

查询"MBRD620"供应商

# SWITCHMODE™ Power Rectifiers

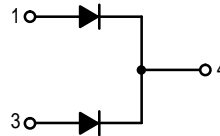
## DPAK Surface Mount Package

... in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

- Extremely Fast Switching
- Extremely Low Forward Drop
- Platinum Barrier with Avalanche Guardrings
- Guaranteed Reverse Avalanche

### Mechanical Characteristics:

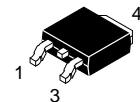
- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 75 units per plastic tube
- Available in 16 mm Tape and Reel, 2500 units per reel, by adding a "T4" suffix to the part number
- Marking: B620T, B630T, B640T, B650T, B660T



**MBRD620CT**  
**MBRD630CT**  
**MBRD640CT**  
**MBRD650CT**  
**MBRD660CT**

MBRD620CT, MBRD640CT and  
MBRD660CT are  
Motorola Preferred Devices

**SCHOTTKY BARRIER  
RECTIFIERS  
6 AMPERES  
20 TO 60 VOLTS**



**CASE 369A-13  
PLASTIC**

### MAXIMUM RATINGS

| Rating  | Symbol                                 | MBRD        |       |       |       |       | Unit                   |
|---|--|-------------|-------|-------|-------|-------|------------------------|
|   |  | 620CT       | 630CT | 640CT | 650CT | 660CT |                        |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                      | $V_{RRM}$<br>$V_{RWV}$<br>$V_R$        | 20          | 30    | 40    | 50    | 60    | Volts                  |
| Average Rectified Forward Current<br>$T_C = 130^\circ\text{C}$ (Rated $V_R$ )                               | $I_{F(AV)}$<br>Per Diode<br>Per Device | 3<br>6      |       |       |       |       | Amps                   |
| Peak Repetitive Forward Current, $T_C = 130^\circ\text{C}$<br>(Rated $V_R$ , Square Wave, 20 kHz) Per Diode | $I_{FRM}$                              | 6           |       |       |       |       | Amps                   |
| Nonrepetitive Peak Surge Current<br>(Surge applied at rated load conditions halfwave, single phase, 60 Hz)  | $I_{FSM}$                              | 75          |       |       |       |       | Amps                   |
| Peak Repetitive Reverse Surge Current (2 $\mu\text{s}$ , 1 kHz)   | $I_{RRM}$                              | 1           |       |       |       |       | Amp                    |
| Operating Junction Temperature  | $T_J$                                  | -65 to +150 |       |       |       |       | $^\circ\text{C}$       |
| Storage Temperature   | $T_{stg}$                              | -65 to +175 |       |       |       |       | $^\circ\text{C}$       |
| Voltage Rate of Change (Rated $V_R$ )   | $dv/dt$                                | 10000       |       |       |       |       | $\text{V}/\mu\text{s}$ |

### THERMAL CHARACTERISTICS PER DIODE

|   |                 |    |                           |
|---|-----------------|----|---------------------------|
| Maximum Thermal Resistance, Junction to Case        | $R_{\theta JC}$ | 6  | $^\circ\text{C}/\text{W}$ |
| Maximum Thermal Resistance, Junction to Ambient (1) | $R_{\theta JA}$ | 80 | $^\circ\text{C}/\text{W}$ |

(1) Rating applies when surface mounted on the minimum pad size recommended.

SWITCHMODE is a trademark of Motorola, Inc.

