

# SFA70UP20DN

## 70A, 200V Ultrafast Dual Diode

### Features

- Ultrafast Soft Recovery:  $t_r=40\text{ns}$
- Typical Forward Voltage:  $V_F=0.96\text{V}@ I_F=35\text{A}$
- Reverse Voltage:  $V_{RRM}=200\text{V}$
- Avalanche Energy Rated

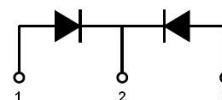
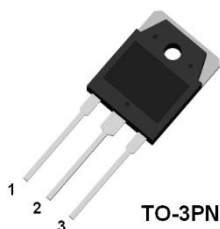
### Applications

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

### Description

The SFA70UP20DN 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.

### Package Type & internal Circuit



1. Anode 2.Cathode 3.Anode

### 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	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 $T_c=120^\circ\text{C}$ 70	A
$I_{FSM}$	Non-repetitive Peak Surge Current	400	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	0.92	$^\circ\text{C/W}$

**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	$I_F=35\text{A}$	-	0.96	-	V
		$I_F=35\text{A}, T_C=120^\circ\text{C}$	-	-	1.05	V
$I_R$	Reverse Leakage Current	$V_R=200\text{V}$	-	-	10	$\mu\text{A}$
$t_{rr}$	Reverse Recovery Time	$I_F=35\text{A}, di/dt=-150\text{A}/\mu\text{s}$	-	40	-	ns
$W_{AVL}$	Avalanche Energy	$L=30\text{mH}$	20	-	-	mJ

**Typical Performance Characteristics**

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

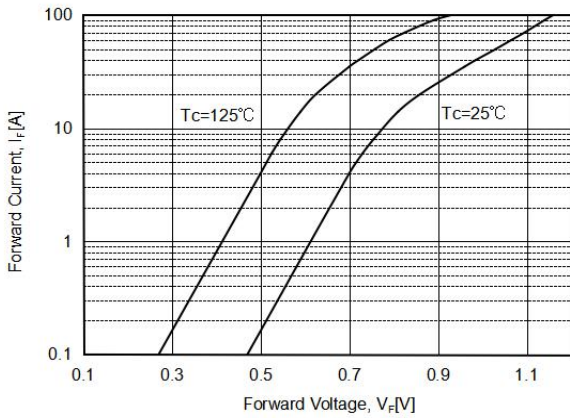


Fig. 2. Typical Characteristics:  $V_R$  vs.  $I_R$

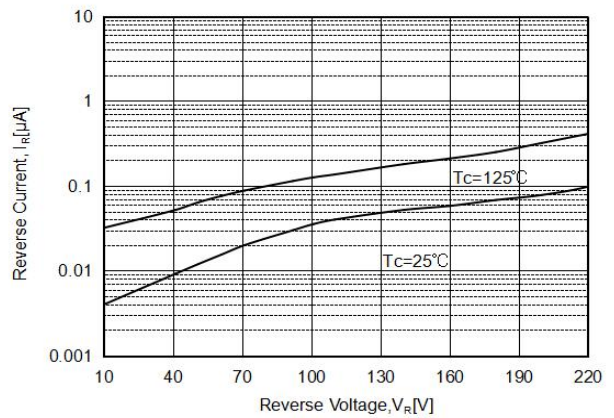


Fig. 3. Typical Reverse Recovery Time vs.  $di/dt$

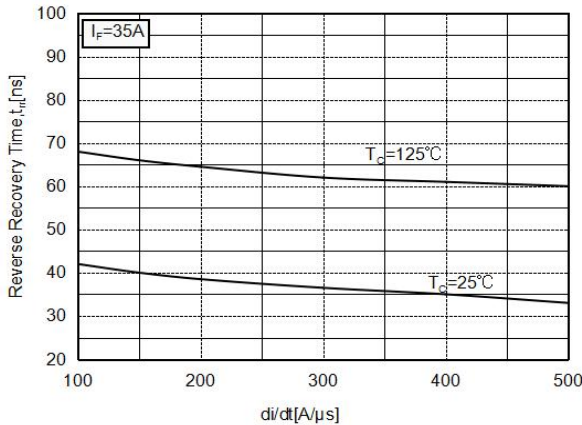
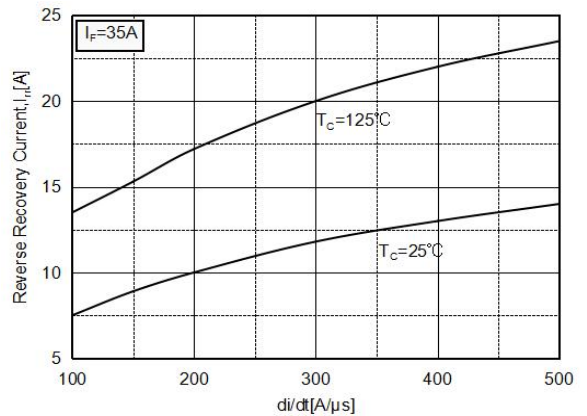


