

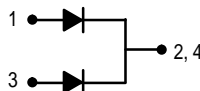
# SWITCHMODE™ Power Rectifier

... 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:

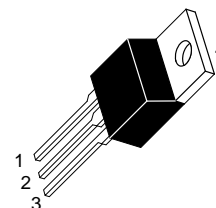
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: U620



**MUR620CT**

Motorola Preferred Device

**ULTRAFAST  
RECTIFIER  
6 AMPERES  
200 VOLTS**



**CASE 221A-06  
TO-220AB  
PLASTIC**

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	Volts
Average Rectified Forward Voltage (Rated $V_R$ ) $T_C = 130^\circ\text{C}$	$I_{F(AV)}$	3.0 6.0	Amps
Peak Repetitive Forward Current Per Diode Leg (Rated $V_R$ , Square Wave, 20 kHz) $T_C = 130^\circ\text{C}$	$I_{FRM}$	6.0	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	75	Amps
Operating Junction Temperature and Storage Temperature	$T_J, T_{stg}$	-65 to +175	$^\circ\text{C}$

### THERMAL CHARACTERISTICS PER DIODE LEG

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

### ELECTRICAL CHARACTERISTICS PER DIODE LEG

Instantaneous Forward Voltage (1) ( $i_F = 3.0$ Amps, $T_C = 150^\circ\text{C}$ ) ( $i_F = 3.0$ Amps, $T_C = 25^\circ\text{C}$ )	$v_F$	0.80 0.94	0.895 0.975	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, $T_C = 150^\circ\text{C}$ ) (Rated dc Voltage, $T_C = 25^\circ\text{C}$ )	$i_R$	2.0-10 0.01-3.0	250 5.0	$\mu\text{A}$
Reverse Recovery Time ( $I_F = 1.0$ Amp, $di/dt = 50$ Amps/ $\mu\text{s}$ )	$t_{rr}$	20-30	35	ns

