

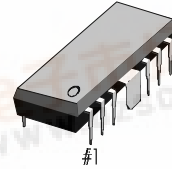
4.6W AUDIO POWER AMP**S1A2206D01****INTRODUCTION**

The S1A2206D01 is a monolithic integrated circuit consisting of a 2-channel power amplifier. It is suitable for the stereo and bridge amplifier application of a radio cassette tape recorder.

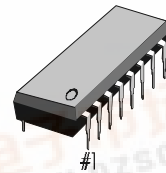
FEATURES

- High power output
Stereo : $P_O = 2.3 \text{ W}$ (Typ) at $V_{CC} = 9 \text{ V}$, $R_L = 4$
Bridge : $P_O = 4.7 \text{ W}$ (Typ) at $V_{CC} = 9 \text{ V}$, $R_L = 8$
- Low switching distortion at high frequency
- Reduced shock noise at the time of power on/off due to a built-in muting circuit
- Good ripple rejection due to a built-in ripple filter
- Good channel separation
- Soft tone at the time of output saturation
- Closed loop voltage gain fixed at 45dB (Bridge : 51 dB) but availability with external resistor added
- Minimum number of external parts required
- Easy-to-design radiator fin

12-DIPH-300

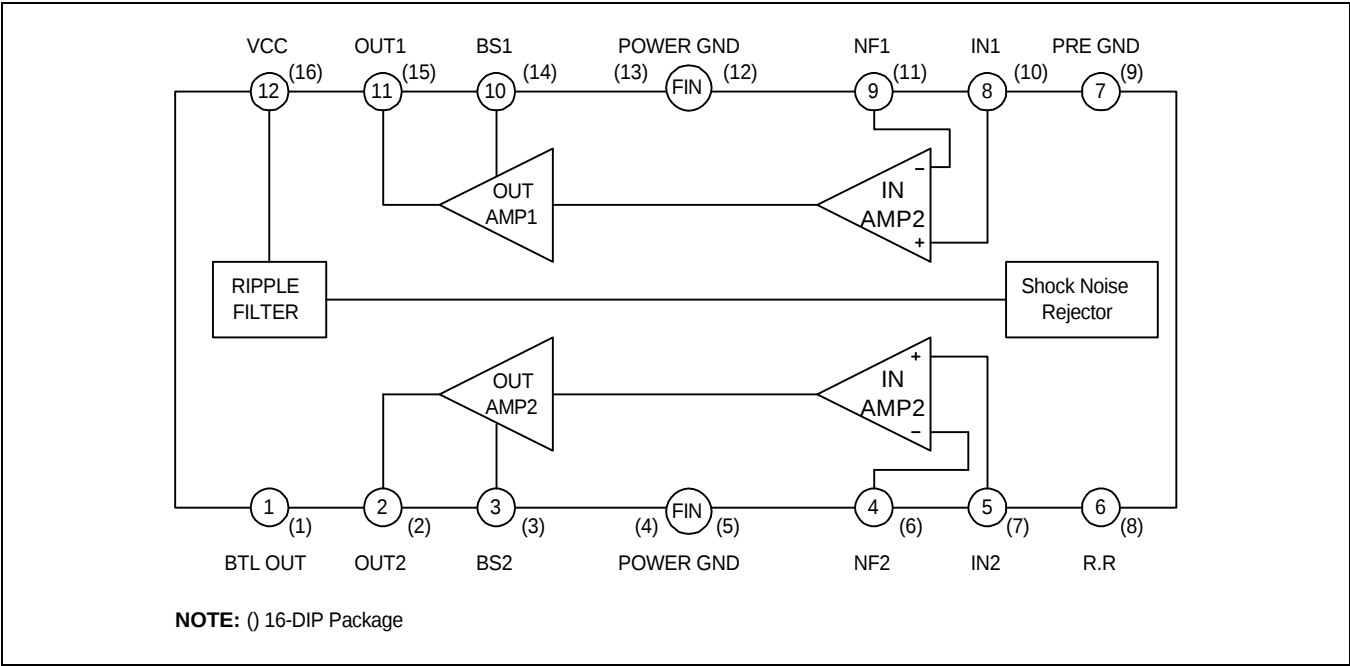


16-DIP-300A

**ORDERING INFORMATION**

Device	Package	Operating Temperature
S1A2206D01-H0B0	12-DIPH-300	- 20°C - + 70°C
S1A2206D01-D0B0	16-DIP-300A	

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	15	V
Power Dissipation	P_D	(*) 4	W
Operating Temperature	T_{OPR}	- 20 — +70	°C
Storage Temperature	T_{STG}	- 40 — +150	°C

