MBR6045WT

SWITCHMODE™ Power Rectifier

The SWITCHMODE power rectifier employs the use of the Schottky Barrier principle with a Platinum barrier metal.

Features

- Dual Diode Construction; Terminals 1 and 3 May Be Connected for Parallel Operation at Full Rating
- 45 V Blocking Voltage
- Low Forward Voltage Drop
- Guard−ring for Stress Protection and High dv/dt Capability (> 10 V/ns)
- 175°C Operating Junction Temperature
- Pb−Free Package is Available*

Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 4.3 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	V
Average Rectified Forward Current (Rated V_R, T_C = 125°C) Per Diode Per Device	$I_{F(AV)}$	 30 60	A
Peak Repetitive Forward Current, (Rated V_R, Square Wave, 20 kHz, T_C = 90°C) Per Diode	I_{FRM}	60	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	500	A
Peak Repetitive Reverse Current (2.0 μs, 1.0 kHz)	I_{RRM}	2.0	A
Storage Temperature Range	T_{stg}	−65 to +175	°C
Operating Junction Temperature (Note 1)	T_J	−65 to +175	°C
Peak Surge Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	175	°C
Voltage Rate of Change	dv/dt	10,000	V/μs

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

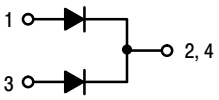
1. The heat generated must be less than the thermal conductivity from Junction−to−Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

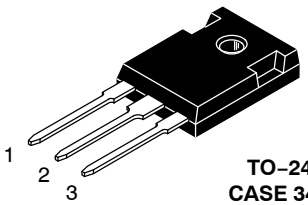
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor®

http://onsemi.com

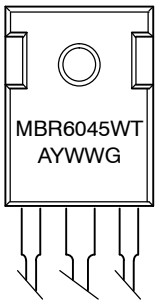
SCHOTTKY BARRIER RECTIFIER 60 AMPERES, 45 VOLTS





TO−247
CASE 340L
STYLE 2

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
G = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping
MBR6045WT	TO−247	30 Units/Rail
MBR6045WTG	TO−247 (Pb−Free)	30 Units/Rail

Publication Order Number:
MBR6045WT/D

THERMAL CHARACTERISTICS (Per Diode)

Rating	Symbol	Max	Unit
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	1.0	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode)

Instantaneous Forward Voltage (Note 2) @ I_F = 30 Amps, T_C = 25°C @ I_F = 30 Amps, T_C = 125°C @ I_F = 60 Amps, T_C = 25°C	V_F	 0.62 0.55 0.75	Volts
Instantaneous Reverse Current (Note 2) @ Rated DC Voltage, T_C = 25°C @ Rated DC Voltage, T_C = 100°C	I_R	 1.0 50	mA

2. Pulse Test: Pulse Width = 300 μs, Duty Cycle < 2.0%

TYPICAL ELECTRICAL CHARACTERISTICS

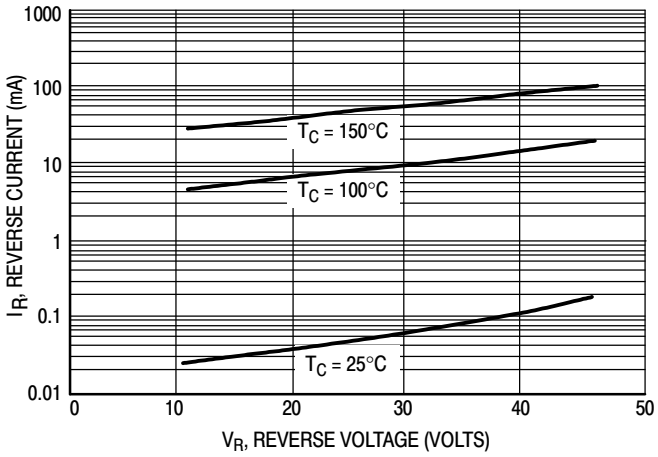


Figure 1. Typical Reverse Current

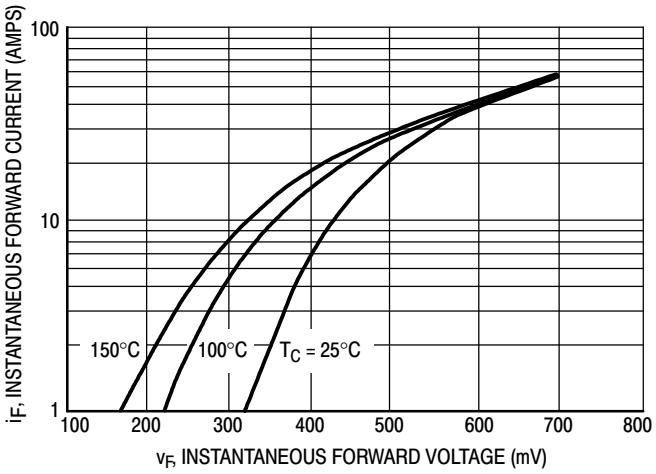
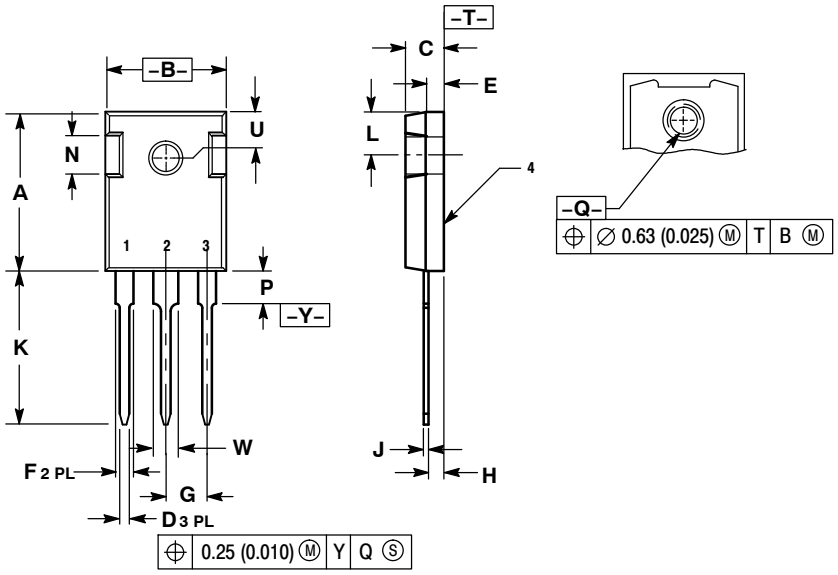


Figure 2. Typical Forward Voltage

PACKAGE DIMENSIONS

TO−247
CASE 340L−02
ISSUE E



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	20.32	21.08	0.800	8.30
B	15.75	16.26	0.620	0.640
C	4.70	5.30	0.185	0.209
D	1.00	1.40	0.040	0.055
E	1.90	2.60	0.075	0.102
F	1.65	2.13	0.065	0.084
G	5.45 BSC		0.215 BSC	
H	1.50	2.49	0.059	0.098
J	0.40	0.80	0.016	0.031
K	19.81	20.83	0.780	0.820
L	5.40	6.20	0.212	0.244
N	4.32	5.49	0.170	0.216
P	---	4.50	---	0.177
Q	3.55	3.65	0.140	0.144
U	6.15 BSC		0.242 BSC	
W	2.87	3.12	0.113	0.123

STYLE 2:
PIN 1. ANODE
2. CATHODE (S)
3. ANODE 2
4. CATHODES (S)

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PUBLICATION ORDERING INFORMATION

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