

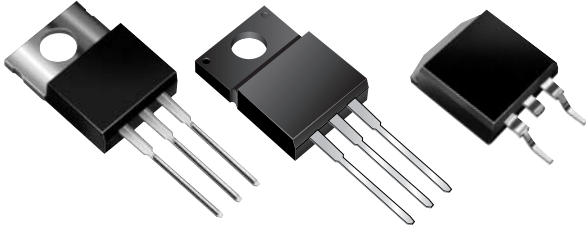


# MBR15xxCT, MBRF15xxCT & MBRB15xxCT

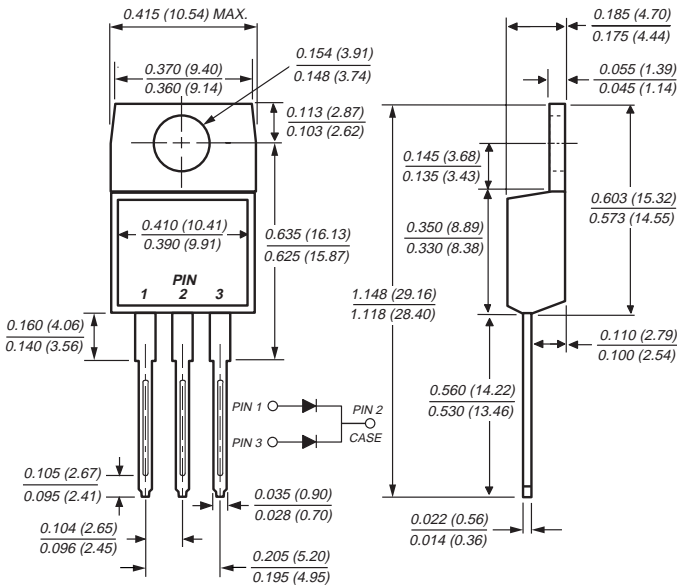
Vishay Semiconductors  
formerly General Semiconductor

## Dual Schottky Barrier Rectifier

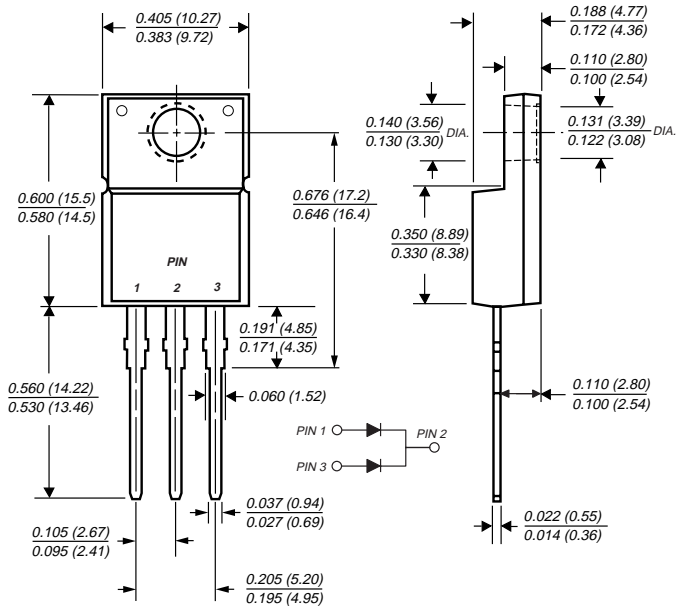
Reverse Voltage 35 to 60V  
Forward Current 15A



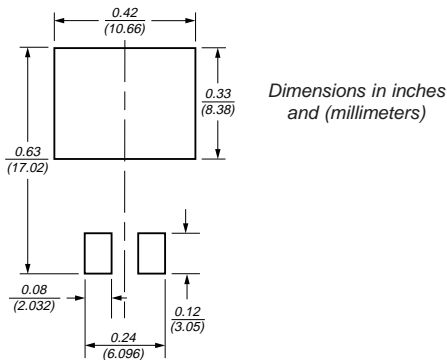
TO-220AB (MBR15xxCT)



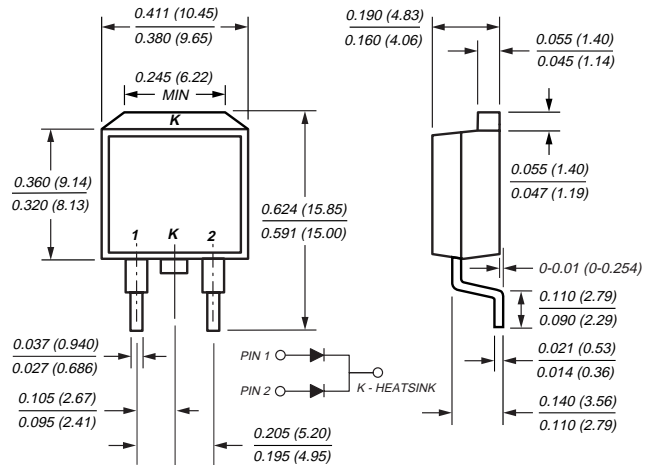
ITO-220AB (MBRF15xxCT)



