

MBR1535CT, MBR1545CT

SWITCHMODE™ Power Rectifier

Features and Benefits

- Center-Tap Configuration
- Low Forward Voltage
- Low Power Loss / High Efficiency
- High Surge Capacity
- 175°C Operating Junction Temperature
- 15 A Total (7.5 A Per Diode Leg)
- Pb-Free Package is Available*

Applications

- Power Supply – Output Rectification
- Power Management
- Instrumentation

Mechanical Characteristics

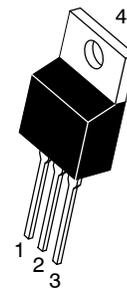
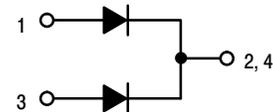
- Case: Epoxy, Molded
- Epoxy Meets UL 94, V-0 @ 0.125 in
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes:
260°C Max. for 10 Seconds
- ESD Rating: Human Body Model = 3B
Machine Model = C



ON Semiconductor®

<http://onsemi.com>

SCHOTTKY BARRIER RECTIFIERS 15 AMPERES 35 and 45 VOLTS



TO-220AB
CASE 221A
PLASTIC

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
x = 3 or 4
G = Pb-Free Package
AKA = Diode Polarity

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---------------------------------|-------------|------------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MBR1535CT MBR1545CT | V_{RRM} V_{RWM} V_R | 35 45 | V |
| Average Rectified Forward Current ($T_C = 163^\circ\text{C}$) Per Diode Per Device | $I_{F(AV)}$ | 7.5 15 | A |
| Peak Repetitive Forward Current (Square Wave, 20 kHz, $T_C = 161^\circ\text{C}$) Per Diode | I_{FRM} | 15 | 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 | $^\circ\text{C}$ |
| Operating Junction Temperature (Note 1) | T_J | -65 to +175 | $^\circ\text{C}$ |
| Voltage Rate of Change (Rated V_R) | dv/dt | 1000 | $\text{V}/\mu\text{s}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

THERMAL CHARACTERISTICS PER DIODE

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------|---------------------------|
| Maximum Thermal Resistance, Junction-to-Case (Min. Pad) | $R_{\theta JC}$ | 3.0 | $^\circ\text{C}/\text{W}$ |
| Maximum Thermal Resistance, Junction-to-Ambient (Min. Pad) | $R_{\theta JA}$ | 60 | $^\circ\text{C}/\text{W}$ |

ELECTRICAL CHARACTERISTICS PER DIODE

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|--------|-------------|----------------------|----------------------|------|
| Maximum Instantaneous Forward Voltage (Note 2) ($i_F = 7.5$ Amps, $T_J = 125^\circ\text{C}$) ($i_F = 15$ Amps, $T_J = 125^\circ\text{C}$) ($i_F = 15$ Amps, $T_J = 25^\circ\text{C}$) | V_F | - - - | 0.47 0.63 0.66 | 0.57 0.72 0.84 | V |
| Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, $T_J = 125^\circ\text{C}$) (Rated DC Voltage, $T_J = 25^\circ\text{C}$) | i_R | - - | 10 0.025 | 15 0.1 | mA |

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

ORDERING INFORMATION

| Device | Package | Shipping† |
|------------|---------------------|-----------------|
| MBR1535CT | TO-220 | 50 Units / Rail |
| MBR1535CTG | TO-220 (Pb-Free) | 50 Units / Rail |
| MBR1545CT | TO-220 | 50 Units / Rail |
| MBR1545CTG | TO-220 (Pb-Free) | 50 Units / Rail |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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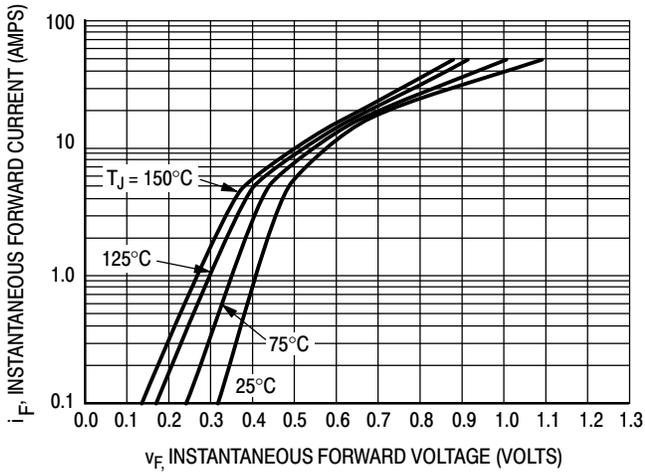


