

MBRD10200CT

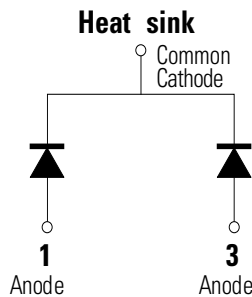


Description

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

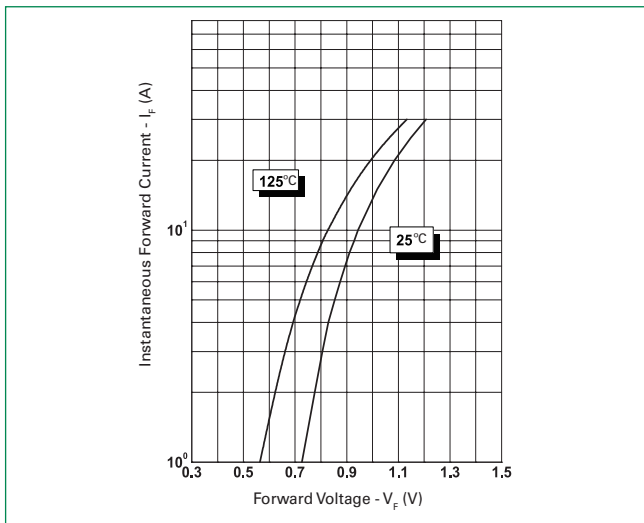


Figure 2: Typical Reverse Characteristics

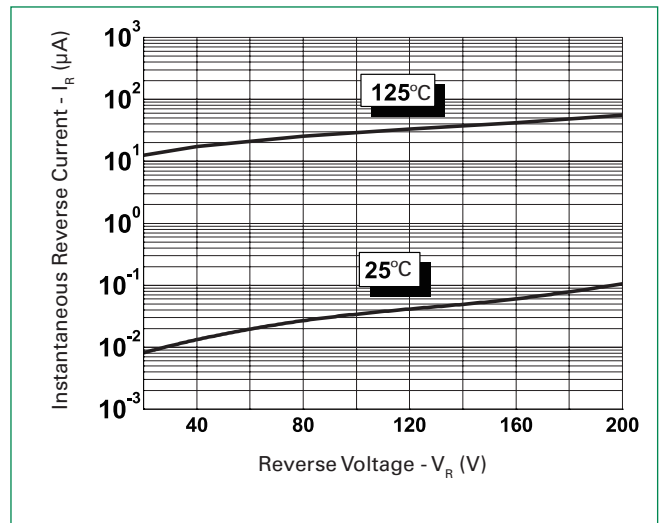


Figure 3: Typical Junction Capacitance

