

60A, 650V Ultrafast Dual Diode

Description

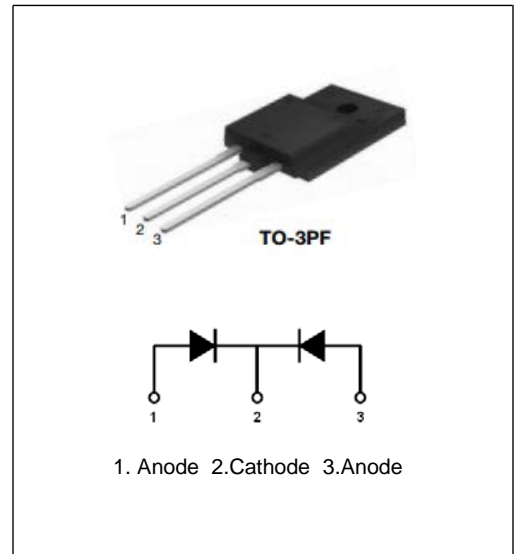
The AKFAF60UP65DN is an ultrafast dual diode with low forward voltage drop. This device is designed for FWD in motor and power switching applications. It is specially suited for use in switching power supplies and industrial applications as welder, UPS and inverter.

Features

- Ultrafast Soft Recovery: $t_{rr}=72\text{ns}$ (typ.)
- Typical Forward Voltage: $V_F=1.34\text{V}$ @ $I_F=30\text{A}$
- Reverse Voltage: $V_{RRM}=650\text{V}$
- Avalanche Energy Rated

Applications

- Welder & UPS & Inverter
- Switching Power Supply
- FWD for Motor Application



Absolute Maximum Ratings ($T_C=25\text{ }^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit	
V_{RRM}	Peak Repetitive Reverse Voltage	650	V	
V_{RWM}	Working Peak Reverse Voltage	650	V	
V_R	DC Blocking Voltage	650	V	
$I_{F(AV)}$	Average Rectified Forward Current	Per Diode at $T_C=90^\circ\text{C}$	30	A
		Per Package at $T_C=90^\circ\text{C}$	60	A
I_{FSM}	Non-repetitive Peak Surge Current	200	A	
T_J	Operating Junction Temperature Range	-65~+150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-65~+150	$^\circ\text{C}$	

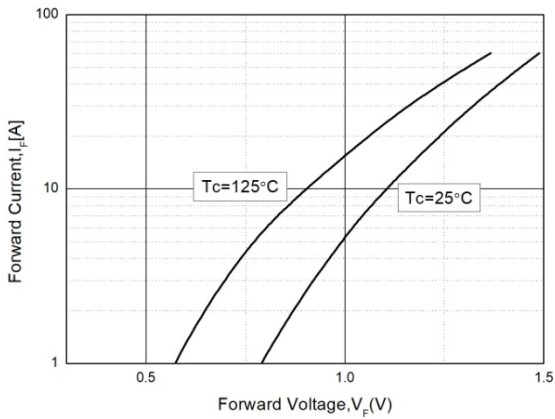
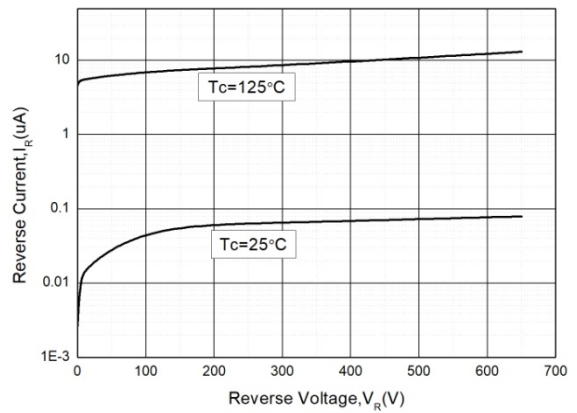
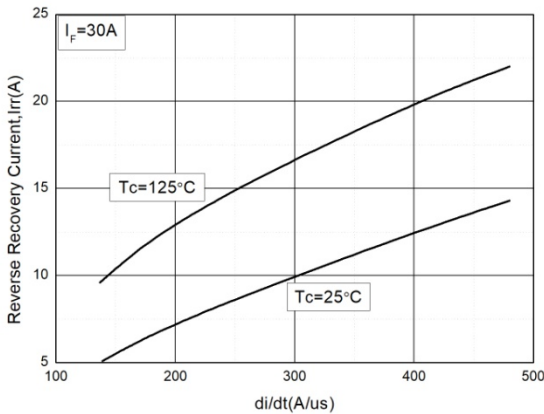
Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$	Thermal Resistance, Junction to case	0.46	$^\circ\text{C}/\text{W}$

Electrical Characteristics (Per Diode $T_C=25\text{ }^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	$I_F=30\text{A}$	-	1.34	1.5	V
		$I_F=30\text{A}, T_C=125\text{ }^\circ\text{C}$	-	-	1.4	V
I_R	Reverse Leakage Current	$V_R=600\text{V}$	-	-	10	μA
t_{rr}	Reverse Recovery Time	$I_F=30\text{A}, di/dt=-200\text{A/us}$	-	72	-	ns
W_{AVL}	Avalanche Energy	$L=10\text{mH}$	100	-	-	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
