

KA2224B

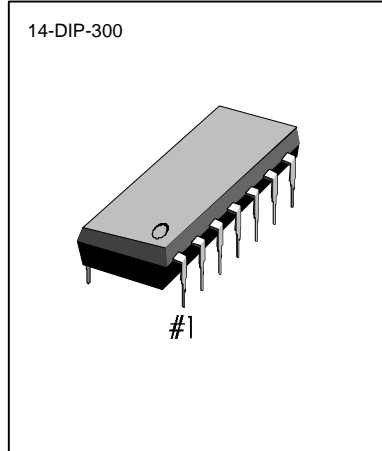
DUAL EQ AMP WITH ALC

GENERAL DESCRIPTION

The KA2224B is a monolithic integrated circuit consisting of a dual equalizer amplifier with ALC, and it is suitable for stereo radio cassettes.

FEATURES

- Dual equalizer amplifier with a built-in ALC circuit.
- Recording amp available because of high gain characteristic (Variable monitor possible).
- Good channel separation (CS = 50dB Typ).
- Quick stabilization after power on.
- Capable of direct meter driving and ALC transistor.
- Good ALC response balance between channels.
- Wide operating supply voltage range: $V = 4V \sim 13V$



ORDERING INFORMATION

Device	Package	Operating Temperature
KA2224B	14-DIP-300	-20°C ~ +70°C

BLOCK DIAGRAM

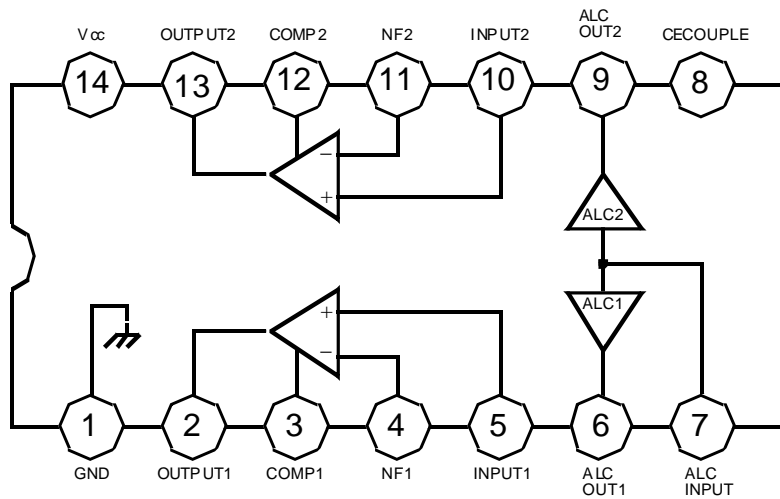


Fig. 1

ABSOLUTE MAXIMUM RATINGS (Ta =25)

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	14	V
Power Dissipation	P _D	600	mW
Operating Temperature	T _{OPR}	-20 ~ +70	°C
Storage Temperature	T _{STG}	-40 ~ +125	°C
ALC TR Maximum Current		3.5	mA

ELECTRICAL CHARACTERISTICS

(Ta =25°C, V_{CC} =5V, R_L =10KΩ, f =1KHz: play, R_L =68Ω: Recording)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I _{CCQ}	V _I = 0		4.5	10	mA
Open Loop Voltage Gain	G _{VO}			85		dB
Closed Loop Voltage Gain	G _{VC1}	Play		40		dB
	G _{VC2}	Record		58		dB
Output Voltage	V _O	THD =1%, Play	0.9	1.2	1.0	V
Total Harmonic Distortion	THD	V _O = 0.5V, Play		0.1		%
Input Resistance	R _I		21	30		KΩ
Equivalent Input Noise Voltage	V _{NI}	BW (-3dB) = 20Hz ~ 20KHz		1.0	2.0	μV
Cross Talk	CT	R _G = 2.2KΩ	40	50		dB
ALC Range	ΔV _{ALC}	V _I = -60dBm, Record	35	45		dB
ALC Balance	CB _{ALC}	V _I = -20dBm, Record		0	2.0	dB
ALC Distortion	THD _{ALC}	V _I = -20dBm, Record		0.5	2.0	%

