

# Switchmode

## Dual Ultrafast Power Rectifiers

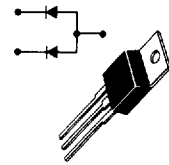
... designed for use in negative switching power supplies, inverters and as free wheeling diodes. Also, used in conjunction with common cathode dual Ultrafast Rectifiers, makes a single phase full-wave bridge. These state-of-the-art devices have the following features:

- 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

**MUR1605CTR**  
**MUR1610CTR**  
**MUR1615CTR**  
**MUR1620CTR**

MUR1620CTR is a  
 Motorola Preferred Device

**ULTRAFAST RECTIFIERS**  
**16 AMPERES**  
**50-200 VOLTS**



CASE 221A-06  
 TO-220AB

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### MAXIMUM RATINGS (Per Leg)

Rating	Symbol	MUR				Unit
		1605CTR	1610CTR	1615CTR	1620CTR	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	50	100	150	200	Volts
Average Rectified Forward Current, (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 Amp, T <sub>C</sub> = 25°C) (I <sub>F</sub> = 8.0 Amp, 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 Amp/μs) (I <sub>F</sub> = 0.5 Amp, di/dt = 100 Amp/μs)	t <sub>rr</sub>	85 35	ns

(1) Pulse Test Pulse Width - 5.0 ms, Duty Cycle 10%  
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# MUR1605CTR, MUR1610CTR, MUR1615CTR, MUR1620CTR

MOTOROLA SC (DIODES/OPTO) 64E D ■ 6367255 0086497 9TJ ■ M0T7

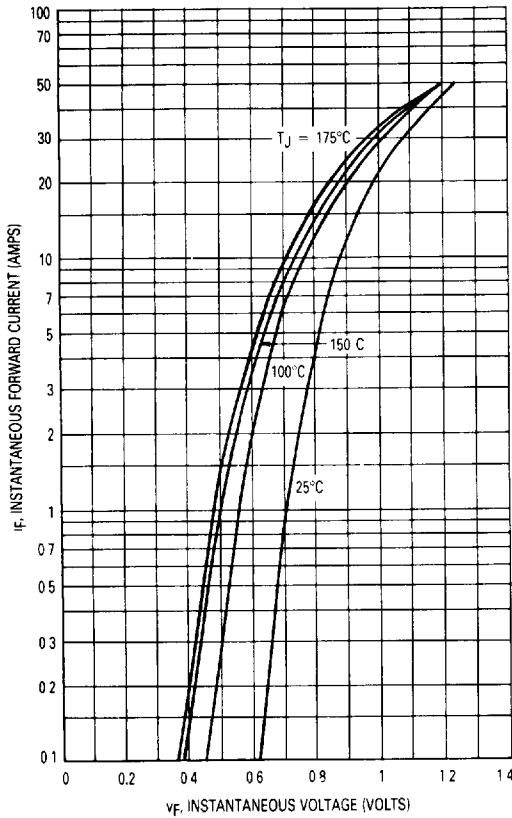


Figure 1. Typical Forward Voltage (Per Leg)

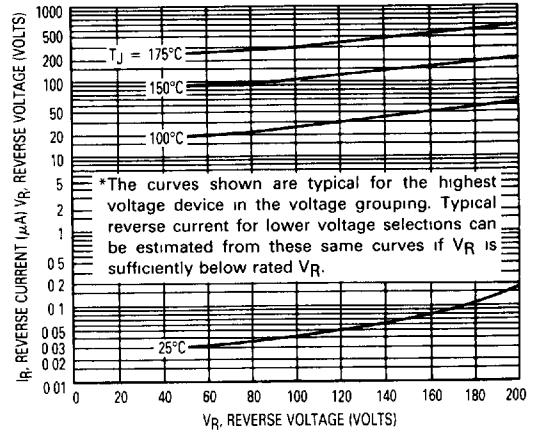


Figure 2. Typical Reverse Current\* (Per Leg)

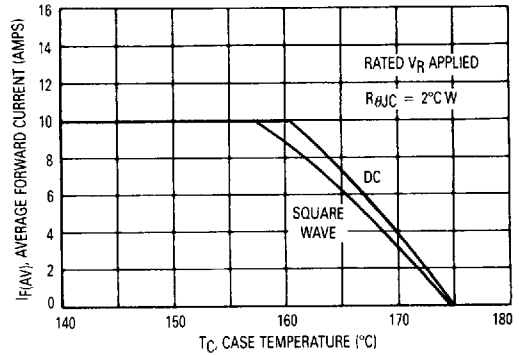


Figure 3. Current Derating, Case (Per Leg)

