# KA2206B   2.3W DUAL AUDIO POWER AMP

The KA2206B is a monolithic intergrated circuit consisting of a
2-channel power amplifier. It is suitable for stereo and bridge
amplifier application of radio cassette tape recorder.

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.

12-DIPH-300

16-DIP-300A

#1
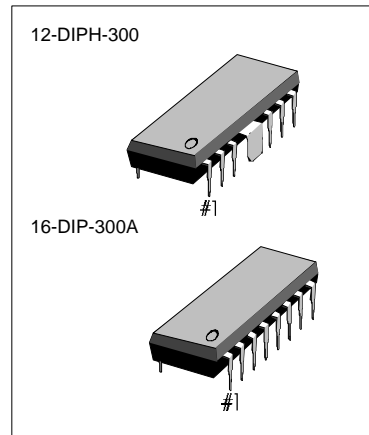
ORDERING INFORMATION

Device	Package	Operating Temperature
KS2206B	12-DIPH-300	-20°C ~ +70°C
KS22069BN	16-DIP-300A	

BLOCK DIAGRAM

Fig. 1

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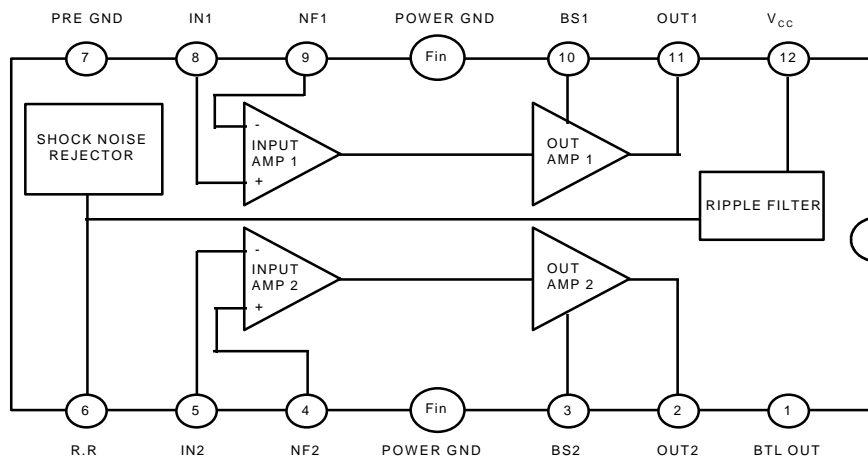
ABSOLUTE MAXIMUM RATINGS

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

* 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
Ouput 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_I=150mW f=100Hz		40	46		dB
Output Noise Voltage	V_{NO}	Stereo,R_G=0Ω			0.3	1.0	mW
		Stereo,R_G=10KΩ			0.5	2.0	mV
Cross Talk	CT	Stereo,R_G=10KΩ, V_O=0dBm		40	55		dB

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APPLICATION INFORMATION

1.Stereo application
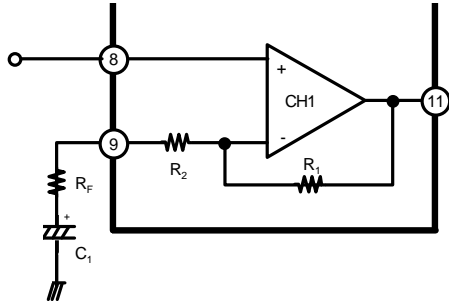
i) Fixed voltage gain
(Pin 9 connected to GND directly)

$$G_V = 20 \log \quad (c\frac{R_1}{R_2}$$

ii) Variable voltage gain
(Rf and C_1 connected with pin 9)

