

# MUR1620CTR

Preferred Device

## SWITCHMODE™ Dual Ultrafast Power Rectifier

... designed for use in negative switching power supplies, inverters and as free wheeling diodes. Also, used in conjunction with common cathode dual Ultrafast Rectifiers, makes a single phase full-wave bridge. These state-of-the-art devices have the following features:

- Common Anode Dual Rectifier (8.0 A per Leg or 16 A per Package)
- Ultrafast 35 Nanosecond Reverse Recovery Times
- Exhibits Soft Recovery Characteristics
- High Temperature Glass Passivated Junction
- Low Leakage Specified @ 150°C Case Temperature
- Current Derating @ Both Case and Ambient Temperatures
- Epoxy Meets UL94, V<sub>O</sub> @ 1/8"
- Complement to MUR1620CT Common Cathode Device

### 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: U1620R

### MAXIMUM RATINGS (Per Leg)

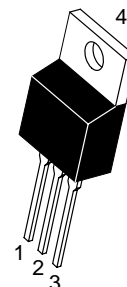
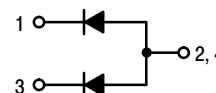
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	V
Average Rectified Forward Voltage (Rated $V_R$ , $T_C = 160^\circ\text{C}$ ) Per Leg Per Total Device	$I_{F(AV)}$	8.0 16	A
Peak Repetitive Surge Current (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 140^\circ\text{C}$ ) Per Diode	$I_{FM}$	16	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	100	A
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-65 to +175	°C



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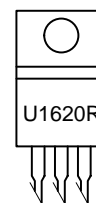
<http://onsemi.com>

**ULTRAFAST  
RECTIFIER  
16 AMPERES  
200 VOLTS**



TO-220AB  
CASE 221A  
STYLE 7

### MARKING DIAGRAM



U1620R = Device Code

### ORDERING INFORMATION

Device	Package	Shipping
MUR1620CTR	TO-220	50 Units/Rail

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

# MUR1620CTR

## THERMAL CHARACTERISTICS (Per Leg)

Rating	Symbol	Value	Unit
Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS (Per Leg)

Maximum Instantaneous Forward Voltage (Note 1.) ( $i_F = 8.0$ Amps, $T_C = 25^{\circ}C$ ) ( $i_F = 8.0$ Amps, $T_C = 150^{\circ}C$ )	$V_F$	1.2 1.1	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_C = 25^{\circ}C$ ) (Rated dc Voltage, $T_C = 150^{\circ}C$ )	$i_R$	5.0 500	$\mu A$
Maximum Reverse Recovery Time ( $I_F = 1.0$ Amp, $di/dt = 50$ Amps/ $\mu s$ ) ( $I_F = 0.5$ Amp, $di/dt = 100$ Amps/ $\mu s$ )	$t_{rr}$	85 35	ns

1. Pulse Test: Pulse Width = 5.0 ms, Duty Cycle  $\leq 10\%$ .

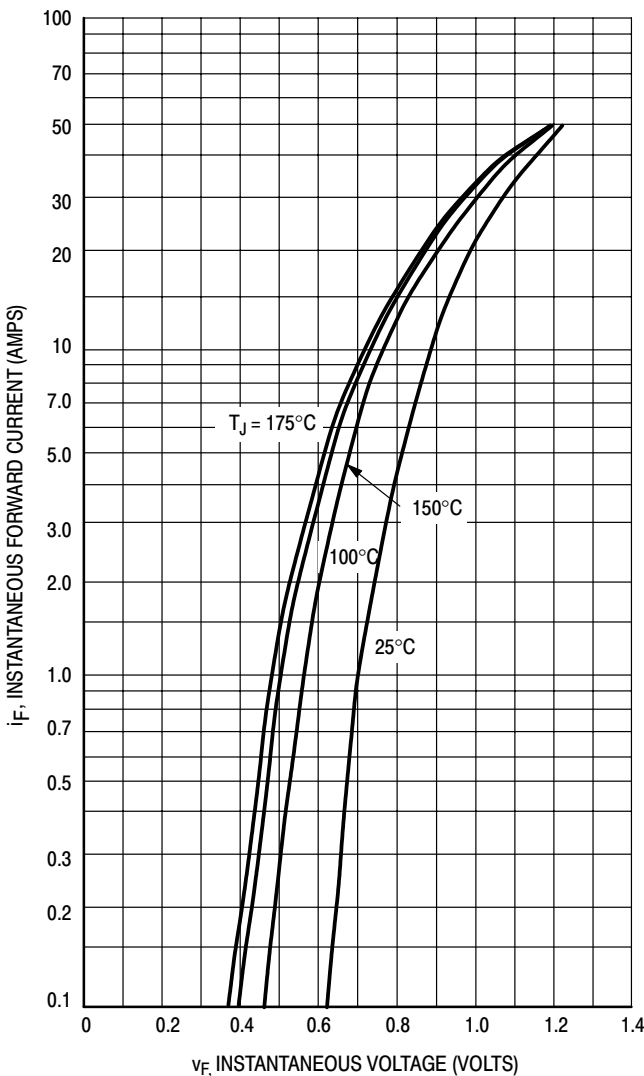


Figure 1. Typical Forward Voltage (Per Leg)

