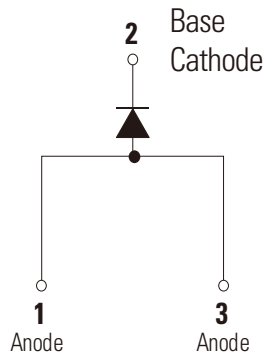


DSTD5200



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 TO-252 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} | - | 200 | V |
| Average Forward Current (per device) | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 100^\circ\text{C}$ rectangular wave form | 5 | A |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3 ms, half Sine pulse | 120 | A |

Electrical Characteristics

| Parameters | Symbol | Test Conditions | Typ | Max | Unit |
|----------------------------------|----------|---|----------|------|---------------|
| Breakdown Voltage (per leg) * | V_{BR} | @ $I_r = 1.0\text{mA}$, $T_J = 25^\circ\text{C}$ | 200(Min) | - | V |
| Forward Voltage Drop (per leg) * | V_{F1} | @2.5A, Pulse, $T_J = 25^\circ\text{C}$ | 0.72 | - | V |
| | | @5A, Pulse, $T_J = 25^\circ\text{C}$ | 0.81 | 0.90 | |
| | V_{F2} | @2.5A, Pulse, $T_J = 125^\circ\text{C}$ | 0.60 | - | |
| | | @5A, Pulse, $T_J = 125^\circ\text{C}$ | 0.67 | 0.73 | |
| Reverse Current (per leg) * | I_{R1} | @ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$ | 0.19 | 150 | μA |
| | I_{R2} | @ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$ | 0.33 | 10 | mA |

* 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 |
| Typical Thermal Resistance Junction to Case | R_{thJC} | DC operation | 2.4 | °C/W |
| Approximate Weight | wt | | 0.39 | g |
| Case Style | | DPAK (TO-252) | | |

