

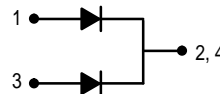
SWITCHMODE™ Power Rectifiers

... 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
- Guaranteed Reverse Avalanche
- Epoxy Meets UL94, VO at 1/8"

Mechanical Characteristics:

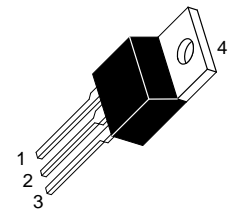
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B1535, B1545



MBR1535CT
MBR1545CT

MBR1545CT is a
Motorola Preferred Device

**SCHOTTKY BARRIER
RECTIFIERS**
15 AMPERES
35 and 45 VOLTS



CASE 221A-06
TO-220AB
PLASTIC

MAXIMUM RATINGS

| Rating | Symbol | MBR1535CT | MBR1545CT | Unit |
|---|--------------------------------------|-------------|-------------|------------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 35 | 45 | Volts |
| Average Rectified Forward Current $T_C = 105^\circ\text{C}$ (Rated V_R) | $I_F(AV)$ Per Diode Per Device | 7.5 15 | 7.5 15 | Amps |
| Peak Repetitive Forward Current, $T_C = 105^\circ\text{C}$ (Rated V_R , Square Wave, 20 kHz) Per Diode | I_{FRM} | 15 | 15 | Amps |
| Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz) | I_{FSM} | 150 | 150 | Amps |
| Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz) | I_{RRM} | 1.0 | 1.0 | Amp |
| Operating Junction Temperature | T_J | -65 to +150 | -65 to +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -65 to +175 | -65 to +175 | $^\circ\text{C}$ |
| Voltage Rate of Change (Rated V_R) | dv/dt | 1000 | 1000 | $\text{V}/\mu\text{s}$ |

THERMAL CHARACTERISTICS PER DIODE

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

ELECTRICAL CHARACTERISTICS PER DIODE

| | | | | |
|---|-------|----------------------|----------------------|-------|
| Maximum Instantaneous Forward Voltage (1) ($i_F = 7.5$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 15$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 15$ Amps, $T_C = 25^\circ\text{C}$) | V_F | 0.57 0.72 0.84 | 0.57 0.72 0.84 | Volts |
| Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, $T_C = 125^\circ\text{C}$) (Rated dc Voltage, $T_C = 25^\circ\text{C}$) | i_R | 15 0.1 | 15 0.1 | mA |

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

SWITCHMODE is a trademark of Motorola, Inc.

Preferred devices are Motorola recommended choices for future use and best overall value.