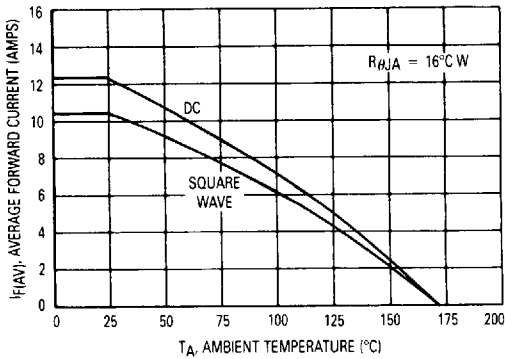


Figure 4. Current Derating, Ambient (Per Leg)

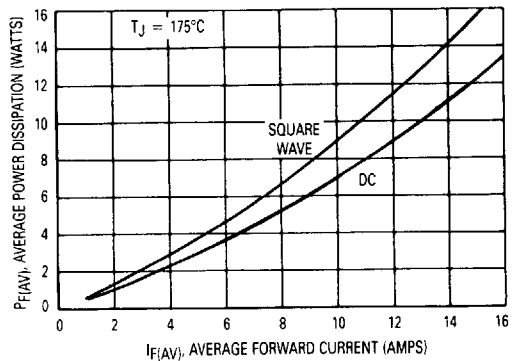


Figure 5. Power Dissipation (Per Leg)

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MUR1605CTR, MUR1610CTR, MUR1615CTR, MUR1620CTR

MOTOROLA SC (DIODES/OPTO) 64E D ■ 6367255 0086498 838 ■ MOT7

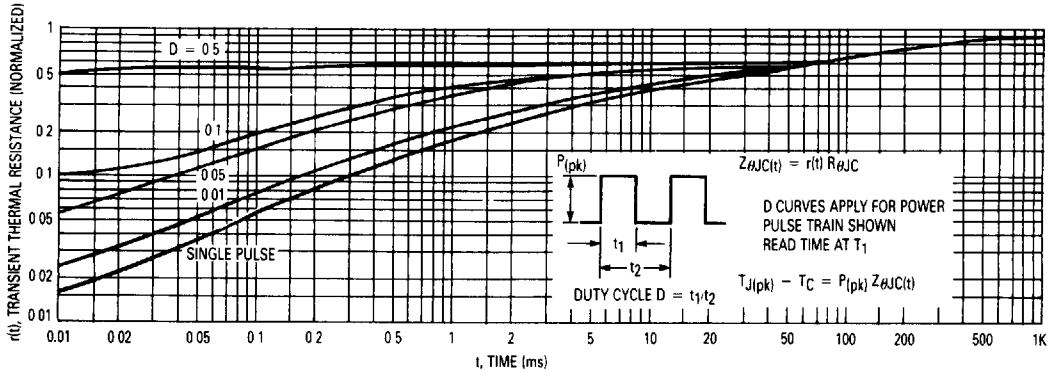


Figure 6. Thermal Response

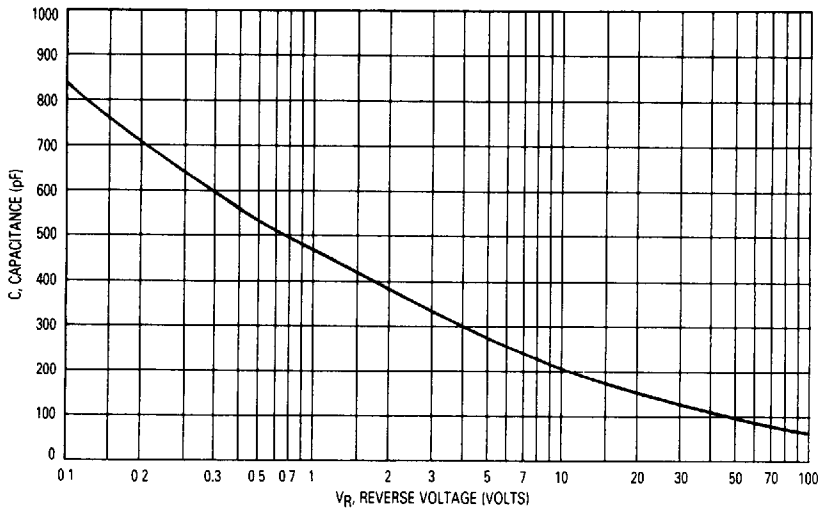


Figure 7. Typical Capacitance (Per Leg)

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