

## 60A, 200V Schottky Barrier Diode

### Description

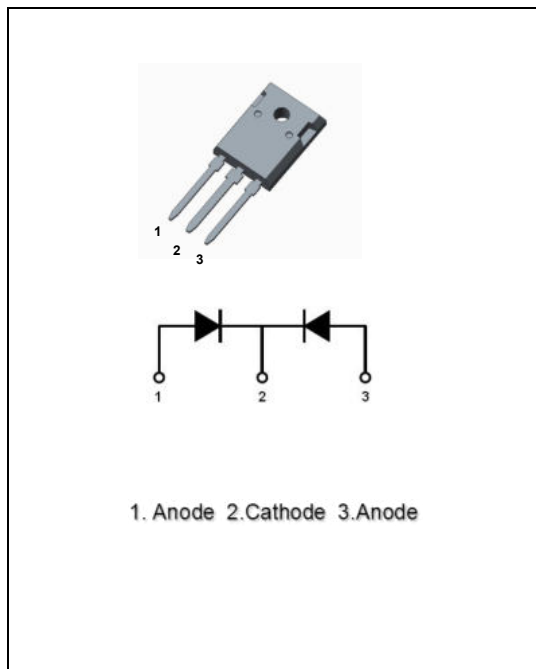
The AKS6020DNH is a Schottky Barrier Diode and based on silicon extension process. It has very low switching losses and high ESD / surge current capability. Because of schottky barrier structure, the device suit for rectifier、 free wheeling diode in high frequency and low voltage devices, like SMPS or PFC.

### Features

- Low Forward Voltage Drop:  $V_F=0.6V$  (typical @  $I_F=30A$ )
- Reverse Voltage:  $V_{RRM}=200V$
- Extremely Low Switching Losses
- High ESD and Surge Current Capability
- Low Reverse Leakage
- Standard TO-247 Package

### Applications

- Rectifier in SMPS
- Free Wheeling Diode in PFC
- High Frequency Devices



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

| Symbol      | Parameter                            |                                 | Ratings  | Unit       |
|-------------|--------------------------------------|---------------------------------|----------|------------|
| $V_{RRM}$   | Peak Repetitive Reverse Voltage      |                                 | 200      | V          |
| $V_{RWM}$   | Working Peak Reverse Voltage         |                                 | 200      | V          |
| $V_R$       | DC Blocking Voltage                  |                                 | 200      | V          |
| $I_{F(AV)}$ | Average Rectified Forward Current    | per device at $T_C=125^\circ C$ | 60       | A          |
| $I_{FSM}$   | Non-repetitive Peak Surge Current    | $t_p=10ms$ , half sine wave     | 400      | A          |
| $P_D$       | Power Dissipation                    |                                 | 138      | W          |
| $T_J$       | Operating Junction Temperature Range |                                 | -60~+150 | $^\circ C$ |
| $T_{STG}$   | Storage Temperature Range            |                                 | -60~+175 | $^\circ C$ |

### Thermal Characteristics

| Symbol        | Parameter                            | Ratings | Unit         |
|---------------|--------------------------------------|---------|--------------|
| $R_{th(J-C)}$ | Thermal Resistance, Junction to case | 0.9     | $^\circ C/W$ |

## 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    | $I_F=30\text{A}$                         | -    | 0.6  | 0.8  | V             |
|        |                         | $I_F=30\text{A}, T_C=125^\circ\text{C}$  | -    | 0.55 | -    | V             |
| $I_R$  | Reverse Leakage Current | $V_R=200\text{V}$                        | -    | -    | 100  | $\mu\text{A}$ |
|        |                         | $V_R=200\text{V}, T_C=125^\circ\text{C}$ | -    | -    | 2.5  | mA            |

## Typical Performance Characteristics

Fig. 1. Typical Characteristics:  $I_F$  vs.  $V_F$

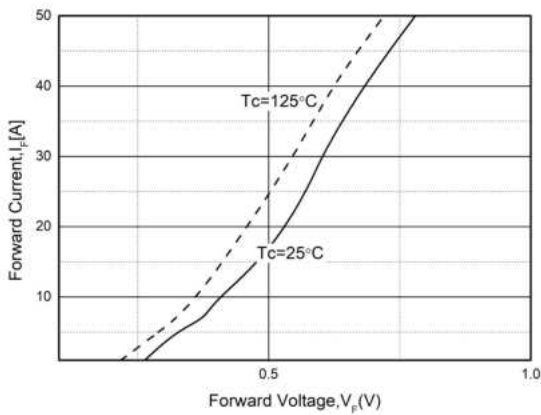


Fig. 2. Typical Characteristics:  $I_R$  vs.  $V_R$

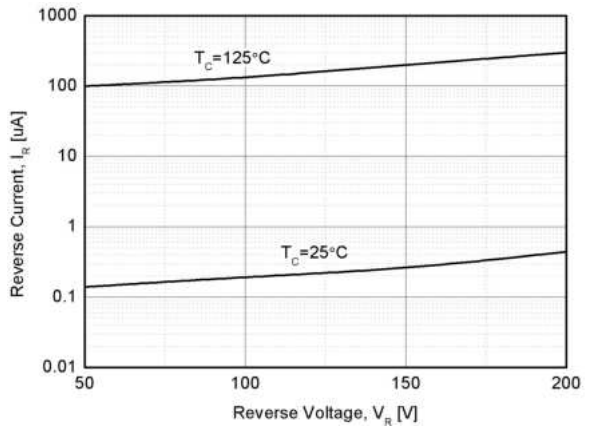


Fig. 3. Typical Characteristics:  $I_{F(AV)}$  vs.  $T_C$

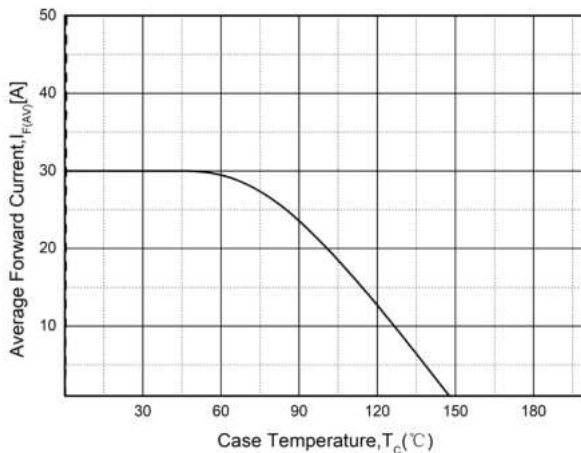
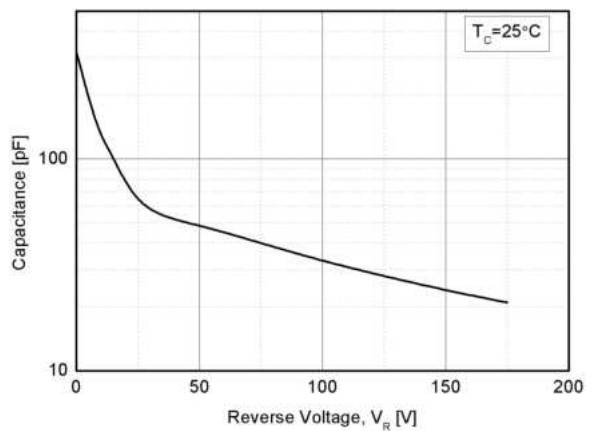


Fig. 4. Typical Characteristics: Capacitance vs.  $V_R$



**Package Dimensions**

**TO-247**

(Dimensions in Millimeters)

