

25A, 1700V SiC Schottky Barrier Diode

Description

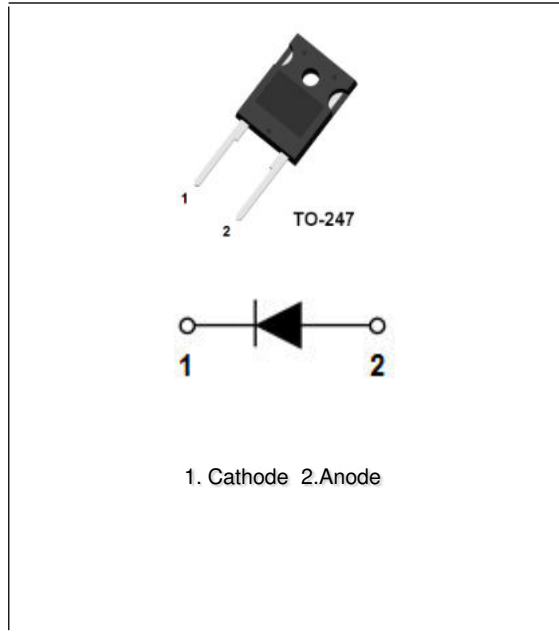
The AKC25170SH is a SiC schottky barrier diode. It is based on silicon carbide material, and its switching behavior is independent of temperature. The device has superfast recovery properties and a lower forward voltage drop, so it can be used in switching power supplies, solar inverters, PFC and UPS.

Features

- Low Forward Voltage Drop: $V_F=1.6V$ (typical @ $I_F=25A$)
- Reverse Voltage: $V_{RRM}=1700V$
- Avalanche Energy Rated
- High Surge Capability
- Low Power Loss and High Efficiency
- Silicon Carbide Substrate

Applications

- Switching Power Supply
- Solar Inverter
- Power Factor Correction
- Uninterruptible Power Supply



Absolute Maximum Ratings per diode at $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter		Ratings	Unit
V_{RRM}	Peak Repetitive Reverse Voltage		1700	V
V_{RWM}	Working Peak Reverse Voltage		1700	V
V_R	DC Blocking Voltage		1700	V
$I_{F(AV)}$	Average Rectified Forward Current	per diode at $T_C=125^\circ C$	25	A
I_{FSM}	Non-repetitive Peak Surge Current	$t_p=10ms$, half sine wave	120	A
		$t_p=200\mu s$, square wave	480	A
P_D	Power Dissipation		360	W
T_J	Operating Junction Temperature Range		-55~+175	$^\circ C$
T_{STG}	Storage Temperature Range		-55~+175	$^\circ C$

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$	Thermal Resistance, Junction to case	0.42	$^\circ C/W$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	$I_F=25\text{A}$	-	1.6	2.2	V
		$I_F=25\text{A}, T_C=125\text{ }^\circ\text{C}$	-	-	3.0	V
I_R	Reverse Leakage Current	$V_R=1700\text{V}$	-	-	200	μA
C	Total Capacitance	$V_R=0\text{V}, f=1\text{MHz}$	-	1900	-	pF
		$V_R=800\text{V}, f=1\text{MHz}$	-	95	-	
		$V_R=1700\text{V}, f=1\text{MHz}$	-	60	-	
Q_C	Total Capacitive Charge	$V_R=1700\text{V}, I_F=10\text{A}, di/dt=-200\text{A}/\mu\text{s}$	-	240	-	nC

Package Dimensions

TO-247

(Dimensions in Millimeters)

