

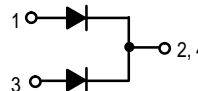
SWITCHMODE™ Power Rectifier

... using the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Dual Diode Construction — Terminals 1 and 3 may be Connected for Parallel Operation at Full Rating
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Guaranteed Reverse Avalanche
- Popular TO-247 Package

Mechanical Characteristics:

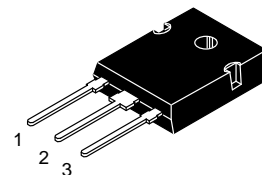
- Case: Epoxy, Molded
- Weight: 4.3 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 30 units per plastic tube
- Marking: B3045



MBR3045WT

Motorola Preferred Device

**SCHOTTKY BARRIER
RECTIFIER
30 AMPERES
45 VOLTS**



**CASE 340F-03
TO-247AC**

MAXIMUM RATINGS

Rating	Symbol	Maximum	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	Volts
Average Rectified Forward Current (Rated V_R) $T_C = 105^\circ\text{C}$	$I_F(AV)$	30 15	Amps Per Device Per Diode
Peak Repetitive Forward Current, Per Diode (Rated V_R , Square Wave, 20 kHz)	I_{FRM}	30	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	200	Amps
Peak Repetitive Reverse Current, Per Diode (2.0 μs , 1.0 kHz) See Figure 6	I_{RRM}	2.0	Amps
Operating Junction Temperature	T_J	-65 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +175	$^\circ\text{C}$
Peak Surge Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	175	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	10000	$\text{V}/\mu\text{s}$

THERMAL CHARACTERISTICS (Per Diode)

Thermal Resistance — Junction to Case — Junction to Ambient	$R_{\theta JC}$ $R_{\theta JA}$	1.4 40	$^\circ\text{C}/\text{W}$
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ELECTRICAL CHARACTERISTICS (Per Diode)

Instantaneous Forward Voltage (1) ($i_F = 20$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 30$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 30$ Amps, $T_C = 25^\circ\text{C}$)	V_F	0.6 0.72 0.76	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, $T_C = 125^\circ\text{C}$) (Rated dc Voltage, $T_C = 25^\circ\text{C}$)	i_R	100 1.0	mA

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

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Preferred devices are Motorola recommended choices for future use and best overall value.

