

DURF1060



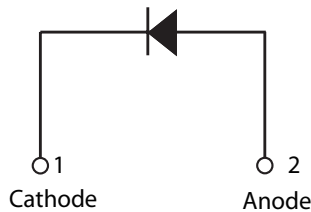
Description

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
- Single die in two-leaded, electrically isolated ITO-220AC 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 | $I_{F(AV)}$ | 50% duty cycle @ $T_c = 105^\circ\text{C}$, rectangular wave form | 10 | A |
| Peak One Cycle Non-Repetitive Surge Current (Per Leg) | I_{FSM} | 8.3 ms, half sine pulse | 100 | A |

Electrical Characteristics

| Characteristics | Symbol | Conditions | Max. | Unit |
|-----------------------------------|-----------|---|------|---------------|
| Forward Voltage Drop ¹ | V_{F1} | @10A, Pulse, $T_J = 25^\circ\text{C}$ | 2.2 | V |
| | V_{F2} | @10A, Pulse, $T_J = 100^\circ\text{C}$ | 2.0 | V |
| Reverse Current ¹ | I_{R1} | @ $V_R = \text{Rated } V_R, T_J = 25^\circ\text{C}$ | 10 | μA |
| | I_{R2} | @ $V_R = \text{Rated } V_R, T_J = 125^\circ\text{C}$ | 500 | μA |
| Reverse Recovery Time | t_{rr1} | $I_F = 500\text{mA}, I_R = 1\text{A}, \text{ and } I_{rm} = 250\text{mA}$ | 32 | 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 | 6.0 | °C/W |
| Approximate Weight | wt | - | 1.65 | g |
| Case Style | - | ITO-220AC | - | - |

Figure 1: Typical Forward Characteristics

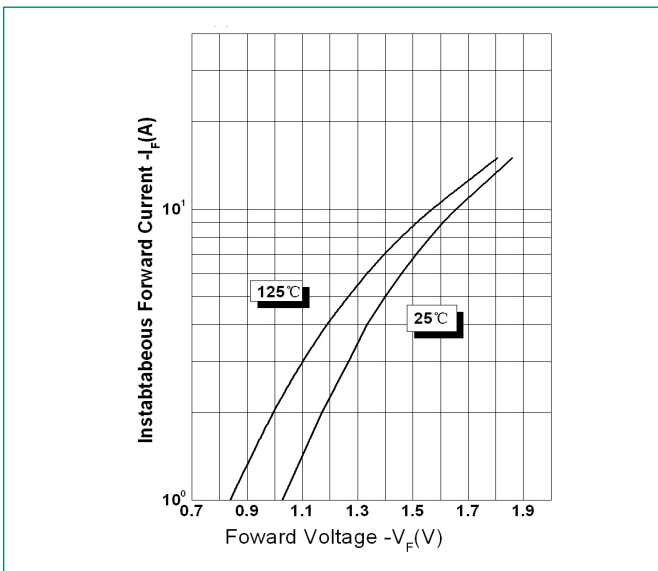


Figure 2: Typical Reverse Characteristics

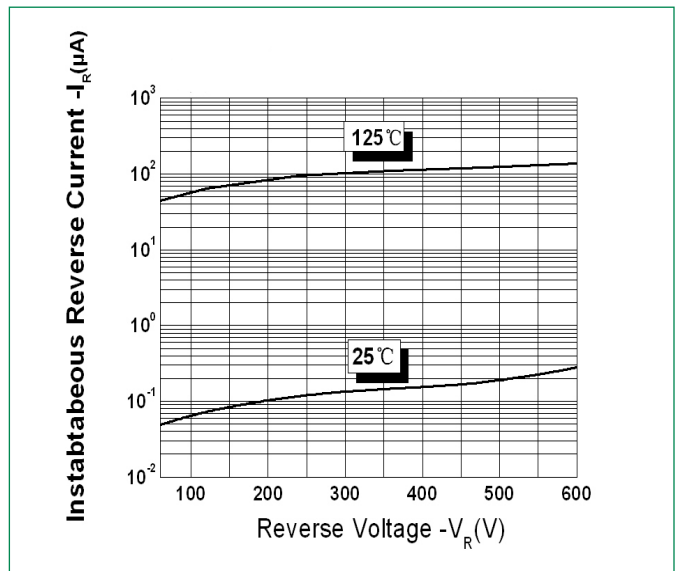
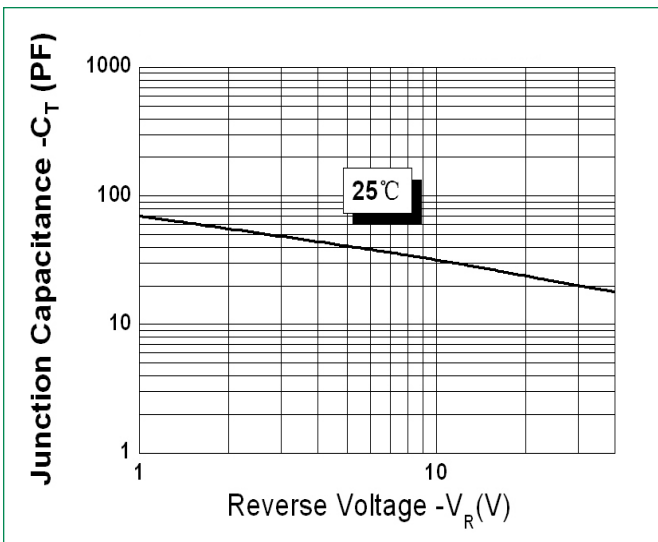
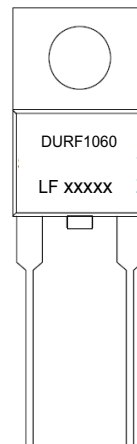


