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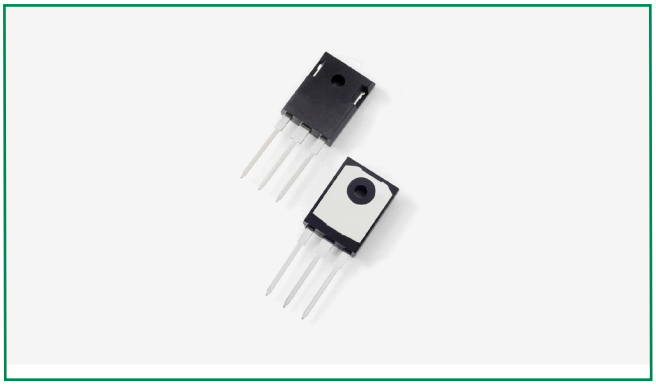
Schottky Barrier Rectifier
MBR6045WT 2x 30A, 45V, TO-247AD Common Cathode

MBR6045WT

RoHS



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.

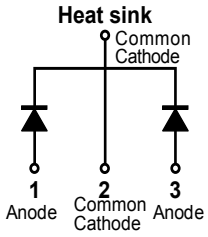
Features

- High junction temperature capability
- Guard ring for enhanced ruggedness and long term reliability
- Low forward voltage drop
- High frequency operation
- Common cathode configuration in TO-247AD package

Applications

- Switching mode power supply
- Free-wheeling diodes
- DC/DC converters
- Polarity protection diodes

Pin out



Maximum Ratings

Parameters	Symbol	Test Conditions	Max.	Unit
Peak Reverse Voltage	V_{RWM}	-	45	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =135°C rectangular wave form	30 (per leg)	A
			60 (per device)	
Repetitive Avalanche Current(per leg)	I_{AR}	Current decaying linearly to zero in 1µsec frequency limited by T_J max.V_A=1.5×V_R typical	6	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	432	A
Non-Repetitive Avalanche Energy(per leg)	E_{AS}	T_J=25°C,I_{AS}=4A,L=3.4mH	27	mJ

Electrical Characteristics

Parameters	Symbol	Test Conditions	Typ.	Max.	Unit
Forward Voltage Drop (per leg) *	V_{F1}	@ 30A, Pulse, T_J = 25 °C	0.55	0.65	V
	V_{F2}	@ 30A, Pulse, T_J = 125 °C	0.50	0.55	
Reverse Current (per leg) *	I_{R1}	@V_R = rated V_{DC} T_J = 25 °C	0.2	1.0	mA
	I_{R2}	@V_R = rated V_{DC} T_J = 125 °C	6	150	
Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C, f_{SIG} = 1MHz	500	1400	pF
Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	7.5	–	nH
Voltage Rate of Change	dv/dt	–	–	10,000	V/µs

* Pulse Width < 300µs, Duty Cycle <2%

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Thermal-Mechanical Specifications

Parameters	Symbol	Test Conditions	Max.	Unit
Junction Temperature Range	T_J		-55 to +150	°C
Storage Temperature Range	T_{stg}		-55 to +150	°C
Maximum Thermal Resistance Junction to Case	R_{thJC}	DC operation	0.5 (per leg)	°C/W
			0.25 (per package)	
Approximate Weight	wt		6.28	g
Case Style	TO-247AD			

