

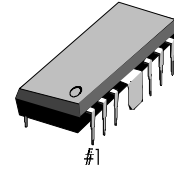
## INTRODUCTION

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.

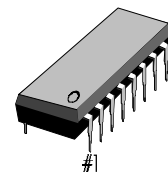
## FEATURES

- 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



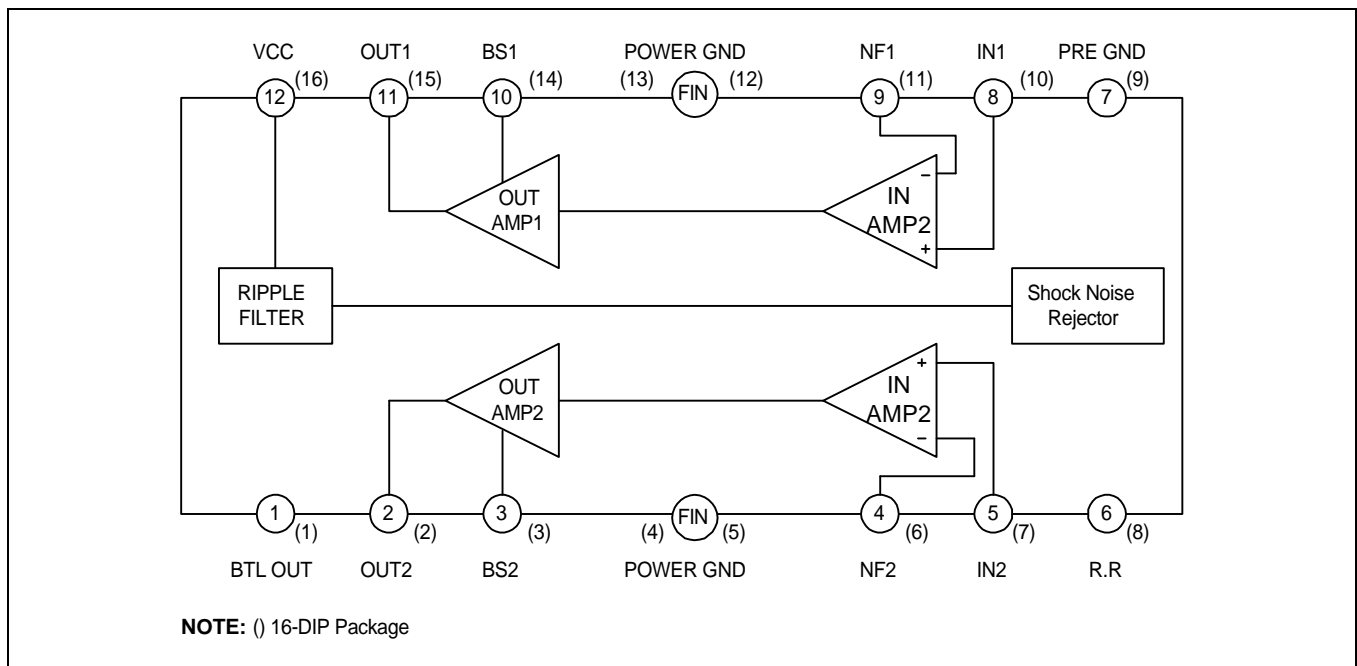
16-DIP-300A



## 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

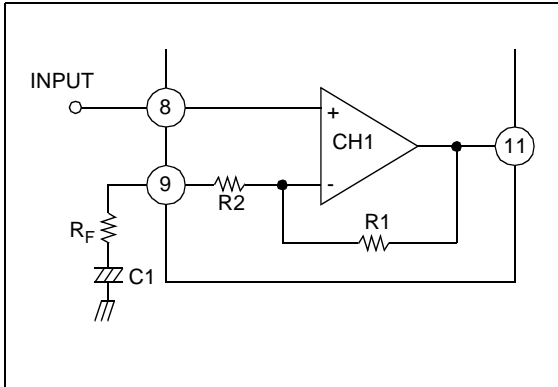
\* Fin is soldered on the PCB

**ELECTRICAL CHARACTERISTICS**( Ta = 25°C, V<sub>CC</sub> = 9V, f = 1kHz, R<sub>G</sub> = 600Ω, unless otherwise specified )

