

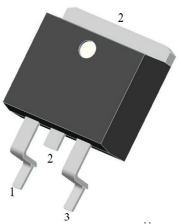
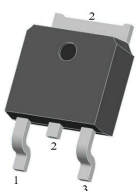
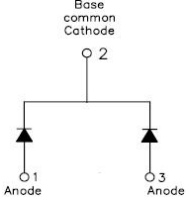
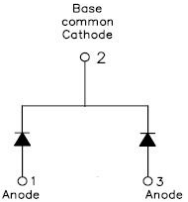
## SDURB1060CT/SDURD1060CT ULTRAFAST RECTIFIER

### 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

### Features

- Ultra-Fast Switching
- High Current Capability
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-0
- “-A” is an AEC-Q101 qualified device
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

| SDURB1060CT   | SDURD1060CT   |
|---|---|
|   |   |
|  |  |
| D <sup>2</sup> PAK  | DPAK  |

### Maximum Ratings:

| Characteristics                                      | Symbol      | Condition  | Max.                         | Units |
|--|-------------|--|------------------------------|-------|
| Peak Repetitive Reverse Voltage                      | $V_{RRM}$   | -  | 600                          | V     |
| Working Peak Reverse Voltage                         | $V_{RWM}$   |  |                              |       |
| DC Blocking Voltage                                  | $V_R$       |  |                              |       |
| Average Rectified Forward Current                    | $I_{F(AV)}$ | 50% duty cycle @ $T_c=100^\circ\text{C}$ , rectangular wave form | 5(Per Leg)<br>10(Per Device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | $I_{FSM}$   | 8.3ms, Half Sine pulse   | 60                           | A     |

### Electrical Characteristics:

| Characteristics                | Symbol          | Condition  | Typ.  | Max. | Units |
|--------------------------------|-----------------|--|-------|------|-------|
| Forward Voltage Drop(Per Leg)* | V <sub>F1</sub> | @ 5A, Pulse, T <sub>J</sub> = 25°C                                   | 1.14  | 1.55 | V     |
|                                | V <sub>F2</sub> | @ 5A, Pulse, T <sub>J</sub> = 125°C                                  | 0.95  | 1.45 | V     |
| Reverse Current(Per Leg)*      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25°C       | 0.007 | 5    | μA    |
|                                | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125°C      | 3     | 500  | μA    |
| Reverse Recovery Time(Per Leg) | t <sub>rr</sub> | I <sub>F</sub> =500mA, I <sub>R</sub> =1A, and I <sub>m</sub> =250mA | 42    | 50   | ns    |

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

### Thermal-Mechanical Specifications:

| Characteristics                             | Symbol                   | SDURB1060CT | SDURD1060CT | Units |
|---|--------------------------|-------------|-------------|-------|
| Junction Temperature                        | T <sub>J</sub>           | -55 to +150 |             | °C    |
| Storage Temperature                         | T <sub>stg</sub>         | -55 to +150 |             | °C    |
| Typical Thermal Resistance Junction to Case | R <sub>θJC</sub>         | 2.3         | 1.7         | °C/W  |
| Case Style                                  | D <sup>2</sup> PAK/ DPAK |             |             |       |

### Tube Specification

| Device        | Package            | Weight | Shipping       |
|---------------|--------------------|--------|----------------|
| SDURB1060CT   | D <sup>2</sup> PAK | 1.85g  | 800pcs / reel  |
| SDURB1060CTTR | D <sup>2</sup> PAK | 1.85g  | 800pcs / reel  |
| SDURD1060CT   | DPAK               | 0.39g  | 2500pcs / reel |
| SDURD1060CTTR | DPAK               | 0.39g  | 2500pcs / reel |

