

BIPOLAR ANALOG INTEGRATED CIRCUIT

μ PC1188H

20 W AUDIO POWER AMPLIFIER

DESCRIPTION

The μ PC1188H is a monolithic integrated circuit and a power amplifier designed for Hi-Fi audio sets and in a 10pin Single In-Line plastic package. μ PC1188H can provide 20 W (TYP.) to 8 ohms at 1 % T.H.D. and ± 22 V Supply voltage.

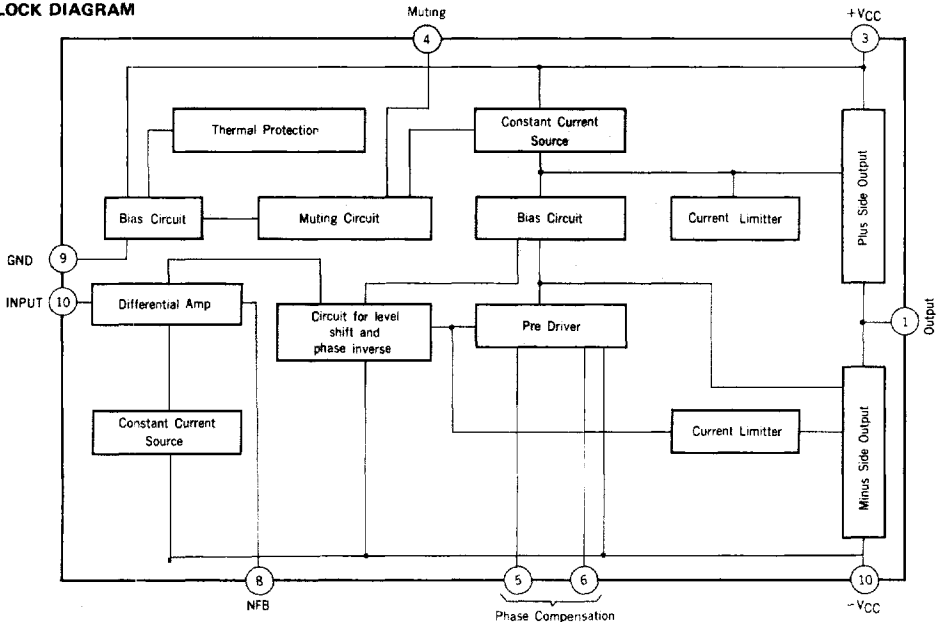
FEATURES

- High output power. 20 W TYP. ($V_{CC} = \pm 22$ V, $A_V = 40$ dB, $f = 20$ Hz ~ 20 kHz, $R_L = 8 \Omega$, T.H.D. = 1 %)

20 W TYP. ($V_{CC} = \pm 22$ V, $A_V = 27.5$ dB, $f = 20$ Hz ~ 20 kHz, $R_L = 8 \Omega$, T.H.D. = 0.5 %)
- Low distortion. 0.02 % TYP. ($V_{CC} = \pm 22$ V, $A_V = 40$ dB, $f = 1$ kHz, $R_L = 8 \Omega$, $P_{out} = 5.0$ W)

0.005 % TYP. ($V_{CC} = \pm 22$ V, $A_V = 27.5$ dB, $f = 1$ kHz, $R_L = 8 \Omega$, $P_{out} = 5.0$ W)
- Wide frequency band width. $f = 250$ kHz (-3 dB)
- μ PC1188H has a muting function which eliminates pop on noise and the thermal and the over current protection circuit.
- Available for NFB tone control amp.

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

Supply Voltage (Quiescent)	V _{CC}	± 30	V
Circuit Current	I _{CC(peak)}	5	A
Package Dissipation	P _D	30*	W
Operating Temperature	T _{opt}	-20 to +70	°C
Storage Temperature	T _{stg}	-55 to +150	°C
Thermal Resistance Junction to Case	R _{th(j-c)}	3	°C/W

