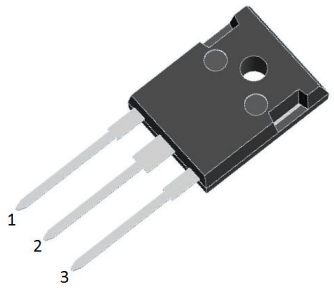
Technical Data
Data Sheet N0376, Rev. B

RoHS

# SDUR2020WT ULTRAFAST RECTIFIER

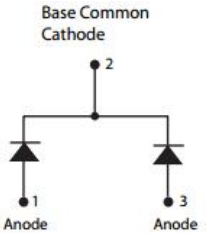



TO-247AD

## 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>$V_R$ | - | 200 | V |
| Average Rectified Forward Current | $I_{F\ (AV)}$ | 50% duty cycle @Tc=100°C, rectangular wave form | 10(Per Leg)<br>20(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | $I_{FSM}$ | 8.3ms, Half Sine pulse | 120 | A |

## Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Forward Voltage Drop (Per Leg)* | $V_{F1}$ | @10A, Pulse, $T_J$ = 25°C | 0.85 | 1.05 | V |
| | $V_{F2}$ | @10A, Pulse, $T_J$ = 125°C | 0.75 | 0.85 | V |
| Reverse Current (Per Leg)* | $I_{R1}$ | @$V_R$ = rated VR , $T_J$ = 25°C | 0.04 | 10 | μA |
| | $I_{R2}$ | @$V_R$ = rated VR , $T_J$ = 150°C | - | 500 | μA |
| Reverse Recovery Time (Per Leg) | $t_{rr}$ | $I_F$=500mA, $I_R$=1A,and $I_{rm}$=250mA | 32 | 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 | - | 6.28 | g |
| Case Style | TO-247AD | | | |

## Ratings and Characteristics Curves

Fugre1
Typical Forward Characteristics

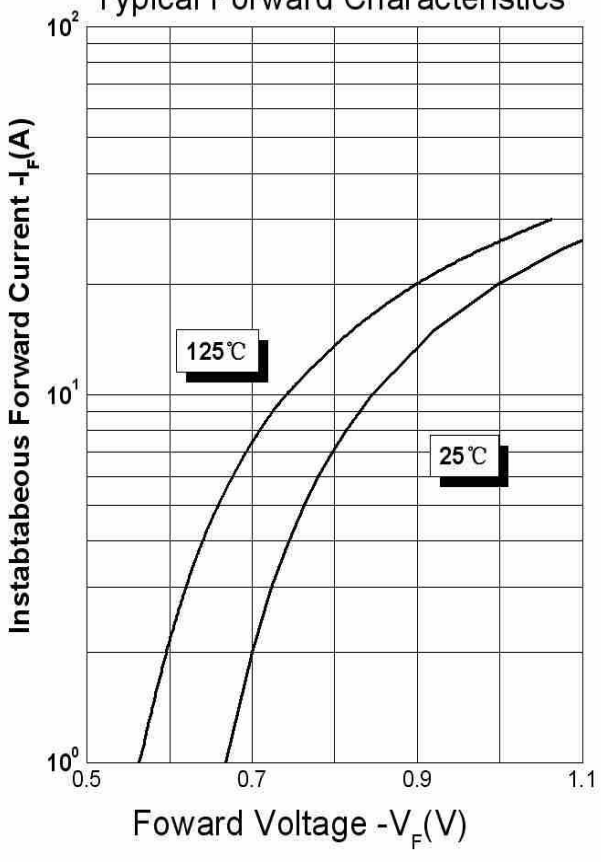



Figure 2
Typical Reverse Characteristics

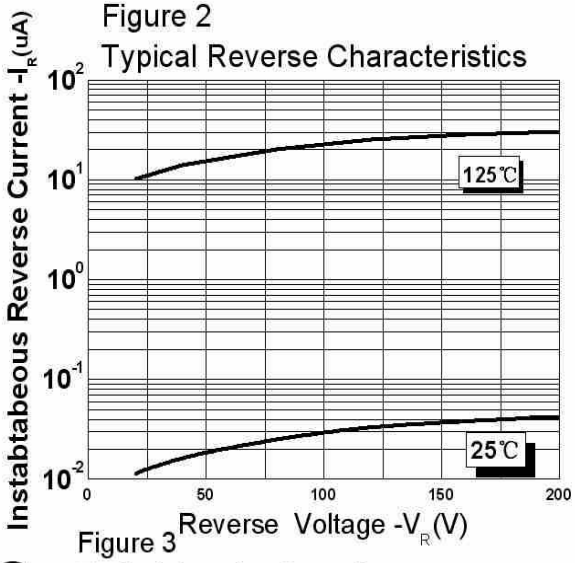
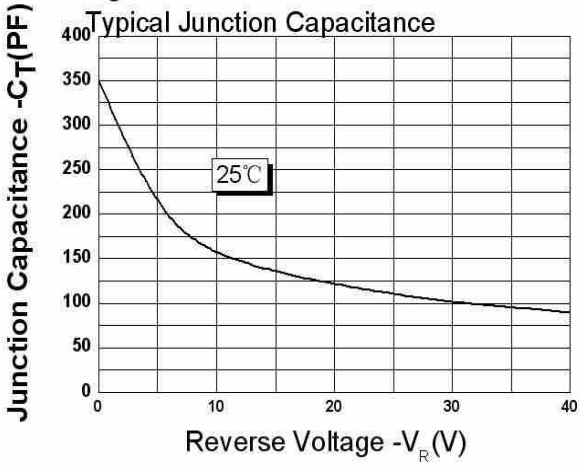



