PD 2.476

International
IOR Rectifier

MBR6045WT

SCHOTTKY RECTIFIER

60 Amp

Major Ratings and Characteristics

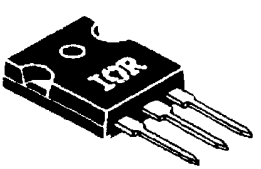
Characteristics		MBR60..WT	Units
$I_{F(AV)}$	Rectangular waveform	60	A
V_{RRM}		45	V
I_{FSM}	@ tp = 5 µs sine	3500	A
V_F	@ 30 Apk, T_J=125°C (per leg)	0.50	V
T_J		-55 to 150	°C

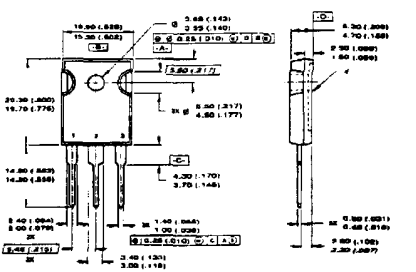
Description/Features

The MBR6045WT center tap Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. The proprietary barrier technology allows for reliable operation up to 150° C junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- 150° C T_J operation
- Center tap TO-247 package
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

CASE STYLE AND DIMENSIONS





Conforms to JEDEC Outline TO-247AC (TO-3P)

Dimensions in millimeters and inches

MBR6045WT

IOR

Voltage Ratings

	Part number	MBR6045WT
V_R	Max. DC Reverse Voltage (V)	45
V_{RWM}	Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

	Parameters	MBR60..	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current	60	A	50% duty cycle @ T_C = 101 °C, rectangular wave form
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg)	3500	A	5µs Sine or 3µs Rect. pulse — Following any rated load condition and with rated V_{RRM} applied
		430		10ms Sine or 6ms Rect. pulse
E_{AS}	Non-Repetitive Avalanche Energy (Per Leg)	27	mJ	T_J = 25 °C, I_{AS} = 4 Amps, L = 3.4 mH
I_{AR}	Repetitive Avalanche Current (Per Leg)	4	A	Current decaying linearly to zero in 1 µsec Frequency limited by T_J max. V_A = 1.5 x V_R typical

Electrical Specifications

	Parameters	MBR60..	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (Per Leg) (1)	0.58	V	@ 30A	T_J = 25 °C
		0.73	V	@ 60A	
		0.50	V	@ 30A	T_J = 125 °C
		0.68	V	@ 60A	
I_{RM}	Max. Reverse Leakage Current (Per Leg) (1)	4	mA	T_J = 25 °C	V_R = rated V_R
		150	mA	T_J = 125 °C	
C_T	Max. Junction Capacitance (Per Leg)	1850	pF	V_R = 5V_{DC}, (test signal range 100Khz to 1Mhz)	
25°C					
L_S	Typical Series Inductance (Per Leg)	7.5	nH	Measured lead to lead 5mm from package body	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	10,000	V/ µs		

(1) Pulse Width < 300µs, Duty Cycle <2%

Thermal-Mechanical Specifications

	Parameters		MBR60..	Units	Conditions
T_J	Max. Junction Temperature Range		-55 to 150	°C	
T_{stg}	Max. Storage Temperature Range		-55 to 150	°C	
R_{thJC}	Max. Thermal Resistance Junction to Case (Per Leg)		1.25	°C/W	DC operation
R_{thJC}	Max. Thermal Resistance Junction to Case (Per Package)		0.63	°C/W	DC operation
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.24	°C/W	Mounting surface , smooth and greased
wt	Approximate Weight		6 (0.21)	g (oz.)	
T	Mounting Torque	Min.	6 (5)	Kg-cm (lbf-in)	Non-lubricated threads
		Max.	12 (10)		
	Case Style		TO-247AC(TO-3P)		JEDEC

Data and specifications subject to change without notice.