Figure 1: Typical Forward Characteristics

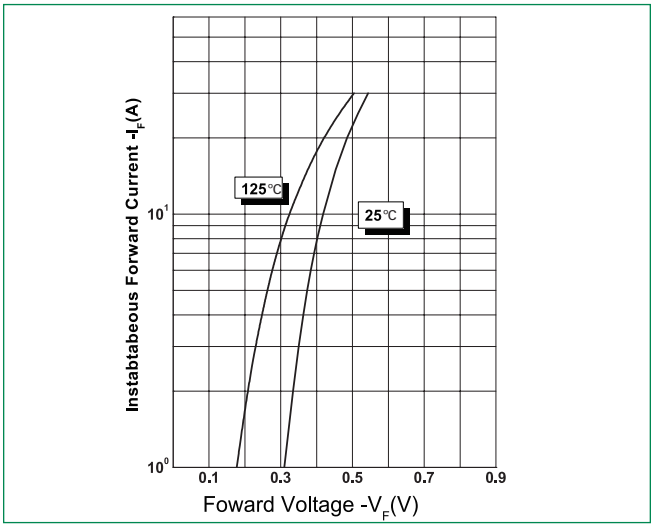


Figure 2: Typical Reverse Characteristics

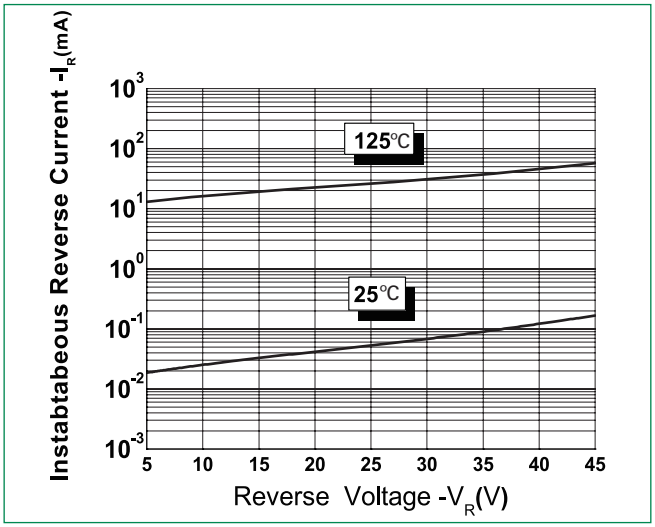
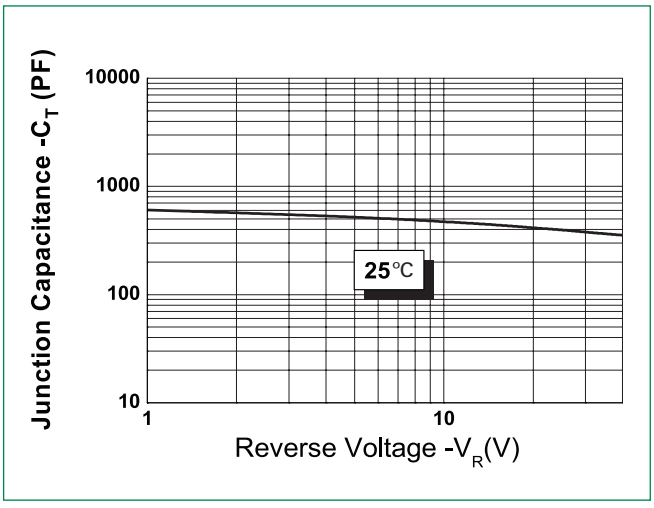


Figure 3: Typical Junction Capacitance



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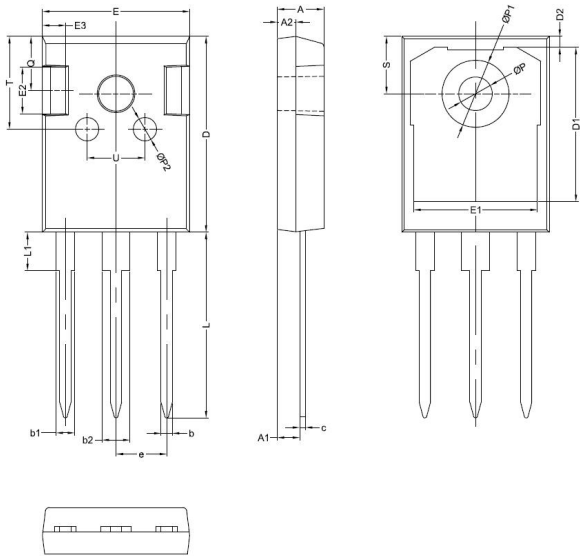
Dimensions- TO-247AD

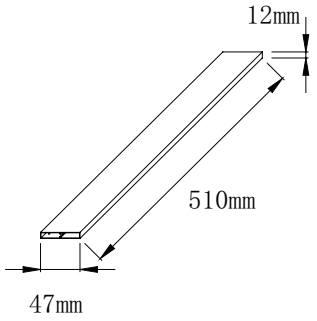


Symbol	Millimeters		
	Min	Typ.	Max
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.40
b1	1.80	2.00	2.20
b2	2.80	3.00	3.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1	–	16.55	–
D2	–	1.20	–
E	15.45	15.80	16.00
E1	–	13.30	–
E2	–	5.00	–
E3	–	2.50	–
e	–	5.44	–
L	19.42	19.92	20.70
L1	–	4.13	–
P	3.50	3.60	3.70
P1	7.1	–	7.40
P2	–	2.50	–
Q	–	5.80	–
S	6.05	6.15	6.25
T	–	10.00	–
U	–	6.20	–

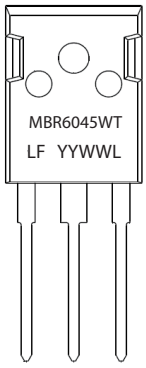
Packing Options

Part Number	Marking	Packing Mode	M.O.Q
MBR6045WT	MBR6045WT	25 pcs / Tube	20000

Tube Specification



Part Numbering and Marking System



MBR = Device Type
60 = Forward Current (60A)
45 = Reverse Voltage (45V)
WT = Configuration
LF = Littelfuse
YY = Year
WW = Week
L = Lot Number

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