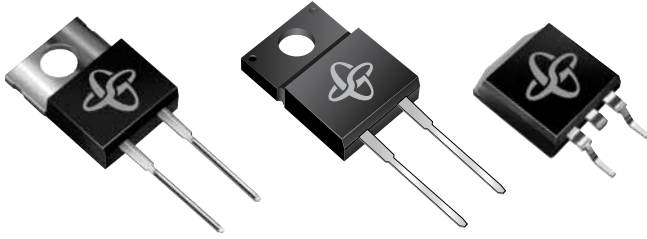
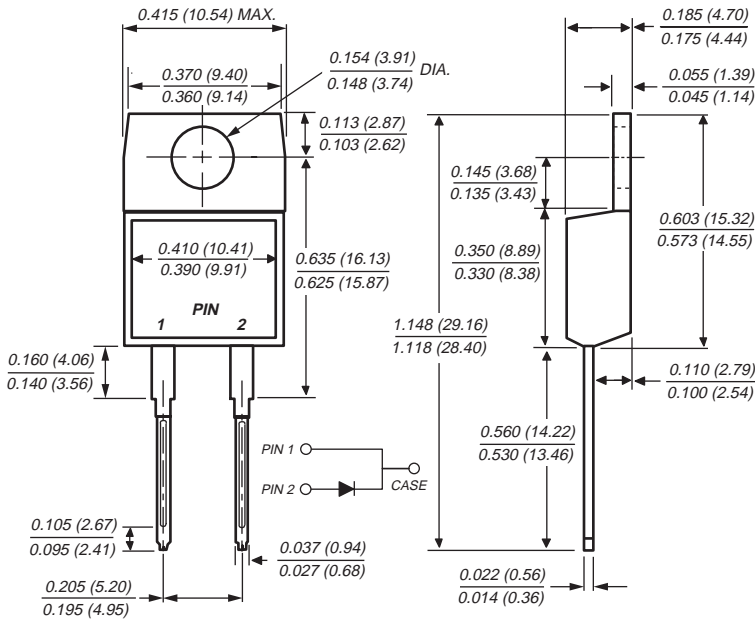


MBR16xx, MBRF16xx & MBRB16xx Series

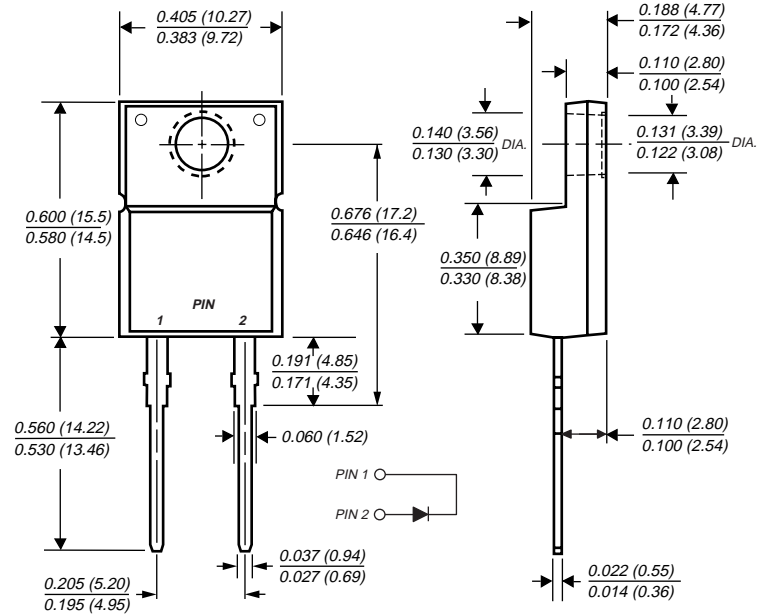
Schottky Barrier Rectifier
Reverse Voltage 35 to 60V
Forward Current 16A



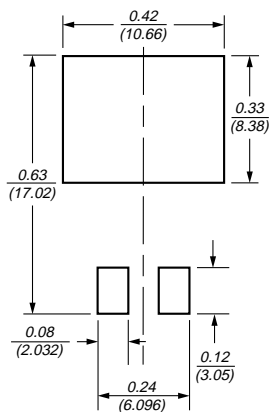
TO-220AC (MBR16xx)



ITO-220AC (MBRF16xx)

