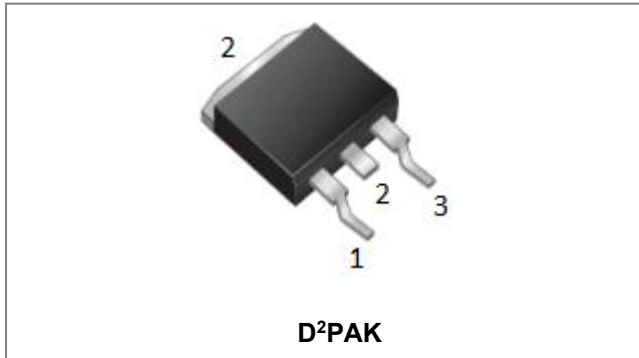


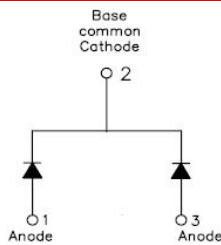
SDURB3020CT ULTRAFAST RECTIFIER



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
- “-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

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 (Per Device) | $I_{F(AV)}$ | 50% duty cycle @ $T_c=105^\circ\text{C}$, rectangular wave form | 15(Per Leg) 30(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I_{FSM} | 8.3ms, Half Sine pulse | 110 | A |

Electrical Characteristics:

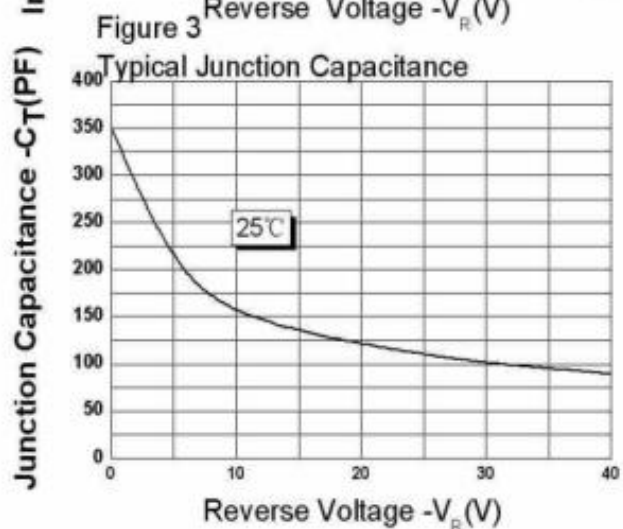
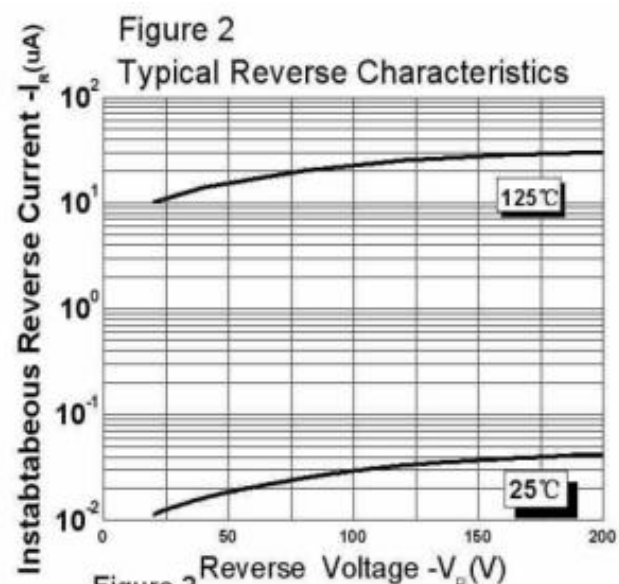
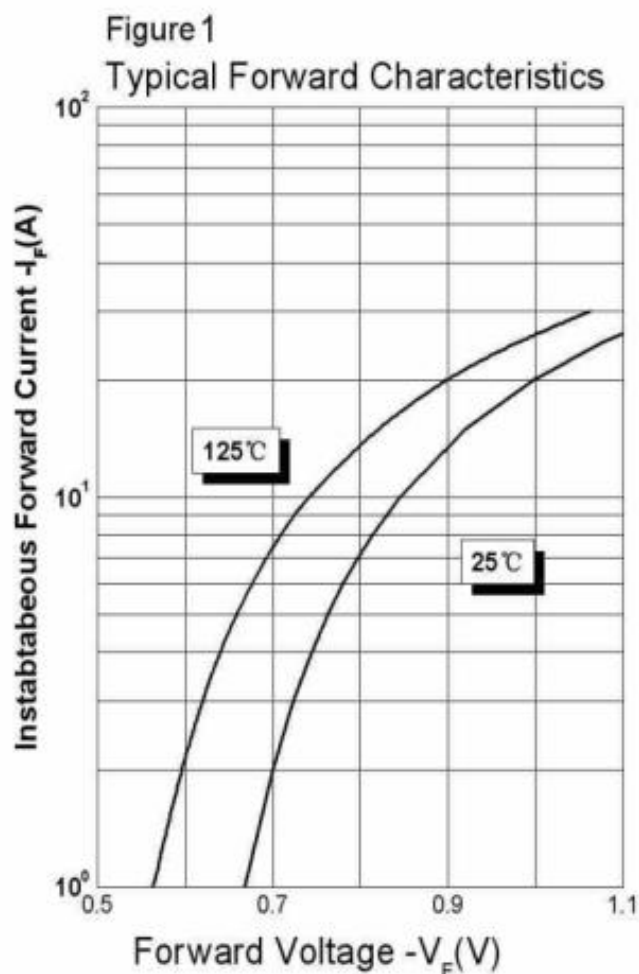
| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|--------------------------------|----------|---|------|------|---------------|
| Forward Voltage Drop(Per Leg)* | V_{F1} | @15A, Pulse, $T_J = 25^\circ\text{C}$ | 0.92 | 1.05 | V |
| | V_{F2} | @15A, Pulse, $T_J = 150^\circ\text{C}$ | - | 0.85 | V |
| Reverse Current(Per Leg)* | I_{R1} | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$ | 0.04 | 10 | μA |
| | I_{R2} | @ $V_R = \text{rated } V_R, T_J = 150^\circ\text{C}$ | - | 500 | μA |
| Reverse Recovery Time(Per Leg) | t_{rr} | $I_F=500\text{mA}, I_R=1\text{A}, \text{ and } I_{tm}=250\text{mA}$ | 29 | 35 | ns |

