

SFA60UP60S

60A, 600V Ultrafast Diode

Features

- Ultrafast Soft Recovery: t_{rr} =100ns (typ.)
- Typical Forward Voltage: V_F =1.32V @ I_F =60A
- Reverse Voltage: V_{RRM} =600V
- Avalanche Energy Rated

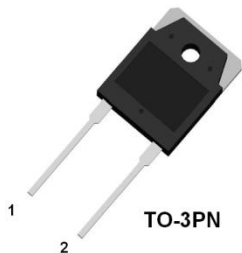
Description

The SFA60UP60S is an ultrafast 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 and UPS application.

Applications

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

Package Type & internal Circuit



1. Cathode 2. Anode

Absolute Maximum Ratings at T_C =25 °C 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	at T_C =120°C	60	A
I_{FSM}	Non-repetitive Peak Surge Current		500	A
T_J	Operating Junction Temperature Range		-55~+150	°C
T_{STG}	Storage Temperature Range		-55~+150	°C

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$	Thermal Resistance, Junction to case	0.7	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	$I_F=60\text{A}$	-	1.32	1.70	V
		$I_F=60\text{A}, T_C=125^\circ\text{C}$	-	1.2	-	V
I_R	Reverse Leakage Current	$V_R=600\text{V}$	-	-	10	μA
t_{rr}	Reverse Recovery Time	$I_F=60\text{A}, di/dt=-200\text{A}/\mu\text{s}, V_R=300\text{V}$	-	100	130	ns
Q_{rr}	Reverse Recovery Charge		-	198.6	-	nC
I_{RRM}	repetitive peak reverse current		-	6.2	-	A
W_{AVL}	Avalanche Energy	$L=30\text{mH}$	20	-	-	mJ

Electrical Characteristics @ $T_C=125^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F=60\text{A}, di/dt=-200\text{A}/\mu\text{s}, V_R=300\text{V}$	-	236.4	-	ns
Q_{rr}	Reverse Recovery Charge		-	1860	-	nC
I_{RRM}	repetitive peak reverse current		-	13.8	-	A
t_{rr}	Reverse Recovery Time	$I_F=60\text{A}, di/dt=-1000\text{A}/\mu\text{s}, V_R=300\text{V}$	-	165.4	-	ns
Q_{rr}	Reverse Recovery Charge		-	2880	-	nC
I_{RRM}	repetitive peak reverse current		-	28.2	-	A

