

Advance Information

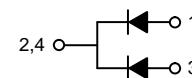
SWITCHMODE™ Power Rectifier

The SWITCHMODE power rectifier employs the use of the Schottky Barrier principle with a Platinum barrier metal. This state-of-the-art device has the following features:

- Dual Diode Construction — Terminals 1 and 3 May Be Connected for Parallel Operation at Full Rating
- 45 Volt Blocking Voltage
- Low Forward Voltage Drop
- Guardring for Stress Protection and High dv/dt Capability (> 10 V/ns)
- Guaranteed Reverse Avalanche
- 150°C Operating Junction Temperature

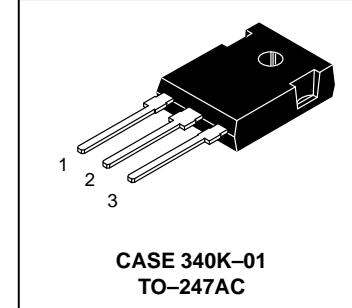
Mechanical Characteristics

- 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
- Shipped 30 Units Per Plastic Tube
- Marking: B4045



MBR4045WT

**SCHOTTKY BARRIER
RECTIFIER
40 AMPERES
45 VOLTS**



MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	Volt
Average Rectified Forward Current — Per Diode (Rated V_R) @ $T_C = 125^\circ C$ — Per Device	$I_{F(AV)}$	20 40	Amp
Peak Repetitive Forward Current, Per Diode (Rated V_R , Square Wave, 20 kHz) @ $T_C = 90^\circ C$	I_{FRM}	40	Amp
Non Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	400	Amp
Peak Repetitive Reverse Current (2.0 μs , 1.0 kHz)	I_{RRM}	2.0	Amp
Operating Junction Temperature	T_J	-65 to +150	°C
Storage Temperature	T_{stg}	-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

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	$R_{\theta JC}$	1.4	°C/W
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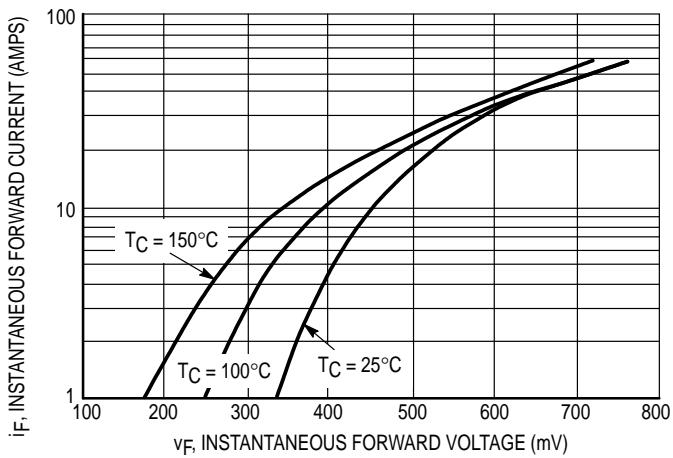
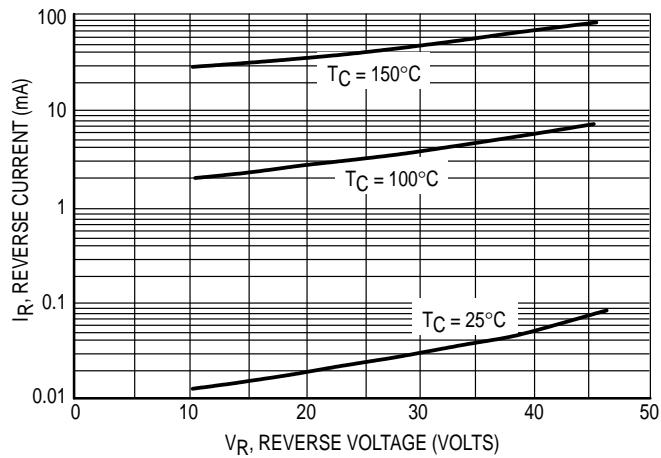
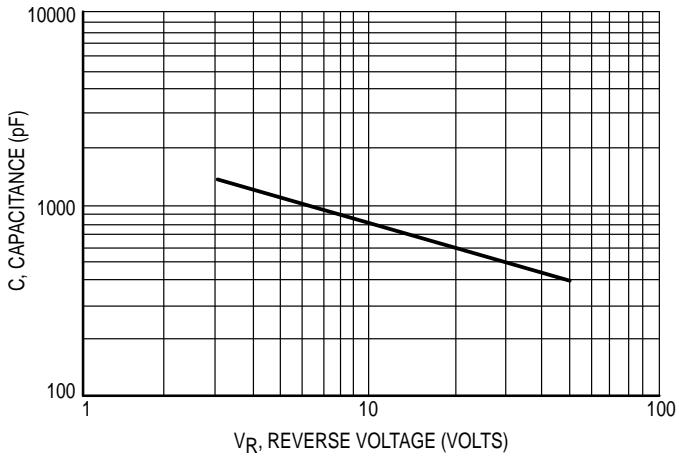
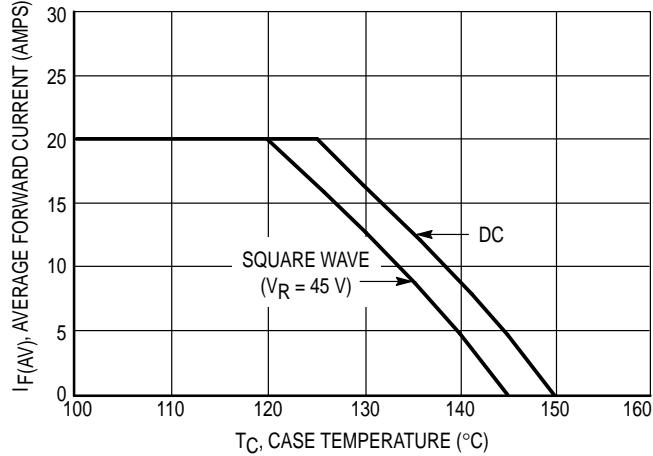
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This document contains information on a new product. Specifications and information herein are subject to change without notice.

