


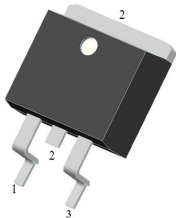

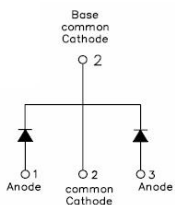
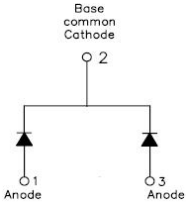
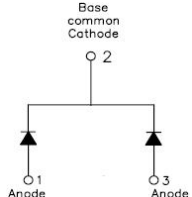
SDUR15120CT SDURB15120CT SDURD15120CT ULTRAFAST RECTIFIER

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
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

| SDUR15120CT | SDURB15120CT | SDURD15120CT |
|---|---|---|
|  |  |  |
|  |  |  |
| TO-220AB | D ² PAK | DPAK |

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|--|------------|---|--------------------------------|-------|
| Peak Repetitive Reverse Voltage | V_{RRM} | - | 1200 | V |
| Working Peak Reverse Voltage | V_{RWM} | | | |
| DC Blocking Voltage | V_R | | | |
| Average Rectified Forward Current | $I_F (AV)$ | 50% duty cycle @ $T_c=115^{\circ}C$, rectangular wave form | 7.5(Per Leg) 15(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} | @ I _F = 7.5A, Pulse, T _J = 25°C | - | 2.95 | V |
| | V _{F2} | @ I _F = 7.5A, Pulse, T _J =150°C | - | 1.95 | V |
| Reverse Current(Per Leg)* | I _{R1} | @V _R = rated V _R T _J = 25°C | - | 80 | μA |
| | I _{R2} | @V _R = rated V _R T _J = 125°C | - | 2.0 | mA |
| Reverse Recovery Time(Per Leg) | t _{rr} | I _F =500mA, I _R =1A,and I _m =250mA | - | 100 | ns |

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

Thermal-Mechanical Specifications:

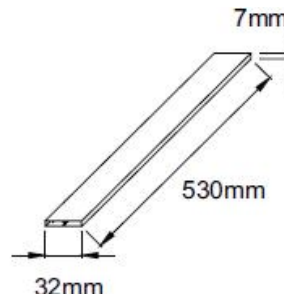
| Characteristics | Symbol | SDUR15120CT | SDURB15120CT | SDURD15120CT | Units |
|---|------------------------------------|-------------|--------------|--------------|-------|
| Junction Temperature | T _J | -55 to +150 | | | °C |
| Storage Temperature | T _{stg} | -55 to +150 | | | °C |
| Typical Thermal Resistance Junction to Case | R _{θJC} | 2.3 | 2.3 | 1.7 | K/W |
| Approximate Weight | wt | 2.0 | 1.85 | 0.39 | g |
| Case Style | TO-220AB/ D ² PAK/ DPAK | | | | |

Tube Specification

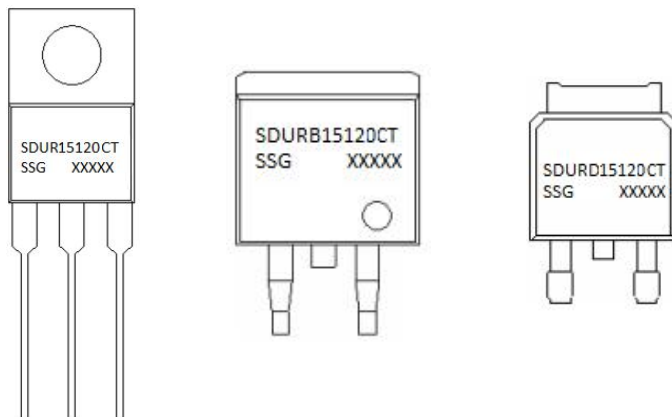
| Device | Package | Shipping |
|--------------|--------------------|----------------|
| SDUR15120CT | TO-220AB | 50pcs / tube |
| SDURB15120CT | D ² PAK | 800pcs / reel |
| SDURD15120CT | DPAK | 2500pcs / reel |

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

Tube Specification(TO-220AB)