Mounting Pad Layout TO-263AB



TO-263AB (MBRB15xxCT)



### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Dual rectifier construction, positive center tap
- 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-220AB, ITO-220AB & 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

# MBR15xxCT, MBRF15xxCT & MBRB15xxCT



Vishay Semiconductors  
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## Maximum Ratings (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter   | Symbol             | MBR1535CT                                       | MBR1545CT | MBR1550CT | MBR1560CT | Unit |
|---|--------------------|---|-----------|-----------|-----------|------|
| Maximum repetitive peak reverse voltage   | V <sub>RRM</sub>   | 35  | 45        | 50        | 60        | V    |
| Working peak reverse voltage  | V <sub>RWM</sub>   | 35  | 45        | 50        | 60        | V    |
| Maximum DC blocking voltage   | V <sub>DC</sub>    | 35  | 45        | 50        | 60        | V    |
| Maximum average forward rectified current <i>Total device</i><br>at T <sub>C</sub> = 105°C <i>Per leg</i> | I <sub>F(AV)</sub> | 15<br>7.5                                       |           |           |           | A    |
| Peak repetitive forward current at T <sub>C</sub> = 105°C<br>(rated V <sub>R</sub> , 20 KHz sq. wave)     | I <sub>FRM</sub>   | 15  |           |           |           | A    |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC Method)    | I <sub>FSM</sub>   | 150   |           |           |           | A    |
| Peak repetitive reverse surge current per leg<br>at t <sub>p</sub> = 2.0μs, 1KHz                          | I <sub>RRM</sub>   | 1.0   |           | 0.5       |           | A    |
| Voltage rate of change (rated V <sub>R</sub> )  | dv/dt              | 10,000  |           |           |           | V/μs |
| Operating junction temperature range  | T <sub>J</sub>     | -65 to +150                                     |           |           |           | °C   |
| Storage temperature range   | T <sub>STG</sub>   | -65 to +175                                     |           |           |           | °C   |
| RMS Isolation voltage (MBRF type only) from terminals to<br>heatsink with t = 1.0 second, RH ≤ 30%        | V <sub>ISOL</sub>  | 4500 (NOTE 1)<br>3500 (NOTE 2)<br>1500 (NOTE 3) |           |           |           | V    |

## Electrical Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter  | Symbol         | MBR1535CT                 | MBR1545CT | MBR1550CT              | MBR1560CT | Unit |
|--|----------------|---------------------------|-----------|------------------------|-----------|------|
| Maximum instantaneous forward voltage per leg (Note 4)<br>at I <sub>F</sub> = 7.5A, T <sub>C</sub> = 25°C<br>at I <sub>F</sub> = 7.5A, T <sub>C</sub> = 125°C<br>at I <sub>F</sub> = 15A, T <sub>C</sub> = 25°C<br>at I <sub>F</sub> = 15A, T <sub>C</sub> = 125°C | V <sub>F</sub> | -<br>0.57<br>0.84<br>0.72 |           | 0.75<br>0.65<br>-<br>- |           | V    |
| Maximum instantaneous reverse current<br>at rated DC blocking voltage per leg (Note 4)   | I <sub>R</sub> | 0.1<br>15                 |           | 1.0<br>50              |           | mA   |

## Thermal Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter                          | Symbol                               | MBR       | MBRF     | MBRB      | Unit |
|------------------------------------|--------------------------------------|-----------|----------|-----------|------|
| Maximum thermal resistance per leg | R <sub>θJA</sub><br>R <sub>θJC</sub> | 60<br>3.0 | -<br>5.0 | 60<br>3.0 | °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                              |
|-------------------------|-----------|--------------|---|
| MBR1535CT - MBR1560CT   | TO-220AB  | 45           | Anti-Static tube, 50/tube, 2K/carton        |
| MBRF1535CT - MBRF1560CT | ITO-220AB | 45           | Anti-Static tube, 50/tube, 2K/carton        |
| MBRB1535CT - MBRB1560CT | 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 |

