

ON Semiconductor

Is Now

onsemi™

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MBR1545CTP

SWITCHMODE™ Power Rectifier

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

- Center-Tap Configuration
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL94, VO at 1/8"

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: B1545P

MAXIMUM RATINGS

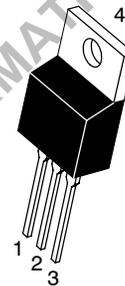
| Rating | Symbol | Value | Unit |
|---|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 45 | V |
| Average Rectified Forward Current (Rated V_R , $T_C = 105^\circ\text{C}$) Per Diode Per Device | $I_{F(AV)}$ | 7.5 15 | A |
| Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 105^\circ\text{C}$) 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 | °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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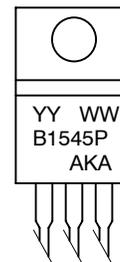
<http://onsemi.com>

**SCHOTTKY BARRIER
RECTIFIER
15 AMPERES
45 VOLTS**



CASE 221A
TO-220AB
PLASTIC

MARKING DIAGRAM



YY = Year
WW = Work Week
B1545P = Device Code
AKA = Diode Polarity

ORDERING INFORMATION

| Device | Package | Shipping |
|------------|---------|---------------|
| MBR1545CTP | TO-220 | 50 Units/Rail |

MBR1545CTP

THERMAL CHARACTERISTICS (Per Diode)

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

ELECTRICAL CHARACTERISTICS (Per Diode)

| | | | |
|---|-------|----------------------|-------|
| Maximum Instantaneous Forward Voltage (Note 1) ($i_F = 7.5$ Amps, $T_C = 125^{\circ}C$) ($i_F = 15$ Amps, $T_C = 125^{\circ}C$) ($i_F = 15$ Amps, $T_C = 25^{\circ}C$) | V_F | 0.57 0.72 0.84 | 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 | 15 0.1 | mA |

