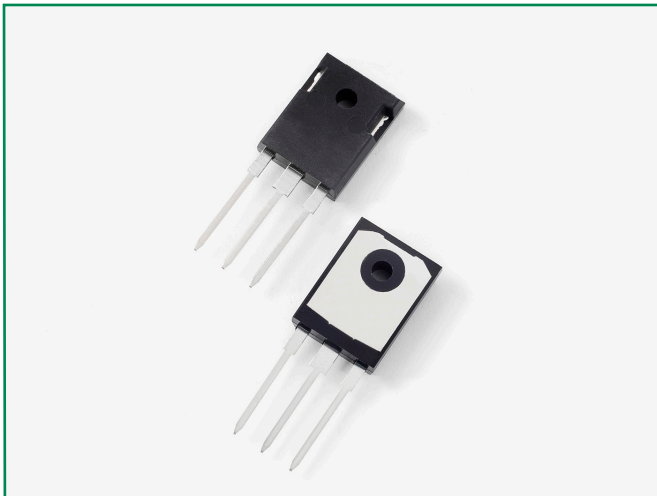


Ultrafast Recovery Rectifier

DUR6030WT, 2x 30A, 300V, TO-247AD, Common Cathode

DUR6030WT



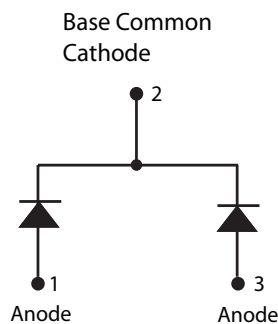
Description

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-247AD 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} | - | 300 | V |
| Average Rectifier Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 100^\circ\text{C}$, rectangular wave form | 30 (Per Leg) 60 (Total Device) | A |
| Peak One Cycle Non-Repetitive Surge Current (Per Leg) | I_{FSM} | 8.3 ms, half sine pulse | 400 | A |

Electrical Characteristics

| Characteristics | Symbol | Conditions | Max. | Unit |
|---|-----------|---|------|---------------|
| Forward Voltage Drop (Per Leg) ¹ | V_{F1} | @30A, Pulse, $T_J = 25^\circ\text{C}$ | 1.3 | V |
| | V_{F2} | @30A, Pulse, $T_J = 125^\circ\text{C}$ | 1.2 | V |
| | V_{F3} | @30A, Pulse, $T_J = 150^\circ\text{C}$ | 1.1 | V |
| Reverse Current (Per Leg) ¹ | I_{R1} | @ $V_R = \text{Rated } V_R, T_J = 25^\circ\text{C}$ | 5.0 | μA |
| | I_{R2} | @ $V_R = \text{Rated } V_R, T_J = 125^\circ\text{C}$ | 1.0 | mA |
| 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 | 2.0 | °C/W |
| Approximate Weight | wt | - | 6.28 | g |
| Case Style | - | TO-247AD | - | - |

