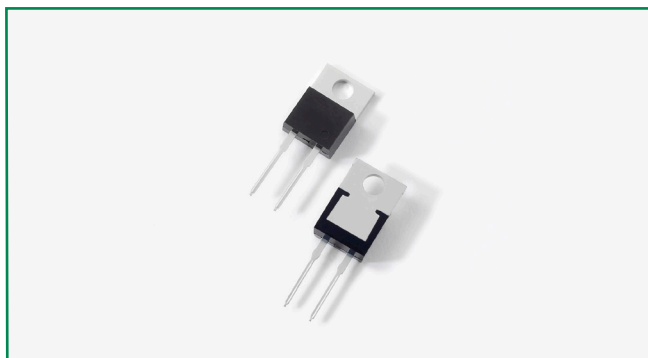
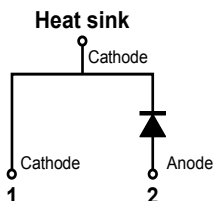


### MBR1045



#### 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
- Single die in true two-leaded TO-220AC package (no center pin)

#### 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	$V_{RWM}$	-	45	V
Average Forward Current (per leg)	$I_{F(AV)}$	50% duty cycle @ $T_C = 115^\circ\text{C}$ rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	150	A

#### Electrical Characteristics

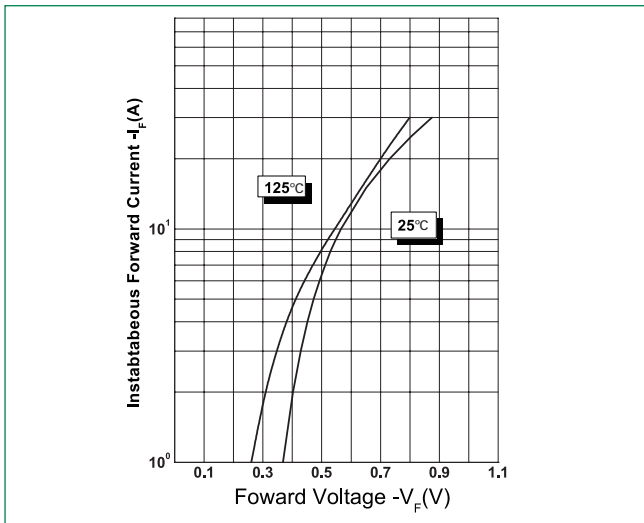
Parameters	Symbol	Test Conditions	Max	Unit
Forward Voltage Drop	$V_{F1}$	@10A, Pulse, $T_J = 25^\circ\text{C}$	0.65	V
Reverse Current	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	1.0	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	15	
Junction Capacitance	$C_T$	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}, f_{SIG} = 1\text{MHz}$	400	pF
Voltage Rate of Change	dv/dt		10,000	V/ $\mu\text{s}$

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

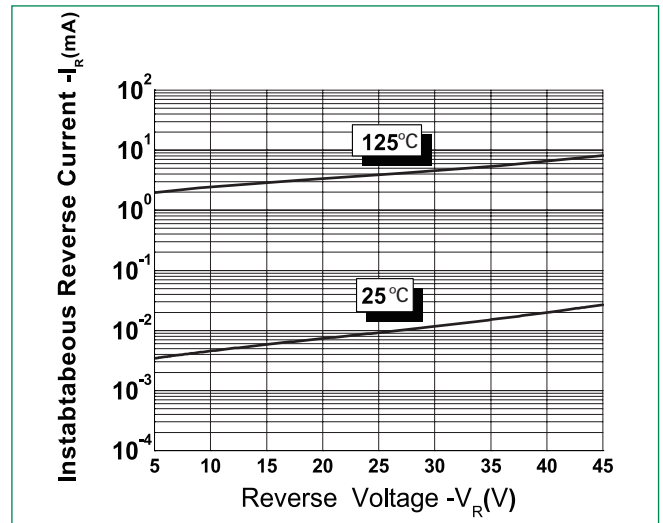
**Thermal-Mechanical Specifications**

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	$R_{thJC}$	DC operation	2.0	°C/W
Approximate Weight	wt		1.85	g
Case Style		TO-220AC		

