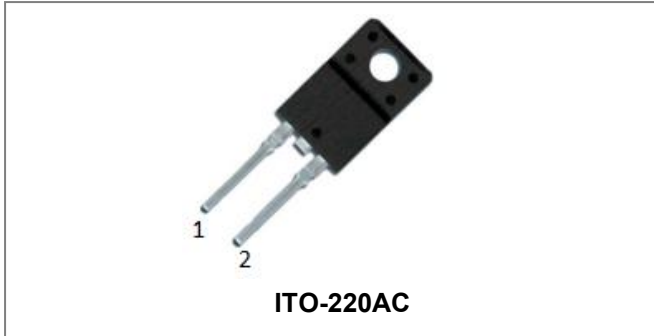


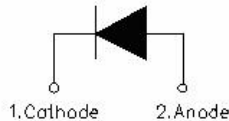
## SURF860 ULTRAFAST RECTIFIER



### Features

- Ultra-Fast Switching
- High Current Capability
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching Power Supply
- Power Switching Circuits
- General Purpose

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	-	600	V
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_c=90^\circ\text{C}$ , rectangular wave form	8	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse	80	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@8A, Pulse, $T_J = 25^\circ\text{C}$	1.20	2.2	V
	$V_{F2}$	@8A, Pulse, $T_J = 125^\circ\text{C}$	1.05	2.0	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	0.03	2	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	5	500	$\mu\text{A}$
Reverse Recovery Time	$t_{rr}$	$I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_{rm}=250\text{mA}$	44	50	ns
RSM Isolation Voltage ( $t=1.0$ second, R.H. < 30%, $T_A=25^\circ\text{C}$ )	$V_{iso}$	Clip mouting, the epoxy body away from the heatsink edge by more than 0.110" along the lead direction.	-	4500	V
		Clip mouting, the epoxy body is inside the heatsink	-	3500	
		Screw mounting, the epoxy body is inside the heatsink	-	1500	

\* 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	3	$^{\circ}\text{C}/\text{W}$
Approximate Weight	wt	-	1.6	g
Case Style	ITO-220AC			

