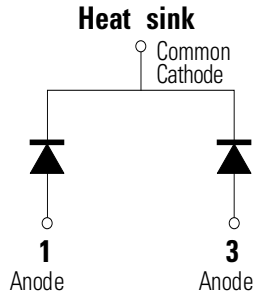


**MBRD10200CT**



**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
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Common cathode configuration in compact surface mount TO-252 package
- Low forward voltage drop

**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                               | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 105^\circ\text{C}$ , rectangular wave form | 5 (per leg)<br>10 (total device) | A    |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$   | 8.3ms, half Sine pulse   | 128                              | A    |

**Electrical Characteristics**

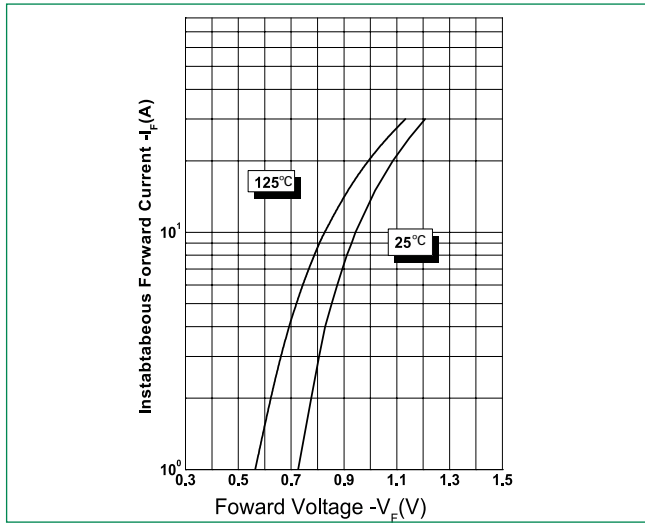
| Parameters                          | Symbol   | Test Conditions   | Max    | Unit             |
|-------------------------------------|----------|---|--------|------------------|
| Forward Voltage Drop (per leg) *    | $V_{F1}$ | @ 5A, Pulse, $T_J = 25^\circ\text{C}$                             | 0.9    | V                |
|                                     | $V_{F2}$ | @ 5A, Pulse, $T_J = 125^\circ\text{C}$                            | 0.74   |                  |
| Reverse Current (per leg) *         | $I_{R1}$ | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$               | 1.0    | mA               |
|                                     | $I_{R2}$ | @ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$              | 25     |                  |
| Junction Capacitance (per leg)      | $C_T$    | @ $V_R = 5\text{V}, T_C = 25^\circ\text{C}, f_{SI} = 1\text{MHz}$ | 150    | 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/ $\mu\text{s}$ |

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

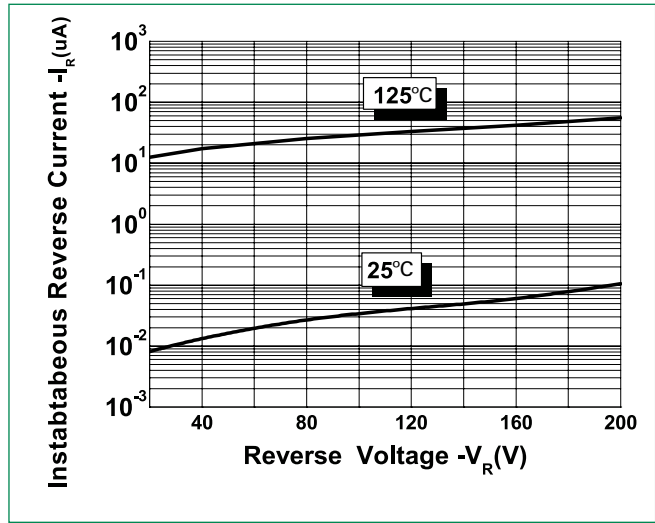
**Thermal-Mechanical Specifications**

| Parameters  | Symbol       | Test Conditions                      | Max         | Unit |
|---|--------------|--------------------------------------|-------------|------|
| Max. Junction Temperature                                 | $T_J$        |                                      | -55 to +150 | °C   |
| Max. Storage Temperature                                  | $T_{stg}$    |                                      | -55 to +150 | °C   |
| Maximum Thermal Resistance Junction to Case (per leg)     | $R_{thJC}$   | DC operation                         | 3.5         | °C/W |
| Maximum Thermal Resistance Junction to Case (per package) |              |                                      | 2.0         |      |
| Maximum Thermal Resistance, Case to Heat Sink             | $R_{thCS}$   | Mounting surface, smooth and greased | 1.0         | °C/W |
| Approximate Weight  | wt           |                                      | 0.39        | g    |
| Case Style  | DPAK(TO-252) |                                      |             |      |