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



# MBRD620CT MBRD630CT MBRD640CT MBRD650CT MBRD660CT

## ELECTRICAL CHARACTERISTICS PER DIODE

|   |       |                            |       |
|---|-------|----------------------------|-------|
| <a href="#">查询"MBRD620"供应商</a><br>Maximum Instantaneous Forward Voltage (2)<br>$i_F = 3 \text{ Amps}, T_C = 25^\circ\text{C}$<br>$i_F = 3 \text{ Amps}, T_C = 125^\circ\text{C}$<br>$i_F = 6 \text{ Amps}, T_C = 25^\circ\text{C}$<br>$i_F = 6 \text{ Amps}, T_C = 125^\circ\text{C}$ | $V_F$ | 0.7<br>0.65<br>0.9<br>0.85 | Volts |
| Maximum Instantaneous Reverse Current (2)<br>(Rated dc Voltage, $T_C = 25^\circ\text{C}$ )<br>(Rated dc Voltage, $T_C = 125^\circ\text{C}$ )  | $i_R$ | 0.1<br>15                  | mA    |

(2) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

## TYPICAL CHARACTERISTICS

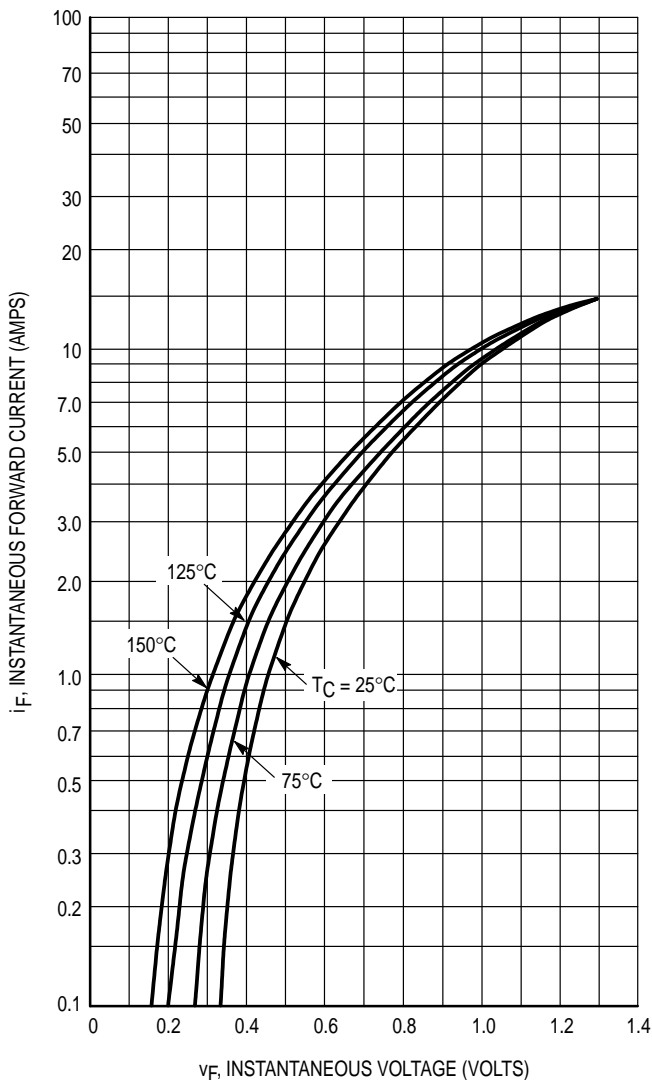
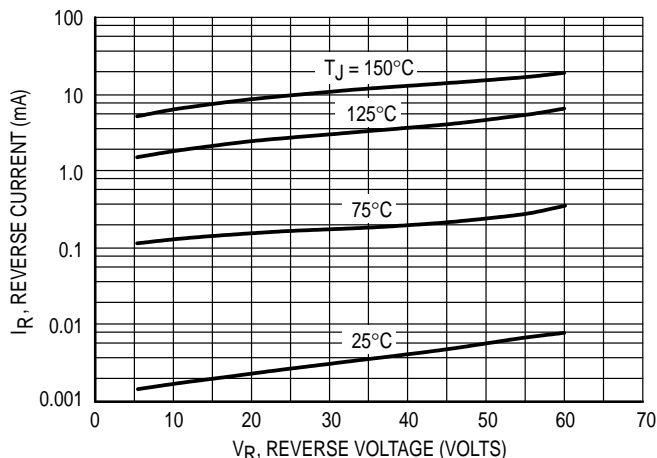


Figure 1. Typical Forward Voltage, Per Leg



\*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these curves if  $V_R$  is sufficient below rated  $V_R$ .

