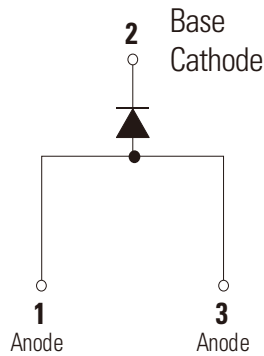


DSTD5200



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

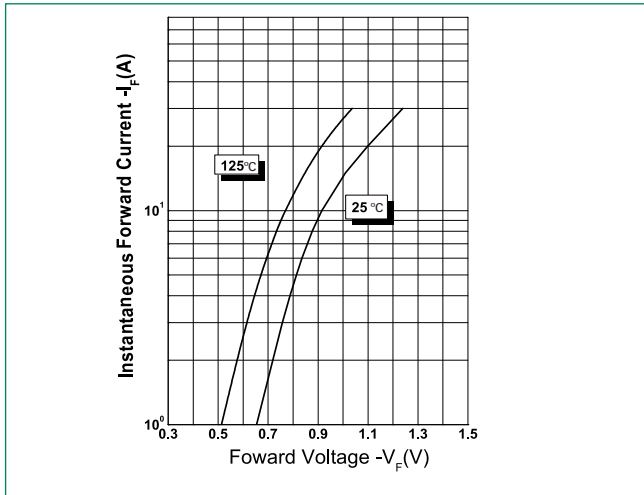


Figure 2: Typical Reverse Characteristics

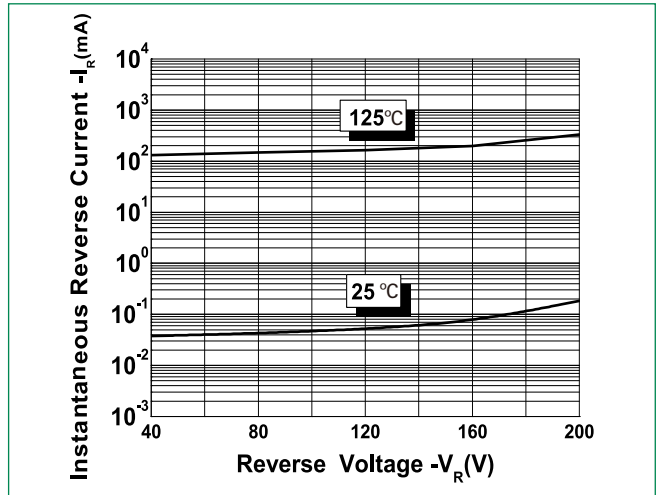


Figure 3: Typical Junction Capacitance