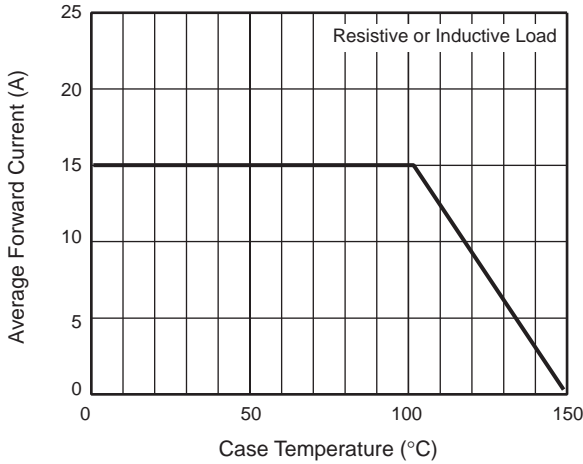


# MBR15xxCT, MBRF15xxCT & MBRB15xxCT

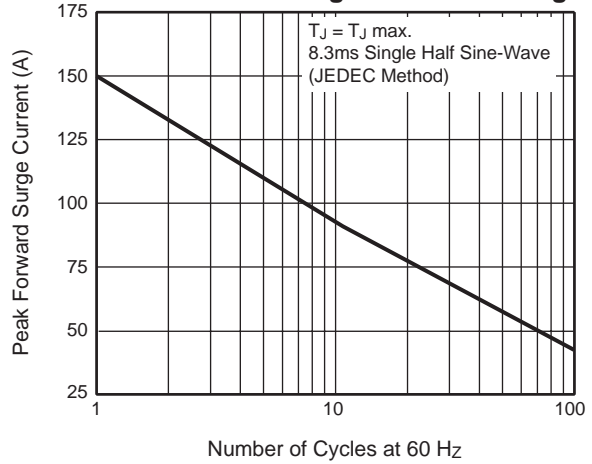
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## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

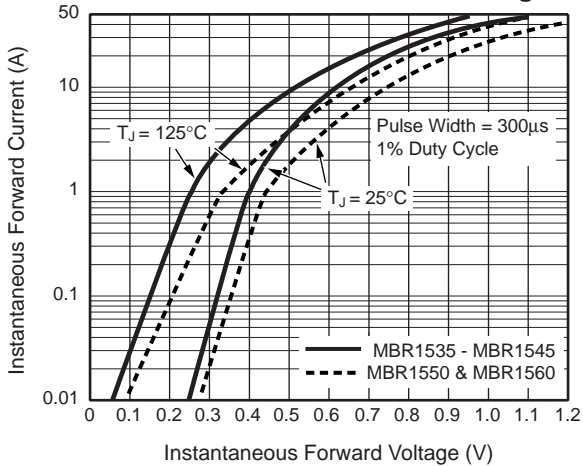
**Fig. 1 – Forward Current Derating Curve**



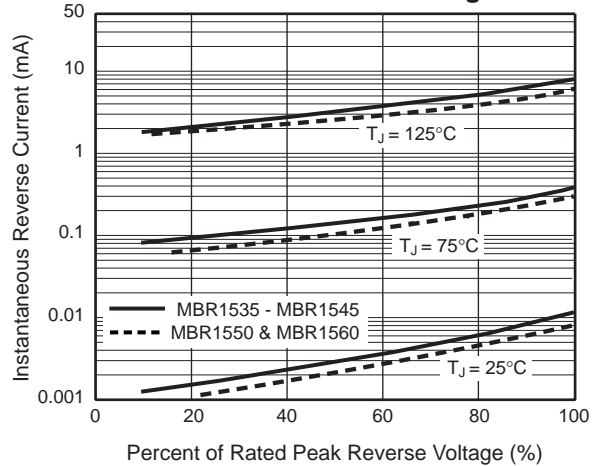
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



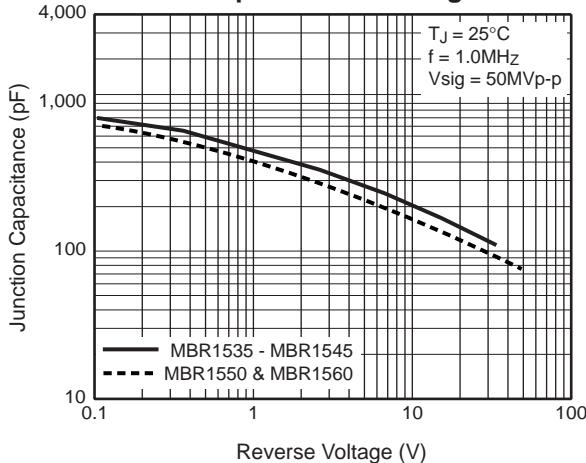
**Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg**



**Fig. 4 – Typical Reverse Characteristics Per Leg**



**Fig. 5 – Typical Junction Capacitance Per Leg**



**Fig. 6 – Typical Transient Thermal Impedance Per Leg**

