

80A, 400V Ultrafast Dual Diode

Description

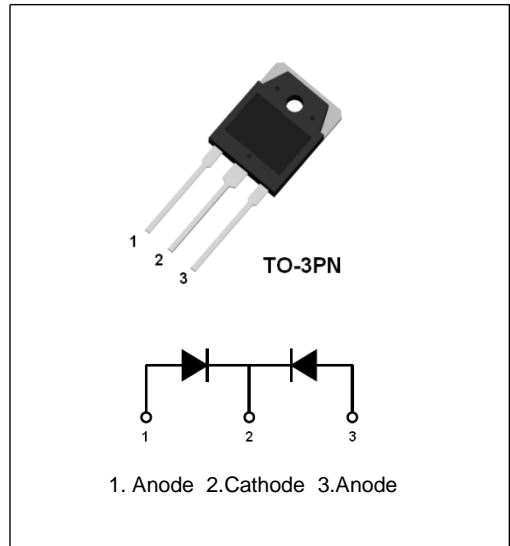
The AKFA80UP40DNT is an ultrafast dual diode with low forward voltage drop. This device is designed for Inversion Welder and UPS, It is specially suited for use in Converter & Chopper and industrial applications as SMPS.

Features

- Ultrafast Soft Recovery: $T_{rr}=48\text{ns}$ (max)
- Typical Forward Voltage: $V_F=1.15\text{V}$ @ $I_F=40\text{A}$
- Reverse Voltage: $V_{RRM}=400\text{V}$
- Avalanche Energy Rated

Applications

- Inversion Welder
- Converter & Chopper
- Rectifiers in Switch Mode Power Supplies



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	400	V
V_{RWM}	Working Peak Reverse Voltage	400	V
V_R	DC Blocking Voltage	400	V
$I_{F(AV)}$	Average Rectified Forward Current	80	A
	per device at $T_C=120^\circ\text{C}$		
I_{FSM}	Non-repetitive Peak Surge Current	350	A
T_J	Operating Junction Temperature Range	-40~+150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-40~+150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$	Thermal Resistance, Junction to case	0.8	$^\circ\text{C}/\text{W}$

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	$I_F=40\text{A}$	-	1.15	1.6	V
		$I_F=40\text{A}, T_C=125^\circ\text{C}$	-	-	1.2	V
I_R	Reverse Leakage Current	$V_R=400\text{V}$	-	-	10	μA
T_{rr}	Reverse Recovery Time	$I_F=40\text{A}, di/dt=-200\text{A}/\mu\text{s}$	-	-	48	ns
E_{AS}	Avalanche Energy	$L=30\text{mH}$	20	-	-	mJ

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

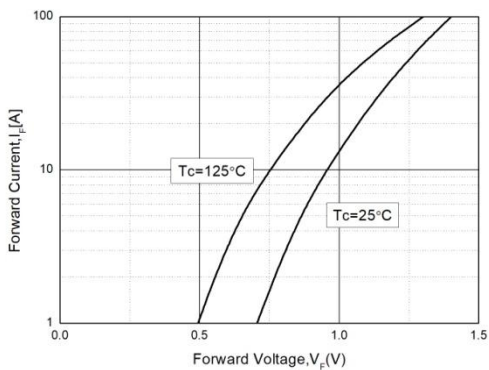


Fig. 2. Typical Characteristics: V_R vs. I_R

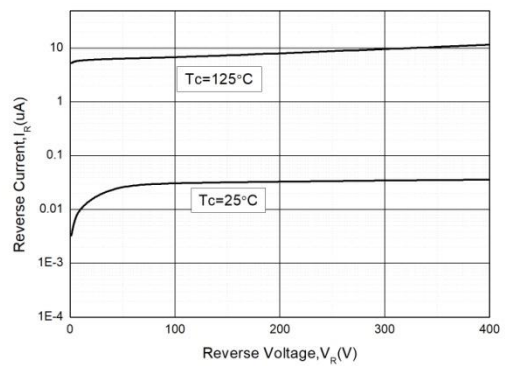


Fig. 3. Typical Reverse Recovery Time vs. di/dt

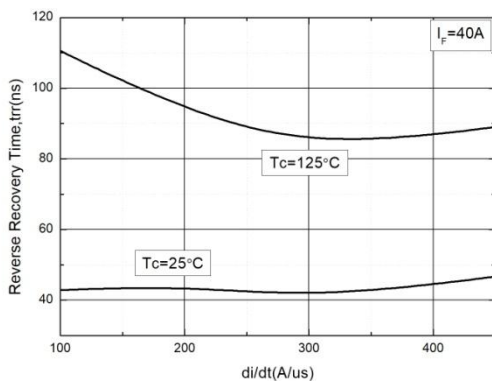
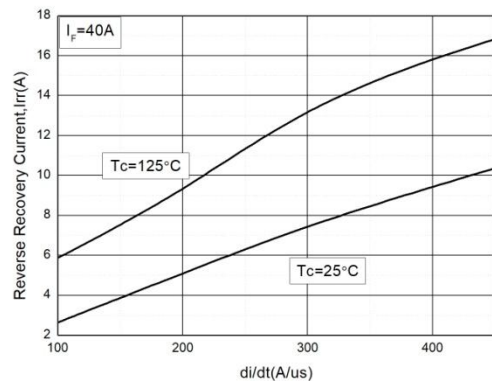


Fig. 4. Typical Reverse Recovery Current vs. di/dt



Package Dimensions

TO-3PN

(Dimensions in Millimeters)

