

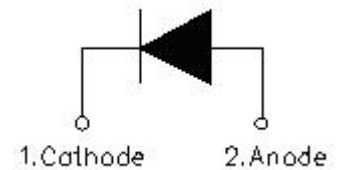
## SUR1560 ULTRAFAST RECTIFIER

**Applications:**

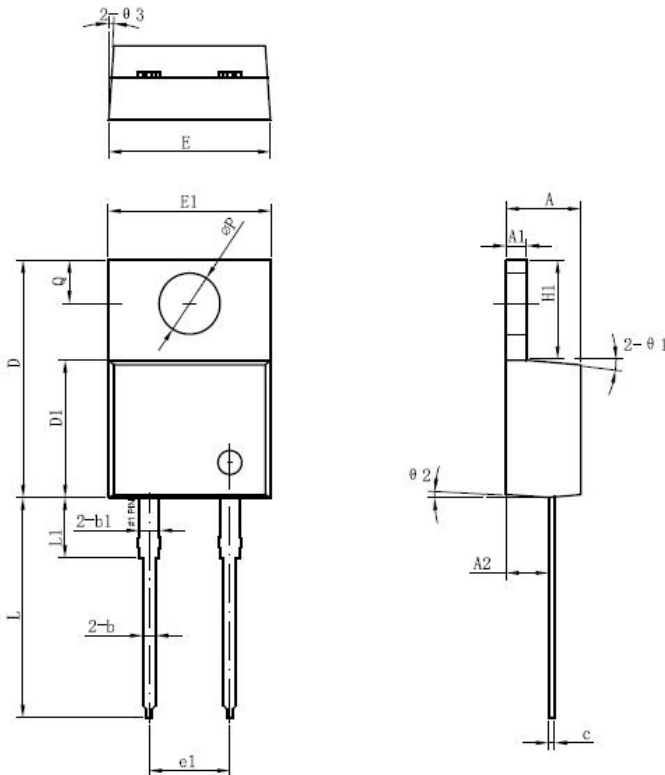
- Antiparallel diode for high frequency switching devices
- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners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

**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



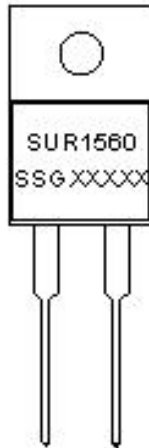
**Mechanical Dimensions: In mm**



| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min.                      | Typical | Max.  |
| A      | 4.55                      | 4.70    | 4.85  |
| A1     | 1.17                      | 1.27    | 1.37  |
| A2     | 2.59                      | 2.69    | 2.89  |
| b      | 0.71                      | 0.81    | 0.96  |
| b1     |                           | 1.27    |       |
| c      | 0.36                      | 0.38    | 0.61  |
| D      | 14.64                     | 14.94   | 15.24 |
| D1     | 8.55                      | 8.07    | 8.85  |
| E      | 10.01                     | 10.16   | 10.31 |
| E1     | 9.98                      | 10.18   | 10.38 |
| e1     |                           | 5.08    |       |
| H1     | 6.04                      | 6.24    | 6.44  |
| L      | 13.00                     | 13.86   | 14.08 |
| L1     |                           | 3.80    |       |
| ΦP     | 3.74                      | 3.84    | 4.04  |
| Q      | 2.54                      | 2.74    | 2.94  |
| θ1     |                           | 5°      |       |
| θ2     |                           | 4°      |       |
| θ3     |                           | 4°      |       |

**TO-220AC**

**Marking Diagram:**



Where XXXXX is YYWWL

SUR = Device Type  
 15 = Forward Current (15A)  
 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     |
|---------|-----------------------|--------------|
| SUR1560 | TO-220AC<br>(Pb-Free) | 50pcs / tube |

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

**Maximum Ratings:**

| Characteristics  | Symbol                          | Condition  | Max. | Units |
|--|---------------------------------|--|------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | -  | 600  | V     |
| Average Forward Current  | $I_{F(AV)}$                     | 50% duty cycle @TC =100°C<br>rectangular wave form | 15   | A     |
| Peak One Cycle Non-Repetitive<br>Surge Current   | $I_{FSM}$                       | 8.3 ms, half Sine pulse                            | 125  | A     |

**Electrical Characteristics:**

| Characteristics       | Symbol          | Condition  | Max. | Units |
|-----------------------|-----------------|--|------|-------|
| Forward Voltage Drop* | V <sub>F1</sub> | @ 15A, Pulse, T <sub>J</sub> = 25°C                                  | 2.4  | V     |
|                       | V <sub>F2</sub> | @ 15A, Pulse, T <sub>J</sub> = 100°C                                 | 2.0  | V     |
| Reverse Current*      | I <sub>R1</sub> | @V <sub>R</sub> = rated VR<br>T <sub>J</sub> = 25°C                  | 5    | μA    |
|                       | I <sub>R2</sub> | @V <sub>R</sub> = rated VR<br>T <sub>J</sub> = 100°C                 | 50   | μA    |
| Reverse Recovery Time | t <sub>rr</sub> | I <sub>F</sub> =500mA, I <sub>R</sub> =1A,and I <sub>rm</sub> =250mA | 50   | ns    |

