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.

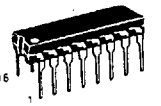
FEATURES

- High output power
  Stereo : Po=2.3W (Typ) at Vcc=9V, R_L=4Ω .
  Bridge : Po=4.7W (Typ) at Vcc=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 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.

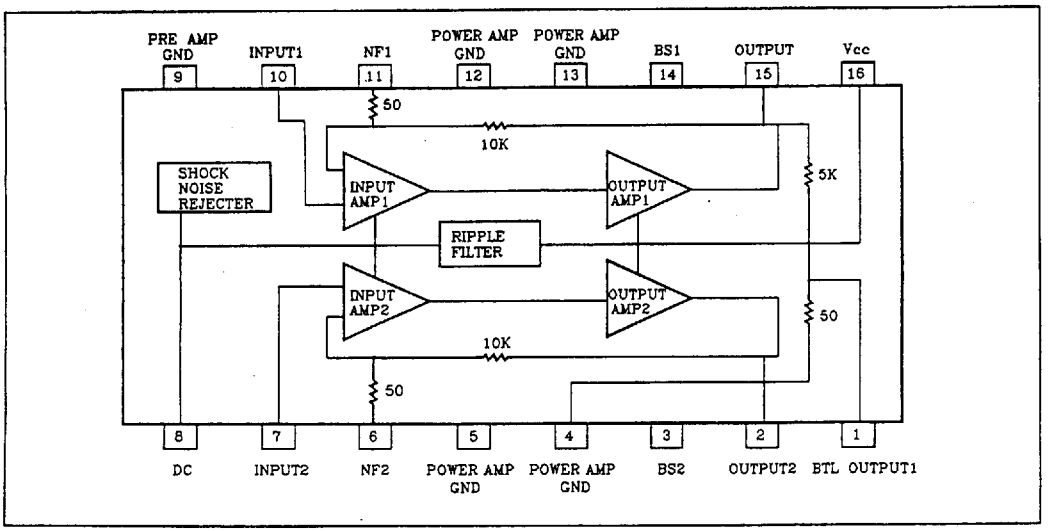
ORDERING INFORMATION

Device	Package	Operating Temperature
KA2206	16DIP	-20 ~ +70℃

16 DIP



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS(Ta=25℃)

Characteristics	Symbol	Value	Unit
Supply Voltage	Vcc	15	V
Power Dissipation	Pd	4*	W
Operating Temperature	Topr	-20 ~ +70	℃
Storage Temperature	Tstg	-40 ~ +150	℃

*Fin is soldering on the PCB

ELECTRICAL CHARACTERISTICS (Ta=25℃, Vcc=9V, f=1KHz Rg=600Ω, unless otherwise specified)

Characteristic	Symbol	Test Conditions		Min	Typ	Max	Unit
Operating Supply Voltage	Vcc				9	11	V
Quiescent Circuit Current	Icc	Vi=0,Stereo			40	55	mA
Closed Loop Voltage Gain	Av	Stereo	Vi=-45dBm	43	45	47	dB
		Bridge		49	51	53	dB
Channel Balance	CB	Stereo		-1	0	+1	dB
Output Power	Po	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	Po=250mW, R_L=4Ω		0.3	1.5	%
		Bridge			0.5		%
Input Resistance	Ri			21	30		KΩ
Ripple Rejection	RR	Stereo,Rg=0Ω, Vr=150mV f=100Hz		40	46		dB
Output Noise Voltage	V_{NO}	Stereo,Rg=0Ω			0.3	1.0	mV
		Stereo,Rg=10KΩ			0.5	2.0	mV
Cross Talk	CT	Stereo,Rg=10KΩ, Vo=0dBm		40	55		dB

