Technical Data
Data Sheet N2459, Rev. -

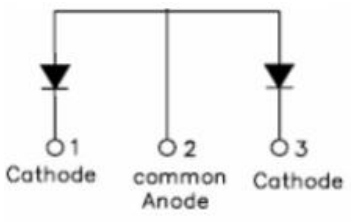
# SDUR1660CTR ULTRAFAST RECTIFIER


TO-220AB

## 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
- Terminals finish: 100% Pure Tin
- 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>$V_R$ | - | 600 | V |
| Average Rectified Forward Current | $I_{F\ (AV)}$ | Tc=120°C, In DC | 8(Per Leg)<br>16(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | $I_{FSM}$ | 8.3ms, Half Sine pulse, $T_C$= 25°C | 80 | A |

## Electrical Characteristics:

| Characteristics | Symbol | Condition | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Forward Voltage Drop(Per Leg)* | $V_{F1}$ | @8A, Pulse, $T_J$ = 25°C | | - | 1.3 | 1.5 | V |
| | $V_{F2}$ | @8A, Pulse, $T_J$ = 125°C | | - | 1.2 | 1.4 | V |
| Reverse Current(Per Leg)* | $I_{R1}$ | @$V_R$ = rated $V_R$, $T_J$ = 25°C | | - | 0.3 | 5 | μA |
| | $I_{R2}$ | @$V_R$ = rated $V_R$, $T_J$ = 125°C | | - | 84 | 500 | μA |
| Reverse Recovery Time(Per Leg) | $t_{rr}$ | $I_F$=500mA, $I_R$=1A,and $I_{rm}$=250mA $T_J$ = 25°C | | - | 42 | 50 | ns |
| Isolation Voltage | $V_{ISO}$ | t = 1.0 second | 50/60HZ, RMS; $I_{ISO}$≤1mA | 3000 | - | - | V |
| | | t = 1.0 minute | | 2500 | - | - | |

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

**Technical Data**
**Data Sheet N2459, Rev. -**

## 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 | 2.5 | °C/W |
| Approximate Weight | wt | - | 2 | g |
| Case Style | TO-220AB | | | |