Marking Diagram

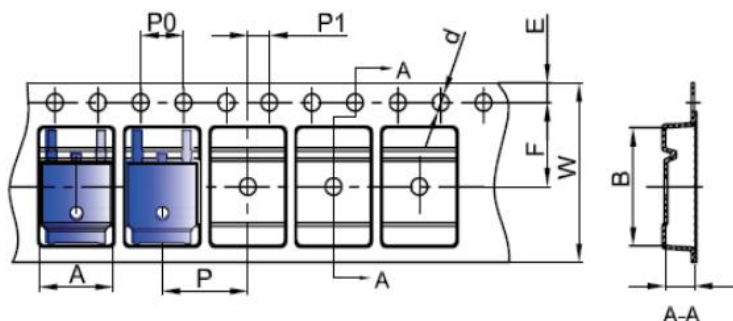


Where XXXXX is YYWWL

- SDUR = Device Type
- B/D = Package type
- 15 = Forward Current (15A)
- 120 = Reverse Voltage (1200V)
- CT = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

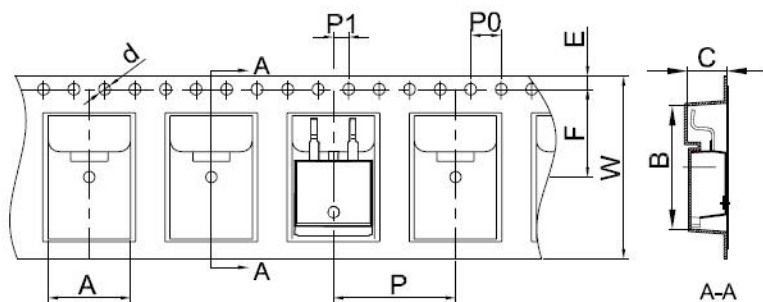
Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape Specification DPAK



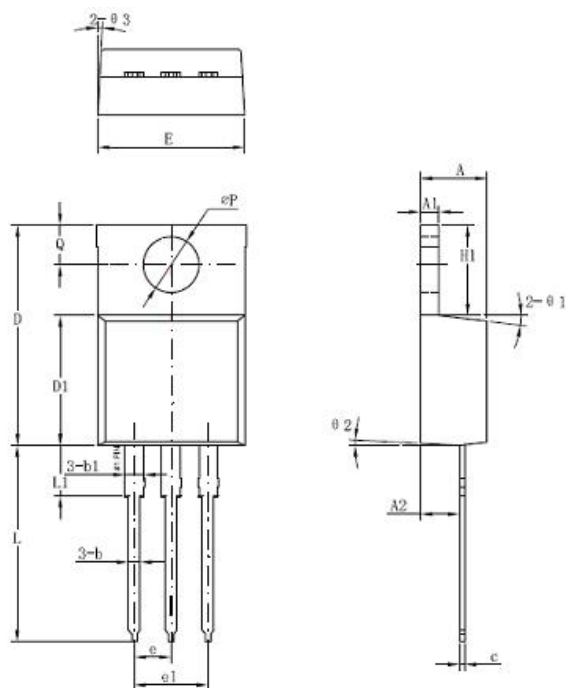
| SYMBOL | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 6.80 | 7.00 |
| B | 10.40 | 10.60 |
| C | 2.60 | 2.80 |
| d | Φ1.45 | Φ1.65 |
| E | 1.65 | 1.85 |
| F | 7.40 | 7.60 |
| P0 | 3.90 | 4.10 |
| P | 7.90 | 8.10 |
| P1 | 1.90 | 2.10 |
| W | 15.90 | 16.30 |

