

MBR1635, MBR1645

MBR1645 is a Preferred Device

SWITCHMODE™ Power Rectifiers

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

- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B1635, B1645

MAXIMUM RATINGS

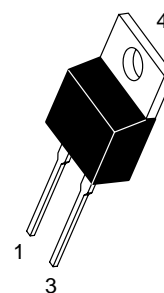
| Rating | Symbol | Value | Unit |
|---|------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage | V_{RRM} | | V |
| Working Peak Reverse Voltage | V_{RWM} | | |
| DC Blocking Voltage | MBR1635 V_R | 35 | |
| | MBR1645 | 45 | |
| Average Rectified Forward Current (Rated V_R , $T_C = 125^\circ\text{C}$) | $I_{F(AV)}$ | 16 | A |
| Peak Repetitive Forward Current, (Rated V_R , Square Wave, 20 kHz, $T_C = 125^\circ\text{C}$) | I_{FRM} | 32 | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) | I_{FSM} | 150 | A |
| Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz) | I_{RRM} | 1.0 | A |
| Storage Temperature Range | T_{stg} | -65 to +175 | °C |
| Operating Junction Temperature | T_J | -65 to +150 | °C |
| Voltage Rate of Change (Rated V_R) | dv/dt | 10,000 | V/ μs |



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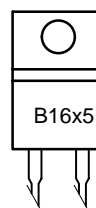
<http://onsemi.com>

SCHOTTKY BARRIER RECTIFIERS 16 AMPERES 35 and 45 VOLTS



TO-220AC
CASE 221B
PLASTIC

MARKING DIAGRAM



B16x5 = Device Code
x = 3 or 4

ORDERING INFORMATION

| Device | Package | Shipping |
|---------|---------|---------------|
| MBR1635 | TO-220 | 50 Units/Rail |
| MBR1645 | TO-220 | 50 Units/Rail |

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

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THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------|---------------|
| Maximum Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 1.5 | $^{\circ}C/W$ |

ELECTRICAL CHARACTERISTICS

| | | | |
|--|-------|--------------|-------|
| Maximum Instantaneous Forward Voltage (Note 1.) ($i_F = 16$ Amps, $T_C = 125^{\circ}C$) ($i_F = 16$ Amps, $T_C = 25^{\circ}C$) | V_F | 0.57 0.63 | Volts |
| Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_C = 125^{\circ}C$) (Rated dc Voltage, $T_C = 25^{\circ}C$) | i_R | 40 0.2 | mA |

