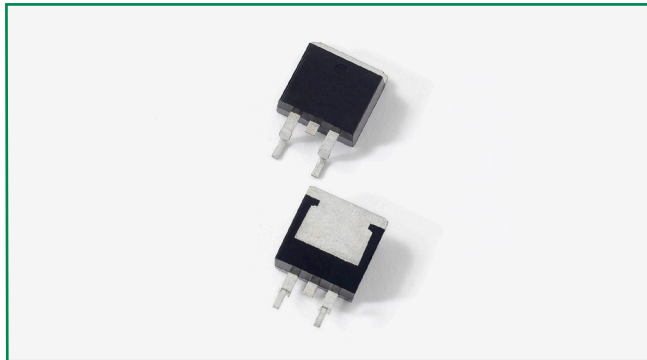
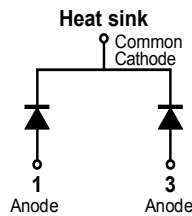


MBRB10100CT



Pin out



Description

Littelfuse MBR series Schottky Barrier Rectifier is designed to meet the general requirements of commercial 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

- High junction temperature capability
- Guard ring for enhanced ruggedness and long term reliability
- Low forward voltage drop
- High frequency operation
- Common cathode configuration in surface mount TO-263 package

Applications

- Switching mode power supply
- Free-wheeling diodes
- DC/DC converters
- Polarity protection diodes

Maximum Ratings

| Parameters | Symbol | Test Conditions | Max | Unit |
|-------------------------------------------------------|-------------|--------------------------------------------------------------------|----------------------------------|------|
| Peak Inverse Voltage | V_{RWM} | - | 100 | V |
| Average Forward | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 105^\circ\text{C}$, rectangular wave form | 5 (per leg) 10 (total device) | A |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3ms, half Sine pulse | 120 | A |

Electrical Characteristics

| Parameters | Symbol | Test Conditions | Max | Unit |
|-------------------------------------------|----------|--------------------------------------------------------------------|--------|------------------|
| Forward Voltage Drop (per leg) * | V_{F1} | @ 5A, Pulse, $T_J = 25^\circ\text{C}$ | 0.85 | V |
| | V_{F2} | @ 5A, Pulse, $T_J = 125^\circ\text{C}$ | 0.75 | |
| Reverse Current at DC condition (per leg) | I_{R1} | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$ | 1.0 | mA |
| Reverse Current (per leg) * | I_{R2} | @ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$ | 15 | |
| Junction Capacitance (per leg) | C_T | @ $V_R = 5\text{V}, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}$ | 300 | pF |
| Typical Series Inductance (per leg) | L_S | Measured lead to lead 5 mm from package body | 8.0 | nH |
| Voltage Rate of Change | dv/dt | | 10,000 | V/ μs |

* 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 Case (per leg) | R_{thJC} | DC operation | 6.0 | °C/W |
| Approximate Weight | wt | | 1.85 | g |
| Case Style | D ² PAK (TO-263) | | | |

