

# MBR340

Preferred Device

## Axial Lead Rectifier

...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 overlap contact. Ideally suited for use as rectifiers in low-voltage, high-frequency inverters, free wheeling diodes, and polarity protection diodes.

- Extremely Low  $V_F$
- Low Power Loss/High Efficiency
- Highly Stable Oxide Passivated Junction
- Low Stored Charge, Majority Carrier Conduction

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.1 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16" from case
- Shipped in plastic bags, 500 per bag
- Available Tape and Reeled, 1500 per reel, by adding a "RL" suffix to the part number
- Polarity: Cathode indicated by Polarity Band
- Marking: B340

### MAXIMUM RATINGS

| Rating   | Symbol                          | Max         | Unit |
|--|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage   | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 40          | V    |
| Average Rectified Forward Current<br>$T_A = 65^\circ\text{C}$ ( $R_{\theta JA} = 28^\circ\text{C/W}$ ,<br>P.C. Board Mounting)                           | $I_O$                           | 3.0         | A    |
| Non-Repetitive Peak<br>Surge Current (Note 1)<br>(Surge Applied at Rated Load<br>Conditions Halfwave, Single<br>Phase, 60 Hz, $T_L = 75^\circ\text{C}$ ) | $I_{FSM}$                       | 80          | A    |
| Operating and Storage Junction<br>Temperature Range<br>(Reverse Voltage Applied)   | $T_J, T_{stg}$                  | -65 to +150 | °C   |
| Peak Operating Junction<br>Temperature<br>(Forward Current Applied)  | $T_{J(pk)}$                     | 150         | °C   |

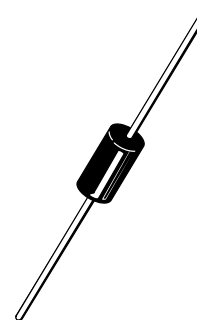
1. Lead Temperature reference is cathode lead 1/32" from case.



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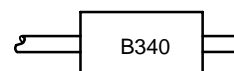
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**SCHOTTKY BARRIER  
RECTIFIER  
3.0 AMPERES  
40 VOLTS**



AXIAL LEAD  
CASE 267-05  
(DO-201AD)  
STYLE 1

### MARKING DIAGRAM



B340 = Device Code

### ORDERING INFORMATION

| Device   | Package    | Shipping         |
|----------|------------|------------------|
| MBR340   | Axial Lead | 500 Units/Bag    |
| MBR340RL | Axial Lead | 1500/Tape & Reel |

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

# MBR340

## THERMAL CHARACTERISTICS

| Characteristic  | Symbol          | Max | Unit          |
|---|-----------------|-----|---------------|
| Thermal Resistance, Junction to Ambient (see Note 4, Mounting Method 3) | $R_{\theta JA}$ | 28  | $^{\circ}C/W$ |

## ELECTRICAL CHARACTERISTICS ( $T_L = 25^{\circ}C$ unless otherwise noted) (Note 2)

| Characteristic   | Symbol | Max                     | Unit |
|--|--------|-------------------------|------|
| Maximum Instantaneous Forward Voltage (Note 3)<br>( $i_F = 1.0$ Amp)<br>( $i_F = 3.0$ Amp)<br>( $i_F = 9.4$ Amp) | $V_F$  | 0.500<br>0.600<br>0.850 | V    |
| Maximum Instantaneous Reverse Current @ Rated dc Voltage (Note 3)<br>$T_L = 25^{\circ}C$<br>$T_L = 100^{\circ}C$ | $i_R$  | 0.60<br>20              | mA   |

- Lead Temperature reference is cathode lead 1/32" from case.
- Pulse Test: Pulse Width = 300  $\mu s$ , Duty Cycle = 2.0%.

