



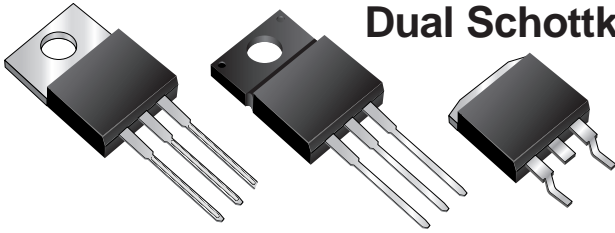
MBR15HxxCT, MBRF15HxxCT & MBRB15HxxCT Series

New Product

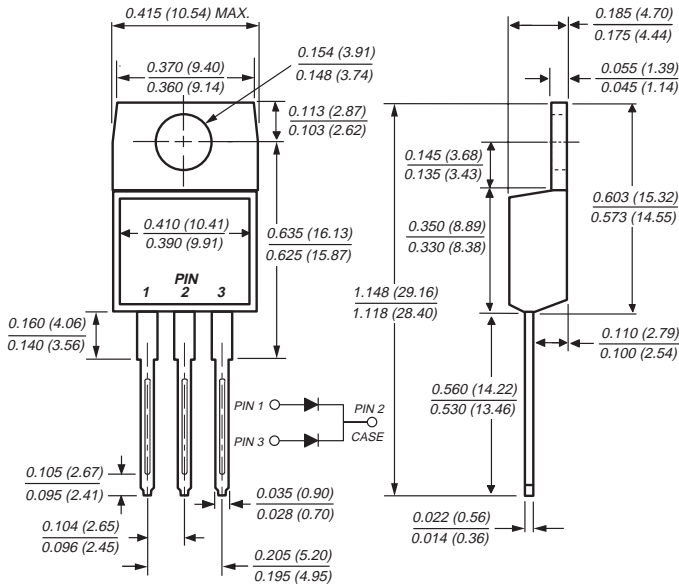
Vishay Semiconductors
formerly General Semiconductor

Dual Schottky Barrier Rectifiers

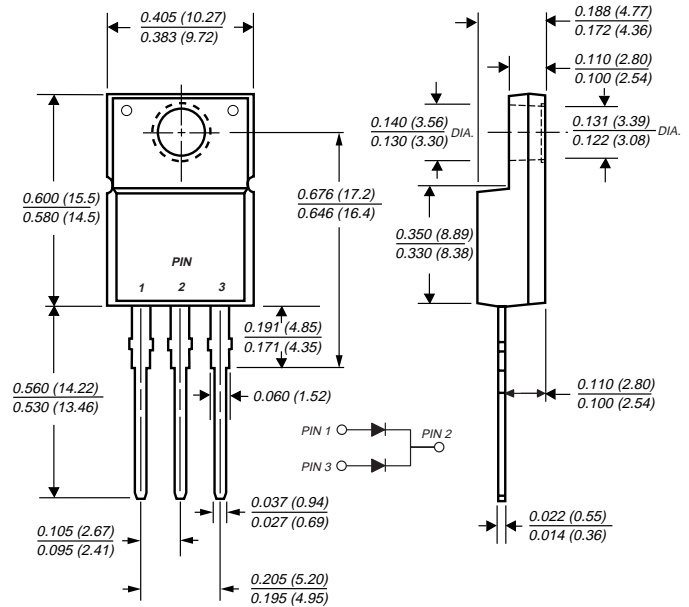
Reverse Voltage 35 to 60 V
Forward Current 15 A



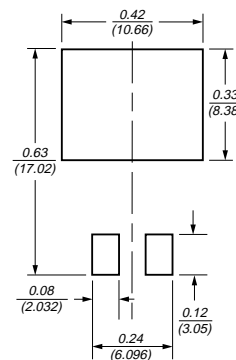
TO-220AB (MBR15HxxCT)



ITO-220AB (MBRF15HxxCT)

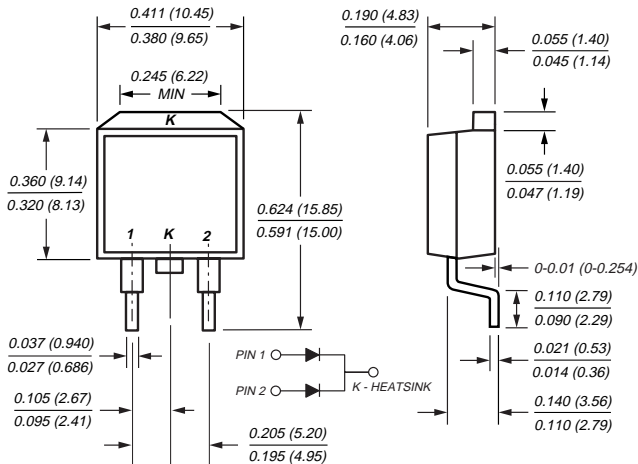


Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)

