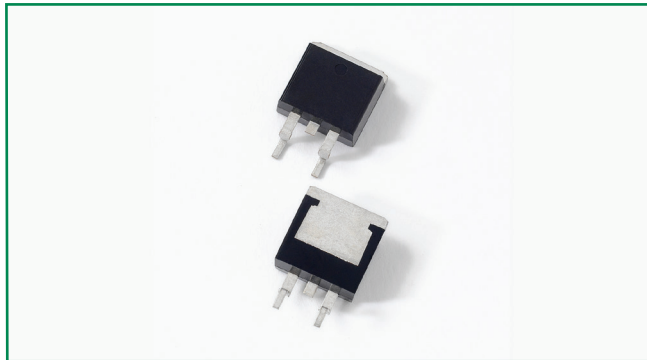
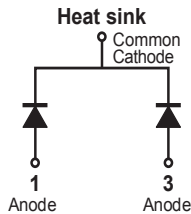


### MBRB20100CT



#### 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 surface mount TO-263 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	$V_{RWM}$	-	100	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 105^\circ\text{C}$ , rectangular wave form	10 (per leg) 20 (total device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3ms, half Sine pulse	150	A

#### Electrical Characteristics

Parameters	Symbol	Test Conditions	Max	Unit
Forward Voltage Drop (per leg) *	$V_{F1}$	@ 5A, Pulse, $T_J = 25^\circ\text{C}$	0.80	V
		@ 10A, Pulse, $T_J = 125^\circ\text{C}$	0.90	
	$V_{F2}$	@ 5A, Pulse, $T_J = 25^\circ\text{C}$	0.70	
		@ 10A, Pulse, $T_J = 125^\circ\text{C}$	0.80	
Reverse Current at DC condition (per leg)	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	1.0	mA
Reverse Current (per leg) *	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	6.0	
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}$	250	pF
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
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	2.0	°C/W
Approximate Weight	wt		1.41	g
Case Style		D <sup>2</sup> PAK (TO-263)		