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

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

# MUR620CT

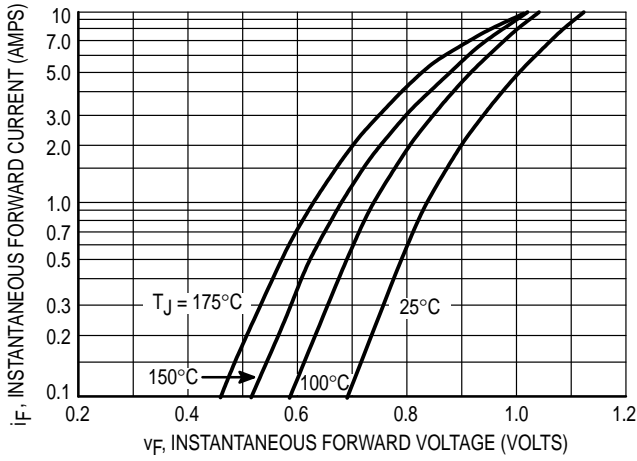


Figure 1. Typical Forward Voltage

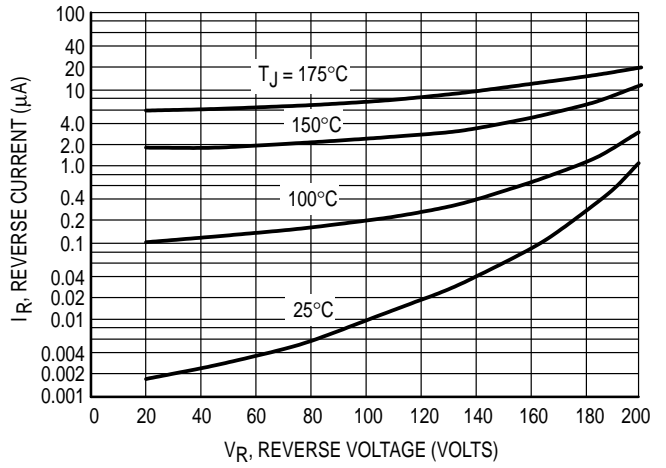


Figure 2. Typical Reverse Current

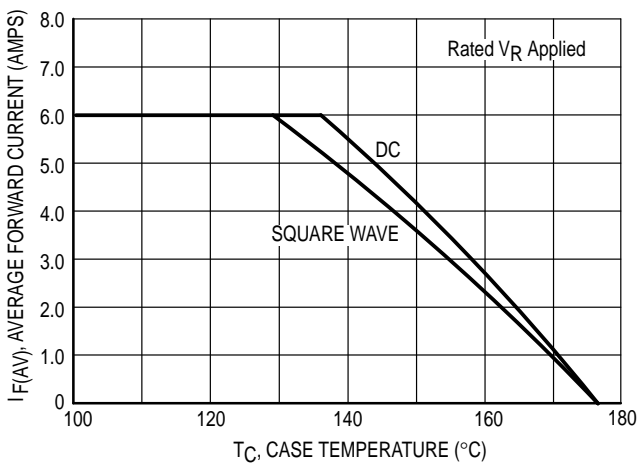


Figure 3. Total Device Current Derating, Case

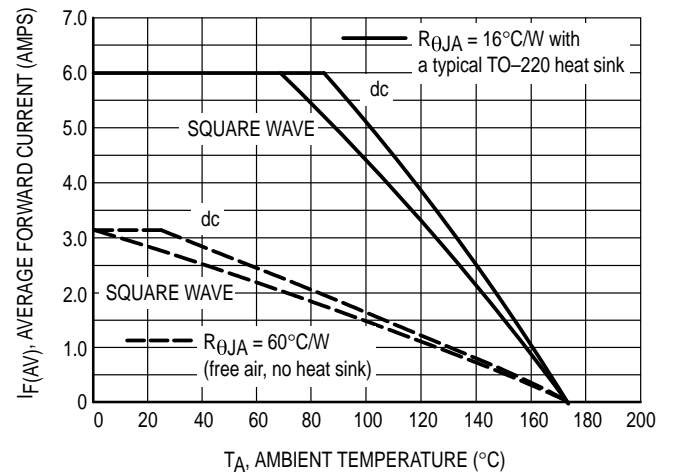


Figure 4. Total Device Current Derating, Ambient

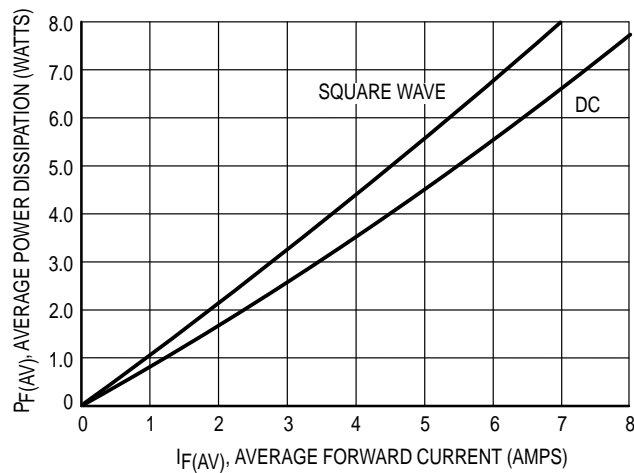
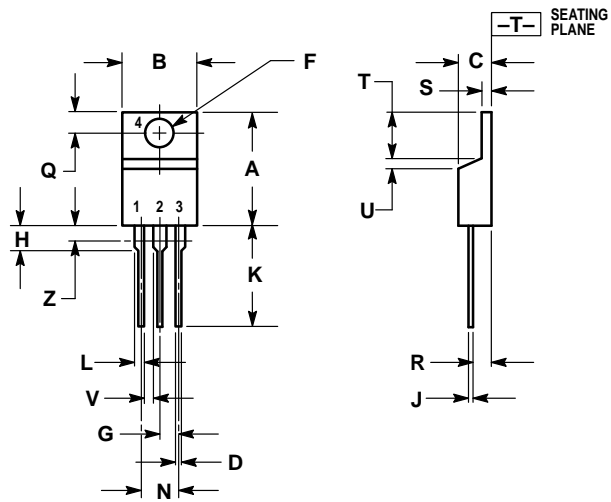


Figure 5. Power Dissipation


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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