

66A, 300V Ultrafast Dual Diode

Description

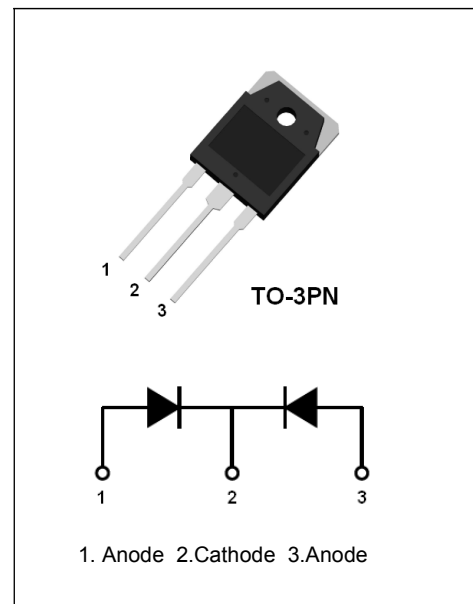
The AKFA6603DN is an ultrafast dual diode with low forward voltage drop. This device is designed for FWD in motor and power switching applications. It is specially suited for use in switching power supplies and industrial applications as welder.

Features

- Ultrafast Soft Recovery: $T_{rr}=55\text{ns}$ (max)
- Typical Forward Voltage: $V_F=0.99\text{V}$ @ $I_F=33\text{A}$
- Reverse Voltage: $V_{RRM}=300\text{V}$
- Avalanche Energy Rated

Applications

- Power Switching Circuits
- Output Rectifier in Switching Power Supply & Welder
- FWD for Motor Application



Absolute Maximum Ratings per diode at $T_c=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Ratings | Unit |
|-------------|--------------------------------------|---|------------------|
| V_{RRM} | Peak Repetitive Reverse Voltage | 300 | V |
| V_{RWM} | Working Peak Reverse Voltage | 300 | V |
| V_R | DC Blocking Voltage | 300 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current | per device at $T_c=120^\circ\text{C}$ 66 | A |
| I_{FSM} | Non-repetitive Peak Surge Current | 300 | A |
| T_J | Operating Junction Temperature Range | -65~+150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | -65~+150 | $^\circ\text{C}$ |

Thermal Characteristics

| Symbol | Parameter | Ratings | Unit |
|---------------|--------------------------------------|---------|--------------------|
| $R_{th(J-C)}$ | Thermal Resistance, Junction to case | 0.53 | $^\circ\text{C/W}$ |

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

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|----------|-------------------------|--|------|------|------|---------------|
| V_F | Forward Voltage Drop | $I_F=33\text{A}$ | - | 0.99 | 1.4 | V |
| | | $I_F=33\text{A}, T_c=125^\circ\text{C}$ | - | - | 1.1 | V |
| I_R | Reverse Leakage Current | $V_R=300\text{V}$ | - | - | 100 | μA |
| T_{rr} | Reverse Recovery Time | $I_F=33\text{A}, di/dt=-200\text{A}/\mu\text{s}$ | - | - | 55 | ns |
| E_{AS} | Avalanche Energy | $L=30\text{mH}$ | 20 | - | - | mJ |

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

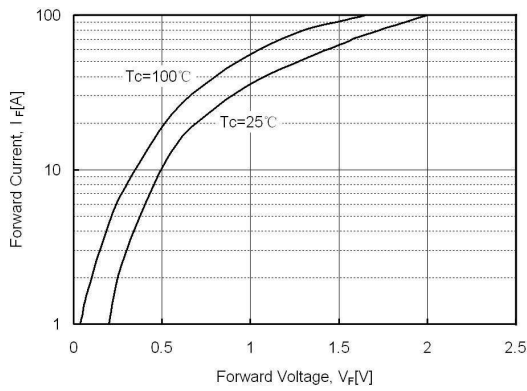


Fig. 2. Typical Characteristics: V_R vs. I_R

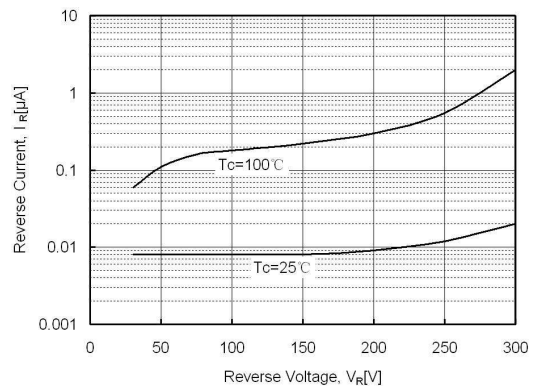


Fig. 3. Typical Reverse Recovery Time vs. di/dt

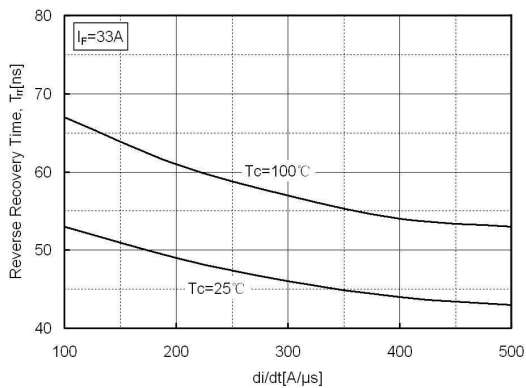
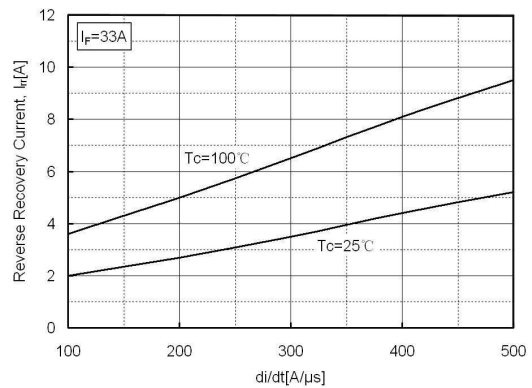


Fig. 4. Typical Reverse Recovery Current vs. di/dt



Package Dimensions

TO-3PN

(Dimensions in Millimeters)