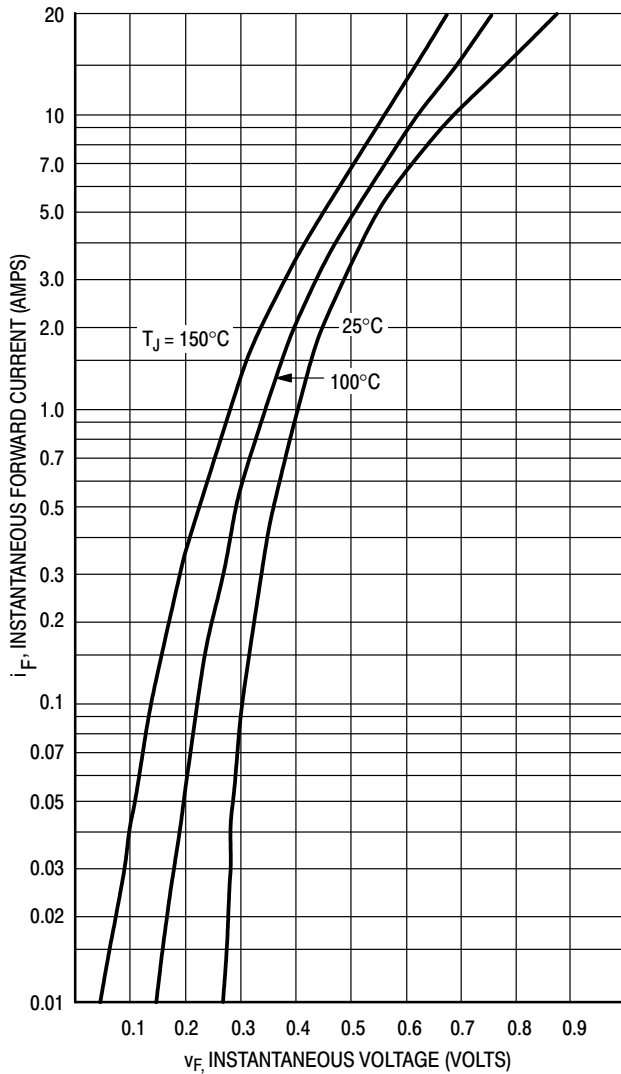


Figure 1. Typical Forward Voltage

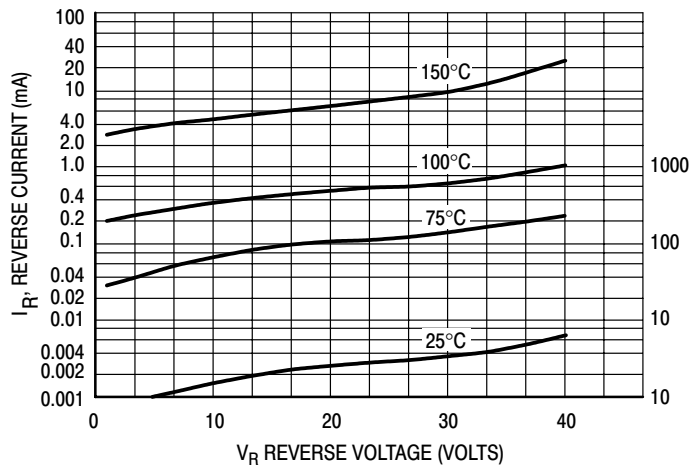


Figure 2. Typical Reverse Current\*

\*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if  $V_R$  is sufficiently below rated  $V_R$ .

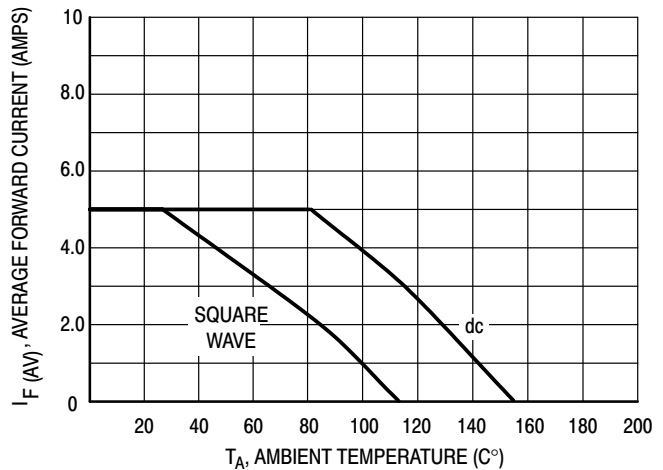


Figure 3. Current Derating  
(Mounting Method #3 per Note 4)