Figure 1: Typical Forward Characteristics

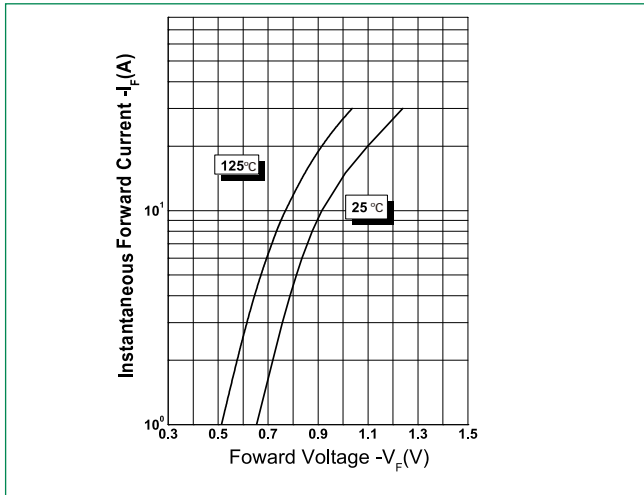


Figure 2: Typical Reverse Characteristics

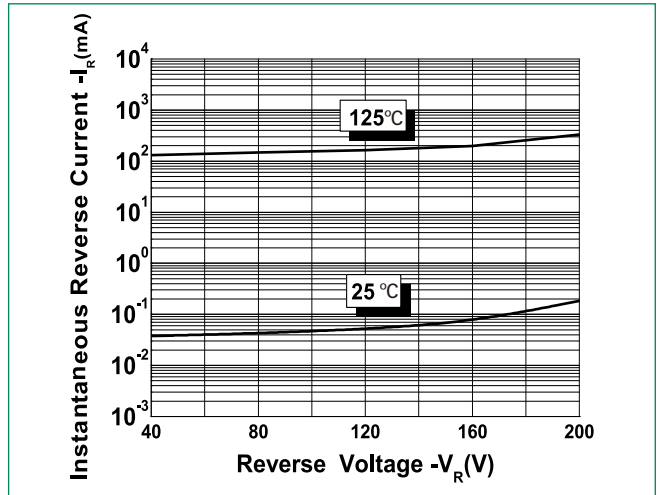
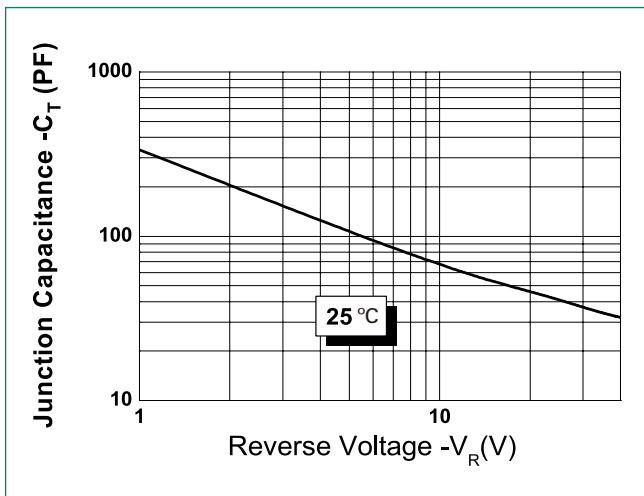
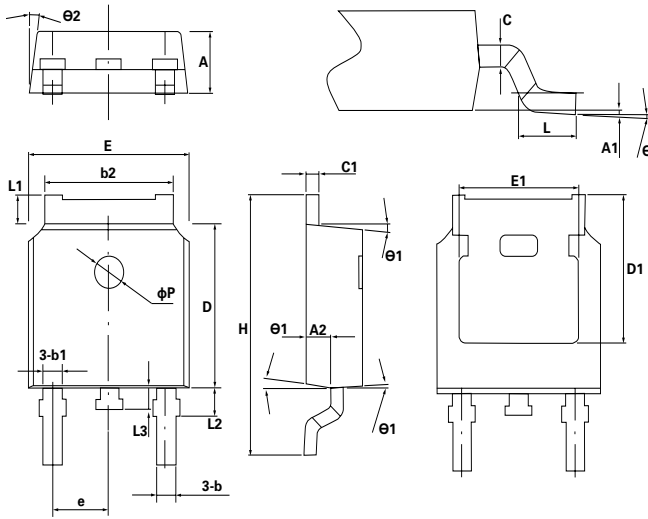


Figure 3: Typical Junction Capacitance

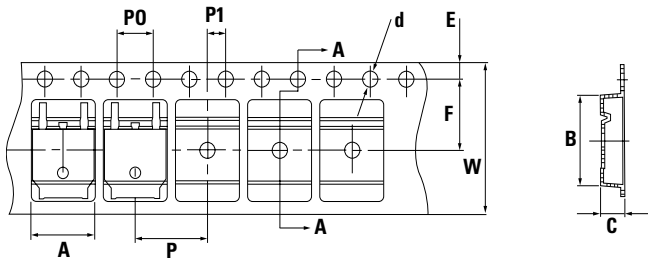


Dimensions-DPAK(TO-252)



| Symbol | Min. | Typ. | Max.. |
|-----------|----------|------|-------|
| A | 2.2 | 2.3 | 2.38 |
| A1 | 0 | - | 0.1 |
| A2 | 0.9 | 1.01 | 1.1 |
| b | 0.71 | 0.76 | 0.86 |
| b1 | | 0.76 | |
| b2 | 5.13 | 5.33 | 5.46 |
| c | 0.47 | 0.5 | 0.6 |
| c1 | 0.47 | 0.5 | 0.6 |
| D | 6 | 6.1 | 6.2 |
| D1 | - | 5.3 | - |
| E | 6.5 | 6.6 | 6.7 |
| E1 | - | 4.8 | - |
| e | 2.286BSC | | |
| H | 9.7 | 10.1 | 10.4 |
| L | 1.4 | 1.5 | 1.7 |
| L1 | 0.9 | - | 1.25 |
| L2 | | 1.05 | |
| L3 | | 0.8 | |
| øP | | 1.2 | |
| θ | 0° | - | 8° |
| θ1 | 5° | 7° | 9° |
| θ2 | 5° | 7° | 9° |

Carrier Tape & Reel Specification



| Symbol | Millimeters | |
|-----------|-------------|-------|
| | Min | Max |
| A | 6.80 | 7.00 |
| B | 10.40 | 10.60 |
| C | 2.60 | 2.80 |
| d | ø1.45 | ø1.65 |
| E | 1.65 | 1.85 |
| F | 7.40 | 7.60 |
| P0 | 3.90 | 4.10 |
| P | 7.90 | 8.10 |
| P1 | 1.90 | 2.10 |
| W | 15.5 | 16.5 |

Part Numbering and Marking System



- DST** = Device Type
- D** = Package type
- 5** = Forward Current (5A)
- 200** = Reverse Voltage (200V)
- CT** = Configuration
- LF** = Littelfuse
- YY** = Year
- WW** = Week
- L** = Lot Number

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|----------|----------------|-------|
| DSTD5200 | DSTD5200 | 2500pcs / reel | 2500 |