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

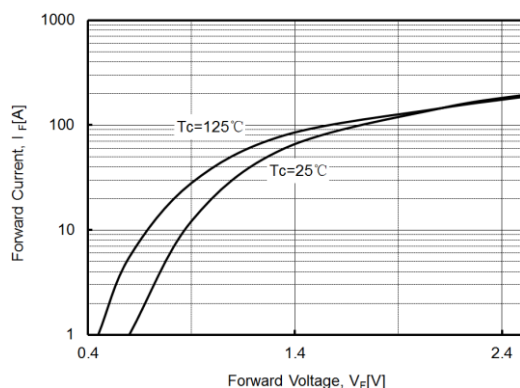


Fig. 2. Typical Characteristics: V_R vs. I_R

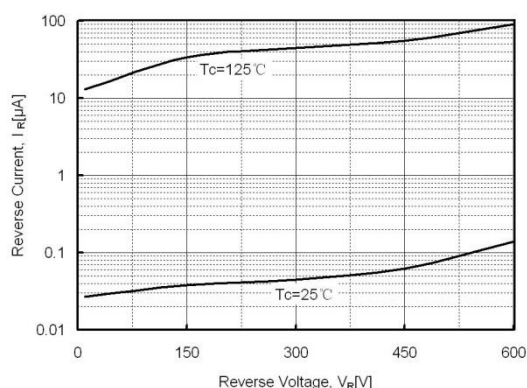


Fig. 3. Typical Reverse Recovery Time vs. di/dt

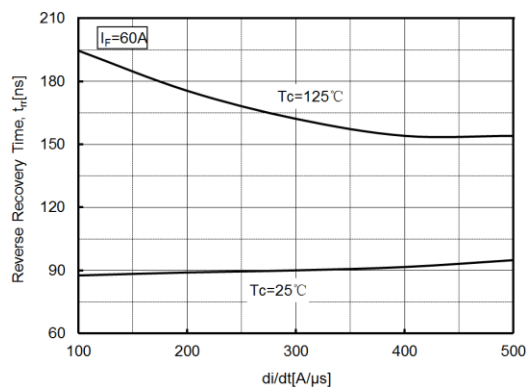
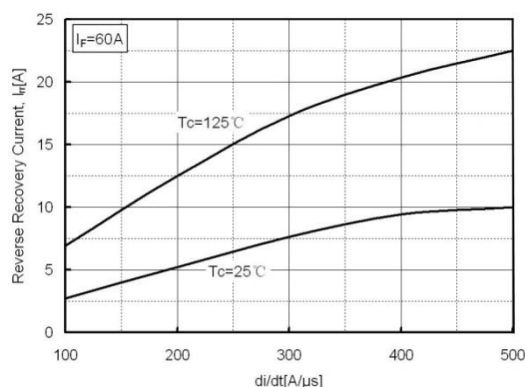


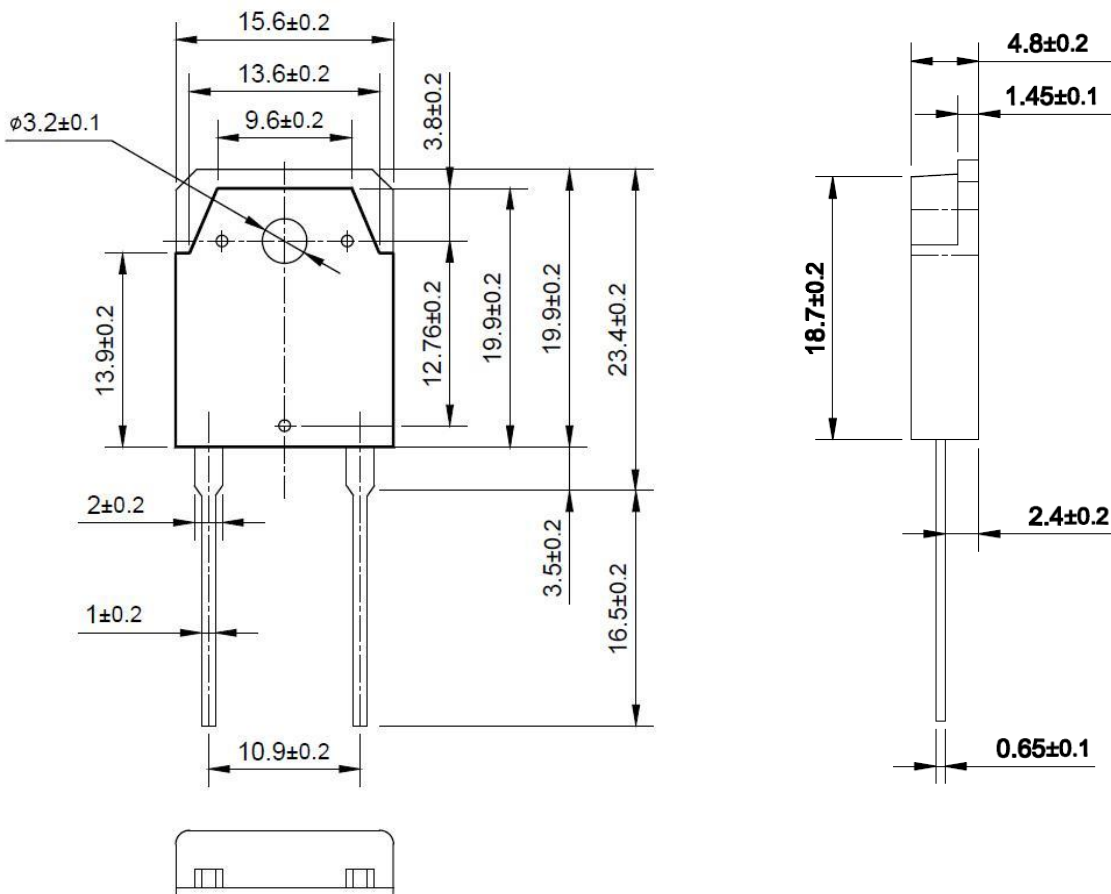
Fig. 4. Typical Reverse Recovery Current vs. di/dt



Package Dimensions

TO-3PN

(Dimensions in Millimeters)



DISCLAIMER:

The products are not designed for use in hostile environments, including, without limitation, aircraft, nuclear power generation, medical appliances, and devices or systems in which malfunction of any product can reasonably be expected to result in a personal injury. Seller's customers using or selling seller's products for use in such applications do so at their own risk and agree to fully defend and indemnify Seller.

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