TO-263AB (MBRB15HxxCT)



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 oz., 2.24 g

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-0
- Dual rectifier construction, positive center tap
- Metal silicon junction, majority carrier conduction
- Low forward voltage drop, low power loss and 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" (6.35 mm) from case
- Rated for reverse surge and ESD
- 175 °C maximum operation junction temperature

MBR15HxxCT, MBRF15HxxCT & MBRB15HxxCT Series



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

| Parameter | Symbol | MBR15H35CT | MBR15H45CT | MBR15H50CT | MBR15H60CT | 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 |
| Max. average forward rectified current <small>(see figure 1)</small> | <i>Total device</i> I _{F(AV)} <i>Per leg</i> | 15 7.5 | | | | A |
| Peak repetitive forward current at T _C = 155 °C per leg <small>(rated V_R, 20 KHz sq. wave)</small> | I _{FRM} | 15 | | | | A |
| Non-repetitive avalanche energy per leg <small>at 25 °C, I_{AS} = 4A, L = 10 mH</small> | E _{AS} | 80 | | | | mJ |
| Peak forward surge current 8.3 ms single half sine-wave <small>superimposed on rated load (JEDEC Method)</small> | I _{FSM} | 150 | | | | A |
| Peak repetitive reverse surge current per leg <small>at t_p = 2.0 μs, 1 KHz</small> | I _{RRM} | 1.0 | | 0.5 | | A |
| Peak non-repetitive reverse energy (8/20 μs waveform) | E _{RSM} | 20 | | 10 | | mJ |
| Electrostatic discharge capacitor voltage <small>Human body model: C = 100 F, R = 1.5 kΩ</small> | V _C | 25 | | | | kV |
| Voltage rate of change (rated V _R) | dv/dt | 10,000 | | | | V/μs |
| Operating junction temperature range | T _J | -65 to +175 | | | | °C |
| Storage temperature range | T _{STG} | -65 to +175 | | | | °C |
| RMS Isolation voltage (MBRF type only) from terminals <small>to heatsink with t = 1.0 second, RH ≤ 30%</small> | V _{ISOL} | 4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾ | | | | V |

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

| Parameter | Symbol | MBR15H35CT, MBR15H45CT | | MBR15H50CT, MBR15H60CT | | Unit |
|--|----------------|------------------------|------------------------------|------------------------|------------------------------|----------|
| | | Typ | Max | Typ | Max | |
| Maximum instantaneous forward voltage per leg ⁽⁴⁾ <small>at I_F = 7.5 A T_J = 25 °C at I_F = 7.5 A T_J = 125 °C at I_F = 15 A T_J = 25 °C at I_F = 15 A T_J = 125 °C</small> | V _F | – 0.50 – 0.61 | 0.63 0.55 0.75 0.66 | – 0.58 – 0.68 | 0.73 0.61 0.87 0.72 | V |
| Maximum instantaneous reverse current <small>at rated DC blocking voltage per leg⁽⁴⁾</small> | I _R | – 3.0 | 50 10 | – 2.0 | 50 10 | μA mA |

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

| Parameter | Symbol | MBR | MBRF | MBRB | Unit |
|------------------------------------|------------------|-----|------|------|------|
| Maximum thermal resistance per leg | R _{θJC} | 3.0 | 5.0 | 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: 300 μs pulse width, 1% duty cycle

Ordering Information

| Product | Case | Package Code | Package Option |
|---------------------------|-----------|--------------|---|
| MBR15H35CT – MBR15H60CT | TO-220AB | 45 | Anti-Static tube, 50/tube, 2K/carton |
| MBRF15H35CT – MBRF15H60CT | ITO-220AB | 45 | Anti-Static tube, 50/tube, 2K/carton |
| MBRB15H35CT – MBRB15H60CT | 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 |



