

# BIPOLAR ANALOG INTEGRATED CIRCUIT

## $\mu$ PC1188H

### 20 W AUDIO POWER AMPLIFIER

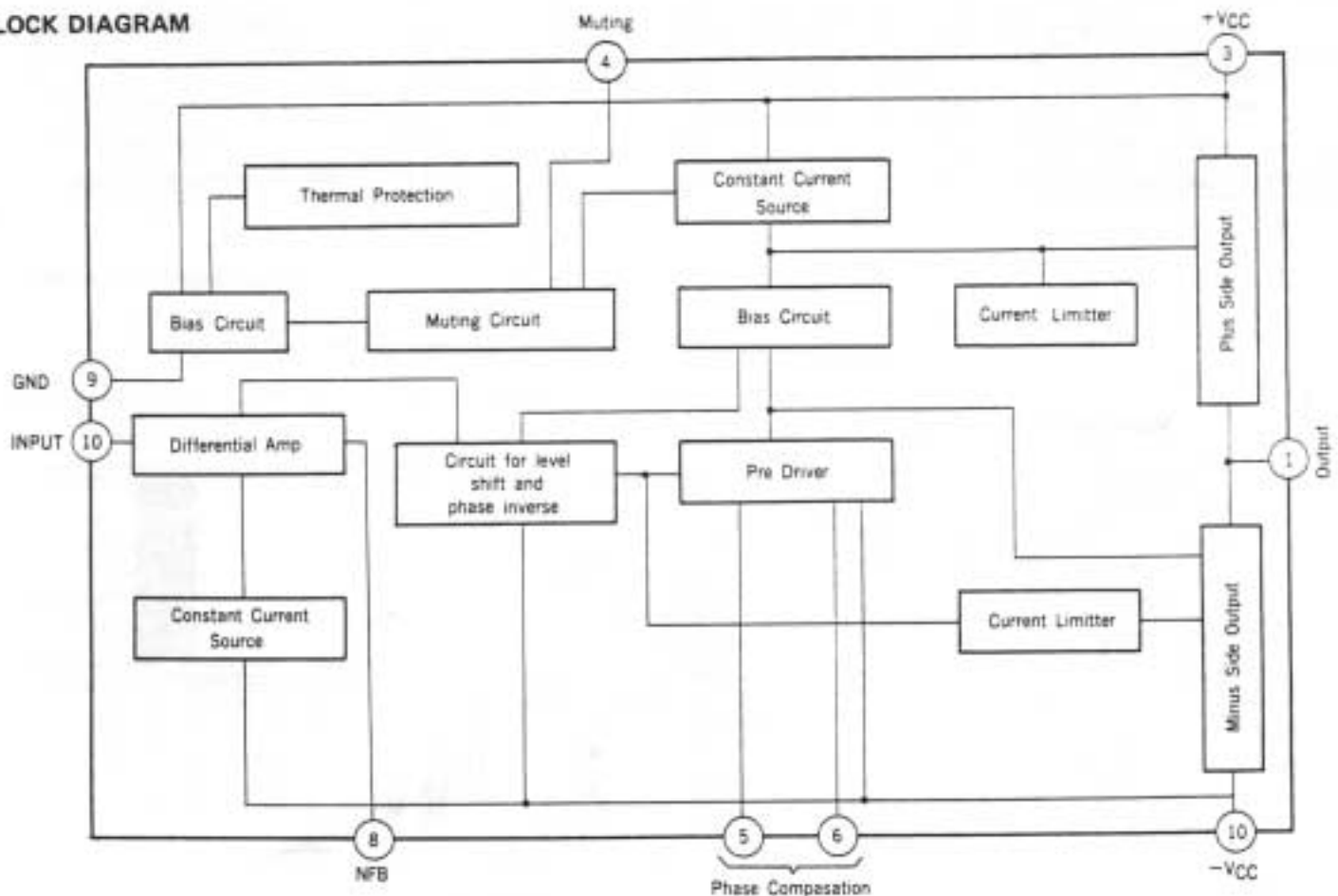
#### DESCRIPTION

The  $\mu$ 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.  $\mu$ PC1188H can provide 20 W (TYP.) to 8 ohms at 1 % T.H.D. and  $\pm 22$  V Supply voltage.

