

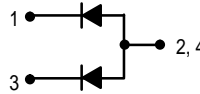
# SWITCHMODE™ Dual Ultrafast Power Rectifier

... 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 MUR1605CT Series of Common Cathode Devices

### Mechanical Characteristics:

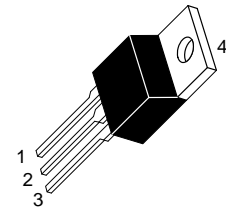
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: U1620R



**MUR1620CTR**

Motorola Preferred Device

**ULTRAFAST  
RECTIFIER  
16 AMPERES  
200 VOLTS**



**CASE 221A-06  
TO-220AB  
STYLE 7**

### MAXIMUM RATINGS (Per Leg)

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	200	Volts
Average Rectified Forward Voltage, (Rated V <sub>R</sub> ), T <sub>C</sub> = 160°C Per Leg Per Total Device	I <sub>F(AV)</sub>	8.0 16	Amps
Peak Repetitive Surge Current, Per Diode (Rated V <sub>R</sub> , Square Wave, 20 kHz), T <sub>C</sub> = 140°C	I <sub>FM</sub>	16	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I <sub>FSM</sub>	100	Amps
Operating Junction Temperature and Storage Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +175	°C

### THERMAL CHARACTERISTICS (Per Leg)

Thermal Resistance — Junction to Case	R <sub>θJC</sub>	2.0	°C/W
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### ELECTRICAL CHARACTERISTICS (Per Leg)

Maximum Instantaneous Forward Voltage (1) (i <sub>F</sub> = 8.0 Amps, T <sub>C</sub> = 25°C) (i <sub>F</sub> = 8.0 Amps, T <sub>C</sub> = 150°C)	V <sub>F</sub>	1.2 1.1	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, T <sub>C</sub> = 25°C) (Rated dc Voltage, T <sub>C</sub> = 150°C)	i <sub>R</sub>	5.0 500	μA
Maximum Reverse Recovery Time (I <sub>F</sub> = 1.0 Amp, di/dt = 50 Amps/μs) (I <sub>F</sub> = 0.5 Amp, di/dt = 100 Amps/μs)	t <sub>rr</sub>	85 35	ns

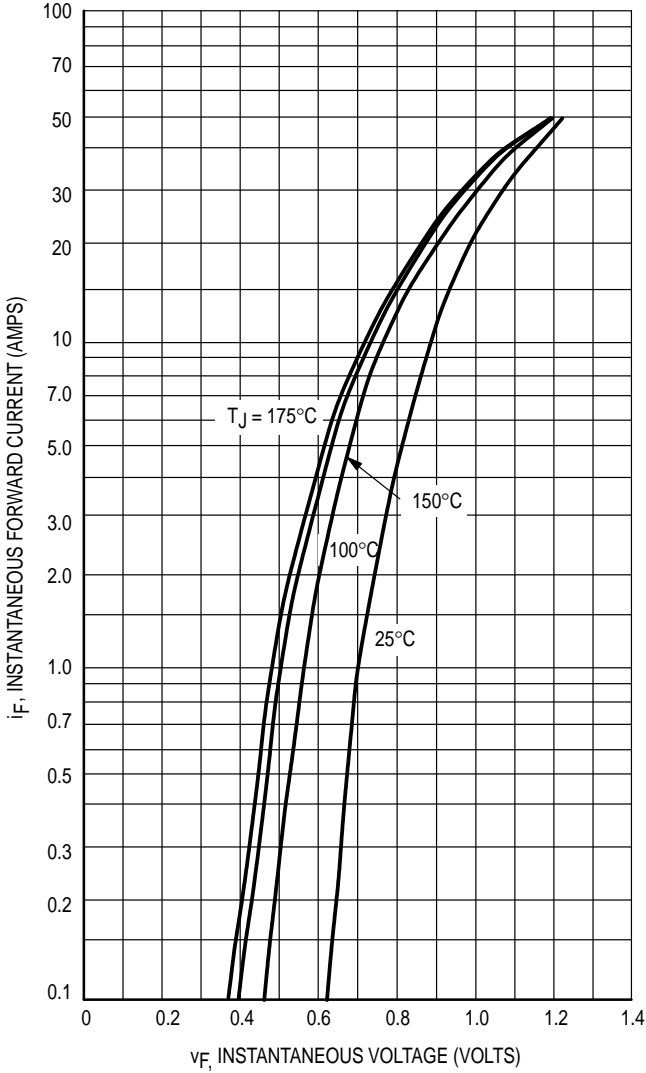
(1) Pulse Test: Pulse Width = 5.0 ms, Duty Cycle ≤ 10%.

