

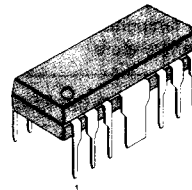
## 2.3W DUAL AUDIO POWER AMPLIFIER

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.

### FEATURES

- High output power  
Stereo:  $P_o = 2.3W$  (Typ) at  $V_{cc} = 9V$ ,  $R_L = 4\Omega$ .  
Bridge:  $P_o = 4.7W$  (Typ) at  $V_{cc} = 9V$ ,  $R_L = 8\Omega$ .
- 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.

12 DIP/F



### ORDERING INFORMATION

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

### BLOCK DIAGRAM

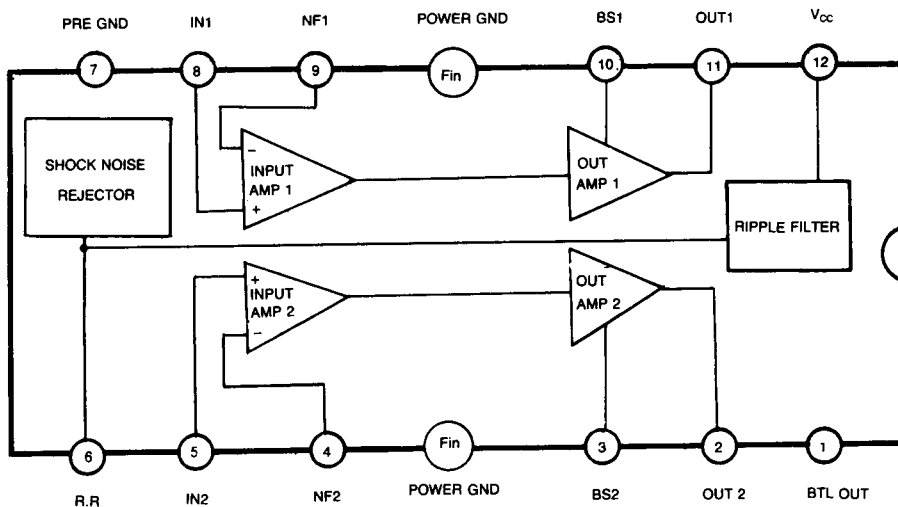


Fig. 1

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

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	15	V
Power Dissipation	$P_D$	4*	W
Operating Temperature	$T_{OPR}$	-20 ~ +70	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

\* Fin is soldering on the PCB

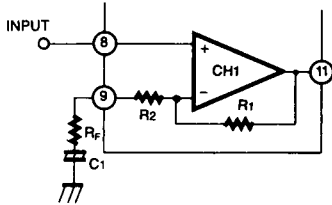
## ELECTRICAL CHARACTERISTICS

( $T_a=25^\circ\text{C}$ ,  $V_{CC}=9\text{V}$ ,  $f=1\text{KHz}$   $R_G=600\Omega$ , 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	$V_i=-45\text{dBm}$	43	45	47	dB
		Bridge		49	51	53	dB
Channel Balance	CB	Stereo	-1	0	+1	dB	
Output Power	$P_O$	Stereo	$R_L=4\Omega$ , THD=10%	1.7	2.3		W
			$R_L=8\Omega$ , THD=10%		1.3		W
		Bridge	$R_L=8\Omega$ , THD=10%		4.7		W
Total Harmonic Distortion	THD	Stereo	$P_O=250\text{mW}$ , $R_L=4\Omega$		0.3	1.5	%
		Bridge				0.5	
Input Resistance	$R_i$		21	30		K $\Omega$	
Ripple Rejection Ratio	RR	Stereo, $R_G=0\Omega$ , $V_i=150\text{mV}$ $f=100\text{Hz}$	40	46		dB	
Output Noise Voltage	$V_{NO}$	Stereo, $R_G=0\Omega$		0.3	1.0	mV	
		Stereo, $R_G=10\text{K}\Omega$		0.5	2.0	mV	
Cross Talk	CT	Stereo, $R_G=10\text{K}\Omega$ , $V_o=0\text{dBm}$	40	55		dB	

APPLICATION INFORMATION

1. Stereo application



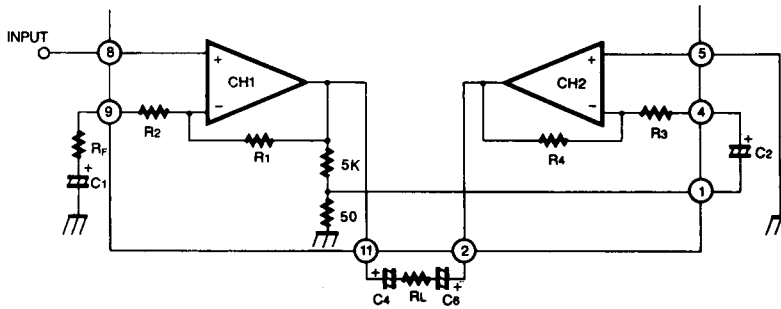
i) Fixed voltage gain  
(Pin 9 connected to GND directly)

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

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

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

2. Bridge application



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

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

ii) Variable voltage gain Rf and C1, connected with pin 9)

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

APPLICATION CIRCUIT

1. Stereo Amplifier

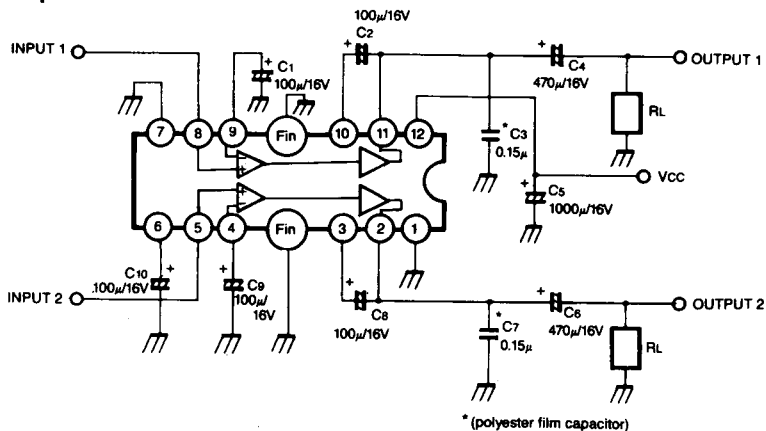


Fig. 2

2. Bridge Amplifier

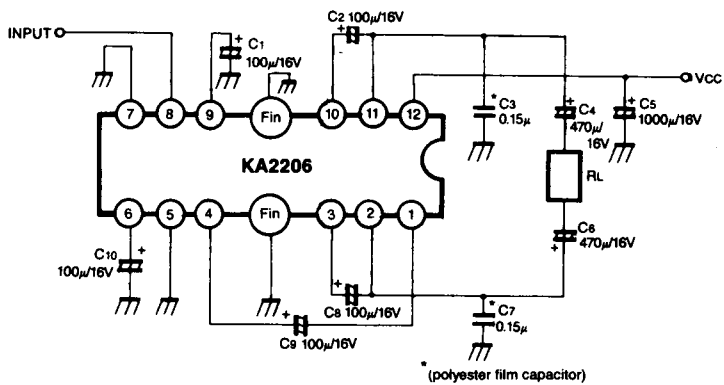


Fig. 3