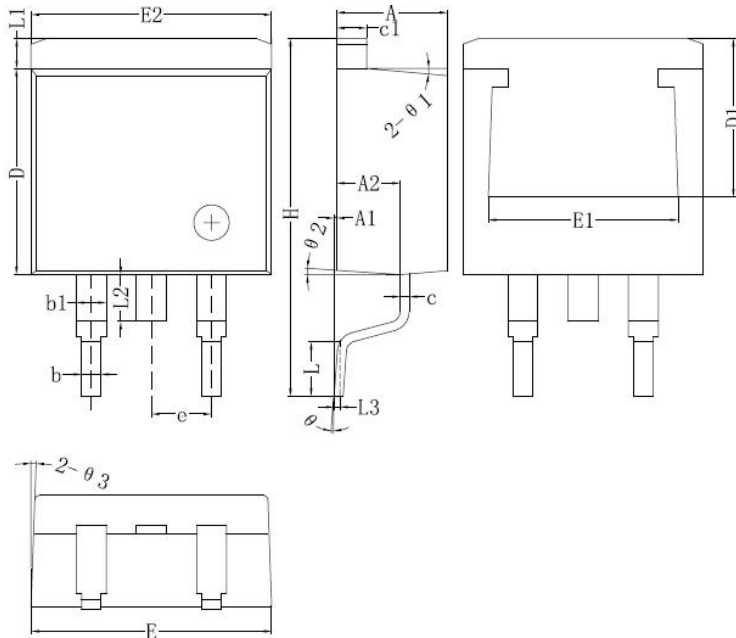
* Pulse width < 300 μs , duty cycle < 2%

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 | - | 1.85 | g |
| Case Style | D ² PAK | | | |

Ratings and Characteristics Curves



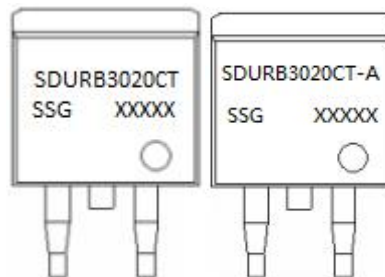
Mechanical Dimensions D²PAK


| 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° | |

Ordering Information

| Device | Package | Shipping |
|---------------|--------------------|---------------|
| SDURB3020CT | D ² PAK | 800pcs / reel |
| SDURB3020CTTR | D ² PAK | 800pcs / reel |

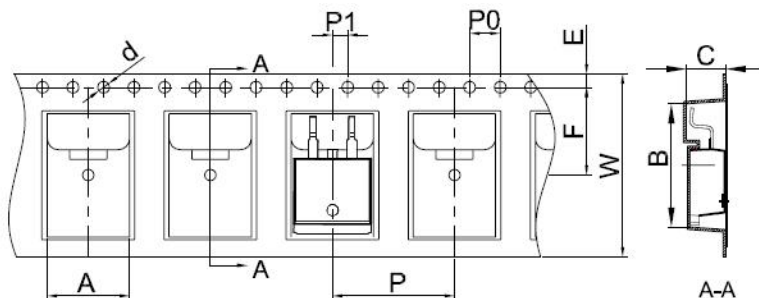
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram


Where XXXXX is YYWWL

- SDUR = Device Type
- B = Package type
- 30 = Forward Current (30A)
- 20 = Reverse Voltage(200V)
- CT = Configuration
- A = AEC-Q101
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Carrier Tape Specification D²PAK


| 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 |

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