* T_{tab} = 60°C

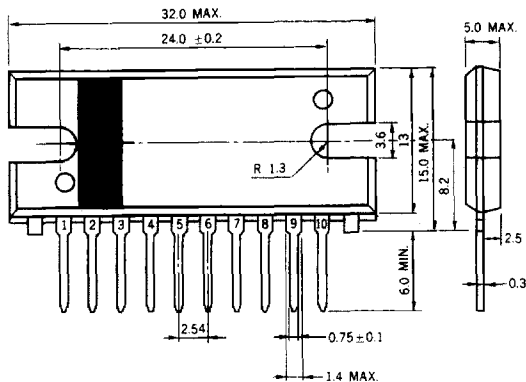
RECOMMENDED OPERATING CONDITIONS (Ta = 25 °C)

CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT
Operating Supply Voltage	± 17	± 22	± 23	V
Input Impedance	47	56	100	kΩ
Closed Loop Voltage Gain	26	40		dB
Load Impedance	4	8		Ω

ELECTRIC CHARACTERISTICS (V_{CC} = ± 22 V, A_V = 40 dB, R_L = 8 Ω, R_G = 600 Ω, Ta = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Output Offset Voltage	V _{IO}	-100	0	+100	mV	No Signal
Circuit Current	I _{CC}	30	60	120	mA	No Signal
Output Power	P _O	16	18		W	T.H.D. = 0.5 %, f = 20 Hz - 20 kHz
Open Loop Voltage Gain	A _{vo}	65	75		dB	P _O = 0.3 W, f = 1 kHz
Total Harmonic Distortion	T.H.D.		0.1	0.3	%	P _O = 10 W, f = 20 Hz - 20 kHz
Output Noise Voltage	NV		0.4	1.0	mV	R _G = 2.2 kΩ, No Filter
Power Band Width	P.B.W.		250		kHz	P _O = 0.3 W, -3 dB
Supply Voltage Rejection Ratio	S.V.R.	50	56		dB	R _G = 2.2 kΩ, f _{ripple} = 100 Hz

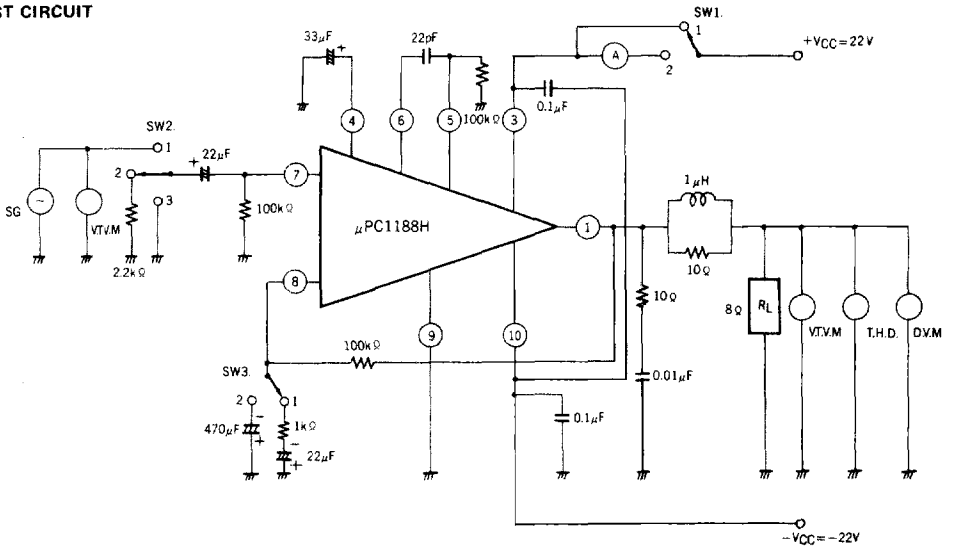
PACKAGE DIMENSION (Unit: mm)



