

# MBRP20035L

## 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: MBRP20035L

#### MAXIMUM RATINGS

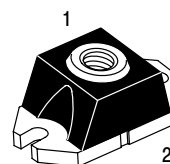
| Rating                                                                                                             | Symbol                          | Value       | Unit             |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                             | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 35          | V                |
| Average Rectified Forward Current<br>(At Rated $V_R$ , $T_C = 100^\circ\text{C}$ )                                 | $I_O$                           | 200         | A                |
| Peak Repetitive Forward Current<br>(At Rated $V_R$ , Square Wave,<br>20 kHz, $T_C = 100^\circ\text{C}$ )           | $I_{FRM}$                       | 400         | A                |
| Non-Repetitive Peak Surge Current<br>(Surge applied at rated load<br>conditions, halfwave, single phase,<br>60 Hz) | $I_{FSM}$                       | 2000        | A                |
| Peak Repetitive Reverse Surge<br>Current (2.0 $\mu\text{s}$ , 1.0 kHz)                                             | $I_{RRM}$                       | 2.0         | A                |
| Storage/Operating Case<br>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<br>(Rated $V_R$ , $T_J = 25^\circ\text{C}$ )                                                | dv/dt                           | 10,000      | V/ $\mu\text{s}$ |



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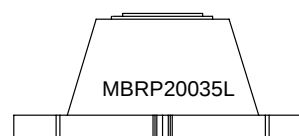
<http://onsemi.com>

**SCHOTTKY  
BARRIER RECTIFIER  
200 AMPERES  
35 VOLTS**



**POWERTAP III  
CASE 357D  
PLASTIC**

#### MARKING DIAGRAM



MBRP20035L = Device Code

#### ORDERING INFORMATION

| Device     | Package      | Shipping      |
|------------|--------------|---------------|
| MBRP20035L | POWERTAP III | 50 Units/Foam |

# MBRP20035L

## THERMAL CHARACTERISTICS

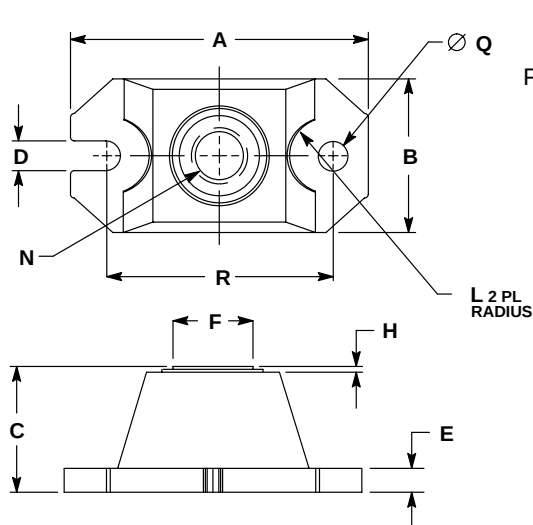
| Characteristic                        | Symbol          | Value | Unit |
|---------------------------------------|-----------------|-------|------|
| Thermal Resistance — Junction-to-Case | $R_{\theta JC}$ | 0.45  | °C/W |

## ELECTRICAL CHARACTERISTICS

|                                                                     |       |                          |                           |       |
|---------------------------------------------------------------------|-------|--------------------------|---------------------------|-------|
| Maximum Instantaneous Forward Voltage (Note 1.)<br>( $I_F = 200$ A) | $V_F$ | $T_J = 25^\circ\text{C}$ | $T_J = 100^\circ\text{C}$ | Volts |
|                                                                     |       | 0.57                     | 0.5                       |       |
| Maximum Instantaneous Reverse Current<br>( $V_R = 35$ 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



**CASE 357D-01  
POWERTAP  
PLASTIC PACKAGE  
ISSUE A**

### 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   | 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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