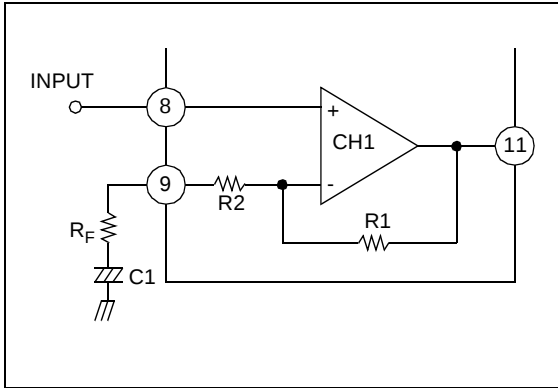
* Fin is soldered on the PCB

ELECTRICAL CHARACTERISTICS(Ta = 25°C, V_{CC} = 9V, f = 1kHz, R_G = 600Ω, unless otherwise specified)

Characteristic	Symbol	Test Conditions		Min	Typ	Max	Unit
Operating Supply Voltage	V _{CC}	—		—	9	11	V
Quiescent Circuit Current	I _{CCQ}	V _I = 0, Stereo		—	40	55	mA
Closed Loop Voltage Gain	G _{VC}	Stereo	V _I = -45 dBm	43	45	47	dB
		Bridge		49	51	53	dB
Channel Balance	CB	Stereo	—	−1	0	+1	dB
Power Output	PO	Stereo	R _L = 4, THD = 10 %,	1.7	2.3	—	W
			R _L = 8, THD = 10 %,	—	1.3	—	W
		Bridge	R _L = 8, THD = 10 %,	—	4.7	—	W
Total Harmonic Distortion	THD	Stereo	P _O = 250 mW, R _L = 4Ω	—	0.3	1.5	%
		Bridge		—	0.5	—	%
Input Resistance	R _I	—		21	30	—	kΩ
Ripple Rejection Ratio	RR	Stereo,R _G = 0, V _I = 150mW f =100Hz		40	46	—	dB
Output Noise Voltage	V _{NO}	Stereo,R _G = 0Ω		—	0.3	1.0	mV
		Stereo,R _G = 10kΩ		—	0.5	2.0	mV
Cross Talk	CT	Stereo,R _G = 10kΩ, V _O = 0dBm		40	55	—	dB

APPLICATION INFORMATION

1. Stereo Application



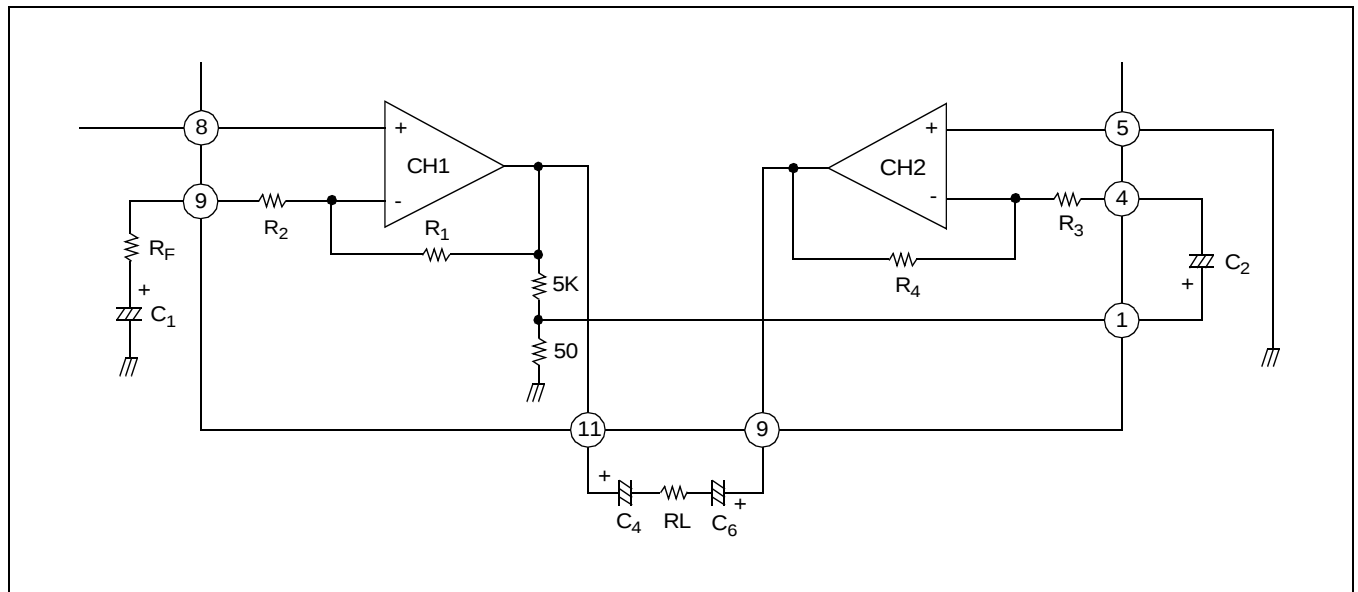
- i) Fixed voltage gain
(Pin 9 connected to GND directly)

$$G_v = 20 \log \frac{R_1}{R_2} (dB)$$

- ii) Variable voltage gain
(R_f and C₁ connected with pin 9)

$$G_v = 20 \log \frac{R_1}{R_2 + R_F} (dB)$$

2. Bridge Application



- i) Fixed voltage gain (Pin 9 connected to GND directly)