MBR3045WT

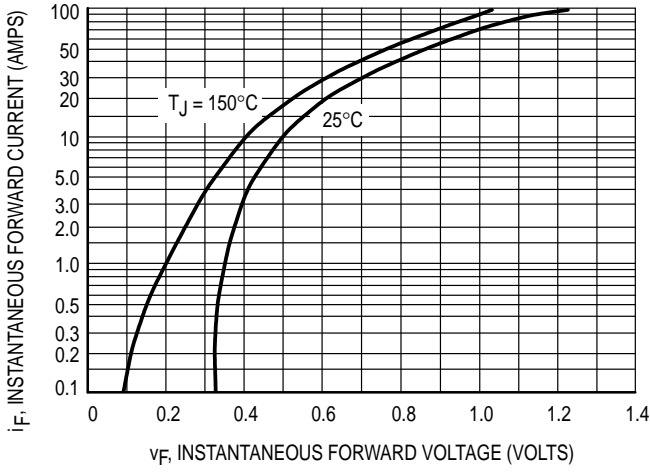


Figure 1. Typical Forward Voltage

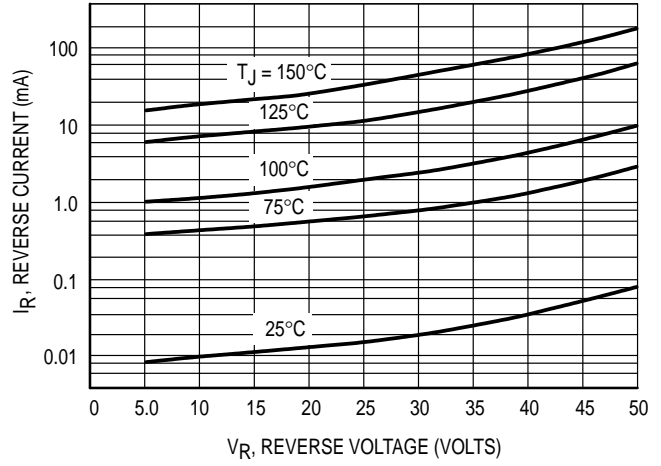


Figure 2. Typical Reverse Current

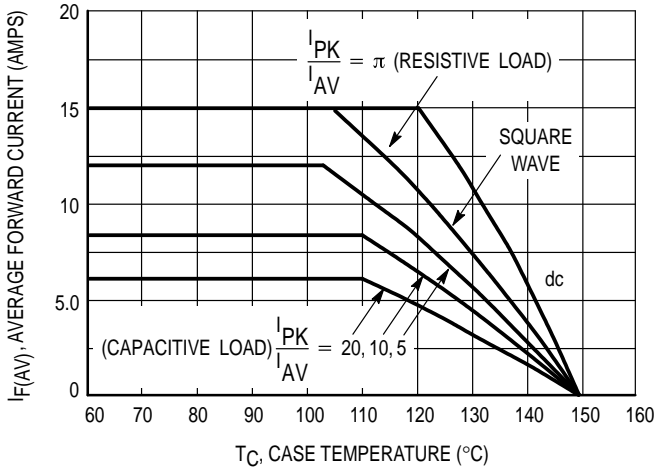


Figure 3. Current Derating (Per Leg)

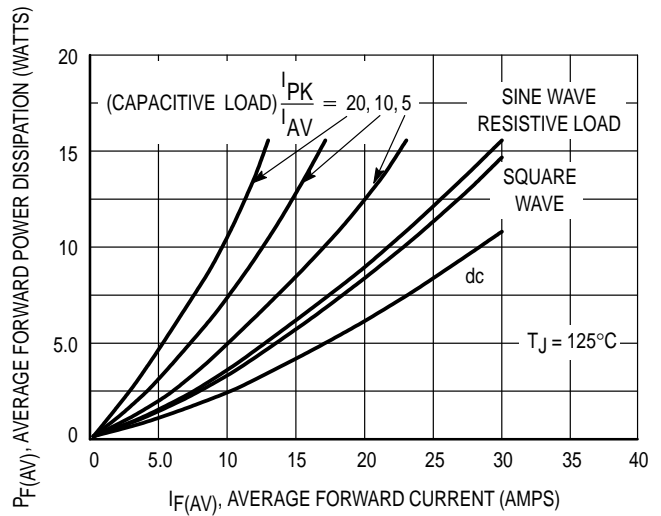


Figure 4. Forward Power Dissipation (Per Leg)

