# MUR620CT

**Preferred Device**

# SWITCHMODE™ Power Rectifier

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

- Ultrafast 35 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO–220 Package

**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: U620

**MAXIMUM RATINGS**

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 200 | V |
| Average Rectified Forward Voltage (Rated $V_R$, $T_C$ = 130°C) Per Diode<br>Total Device | $I_{F(AV)}$ | 3.0<br>6.0 | A |
| Peak Repetitive Forward Current per Diode Leg (Rated $V_R$, Square Wave, 20 kHz, $T_C$ = 130°C) | $I_{FRM}$ | 6.0 | A |
| Non–Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) | $I_{FSM}$ | 75 | A |
| Operating Junction and Storage Temperature Range | $T_J$, $T_{stg}$ | –65 to +175 | °C |

ON Semiconductor™

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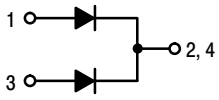
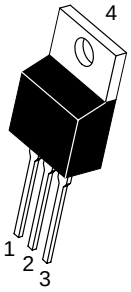
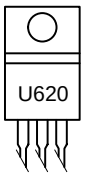
**ULTRAFAST RECTIFIER 6.0 AMPERES 200 VOLTS**




**TO–220AB**
**CASE 221A**
**PLASTIC**

**MARKING DIAGRAM**




U620 = Device Code

**ORDERING INFORMATION**

| Device | Package | Shipping |
|---|---|---|
| MUR620CT | TO–220 | 50 Units/Rail |

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

**THERMAL CHARACTERISTICS** (Per Diode Leg)

| Rating | Symbol | Typical | Maximum | Unit |
|---|---|---|---|---|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 5.0–6.0 | 7.0 | °C/W |

**ELECTRICAL CHARACTERISTICS** (Per Diode Leg)

| | | | | |
|---|---|---|---|---|
| Instantaneous Forward Voltage (Note 1.)<br>($i_F$ = 3.0 Amps, $T_C$ = 150°C)<br>($i_F$ = 3.0 Amps, $T_C$ = 25°C) | $v_F$ | <br>0.80<br>0.94 | <br>0.895<br>0.975 | Volts |
| Instantaneous Reverse Current (Note 1.)<br>(Rated dc Voltage, $T_C$ = 150°C)<br>(Rated dc Voltage, $T_C$ = 25°C) | $i_R$ | <br>2.0–10<br>0.01–3.0 | <br>250<br>5.0 | μA |
| Reverse Recovery Time<br>($I_F$ = 1.0 Amp, di/dt = 50 Amps/μs) | $t_{rr}$ | 20–30 | 35 | ns |