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

**Ratings and Characteristics Curves**

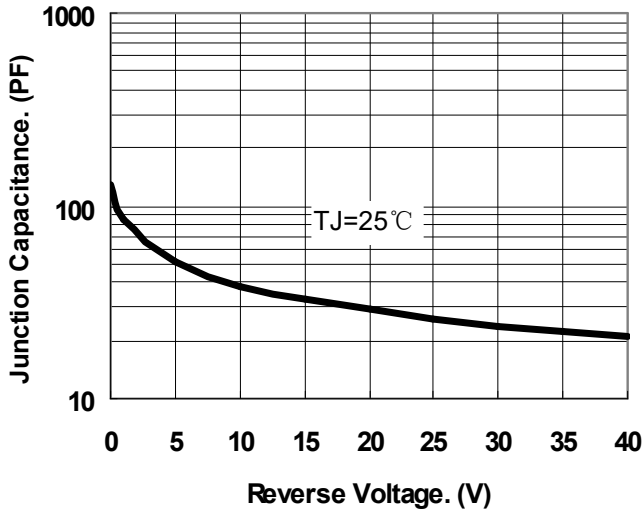


Fig.1-Typical Junction Capacitance

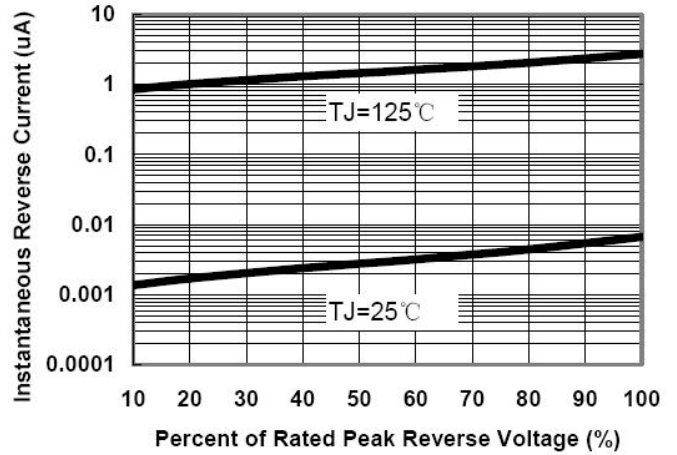


Fig.2-Typical Reverse Characteristics

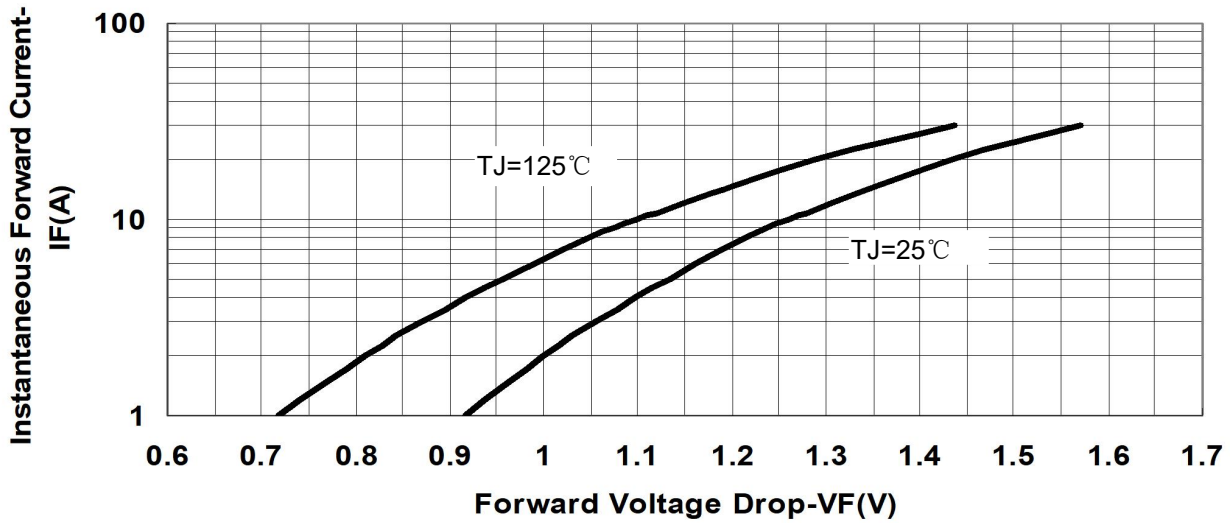
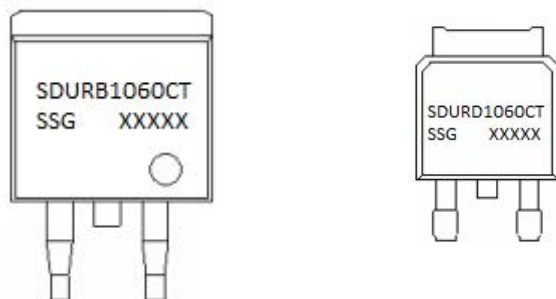


