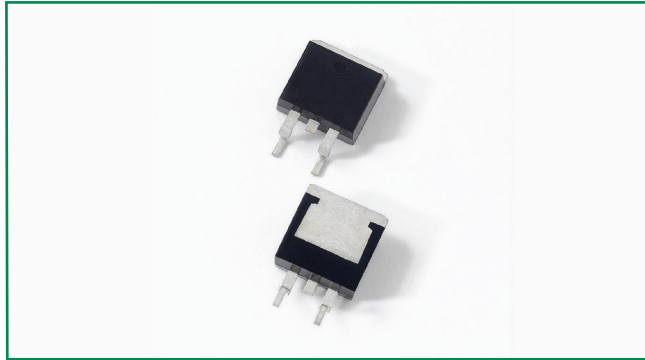
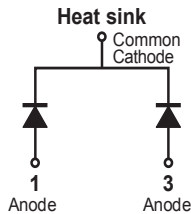


## MBRB20100CT



### 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
- Low forward voltage drop
- Guard ring for enhanced ruggedness and long term reliability
- High frequency operation
- Common cathode configuration in surface mount TO-263 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                                  | $V_{RWM}$   | -                                                                  | 100                               | V    |
| Average Forward Current                               | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 105^\circ\text{C}$ , rectangular wave form | 10 (per leg)<br>20 (total device) | A    |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$   | 8.3ms, half Sine pulse                                             | 150                               | A    |

### Electrical Characteristics

| Parameters                                | Symbol   | Test Conditions                                                          | Max    | Unit             |
|-------------------------------------------|----------|--------------------------------------------------------------------------|--------|------------------|
| Forward Voltage Drop (per leg) *          | $V_{F1}$ | @ 5A, Pulse, $T_J = 25^\circ\text{C}$                                    | 0.80   | V                |
|                                           |          | @ 10A, Pulse, $T_J = 125^\circ\text{C}$                                  | 0.90   |                  |
|                                           | $V_{F2}$ | @ 5A, Pulse, $T_J = 25^\circ\text{C}$                                    | 0.70   |                  |
|                                           |          | @ 10A, Pulse, $T_J = 125^\circ\text{C}$                                  | 0.80   |                  |
| 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) *               | $I_{R2}$ | @ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$                  | 6.0    |                  |
| Junction Capacitance (per leg)            | $C_T$    | @ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ , $f_{SIG} = 1\text{MHz}$ | 250    | pF               |
| 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/ $\mu\text{s}$ |

\* 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   |
| Maximum Thermal Resistance<br>Junction to Case (per leg) | $R_{thJC}$                  | DC operation    | 2.0         | °C/W |
| Approximate Weight                                       | wt                          |                 | 1.41        | g    |
| Case Style                                               | D <sup>2</sup> PAK (TO-263) |                 |             |      |