Figure 1: Typical Forward Characteristics

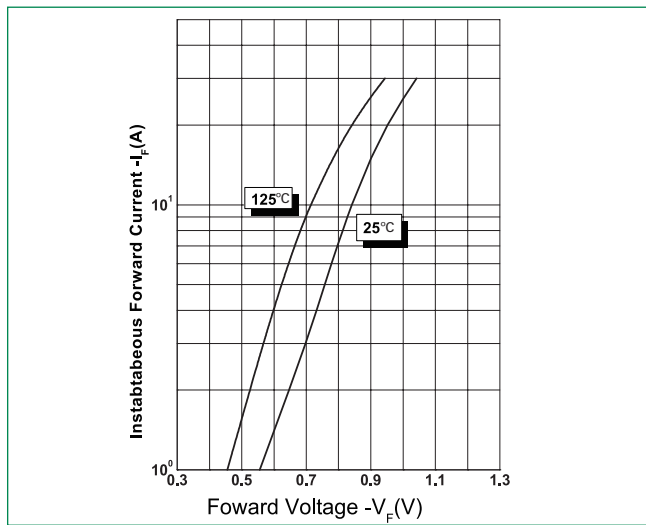


Figure 2: Typical Reverse Characteristics

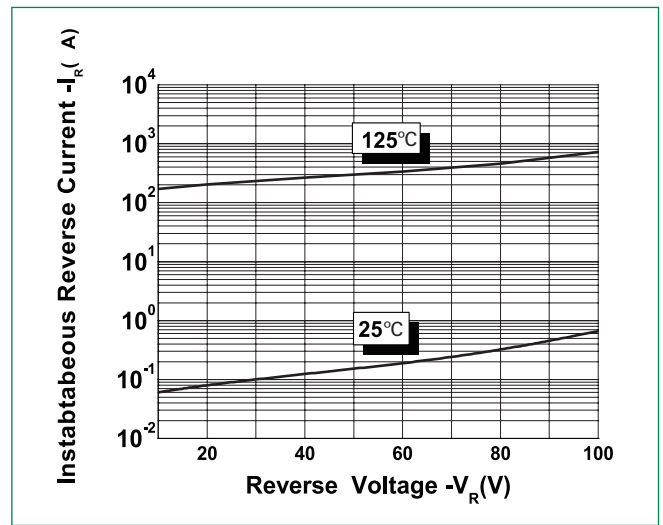
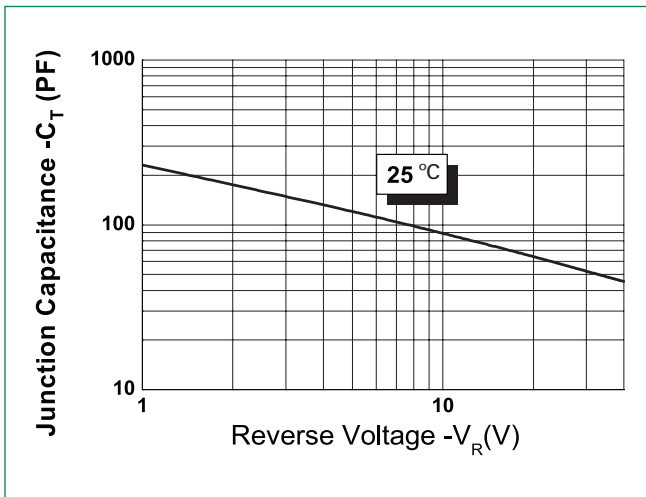
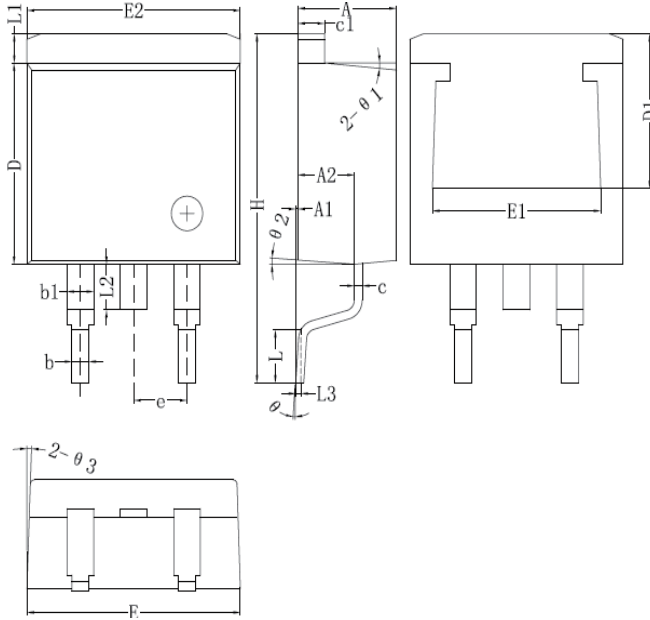


Figure 3: Typical Junction Capacitance



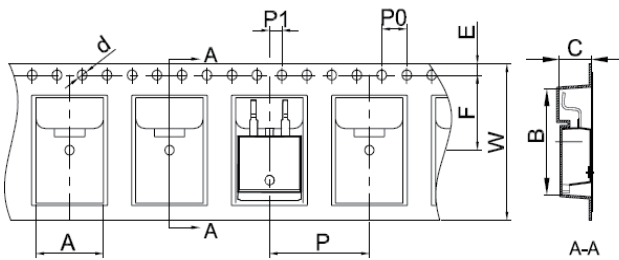
Dimensions-D²PAK(TO-263)



| | Millimeters | |
|-----------|-------------|-------|
| | Min | Max |
| A | 4.06 | 4.83 |
| A1 | 0.00 | 0.25 |
| b | 0.51 | 0.99 |
| b1 | 1.14 | 1.78 |
| c | 0.31* | 0.74 |
| c1 | 1.14 | 1.65 |
| D | 8.38 | 9.65 |
| D1 | 6.40* | - |
| E | 9.65 | 10.67 |
| E1 | 6.22 | - |
| E2 | 9.65 | 10.67 |
| e | 2.54 BSC | |
| H | 14.60* | 15.88 |
| L | 1.78 | 2.79 |
| L1 | - | 1.68 |
| L2 | - | 1.78 |
| L3 | 0.254 BSC | |

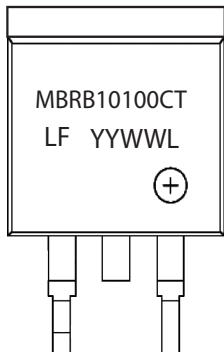
Footnote *: The spec. does not comply with JEDEC spec.

Carrier Tape & Reel Specification



| Symbol | Millimeters | |
|-----------|-------------|-------|
| | Min | Max |
| A | 10.70 | 10.90 |
| B | 16.03 | 16.23 |
| C | 5.11 | 5.31 |
| d | ø1.45 | ø1.65 |
| E | 1.65 | 1.85 |
| F | 11.40 | 11.60 |
| P0 | 3.90 | 4.10 |
| P | 15.90 | 16.10 |
| P1 | 1.90 | 2.10 |
| W | 23.90 | 24.30 |

Part Numbering and Marking System



- MBR = Device Type
- B = Package type
- 10 = Forward Current (10A)
- 100 = Reverse Voltage (100V)
- CT = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

Packing Options

| Part Number | Marking | Packing Mode | M.O.Q |
|-------------|-------------|---------------|-------|
| MBRB10100CT | MBRB10100CT | 800pcs / reel | 800 |

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