Figure 1: Typical Forward Characteristics

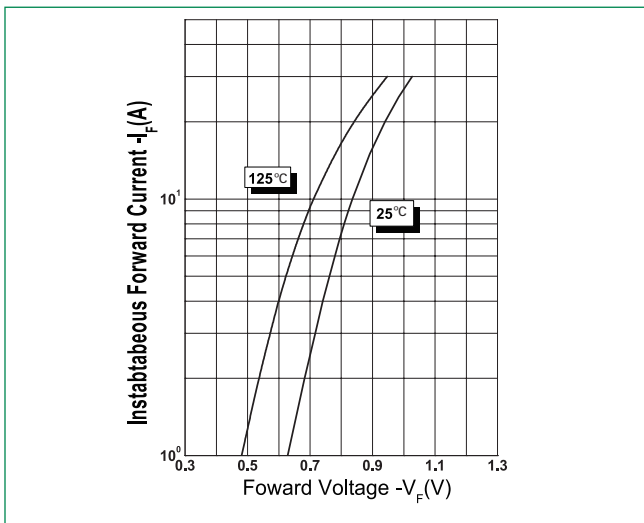


Figure 2: Typical Reverse Characteristics

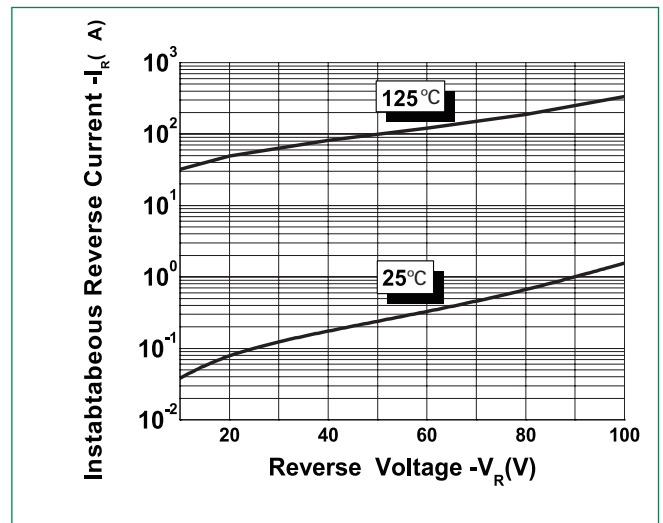
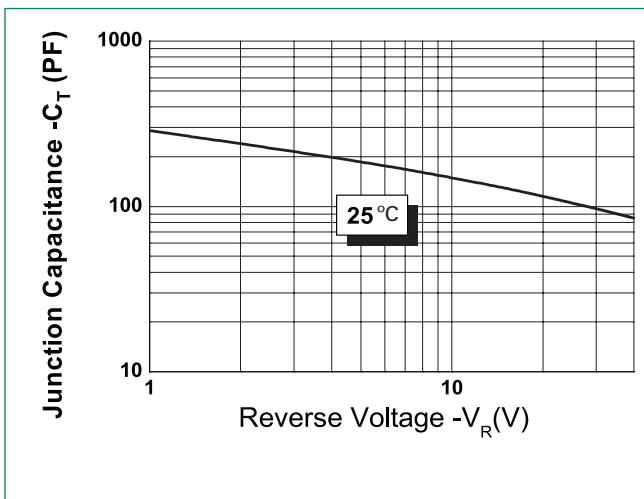
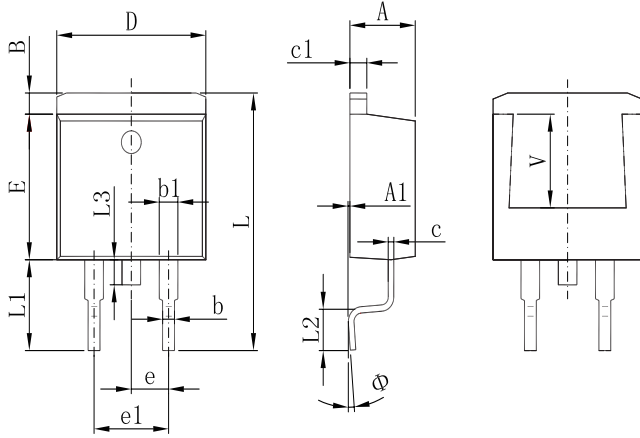


Figure 3: Typical Junction Capacitance

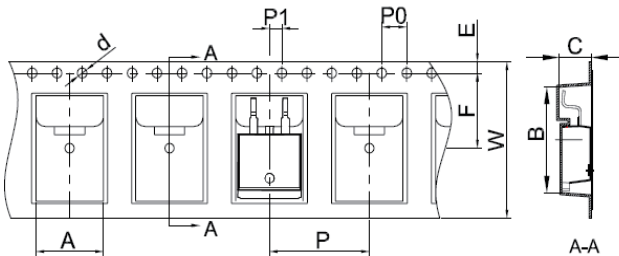


### Dimensions-D<sup>2</sup>PAK(TO-263)



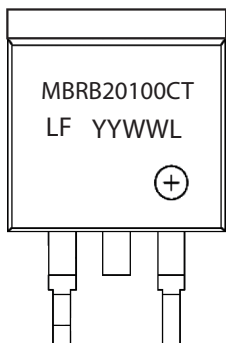
Symbol	Millimeters	
	Min	Max
A	4.47	4.67
A1	0	0.15
B	1.12	1.42
b	0.71	0.91
b1	1.17	1.37
c	0.31	0.53
c1	1.17	1.37
D	10.01	10.31
E	8.50	8.90
e	2.54 TYP	
e1	4.98	5.18
L	14.94	15.5
L1	4.95	5.45
L2	2.34	2.74
L3	1.30	1.7
∅	0°	8°
V	5.60 REF	

### Carrier Tape & Reel Specification



Symbol	Millimeters	
	Min	Max
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	∅1.45	∅1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

### Part Numbering and Marking System



- MBR = Device Type
- B = Package type
- 20 = Forward Current (20A)
- 100 = Reverse Voltage (100V)
- CT = Configuration
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number

### Packing Options

Part Number	Marking	Packing Mode	M.O.Q
MBRB20100CT	MBRB20100CT	800pcs / reel	800