Figure 1. Typical Forward Voltage

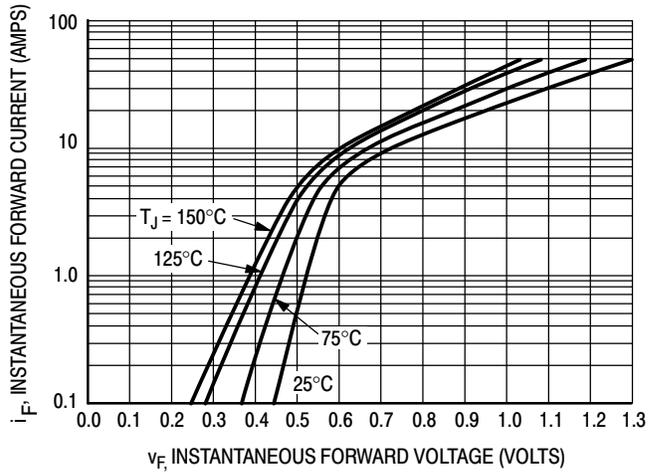


Figure 2. Maximum Forward Voltage

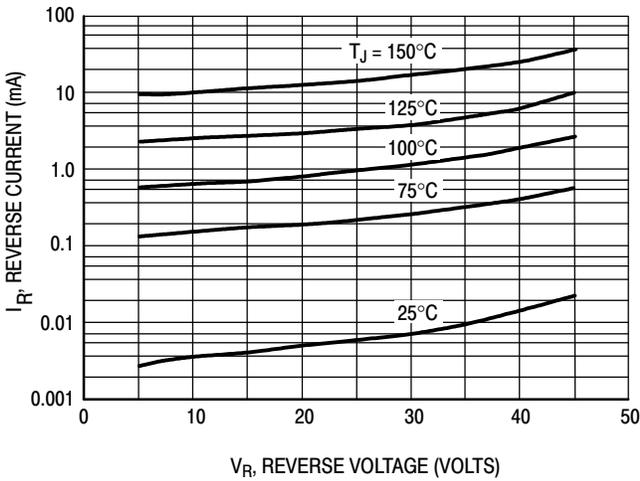


Figure 3. Typical Reverse Current

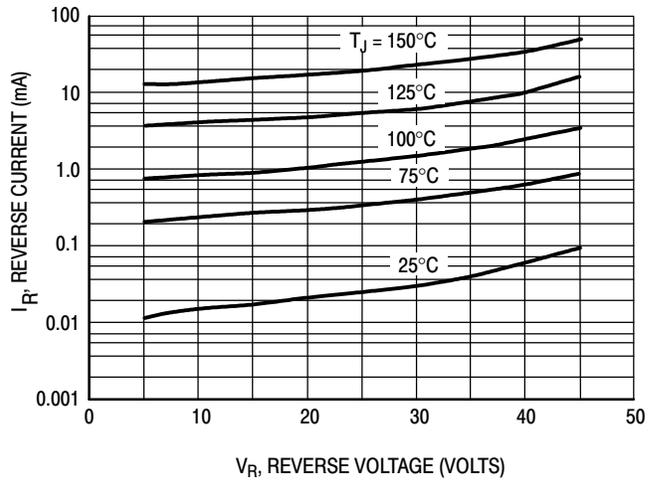


Figure 4. Maximum Reverse Current

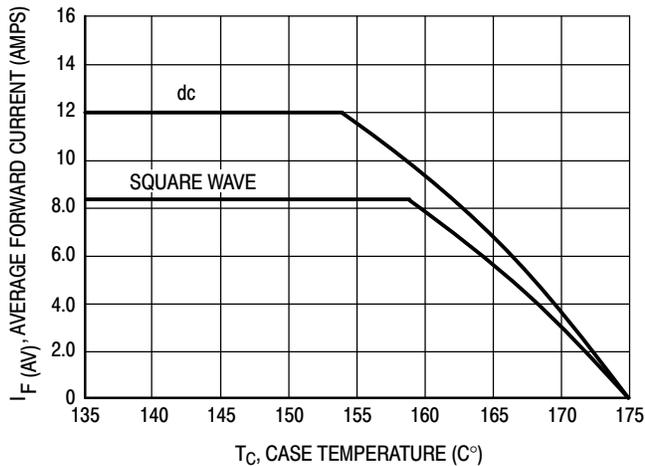


Figure 5. Current Derating, Case Per Leg

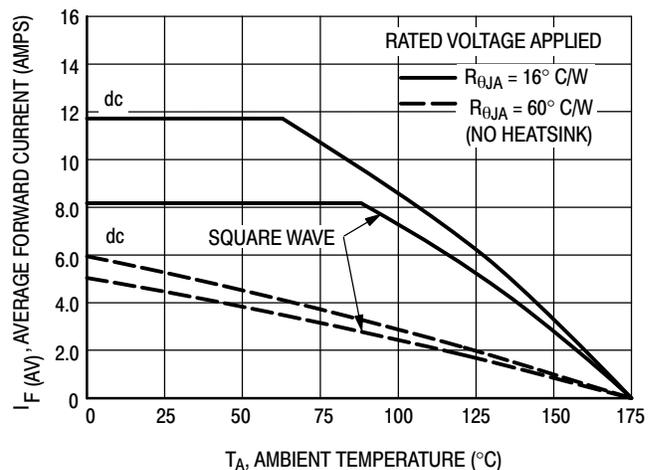


Figure 6. Current Derating, Ambient Per Leg

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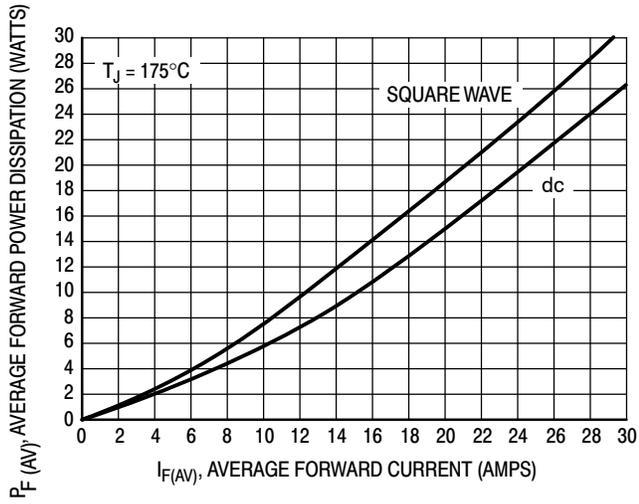


Figure 7. Forward Power Dissipation

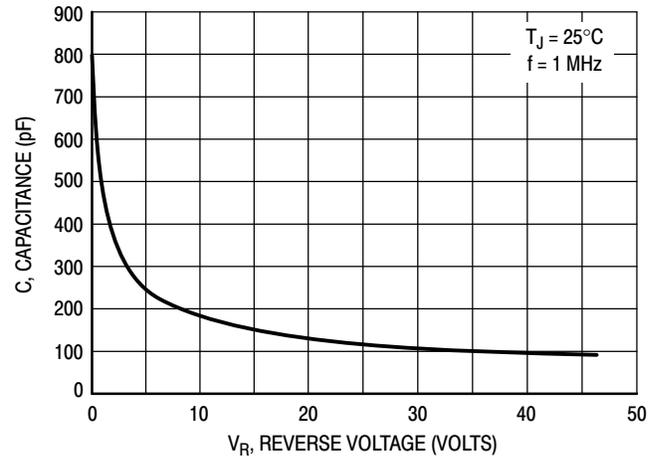
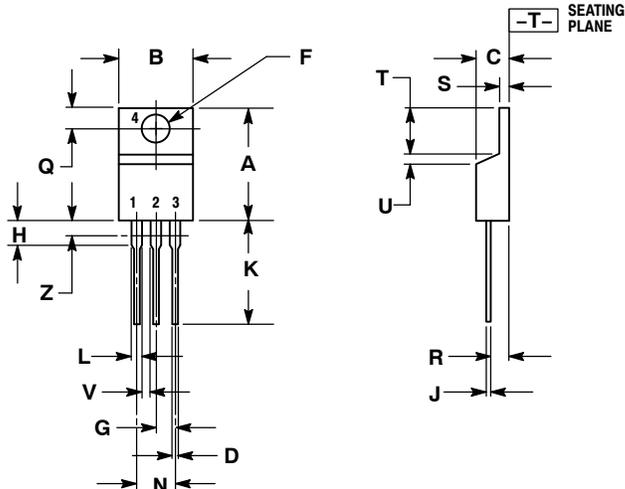


Figure 8. Typical Capacitance

MBR1535CT, MBR1545CT

PACKAGE DIMENSIONS

TO-220
CASE 221A-09
ISSUE AF



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.570 | 0.620 | 14.48 | 15.75 |
| B | 0.380 | 0.405 | 9.66 | 10.28 |
| C | 0.160 | 0.190 | 4.07 | 4.82 |
| D | 0.025 | 0.035 | 0.64 | 0.88 |
| F | 0.142 | 0.161 | 3.61 | 4.09 |
| G | 0.095 | 0.105 | 2.42 | 2.66 |
| H | 0.110 | 0.155 | 2.80 | 3.93 |
| J | 0.014 | 0.025 | 0.36 | 0.64 |
| K | 0.500 | 0.562 | 12.70 | 14.27 |
| L | 0.045 | 0.060 | 1.15 | 1.52 |
| N | 0.190 | 0.210 | 4.83 | 5.33 |
| Q | 0.100 | 0.120 | 2.54 | 3.04 |
| R | 0.080 | 0.110 | 2.04 | 2.79 |
| S | 0.045 | 0.055 | 1.15 | 1.39 |
| T | 0.235 | 0.255 | 5.97 | 6.47 |
| U | 0.000 | 0.050 | 0.00 | 1.27 |
| V | 0.045 | --- | 1.15 | --- |
| Z | --- | 0.080 | --- | 2.04 |

STYLE 6:

1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

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- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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