

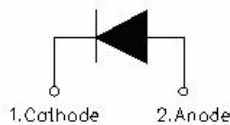
## SDURF10P100B ULTRAFAST RECTIFIER



### 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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | -  | 1000 | V     |
| Average Rectified Forward Current  | $I_{F(AV)}$                     | 50% duty cycle @ $T_c=75^\circ\text{C}$ ,<br>rectangular wave form | 10   | A     |
| Peak One Cycle Non-Repetitive Surge Current  | $I_{FSM}$                       | 8.3ms, Half Sine pulse   | 100  | A     |

### Electrical Characteristics:

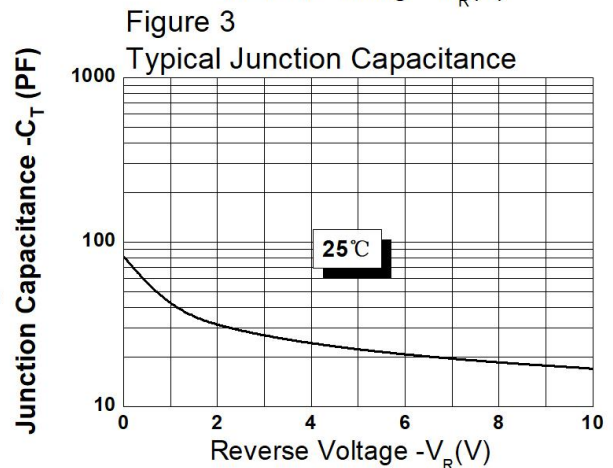
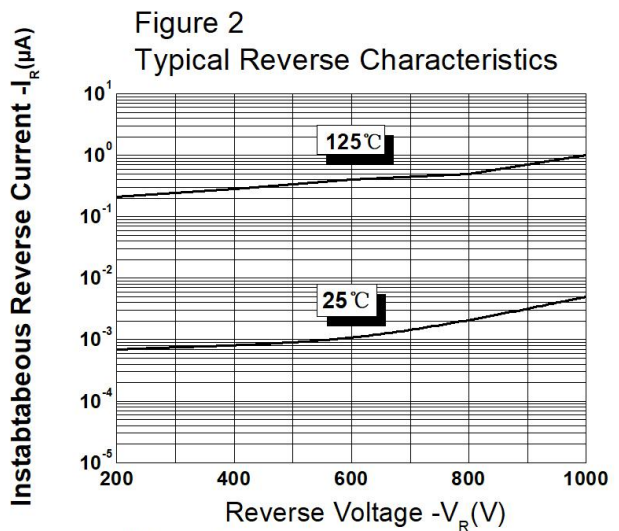
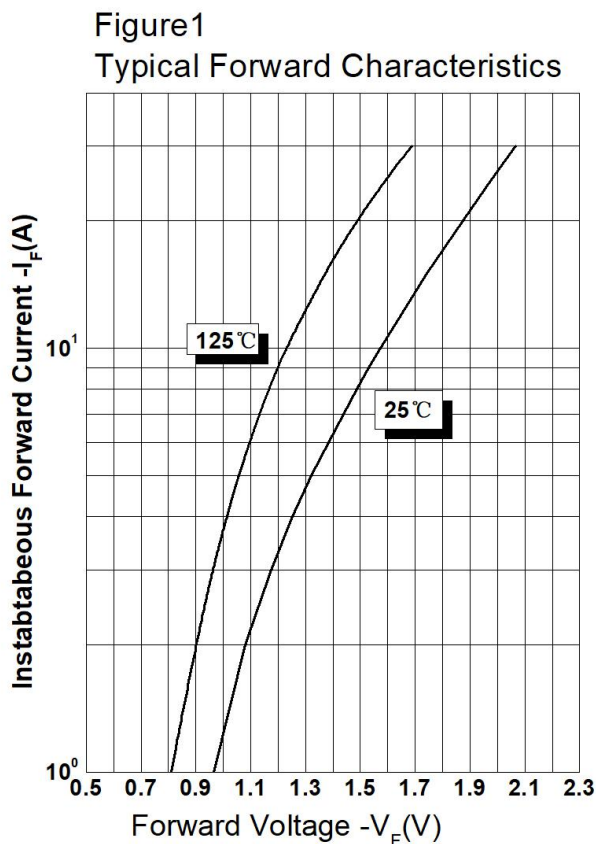
| Characteristics       | Symbol   | Condition  | Typ.  | Max. | Units         |
|-----------------------|----------|--|-------|------|---------------|
| Forward Voltage Drop* | $V_{F1}$ | @10A, Pulse, $T_J = 25^\circ\text{C}$                            | 1.60  | 1.8  | V             |
| Reverse Current*      | $I_{R1}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 25^\circ\text{C}$          | 0.005 | 10   | $\mu\text{A}$ |
| Reverse Recovery Time | $t_{rr}$ | $I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_{rm}=250\text{mA}$ | 76    | 100  | ns            |