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

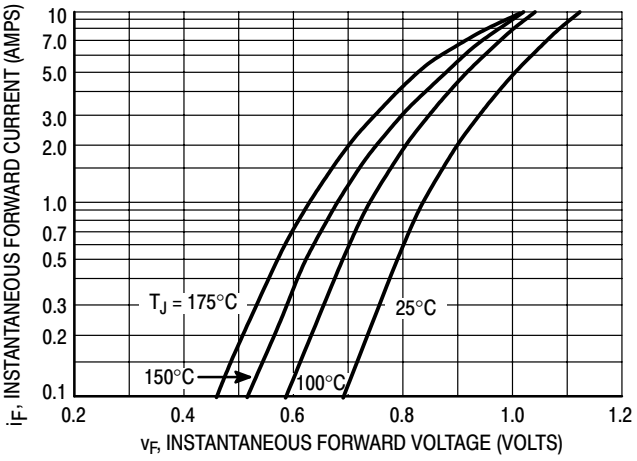



**Figure 1. Typical Forward Voltage**

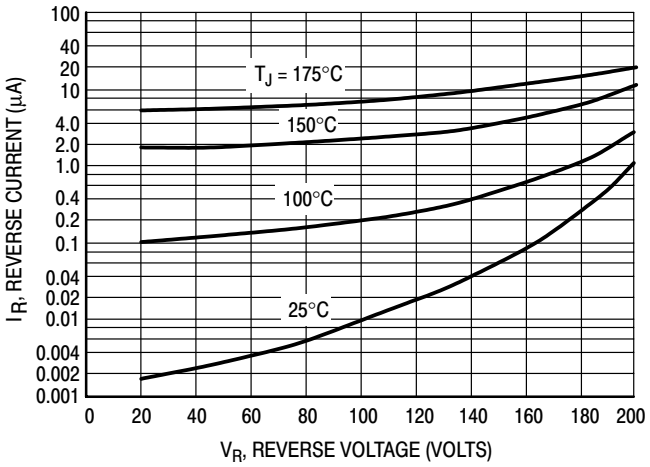



**Figure 2. Typical Reverse Current**

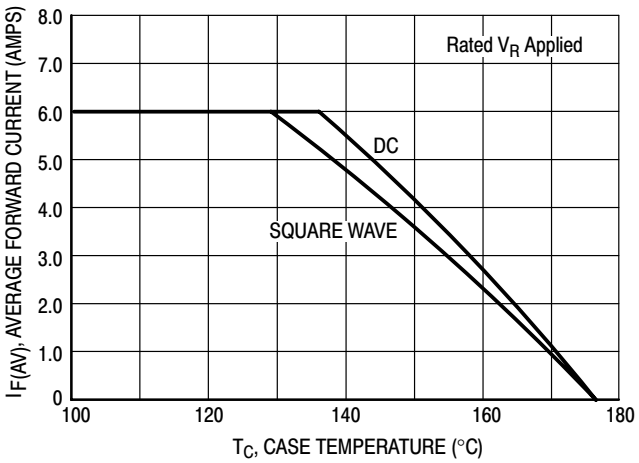



**Figure 3. Total Device Current Derating, Case**

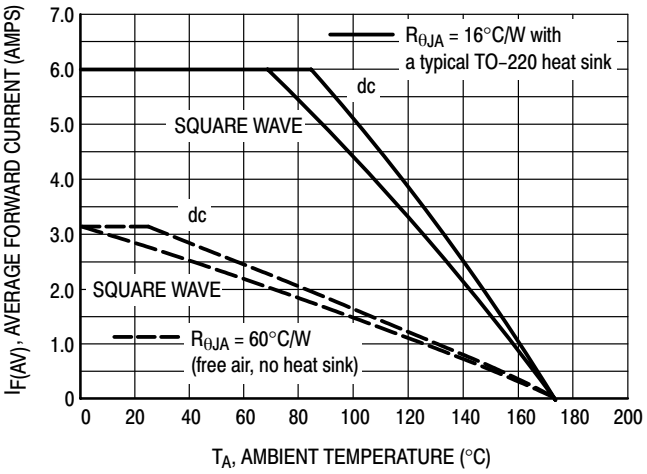



**Figure 4. Total Device Current Derating, Ambient**

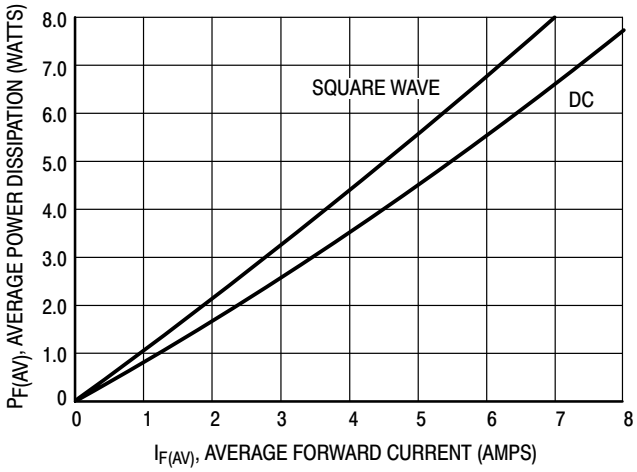
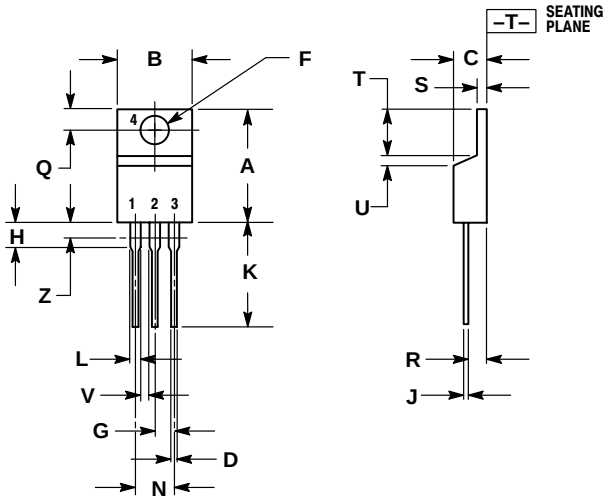



**Figure 5. Power Dissipation**

# MUR620CT

## 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.

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | 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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