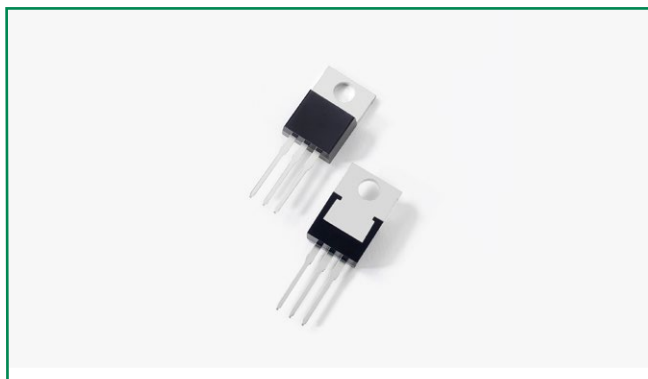
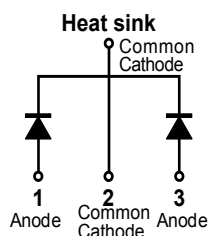


### DST20100C



#### Pin out



#### Description

The 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 low  $V_F$  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
- Common cathode configuration in TO-220AB package
- Lead-free and RoHS compliant

#### 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                                  | $V_{RWM}$   | -   | 100                               | V    |
| Average Forward Current                               | $I_{F(AV)}$ | 50% duty cycle @ $T_c = 120^\circ\text{C}$<br>rectangular wave form | 10 (per leg)<br>20 (total device) | A    |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse   | 150                               | A    |

#### Electrical Characteristics

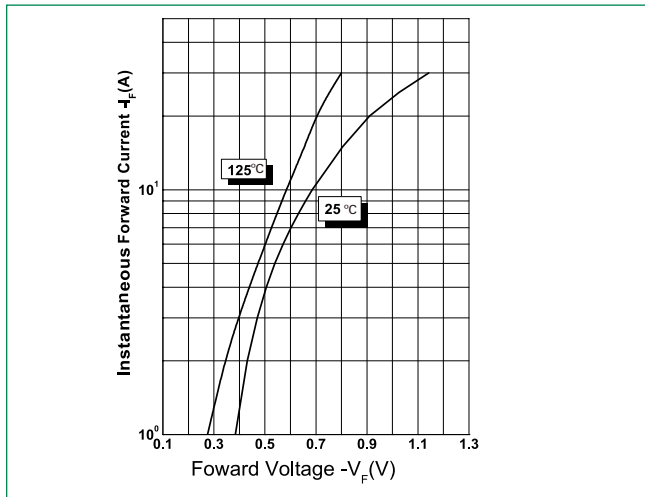
| Parameters                       | Symbol   | Test Conditions  | Typ  | Max  | Unit          |
|----------------------------------|----------|--|------|------|---------------|
| Forward Voltage Drop (per leg) * | $V_{F1}$ | @5A, Pulse, $T_J = 25^\circ\text{C}$                               | 0.54 | 0.55 | V             |
|                                  |          | @10A, Pulse, $T_J = 25^\circ\text{C}$                              | 0.69 | 0.75 |               |
|                                  | $V_{F2}$ | @5A, Pulse, $T_J = 125^\circ\text{C}$                              | 0.48 | 0.53 |               |
|                                  |          | @10A, Pulse, $T_J = 125^\circ\text{C}$                             | 0.59 | 0.70 |               |
| Reverse Current (per leg) *      | $I_{R1}$ | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$                | 18   | 300  | $\mu\text{A}$ |
|                                  | $I_{R2}$ | @ $V_R = \text{rated } V_R, T_J = 100^\circ\text{C}$               | -    | 12   | mA            |
|                                  | $I_{R3}$ | @ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$               | 7.8  | 36   |               |
| Junction Capacitance (per leg)   | $C_T$    | @ $V_R = 5\text{V}, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}$ | 462  | -    | pF            |

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

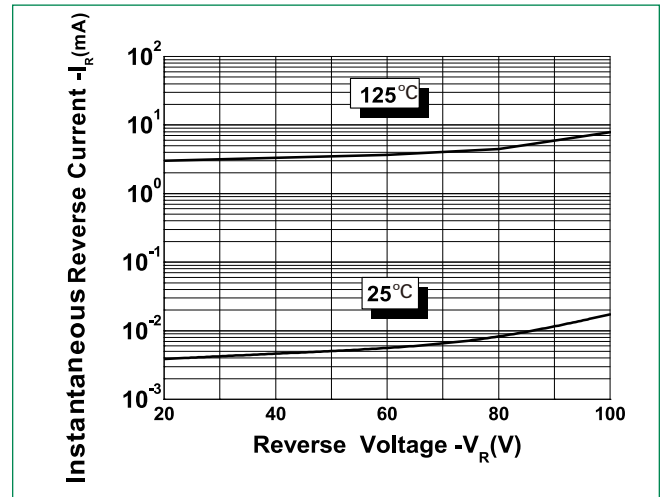
**Thermal-Mechanical Specifications**

| 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 Case (per leg) | $R_{\theta JC}$ | DC operation    | 2.8         | °C/W |
| Approximate Weight                            | wt              |                 | 2           | g    |
| Case Style                                    |                 | TO-220AB        |             |      |

