

BIPOLAR ANALOG INTEGRATED CIRCUIT

μ PC1185H2

7 W DUAL AF POWER AMPLIFIER

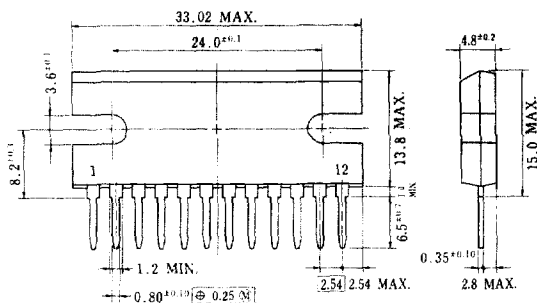
The μ PC1185H2 is a dual audio power amplifiers in a 12-lead single in-line package, specifically designed for car stereo application.

This device provides an output power of 7 watts per channel to 4 ohm load with 10 percent distortion at 14.4 volts power supply.

FEATURES

- Very low number of external components.
- Easy mounting with no electrical isolation between the package and heat sink.
- Space saving due to the single in-line package.
- Very low transient noise at power switch-on.
- No damage for reverse insertion on the PC-board.
- Thermal shut-down circuit included.
- Load dump protection circuit included.

PACKAGE DIMENSIONS (Unit:mm)



P124P-254B2

CONNECTION DIAGRAM

Pin No.	Function
1	GND (for input)
2	Output 1
3	Bootstrap 1
4	Filter
5	N.F. 1
6	Input 1
7	Input 2
8	N.F. 2
9	+VCC
10	Bootstrap 2
11	Output 2
12	GND (for output)

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

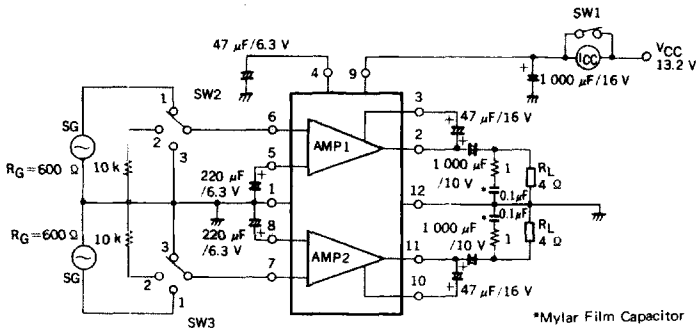
Supply Voltage (Surge PW = 200 ms)	$V_{CC\text{surge}}$	40	V
Supply Voltage (Operational)	V_{CC}	18	V
Circuit Current (Peak)	$I_{CC\text{ peak}}$	4.5	A
Package Dissipation	P_D	20	W
Operating Temperature	T_{opt}	-30 to +75*	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

*Using an aluminum heat sink $R_{\text{th(c-a)}} = 6^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$, $V_{CC} = 13.2\text{ V}$, $f = 1\text{ kHz}$, $R_L = 4\ \Omega$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	I_{CC}	30	80	180	mA	$V_{\text{in}} = 0$
Output Power	P_O		7.0		W	T.H.D. = 10 %, $V_{CC} = 14.4\text{ V}$
		5.0	5.8		W	T.H.D. = 10 %, $V_{CC} = 13.2\text{ V}$
			8.5		W	T.H.D. = 10 %, $R_L = 2\ \Omega$, $V_{CC} = 13.2\text{ V}$
Total Harmonic Distortion	T.H.D.		0.3	1.0	%	$P_O = 0.5\text{ W}$
			0.4		%	$P_O = 2\text{ W}$, $R_L = 2\ \Omega$
Voltage Gain	A_v	51	54	58	dB	$P_O = 0.5\text{ W}$
Channel Balance	ΔA_v		0	± 1.5	dB	$P_O = 0.5\text{ W}$
Cross Talk	CT	30	45		dB	$f = 1\text{ kHz}$, other ch $R_G = 0$
Output Noise Level	V_n		1.4	4	mVr.m.s.	$R_G = 10\text{ k}\Omega$