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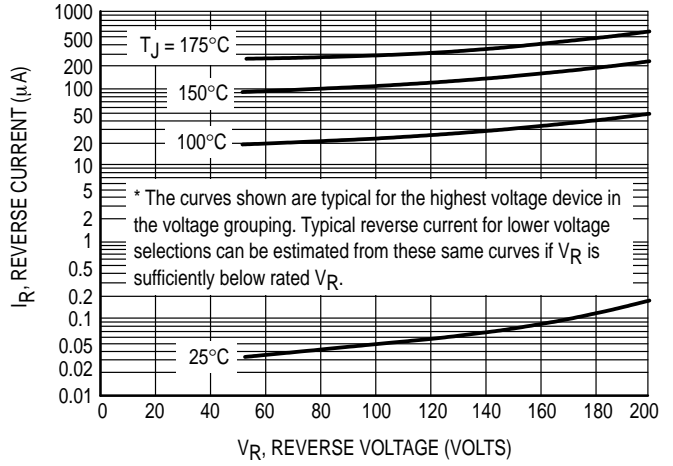
Preferred devices are Motorola recommended choices for future use and best overall value.

Rev 1

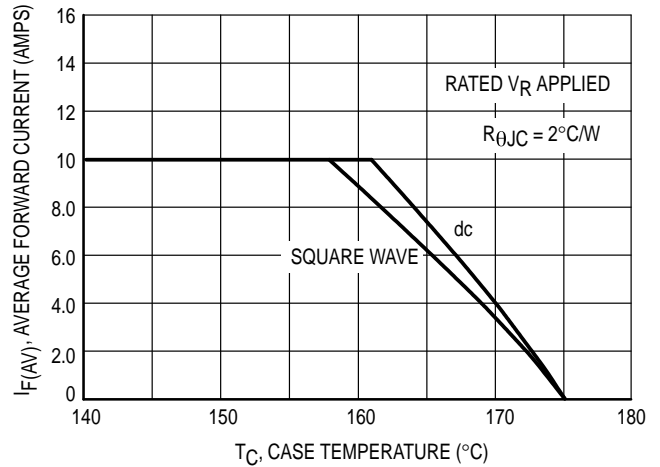
**MUR1620CTR**



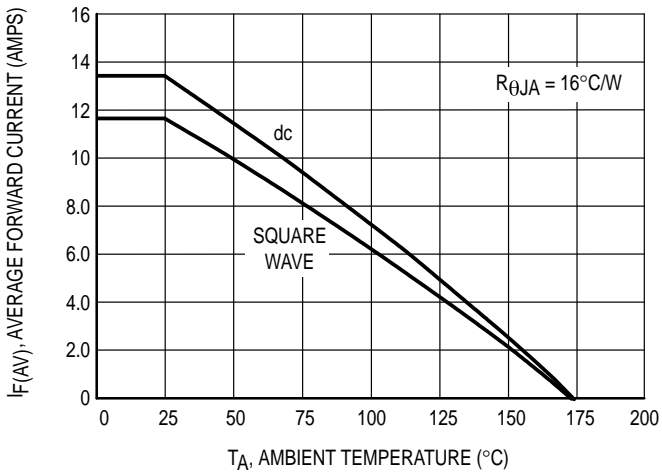
**Figure 1. Typical Forward Voltage (Per Leg)**



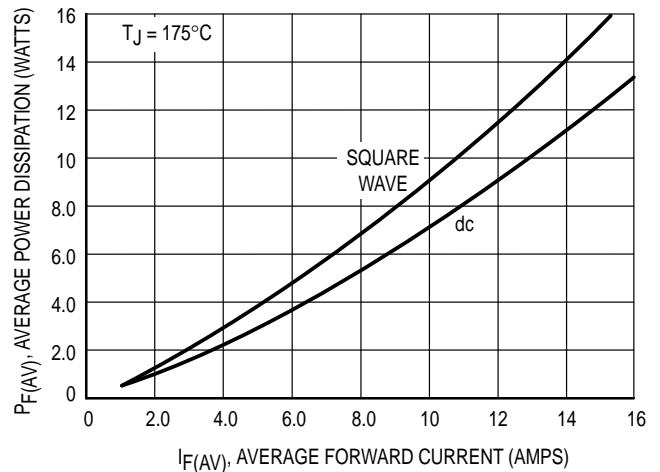
**Figure 2. Typical Reverse Current\* (Per Leg)**



