MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MUR10005CT
MUR10010CT
MUR10015CT
MUR10020CT

MUR10020CT is a
Motorola Preferred Device

Advance Information

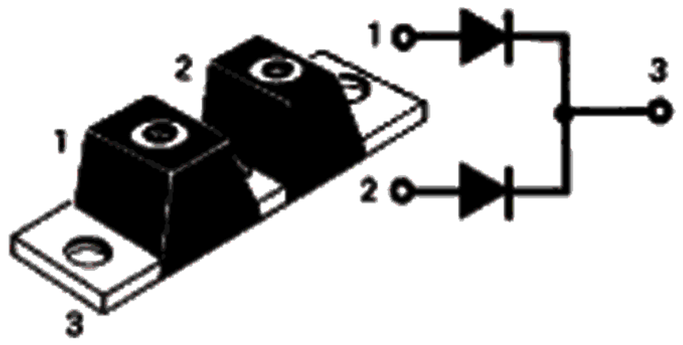
ULTRAFAST SWITCHMODE POWER RECTIFIERS

. . . 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 10005CT	MUR 10010CT	MUR 10015CT	MUR 10020CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	Volts
Average Rectified Forward Current, (Rated V_R), T_C = 140°C Per Device Per Leg	$I_{F(AV)}$		100 50			Amps
Peak Repetitive Forward Current, Per Leg, (Rated V_R, Square Wave, 20 kHz), T_C = 140°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}		−65 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°C)	v_F	1.10	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, T_C = 125°C) (Rated dc Voltage, T_C = 25°C)	i_R	 250 25	μA
Maximum Reverse Recovery Time (I_F = 1.0 Amps, di/dt = 50 Amps/μs)	t_{rr}	50	ns