\* Pulse Width < 300μs, Duty Cycle <2%

Measured lead to lead 5 mm from package body

**Thermal-Mechanical Specifications:**

| Characteristics                                | Symbol           | Condition    | Specification | Units |
|--|------------------|--------------|---------------|-------|
| Junction Temperature                           | T <sub>J</sub>   | -            | -55 to +150   | °C    |
| Storage Temperature                            | T <sub>stg</sub> | -            | -55 to +150   | °C    |
| Typical Thermal Resistance<br>Junction to Case | R <sub>θJC</sub> | DC operation | 4.0           | °C/W  |
| Approximate Weight                             | wt               | -            | 1.6           | g     |
| Case Style                                     | TO-220AC         |              |               |       |

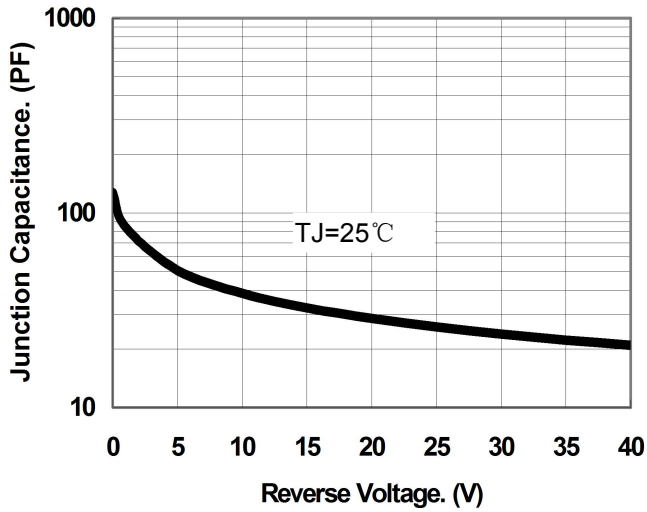


Fig.1-Typical Junction Capacitance

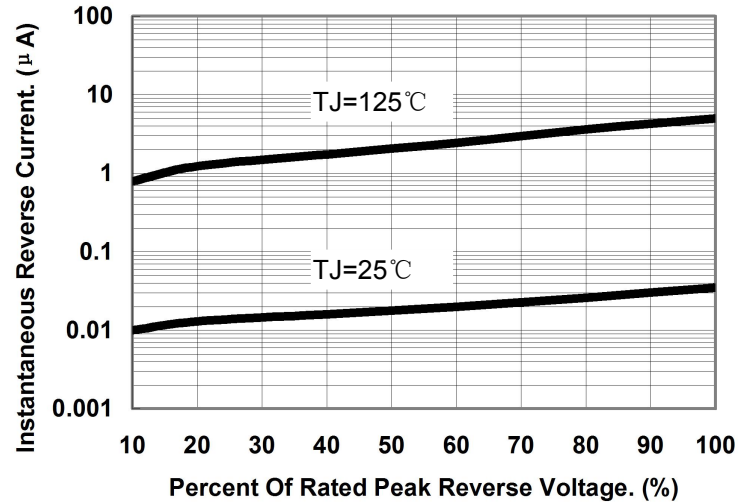


Fig.2-Typical Reverse Characteristics

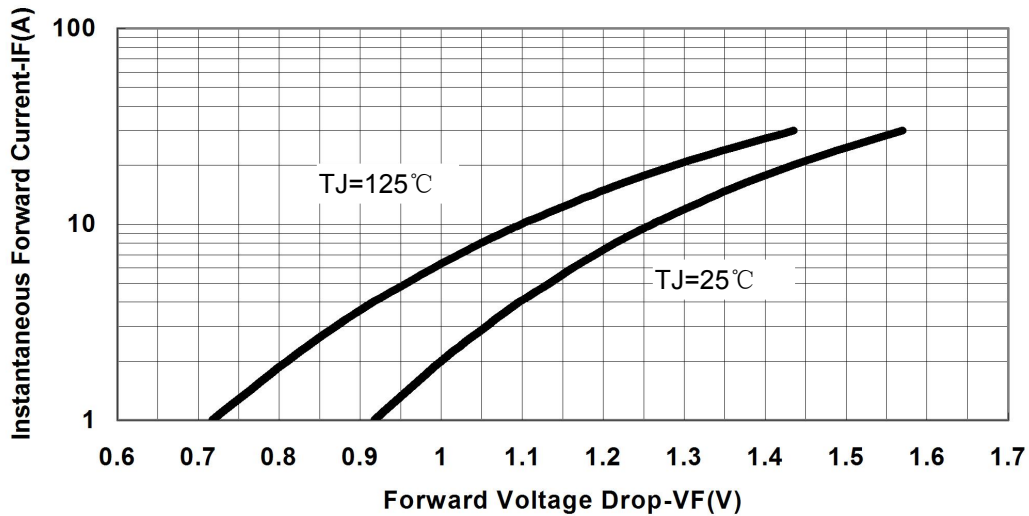


Fig.3-Typical Forward Voltage Drop Characteristics

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