MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MUR5005
MUR5010
MUR5015
MUR5020

MUR5020 is a
Motorola Preferred Device

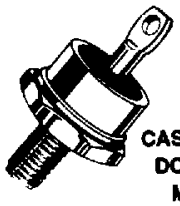
ULTRAFAST RECTIFIERS

50 AMPERES
50 to 200 VOLTS

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 50 Nanosecond Recovery Time
- Low Forward Voltage Drop
- Hermetically Sealed Metal DO-203AB Package



CASE 257-01
DO-203AB
METAL

MECHANICAL CHARACTERISTICS
CASE: Welded, hermetically sealed
FINISH: All external surface corrosion resistant and terminal leads are readily solderable
POLARITY: Cathode to Case
MOUNTING POSITIONS: Any
MOUNTING TORQUE: 25 in-lb max

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MAXIMUM RATINGS

Rating	Symbol	MUR 5005	MUR 5010	MUR 5015	MUR 5020	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	Volts
Nonrepetitive Peak Reverse Voltage	V_{RSM}	55	110	165	220	Volts
Average Forward Current T_C = 125°C	$I_{F(AV)}$	50				Amps
Nonrepetitive Peak Surge Forward Current (half cycle, 60 Hz, Sinusoidal Waveform)	I_{FSM}	600				Amps
Operating Junction and Storage Temperature	T_J, T_{stg}	-55 to +175				°C

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage Drop (I_F = 50 Amp, T_J = 25°C) (I_F = 50 Amp T_J = 125°C) (I_F = 100 Amp, T_J = 125°C)	v_F	 1.15 0.95 1.10	Volts
Maximum Reverse Current @ DC Voltage (T_J = 25°C) (T_J = 125°C)	I_R	 10 1.0	 μA mA
Maximum Reverse Recovery Time (I_F = 1.0 Amp, di/dt = 50 Amp/μs, V_R = 30 V T_J = 25°C)	t_{rr}	50	ns

FIGURE 1 — TYPICAL FORWARD VOLTAGE

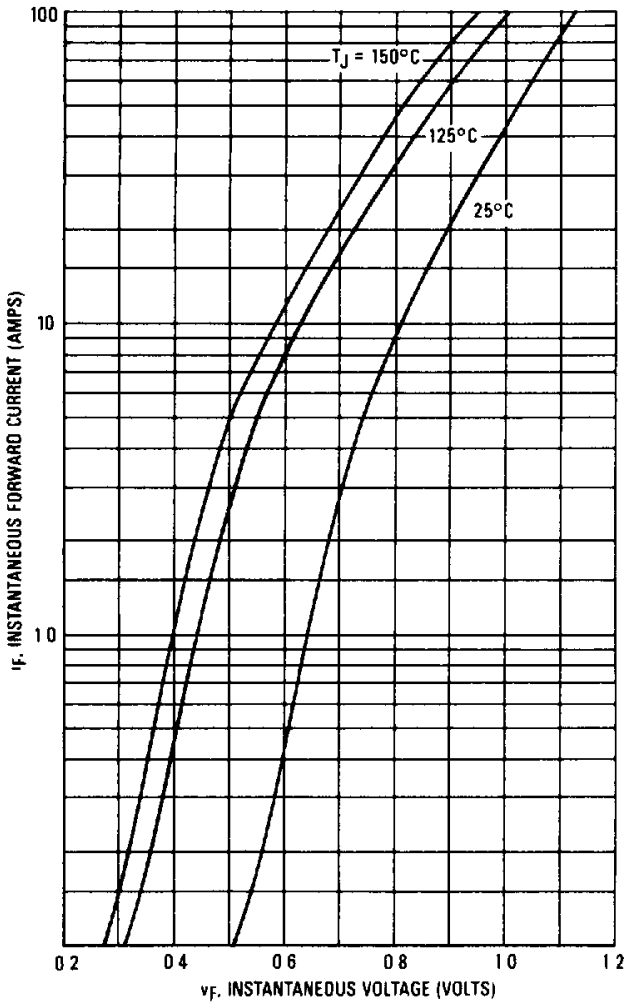
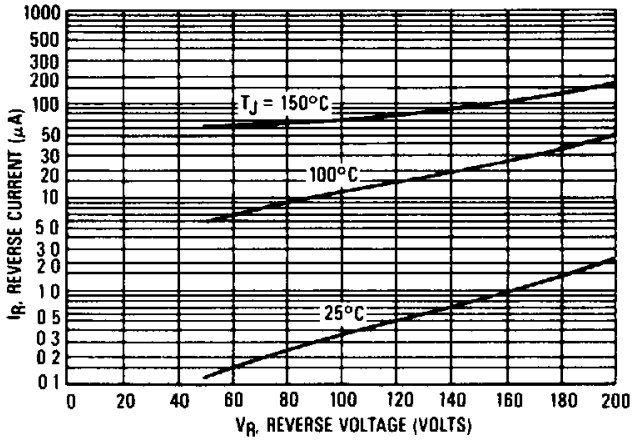


