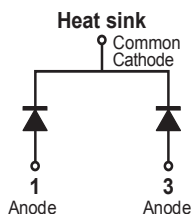


### MBRD10200CT



#### 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
- 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

#### 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

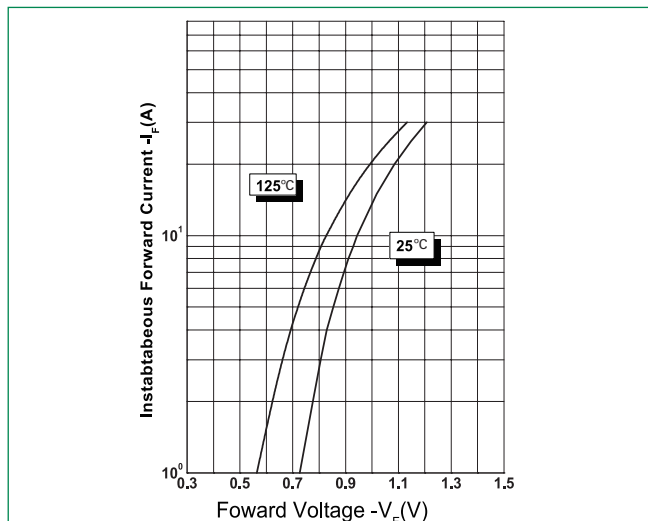
Parameters	Symbol	Test Conditions	Max	Unit
Forward Voltage Drop (per leg) *	$V_{F1}$	@ 5A, Pulse, $T_J = 25^\circ\text{C}$	0.9	V
	$V_{F2}$	@ 5A, Pulse, $T_J = 125^\circ\text{C}$	0.74	
Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	1.0	mA
	$I_{R2}$	@ $V_R = \text{rated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

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

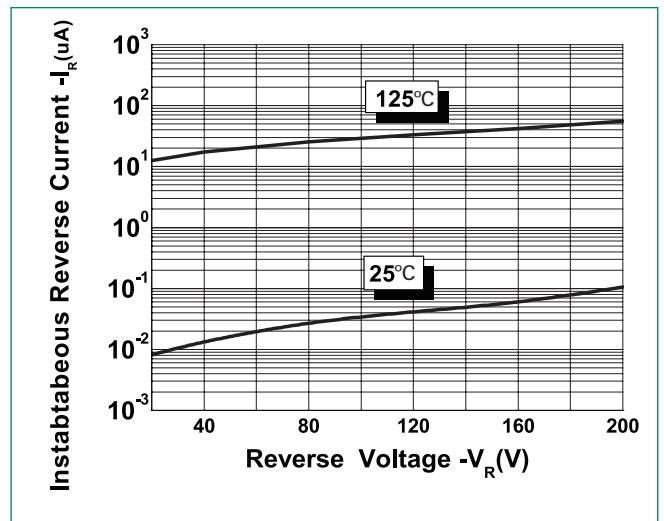
**Thermal-Mechanical Specifications**

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)			

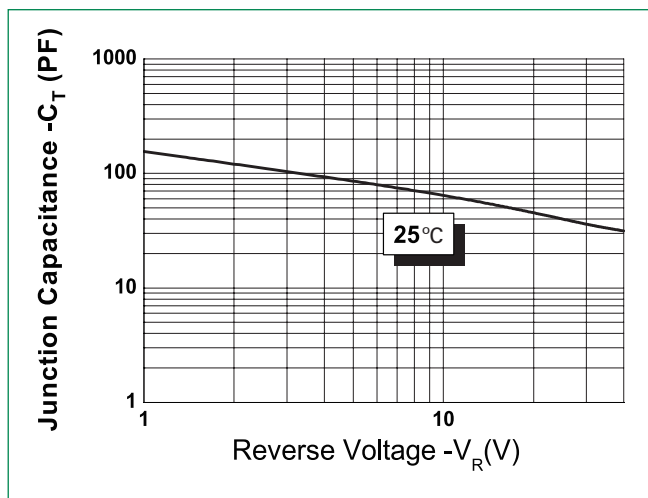
**Figure 1: Typical Forward Characteristics**



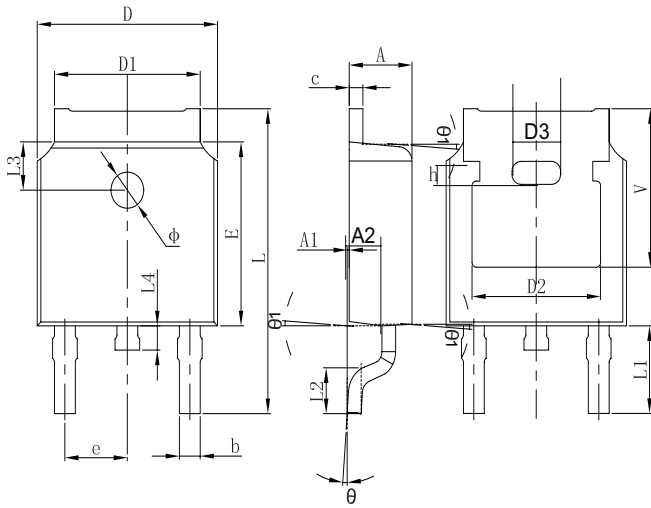
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**

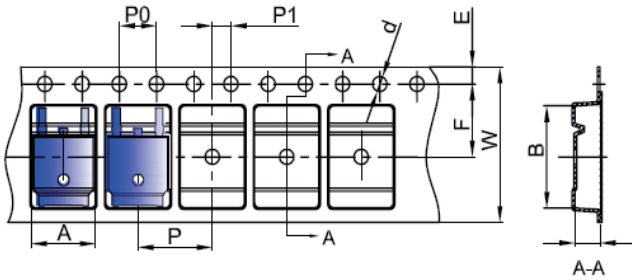


**Dimensions-DPAK(TO-252)**



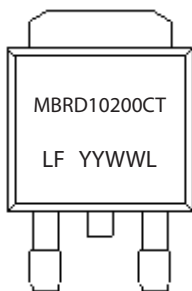
Symbol	Millimeters	
	Min	Max
A	2.20	2.38
A1	0	0.10
b	0.71	0.81
c	0.46	0.56
D	6.50	6.70
D1	5.13	5.46
D2	4.83 REF	
E	6.00	6.20
e	2.186	2.386
L	9.80	10.40
L1	2.90 REF	
L2	1.40	1.70
L3	1.60 REF	
L4	0.60	1.00
∅	1.10	1.30
θ	0°	8°
A2	0.91	1.11
V	5.35 REF	
D3	1.778 REF	
h	0.762 REF	
θ1	7°	

**Carrier Tape & Reel Specification**



Symbol	Millimeters	
	Min	Max
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	∅1.45	∅1.65
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	15.90	16.30

**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