**Figure 3. Current Derating, Case (Per Leg)**



**Figure 4. Current Derating, Ambient (Per Leg)**



**Figure 5. Power Dissipation (Per Leg)**

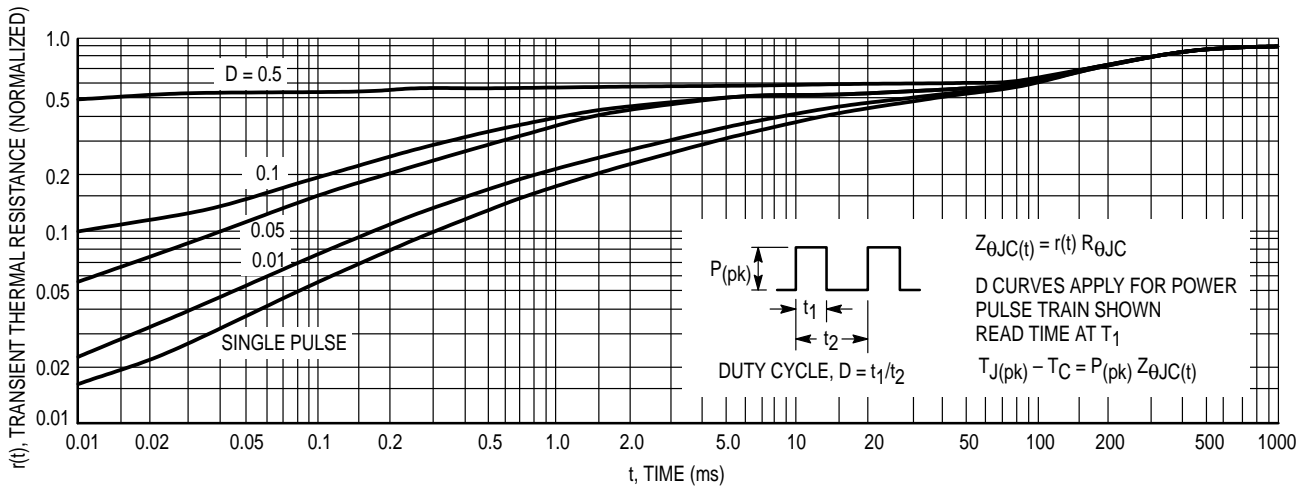


Figure 6. Thermal Response

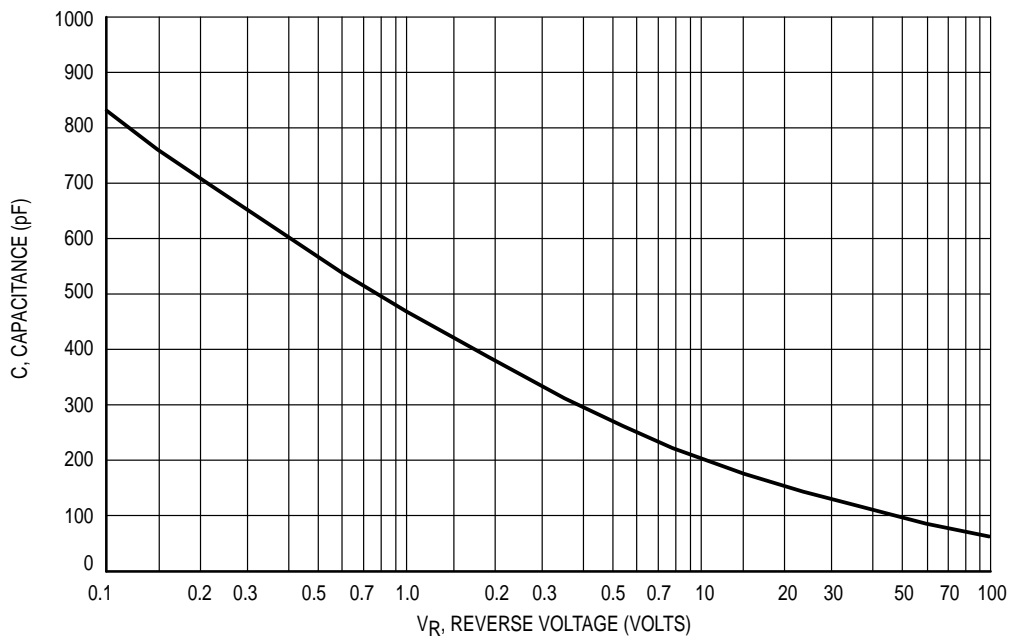
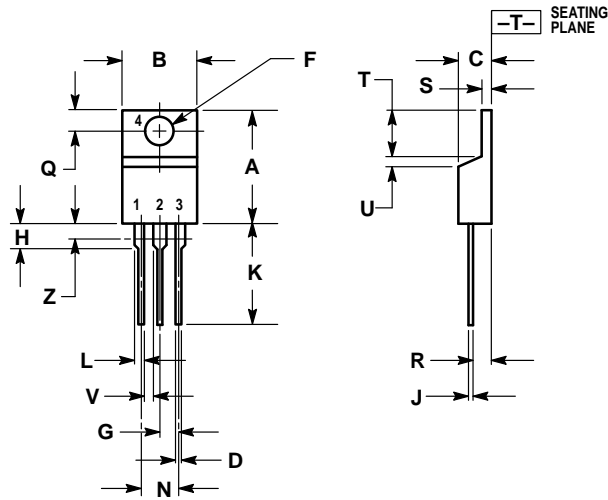


Figure 7. Typical Capacitance (Per Leg)

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**

- STYLE 7:
- PIN 1. CATHODE
  - ANODE
  - CATHODE
  - ANODE

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