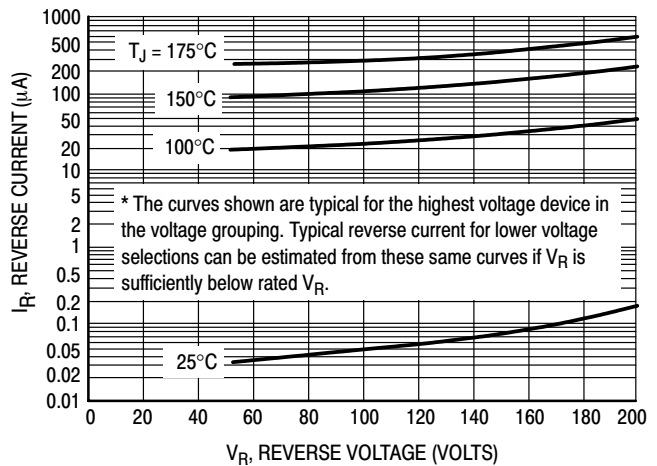


Figure 2. Typical Reverse Current\* (Per Leg)

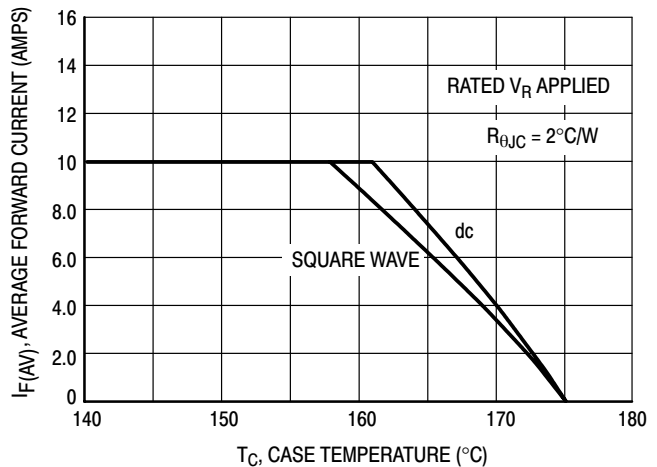


Figure 3. Current Derating, Case (Per Leg)

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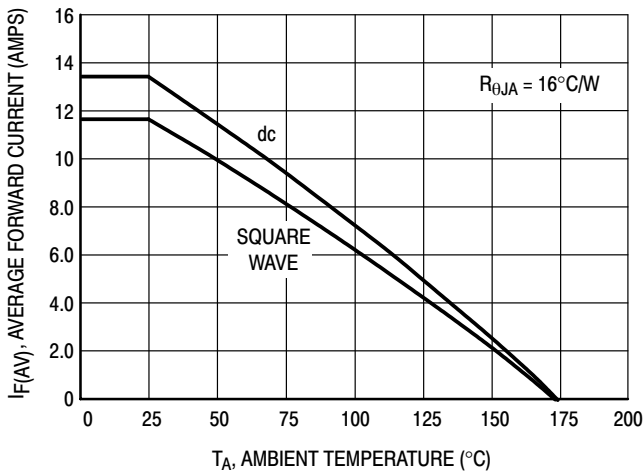


Figure 4. Current Derating, Ambient (Per Leg)

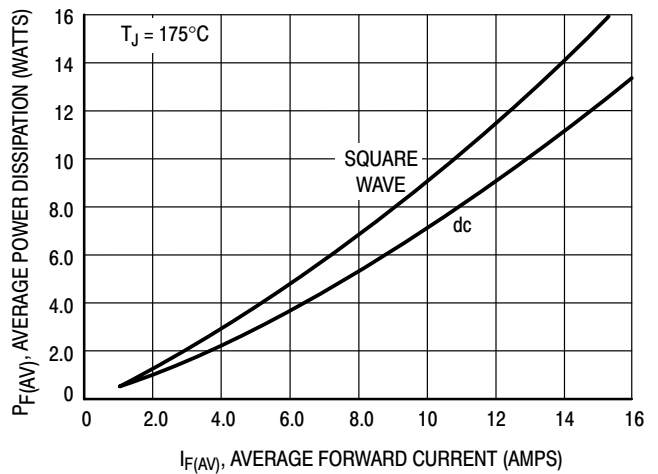


Figure 5. Power Dissipation (Per Leg)