Fig.3-Typical Forward Voltage Drop Characteristics

## Marking Diagram

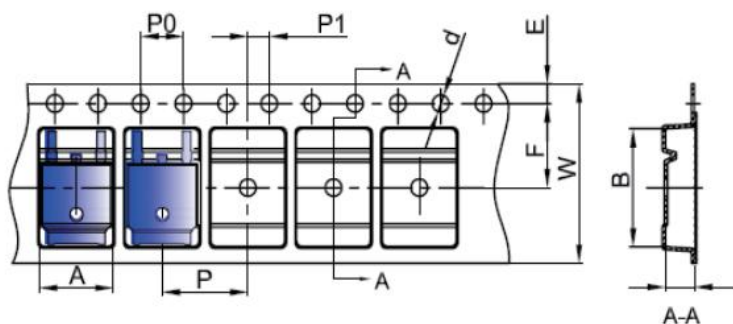


Where XXXXX is YYWWL

SDUR = Device Type  
B/D = Package type  
10 = Forward Current (10A)  
60 = Reverse Voltage (600V)  
CT = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

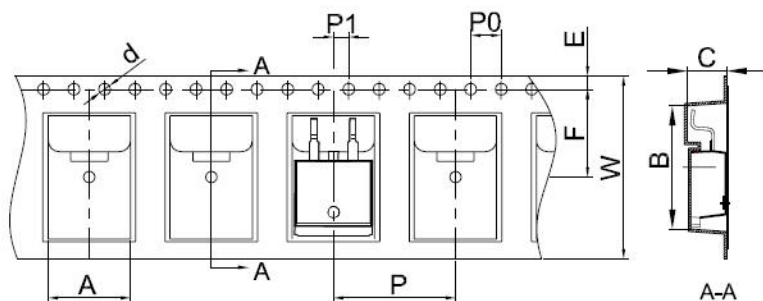
**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Carrier Tape & Reel Specification DPAK



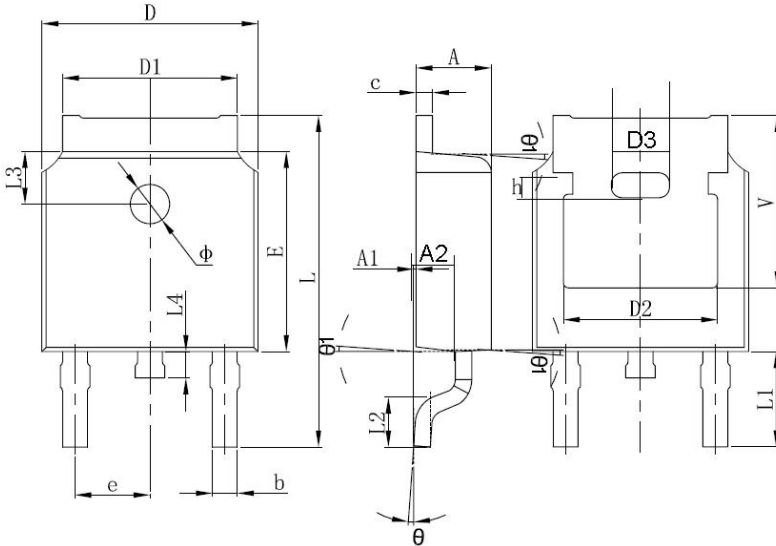
| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 6.80        | 7.00  |
| B      | 10.40       | 10.60 |
| C      | 2.60        | 2.80  |
| d      | Φ1.45       | Φ1.65 |
| E      | 1.65        | 1.85  |
| F      | 7.40        | 7.60  |
| P0     | 3.90        | 4.10  |
| P      | 7.90        | 8.10  |
| P1     | 1.90        | 2.10  |
| W      | 15.90       | 16.30 |