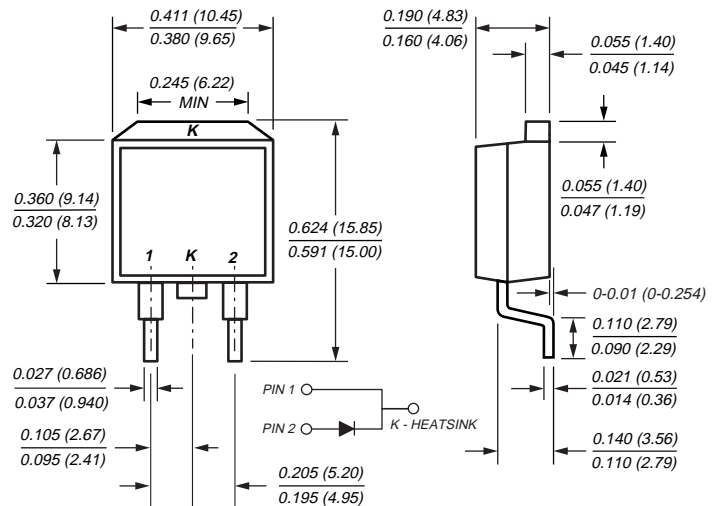


Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)

TO-263AB (MBRB16xx)



Features

- Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case

Mechanical Data

Case: JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

Polarity: As marked

Mounting Position: Any

Mounting Torque: 10 in-lbs maximum

Weight: 0.08 ounce, 2.24 grams

4/30/01

MBR16xx, MBRF16xx & MBRB16xx Series Schottky Barrier Rectifier

Maximum Ratings (T_C = 25°C unless otherwise noted)

| Parameter | Symbol | MBR1635 | MBR1645 | MBR1650 | MBR1660 | Unit |
|--|--------------------|---------------|---------|---------------|---------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 35 | 45 | 50 | 60 | V |
| Working peak reverse voltage | V _{RWM} | 35 | 45 | 50 | 60 | V |
| Maximum DC blocking voltage | V _{DC} | 35 | 45 | 50 | 60 | V |
| Maximum average forward rectified current at T _C = 125 °C | I _{F(AV)} | 16 | | | | A |
| Peak repetitive forward current at T _C = 125°C (rated V _R , sq. wave, 20 KHz) | I _{FRM} | 32 | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg | I _{FSM} | 150 | | | | A |
| Peak repetitive reverse current per leg at t _p = 2.0μs, 1KHz | I _{RRM} | 1.0 | | 0.5 | | A |
| Voltage rate of change (rated V _R) | dv/dt | 10,000 | | 1,000 | | V/μs |
| Operating junction temperature range | T _J | -65 to +150 | | | | °C |
| Storage temperature range | T _{STG} | -65 to +175 | | | | °C |
| RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30% | V _{ISOL} | 4500 (NOTE 1) | | 3500 (NOTE 2) | | V |
| | | | | 1500 (NOTE 3) | | |

Electrical Characteristics (T_C = 25°C unless otherwise noted)

| Parameter | Symbol | MBR1635 | MBR1645 | MBR1650 | MBR1660 | Unit |
|---|----------------|---------|---------|---------|---------|------|
| Maximum instantaneous forward voltage per leg (Note 4) at I _F = 16A, T _C = 25°C at I _F = 16A, T _C = 125°C | V _F | 0.63 | | 0.75 | | V |
| | | 0.57 | | 0.65 | | |
| Maximum instantaneous reverse current at rated DC blocking voltage (Note 4) | I _R | 0.2 | | 1.0 | | mA |
| | | 40 | | 50 | | |

Thermal Characteristics (T_C = 25°C unless otherwise noted)

| Parameter | Symbol | MBR | MBRF | MBRB | Unit |
|--|------------------|-----|------|------|------|
| Typical thermal resistance from junction to case per leg | R _{θJC} | 1.5 | 3.0 | 1.5 | °C/W |

Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

Ordering Information

| Product | Case | Package Code | Package Option |
|---------------------|-----------|--------------|---|
| MBR1635 - MBR1660 | TO-220AC | 45 | Anti-Static tube, 50/tube, 2K/carton |
| MBRF1635 - MBRF1660 | ITO-220AC | 45 | Anti-Static tube, 50/tube, 2K/carton |
| MBRB1635 - MBRB1660 | TO-263AB | 31 | 13" reel, 800/reel, 4.8K/carton |
| | | 45 | Anti-Static tube, 50/tube, 2K/carton |
| | | 81 | Anti-Static 13" reel, 800/reel, 4.8K/carton |