## Ratings and Characteristics Curves

Figure1
Typical Forward Characteristics

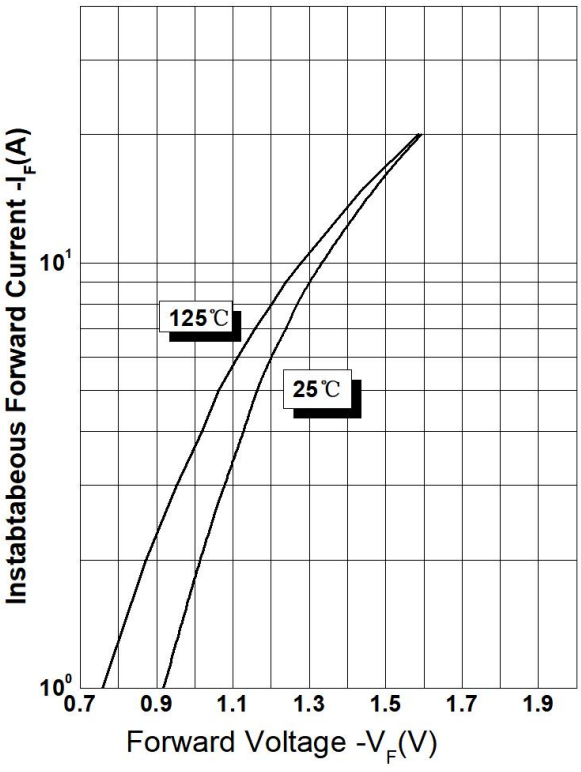



Figure 2
Typical Reverse Characteristics

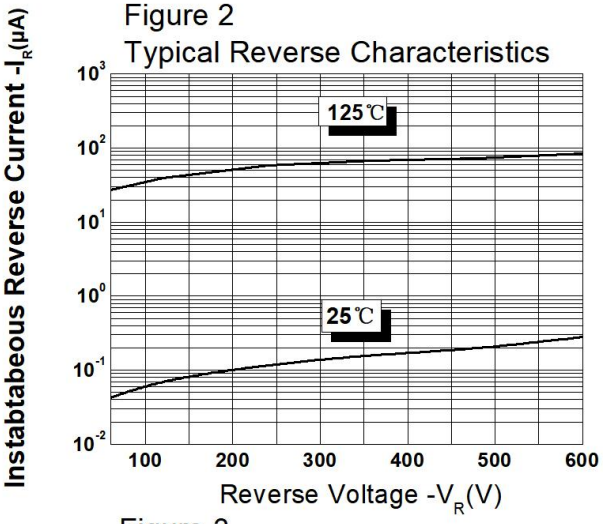
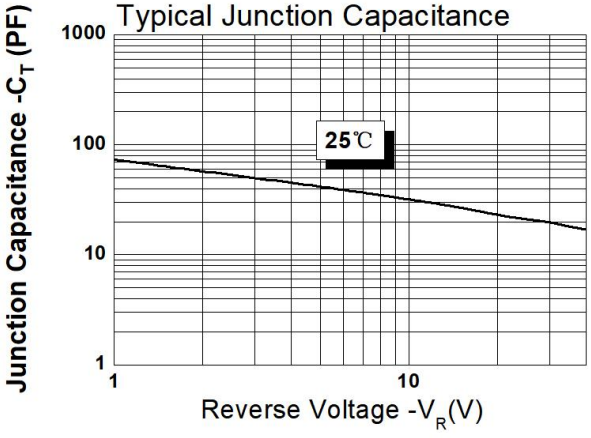


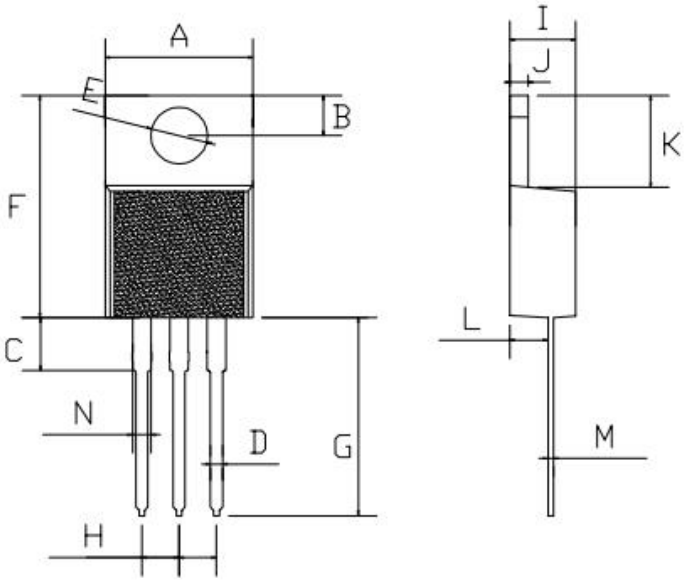

Figure 3
Typical Junction Capacitance



# SDUR1660CTR

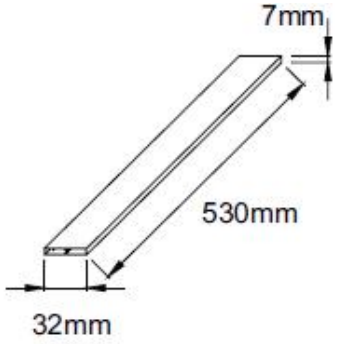
**Technical Data**
**Data Sheet N2459, Rev. -**

## Mechanical Dimensions TO-220AB

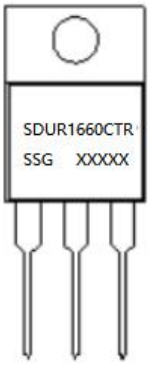



| SYMBOL | Millimeters | | Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 9.7 | 10.4 | 0.381 | 0.409 |
| B | 2.5 | 3.0 | 0.098 | 0.118 |
| C | 3.5 | 3.9 | 0.137 | 0.153 |
| D | 0.7 | 0.92 | 0.027 | 0.036 |
| E | 3.72 | 3.95 | 0.146 | 0.155 |
| F | 14.51 | 15.55 | 0.571 | 0.612 |
| G | 12.95 | 13.9 | 0.509 | 0.547 |
| H | 2.40 | 2.70 | 0.094 | 0.204 |
| I | 4.38 | 4.65 | 0.172 | 0.106 |
| J | 1.15 | 1.36 | 0.045 | 0.053 |
| K | 5.86 | 6.38 | 0.230 | 0.251 |
| L | 2.35 | 2.85 | 0.092 | 0.112 |
| M | 0.32 | 0.58 | 0.012 | 0.022 |
| N | 1.18 | 1.42 | 0.046 | 0.055 |

## Tube Specification




## Marking Diagram




Where XXXXX is YYWWL

| | |
|---|---|
| SDUR | = Device Type |
| 16 | = Forward Current (16A) |
| 60 | = Reverse Voltage(600V) |
| CTR | = Configuration |
| SSG | = SSG |
| YY | = Year |
| WW | = Week |
| L | = Lot Number |

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

## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| SDUR1660CTR | TO-220AB (Pb-Free) | 50 pcs/ tube |

**Technical Data**
**Data Sheet N2459, Rev. -**

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