Figure 3: Typical Junction Capacitance



Part Numbering and Marking System



- *xxxxx is YYWWL
- DUR = Device Type
 - F = Package type
 - 10 = Forward Current (10A)
 - 60 = Reverse Voltage (600V)
 - LF = Littelfuse
 - YY = Year
 - WW = Week
 - L = Lot Number

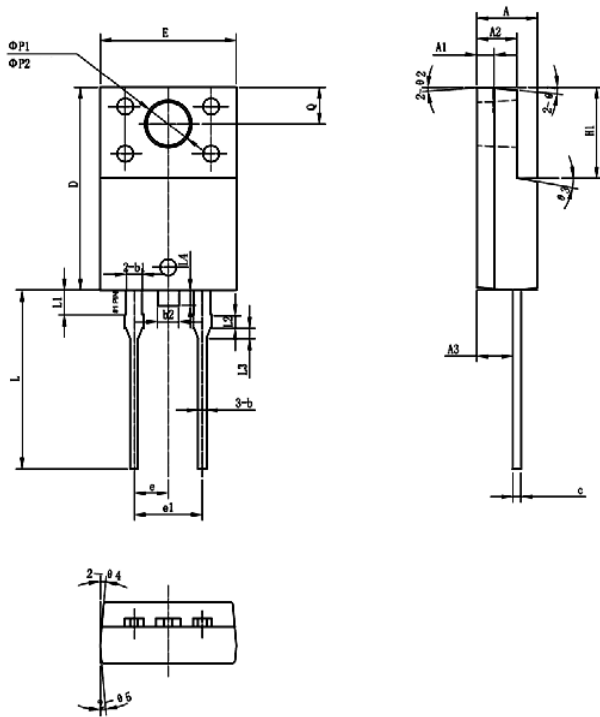
Ultrafast Recovery Rectifier

DURF1060, 10A, 600V, ITO-220AC

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|----------|--------------|-------|
| DURF1060 | DURF1060 | 50pcs / Tube | 1000 |

Dimensions-Package ITO-220AC



| Symbol | Millimeters | | |
|--------|-------------|-------|-------|
| | Min | Typ | Max |
| A | 4.30 | 4.50 | 4.70 |
| A1 | 1.10 | 1.30 | 1.50 |
| A2 | 2.80 | 3.00 | 3.20 |
| A3 | 2.50 | 2.70 | 2.90 |
| b | 0.50 | 0.60 | 0.75 |
| b1 | 1.10 | 1.20 | 1.35 |
| b2 | 1.50 | 1.60 | 1.75 |
| c | 0.55 | 0.60 | 0.75 |
| D | 14.80 | 15.00 | 15.20 |
| E | 9.96 | 10.16 | 10.36 |
| e | - | 2.55 | - |
| e1 | - | 5.10 | - |
| H1 | 6.50 | 6.70 | 6.90 |
| L | 12.70 | 13.20 | 13.70 |
| L1 | 1.60 | 1.80 | 2.00 |
| L2 | 0.80 | 1.00 | 1.20 |
| L3 | 0.60 | 0.80 | 1.00 |
| L4 | - | 1.10 | 1.50 |
| ØP1 | 3.30 | 3.50 | 3.70 |
| ØP2 | 2.99 | 3.19 | 3.39 |
| Q | 2.50 | 2.70 | 2.90 |
| θ1 | - | 5° | - |
| θ2 | - | 4° | - |
| θ3 | - | 10° | - |
| θ4 | - | 5° | - |
| θ5 | - | 5° | - |

Tube Specification ITO-220AC