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

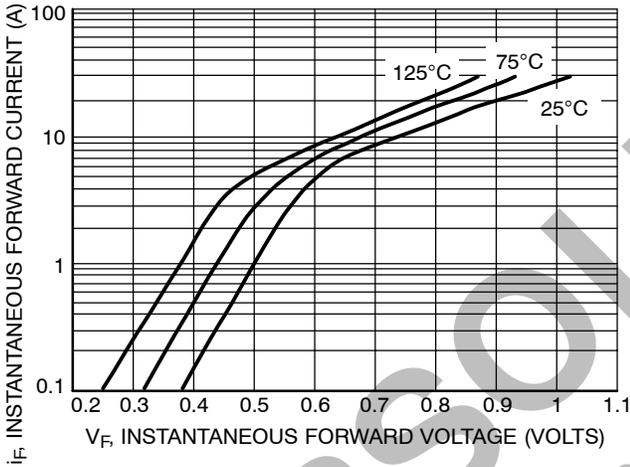


Figure 1. Maximum Forward Voltage

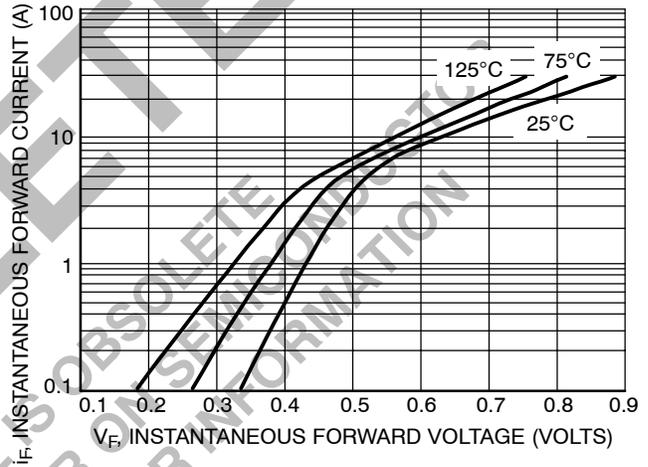


Figure 2. Typical Forward Voltage

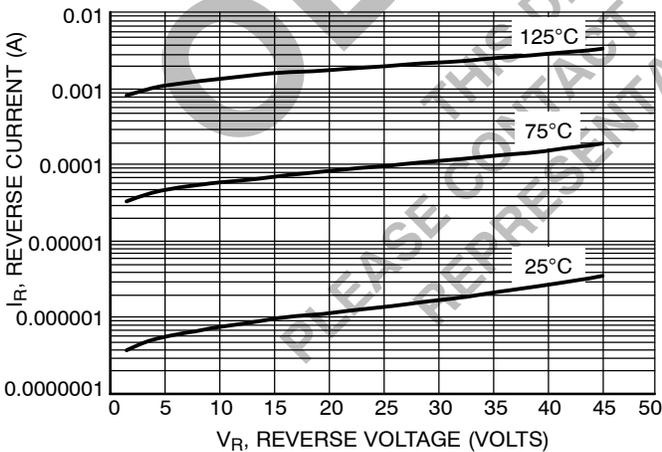


Figure 3. Typical Reverse Current

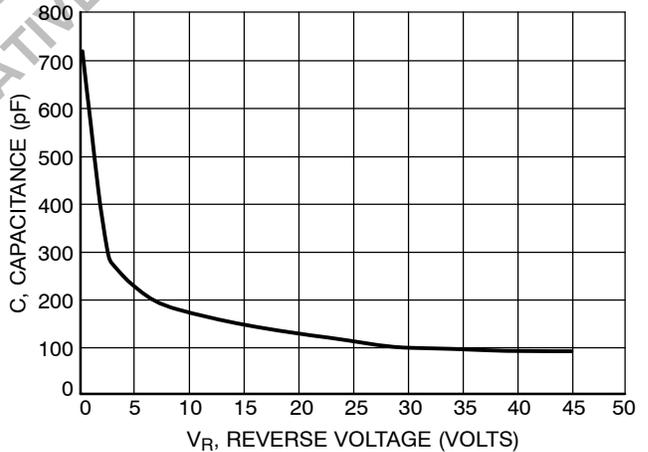


Figure 4. Typical Capacitance

MBR1545CTP

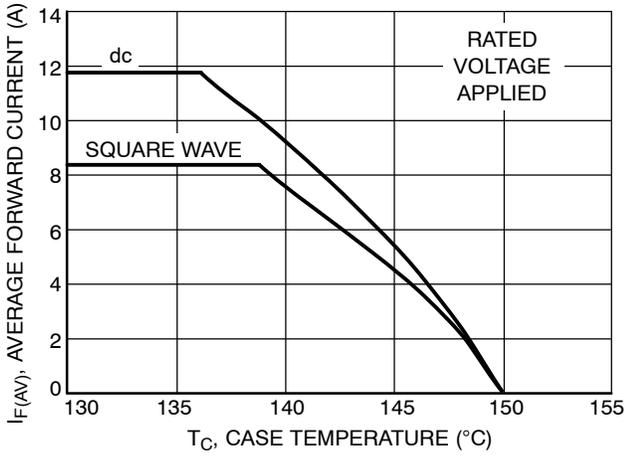


Figure 5. Current Derating, Case, Per Diode

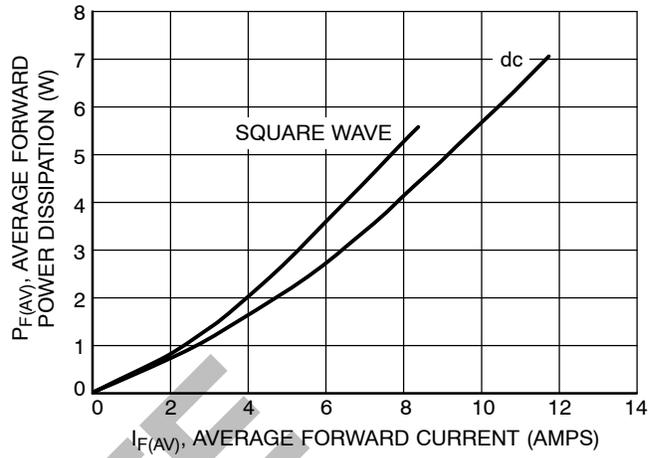


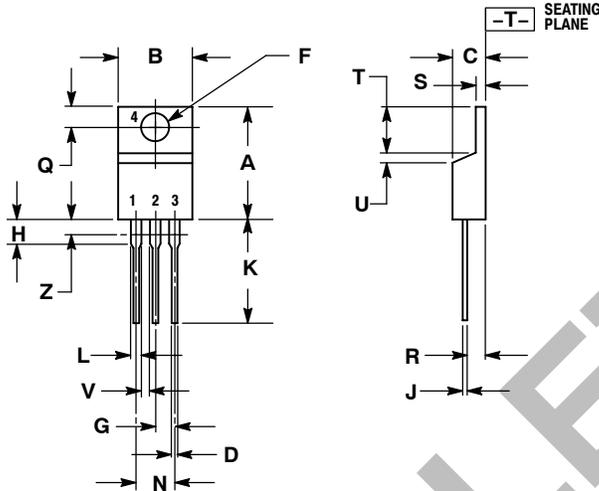
Figure 6. Forward Power Dissipation, Per Diode

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MBR1545CTP

PACKAGE DIMENSIONS

TO-220 THREE-LEAD
TO-220AB
CASE 221A-09
ISSUE AA



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 | 0.147 | 3.61 | 3.73 |
| G | 0.095 | 0.105 | 2.42 | 2.66 |
| H | 0.110 | 0.155 | 2.80 | 3.93 |
| J | 0.018 | 0.025 | 0.46 | 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 |

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