

# MBRP30035L

## SWITCHMODE™ Schottky Power Rectifier

### POWERTAP™ III Package

...employing the Schottky Barrier principle in a large area metal-to-silicon power diode. State of the art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency switching power supplies, free wheeling diode and polarity protection diodes.

- Very Low Forward Voltage Drop
- Highly Stable Oxide Passivated Junction
- Guardring for Stress Protection
- High dv/dt Capability

#### Mechanical Characteristics:

- Dual Die Construction
- Case: Epoxy, Molded with Plated Copper Heatsink Base
- Weight: 40 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant
- Base Plate Torques: See procedure given in the Package Outline Section
- Top Terminal Torque: 25–40 lb-in max.
- Shipped 50 units per foam
- Marking: MBRP30035L

#### MAXIMUM RATINGS

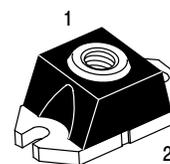
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	35	V
Average Rectified Forward Current (At Rated $V_R$ , $T_C = 100^\circ\text{C}$ )	$I_O$	300	A
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_C = 100^\circ\text{C}$ )	$I_{FRM}$	600	A
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	$I_{FSM}$	3000	A
Peak Repetitive Reverse Surge Current (2.0 $\mu\text{s}$ , 1.0 kHz)	$I_{RRM}$	2.0	A
Storage/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 $V_R$ , $T_J = 25^\circ\text{C}$ )	dv/dt	10,000	V/ $\mu\text{s}$



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**SCHOTTKY  
BARRIER RECTIFIER  
300 AMPERES  
35 VOLTS**



POWERTAP III  
CASE 357D  
PLASTIC

#### MARKING DIAGRAM



MBRP30035L = Device Code

#### ORDERING INFORMATION

Device	Package	Shipping
MBRP30035L	POWERTAP III	50 Units/Foam

# MBRP30035L

## THERMAL CHARACTERISTICS

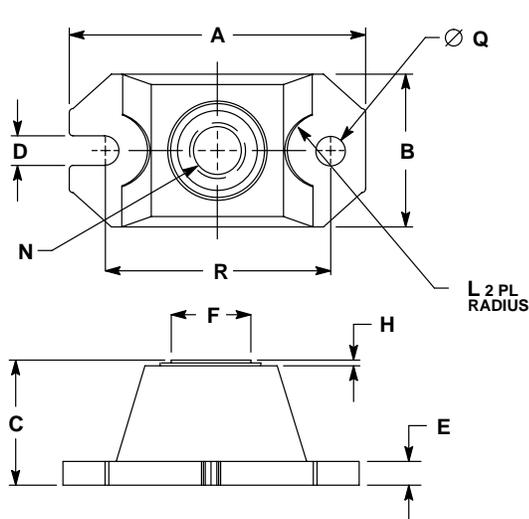
Characteristic	Symbol	Value	Unit
Thermal Resistance — Junction-to-Case	$R_{\theta JC}$	0.4	$^{\circ}\text{C}/\text{W}$

## ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1.) ( $I_F = 300\text{ A}$ )	$V_F$	$T_J = 25^{\circ}\text{C}$	$T_J = 100^{\circ}\text{C}$	Volts
		0.57	0.5	
Maximum Instantaneous Reverse Current ( $V_R = 35\text{ V}$ )	$I_R$	$T_J = 25^{\circ}\text{C}$	$T_J = 100^{\circ}\text{C}$	mA
		10	250	

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

## PACKAGE DIMENSIONS



**POWERTAP III**  
CASE 357D-01  
ISSUE A

### NOTES:

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.520	1.560	38.61	39.62
B	0.783	0.813	19.89	20.65
C	0.615	0.635	15.62	16.13
D	0.152	0.162	3.86	4.11
E	0.120	0.130	3.05	3.30
F	0.435	0.445	11.05	11.30
H	0.007	0.030	0.18	0.76
L	0.210	0.230	5.33	5.84
N	1/4-20UNC-2B	1/4-20UNC-2B		
Q	0.152	0.162	3.86	4.11
R	1.175	1.195	29.85	30.35

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