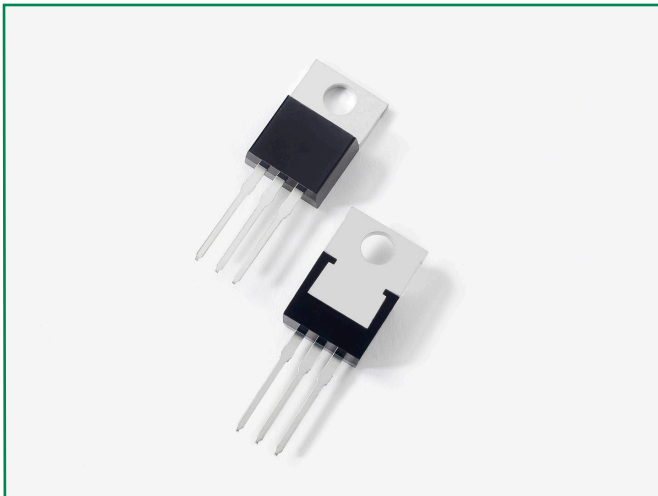


DUR1040CT



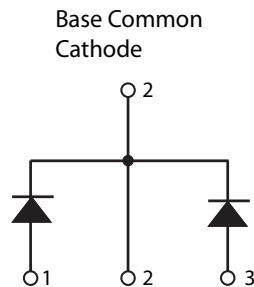
Description

Littelfuse DUR series Ultrafast Recovery Rectifier is designed to meet the general requirements of commercial applications by providing low T_{rr} , high-temperature, low-leakage and low forward voltage drop products. It is suitable for output rectifier, free-wheeling or boost diode in high-frequency power switching application such as switch mode power supply and DC-DC converters.

Features

- Ultra-fast switching
 - Low reverse leakage current
 - High surge current capability
 - Low forward voltage drop
 - Common Cathode
- configuration in TO-220AB package
- Pb-free E3 means 2nd level interconnect is Pb-free and the terminal finish material is tin(Sn) (IPC/JEDEC J-STD-609A.01)

Circuit Diagram



Applications

- Output rectifiers in switch mode power supplies (SMPS) and DC to DC converters
- Free-wheeling diode or boost diode in converters and motor control circuits
- Anti-parallel diode for high frequency switching devices such as IGBT
- Uninterruptible Power Supplies (UPS)
- Inductive heating and melting
- Ultrasonic cleaners and welders

Maximum Ratings

| Characteristics | Symbol | Conditions | Max. | Unit |
|--|-----------|--|----------------------------------|------|
| Peak Inverse Voltage | V_{RWM} | - | 400 | V |
| Average Forward Current | I_{FAV} | 50% duty cycle @ $T_C = 112^\circ\text{C}$, rectangular wave form | 5 (Per Leg) 10 (Total Device) | A |
| Peak One Cycle Non-Repetitive Surge Current (Per Leg) | I_{FSM} | 8.3 ms, half sine pulse | 80 | A |

Electrical Characteristics

| Characteristics | Symbol | Conditions | Max. | Unit |
|---|-----------|---|------|---------------|
| Forward Voltage Drop (Per Leg) ¹ | V_F | @5A, Pulse, $T_J = 25^\circ\text{C}$ | 1.3 | V |
| Reverse Current ¹ | I_{R1} | @ $V_R = \text{Rated } V_R, T_J = 25^\circ\text{C}$ | 30 | μA |
| | I_{R2} | @ $V_R = \text{Rated } V_R, T_J = 125^\circ\text{C}$ | 300 | |
| Reverse Recovery Time | t_{rr1} | $I_F = 500\text{mA}, I_R = 1\text{A}, \text{ and } I_{rm} = 250\text{mA}$ | 45 | ns |

Footnote 1: Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications

| Characteristics | Symbol | Conditions | Specification | Unit |
|---|-----------------|--------------|---------------|------|
| 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 | 3.5 | °C/W |
| Approximate Weight | wt | - | 2 | g |
| Case Style | - | TO-220AB | - | - |

