

# MUR620CT

Preferred Device

## SWITCHMODE™ Power Rectifier

These state-of-the-art SWITCHMODE power rectifiers are designed for use in switching power supplies, inverters and as free wheeling diodes.

### Features

- Ultrafast 35 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- Pb-Free Package is Available\*

### 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

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	V
Average Rectified Forward Voltage (Rated $V_R$ , $T_C = 130^\circ\text{C}$ )	$I_{F(AV)}$	3.0 6.0	A
Peak Repetitive Forward Current per Diode Leg (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 130^\circ\text{C}$ )	$I_{FRM}$	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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

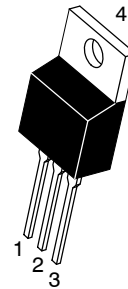
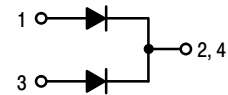
\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



ON Semiconductor®

<http://onsemi.com>

## ULTRAFAST RECTIFIER 6.0 AMPERES, 200 VOLTS



TO-220AB  
CASE 221A  
PLASTIC

### MARKING DIAGRAM



A = Assembly Location  
Y = Year  
WW = Work Week  
U620 = Device Code  
G = Pb-Free Package  
AKA = Diode Polarity

### ORDERING INFORMATION

Device	Package	Shipping
MUR620CT	TO-220	50 Units/Rail
MUR620CTG	TO-220 (Pb-Free)	50 Units/Rail

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

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## THERMAL CHARACTERISTICS (Per Diode Leg)

