MOTOROLA

MUR805
MUR810
MUR815
MUR820

SWITCHMODE POWER RECTIFIERS

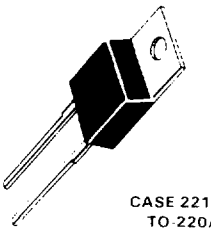
designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

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

ULTRAFAST RECTIFIERS

8 AMPERES
50-200 VOLTS

3



CASE 221B-02
TO-220AC

CROSS-REFERENCE GUIDE

MOTOROLA	AMPEREX	GI	UNITRODE	VARO
MUR805	BYW29-50	FE8A	UES1401	VHE1401
MUR810	BYW29-100	FE8B	UES1402	VHE1402
MUR815	BYW29-150	FE8C	UES1403	VHE1403
MUR820	BYW29-200	FE8D		VHE1404

MAXIMUM RATINGS

Rating	Symbol	MUR805	MUR810	MUR815	MUR820	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 Total Device, T_C = 150°C (Rated V_R)	$I_{F(AV)}$	8.0	8.0	8.0	8.0	Amps
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz) T_C = 150°C	I_{FRM}	16	16	16	16	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	100	100	100	100	Amps
Operating Junction Temperature and Storage Temperature	T_J, T_{stg}	-65 to +175	65 to +175	65 to +175	65 to +175	°C
THERMAL CHARACTERISTICS						
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	3.0	3.0	3.0	°C/W
ELECTRICAL CHARACTERISTICS						
Maximum Instantaneous Forward Voltage (1) (i_F = 8.0 Amp, T_C = 150°C) (i_F = 8.0 Amp, T_C = 25°C)	v_F	 0.895 0.975	 0.895 0.975	 0.895 0.975	 0.895 0.975	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, T_C = 150°C) (Rated dc Voltage, T_C = 25°C)	i_R	 250 5.0	 250 5.0	 250 5.0	 250 5.0	μA
Maximum Reverse Recovery Time (I_F = 1.0 Amp, di/dt = 50 Amp/μs)	t_{rr}	35	35	35	35	ns

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

FIGURE 1 — TYPICAL FORWARD VOLTAGE

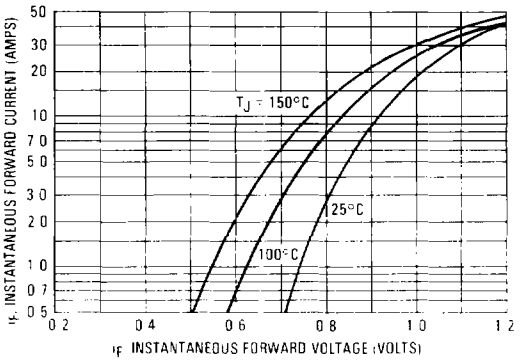
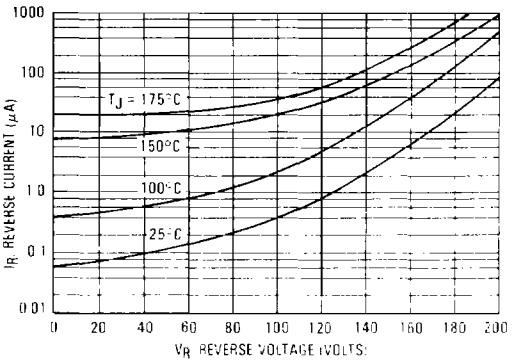


FIGURE 2 — TYPICAL REVERSE CURRENT



3

FIGURE 3 — CURRENT DERATING, CASE

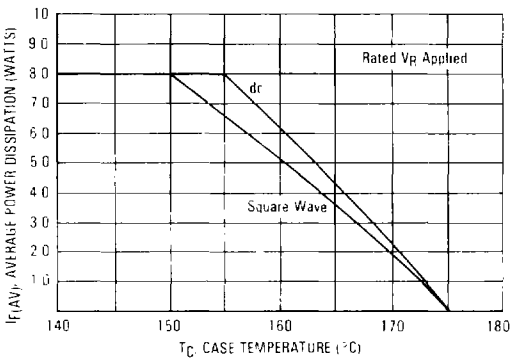


FIGURE 4 — CURRENT DERATING, AMBIENT

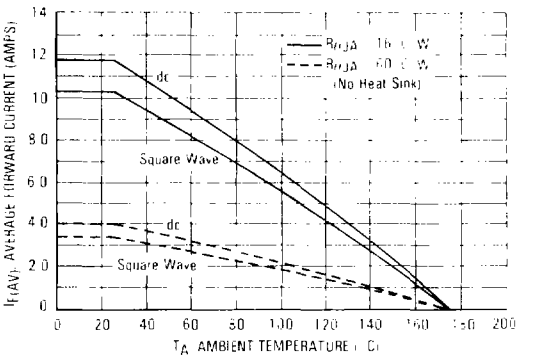
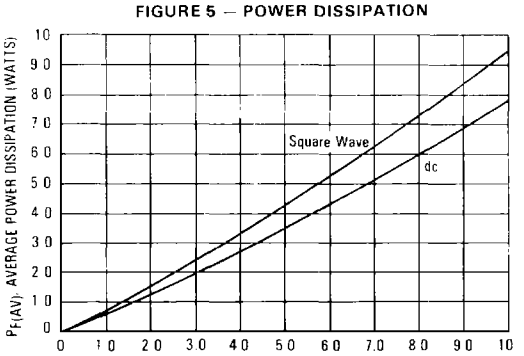
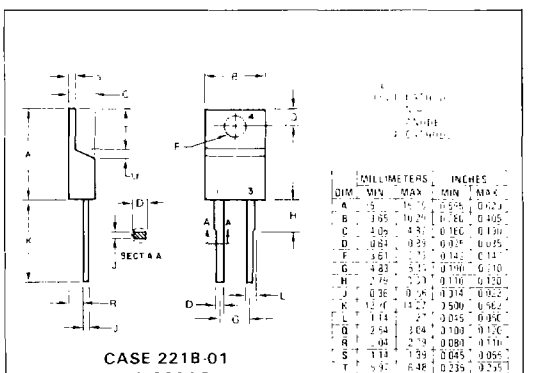


FIGURE 5 — POWER DISSIPATION





DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	14.70	15.30	0.579	0.621
B	9.65	10.29	0.381	0.405
C	4.09	4.83	0.160	0.190
D	0.64	0.89	0.025	0.035
F	3.61	3.73	0.142	0.147
G	4.83	5.33	0.190	0.210
H	2.79	2.93	0.110	0.120
J	0.36	0.55	0.014	0.022
K	12.70	14.27	0.500	0.562
L	1.14	1.77	0.045	0.070
Q	2.54	3.04	0.100	0.120
R	1.04	2.79	0.080	0.110
S	1.14	1.39	0.045	0.055
T	5.97	6.48	0.235	0.255
U	0.25	1.27	0.000	0.050