## Carrier Tape & Reel Specification D<sup>2</sup>PAK



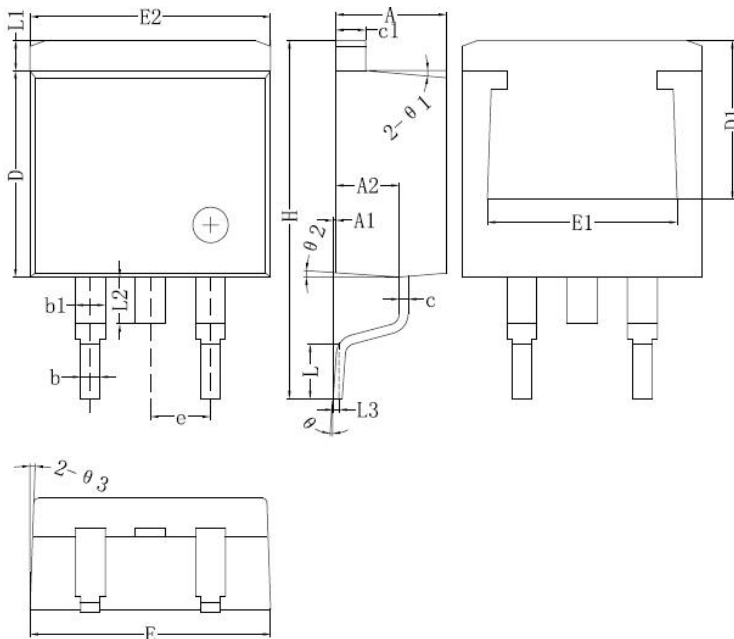
| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 10.70       | 10.90 |
| B      | 16.03       | 16.23 |
| C      | 5.11        | 5.31  |
| d      | 1.45        | 1.65  |
| E      | 1.65        | 1.85  |
| F      | 11.40       | 11.60 |
| P0     | 3.90        | 4.10  |
| P      | 15.90       | 16.10 |
| P1     | 1.90        | 2.10  |
| W      | 23.90       | 24.30 |

**Mechanical Dimensions DPAK**



| SYMBOL | Millimeters |       | Inches     |       |
|--------|-------------|-------|------------|-------|
|        | Min.        | Max.  | Min.       | Max.  |
| A      | 2.20        | 2.40  | 0.087      | 0.094 |
| A1     | 0.00        | 0.127 | 0.000      | 0.005 |
| b      | 0.66        | 0.86  | 0.026      | 0.034 |
| c      | 0.46        | 0.60  | 0.018      | 0.024 |
| D      | 6.50        | 6.70  | 0.256      | 0.264 |
| D1     | 5.13        | 5.46  | 0.202      | 0.215 |
| D2     | 4.83 REF.   |       | 0.190 REF. |       |
| E      | 6.00        | 6.20  | 0.236      | 0.244 |
| e      | 2.186       | 2.386 | 0.086      | 0.094 |
| L      | 9.70        | 10.40 | 0.381      | 0.409 |
| L1     | 2.90 REF.   |       | 0.144 REF. |       |
| L2     | 1.40        | 1.70  | 0.055      | 0.067 |
| L3     | 1.60 REF.   |       | 0.063 REF. |       |
| L4     | 0.60        | 1.00  | 0.024      | 0.039 |
| Φ      | 1.10        | 1.30  | 0.043      | 0.051 |
| θ      | 0°          | 8°    | 0°         | 8°    |
| h      | 0.00        | 0.30  | 0.000      | 0.012 |
| V      | 5.35 REF.   |       | 0.211 REF. |       |

**Mechanical Dimensions D<sup>2</sup>PAK**



| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min.                      | Typical | Max.  |
| A      | 4.47                      | 4.70    | 4.85  |
| A1     | 0                         | 0.10    | 0.25  |
| A2     | 2.59                      | 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  |
| c1     | 1.17                      | 1.27    | 1.37  |
| D      | 8.50                      | 8.70    | 8.90  |
| D1     | 6.40                      |         |       |
| E      | 10.01                     | 10.16   | 10.31 |
| E1     | 7.6                       |         |       |
| E2     | 9.98                      | 10.08   | 10.31 |
| e      |                           | 2.54    |       |
| H      | 14.6                      | 15.1    | 15.6  |
| L      | 2.00                      | 2.30    | 2.74  |
| L1     | 1.12                      | 1.27    | 1.42  |
| L2     | 1.30                      |         | 2.20  |
| L3     |                           | 0.25BSC |       |
| e      | 0                         | -       | 8°    |
| e1     |                           | 5°      |       |
| e2     |                           | 4°      |       |
| e3     |                           | 4°      |       |



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