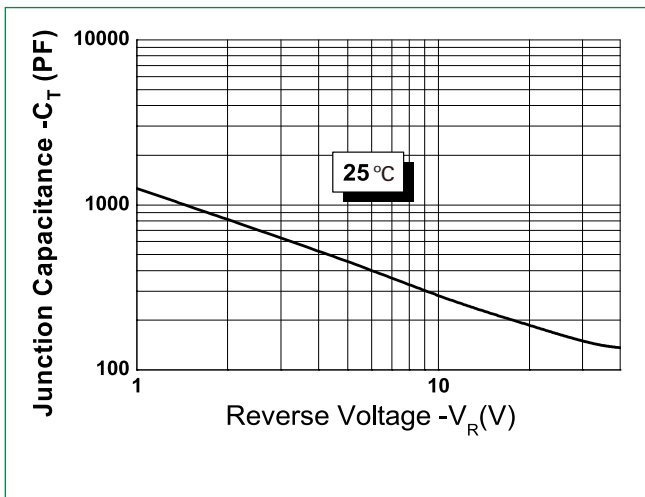
**Figure 1: Typical Forward Characteristics**



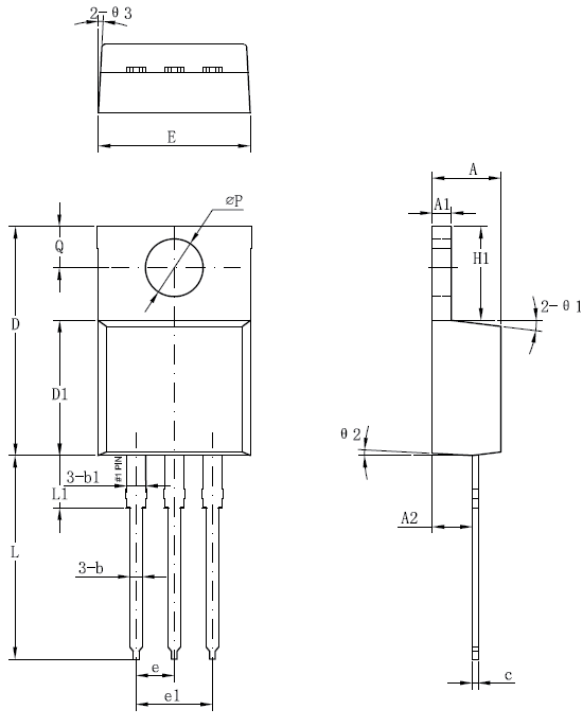
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**



**Dimensions- TO-220AB**



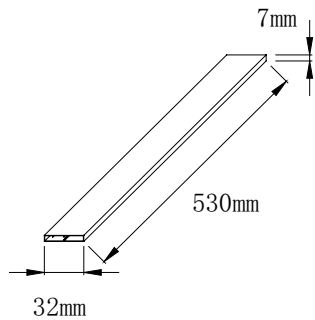
| Symbol    | Millimeters |       |
|-----------|-------------|-------|
|           | Min         | Max   |
| <b>A</b>  | 3.56        | 4.83  |
| <b>A1</b> | 0.51        | 1.40  |
| <b>A2</b> | 2.03        | 2.92  |
| <b>b</b>  | 0.38        | 1.02  |
| <b>b1</b> | 1.14        | 1.78  |
| <b>c</b>  | 0.31*       | 0.61  |
| <b>D</b>  | 14.22       | 16.51 |
| <b>D1</b> | 8.38        | 9.15* |
| <b>E</b>  | 9.65        | 10.67 |
| <b>e</b>  | 2.54        | -     |
| <b>e1</b> | 4.98*       | -     |
| <b>H1</b> | 5.84        | 6.86  |
| <b>L</b>  | 12.70       | 14.73 |
| <b>L1</b> | -           | 6.35  |
| <b>øP</b> | 3.53        | 4.09  |
| <b>Q</b>  | 2.54        | 3.43  |

Footnote \*: The spec. does not comply with JEDEC spec.

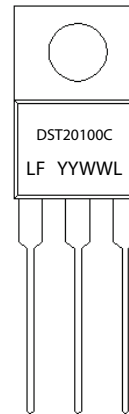
**Packing Options**

| Part Number | Marking   | Packing Mode | M.O.Q |
|-------------|-----------|--------------|-------|
| DST20100C   | DST20100C | 50pcs / Tube | 1000  |

**Tube Specification**



**Part Numbering and Marking System**



- DST = Device Type
- 20 = Forward Current (20A)
- 100 = Reverse Voltage (100V)
- C = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number