MBR1535CT MBR1545CT

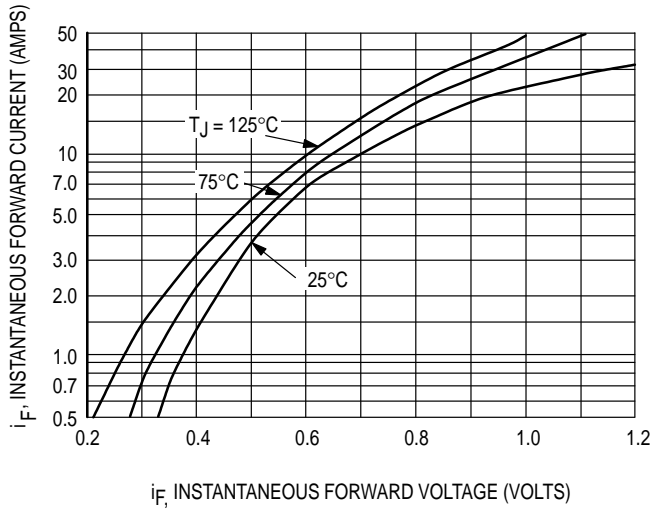


Figure 1. Typical Forward Voltage

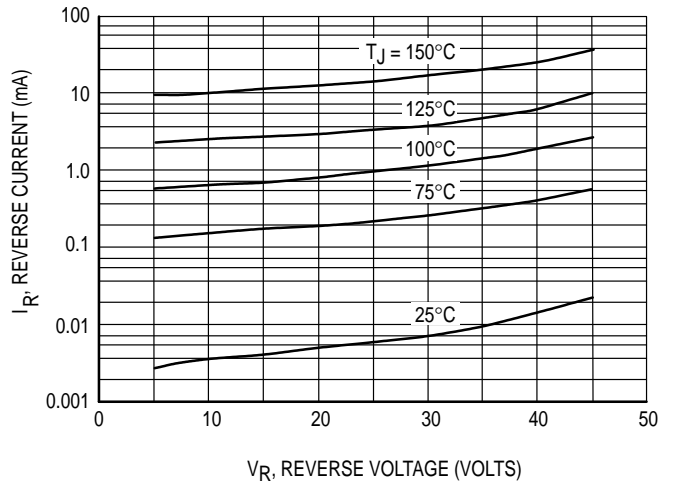


Figure 2. Typical Reverse Current

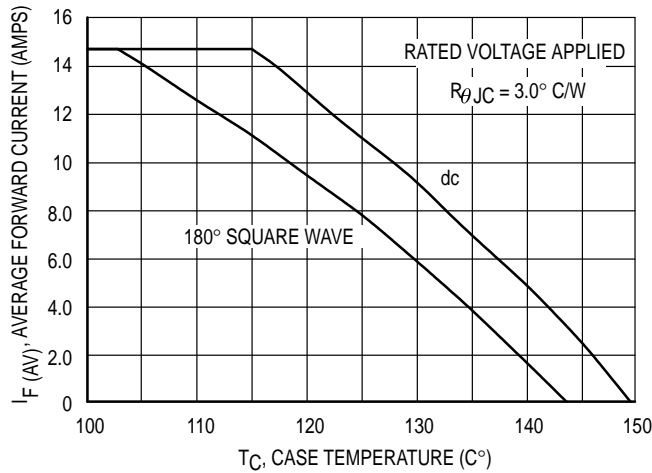


Figure 3. Current Derating, Case

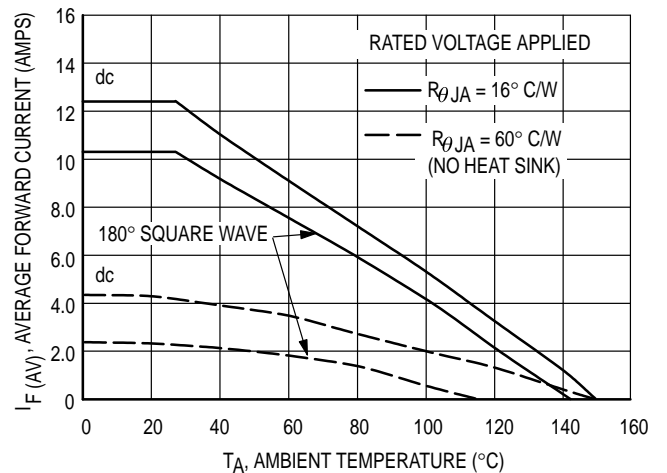


Figure 4. Current Derating, Ambient

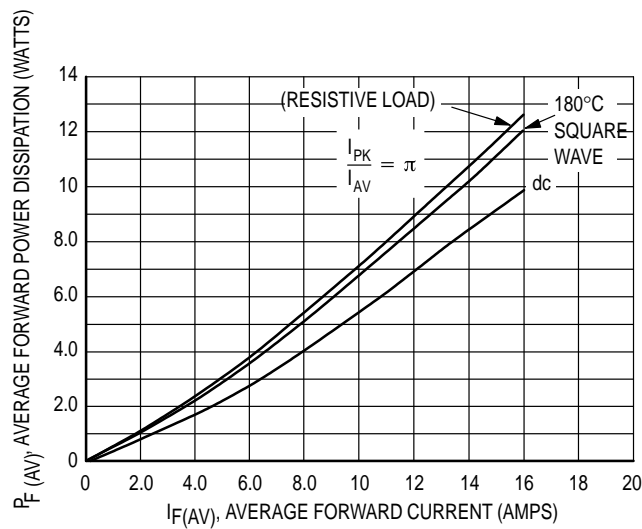
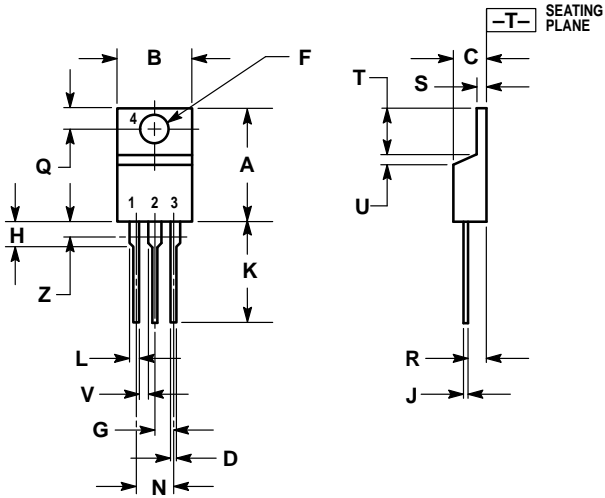


Figure 5. Power Dissipation


PACKAGE DIMENSIONS



- 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 |

CASE 221A-06
(TO-220AB)
ISSUE Y

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