Figure 2. Typical Reverse Current, \* Per Leg

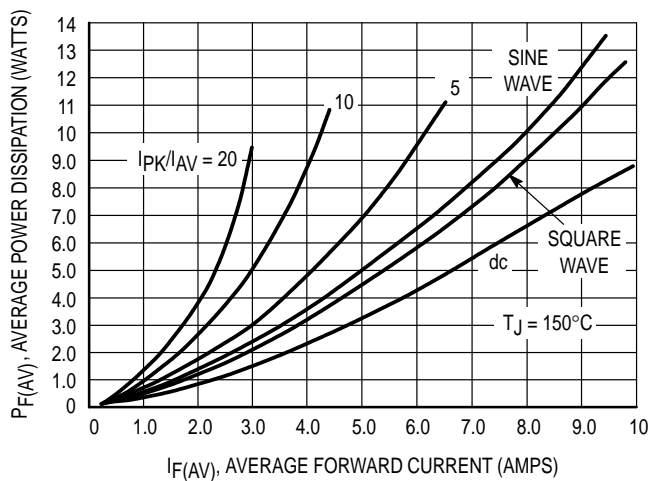
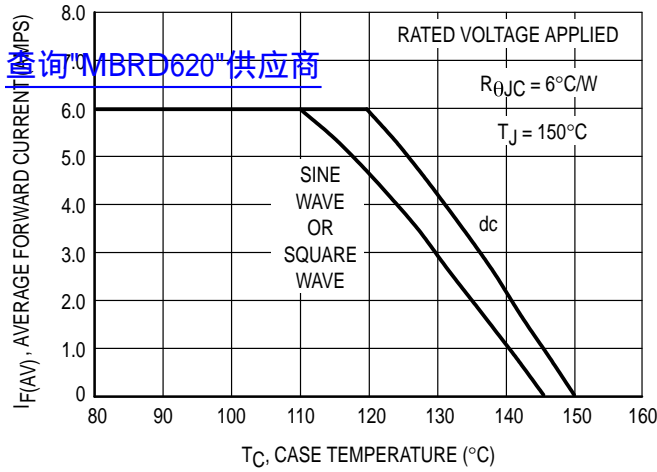
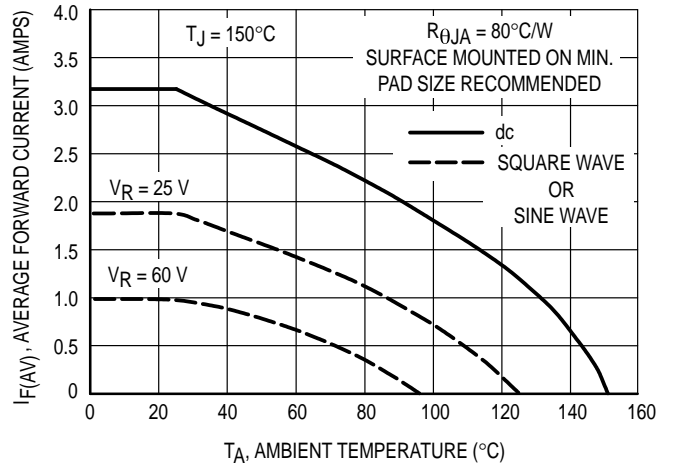


