MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MUR605CT
MUR610CT
MUR615CT
MUR620CT

MUR620CT is a
Motorola Preferred Device

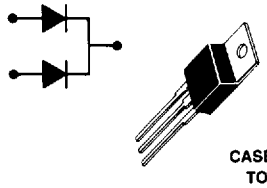
SWITCHMODE POWER RECTIFIERS

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

- Ultrafast 35 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package

ULTRAFAST RECTIFIERS

6 AMPERES
50–200 VOLTS



CASE 221A-06
TO-220AB
PLASTIC

3

MAXIMUM RATINGS

Rating	Symbol	MUR605CT	MUR610CT	MUR615CT	MUR620CT	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 = 130°C — Per Diode	$I_{F(AV)}$	3.0				Amps
Average Rectified Forward Current (Rated V_R) T_C = 130°C — Total Device	$I_{F(AV)}$	6.0				Amps
Peak Repetitive Forward Current Per Diode Leg (Rated V_R, Square Wave, 20 kHz) T_C = 130°C	I_{FRM}	6.0				Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	75				Amps
Operating Junction Temperature and Storage Temperature	T_J, T_{stg}	−65 to +175				°C

THERMAL CHARACTERISTICS PER DIODE LEG

Rating	Symbol	Typical	Maximum	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.0–6.0	7.0	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE LEG

Instantaneous Forward Voltage (1) (i_F = 3.0 Amp, T_C = 150°C) (i_F = 3.0 Amp, T_C = 25°C)	v_F	 0.80 0.94	 0.895 0.975	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, T_C = 150°C) (Rated dc Voltage, T_C = 25°C)	i_R	 2.0–10 0.01–3.0	 250 5.0	μA
Reverse Recovery Time (i_F = 1.0 Amp, di/dt = 50 Amp/μs)	t_{rr}	20–30	35	ns

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

MUR605CT, MUR610CT, MUR615CT, MUR620

FIGURE 1 — TYPICAL FORWARD VOLTAGE

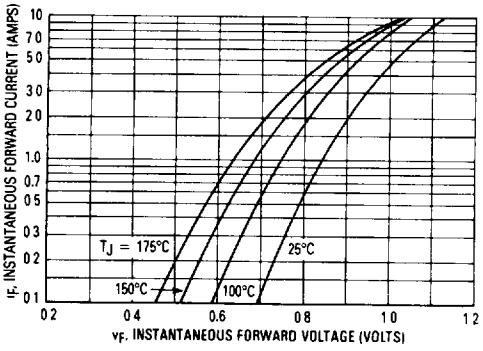


FIGURE 2 — TYPICAL REVERSE CURRENT

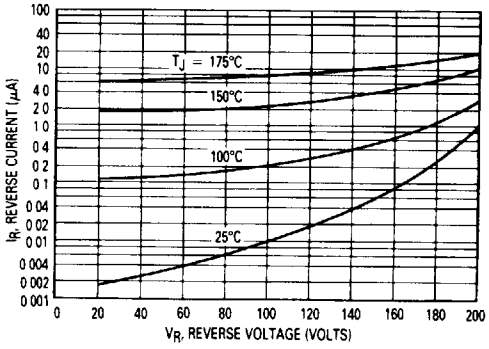


FIGURE 3 — TOTAL DEVICE CURRENT DERATING, CASE

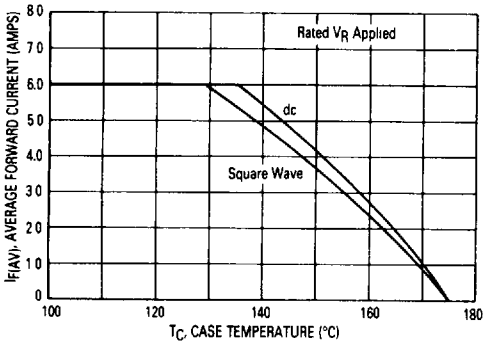


FIGURE 4 — TOTAL DEVICE CURRENT DERATING, AMBIENT

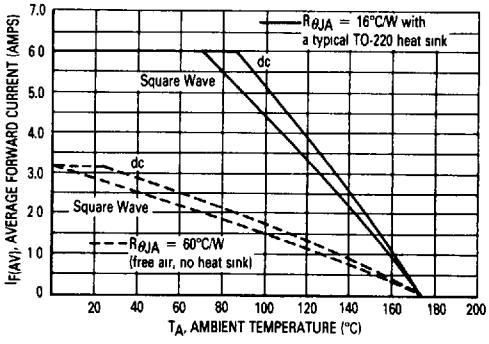


FIGURE 5 — POWER DISSIPATION