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.

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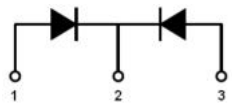


1. Anode 2.Cathode 3.Anode

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 ℃ 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℃	8	A
I_{FSM}	Non-repetitive Peak Forward Surge Current	t_P=10ms, half sine wave	48	A
		t_P=200us, square wave	192	A
P_D	Power Dissipation		90	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	1.39	℃/W

Electrical Characteristics per device @T_C=25 ℃ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	I_F=8A	-	1.45	1.75	V
		I_F=8A, T_J=125℃	-	1.7	2.3	V
I_R	Reverse Leakage Current	V_R=600V,	-		10	uA
Q_c	Total Capacitive Charge	V_R=300V, I_F=8A, di/dt=-=200A/us	-	30	-	nC
C	Total Capacitance	V_R=0V, f=1MHz	-	555	-	pF
		V_R=200V, f=1MHz	-	65	-	
		V_R=400V, f=1MHz	-	50	-	

Fig. 1. Typical Characteristics: V_F vs. I_F

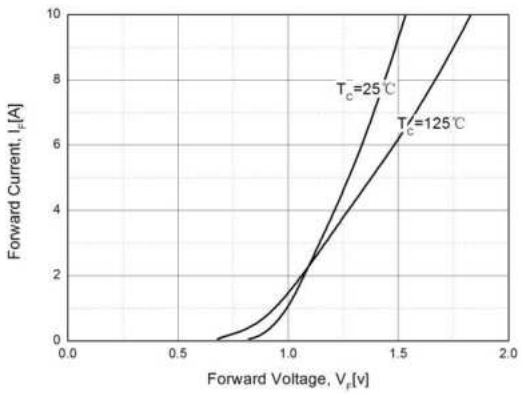


Fig. 2. Typical Characteristics: V_F vs. I_F

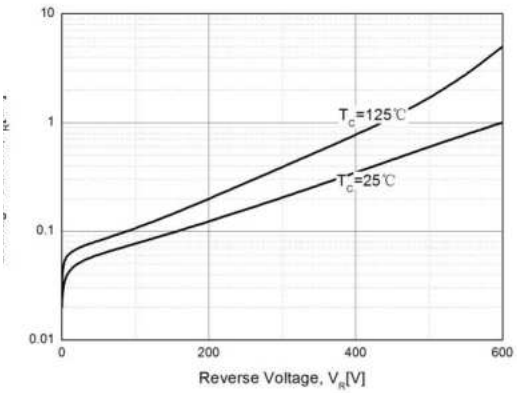


Fig. 3. Typical Characteristics: V_R vs. I_R

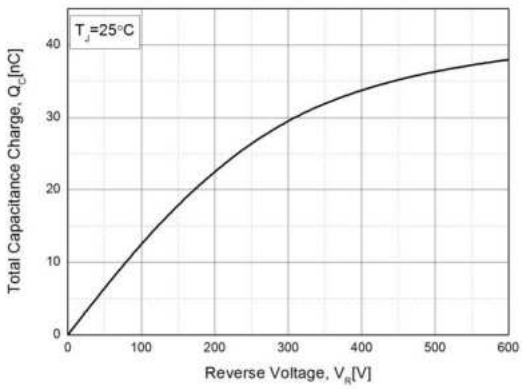
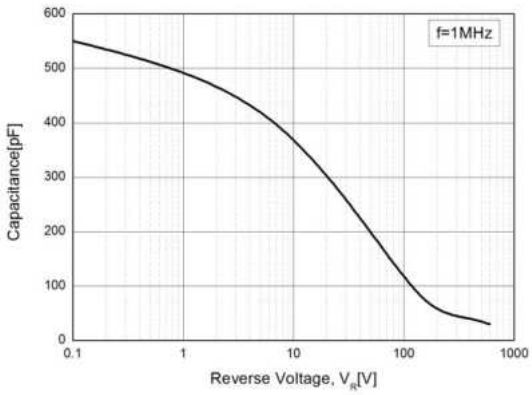


Fig. 4. Typical Characteristics: V_R vs. C_t



Package Dimensions

TO-220

(Dimensions in Millimeters)