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

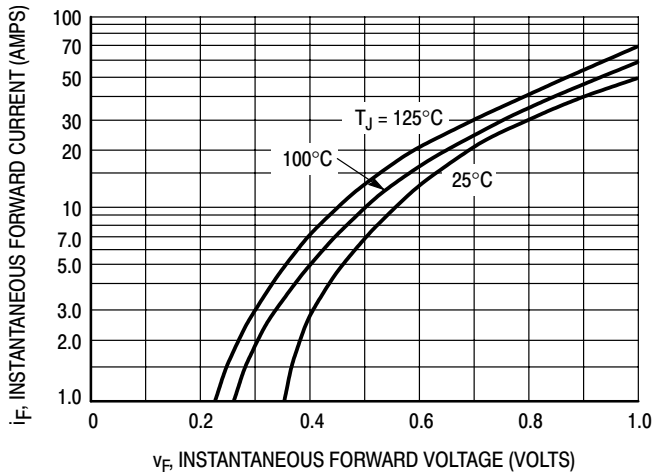


Figure 1. Typical Forward Voltage

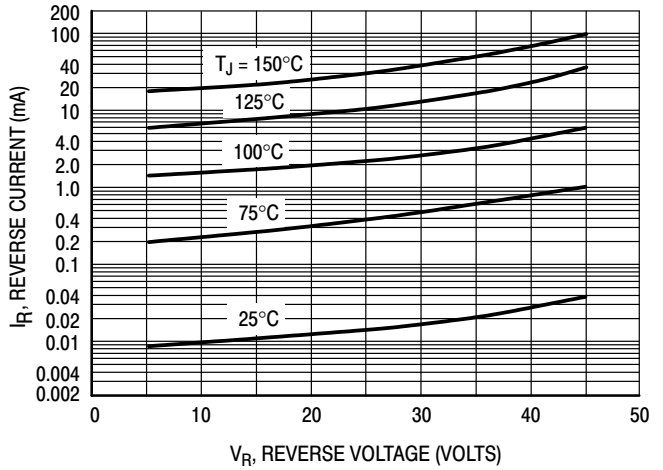


Figure 2. Typical Reverse Current

MBR1635, MBR1645

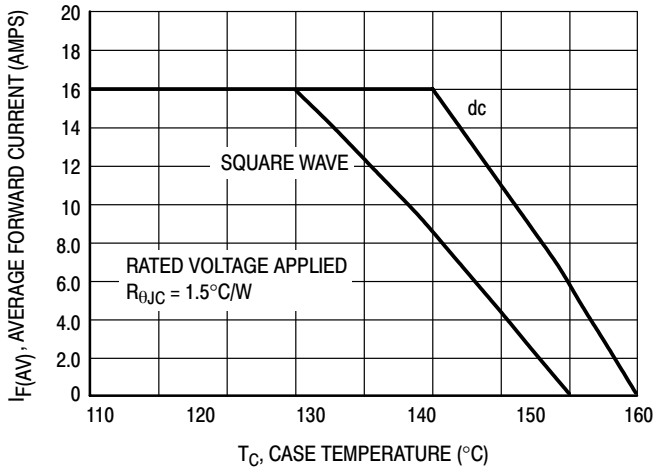


Figure 3. Current Derating, Case

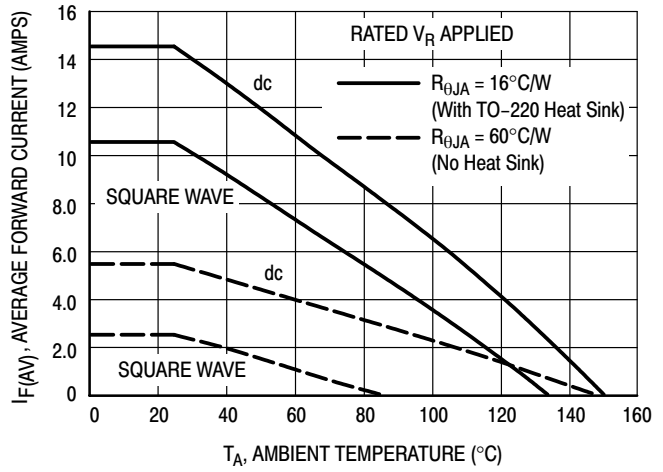


Figure 4. Current Derating, Ambient

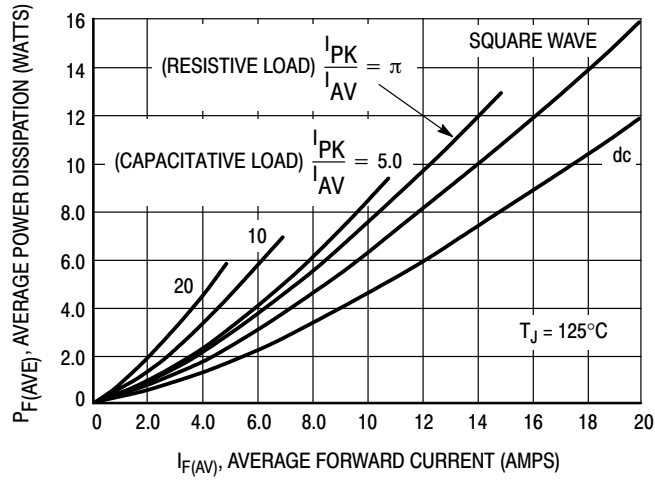
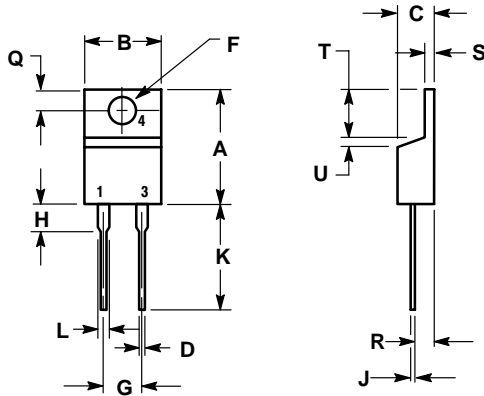


Figure 5. Forward Power Dissipation

MBR1635, MBR1645

PACKAGE DIMENSIONS

TO-220 PLASTIC CASE 221B-04 ISSUE D




NOTES:

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

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.595 | 0.620 | 15.11 | 15.75 |
| B | 0.380 | 0.405 | 9.65 | 10.29 |
| C | 0.160 | 0.190 | 4.06 | 4.82 |
| D | 0.025 | 0.035 | 0.64 | 0.89 |
| F | 0.142 | 0.147 | 3.61 | 3.73 |
| G | 0.190 | 0.210 | 4.83 | 5.33 |
| H | 0.110 | 0.130 | 2.79 | 3.30 |
| J | 0.018 | 0.025 | 0.46 | 0.64 |
| K | 0.500 | 0.562 | 12.70 | 14.27 |
| L | 0.045 | 0.060 | 1.14 | 1.52 |
| Q | 0.100 | 0.120 | 2.54 | 3.04 |
| R | 0.080 | 0.110 | 2.04 | 2.79 |
| S | 0.045 | 0.055 | 1.14 | 1.39 |
| T | 0.235 | 0.255 | 5.97 | 6.48 |
| U | 0.000 | 0.050 | 0.000 | 1.27 |

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