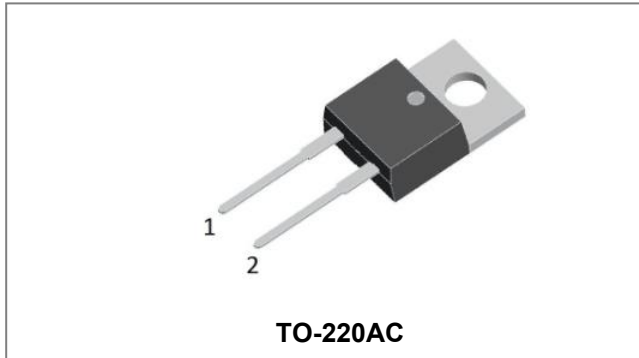


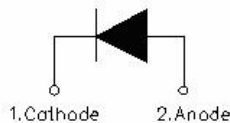
SDUR1520 ULTRAFAST RECTIFIER



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 Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | - | 200 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_c=75^\circ\text{C}$, rectangular wave form | 15 | A |
| Peak One Cycle Non-Repetitive Surge Current | I_{FSM} | 8.3ms, Half Sine pulse | 110 | A |

Electrical Characteristics:

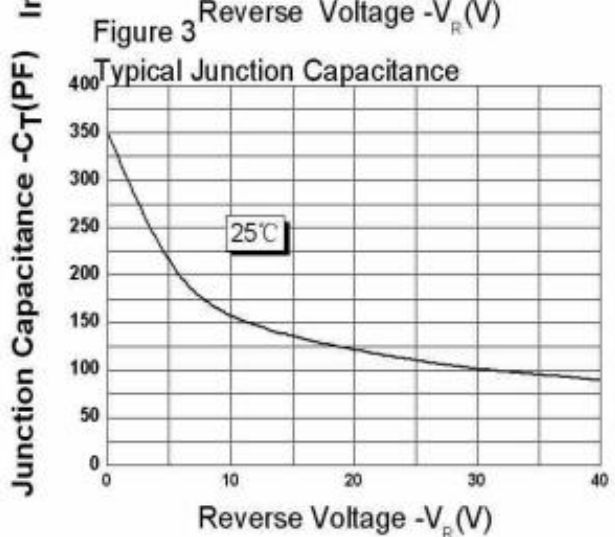
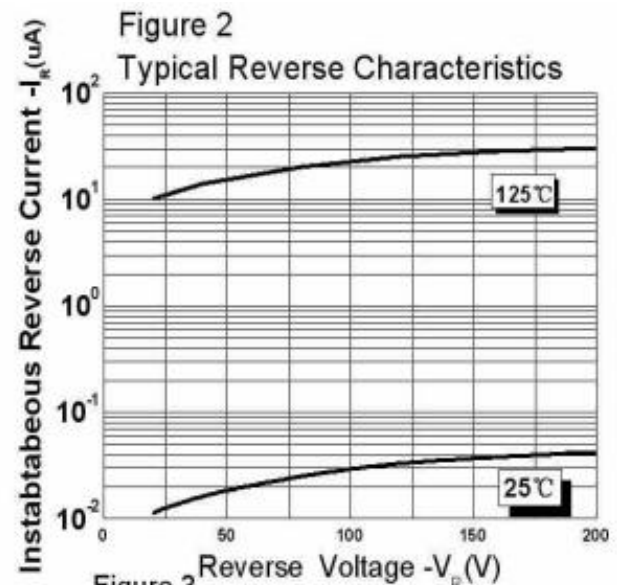
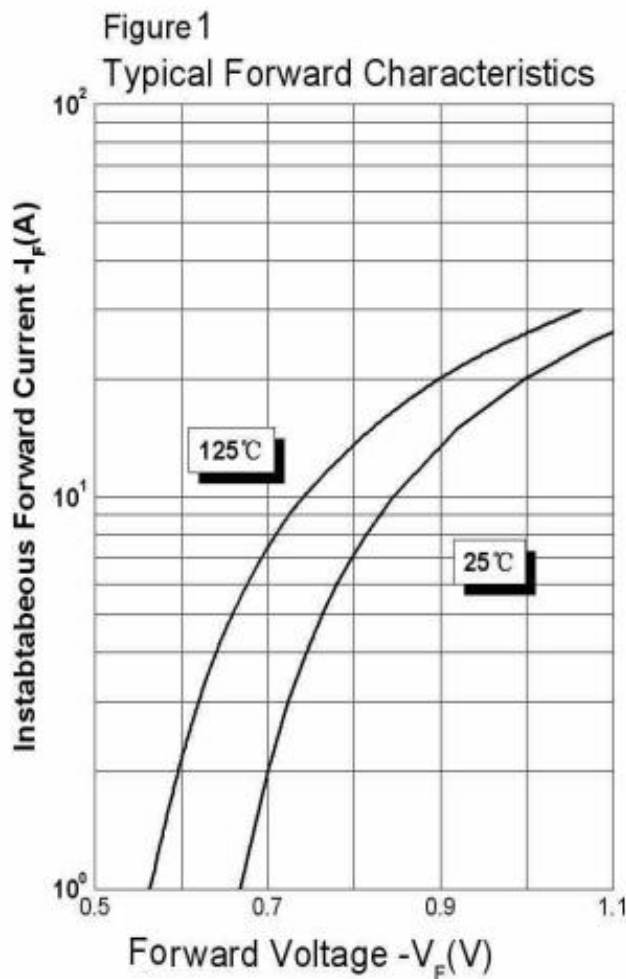
| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|-----------------------|----------|---|------|------|---------------|
| Forward Voltage Drop* | V_{F1} | @15A, Pulse, $T_J = 25^\circ\text{C}$ | 0.91 | 1.05 | V |
| | V_{F2} | @15A, Pulse, $T_J = 150^\circ\text{C}$ | - | 0.85 | V |
| Reverse Current* | I_{R1} | @ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$ | 0.03 | 10 | μA |
| | I_{R2} | @ $V_R = \text{rated } V_R$ $T_J = 150^\circ\text{C}$ | - | 500 | μA |
| Reverse Recovery Time | t_{rr} | $I_F=500\text{mA}$, $I_R=1\text{A}$, and $I_m=250\text{mA}$ | 31 | 35 | ns |