MBR16xx, MBRF16xx & MBRB16xx Series Schottky Barrier Rectifier

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

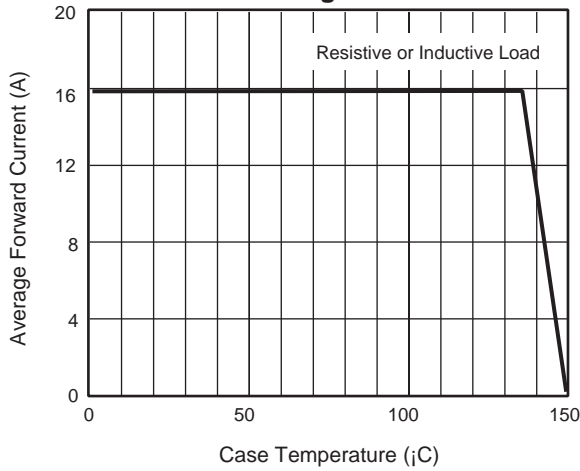


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

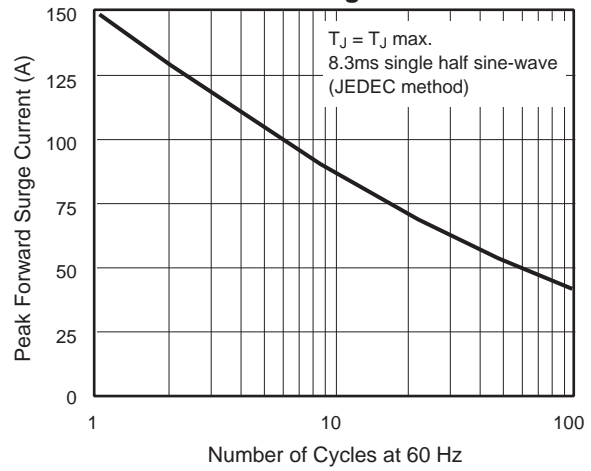


Fig. 3 - Typical Instantaneous Forward Characteristics

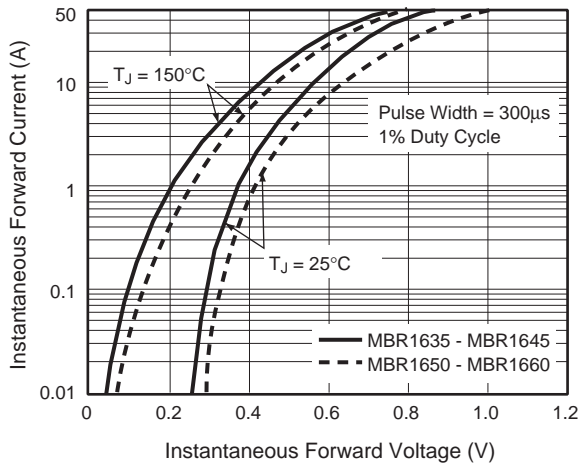


Fig. 4 - Typical Reverse Characteristics

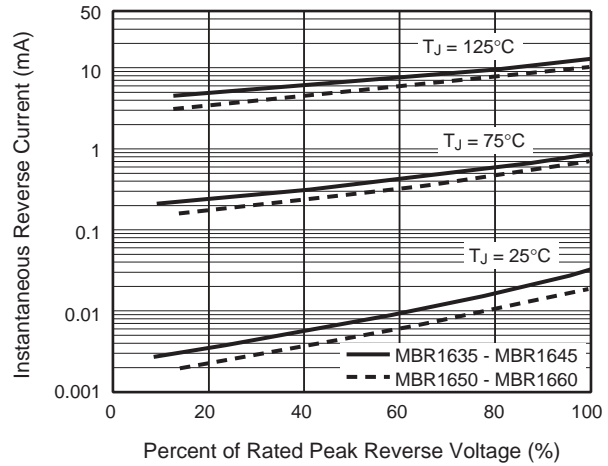


Fig. 5 - Typical Junction Capacitance Per Leg

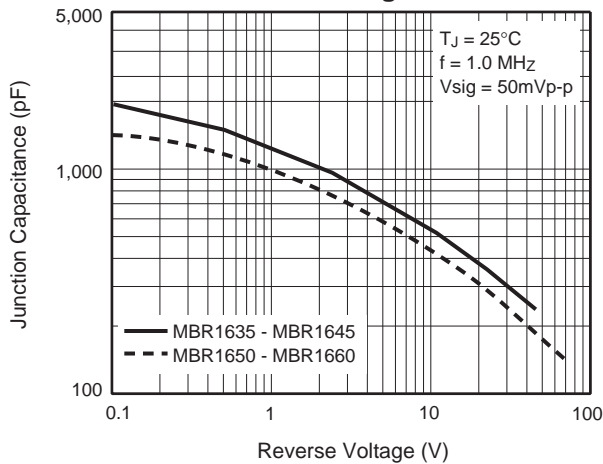


Fig. 6 - Typical Transient Thermal Impedance Per Leg