(1) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

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

FIGURE 1 — FORWARD VOLTAGE

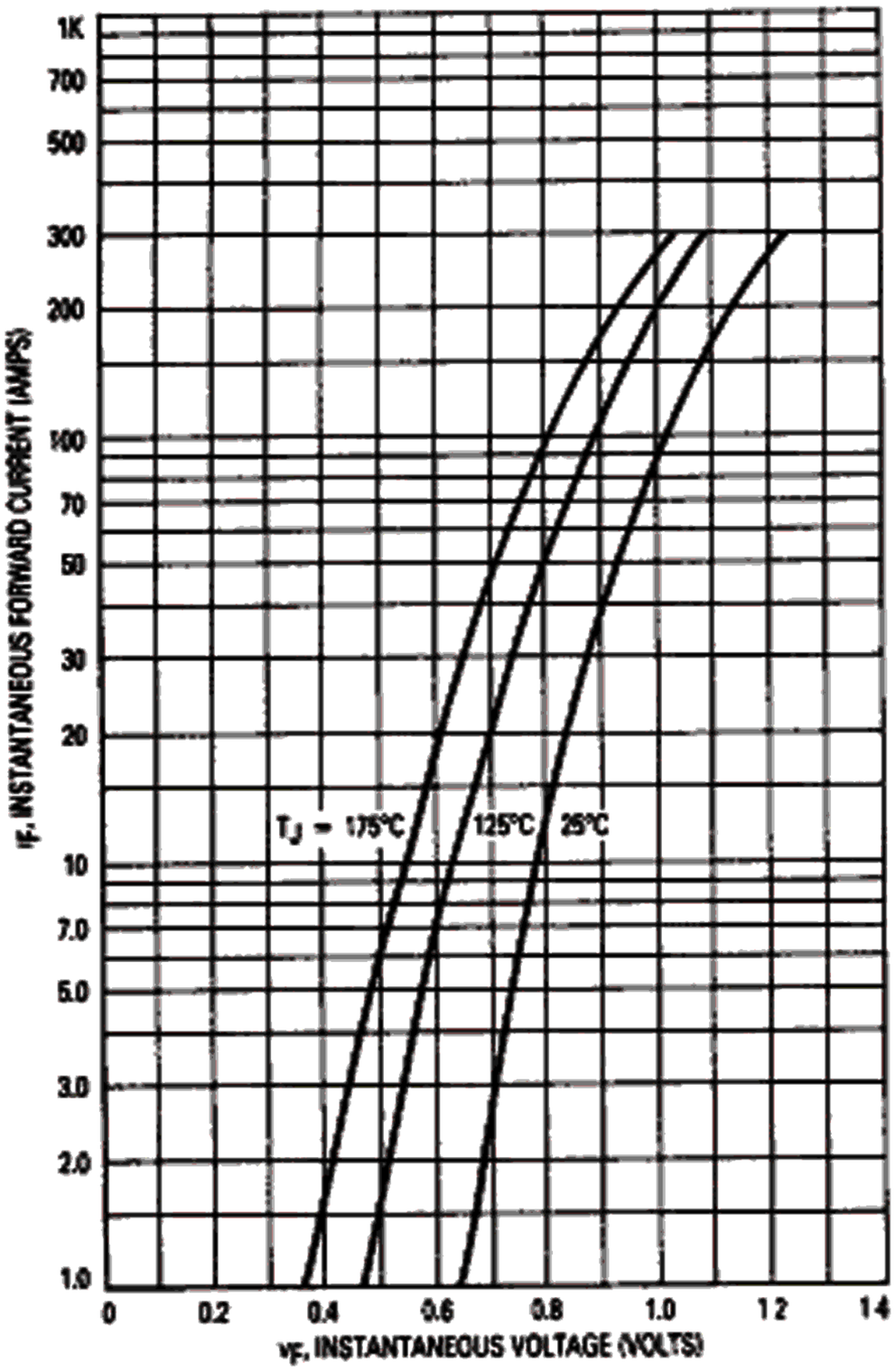
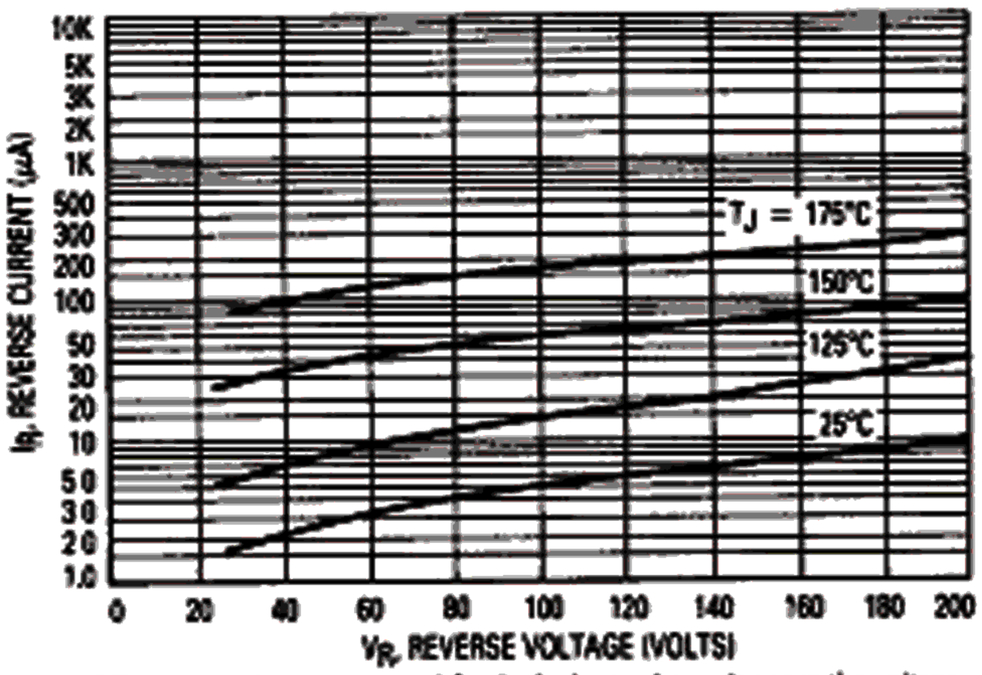


FIGURE 2 — TYPICAL REVERSE CURRENT*



*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)