Figure 1: Typical Forward Characteristics

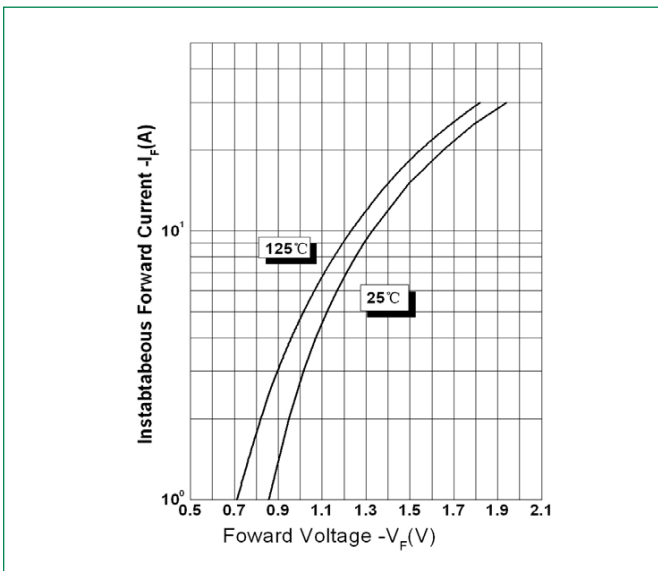


Figure 2: Typical Reverse Characteristics

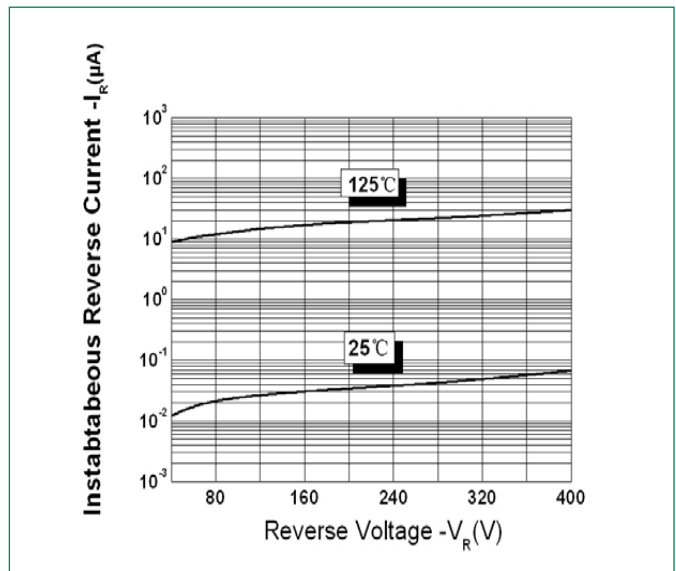
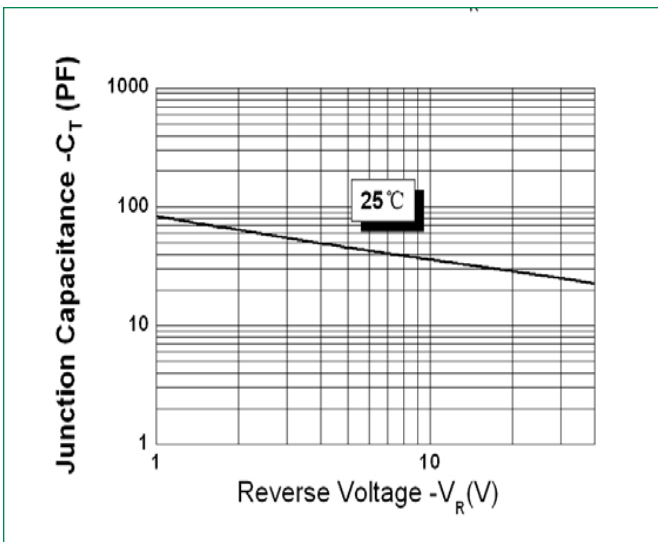
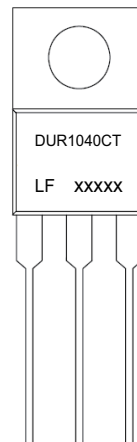


Figure 3: Typical Junction Capacitance



Part Numbering and Marking System



*xxxxx is YYWWL

- DUR = Device Type
- 10 = Forward Current (10A)
- 40 = Reverse Voltage (400V)
- CT = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

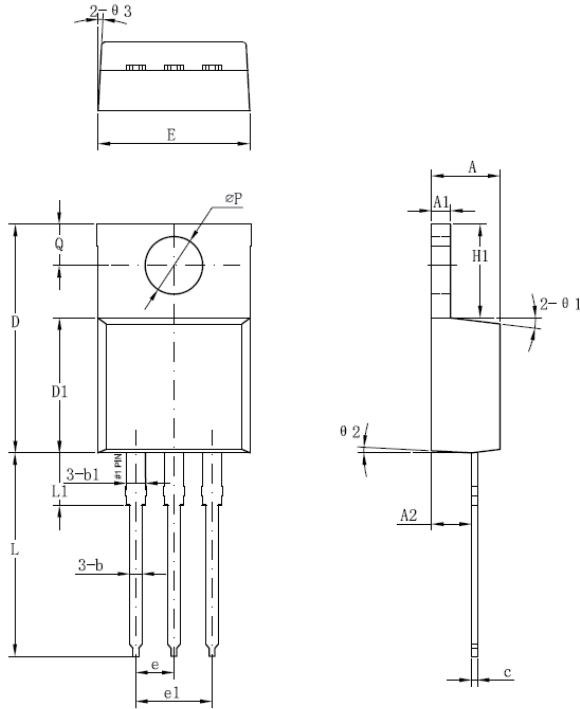
Ultrafast Recovery Rectifier

DUR1040CT, 2x 5A, 400V, TO-220AB, Common Cathode

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|-----------|--------------|-------|
| DUR1040CT | DUR1040CT | 50pcs /Tube | 1000 |

Dimensions-Package TO-220AB



| Symbol | Millimeters | |
|--------|-------------|-------|
| | Min | Max |
| A | 3.56 | 4.83 |
| A1 | 0.51 | 1.40 |
| A2 | 2.03 | 2.92 |
| b | 0.38 | 1.02 |
| b1 | 1.14 | 1.78 |
| c | 0.31* | 0.61 |
| D | 14.22 | 16.51 |
| D1 | 8.38 | 9.15* |
| E | 9.65 | 10.67 |
| e | 2.54 | - |
| e1 | 4.98* | - |
| H1 | 5.84 | 6.86 |
| L | 12.70 | 14.73 |
| L1 | - | 6.35 |
| øP | 3.53 | 4.09 |
| Q | 2.54 | 3.43 |

Footnote *: The spec. does not comply with JEDEC spec.

Tube Specification TO-220AB