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

Fig. 1 – Forward Current Derating Curve

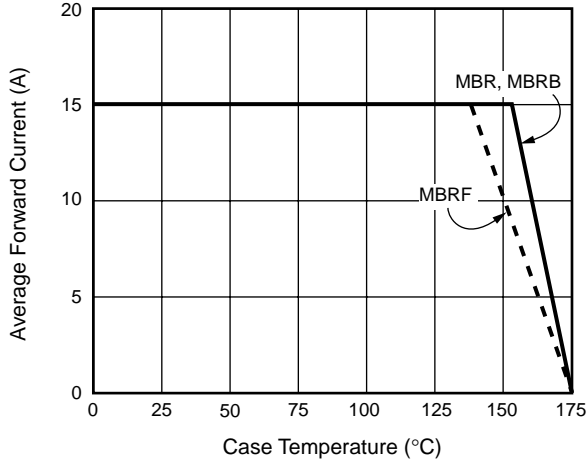


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

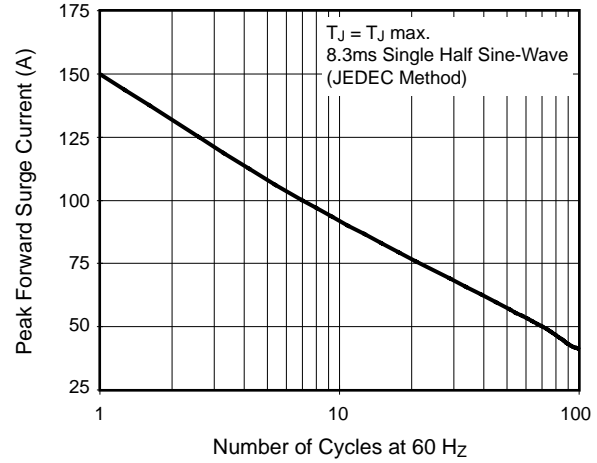


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

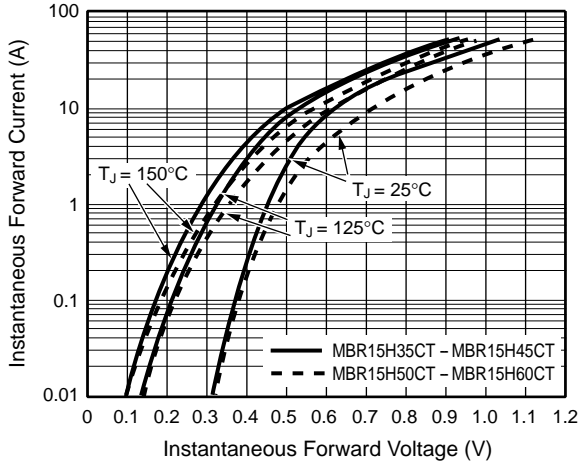


Fig. 4 – Typical Reverse Characteristics Per Leg

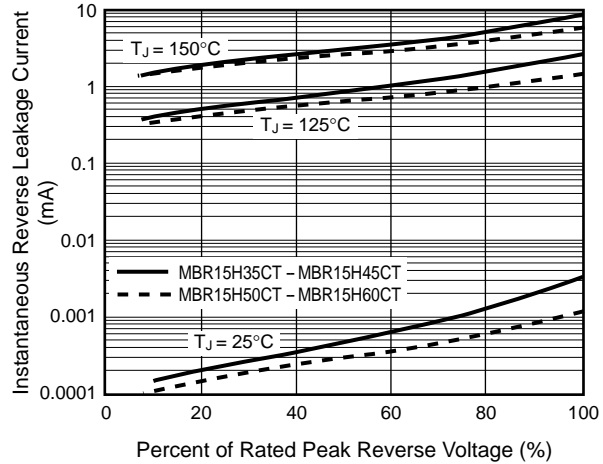


Fig. 5 – Typical Junction Capacitance Per Leg

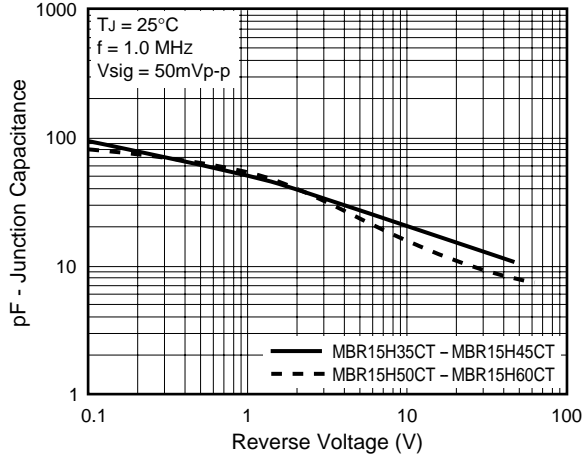


Fig. 6 – Typical Transient Thermal Impedance Per Leg