Figure 1: Typical Forward Characteristics

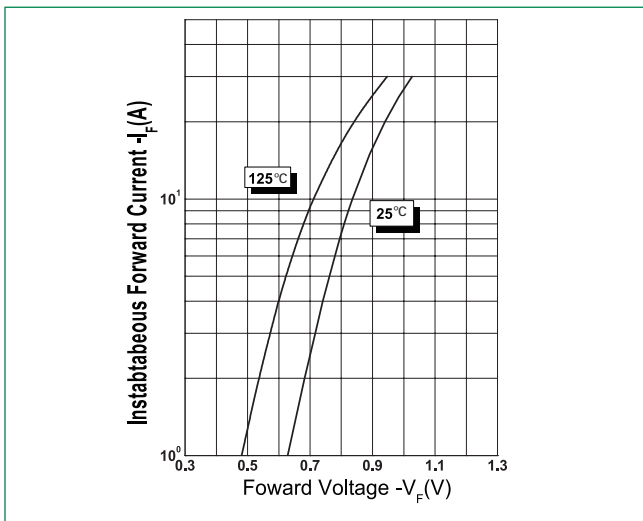


Figure 2: Typical Reverse Characteristics

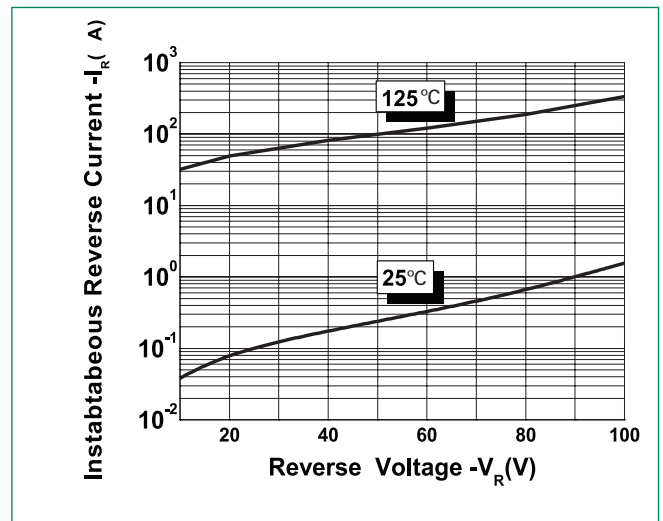
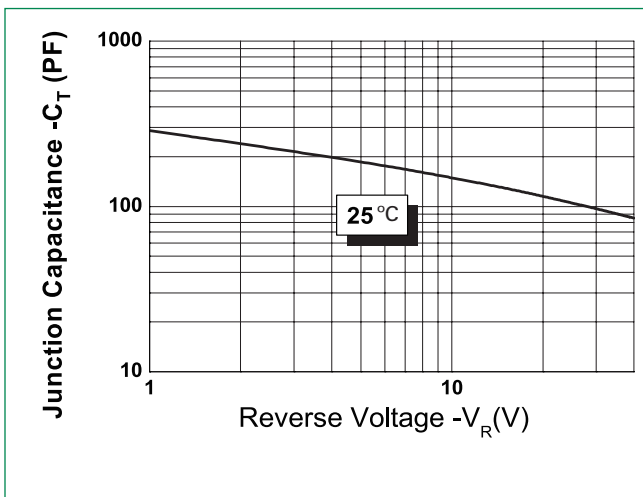


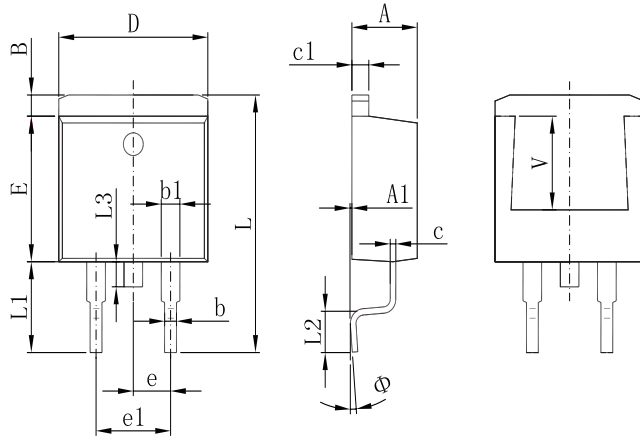
Figure 3: Typical Junction Capacitance



# Schottky Barrier Rectifier

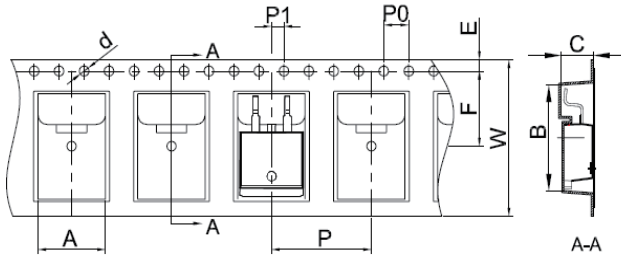
## MBRB20100CT 2x 10A, 100V, TO-263 Common Cathode

### Dimensions-D<sup>2</sup>PAK(TO-263)



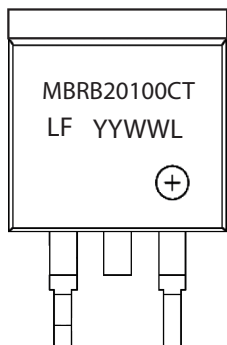
| Symbol | Millimeters |       |
|--------|-------------|-------|
|        | Min         | Max   |
| A      | 4.47        | 4.67  |
| A1     | 0           | 0.15  |
| B      | 1.12        | 1.42  |
| b      | 0.71        | 0.91  |
| b1     | 1.17        | 1.37  |
| c      | 0.31        | 0.53  |
| c1     | 1.17        | 1.37  |
| D      | 10.01       | 10.31 |
| E      | 8.50        | 8.90  |
| e      | 2.54 TYP    |       |
| e1     | 4.98        | 5.18  |
| L      | 14.94       | 15.5  |
| L1     | 4.95        | 5.45  |
| L2     | 2.34        | 2.74  |
| L3     | 1.30        | 1.7   |
| Ø      | 0°          | 8°    |
| V      | 5.60 REF    |       |

### 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  
 20 = Forward Current (20A)  
 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 |
|-------------|-------------|---------------|-------|
| MBRB20100CT | MBRB20100CT | 800pcs / reel | 800   |