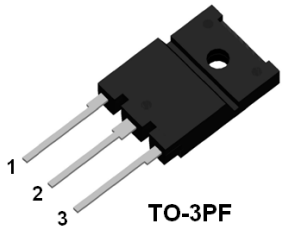
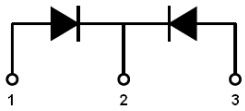
30A, 600V Ultrafast Dual Diode

Description

The AKF30U60DNG is an ultrafast dual diode, its typical reverse recovery time is 63ns. This device is designed for freewheel diode in motor and power switching applications, and specially suited for use in inverter welding.



TO-3PF



1. Anode 2.Cathode 3.Anode

Features

- Ultrafast Soft Recovery: T_{rr}=63ns (typ.)
- Typical Forward Voltage: V_F=1.34V (typ.) @ I_F=15A
- Reverse Voltage: V_{RRM}=600V
- Avalanche Energy Rated

Applications

- Switching Power Supply
- FWD for Motor Application
- Inverter Welding

Absolute Maximum Ratings per diode 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	per device at T_C=120℃	30	A
I_{FSM}	Non-repetitive Peak Surge Current		150	A
T_J	Operating Junction Temperature Range		-65~+150	℃
T_{STG}	Storage Temperature Range		-65~+150	℃

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th\ (J-C)}$	Thermal Resistance, Junction to case	2.4	℃/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	I_F=15A	-	1.34	1.6	V
		I_F=15A, T_C=125℃	-	-	1.5	V
I_R	Reverse Leakage Current	V_R=600V	-	-	100	uA
T_{rr}	Reverse Recovery Time	I_F=15A, di/dt=-200A/us	-	63	-	ns
W_{AVL}	Avalanche Energy	L=30mH	20	-	-	mJ

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

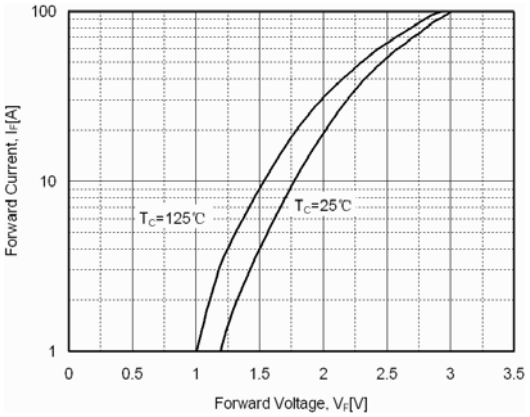


Fig. 2. Typical Characteristics: V_R vs. I_R

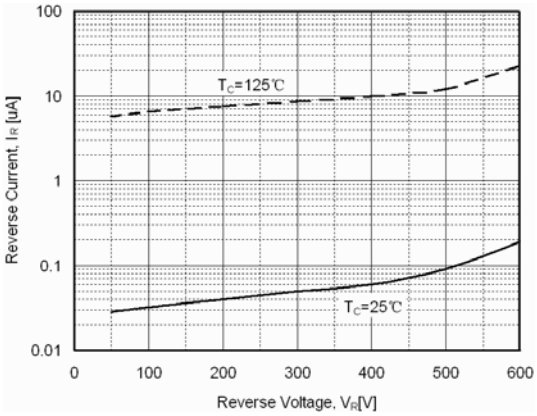


Fig. 3. Typical Reverse Recovery Time vs. di/dt

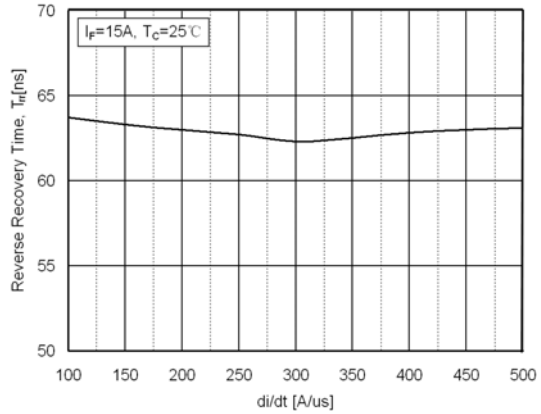
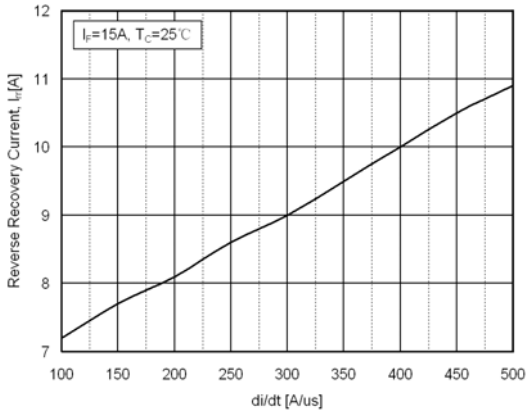


Fig. 4. Typical Reverse Recovery Current vs. di/dt



Package Dimensions

TO-3PF

(Dimensions in Millimeters)