



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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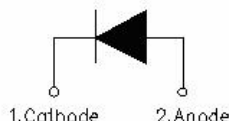
SURF860 ULTRAFAST RECTIFIER



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 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 @ $T_c=90^\circ\text{C}$, 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 = rated V_R $T_J = 25^\circ\text{C}$ | 0.03 | 2 | μA |
| | I_{R2} | @ V_R = rated V_R $T_J = 125^\circ\text{C}$ | 5 | 500 | μA |
| 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_{1so} | 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 μs , duty cycle < 2%

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|-----------------|--------------|---------------|-------|
| Junction Temperature | T_J | - | -55 to +150 | °C |
| Storage Temperature | T_{stg} | - | -55 to +150 | °C |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | DC operation | 3 | °C/W |
| Approximate Weight | wt | - | 1.6 | g |
| Case Style | ITO-220AC | | | |

Ratings and Characteristics Curves

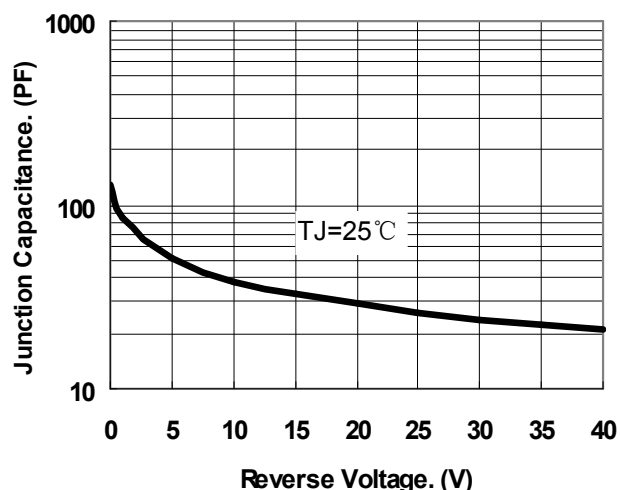


Fig.1-Typical Junction Capacitance

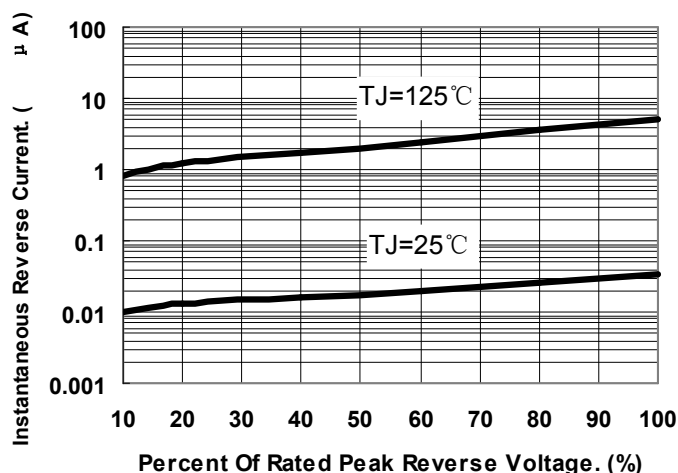


Fig.2-Typical Reverse Characteristics

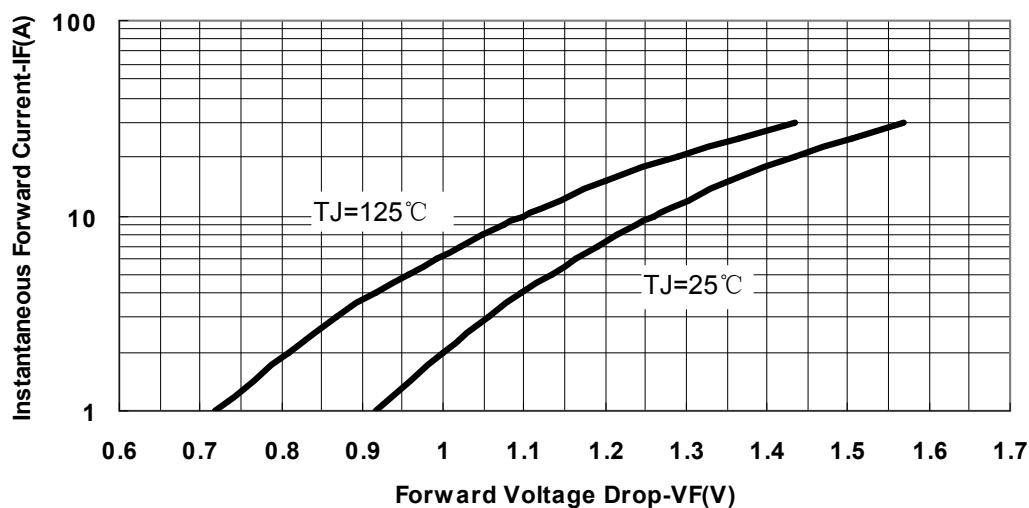
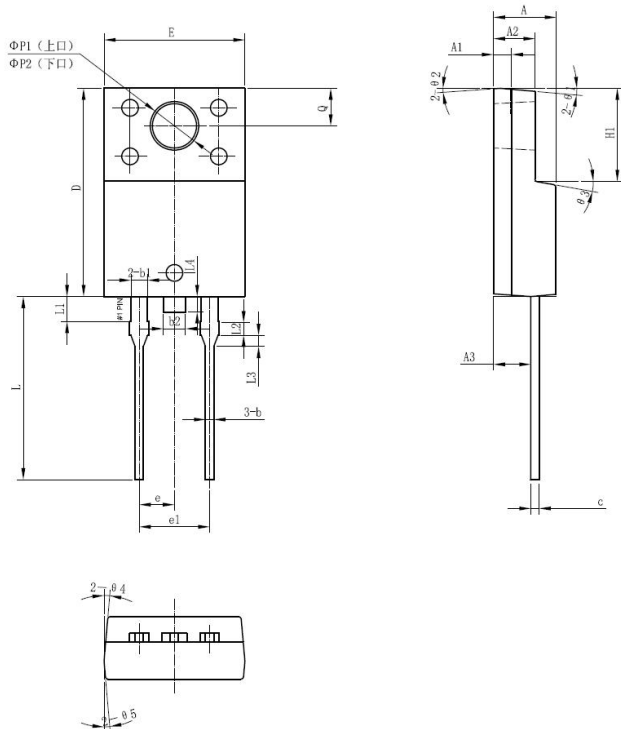


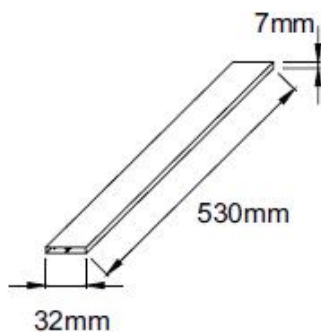
Fig.3-Typical Forward Voltage Drop Characteristics

Mechanical Dimensions ITO-220AC

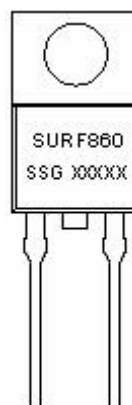


| SYMBOL | Millimeters | | |
|---------|-------------|-------|-------|
| | MIN. | TYP. | MAX. |
| A | 4.30 | 4.50 | 4.70 |
| A1 | 1.10 | 1.30 | 1.50 |
| A2 | 2.80 | 3.00 | 3.20 |
| A3 | 2.50 | 2.70 | 2.90 |
| b | 0.50 | 0.60 | 0.75 |
| b1 | 1.10 | 1.20 | 1.35 |
| b2 | 1.50 | 1.60 | 1.75 |
| c | 0.50 | 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

Technical Data
Data Sheet N1093, Rev. B



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