

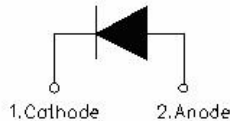
## SDURF560A ULTRAFAST RECTIFIER



### 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
- Terminals finish: Tin Lead-free plated
- This is a Pb - free device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Maximum Ratings(at 25 °C unless otherwise specified):

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	$I_{F(AV)}$	$T_c=100^{\circ}C$ , In DC	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, $T_J = 25^{\circ}C$	1.53	1.7	V
Reverse Current *	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^{\circ}C$	0.14	5	$\mu A$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^{\circ}C$	179	500	$\mu A$
Reverse Recovery Time	$t_{rr}$	$I_F=500mA$ , $I_R=1A$ , and $I_{rm}=250mA$ , $T_J = 25^{\circ}C$	31	35	ns

\* Pulse width < 300  $\mu s$ , 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**

Figure 1 Typical Forward Characteristics

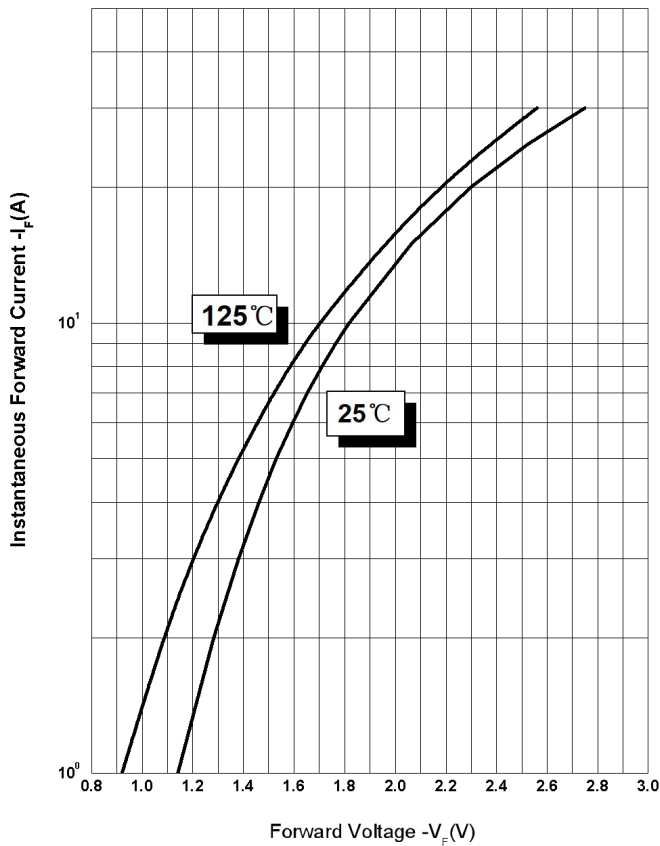


Figure 2 Typical Reverse Characteristics

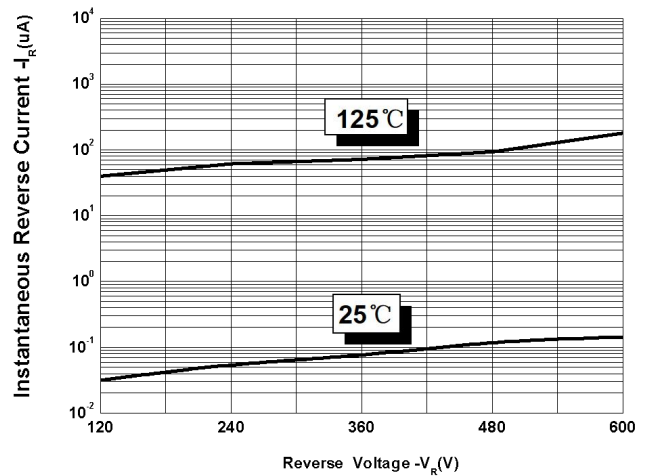
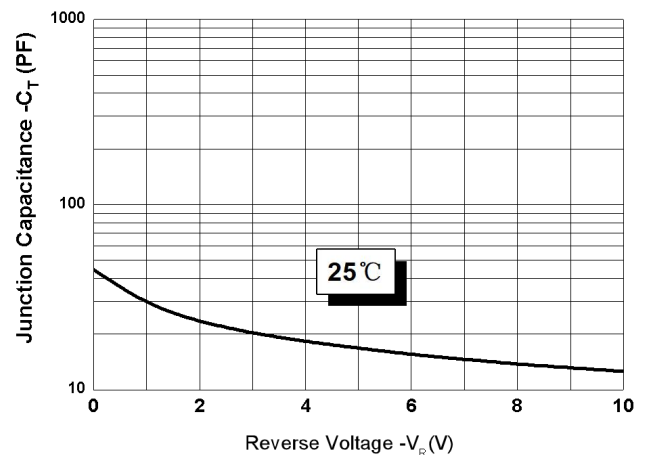
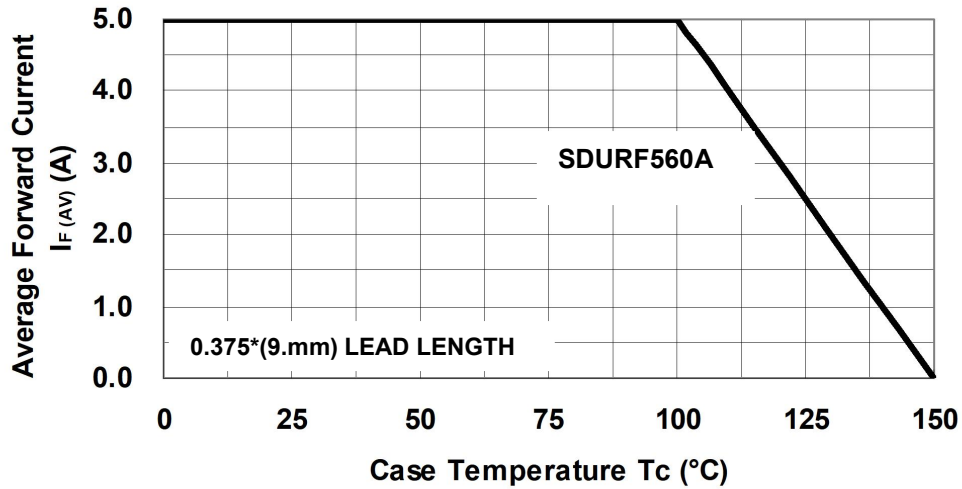


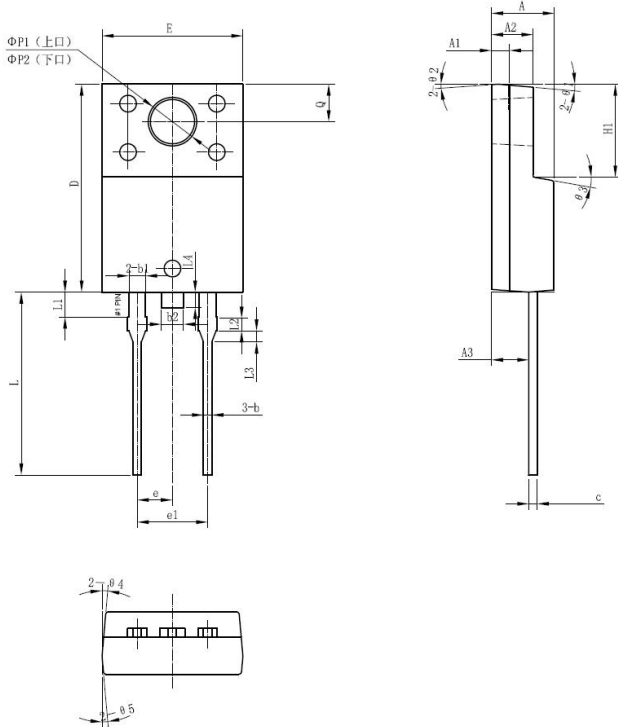
Figure 3 Typical Junction Capacitance



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

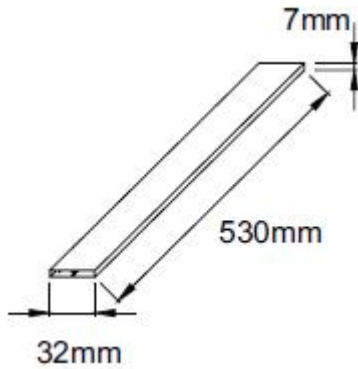


**Mechanical Dimensions ITO-220AC**

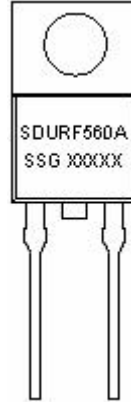


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	-	5.10	-
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	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

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