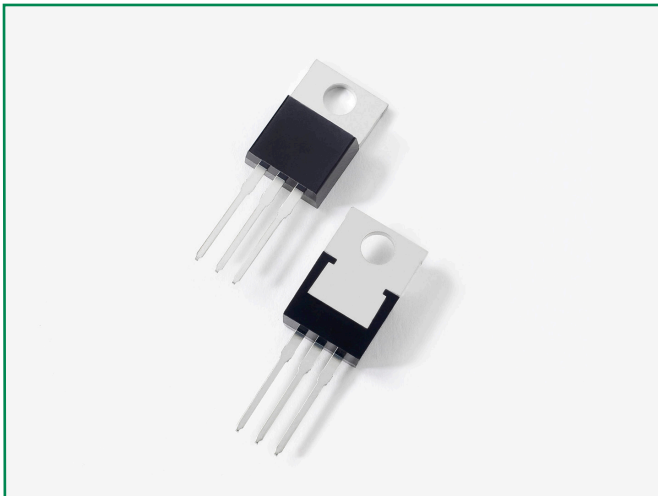


# Ultrafast Recovery Rectifier

DUR3060CT, 2x 15A, 600V, TO-220AB, Common Cathode

DUR3060CT



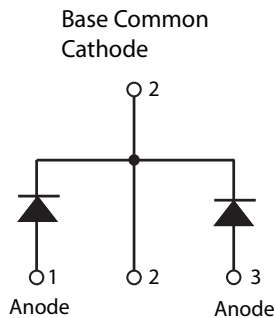
## Description

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                                   | $V_{RWM}$   | -   | 600               | V    |
| Average Forward Current                                | $I_{F(AV)}$ | Rated $V_r$ , @ $T_c = 105^\circ\text{C}$ , rectangular wave form | 15 (Per Leg)      | A    |
|  |             |   | 30 (Total Device) |      |
| Peak One Cycle Non-Repetitive Surge Current ( Per Leg) | $I_{FSM}$   | 8.3 ms, half sine pulse   | 110               | A    |

## Electrical Characteristics

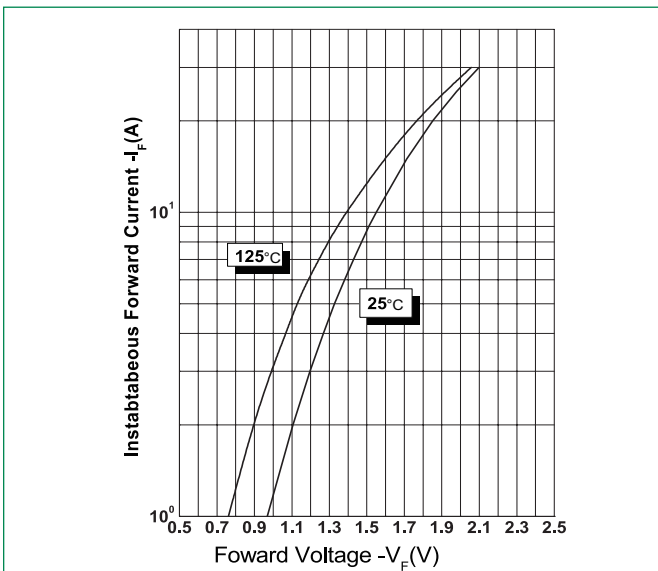
| Characteristics                             | Symbol    | Conditions   | Typ. | Max. | Unit          |
|---|-----------|--|------|------|---------------|
| Forward Voltage Drop (Per Leg) <sup>1</sup> | $V_{F1}$  | @15A, Pulse, $T_j = 25^\circ\text{C}$                                  | 1.71 | 2.03 | V             |
|   | $V_{F2}$  | @15A, Pulse, $T_j = 125^\circ\text{C}$                                 | 1.59 | -    | V             |
| Reverse Current (Per Leg) <sup>1</sup>      | $I_{R1}$  | @ $V_R = \text{Rated } V_R$ , $T_j = 25^\circ\text{C}$                 | 0.54 | 100  | $\mu\text{A}$ |
|   | $I_{R2}$  | @ $V_R = \text{Rated } V_R$ , $T_j = 125^\circ\text{C}$                | 277  | 1500 | $\mu\text{A}$ |
| Reverse Recovery Time                       | $t_{rr1}$ | $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , and $I_{rm} = 250\text{mA}$ | -    | 50   | ns            |