TYPICAL APPLICATION CIRCUIT:Stereo Amplifier

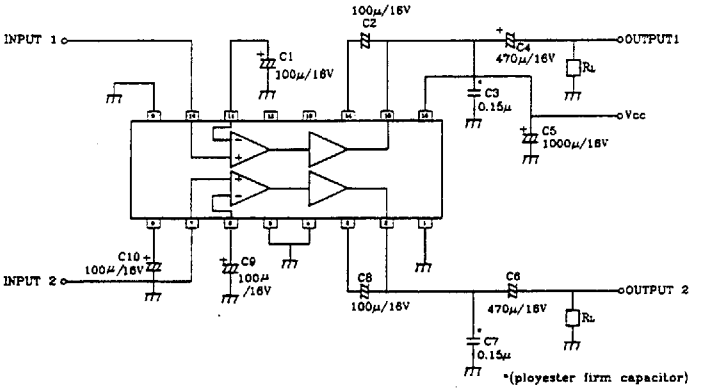


Fig.2

TYPICAL APPLICATION CIRCUIT:Bridge Amplifier

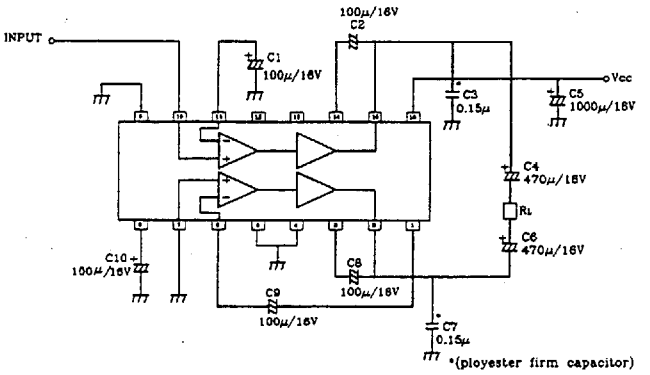
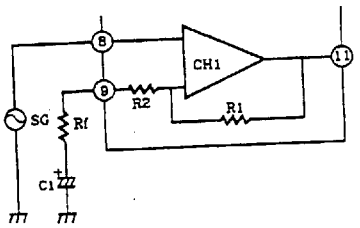


Fig.3

VOLTAGE GAIN ADJUSTMENT

1.Stereo application



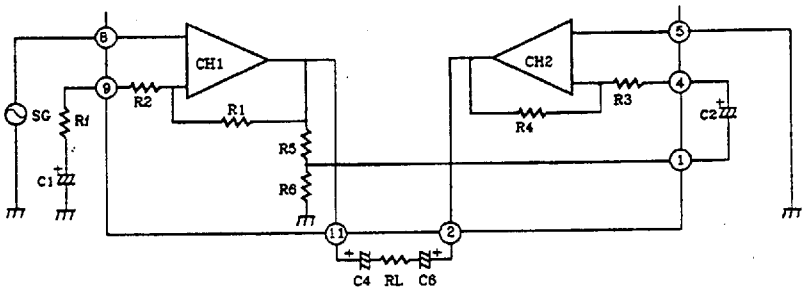
Ⅰ)Fixed voltage gain
(Pin 9 connected to GND directly)

$$Av = 20\log \frac{R1}{R2} \text{ (dB)}$$

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

$$Av = 20\log \frac{R1}{R2+Rf} \text{ (dB)}$$

2.Bridge application



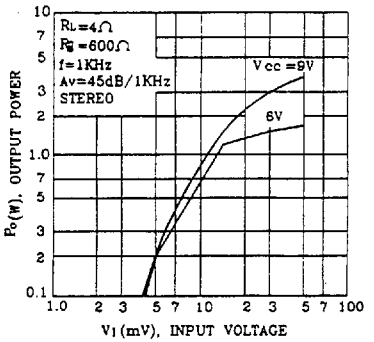
Ⅰ)Fixed voltage gain (Pin 9 connected to GND directly)

$$Av = 20\log \frac{R1}{R2} + 6 \text{ (dB)}$$

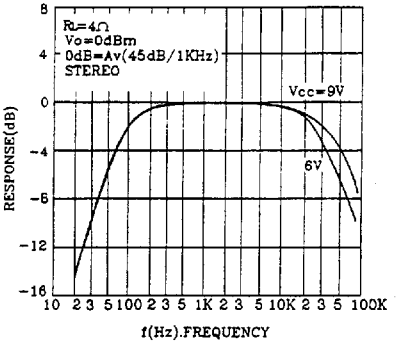
Ⅱ)Variable voltage gain (Rf and C1 connected with pin 9)

