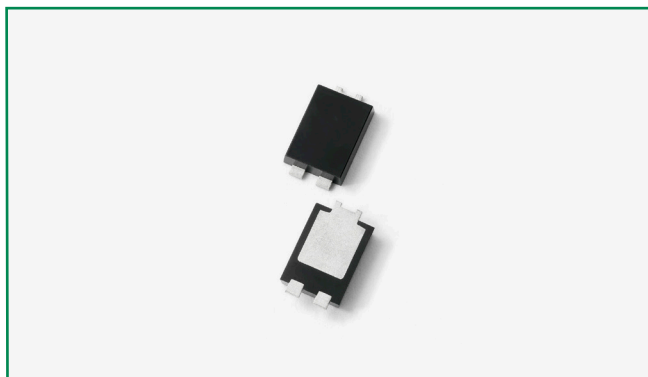
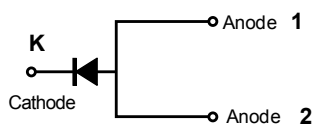


DST2050S

HF RoHS Pb e3



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
- MSL: Level 1 - unlimited
- High junction temperature capability
- Trench MOS Schottky technology
- Single die in TO-277B 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)

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} | - | 50 | V |
| Average Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_L = 125^\circ\text{C}$ rectangular wave form | 20 | A |
| Peak One Cycle Non-Repetitive Surge Current | I_{FSM} | 8.3 ms, half Sine pulse | 250 | A |

Electrical Characteristics

| Parameters | Symbol | Test Conditions | Max | Unit |
|-----------------------|----------|--|------|------|
| Forward Voltage Drop* | V_{F1} | @20A, Pulse, $T_J = 25^\circ\text{C}$ | 0.65 | V |
| | V_{F2} | @20A, Pulse, $T_J = 125^\circ\text{C}$ | 0.60 | |
| Reverse Current* | I_{R1} | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$ | 4 | mA |
| | I_{R2} | @ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$ | 180 | |

* 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 |
| Maximum Thermal Resistance Junction to Ambient | R_{thJA} | DC operation | 75 | °C/W |
| Maximum Thermal Resistance Junction to Lead | R_{thJL} | | 3.5 | °C/W |
| Approximate Weight | wt | | 0.08 | g |
| Case Style | TO-277B | | | |