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

## APPLICATION INFORMATION

### 1. Stereo Application



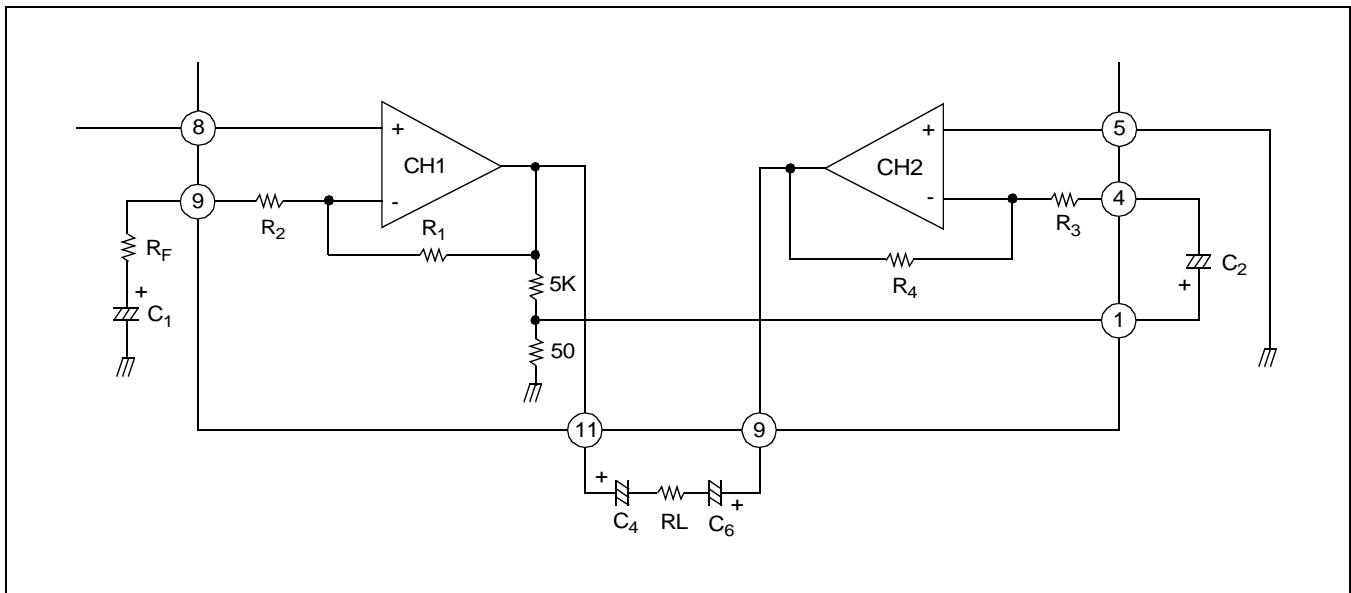
- i) Fixed voltage gain  
(Pin 9 connected to GND directly)

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

- ii) Variable voltage gain  
(Rf and C<sub>1</sub> 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)

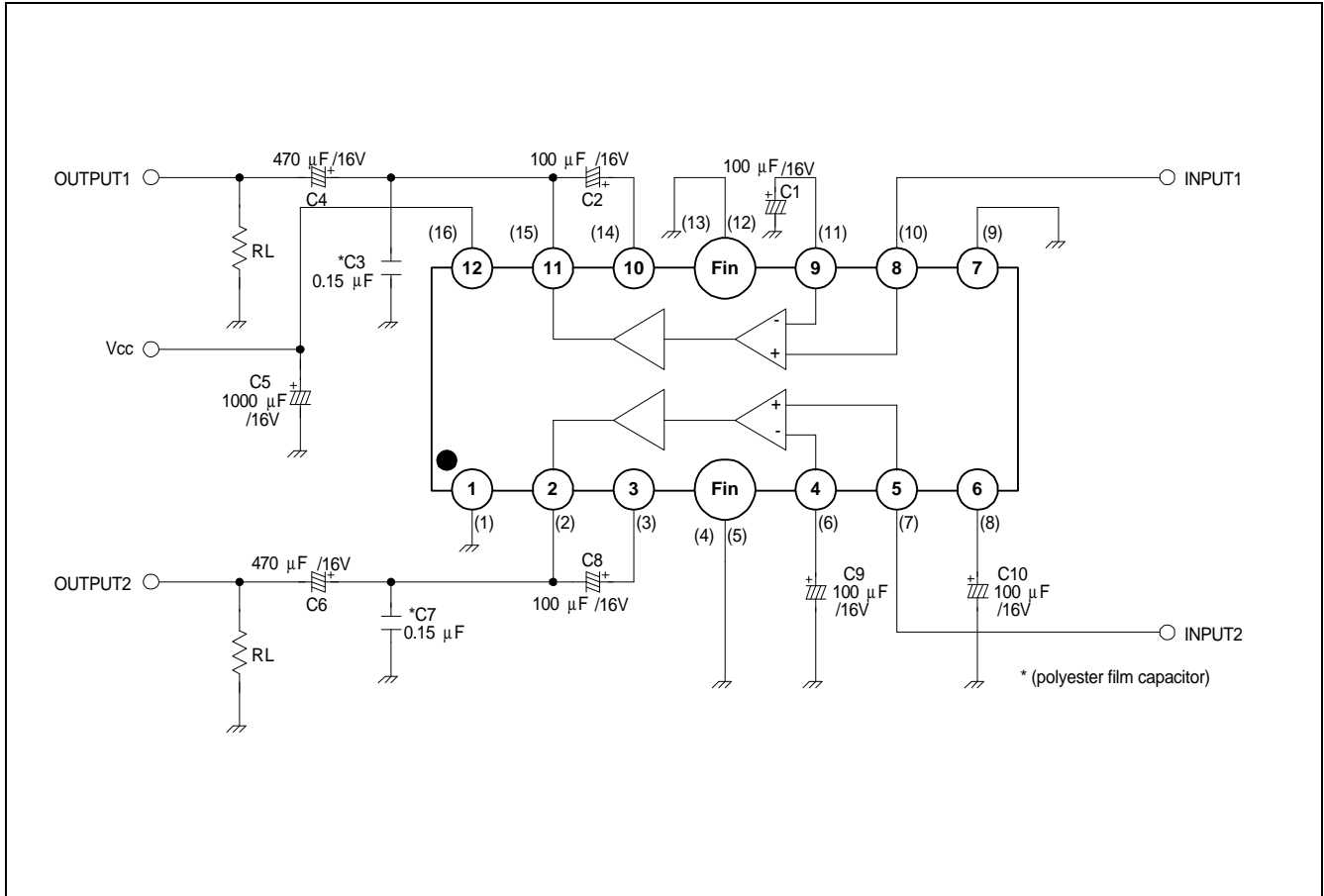
$$G_v = 20 \log \left( \frac{R_1}{R_2} + 6 \right) (dB)$$

- ii) Variable voltage gain R<sub>F</sub> and C<sub>1</sub> 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

