

DST2045AX



Pin out



Description

Littelfuse DST series Ultra Low V_F Schottky Barrier Rectifier is designed to meet the general requirements of commercial and industry applications by providing high temperature, low leakage and lower V_F products.

It is suitable for high frequency switching mode power supply, free-wheeling diodes and polarity protection diodes.

Features

- Ultra low forward voltage drop
- High frequency operation
- High junction temperature capability
- Guard ring for enhanced ruggedness and long term reliability
- Single die in P600 package

Applications

- Switching mode power supply
- DC/DC converters
- Free-Wheeling diodes
- Polarity Protection Diodes

Maximum Ratings

| Parameters | Symbol | Test Conditions | Max | Unit |
|---|-------------|--|-----|------|
| Peak Inverse Voltage | V_{RWM} | - | 45 | V |
| Average Forward Current (per device) | $I_{F(AV)}$ | 50% duty cycle @ $T_A = 25^\circ\text{C}$ rectangular wave form | 20 | A |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3 ms, half Sine pulse | 250 | A |

Electrical Characteristics

| Parameters | Symbol | Test Conditions | Max | Unit |
|----------------------------------|----------|---|------|------|
| Forward Voltage Drop (per leg) * | V_{F1} | @20A, Pulse, $T_J = 25^\circ\text{C}$ | 0.58 | V |
| | V_{F2} | @20A, Pulse, $T_J = 125^\circ\text{C}$ | 0.50 | |
| Reverse Current (per leg) * | I_{R1} | @ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$ | 1.2 | mA |
| | I_{R2} | @ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$ | 35 | |

* Pulse Width < 300 μs , Duty Cycle < 2%

Thermal-Mechanical Specifications

| Parameters | Symbol | Test Conditions | Max | Unit |
|--|-------------|-----------------|-------------|------|
| Junction Temperature | T_J | | -55 to +150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |
| Thermal Resistance Junction to Ambient | $R_{th,JA}$ | DC operation | 55 | °C/W |
| Approximate Weight | wt | | 2.24 | g |
| Case Style | | P600 | | |

