

## 25A, 1700V SiC Schottky Barrier Diode

### Description

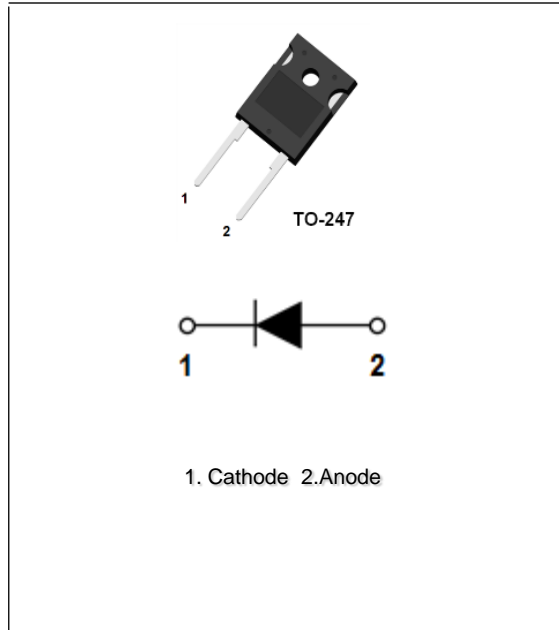
The AKCH25170S is a SiC schottky barrier diode. It is based on silicon carbide material, and its switching behavior is independent of temperature. The device has superfast recovery properties and a lower forward voltage drop, so it can be used in switching power supplies, solar inverters, PFC and UPS.

### 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	$\mu\text{A}$
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)