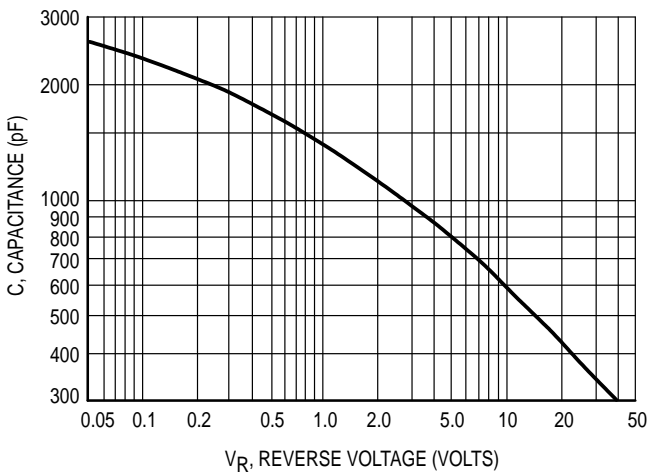


Figure 5. Capacitance

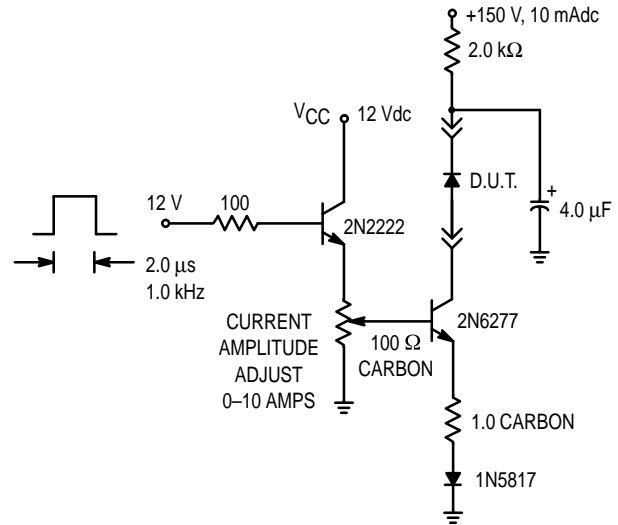
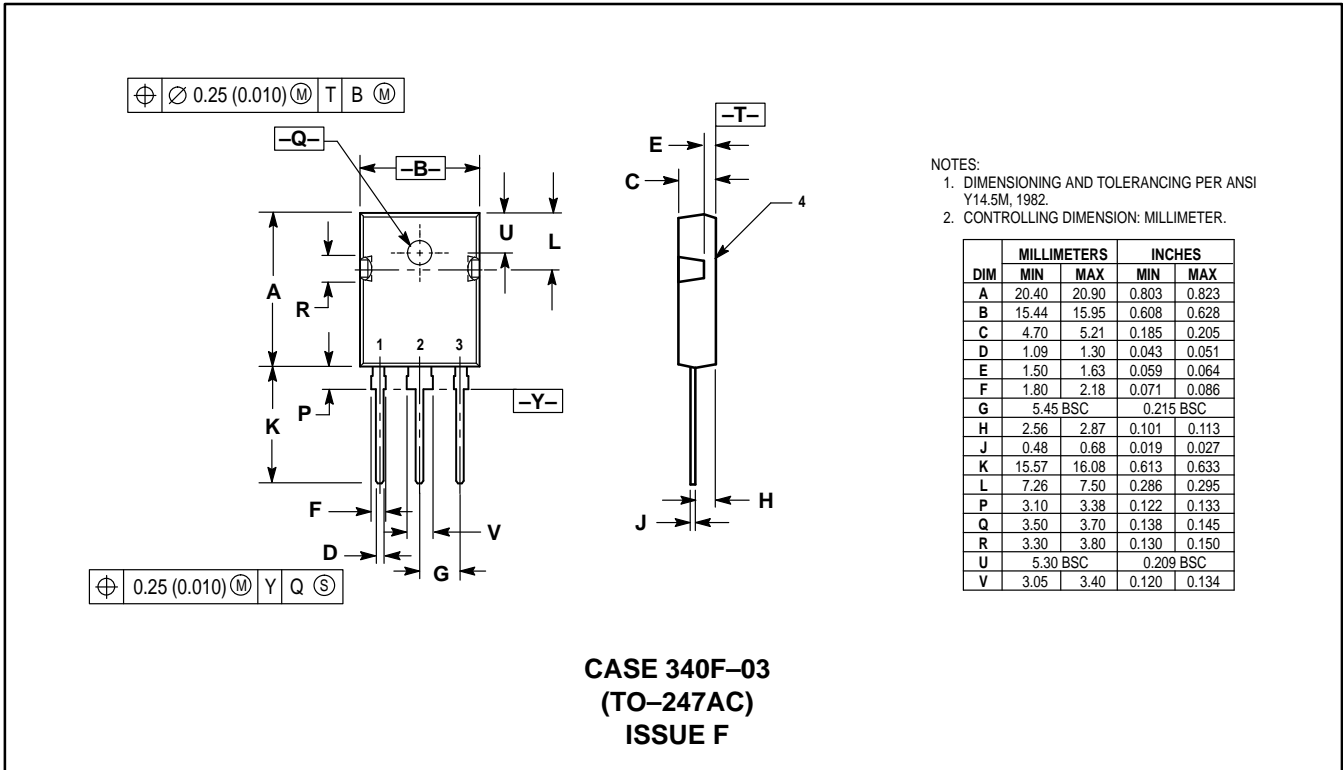



Figure 6. Test Circuit for Repetitive Reverse Current

PACKAGE DIMENSIONS



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