#### FEATURES

- High output power. 20 W TYP. ( $V_{CC} = \pm 22$  V,  $A_V = 40$  dB,  $f = 20$  Hz  $\sim$  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  $\sim$  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)
- $\mu$ 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 ( $T_a = 25^\circ\text{C}$ )

Supply Voltage (Quiescent)	$V_{CC}$	$\pm 30$	V
Circuit Current	$I_{CC(\text{peak})}$	5	A
Package Dissipation	$P_D$	30*	W
Operating Temperature	$T_{\text{opt}}$	$-20$ to $+70$	$^\circ\text{C}$
Storage Temperature	$T_{\text{stg}}$	$-55$ to $+150$	$^\circ\text{C}$
Thermal Resistance Junction to Case	$R_{\text{th(j-c)}}$	3	$^\circ\text{C/W}$

\*  $T_{\text{tab}} = 60^\circ\text{C}$

RECOMMENDED OPERATING CONDITIONS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT
Operating Supply Voltage	$\pm 17$	$\pm 22$	$\pm 23$	V
Input Impedance	47	56	100	$\text{k}\Omega$
Closed Loop Voltage Gain	26	40		dB
Load Impedance	4	8		$\Omega$

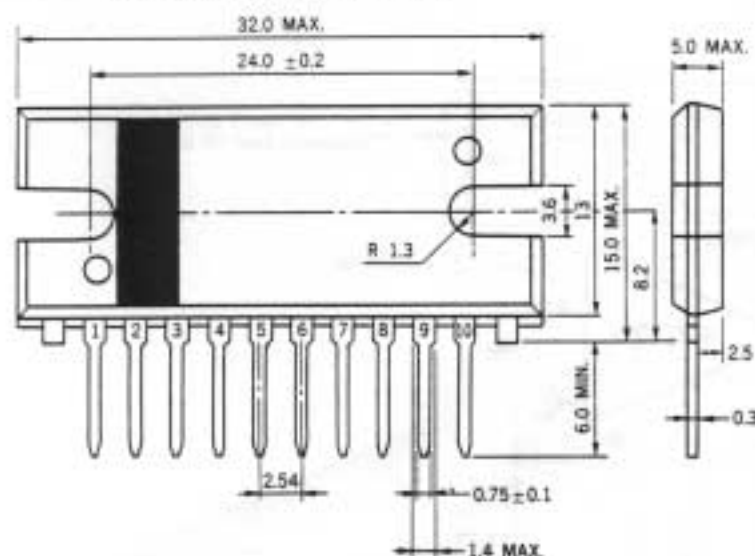
ELECTRIC CHARACTERISTICS ( $V_{CC} = \pm 22\text{ V}$ ,  $A_V = 40\text{ dB}$ ,  $R_L = 8\ \Omega$ ,  $R_G = 600\ \Omega$ ,  $T_a = 25^\circ\text{C}$ )

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 %, $f = 20\text{ Hz} - 20\text{ kHz}$
Open Loop Voltage Gain	$A_{VO}$	65	75		dB	$P_O = 0.3\text{ W}$ , $f = 1\text{ kHz}$
Total Harmonic Distortion	T.H.D.		0.1	0.3	%	$P_O = 10\text{ W}$ , $f = 20\text{ Hz} - 20\text{ kHz}$
Output Noise Voltage	NV		0.4	1.0	mV	$R_G = 2.2\text{ k}\Omega$ , No Filter
Power Band Width	P.B.W.		250		kHz	$P_O = 0.3\text{ W}$ , -3 dB
Supply Voltage Rejection Ratio	S.V.R.	50	56		dB	$R_G = 2.2\text{ k}\Omega$ , fripple = 100 Hz

