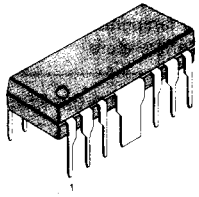
2.3W DUAL AUDIO POWER AMPLIFIER

The KA2206 is a monolithic integrated circuit consisting of a 2-channel power amplifier. It is suitable for stereo and bridge amplifier application of radio cassette tape recorders.

12 DIP/F



FEATURES

- **High output power**
  Stereo: P_O=2.3W (Typ) at V_{CC}=9V, R_L=4Ω.
  Bridge: P_O=4.7W (Typ) at V_{CC}=9V, R_L=8Ω.
- **Low switching distortion at high frequency.**
- **Small 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 45dB (Bridge: 51dB) but availability with external resistor added.**
- **Minimum number of external parts required.**
- **Easy to design radiator fin.**

ORDERING INFORMATION

Device	Package	Operating Temperature
KA2206	12 DIP/F	-20°C~70°C

BLOCK DIAGRAM

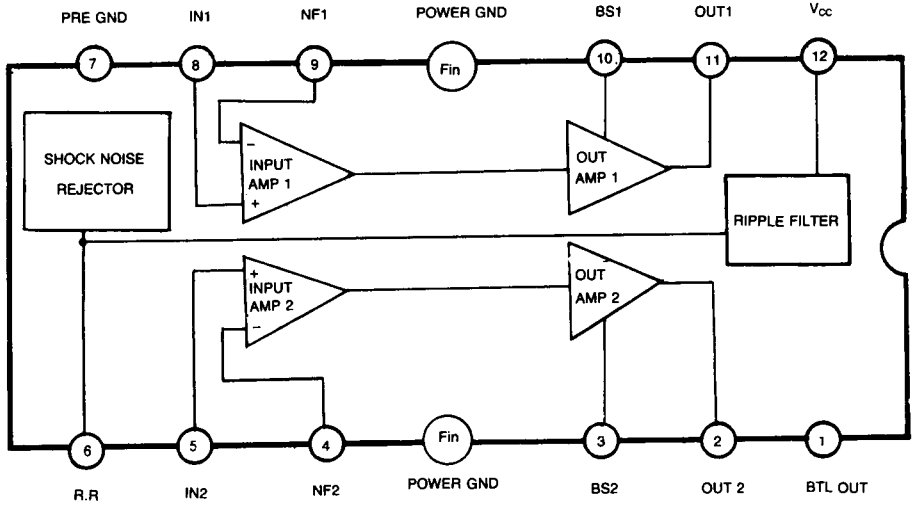


Fig. 1

ABSOLUTE MAXIMUM RATINGS (T_a=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 soldering on the PCB

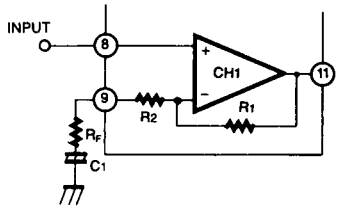
ELECTRICAL CHARACTERISTICS

(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=−45dBm	43	45	47	dB
		Bridge		49	51	53	dB
Channel Balance	CB	Stereo		−1	0	+1	dB
Output Power	P_O	Stereo	R_L=4Ω, THD=10%,	1.7	2.3		W
			R_L=8Ω, THD=10%		1.3		W
		Bridge	R_L=8Ω, THD=10%		4.7		W
Total Harmonic Distortion	THD	Stereo	P_O=250mW, R_L=4Ω		0.3	1.5	%
		Bridge			0.5		%
Input Resistance	R_I			21	30		KΩ
Ripple Rejection Ratio	RR	Stereo, R_g=0Ω, V_r=150mV 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



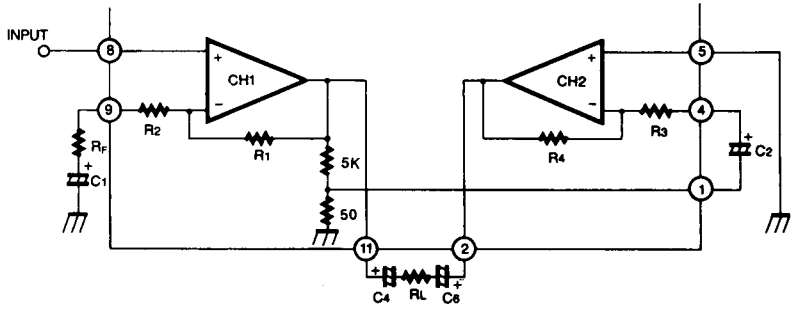
i) Fixed voltage gain
(Pin 9 connected to GND directly)

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

ii) Variable voltage gain
(Rf and C_1 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)

$$G_V = 20 \log \frac{R_1}{R_2} + 6 (dB)$$

ii) Variable voltage gain R_F and C_1 connected with pin 9)

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

APPLICATION CIRCUIT

1. Stereo Amplifier

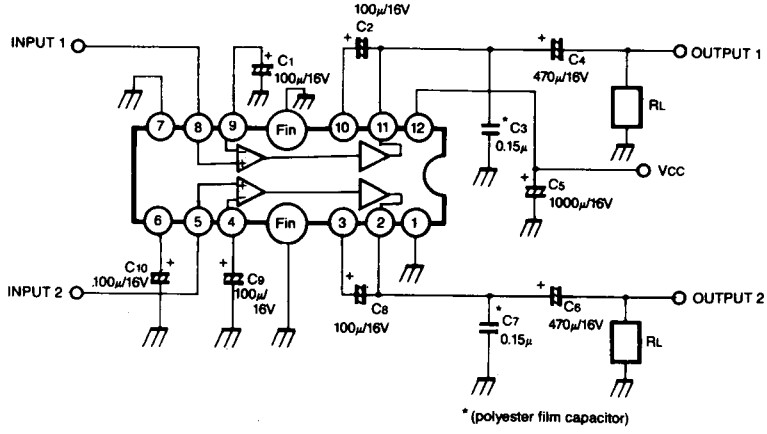


Fig. 2

2. Bridge Amplifier

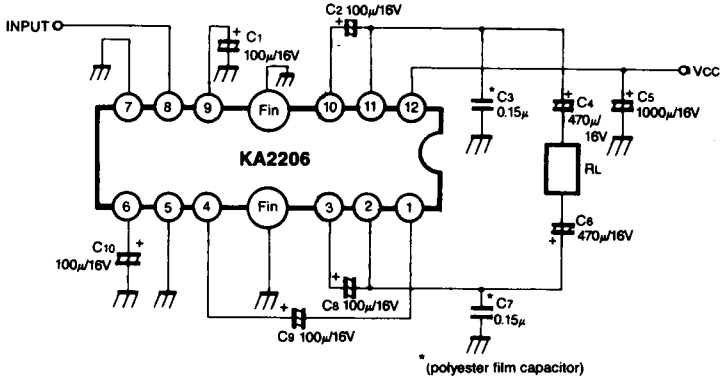


Fig. 3