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

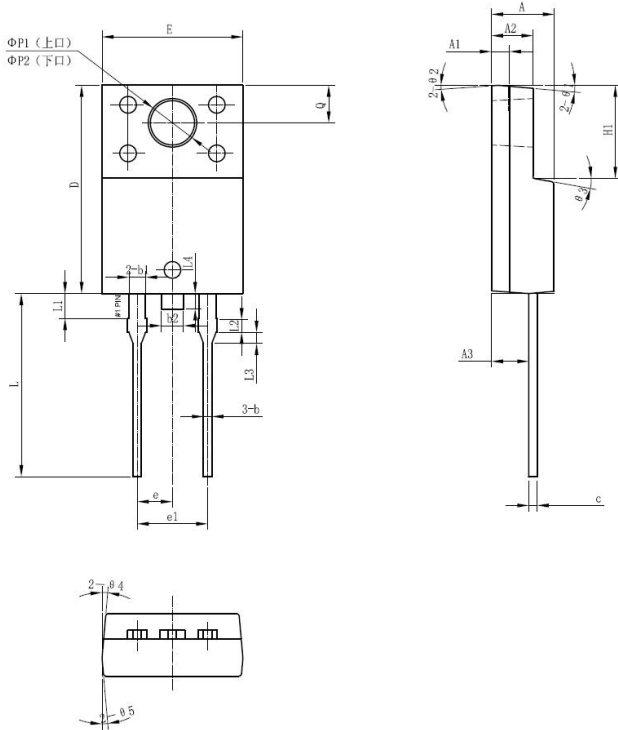
**Thermal-Mechanical Specifications:**

| 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 | 4.2           | $^{\circ}\text{C/W}$ |
| Approximate Weight                          | wt                    | -            | 1.6           | g                    |
| Case Style                                  | ITO-220AC             |              |               |                      |

**Ratings and Characteristics Curves**



**Mechanical Dimensions ITO-220AC**



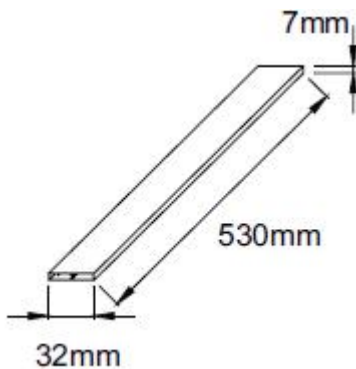
| SYMBOL  | Millimeters |       |       |
|---------|-------------|-------|-------|
|         | MIN.        | TYP.  | MAX.  |
| A       | 4.30        | 4.50  | 4.70  |
| A1      | 1.10        | 1.30  | 1.50  |
| A2      | 2.80        | 3.00  | 3.20  |
| A3      | 2.50        | 2.70  | 2.90  |
| b       | 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□) | 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°    |       |

**Ordering Information:**

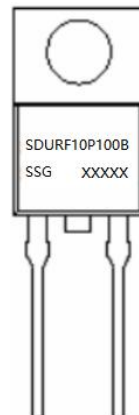
| Device       | Package             | Plating | Shipping     |
|--------------|---------------------|---------|--------------|
| SDURF10P100B | ITO-220AC (Pb-Free) | Pure Sn | 50 pcs/ tube |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- SDUR = Device Type
- F = Package type
- 10 = Forward Current (10A)
- P = P
- 100 = Reverse Voltage (100V)
- B = B
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

N

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