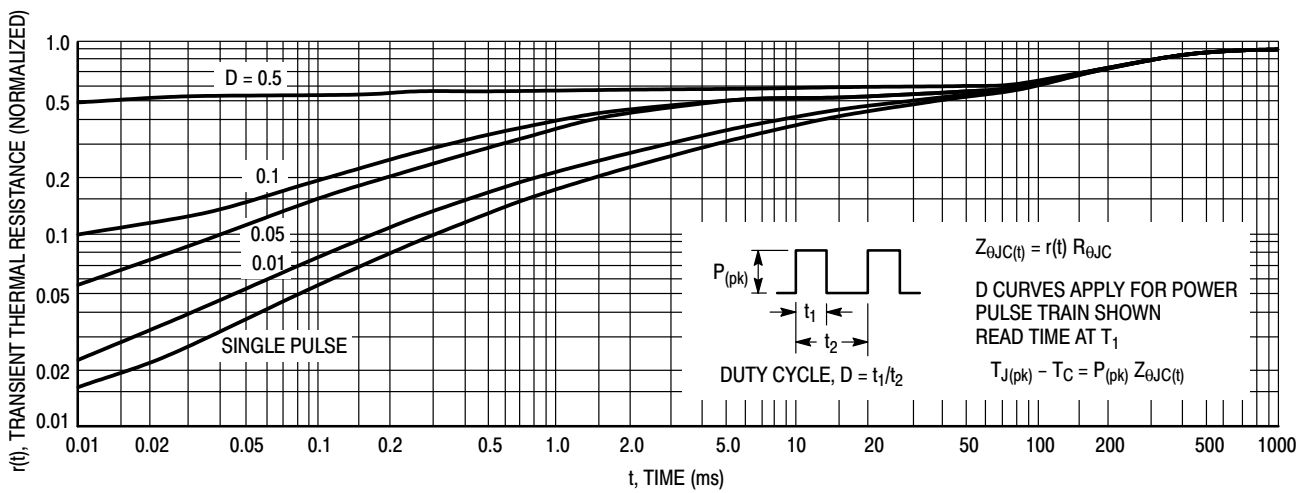


Figure 6. Thermal Response

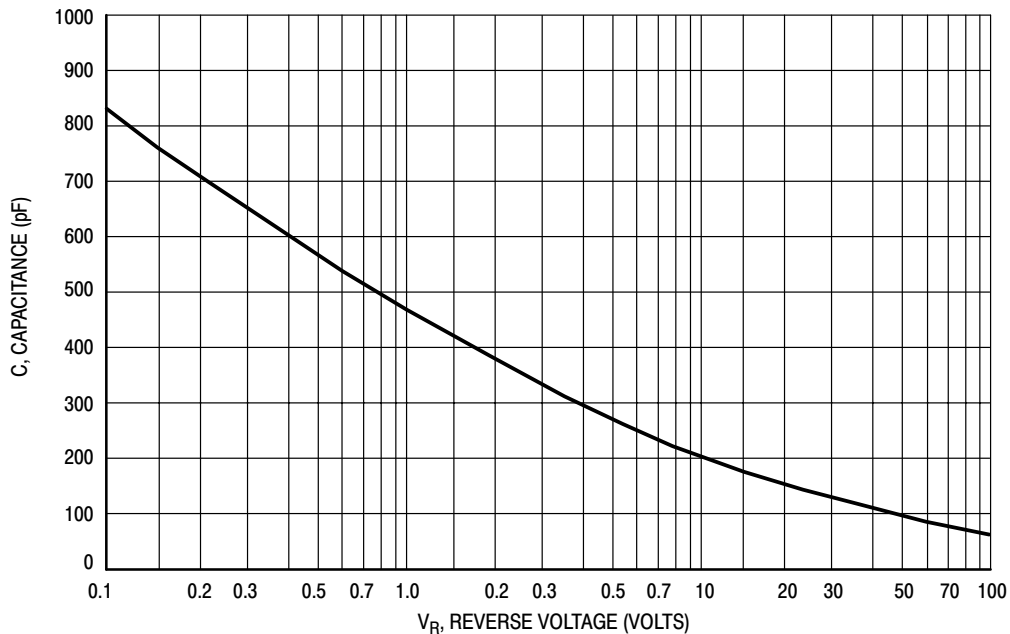
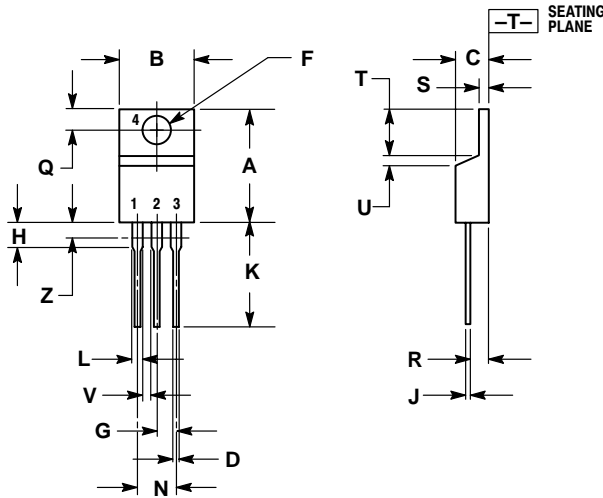


Figure 7. Typical Capacitance (Per Leg)

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## 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.

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

#### STYLE 7:

- PIN 1. CATHODE
- ANODE
- CATHODE
- ANODE

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