

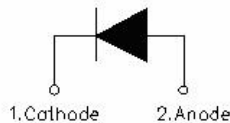
## SDURF560A ULTRAFAST RECTIFIER



### Applications

- Antiparallel diode for high frequency switching devices
- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

### Circuit Diagram



### Features

- Ultra-Fast switching
- High current capability
- Low reverse leakage current
- High surge current capability
- This is a Pb - free device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	600	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_c=100^\circ\text{C}$ , rectangular wave form	5	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse	60	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop *	$V_{F1}$	@5A, Pulse, $T_J = 25^\circ\text{C}$	1.14	1.7	V
Reverse Current *	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$	0.11	5	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$	1	500	$\mu\text{A}$
Reverse Recovery Time	$t_{rr}$	$I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_{rm}=250\text{mA}$	31	35	ns

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta\text{JC}}$	DC operation	4.5	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	2	g
Case Style	ITO-220AC			

**Ratings and Characteristics Curves**

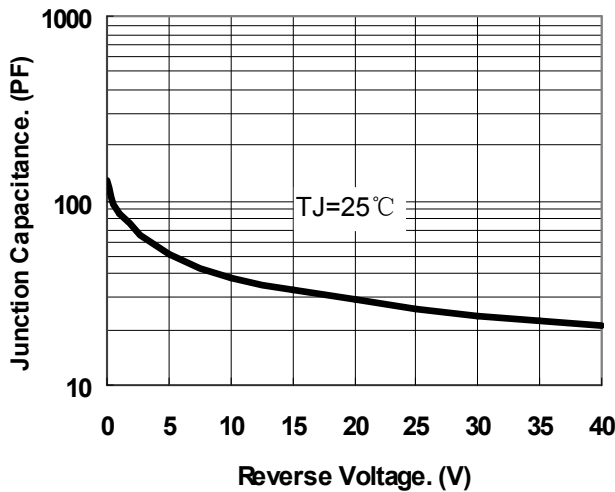


Fig.1-Typical Junction Capacitance

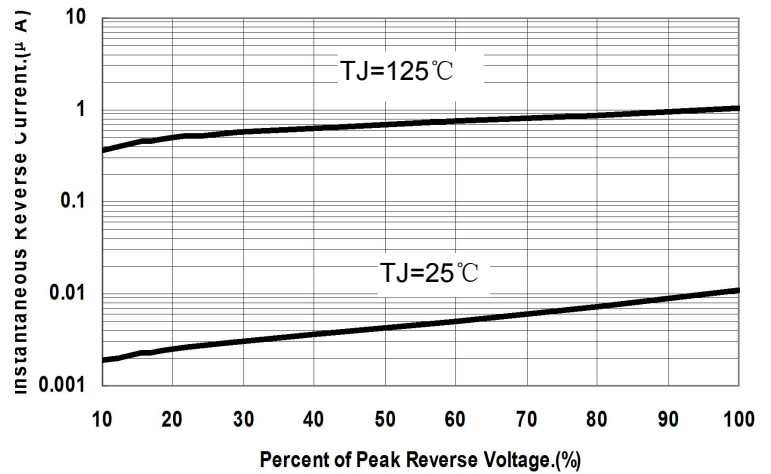


Fig.2-Typical Reverse Characteristics

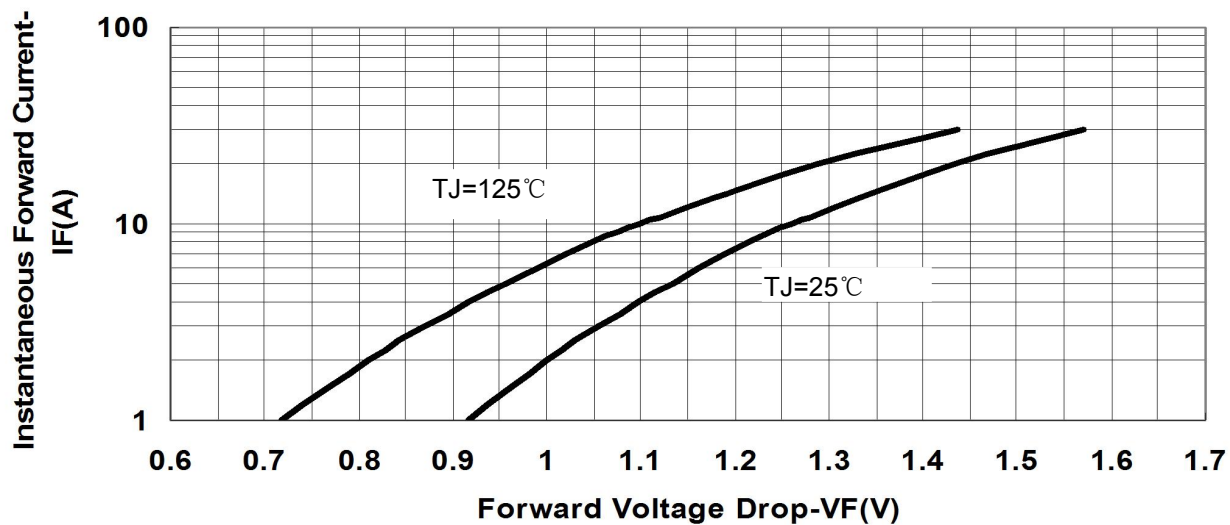
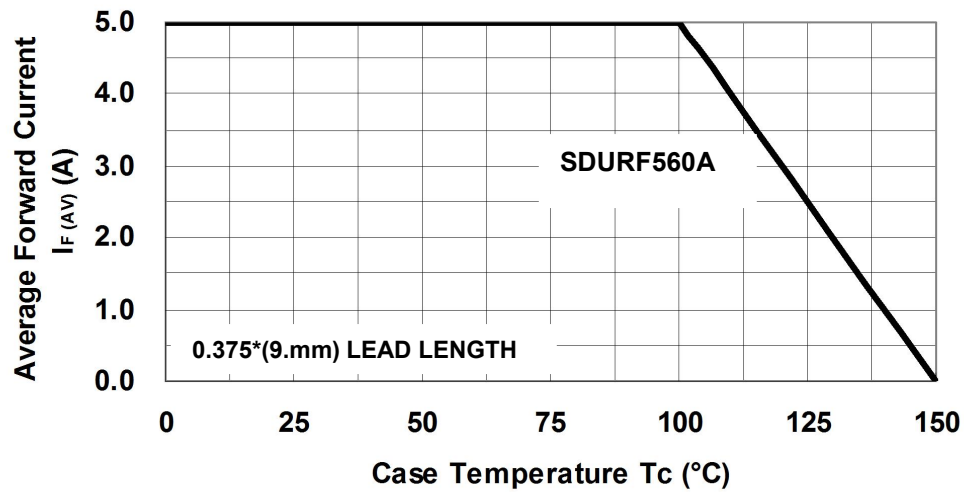
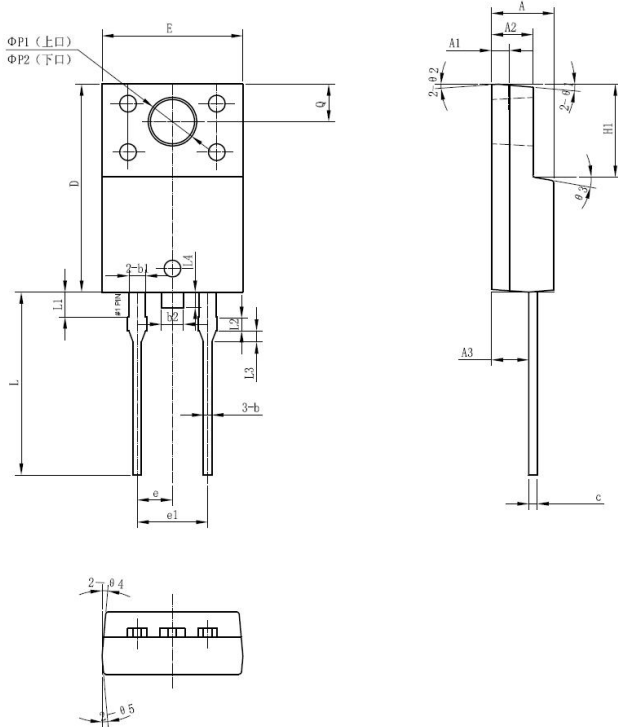


Fig.3-Typical Forward Voltage Drop Characteristics

**FIG.4-Forward Current Derating Curve**

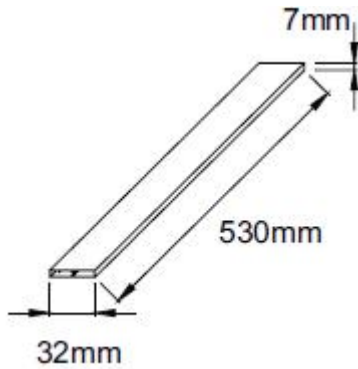


**Mechanical Dimensions ITO-220AC**

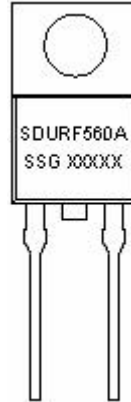


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	-	5.10	-
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
ΦP1(上□)	3.30	3.50	3.70
ΦP2(下□)	2.99	3.19	3.39
Q	2.50	2.70	2.90
θ1		5°	
θ2		4°	
θ3		10°	
θ4		5°	
θ5		5°	

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

SDUR = Device Type  
 F = Package type  
 5 = Forward Current (5A)  
 60 = Reverse Voltage (600V)  
 A = A  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Ordering Information:**

Device	Package	Shipping
SDURF560A	ITO-220AC (Pb-Free)	50 pcs/ tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

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