FIGURE 2 — TYPICAL REVERSE CURRENT*



*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, CASE

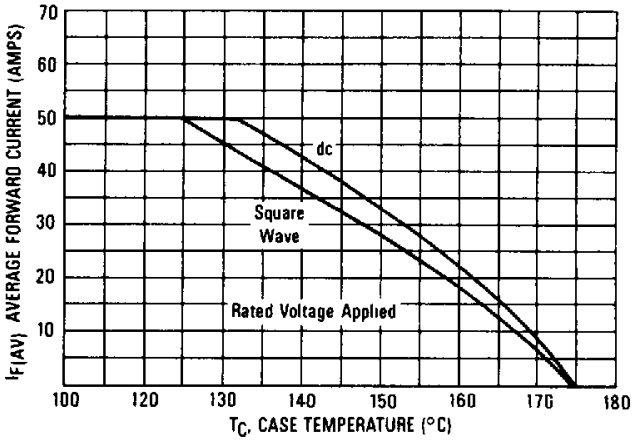


FIGURE 4 — POWER DISSIPATION

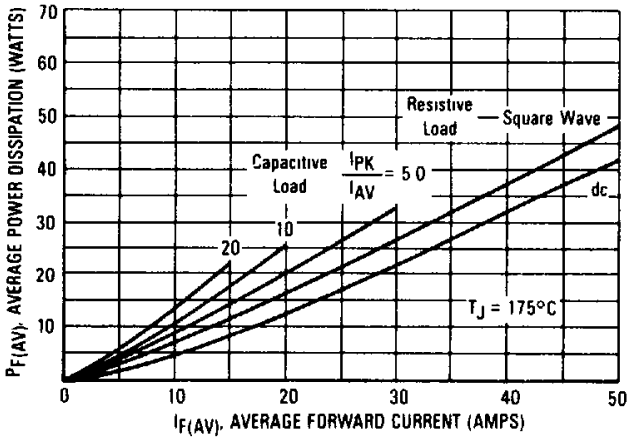


FIGURE 5 — TYPICAL CAPACITANCE

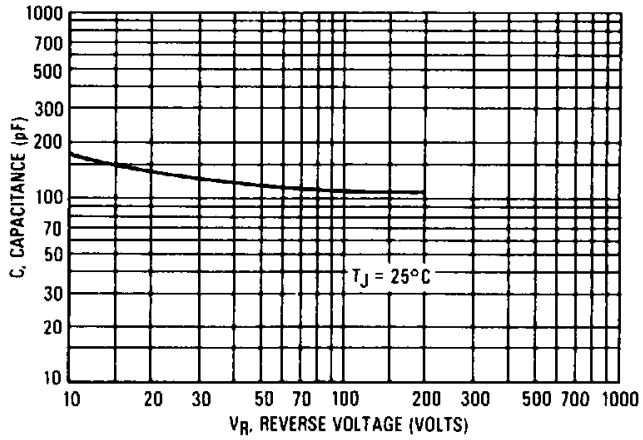


FIGURE 6 — THERMAL RESPONSE