Figure 1: Typical Forward Characteristics

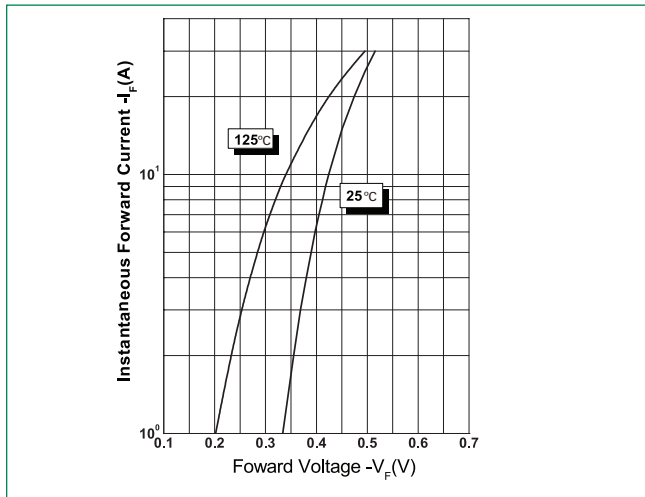


Figure 2: Typical Reverse Characteristics

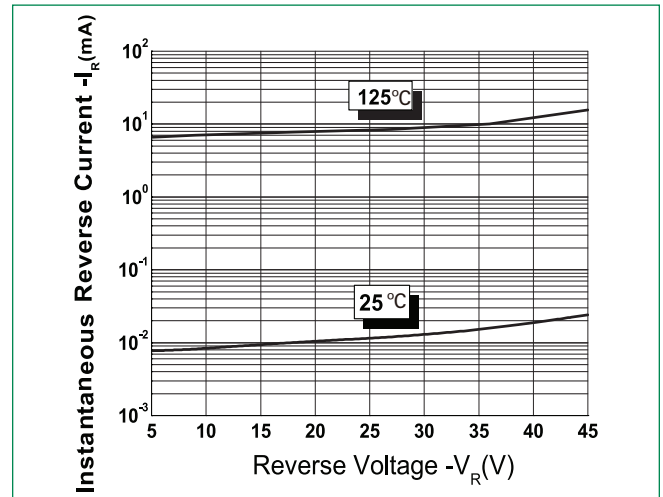
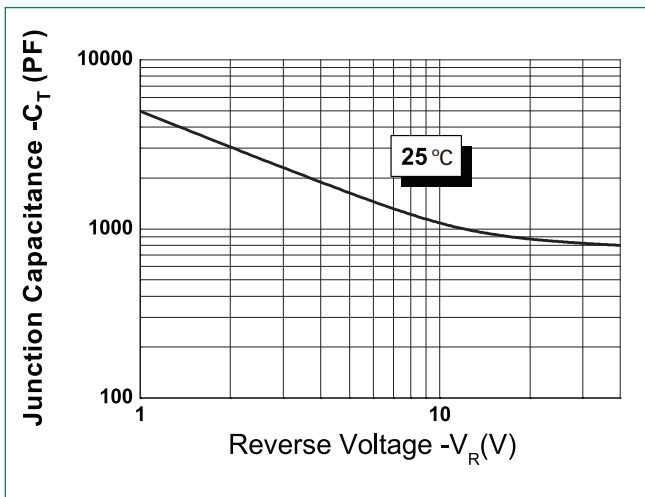
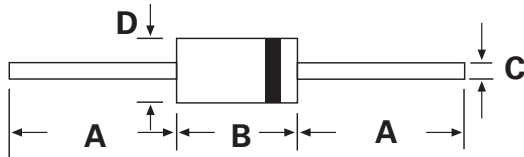


Figure 3: Typical Junction Capacitance



Dimensions- P600



| Dimensions | Inches | | Millimeters | |
|------------|--------|-------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.000 | - | 25.40 | - |
| B | 0.340 | 0.360 | 8.60 | 9.10 |
| C | 0.048 | 0.052 | 1.20 | 1.30 |
| D | 0.340 | 0.360 | 8.60 | 9.10 |

Part Numbering and Marking System

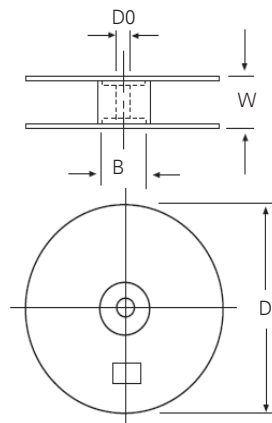
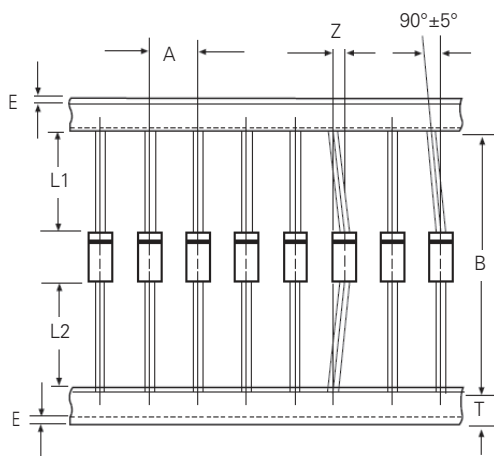


- DS = Device Type
- T = Ultralow VF
- 20 = Forward Current (20A)
- 45 = Reverse Voltage (45V)
- AX = Package Type
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|-----------|---------------|-------|
| DST2045AX | DST2045AX | 500pcs / reel | 2500 |

Carrier Tape & Reel Specification



| Symbol | Millimeters | |
|--------|-------------|------|
| | Min | Max |
| A | 9.5 | 10.5 |
| B | 50.9 | 53.9 |
| D | 330.0 typ | |
| D0 | 30.1 | 30.9 |
| E | 0.8 max | |
| L1 | 1.0 max | |
| L2 | 1.0 max | |
| T | 5.6 | 6.4 |
| W | 78.0 | 81.0 |
| Z | 1.2 max | |