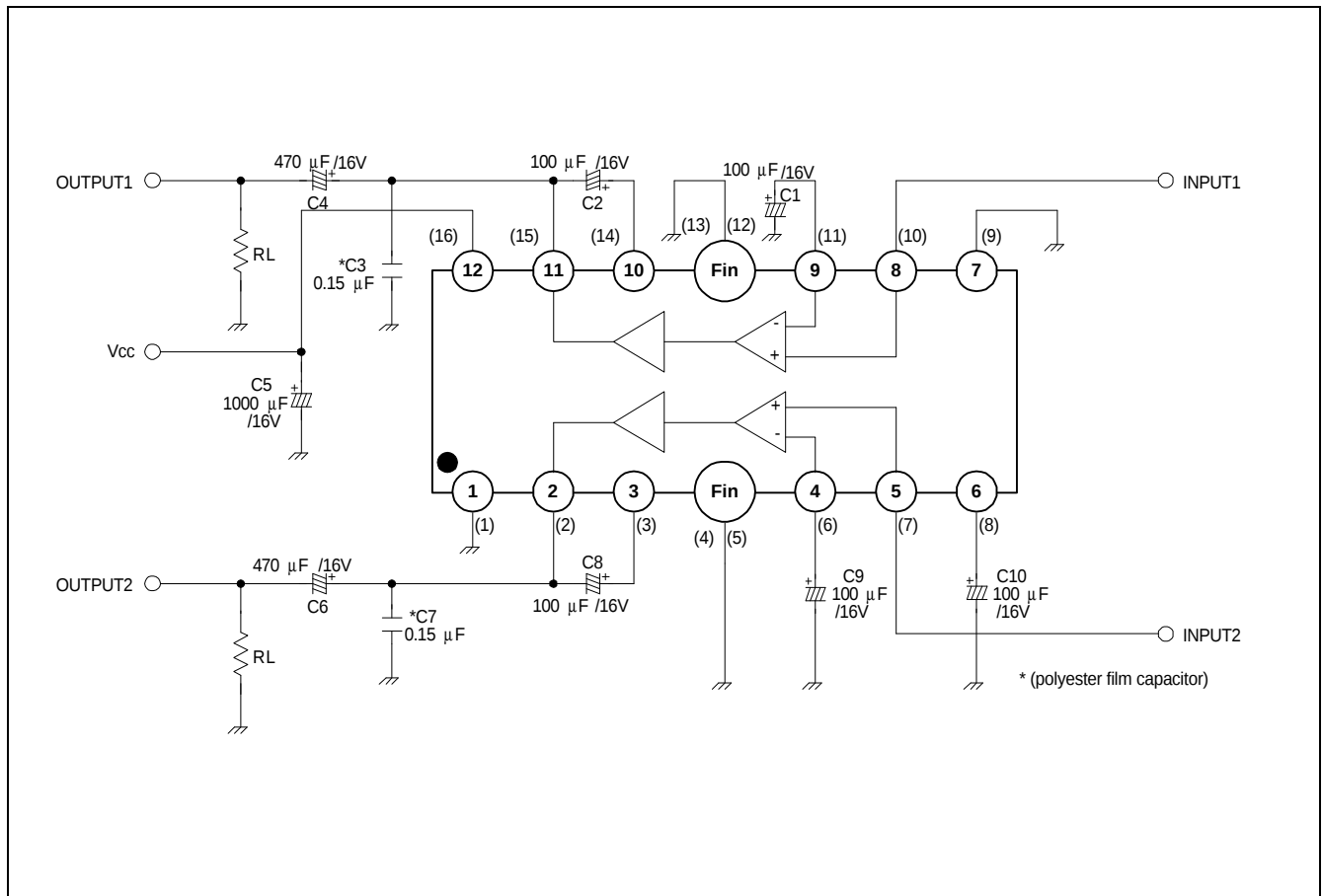
$$G_v = 20 \log \left(\frac{R_1}{R_2} + 6 \right) (dB)$$

- ii) Variable voltage gain R_F and C₁ connected with pin 9)

$$G_v = 20 \log \left(\frac{R_1}{R_2 + R_F} + 6 \right) (dB)$$

APPLICATION CIRCUIT

1. Stereo Amplifier



2. Bridge Amplifier