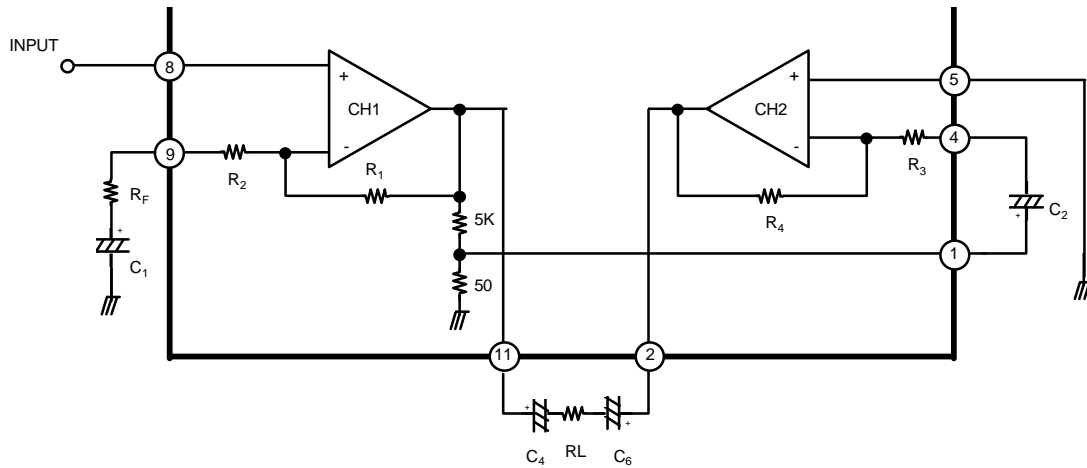$$G_V = 20 \log \quad \frac{R_1}{R_2 + R_F}$$