## PACKAGE DIMENSION

Unit: mm

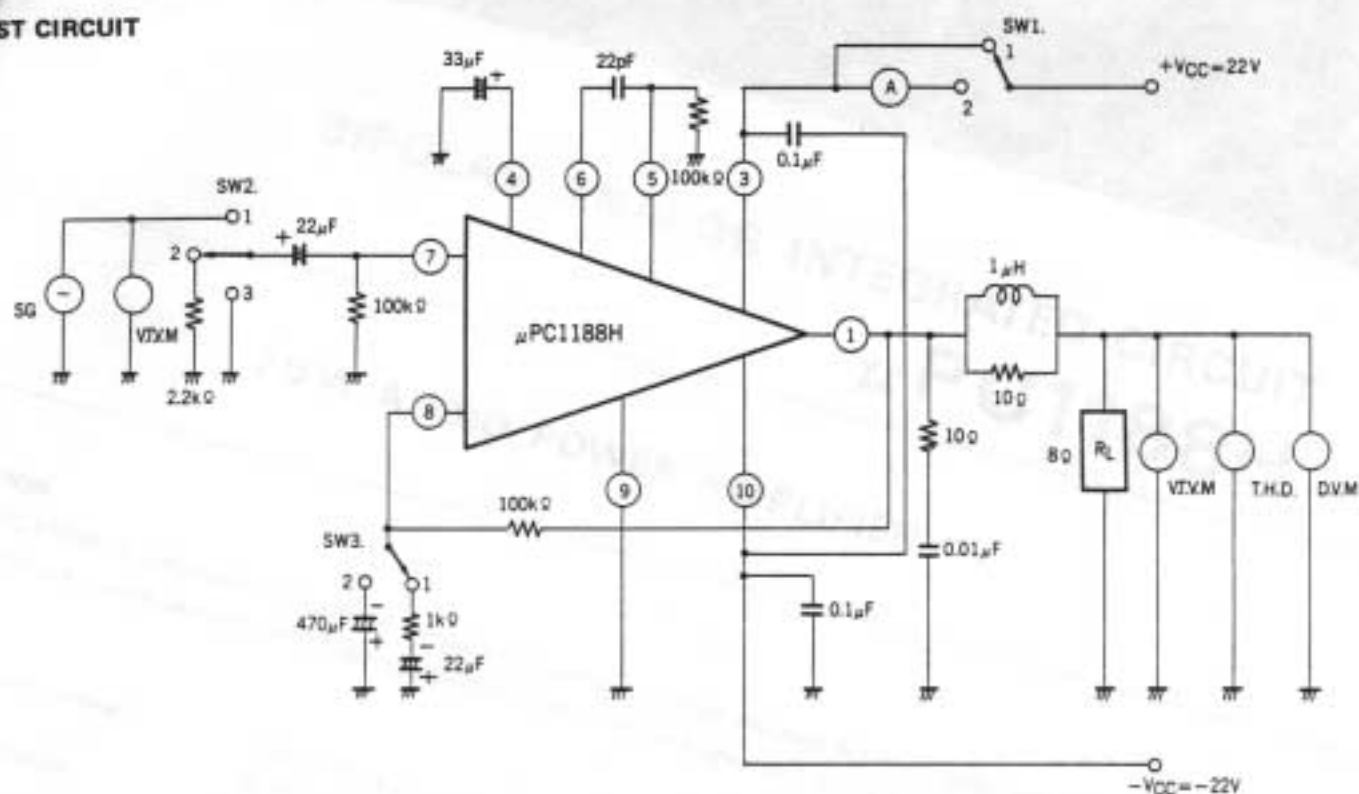
Typical value unless otherwise noted



## CONNECTION DIAGRAM

1	OUTPUT
2	NC
3	+V <sub>CC</sub>
4	MUTING
5	PHASE COMP
6	PHASE COMP
7	INPUT
8	NFB
9	GND
10	-V <sub>CC</sub>

## 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