**Ratings and Characteristics Curves**

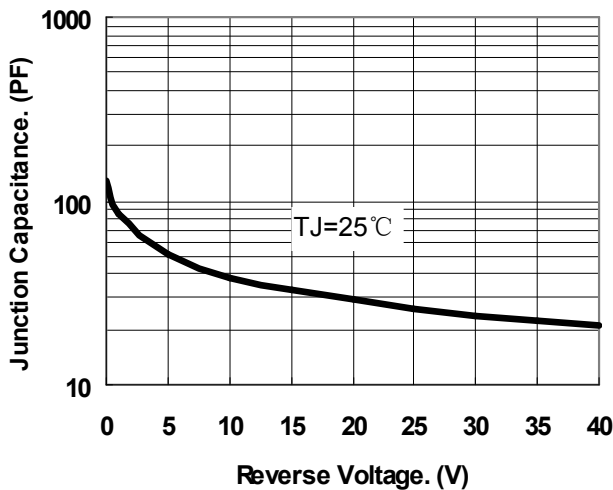


Fig.1-Typical Junction Capacitance

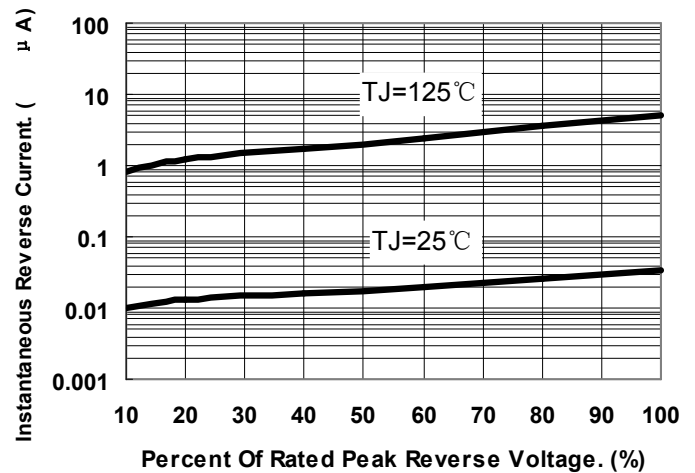


Fig.2-Typical Reverse Characteristics

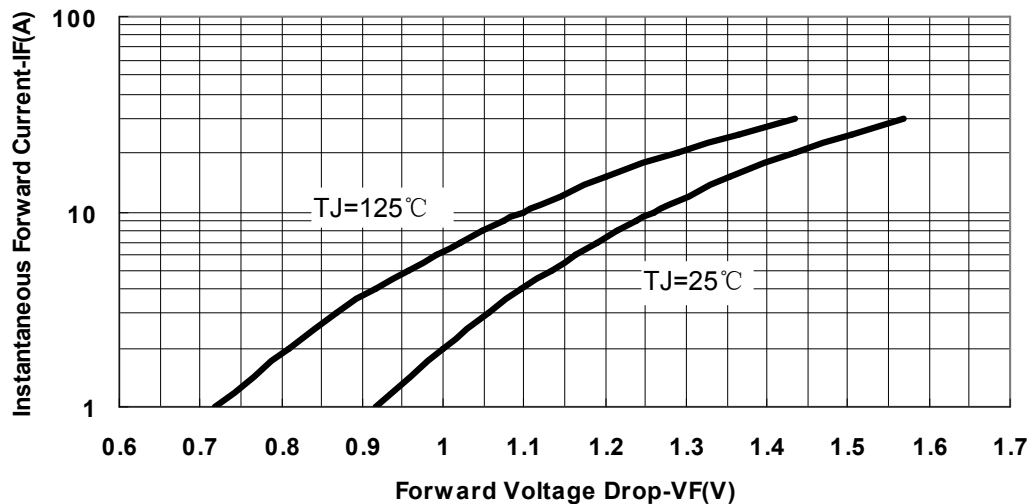
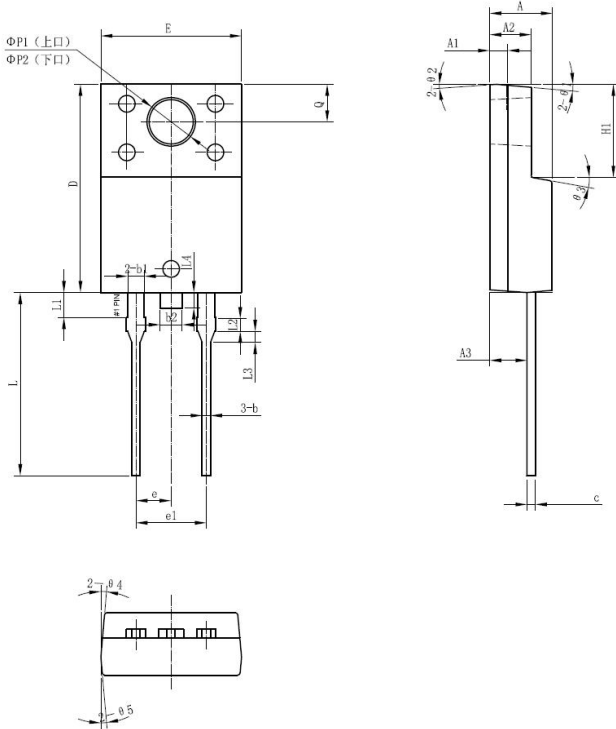


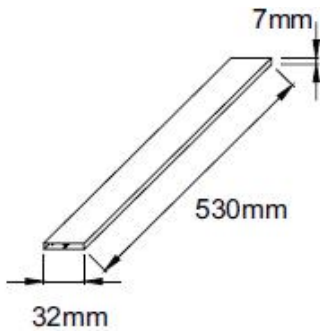
Fig.3-Typical Forward Voltage Drop Characteristics

**Mechanical Dimensions ITO-220AC**

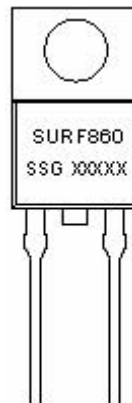


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.50	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	5.00	5.10	5.16
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
ΦP1(上口)	3.30	3.50	3.70
ΦP2(下口)	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

- SUR = Device Type
- F = Package type
- 8 = Forward Current (8A)
- 60 = Reverse Voltage (600V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information**

Device	Package	Shipping
SURF860	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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