2. Bridge application

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

$$G_V = 20 \log \quad +\frac{R_1}{R_2}B)$$

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

$$G_V = 20 \log \quad \frac{R_1}{R_2 + R_F}$$

APPLICATION CIRCUIT

1. Stereo Amplifier

2. Bridge Amplifier
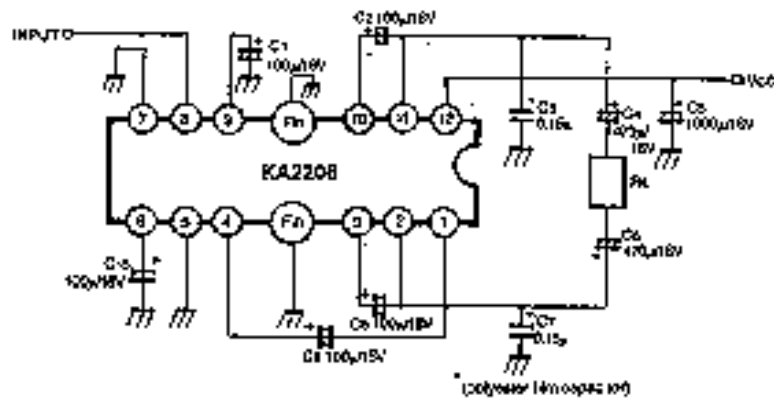
Fig. 3

12-DIPH-300

Dimensions in Milimeters/inches

$\frac{6.40}{0.252} \pm 0.20 \atop \pm 0.008$

#1

#12

#6

#7

$\frac{19.84}{0.781}$ MAX

$\frac{19.44}{0.765} \pm 0.20 \atop \pm 0.008$

$\frac{0.83}{0.033}$

$\frac{0.50}{0.020} \pm 0.10 \atop \pm 0.004$

$\frac{1.20}{0.047} \pm 0.10 \atop \pm 0.004$

$\frac{5.10}{0.201} \pm 0.10 \atop \pm 0.004$

$\frac{2.54}{0.100}$

$\frac{7.62}{0.300}$

$\frac{3.40}{0.134} \pm 0.20 \atop \pm 0.008$

$\frac{0.25}{0.010}$ MIN

$\frac{5.08}{0.200}$ MAX

$\frac{3.57}{0.141} \pm 0.30 \atop \pm 0.012$

$0~15°$

$\frac{0.40}{0.016} \begin{smallmatrix} +0.10 \\ -0.05 \end{smallmatrix} \atop \begin{smallmatrix} +0.004 \\ -0.002 \end{smallmatrix}$
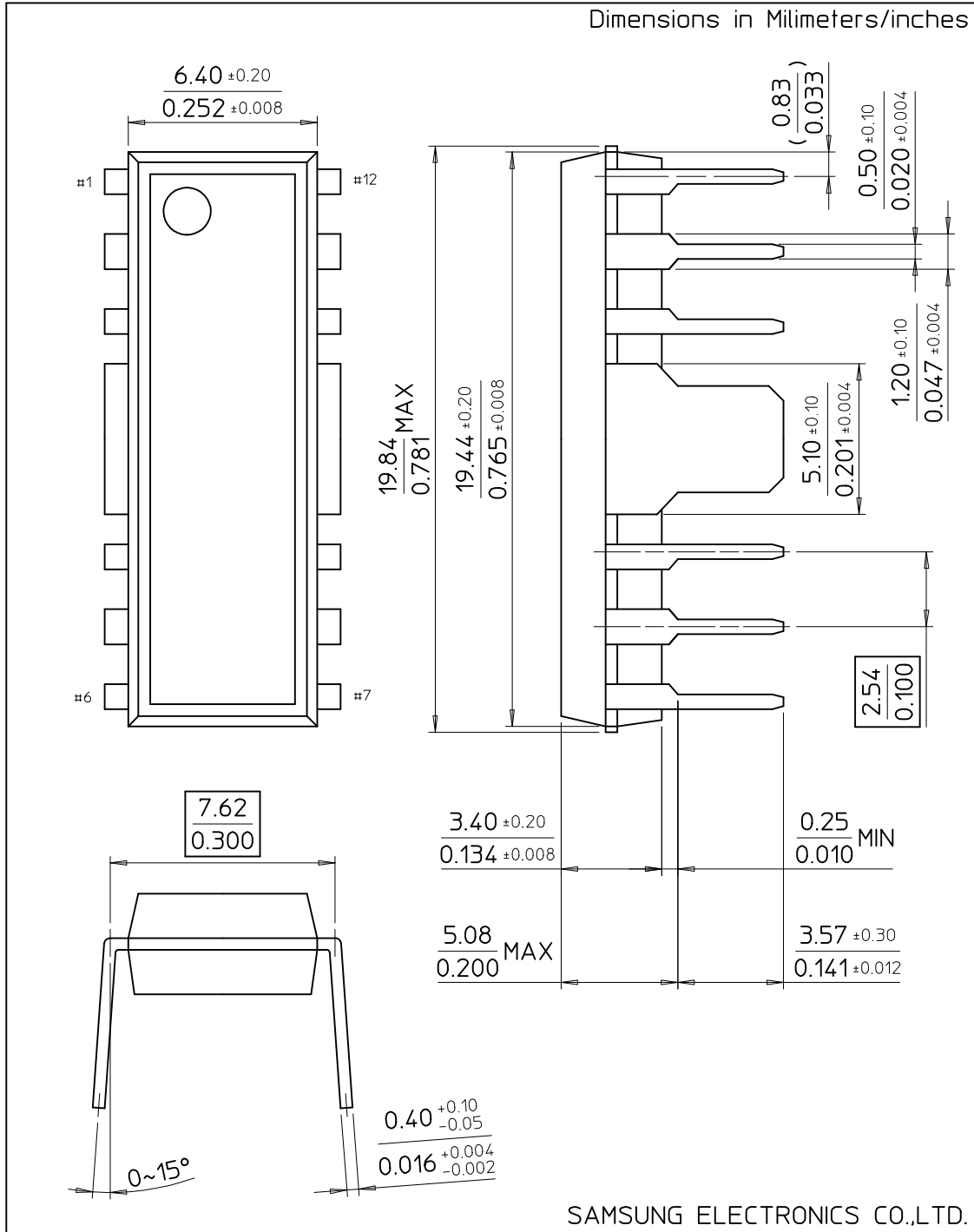
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16-DIP-300A

$\frac{6.40}{0.252} {}^{\pm 0.20}_{\pm 0.008}$

#1 #16

#8 #9

$\frac{19.80}{0.780}$ MAX

$\frac{19.40}{0.764} {}^{\pm 0.20}_{\pm 0.008}$

$(\frac{0.81}{0.032})$

$\frac{0.46}{0.018} {}^{\pm 0.10}_{\pm 0.004}$

$\frac{1.50}{0.059} {}^{\pm 0.10}_{\pm 0.004}$

$\boxed{\frac{2.54}{0.100}}$

$\boxed{\frac{7.62}{0.300}}$

$\frac{3.25}{0.128} {}^{\pm 0.20}_{\pm 0.008}$

$\frac{0.38}{0.014}$ MIN

$\frac{5.08}{0.200}$ MAX

$\frac{3.30}{0.130} {}^{\pm 0.30}_{\pm 0.012}$

0~15°

$\frac{0.25}{0.010} {}^{+0.10}_{-0.05} {}^{+0.004}_{-0.002}$

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