* Pulse width < 300 μs , duty cycle < 2%

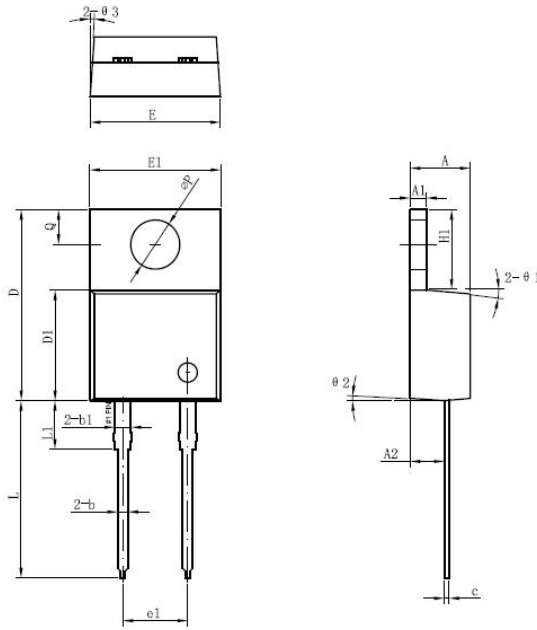
Thermal-Mechanical Specifications:

| 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 | 1.6 | °C/W |
| Approximate Weight | wt | - | 1.6 | g |
| Case Style | TO-220AC | | | |

Ratings and Characteristics Curves

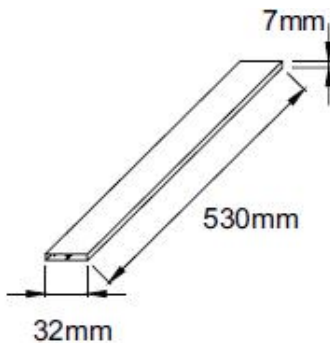


Mechanical Dimensions TO-220AC

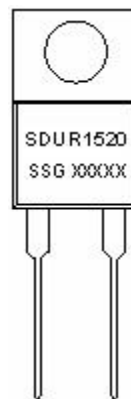


| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.47 | 4.70 | 4.85 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.52 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| D | 14.64 | 14.94 | 15.24 |
| D1 | 8.50 | 8.07 | 8.90 |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 9.98 | 10.18 | 10.38 |
| e1 | 4.98 | 5.08 | 5.18 |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 13.00 | 13.86 | 14.08 |
| L1 | 3.56 | 3.80 | 3.96 |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| Θ1 | | 5° | |
| Θ2 | | 4° | |
| Θ3 | | 4° | |

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- SDUR = Device Type
- 15 = Forward Current (15A)
- 20 = Reverse Voltage(200V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Ordering Information

| Device | Package | Shipping |
|----------|--------------------|--------------|
| SDUR1520 | TO-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.

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

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