Footnote 1: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

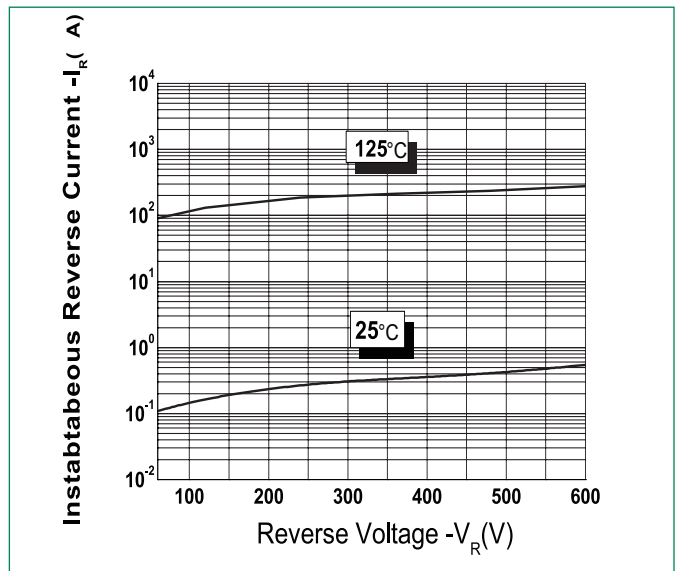
**Thermal-Mechanical Specifications**

| 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 | 1.6           | °C/W |
| Approximate Weight                          | wt              | -            | 2             | g    |
| Case Style                                  | -               | TO-220AB     | -             | -    |

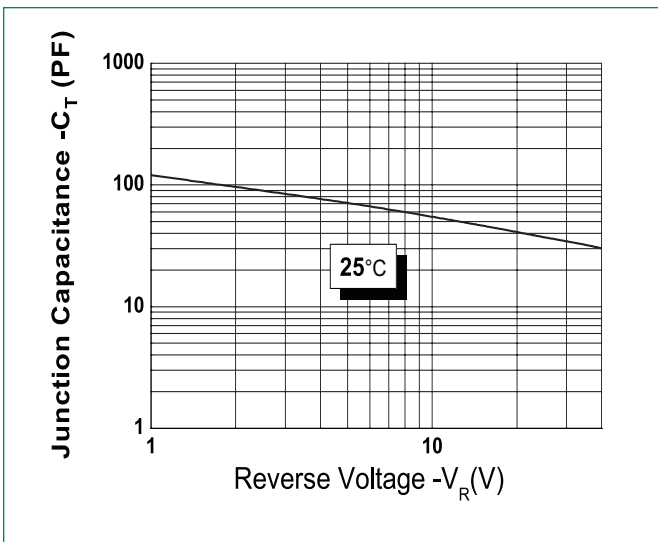
**Figure 1: Typical Forward Characteristics**



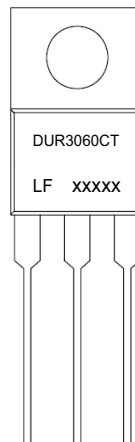
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**



**Part Numbering and Marking System**



- \*xxxxx is YYWWL
- DUR = Device Type
  - 30 = Forward Current (30A)
  - 60 = Reverse Voltage (600V)
  - CT = Configuration
  - LF = Littelfuse
  - YY = Year
  - WW = Week
  - L = Lot Number

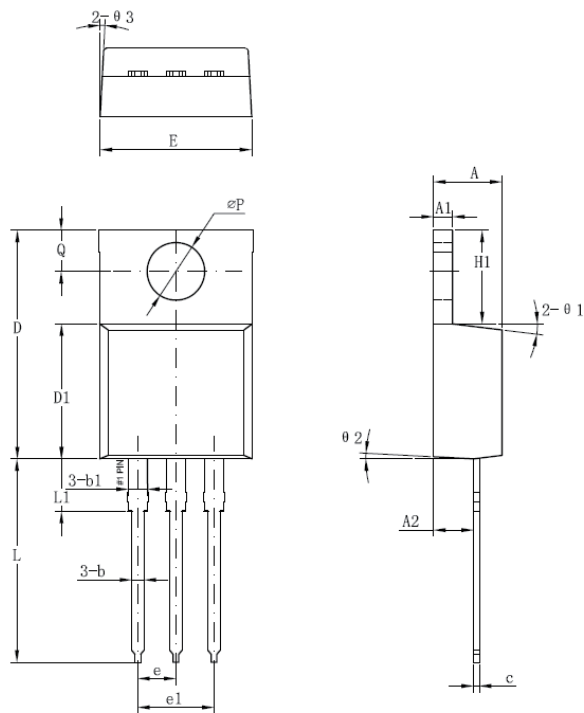
# Ultrafast Recovery Rectifier

## DUR3060CT, 2x 15A, 600V, TO-220AB, Common Cathode

### Packing Options

| Part Number | Marking   | Packing Mode | M.O.Q |
|-------------|-----------|--------------|-------|
| DUR3060CT   | DUR3060CT | 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  |
| $\phi P$ | 3.53        | 4.09  |
| Q        | 2.54        | 3.43  |

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

### Tube Specification TO-220AB

