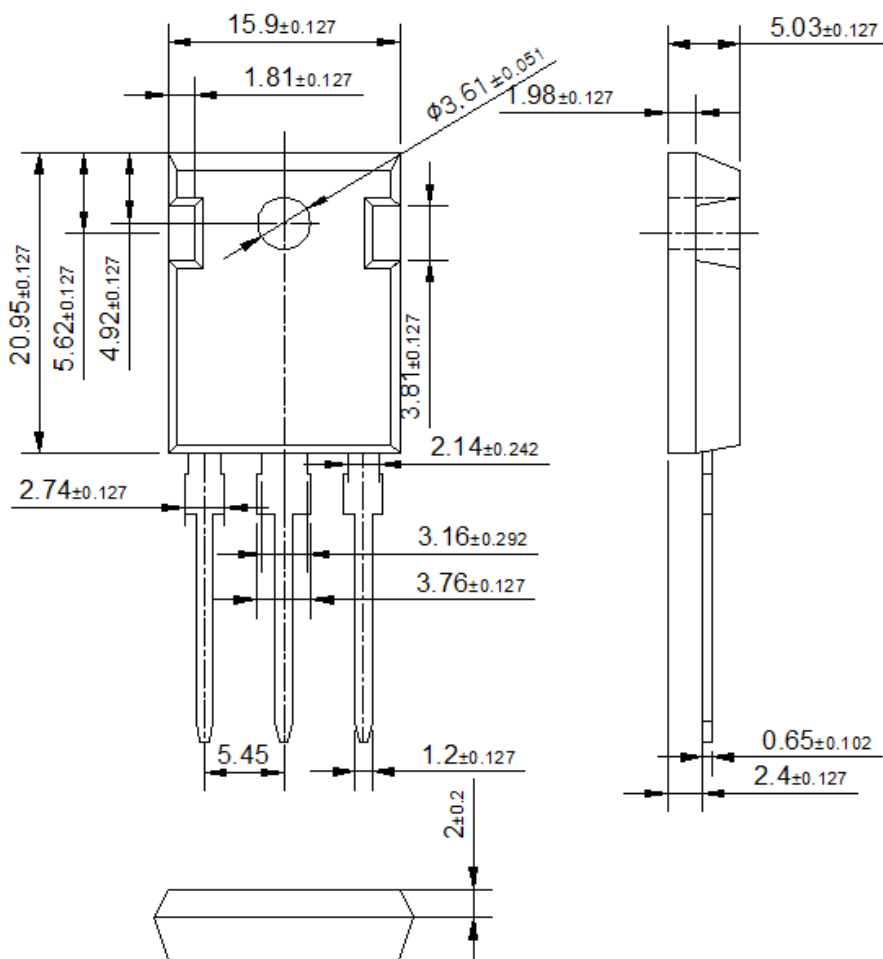




Package Dimensions

TO-247

(Dimensions in Millimeters)



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