

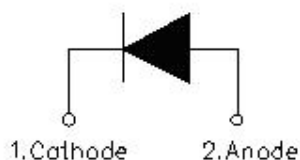
SDUR2060W ULTRAFAST RECTIFIER



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 | - | 600 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_c=100^\circ\text{C}$, rectangular wave form | 20 | A |
| Peak One Cycle Non-Repetitive Surge Current | I_{FSM} | 8.3ms, Half Sine pulse | 250 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|-----------------------|----------|--|------|------|---------------|
| Forward Voltage Drop* | V_{F1} | @ 20A, Pulse, $T_J = 25^\circ\text{C}$ | 1.49 | 1.7 | V |
| | V_{F2} | @ 20A, Pulse, $T_J = 125^\circ\text{C}$ | 1.43 | 1.5 | V |
| Reverse Current* | I_{R1} | @ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$ | 0.07 | 5 | μA |
| | I_{R2} | @ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$ | 7 | 1000 | μA |
| Reverse Recovery Time | t_{rr} | $I_F=500\text{mA}$, $I_R=1\text{A}$, and $I_{tm}=250\text{mA}$ | 33 | 50 | ns |

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

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|-------------------|--------------|---------------|-----------------------------|
| Junction Temperature | T_J | - | -55 to +175 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | - | -55 to +150 | $^{\circ}\text{C}$ |
| Typical Thermal Resistance Junction to Case | R_{thJC} | DC operation | 4 | $^{\circ}\text{C}/\text{W}$ |
| Approximate Weight | wt | - | 6.28 | g |
| Case Style | TO-247AC | | | |