$$Av = 20\log \frac{R2}{R2+Rf} + 6 \text{(dB)}$$

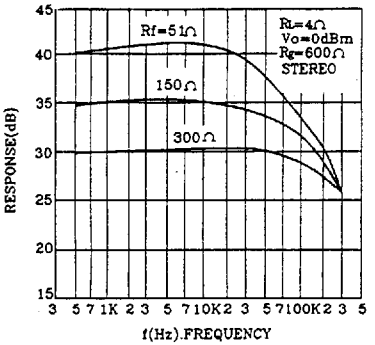
OUTPUT POWER-INPUT VOLTAGE



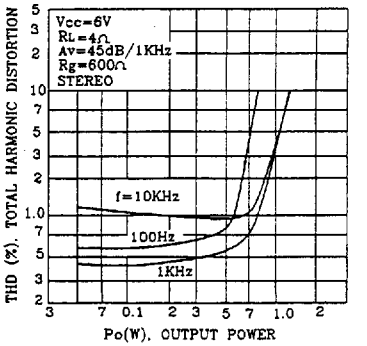
FREQUENCY RESPONSE



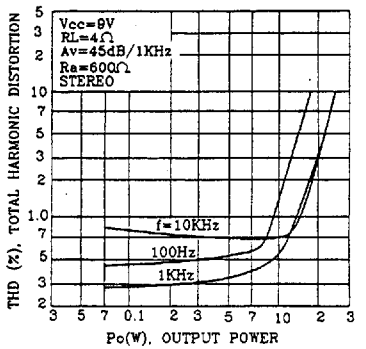
VOLTAGE GAIN-FREQUENCY



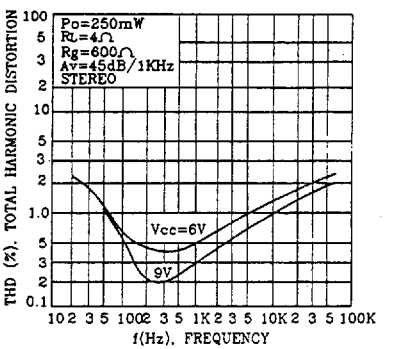
TOTAL HARMONIC DISTORTION-OUTPUT POWER



TOTAL HARMONIC DISTORTION-OUTPUT POWER



TOTAL HARMONIC DISTORTION-FREQUENCY



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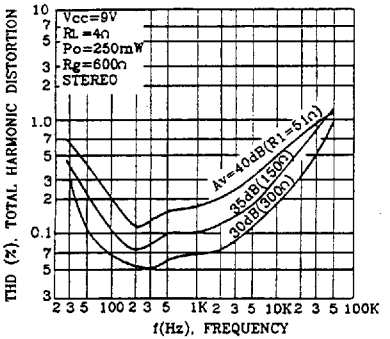
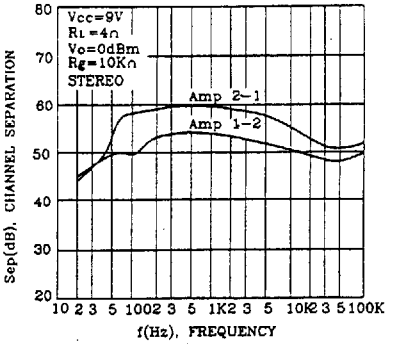
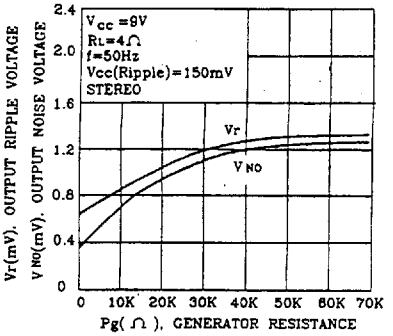