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

## ELECTRICAL CHARACTERISTICS (Per Diode Leg)

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

1. Pulse Test: Pulse Width = 300  $\mu s$ , Duty Cycle  $\leq 2.0\%$ .

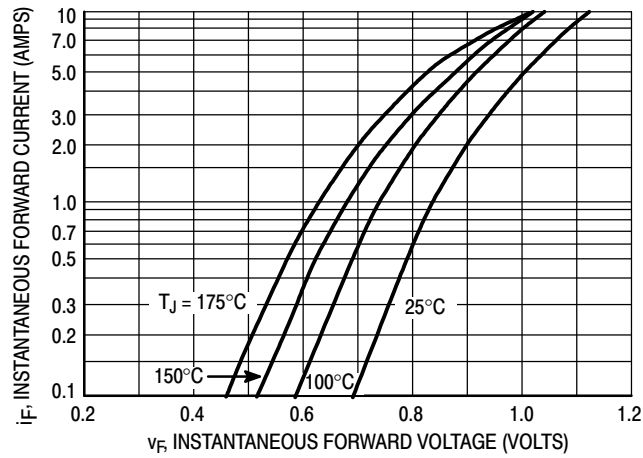


Figure 1. Typical Forward Voltage

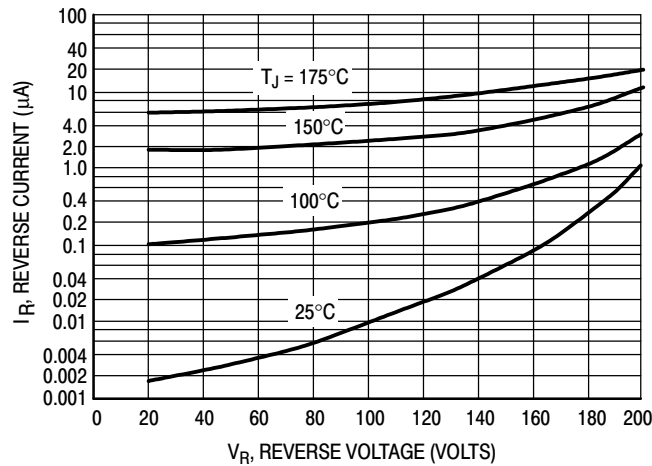


Figure 2. Typical Reverse Current

# MUR620CT

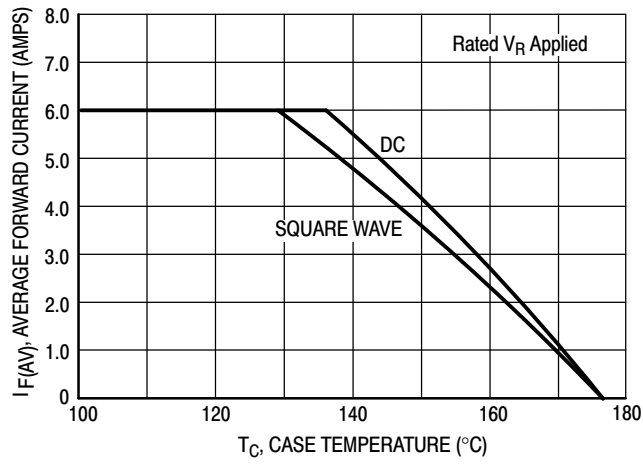


Figure 3. Total Device Current Derating, Case

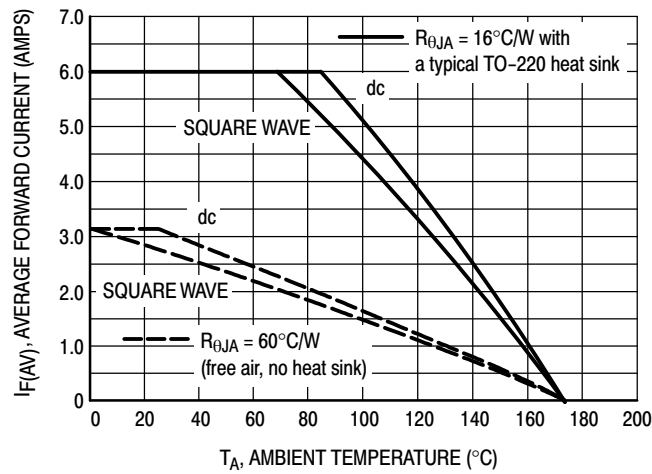


Figure 4. Total Device Current Derating, Ambient

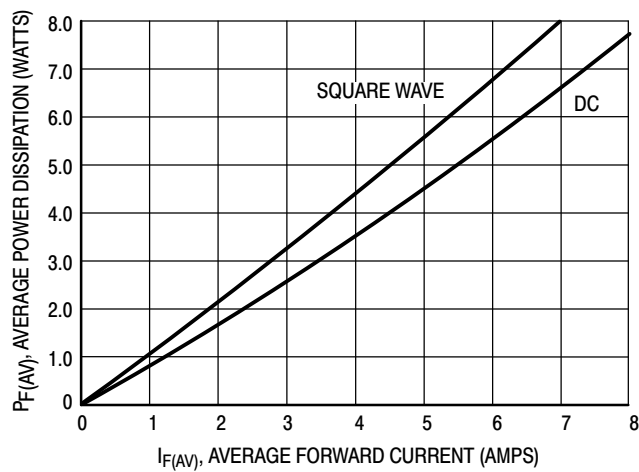
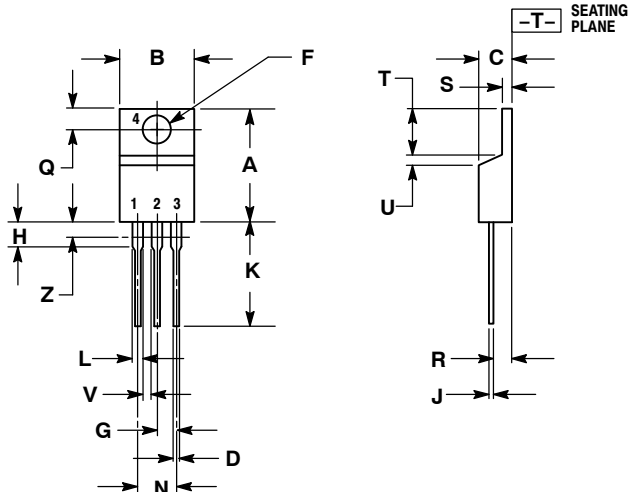


Figure 5. Power Dissipation

# MUR620CT

## PACKAGE DIMENSIONS

TO-220  
CASE 221A-09  
ISSUE AF



**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	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.014	0.025	0.36	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

**STYLE 6:**

1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

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