Figure 3. Average Power Dissipation, Per Leg

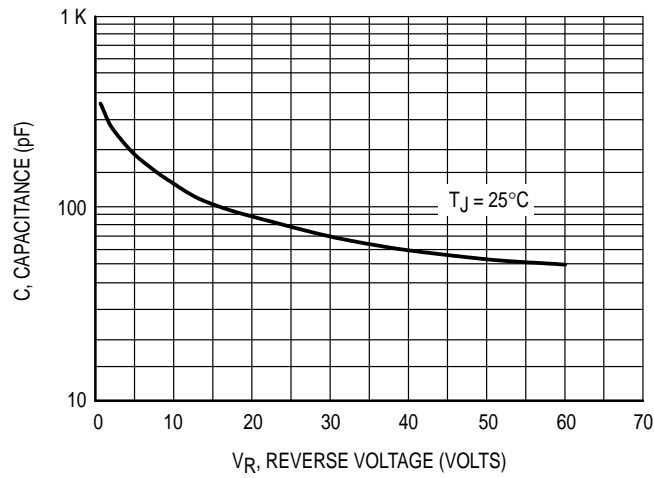
**MBRD620CT MBRD630CT MBRD640CT MBRD650CT MBRD660CT**



**Figure 4. Current Derating, Case, Per Leg**



**Figure 5. Current Derating, Ambient, Per Leg**

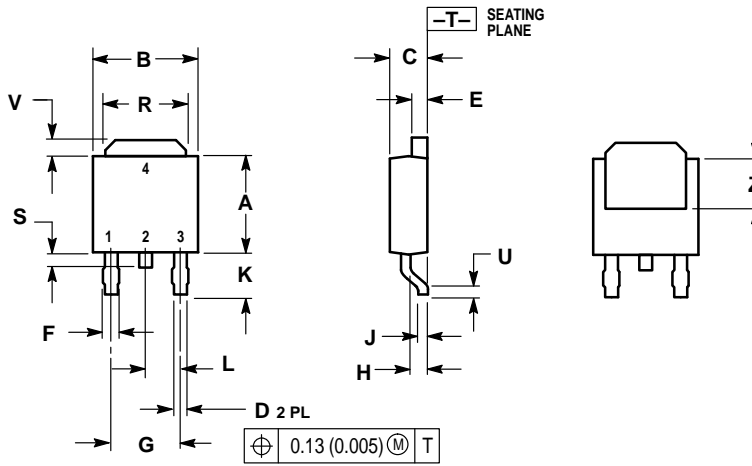


**Figure 6. Typical Capacitance, Per Leg**

**MBRD620CT MBRD630CT MBRD640CT MBRD650CT MBRD660CT**

**PACKAGE DIMENSIONS**

查询"MBRD620"供应商



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES    |       | MILLIMETERS |      |
|-----|-----------|-------|-------------|------|
|     | MIN       | MAX   | MIN         | MAX  |
| A   | 0.235     | 0.250 | 5.97        | 6.35 |
| B   | 0.250     | 0.265 | 6.35        | 6.73 |
| C   | 0.086     | 0.094 | 2.19        | 2.38 |
| D   | 0.027     | 0.035 | 0.69        | 0.88 |
| E   | 0.033     | 0.040 | 0.84        | 1.01 |
| F   | 0.037     | 0.047 | 0.94        | 1.19 |
| G   | 0.180 BSC |       | 4.58 BSC    |      |
| H   | 0.034     | 0.040 | 0.87        | 1.01 |
| J   | 0.018     | 0.023 | 0.46        | 0.58 |
| K   | 0.102     | 0.114 | 2.60        | 2.89 |
| L   | 0.090 BSC |       | 2.29 BSC    |      |
| R   | 0.175     | 0.215 | 4.45        | 5.46 |
| S   | 0.020     | 0.050 | 0.51        | 1.27 |
| U   | 0.020     | —     | 0.51        | —    |
| V   | 0.030     | 0.050 | 0.77        | 1.27 |
| Z   | 0.138     | —     | 3.51        | —    |

**CASE 369A-13  
ISSUE Y**

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

**How to reach us:**

**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution;  
P.O. Box 5405, Denver, Colorado 80217. 303-675-2140 or 1-800-441-2447

**JAPAN:** Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center,  
3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 81-3-3521-8315

**Mfax™:** RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609  
**INTERNET:** http://Design-NET.com

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,  
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298



◇ CODELINE TO BE PLACED HERE

**MBRD620CT/D**