

MBRD10200CT

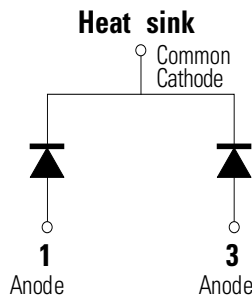


Description

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.

Pin out



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
- 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} | - | 200 | V |
| Average Forward Current | $I_{F(AV)}$ | 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 | 128 | A |

Electrical Characteristics

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

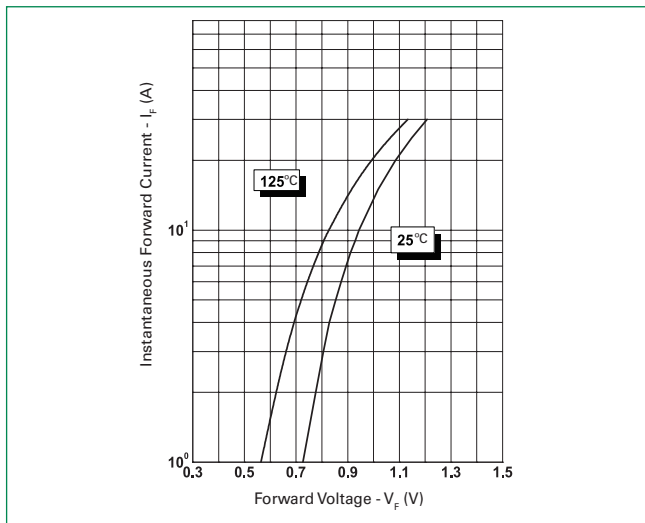


Figure 2: Typical Reverse Characteristics

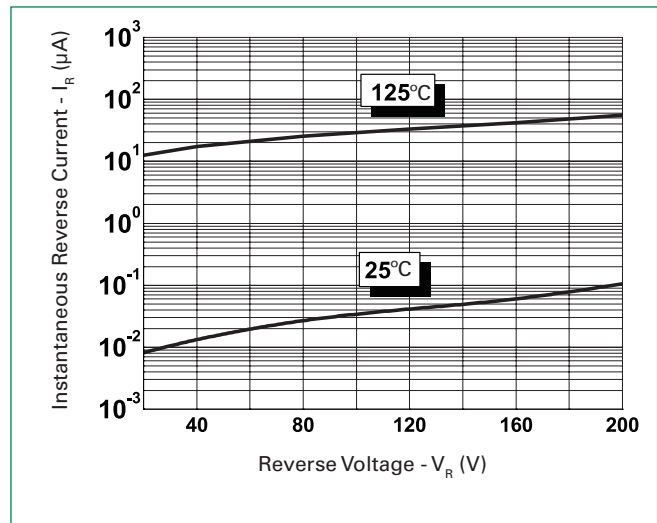


Figure 3: Typical Junction Capacitance

