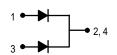
# **SWITCHMODE™** Power Rectifiers

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

- · Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Guaranteed Reverse Avalanche

### **Mechanical Characteristics:**

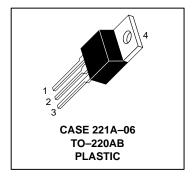
- · Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B2535, B2545



# MBR2535CT MBR2545CT

MBR2545CT is a Motorola Preferred Device

SCHOTTKY BARRIER RECTIFIERS 30 AMPERES 35 and 45 VOLTS



#### **MAXIMUM RATINGS**

| Rating   | Symbol             | MBR2535CT    | MBR2545CT    | Unit  |
|--|--------------------|--------------|--------------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                   | VRRM<br>VRWM<br>VR | 35           | 45           | Volts |
| Average Rectified Forward Current (Rated $V_R$ )<br>$T_C = 130^{\circ}C$   | IF(AV)             | 30           | 30           | Amps  |
| Peak Repetitive Forward Current Per Diode Leg<br>(Rated V <sub>R</sub> , Square Wave, 20 kHz) T <sub>C</sub> = 130°C     | IFRM               | 30           | 30           | Amps  |
| Nonrepetitive Peak Surge Current per Diode Leg<br>(Surge applied at rated load conditions halfwave, single phase, 60 Hz) | IFSM               | 150          | 150          | Amps  |
| Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)  | IRRM               | 1.0          | 1.0          | Amp   |
| Operating Junction Temperature   | TJ                 | -65 to +150  | -65 to +150  | °C    |
| Storage Temperature  |                    | - 65 to +175 | - 65 to +175 | °C    |
| Voltage Rate of Change (Rated V <sub>R</sub> )   | dv/dt              | 1000         | 1000         | V/µs  |

#### THERMAL CHARACTERISTICS PER DIODE LEG

| Maximum Thermal Resistance, Junction to Case | R <sub>0</sub> JC | 1.5 | 1.5 | °C/W |
|--|-------------------|-----|-----|------|

#### **ELECTRICAL CHARACTERISTICS PER DIODE LEG**

| Maximum Instantaneous Forward Voltage (1)<br>( $i_F = 30 \text{ Amps}$ , $T_C = 125^{\circ}\text{C}$ )<br>( $i_F = 30 \text{ Amps}$ , $T_C = 25^{\circ}\text{C}$ ) | ۷F | 0.73<br>0.82 | 0.73<br>0.82 | Volts |
|--|----|--------------|--------------|-------|
| Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, T <sub>C</sub> = 125°C) (Rated dc Voltage, T <sub>C</sub> = 25°C)                                     | iR | 40<br>0.2    | 40<br>0.2    | mA    |

<sup>(1)</sup> Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

SWITCHMODE is a trademark of Motorola, Inc.

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





## **MBR2535CT MBR2545CT**

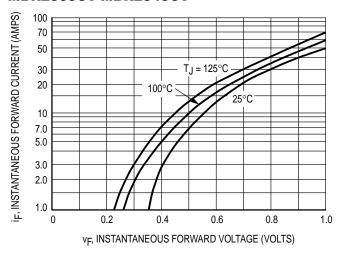
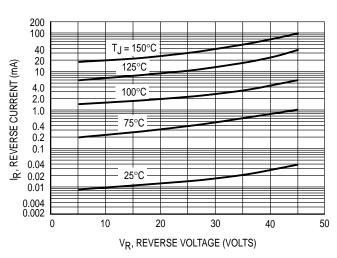


Figure 1. Typical Forward Voltage



**Figure 2. Typical Reverse Current** 

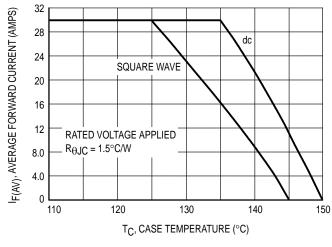


Figure 3. Current Derating, Case

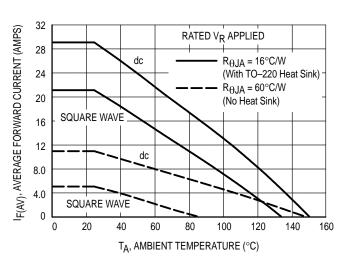


Figure 4. Current Derating, Ambient

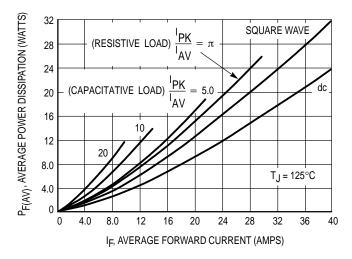
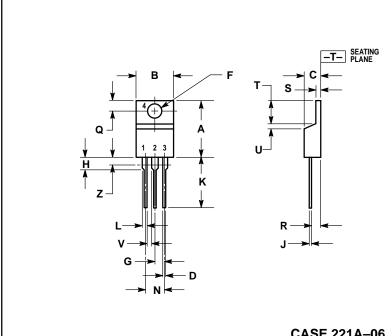


Figure 5. Forward Power Dissipation

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## **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.

|     | INCHES |       | MILLIMETERS |       |  |
|-----|--------|-------|-------------|-------|--|
| DIM | MIN    | MAX   | MIN         | MAX   |  |
| Α   | 0.570  | 0.620 | 14.48       | 15.75 |  |
| В   | 0.380  | 0.405 | 9.66        | 10.28 |  |
| U   | 0.160  | 0.190 | 4.07        | 4.82  |  |
| ם   | 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  |  |
| Η   | 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  |  |
| ø   | 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  |  |
| Т   | 0.235  | 0.255 | 5.97        | 6.47  |  |
| 5   | 0.000  | 0.050 | 0.00        | 1.27  |  |
| ٧   | 0.045  |       | 1.15        |       |  |
| Z   |        | 0.080 |             | 2.04  |  |

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

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#### MBR2535CT MBR2545CT

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