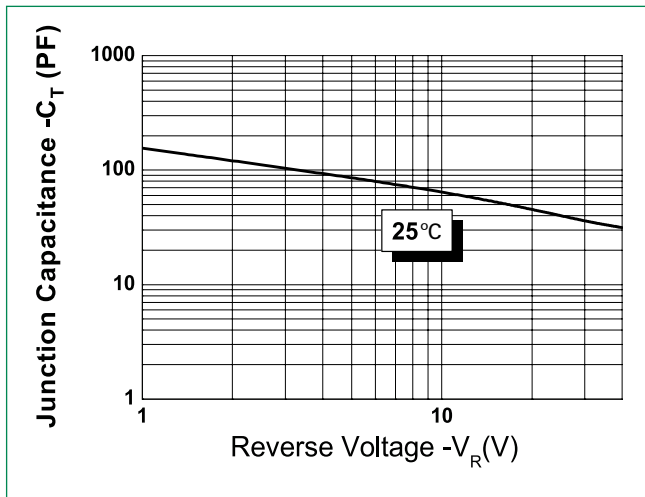
**Figure 1: Typical Forward Characteristics**



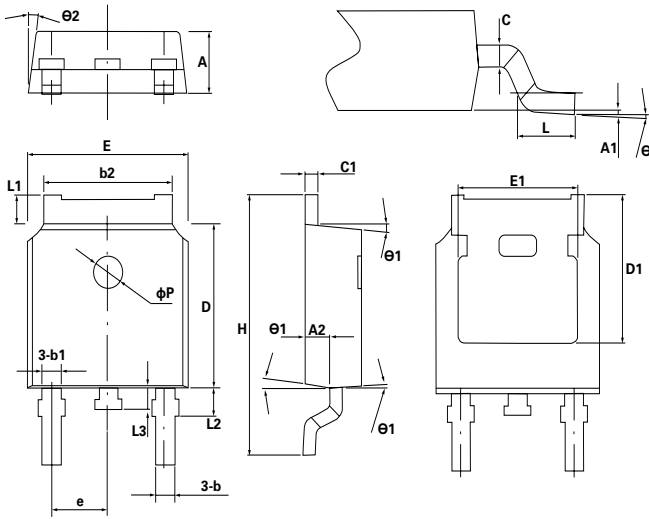
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**

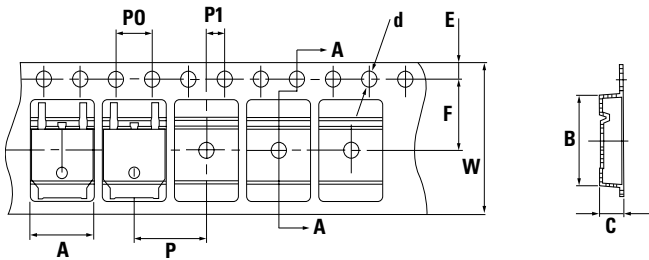


### Dimensions-DPAK(TO-252)



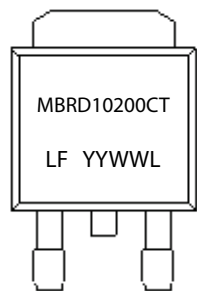
| Symbol | Min.     | Typ. | Max.. |
|--------|----------|------|-------|
| A      | 2.2      | 2.3  | 2.38  |
| A1     | 0        | -    | 0.1   |
| A2     | 0.9      | 1.01 | 1.1   |
| b      | 0.71     | 0.76 | 0.86  |
| b1     |          | 0.76 |       |
| b2     | 5.13     | 5.33 | 5.46  |
| c      | 0.47     | 0.5  | 0.6   |
| c1     | 0.47     | 0.5  | 0.6   |
| D      | 6        | 6.1  | 6.2   |
| D1     | -        | 5.3  | -     |
| E      | 6.5      | 6.6  | 6.7   |
| E1     | -        | 4.8  | -     |
| e      | 2.286BSC |      |       |
| H      | 9.7      | 10.1 | 10.4  |
| L      | 1.4      | 1.5  | 1.7   |
| L1     | 0.9      | -    | 1.25  |
| L2     |          | 1.05 |       |
| L3     |          | 0.8  |       |
| øP     |          | 1.2  |       |
| θ      | 0°       | -    | 8°    |
| θ1     | 5°       | 7°   | 9°    |
| θ2     | 5°       | 7°   | 9°    |

### Carrier Tape & Reel Specification



| Symbol | Millimeters |       |
|--------|-------------|-------|
|        | Min         | Max   |
| A      | 6.80        | 7.00  |
| B      | 10.40       | 10.60 |
| C      | 2.60        | 2.80  |
| d      | ø1.45       | ø1.65 |
| E      | 1.65        | 1.85  |
| F      | 7.40        | 7.60  |
| P0     | 3.90        | 4.10  |
| P      | 7.90        | 8.10  |
| P1     | 1.90        | 2.10  |
| W      | 15.50       | 16.50 |

### Part Numbering and Marking System



- MBR = Device Type
- D = Package type
- 10 = Forward Current (10A)
- 200 = Reverse Voltage (200V)
- CT = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

### Packing Options

| Part Number | Marking     | Packing Mode   | M.O.Q |
|-------------|-------------|----------------|-------|
| MBRD10200CT | MBRD10200CT | 2500pcs / reel | 2500  |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Littelfuse:](#)

[MBRD10200CT](#)