Carrier Tape Specification D2PAK



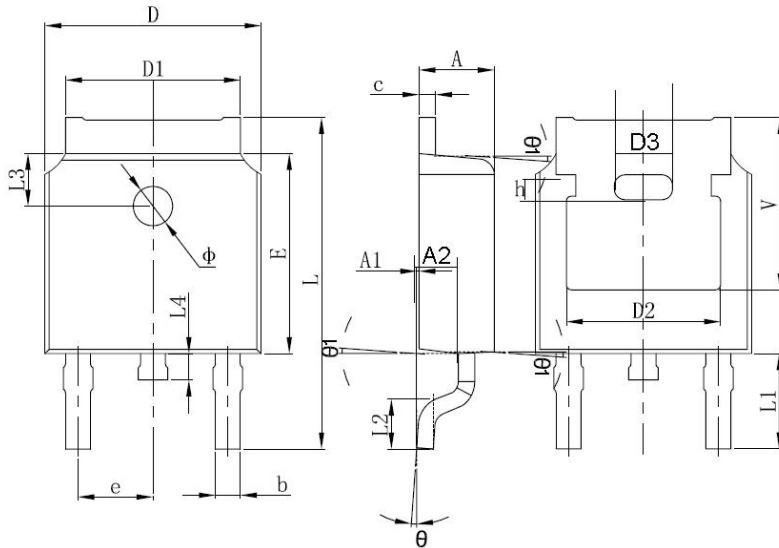
| SYMBOL | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 10.70 | 10.90 |
| B | 16.03 | 16.23 |
| C | 5.11 | 5.31 |
| d | 1.45 | 1.65 |
| E | 1.65 | 1.85 |
| F | 11.40 | 11.60 |
| P0 | 3.90 | 4.10 |
| P | 15.90 | 16.10 |
| P1 | 1.90 | 2.10 |
| W | 23.90 | 24.30 |

Mechanical Dimensions TO-220AB



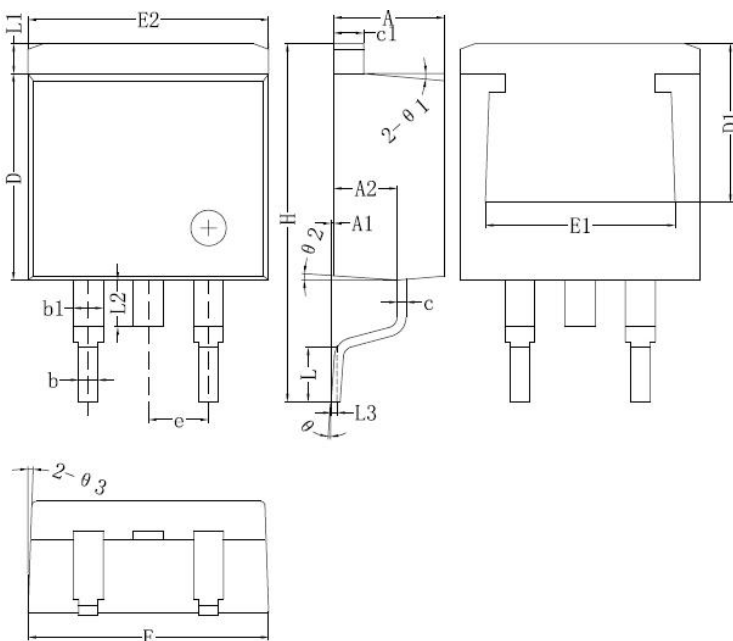
| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min | Typical | Max |
| A | 4.42 | 4.57 | 4.72 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.52 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| D | 14.94 | 15.24 | 15.54 |
| D1 | 8.85 | 9.00 | 9.15 |
| E | 10.01 | 10.16 | 10.31 |
| e | | 2.54 | |
| e1 | 4.98 | 5.06 | 5.18 |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 12.7 | 13.56 | 13.80 |
| L1 | 3.56 | 3.5 | 3.96 |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| Θ1 | | 7° | |
| Θ2 | | 3° | |
| Θ3 | | 4° | |

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 D²PAK



| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.55 | 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 | | 1.27 | |
| c | 0.36 | 0.38 | 0.61 |
| c1 | 1.17 | 1.27 | 1.37 |
| D | 8.55 | 8.70 | 8.85 |
| D1 | 6.40 | | |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 7.6 | | |
| E2 | 9.98 | 10.08 | 10.18 |
| e | | 2.54 | |
| H | 14.6 | 15.1 | 15.6 |
| L | 2.00 | 2.30 | 2.70 |
| L1 | 1.17 | 1.27 | 1.40 |
| L2 | | | 2.20 |
| L3 | | 0.25BSC | |
| e | 0 | - | 8° |
| e1 | | 5° | |
| e2 | | 4° | |
| e3 | | 4° | |

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