Figure 3
Typical Junction Capacitance



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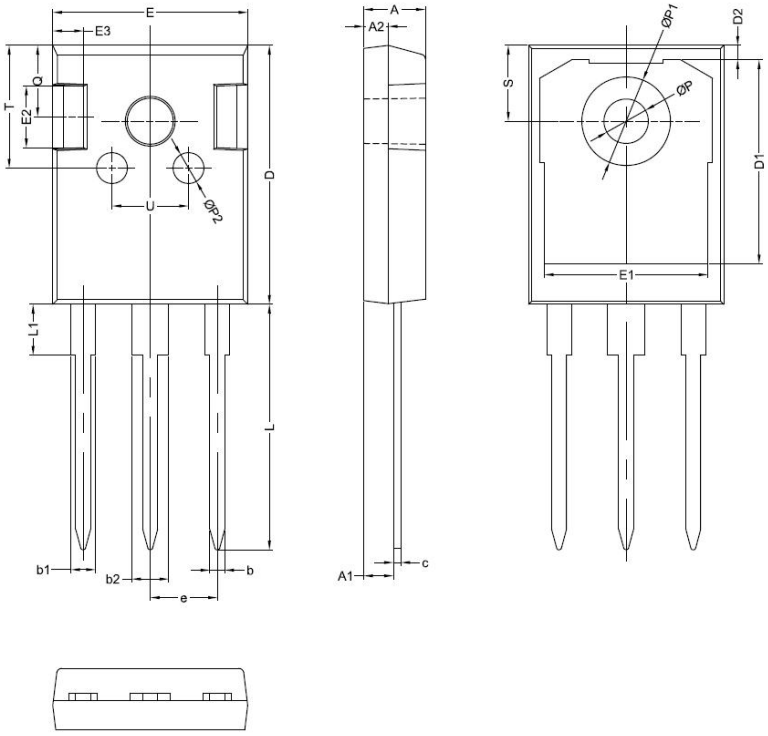
## Mechanical Dimensions TO-247AD



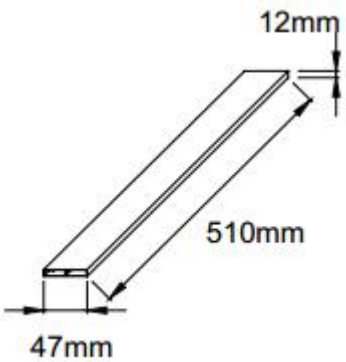

| SYMBOL | Millimeters | | |
|---|---|---|---|
| | MIN. | TYP. | MAX. |
| A | 4.80 | 5.00 | 5.20 |
| A1 | 2.20 | 2.41 | 2.61 |
| A2 | 1.90 | 2.00 | 2.10 |
| b | 1.10 | 1.20 | 1.40 |
| b1 | 1.80 | 2.00 | 2.20 |
| b2 | 2.80 | 3.00 | 3.20 |
| c | 0.50 | 0.60 | 0.75 |
| D | 20.30 | 21.00 | 21.20 |
| D1 | | 16.55 | |
| D2 | | 1.20 | |
| E | 15.45 | 15.80 | 16.00 |
| E1 | | 13.30 | |
| E2 | | 5.00 | |
| E3 | | 2.50 | |
| e | | 5.44 | |
| L | 19.42 | 19.92 | 20.70 |
| L1 | | 4.13 | |
| P | 3.50 | 3.60 | 3.70 |
| P1 | 7.1 | | 7.40 |
| P2 | | 2.50 | |
| Q | | 5.80 | |
| S | 6.05 | 6.15 | 6.25 |
| T | | 10.00 | |
| U | | 6.20 | |

## Ordering Information:

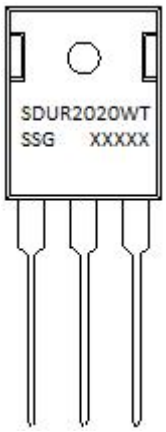
| Device | Package | Shipping |
|---|---|---|
| SDUR2020WT | TO-247AD(Pb-Free) | 25pcs / tube |

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

## Tube Specification




## Marking Diagram




Where XXXXX is YYWWL

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

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

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