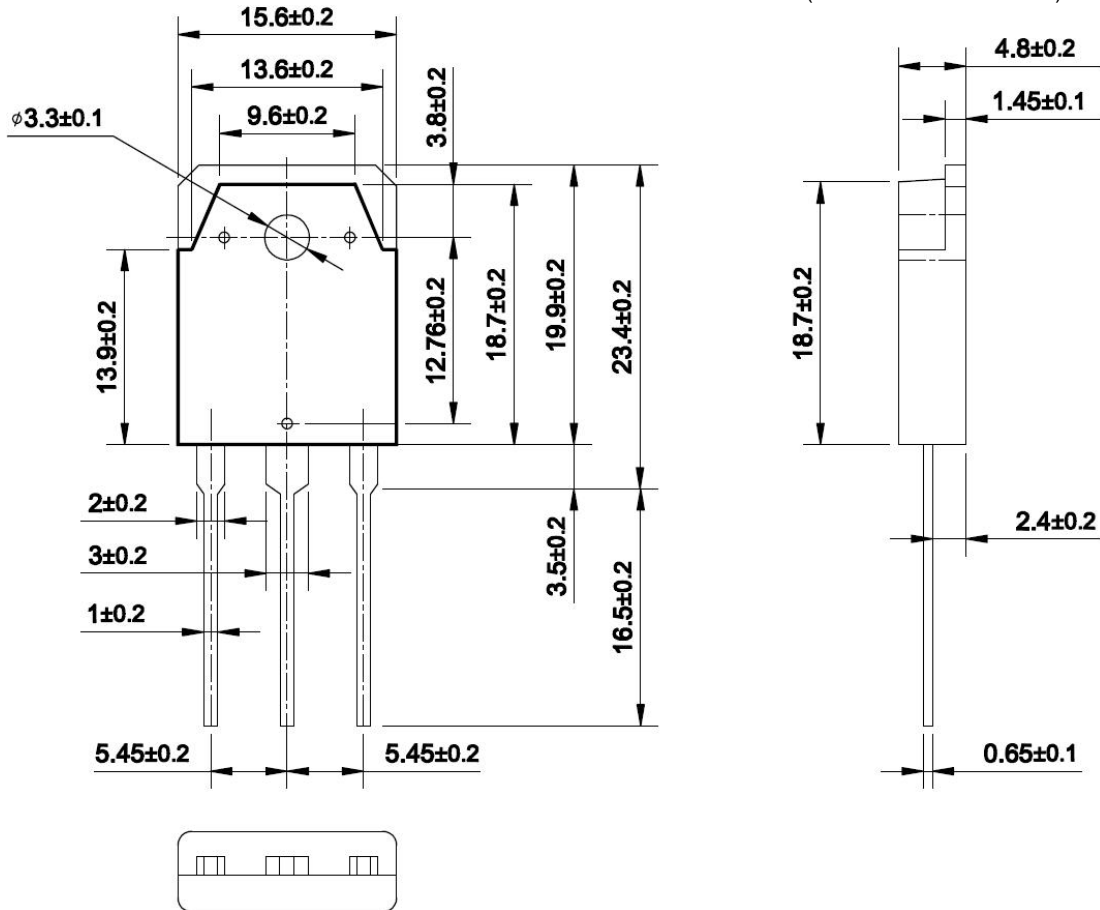
Fig. 4. Typical Reverse Recovery Current vs.  $di/dt$



Package Dimensions


TO-3PN

(Dimensions in Millimeters)



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