MBRP40045CTL

POWERTAP™ II SWITCHMODE™ Power Rectifier

These state−of−the−art devices use the Schottky Barrier principle with a platinum barrier metal.

Features

- Dual Diode Construction; May be Paralleled for Higher Current Output
- Guard−Ring for Stress Protection
- Low Forward Voltage Drop
- 150°C Operating Junction Temperature
- Recyclable Epoxy
- Guaranteed Reverse Avalanche Energy Capability
- Improved Mechanical Ratings
- Pb−Free Package is Available*

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°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°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 μs, 1.0 kHz)	I_{RRM}	2.0	A
Storage and Operating Case Temperature Range	T_{stg}, T_C	−55 to +150	°C
Operating Junction Temperature	T_J	−55 to +150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	1000	V/μs

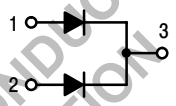
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

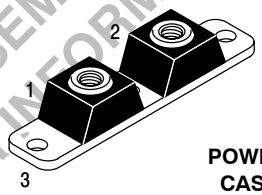
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor®

http://onsemi.com

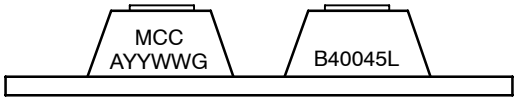
SCHOTTKY BARRIER RECTIFIER 400 AMPERES 45 VOLTS





POWERTAP II
CASE 357C
PLASTIC

MARKING DIAGRAM



B40045L = Specific Device Code
MCC = Mold Compound Code
A = Assembly Location
YY = Year
WW = Work Week
G = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping
MBRP40045CTL	POWERTAP II	25 Units/Tray
MBRP40045CTLG	POWERTAP II (Pb−Free)	25 Units/Tray

THERMAL CHARACTERISTICS

Rating		Symbol	Value	Unit
Thermal Resistance, Junction−to−Case	Per Leg	$R_{\theta JC}$	0.45	°C/W

ELECTRICAL CHARACTERISTICS

Rating		Symbol	Value		Unit
Maximum Instantaneous Forward Voltage (Note 1)	Per Leg	V_F	**T_C = 25°C**	**T_C = 125°C**	V
(I_F = 200 A) (I_F = 400 A)			0.57 0.73	0.52 0.68	
Maximum Instantaneous Reverse Current (Note 1)	Per Leg	I_R	**T_C = 25°C**	**T_C = 125°C**	mA
(Rated DC Voltage)			10	400	

1. Pulse Test: Pulse Width = 380 μs, Duty Cycle ≤ 2%.

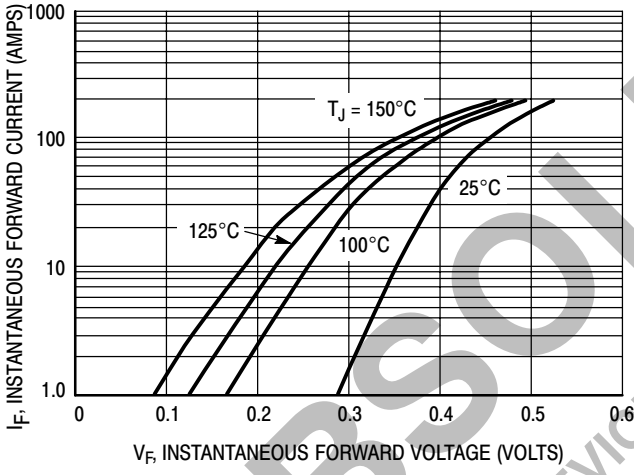


Figure 1. Typical Forward Voltage

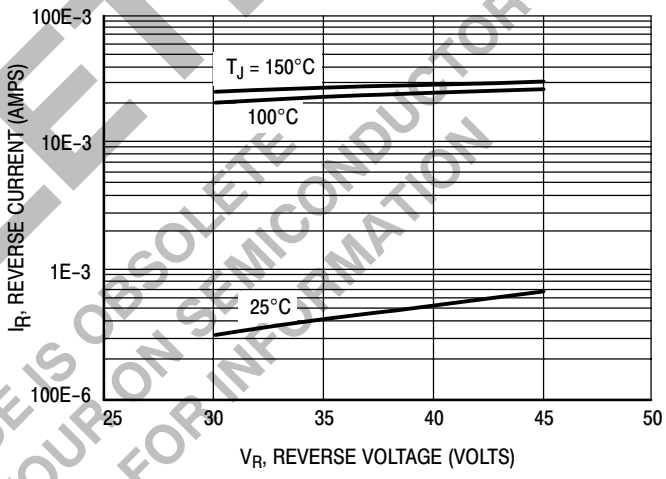
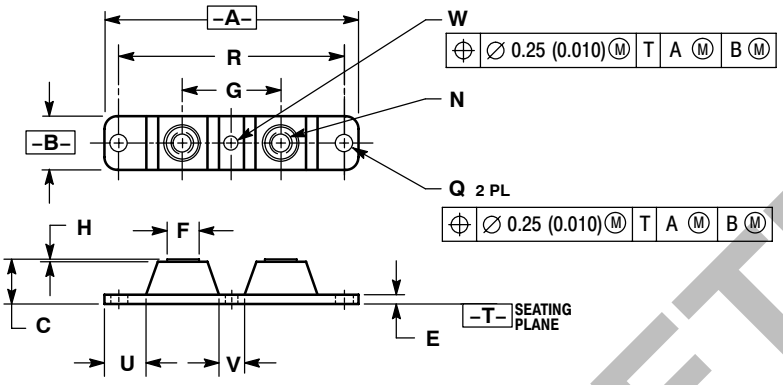


Figure 2. Typical Reverse Current

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.

	INCHES		MILLIMETERS	
DIM	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

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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