Figure 1: Typical Forward Characteristics

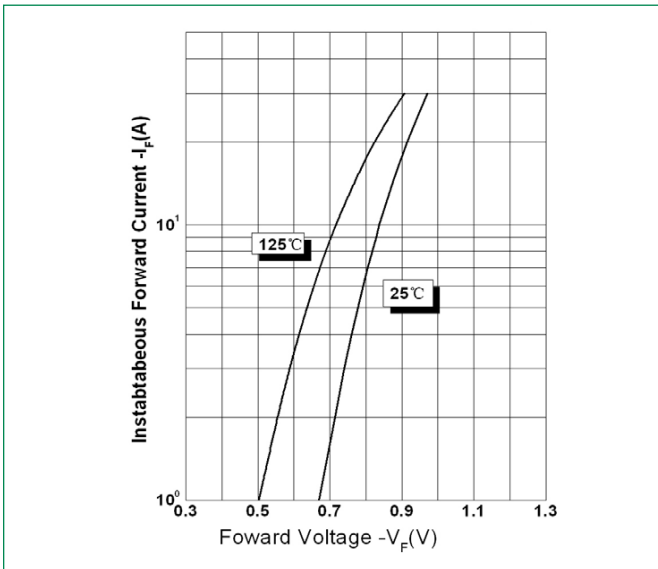


Figure 2: Typical Reverse Characteristics

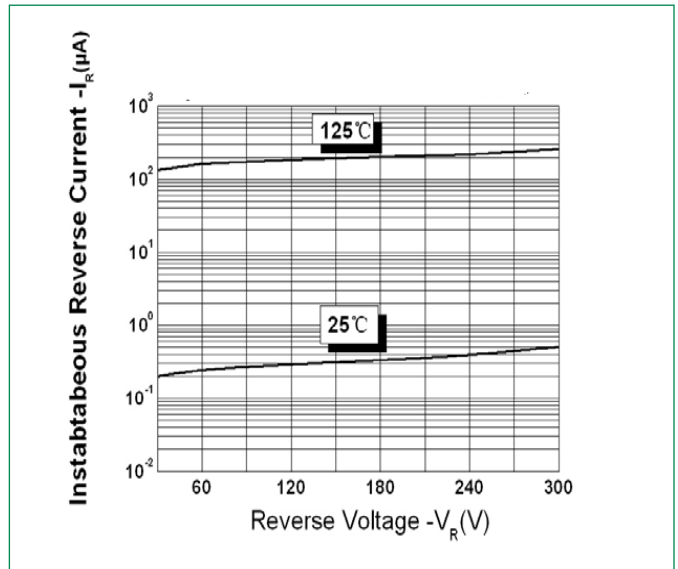
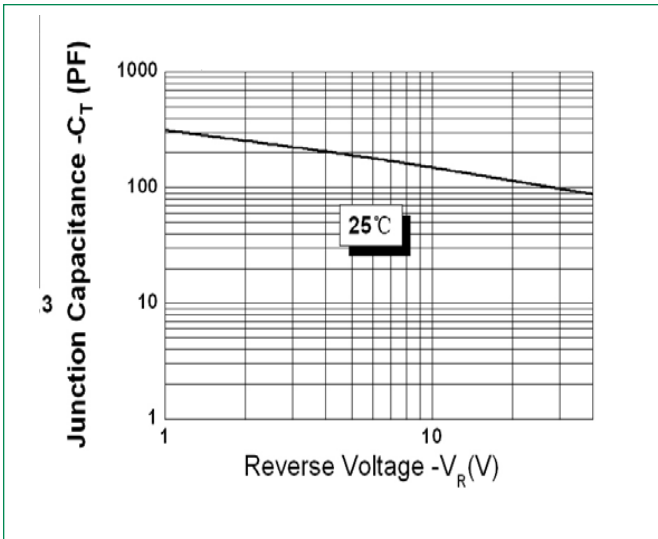
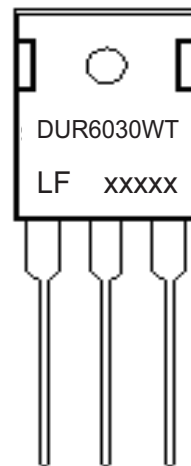


Figure 3: Typical Junction Capacitance



Part Numbering and Marking System



Where XXXXX is YYWWL

- DUR = Device Type
- 60 = Forward Current (60A)
- 30 = Reverse Voltage (300V)
- WT = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

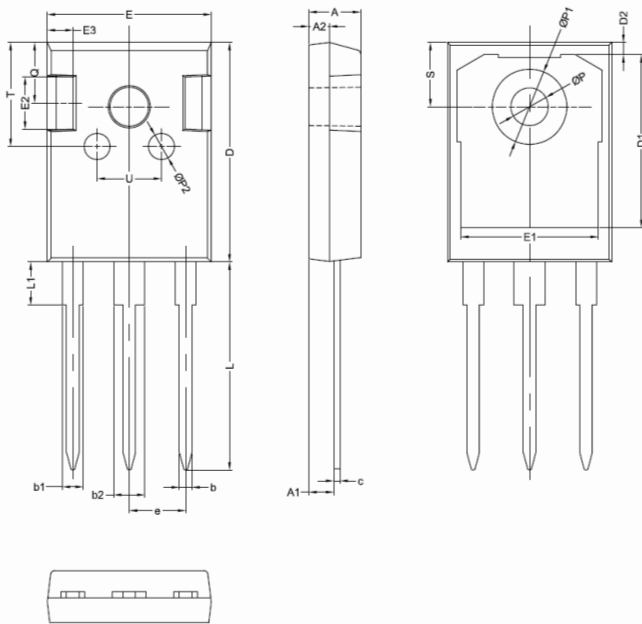
Ultrafast Recovery Rectifier

DUR6030WT, 2x 30A, 300V, TO-247AD, Common Cathode

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|-----------|--------------|-------|
| DUR6030WT | DUR6030WT | 30 pcs/Tube | 300 |

Dimensions-Package TO-247AD



| Symbol | Millimeters | |
|--------|-------------|---------|
| | Min | Max |
| A | 4.70 | 5.31 |
| A1 | 2.21 | 2.61 * |
| A2 | 1.50 | 2.49 |
| b | 0.99 | 1.40 |
| b1 | 1.65 | 2.39 |
| b2 | 2.59 | 3.43 |
| c | 0.38 | 0.89 |
| D | 20.30 * | 21.46 |
| D1 | 13.08 | - |
| D2 | 0.51 | 1.35 |
| E | 14.80 * | 16.26 |
| E1 | 13.46 | - |
| E2 | 4.32 | 5.49 |
| E3 | 1.45 * | 2.74 |
| e | 5.461 BSC | |
| L | 19.42 * | 20.85 * |
| L1 | - | 4.60 * |
| P | 3.35 * | 3.70 * |
| P1 | - | 7.40 * |
| Q | 5.38 | 6.20 |
| S | 5.83 * | 6.25 * |

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

Tube Specification TO-247AD