# MBR340

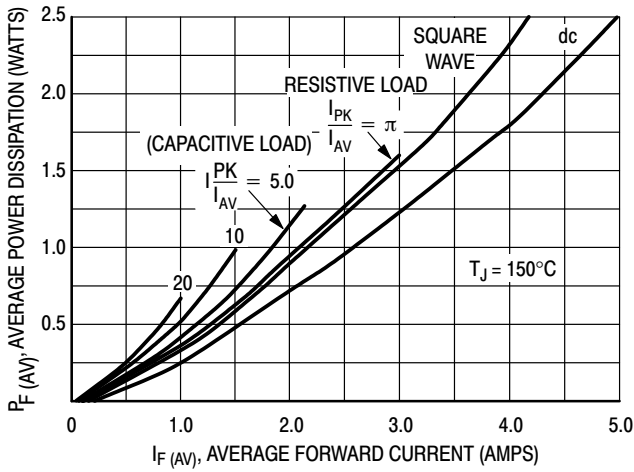


Figure 4. Power Dissipation

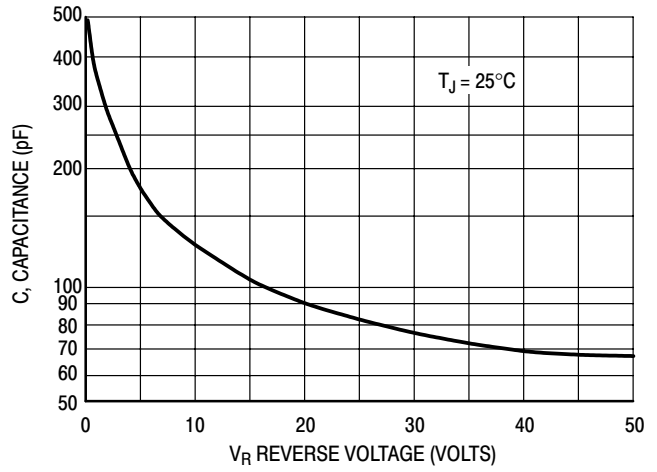


Figure 5. Typical Capacitance

### NOTE 4 — MOUNTING DATA

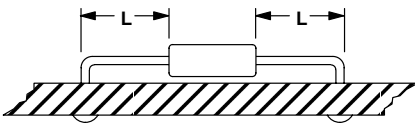
Data shown for thermal resistance junction-to-ambient ( $R_{\theta JA}$ ) for the mountings shown is to be used as typical guideline values for preliminary engineering, or in case the tie point temperature cannot be measured.

#### TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

| Mounting Method | Lead Length, L (in) |     |     |     | $R_{\theta JA}$      |
|-----------------|---------------------|-----|-----|-----|----------------------|
|                 | 1/8                 | 1/4 | 1/2 | 3/4 |                      |
| 1               | 50                  | 51  | 53  | 55  | $^{\circ}\text{C/W}$ |
| 2               | 58                  | 59  | 61  | 63  | $^{\circ}\text{C/W}$ |
| 3               | 28                  |     |     |     | $^{\circ}\text{C/W}$ |

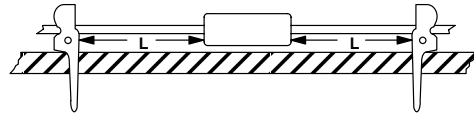
#### Mounting Method 1

P.C. Board where available copper surface is small.



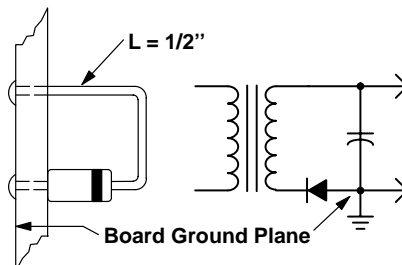
#### Mounting Method 2

Vector Push-In Terminals T-28



#### Mounting Method 3

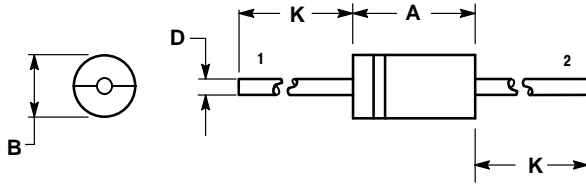
P.C. Board with 2-1/2" X 2-1/2" copper surface.



# MBR340

## PACKAGE DIMENSIONS

AXIAL LEAD  
CASE 267-05  
(DO-201AD)  
ISSUE G




NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES |       | MILLIMETERS |      |
|-----|--------|-------|-------------|------|
|     | MIN    | MAX   | MIN         | MAX  |
| A   | 0.287  | 0.374 | 7.30        | 9.50 |
| B   | 0.189  | 0.209 | 4.80        | 5.30 |
| D   | 0.047  | 0.051 | 1.20        | 1.30 |
| K   | 1.000  | ---   | 25.40       | ---  |

STYLE 1:

- PIN 1. CATHODE (POLARITY BAND)
- ANODE

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