

16A, 600V SiC Schottky Barrier Diode

Description

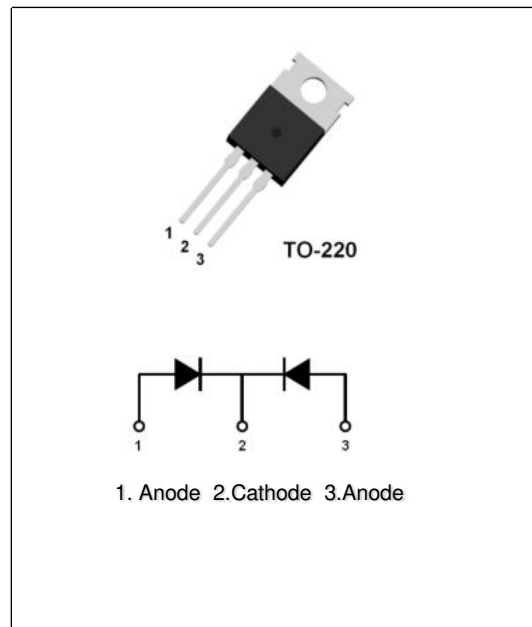
The AKC1660DNT is a SiC Schottky Barrier diode with higher speed switching behavior over Si diodes. Loading of cooling system will be decreased due to the improved efficiency. This device can be used in UPS, PFC, SMPS and solar inverter.

Features

- Typical Forward Voltage: $V_F=1.45V @ I_F=8A$
- Reverse Voltage: $V_{RRM}=600V$
- Shorter Recovery Time
- Avalanche Energy Rated

Applications

- Solar Inverter
- Uninterruptible Power Supply
- Power Factor Correction
- Switch Mode Power Supply



Absolute Maximum Ratings per device at $T_C=25^\circ C$ 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	$T_J=125^\circ C$	8	A
I_{FSM}	Non-repetitive Peak Forward Surge Current	$t_p=10ms$, half sine wave	48	A
		$t_p=200\mu s$, square wave	192	A
P_D	Power Dissipation		90	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	1.39	$^\circ C/W$

Electrical Characteristics per device @ $T_c=25\text{ }^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	$I_F=8\text{A}$	-	1.45	1.75	V
		$I_F=8\text{A}, T_J=125^\circ\text{C}$	-	1.7	2.3	V
I_R	Reverse Leakage Current	$V_R=600\text{V}$,	-		10	μA
Q_C	Total Capacitive Charge	$V_R=300\text{V}, I_F=8\text{A}, di/dt=-200\text{A}/\mu\text{s}$	-	30	-	nC
C	Total Capacitance	$V_R=0\text{V}, f=1\text{MHz}$	-	555	-	pF
		$V_R=200\text{V}, f=1\text{MHz}$	-	65	-	
		$V_R=400\text{V}, f=1\text{MHz}$	-	50	-	

Fig. 1. Typical Characteristics: V_F vs. I_F

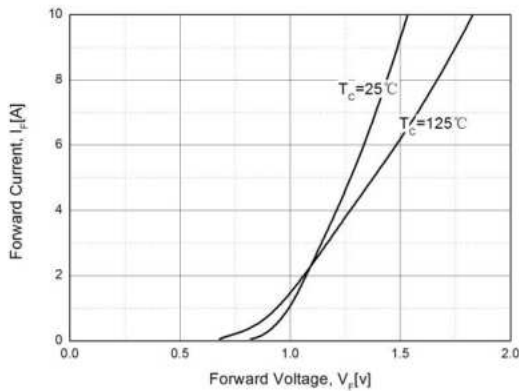


Fig. 2. Typical Characteristics: V_F vs. I_F

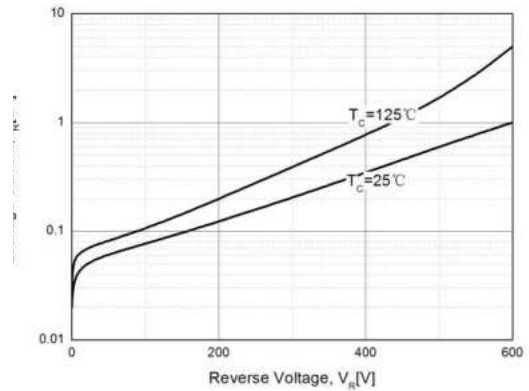


Fig. 3. Typical Characteristics: V_R vs. I_R

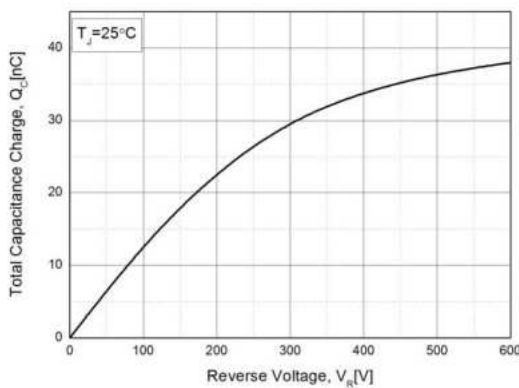
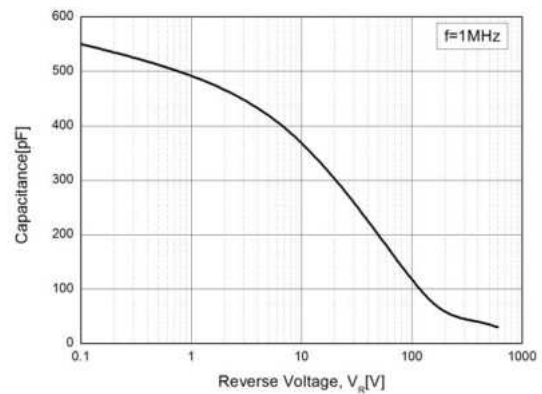


Fig. 4. Typical Characteristics: V_R vs. C_T



Package Dimensions

TO-220

(Dimensions in Millimeters)