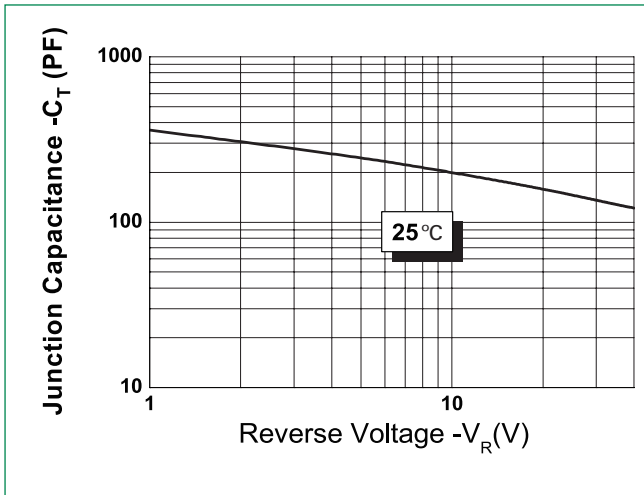
**Figure 1: Typical Forward Characteristics**



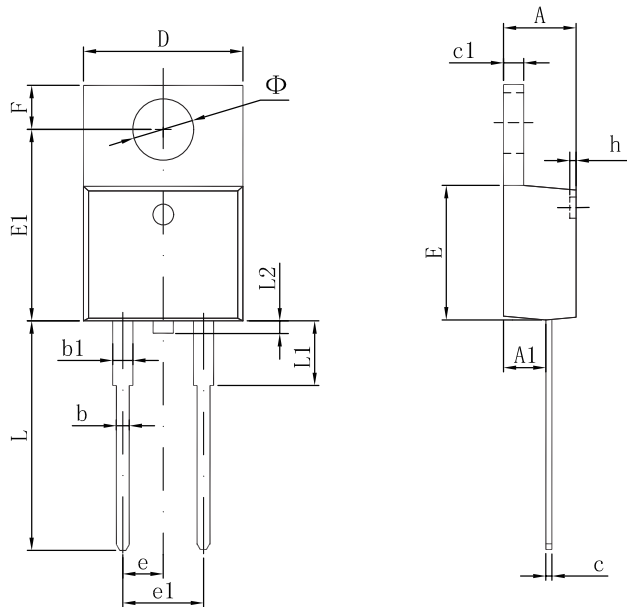
**Figure 2: Typical Reverse Characteristics**



**Figure 3: Typical Junction Capacitance**



**Dimensions- TO-220AC**



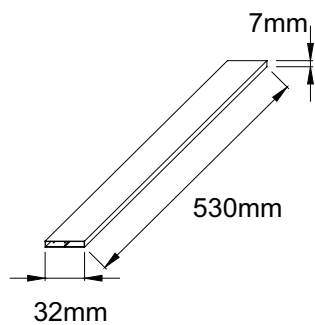
Symbol	Millimeters	
	Min	Max
A	3.56	4.83
A1	0.51	1.40
A2	2.03	2.92
b	0.38	1.02
b1	1.14	1.78
c	0.31*	0.61
D	14.22	16.51
D1	8.38	9.02
E	9.65	10.67
H1	5.84	6.86
L	12.70	14.73
L1	-	6.35
øP	3.53	4.09
Q	2.54	3.43

Footnote \*: The spec. does not comply with JEDEC spec.

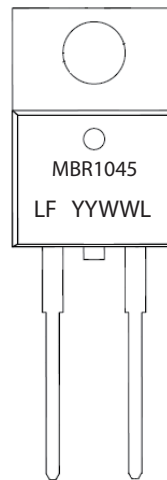
**Packing Options**

Part Number	Marking	Packing Mode	M.O.Q
MBR1045	MBR1045	50pcs /Tube	1000

**Tube Specification**



**Part Numbering and Marking System**



- MBR = Device Type
- 10 = Forward Current (10A)
- 45 = Reverse Voltage (45V)
- LF = Littelfuse
- YY = Year
- WW = Week
- L = Lot Number