Ratings and Characteristics Curves

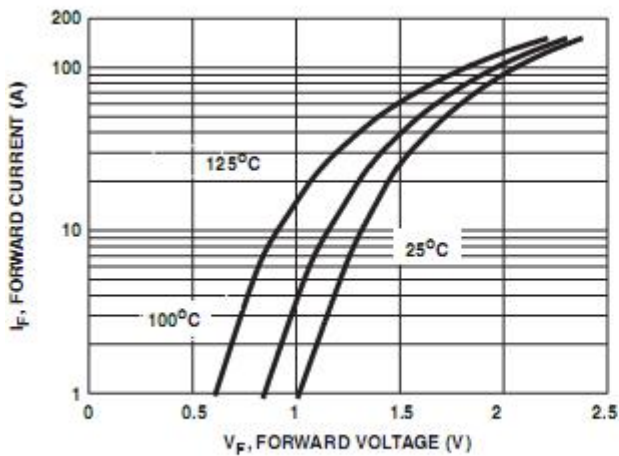


FIGURE 1. FORWARD CURRENT vs FORWARD VOLTAGE

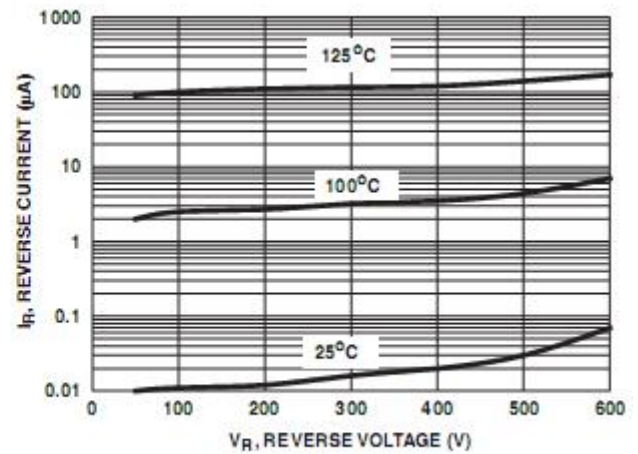


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

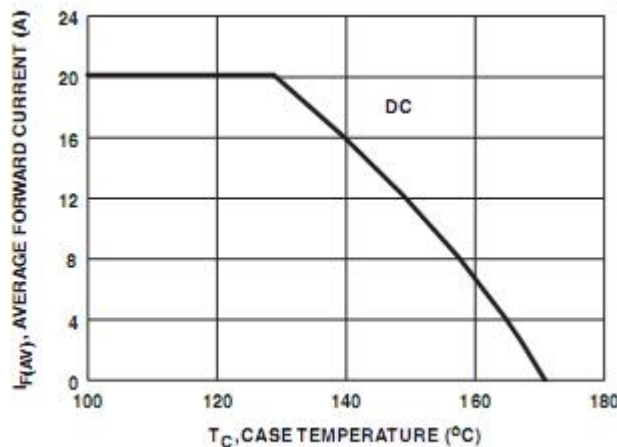
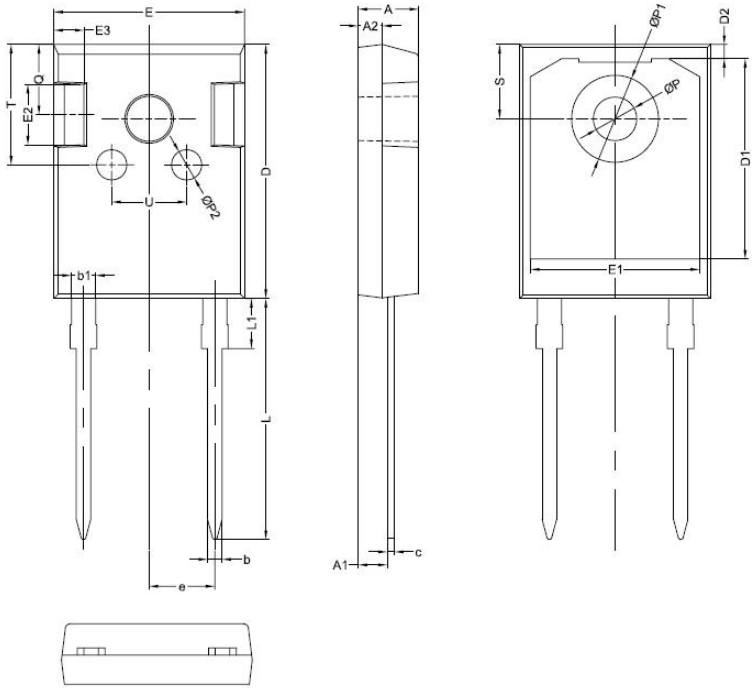
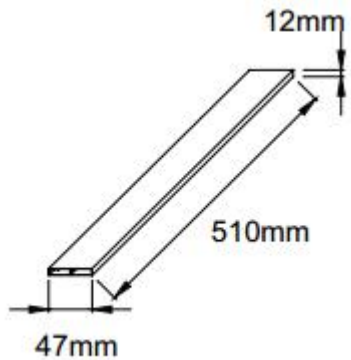
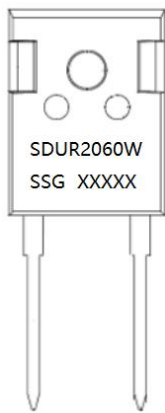


FIGURE 3. CURRENT DERATING CURVE

Mechanical Dimensions TO-247AC


| SYMBOL | Millimeters | | |
|--------|-------------|-------|-------|
| | MIN. | TYP. | MAX. |
| A | 4.80 | 5.00 | 5.20 |
| A1 | 2.20 | 2.41 | 2.61 |
| A2 | 1.90 | 2.00 | 2.10 |
| b | 1.10 | 1.20 | 1.35 |
| b1 | 1.80 | 2.00 | 2.20 |
| c | 0.50 | 0.60 | 0.75 |
| D | 20.30 | 21.00 | 21.20 |
| D1 | | 16.58 | |
| D2 | | 1.17 | |
| E | 15.60 | 15.80 | 16.00 |
| E1 | | 14.02 | |
| E2 | | 5.00 | |
| E3 | | 2.50 | |
| e | | 5.44 | |
| L | 19.42 | 19.92 | 20.42 |
| L1 | | 4.13 | |
| P | 3.50 | 3.60 | 3.70 |
| P1 | 7.1 | 7.19 | 7.40 |
| P2 | | 2.50 | |
| Q | | 5.80 | |
| S | 6.05 | 6.15 | 6.25 |
| T | | 10.00 | |
| U | | 6.20 | |

Tube Specification

Marking Diagram


Where XXXXX is YYWWL

- SDUR = Device Type
- 20 = Forward Current (20A)
- 60 = Reverse Voltage (600V)
- W = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Ordering Information:

| Device | Package | Shipping |
|-----------|-------------------|--------------|
| SDUR2060W | TO-247AC(Pb-Free) | 25pcs / 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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