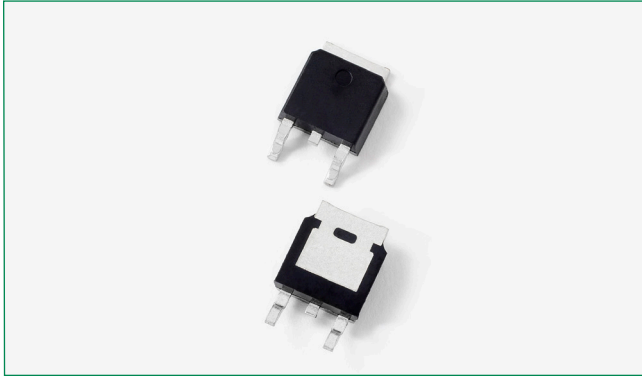


MBRD10200CT

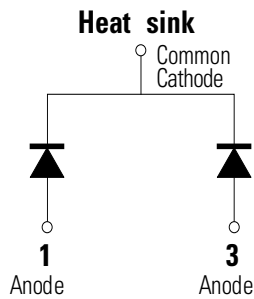


Description

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

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}	-	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	@ $V_R = 5V$, $T_C = 25^\circ\text{C}$, $f_{SIG} = 1 \text{ MHz}$	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

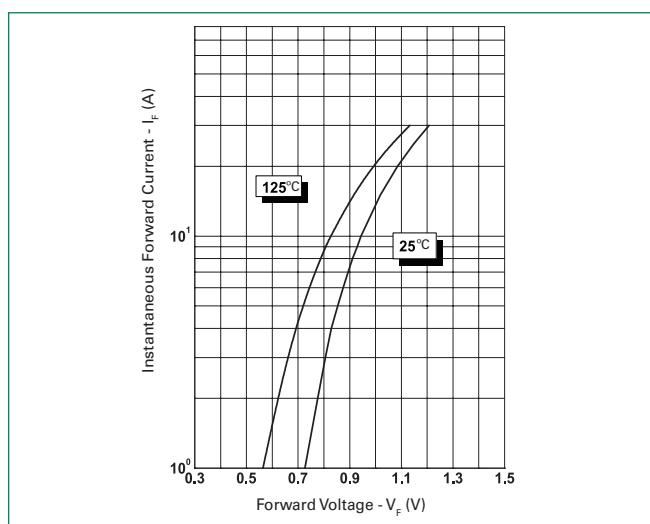


Figure 2: Typical Reverse Characteristics

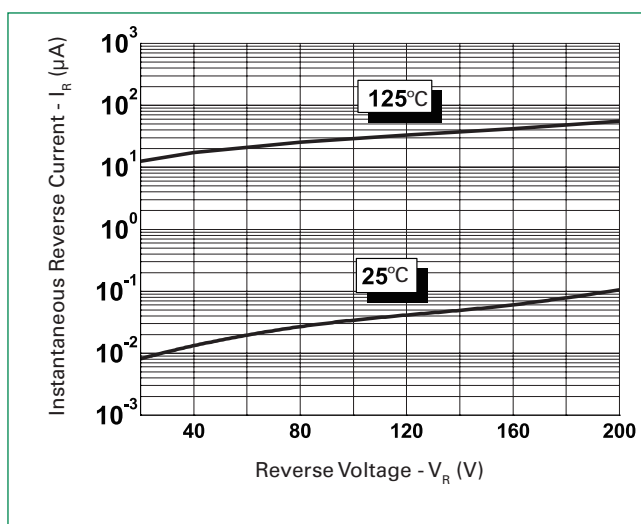
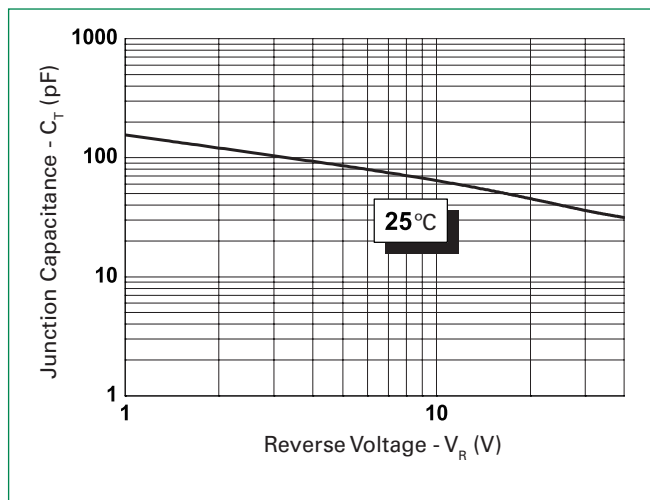


Figure 3: Typical Junction Capacitance



Technical drawings of a mechanical component, showing five views: front, side, top, and two cross-sections. Dimensions are labeled with letters and numbers.

- Front View (Top Left):** Shows a rectangular component with a central slot. Dimensions include $\theta 2$ (top left corner), A (height), and b_2 (width of the central slot).
- Side View (Top Right):** Shows the profile of the component. Dimensions include C (top edge), L (length of the base), A_1 (height of the base), and θ (bottom edge).
- Top View (Bottom Left):** Shows the top of the component. Dimensions include E (width), b_2 (width of the central slot), D (height), ϕP (diameter of the central hole), $3-b_1$ (width of the base), L_3 (length of the base), L_2 (length of the base), e (width of the base), and $3-b$ (width of the base).
- Side View (Bottom Left):** Shows the profile of the component. Dimensions include C_1 (top edge), $\theta 1$ (top edge), H (height), $\theta 1$ (bottom edge), A_2 (width of the base), and $\theta 1$ (bottom edge).
- Top View (Bottom Right):** Shows the top of the component. Dimensions include E_1 (width), D_1 (height), and $3-b$ (width of the base).

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°

Technical drawing of a multi-hole plate. The main view shows a series of holes with dimensions P_0 , P_1 , A , P , E , F , and W . A detail view on the right shows a cross-section of the plate with dimensions B and C . A label d points to a specific hole.

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

MBRD10200CT
LF YYWWL

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

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