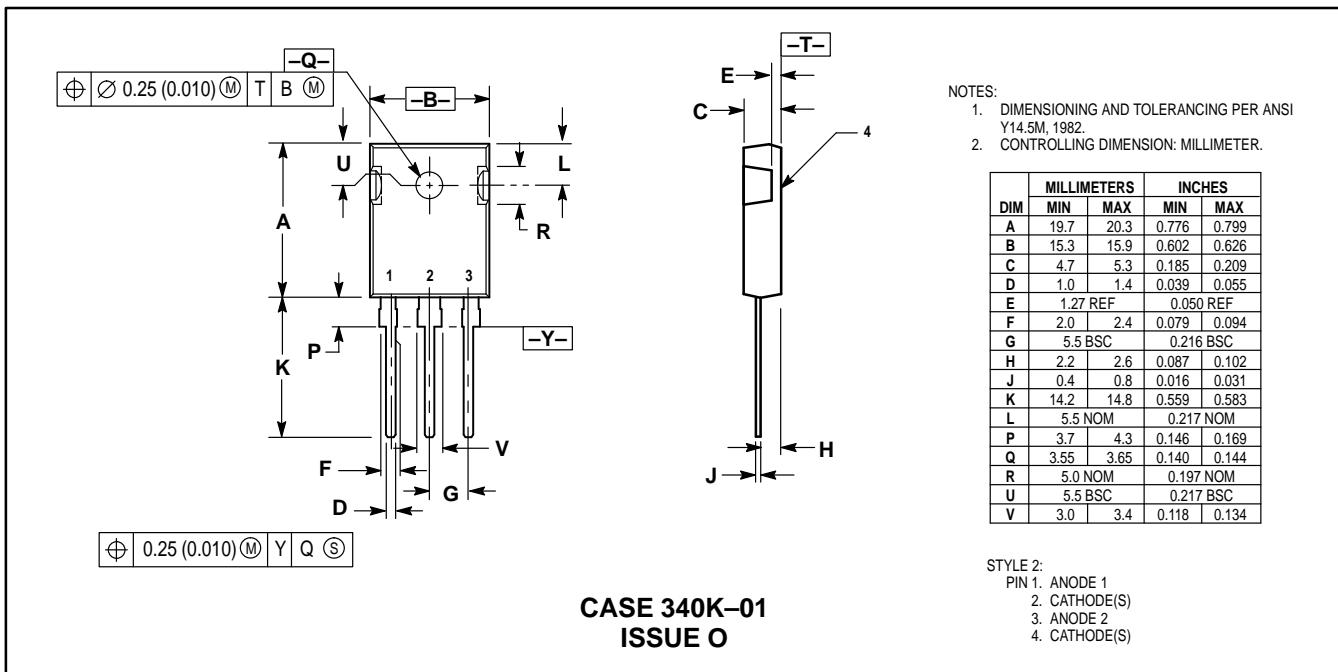
Rev 3

ELECTRICAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Instantaneous Forward Voltage (1)	V_F		
@ $I_F = 20$ Amps, $T_C = 25^\circ\text{C}$		0.70	Volts
@ $I_F = 20$ Amps, $T_C = 125^\circ\text{C}$		0.60	
@ $I_F = 40$ Amps, $T_C = 25^\circ\text{C}$		0.80	
@ $I_F = 40$ Amps, $T_C = 125^\circ\text{C}$		0.75	
Instantaneous Reverse Current (1)	I_R		
@ Rated DC Voltage, $T_C = 25^\circ\text{C}$		1.0	mA
@ Rated DC Voltage, $T_C = 100^\circ\text{C}$		50	

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle < 2.0%**TYPICAL ELECTRICAL CHARACTERISTICS****Figure 1. Typical Forward Voltage****Figure 2. Typical Reverse Current****Figure 3. Typical Capacitance Per Leg****Figure 4. Current Derating Per Leg**

PACKAGE DIMENSIONS



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