Figure 1: Typical Forward Characteristics

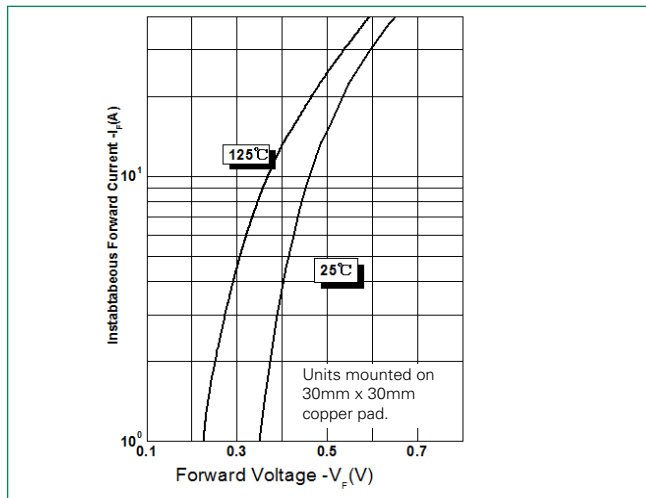


Figure 2: Typical Reverse Characteristics

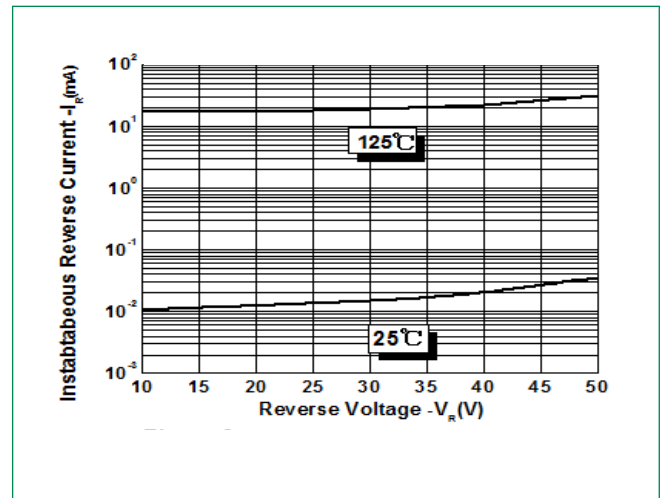
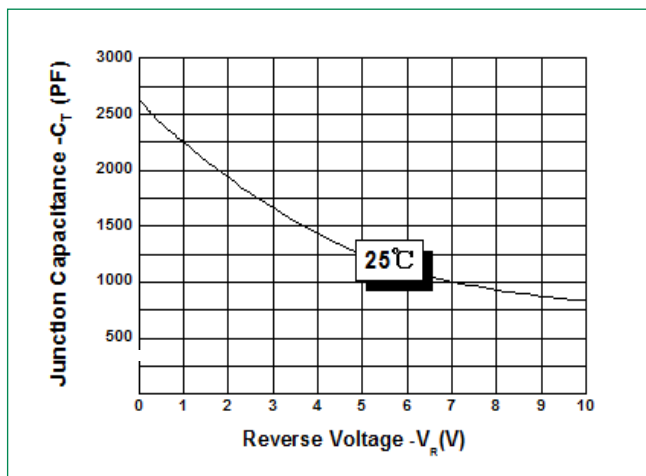
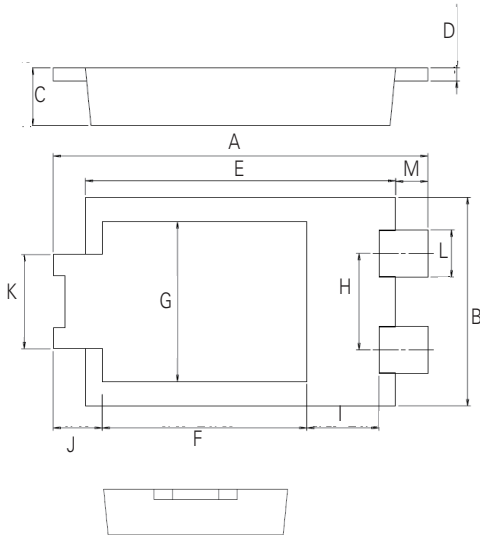


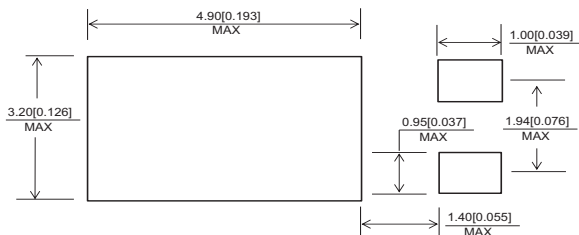
Figure 3: Typical Junction Capacitance



Dimensions-TO-277B



Mounting Pad Layout



| Symbol | Millimeters | | |
|--------|-------------|------|------|
| | Min | Typ | Max |
| A | 6.30 | 6.50 | 6.70 |
| B | 3.88 | 3.98 | 4.08 |
| C | 0.95 | 1.10 | 1.25 |
| D | 0.20 | 0.25 | 0.30 |
| E | 5.28 | 5.38 | 5.48 |
| F | 3.40 | 3.55 | 3.70 |
| G | 2.90 | 3.05 | 3.20 |
| H | 1.74 | 1.84 | 1.94 |
| I | 1.10 | 1.25 | 1.40 |
| J | - | 0.85 | - |
| K | 1.70 | 1.80 | 1.90 |
| L | 0.85 | 0.90 | 0.95 |
| M | - | 0.56 | - |

Part Numbering and Marking System

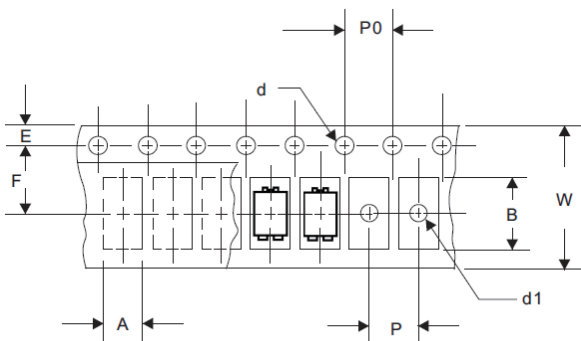


- DST = Device Type
- 20 = Forward Current (20A)
- 50 = Reverse Voltage (50V)
- S = Package Type
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|----------|----------------|-------|
| DST2050S | DST2050S | 5000pcs / Reel | 5000 |

Carrier Tape & Reel Specification



| Symbol | Millimeters | |
|--------|-------------|-------|
| | Min | Max |
| A | 4.28 | 4.48 |
| B | 6.80 | 7.00 |
| d | 1.40 | 1.60 |
| d1 | - | 1.50 |
| E | 1.65 | 1.85 |
| F | 5.40 | 5.60 |
| P | 7.90 | 8.10 |
| P0 | 3.90 | 4.10 |
| W | 11.70 | 12.30 |

Mouser Electronics

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