

# MBRP40045CTL

## POWERTAP™ II SWITCHMODE™ Power Rectifier

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

### Features:

- Dual Diode Construction —  
May be Paralleled for Higher Current Output
- Guardring for Stress Protection
- Low Forward Voltage Drop
- 150°C Operating Junction Temperature
- Recyclable Epoxy
- Guaranteed Reverse Avalanche Energy Capability
- Improved Mechanical Ratings

### MAXIMUM RATINGS

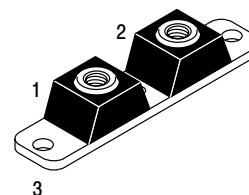
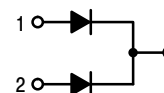
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	45	V
Average Rectified Forward Current (At Rated $V_R$ , $T_C = 100^\circ\text{C}$ ) Per Leg Per Device	$I_{F(AV)}$	200 400	A
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_C = 100^\circ\text{C}$ )	$I_{FRM}$	400	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	2500	A
Peak Repetitive Reverse Current (2.0 $\mu\text{s}$ , 1.0 kHz)	$I_{RRM}$	2.0	A
Storage and Operating Case Temperature Range	$T_{stg}$ , $T_C$	-55 to +150	$^\circ\text{C}$
Operating Junction Temperature	$T_J$	-55 to +150	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	1000	V/ $\mu\text{s}$



ON Semiconductor™

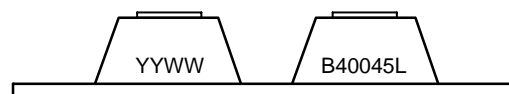
<http://onsemi.com>

**SCHOTTKY  
BARRIER RECTIFIER  
400 AMPERES  
45 VOLTS**



**POWERTAP II  
CASE 357C  
PLASTIC**

### MARKING DIAGRAM



B40045L = Device Code  
YY = Year  
WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
MBRP40045CTL	POWERTAP II	25 Units/Tray

# MBRP40045CTL

## THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance — Junction-to-Case Per Leg	$R_{\theta JC}$	0.45	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value		Unit
Maximum Instantaneous Forward Voltage (Note 1.) Per Leg $(I_F = 200 \text{ A})$ $(I_F = 400 \text{ A})$	$V_F$	$T_C = 25^{\circ}C$	$T_C = 125^{\circ}C$	V
		0.57 0.73	0.52 0.68	
Maximum Instantaneous Reverse Current (Note 1.) Per Leg (Rated DC Voltage)	$I_R$	$T_C = 25^{\circ}C$	$T_C = 125^{\circ}C$	mA
		10	400	

1. Pulse Test: Pulse Width = 380  $\mu s$ , Duty Cycle  $\leq 2\%$ .

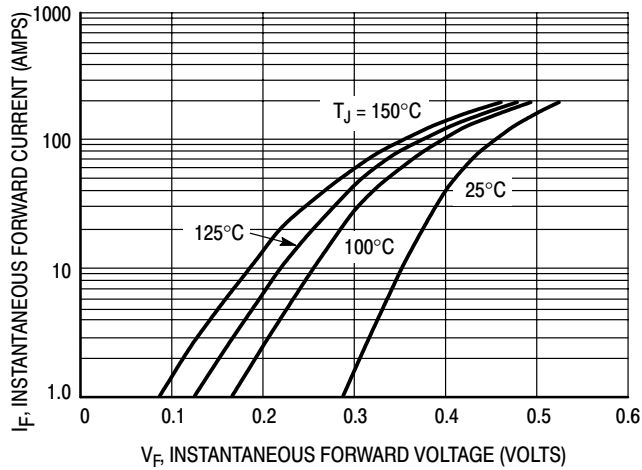


Figure 1. Typical Forward Voltage

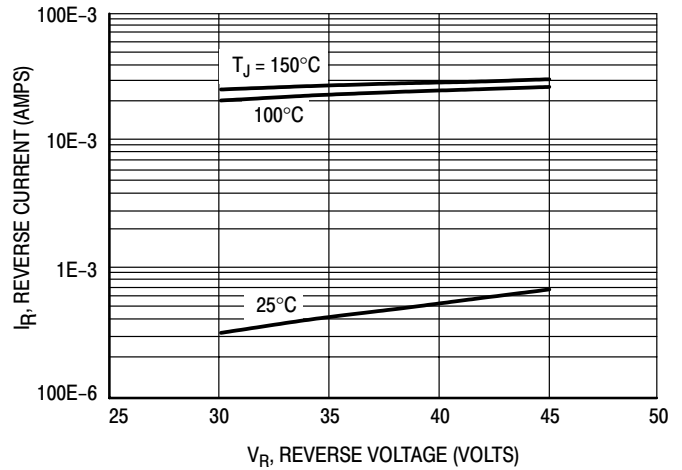
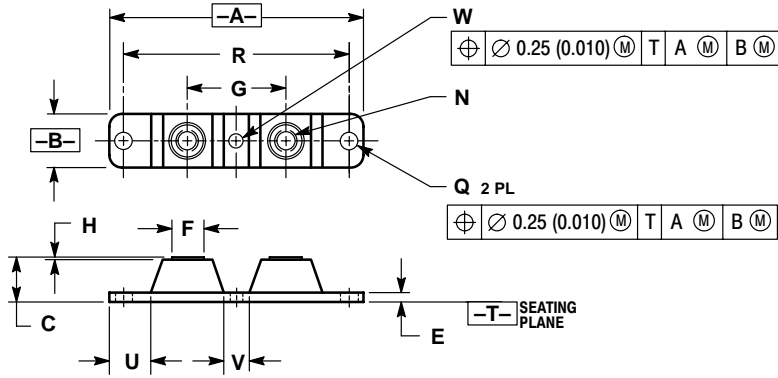


Figure 2. Typical Reverse Current

# MBRP40045CTL

## PACKAGE DIMENSIONS

CASE 357C-03  
 POWERTAP  
 PLASTIC PACKAGE  
 ISSUE E



- 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	15.63	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	7.23
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

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