CONNECTION DIAGRAM

1	OUTPUT
2	NC
3	+V _{CC}
4	MUTING
5	PHASE COMP
6	PHASE COMP
7	INPUT
8	NFB
9	GND
10	-V _{CC}

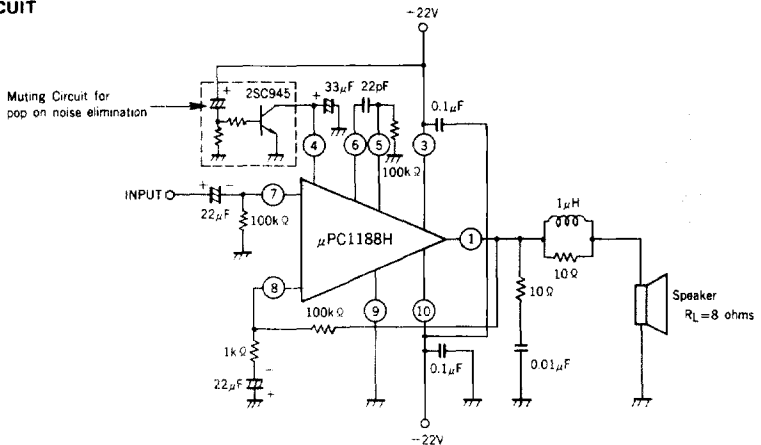
TEST CIRCUIT



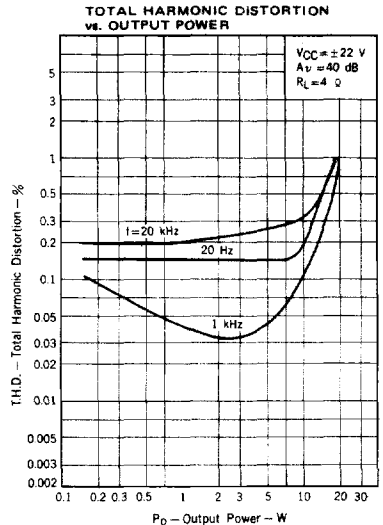
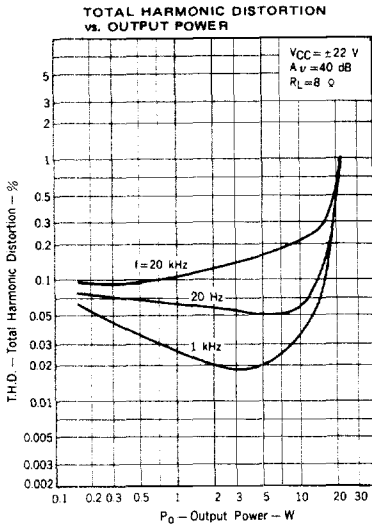
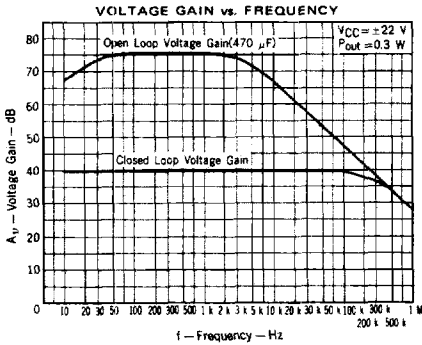
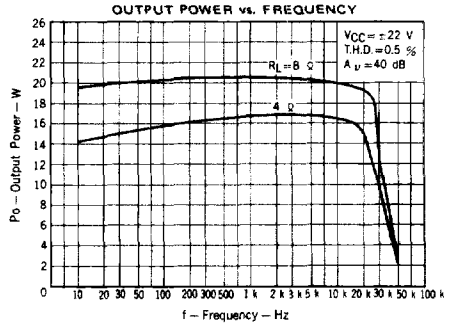
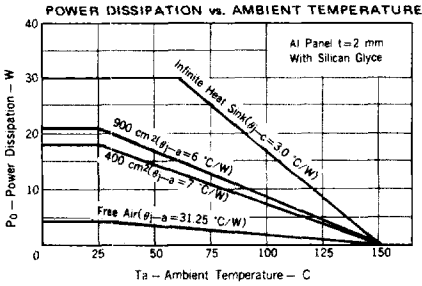
NOTE: Turn on plus and minus power supply at the same time or minus power supply at first.