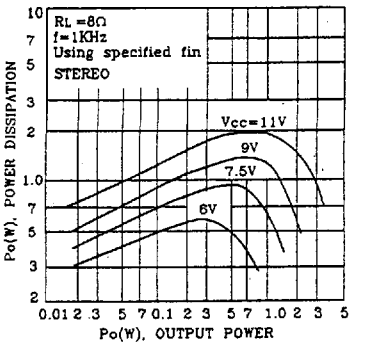
CHANNEL SEPARATION-FREQUENCY



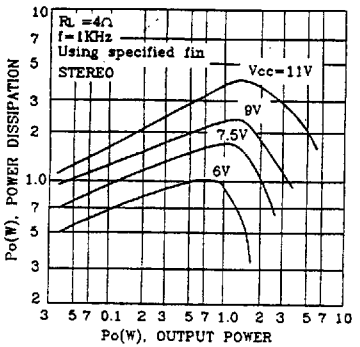
OUTPUT RIPPLE VOLTAGE
OUTPUT NOISE VOLTAGE GENERATOR RESISTANCE



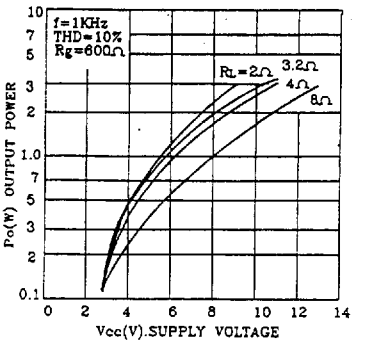
POWER DISSIPATION-OUTPUT POWER



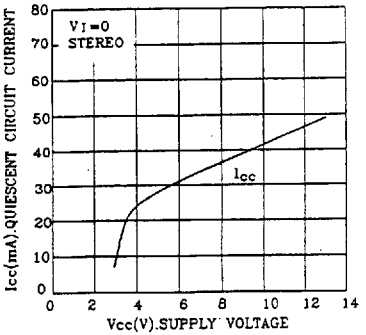
POWER DISSIPATION-OUTPUT POWER



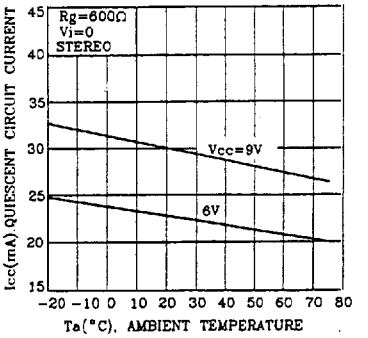
OUTPUT POWER-SUPPLY VOLTAGE



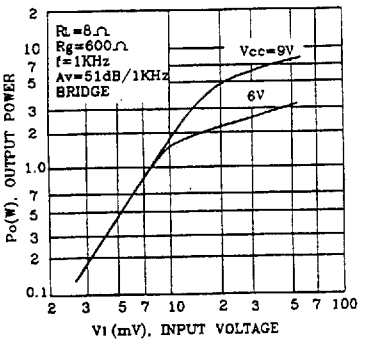
QUIESCENT CIRCUIT CURRENT SUPPLY VOLTAGE



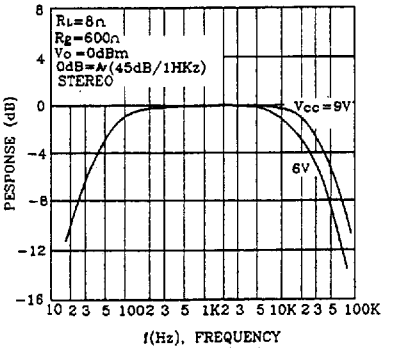
QUIESCENT CIRCUIT CURRENT-AMBIENT TEMPERATURE



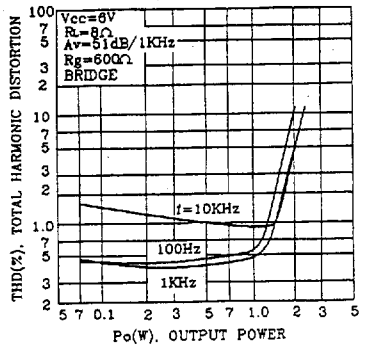
OUTPUT POWER-INPUT VOLTAGE



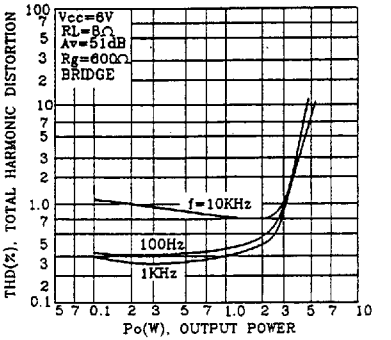
FREQUENCY RESPONSE



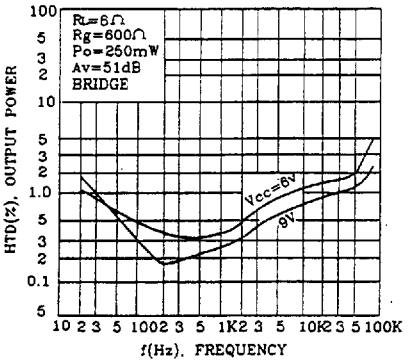
TOTAL HARMONIC DISTORTION-OUTPUT POWER



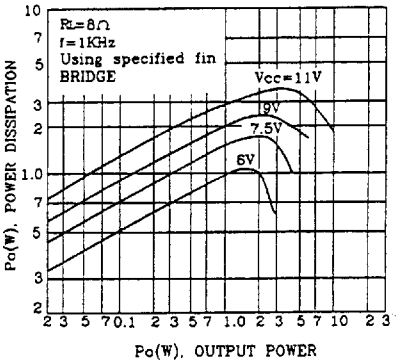
TOTAL HARMONIC DISTORTION-OUTPUT POWER



TOTAL HARMONIC DISTORTION-FREQUENCY



POWER DISSIPATION-OUTPUT POWER



OUTPUT POWER-SUPPLY VOLTAGE