

**MOTOROLA**  
**SEMICONDUCTOR**  
 TECHNICAL DATA

**MUR10005CT**  
**MUR10010CT**  
**MUR10015CT**  
**MUR10020CT**

MUR10020CT is a  
 Motorola Preferred Device

**Advance Information**

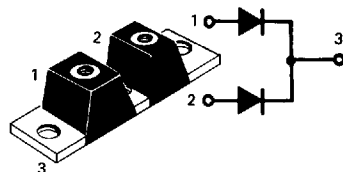
**ULTRAFAST  
 SWITCHMODE POWER RECTIFIERS**

... designed for use in switching power supplies, inverters, and as free wheeling diodes. These state-of-the-art devices have the following features:

- Dual Diode Construction
- Low Leakage Current
- Low Forward Voltage
- 175°C Operating Junction Temperature
- Labor Saving POWERTAP Package

**ULTRAFAST  
 RECTIFIERS**

**100 AMPERES**  
**50 TO 200 VOLTS**



CASE 357C-03

Terminal Penetration: 0.280 max  
 Terminal Torque: 25-40 in-lb max  
 Mounting Torque —  
 Outside Holes:\* 30-40 in-lb max  
 \*Center Hole Must be  
 Torqued First: 8-10 in-lb max

**MAXIMUM RATINGS**

Rating	Symbol	MUR				Unit
		10005CT	10010CT	10015CT	10020CT	
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	150	200	Volts
Working Peak Reverse Voltage	$V_{RWM}$					
DC Blocking Voltage	$V_R$					
Average Rectified Forward Current, (Rated $V_R$ ), $T_C = 140^\circ\text{C}$	$I_{F(AV)}$					Amps
Per Device			100			
Per Leg			50			
Peak Repetitive Forward Current, Per Leg, (Rated $V_R$ , Square Wave, 20 kHz), $T_C = 140^\circ\text{C}$	$I_{FRM}$		100			Amps
Nonrepetitive Peak Surge Current Per Leg (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$		400			Amps
Operating Junction and Storage Temperature	$T_J, T_{stg}$		-85 to +175			°C

**THERMAL CHARACTERISTICS PER LEG**

Rating	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	°C/W

**ELECTRICAL CHARACTERISTICS PER LEG**

Instantaneous Forward Voltage (1) ( $I_F = 50$ Amp, $T_C = 25^\circ\text{C}$ )	$v_F$	1.10	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, $T_C = 125^\circ\text{C}$ ) (Rated dc Voltage, $T_C = 25^\circ\text{C}$ )	$i_R$	250 25	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1.0$ Amps, $di/dt = 50$ Amps/ $\mu\text{s}$ )	$t_{rr}$	50	ns

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

This document contains information on a new product. Specifications and information herein are subject to change without notice.

FIGURE 1 — FORWARD VOLTAGE

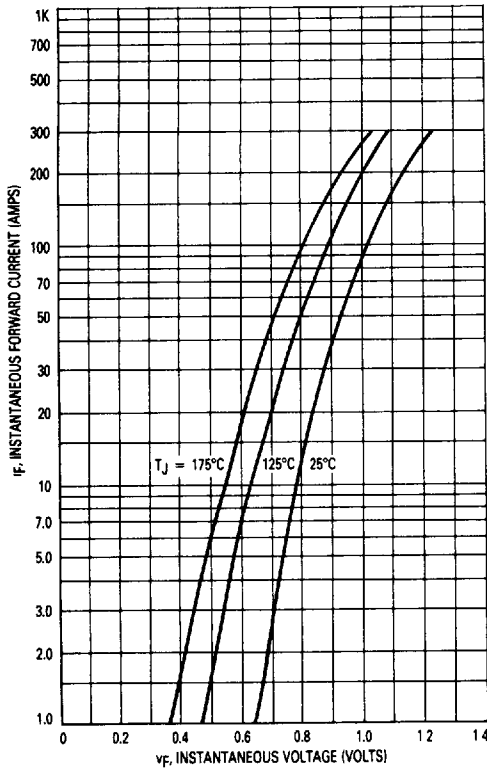
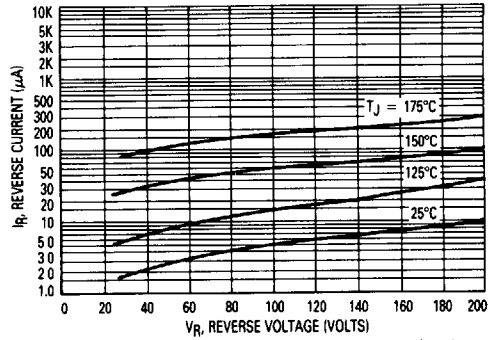


FIGURE 2 — TYPICAL REVERSE CURRENT\*



\*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves, if  $V_R$  is sufficiently below rated  $V_R$ .

FIGURE 3 — CURRENT DERATING (PER LEG)

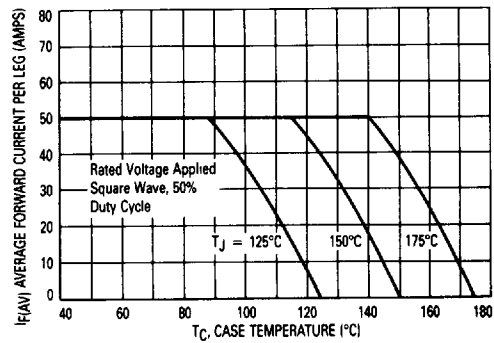


FIGURE 4 — POWER DISSIPATION (PER LEG)

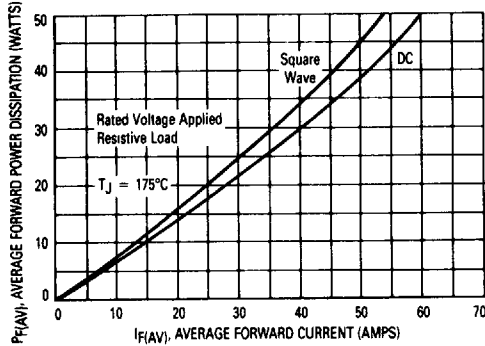


FIGURE 5 — CAPACITANCE (PER LEG)

