

# Preliminary Data Sheet

## POWERTAP II

### SWITCHMODE™ Power Rectifiers

**MBRP30045CT**  
**MBRP30060CT**

Motorola Preferred Devices

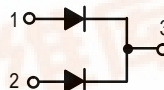
... using the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Dual Diode Construction — May Be Paralleled for Higher Current Output
- Guardring for Stress Protection
- Low Forward Voltage
- 175°C Operating Junction Temperature
- Guaranteed Reverse Avalanche

#### Mechanical Characteristics:

- Case: Epoxy, Molded with metal heatsink base
- Weight: 80 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant
- Top Terminal Torque: 25–40 lb-in max
- Base Plate Torques: See procedure given in the Package Outline Section
- Shipped 25 units per foam
- Marking: B30045T, B30060T

**SCHOTTKY BARRIER  
 RECTIFIERS**  
**300 AMPERES**  
**45 to 60 VOLTS**



**CASE 357C-03**  
**POWERTAP II**

#### MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		Volts
Working Peak Reverse Voltage	$V_{RWM}$	45	
DC Blocking Voltage	$V_R$	60	
Average Rectified Forward Current (Rated $V_R$ ) $T_C = 140^\circ\text{C}$	$I_{F(AV)}$	300 150	Amps
Peak Repetitive Forward Current, Per Leg (Rated $V_R$ , Square Wave, 20 kHz), $T_C = 140^\circ\text{C}$	$I_{FRM}$	300	Amps
Non-Repetitive Peak Surge Current Per Leg (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	2500	Amps
Peak Repetitive Reverse Current, Per Leg (2.0 $\mu\text{s}$ , 1.0 kHz) See Figure 6.	$I_{RRM}$	2.0	Amps
Operating Junction Temperature	$T_J$	-55 to +175	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	10000	$\text{V}/\mu\text{s}$

#### THERMAL CHARACTERISTICS PER LEG

Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.45	$^\circ\text{C}/\text{W}$
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#### ELECTRICAL CHARACTERISTICS PER LEG

Instantaneous Forward Voltage (1) ( $i_F = 150$ Amps, $T_J = 25^\circ\text{C}$ ) ( $i_F = 300$ Amps, $T_J = 25^\circ\text{C}$ ) ( $i_F = 150$ Amps, $T_J = 25^\circ\text{C}$ ) ( $i_F = 300$ Amps, $T_J = 25^\circ\text{C}$ )	$V_F$	0.70 0.82 0.79 0.89	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, $T_J = 125^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	75 0.8	mA

(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

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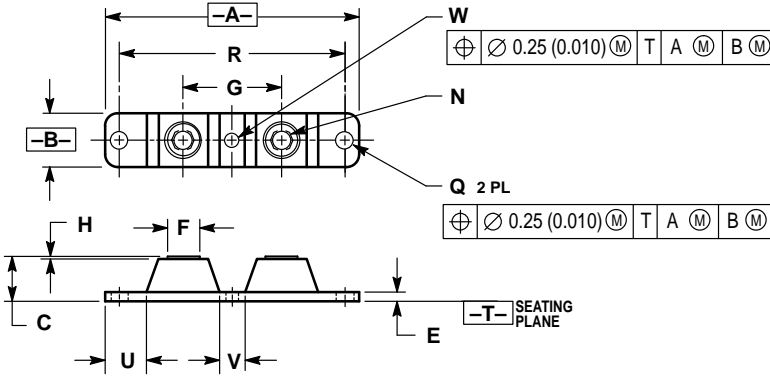
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Preferred devices are Motorola recommended choices for future use and best overall value.



**MBRP30045CT MBRP30060CT**

**PACKAGE DIMENSIONS**



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. TERMINAL PENETRATION: 5.97 (0.235) MAXIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	3.450	3.635	87.63	92.33
B	0.700	0.810	17.78	20.57
C	0.615	0.640	15.53	16.26
E	0.120	0.130	3.05	3.30
F	0.435	0.445	11.05	11.30
G	1.370	1.380	34.80	35.05
H	0.007	0.030	0.18	0.76
N	1/4-20UNC-2B		1/4-20UNC-2B	
Q	0.270	0.285	6.86	7.32
R	31.50 BSC		80.01 BSC	
U	0.600	0.630	15.24	16.00
V	0.330	0.375	8.39	9.52
W	0.170	0.190	4.32	4.82

**CASE 357C-03  
ISSUE C**

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