TEST CIRCUIT



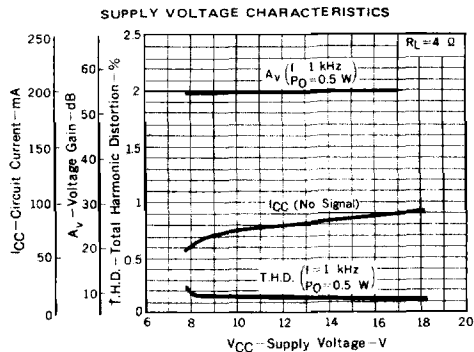
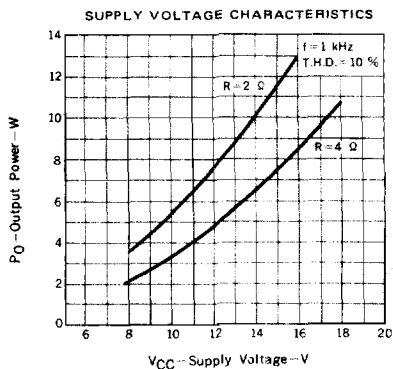
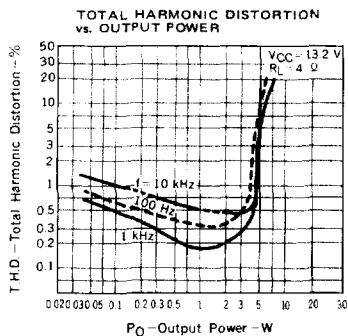
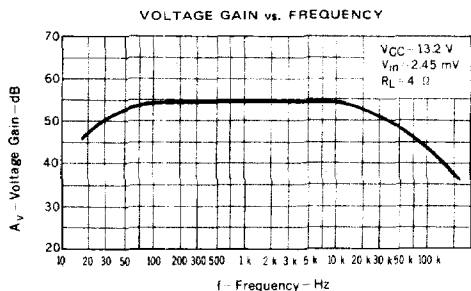
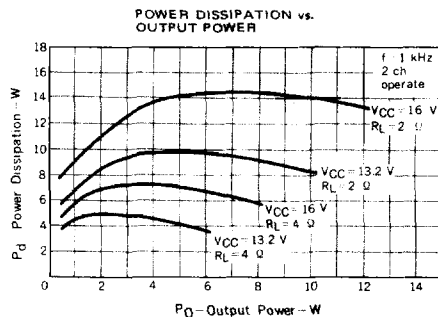
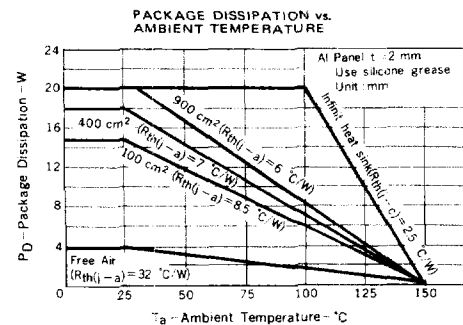
*Mylar Film Capacitor

Table 1

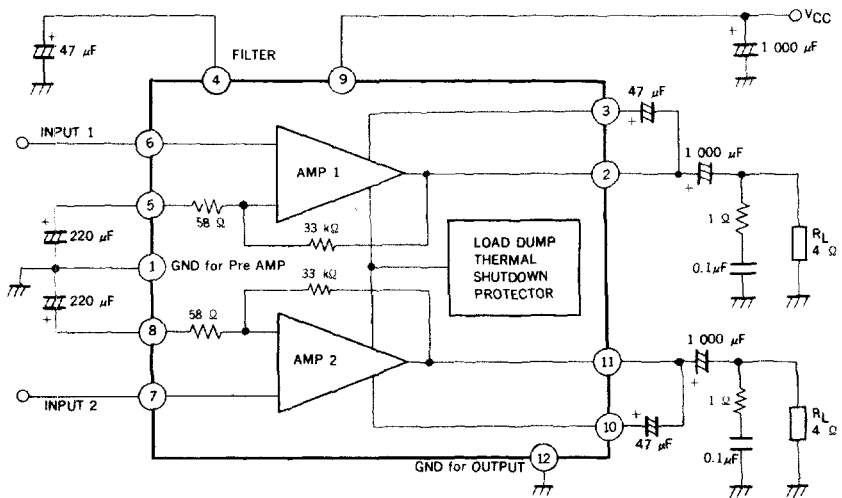
	SW1	SW2	SW3
I_{CC}	OFF	3	3
P_O	ON	1 (3)	3 (1)
T.H.D.	ON	1 (3)	3 (1)
A_v	ON	1 (3)	3 (1)
V_n	ON	2	2
SVR	ON	3	3
CT	ON	1 (3)	3 (1)

The position of switches at testing AMP1 is show in table 1. The numbers in parenthesis show the position of switches in testing AMP2.

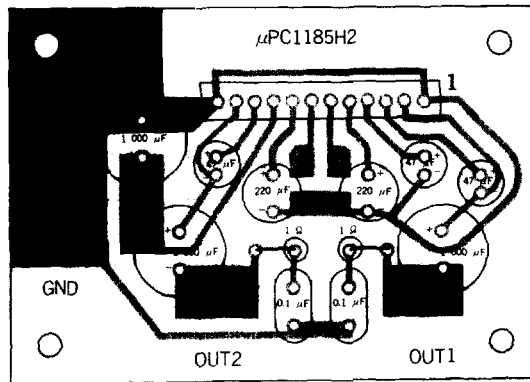
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



BLOCK DIAGRAM AND TYPICAL APPLICATION



PC BOARD AND COMPONENT LAY-OUT



NOTICE:

The μ PC1185H2 is not recommended for bridge and power booster amplifiers without output capacitors because it doesn't include speaker protection circuit.

The μ PC1230H2 is suitable for bridge and power booster amplifiers.