ITEM	SYMBOL	SW1	SW2	SW3
Circuit Current	I_{CC}	2	3	1
Output Offset Voltage	V_{IO}	1	3	1
Output Power	P_o	1	1	1
Open Loop Voltage Gain	A_{VO}	1	1	2
Total Harmonic Distortion	T.H.D.	1	1	1
Output Noise Voltage	NV	1	2	1
Supply Voltage Rejection Ratio	SVR	1	2	1

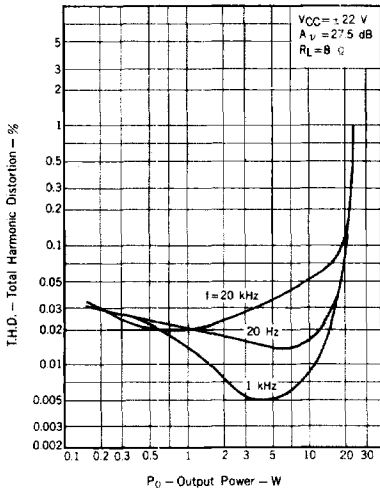
APPLICATION CIRCUIT



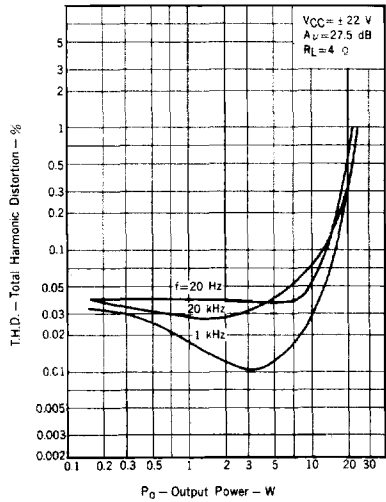
TYPICAL CHARACTERISTICS (Ta = 25 °C)



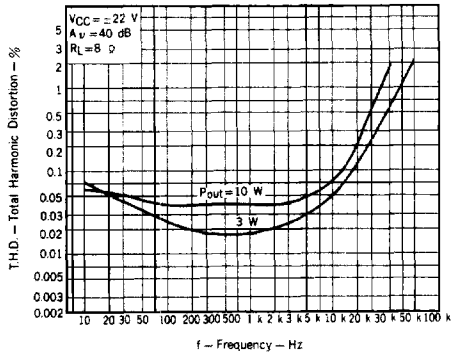
TOTAL HARMONIC DISTORTION vs. OUTPUT POWER



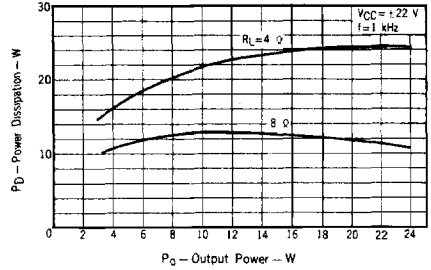
TOTAL HARMONIC DISTORTION vs. OUTPUT POWER



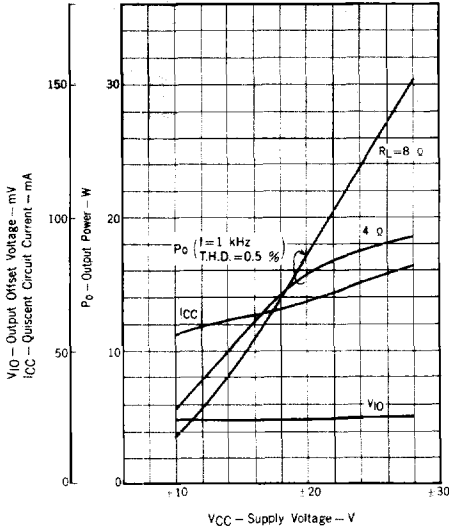
TOTAL HARMONIC DISTORTION vs. FREQUENCY



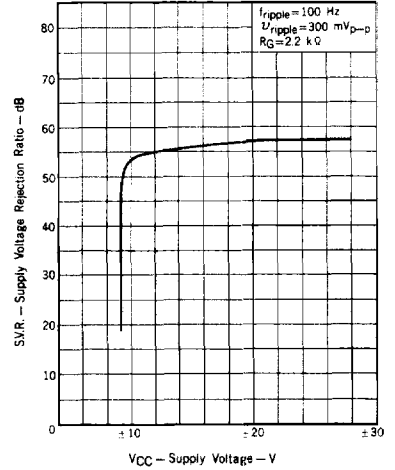
POWER DISSIPATION vs. OUTPUT POWER



OUTPUT OFFSET VOLTAGE, CIRCUIT CURRENT vs. SUPPLY VOLTAGE



SUPPLY VOLTAGE REJECTION RATIO vs. SUPPLY VOLTAGE



OUTPUT NOISE VOLTAGE vs. INPUT IMPEDANCE