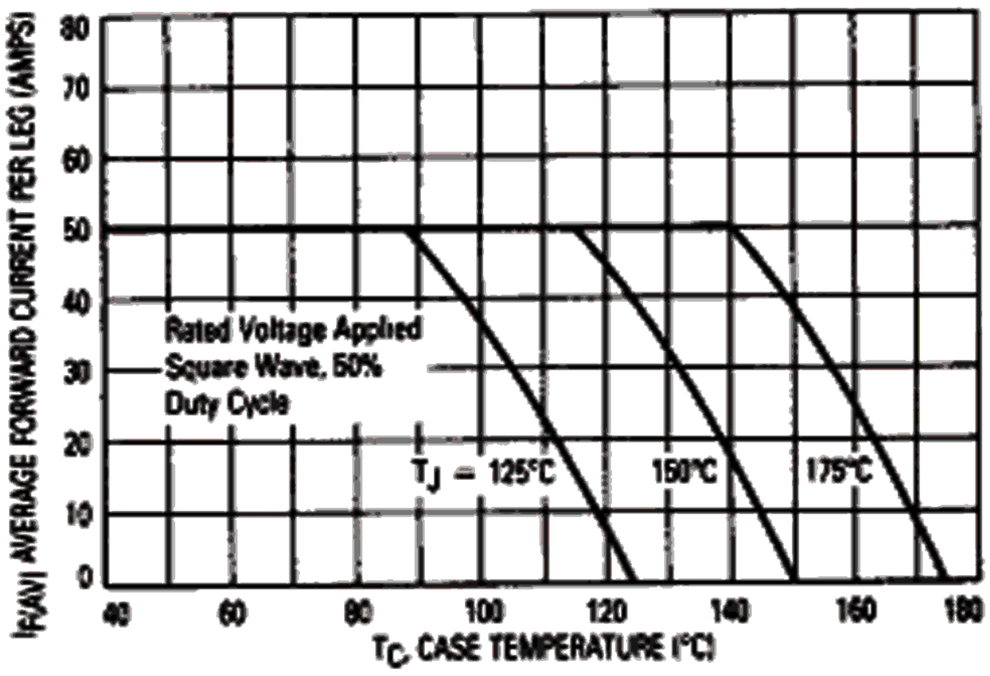


FIGURE 4 — POWER DISSIPATION (PER LEG)

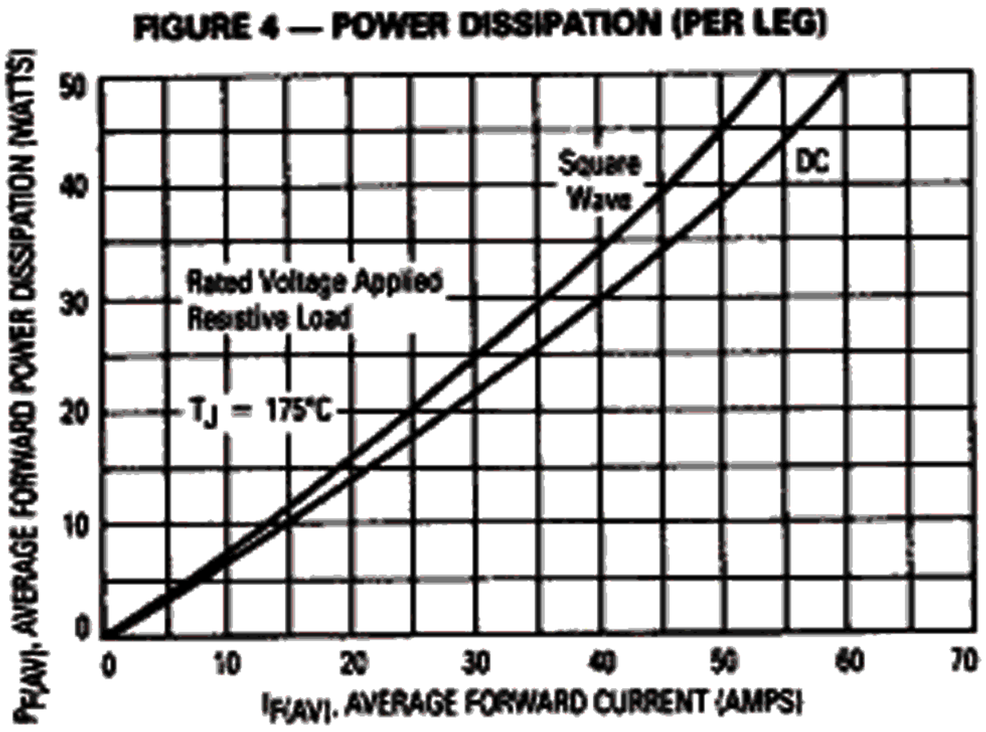


FIGURE 5 — CAPACITANCE (PER LEG)