TEST CIRCUIT

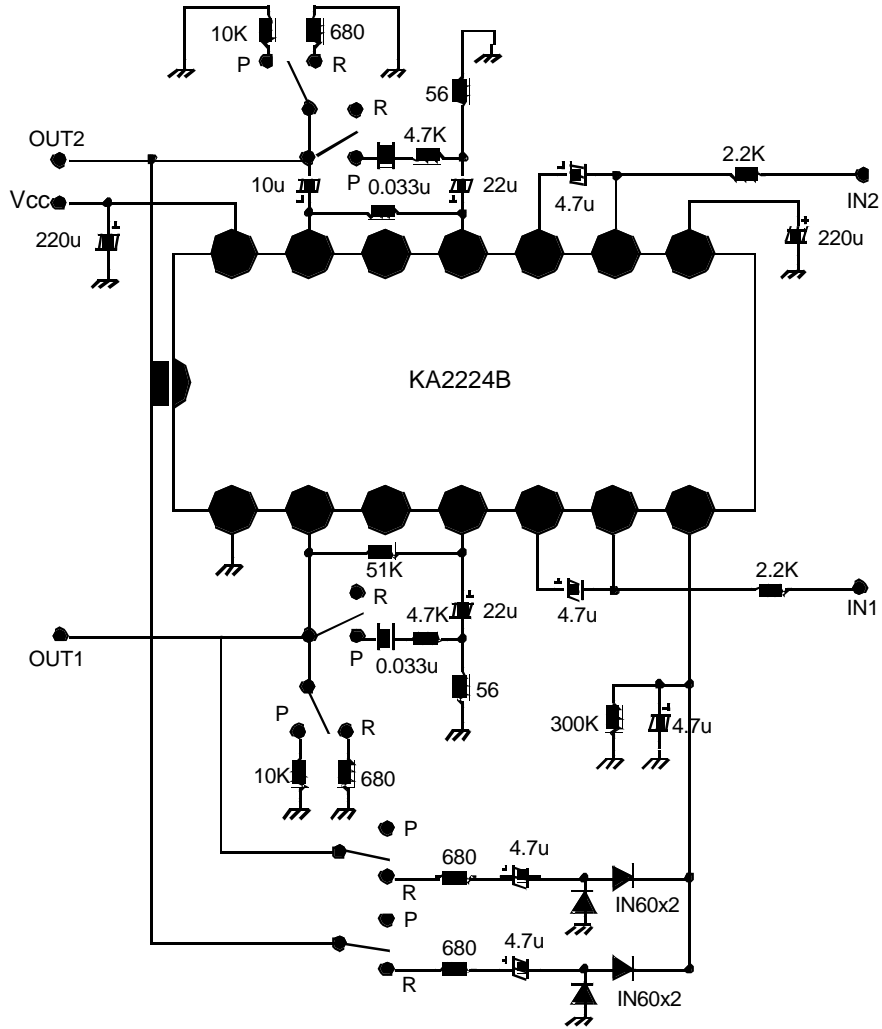


Fig. 2

APPLICATION INFORMATION

1. Closed Loop Voltage Gain

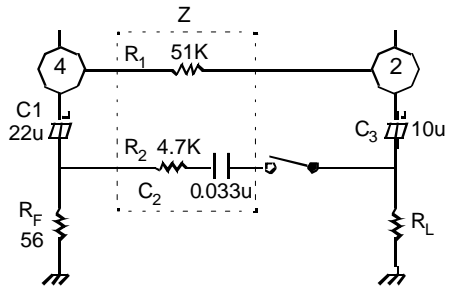


Fig. 3.

SW on: play

A. Playback amplifier

$$G_v = 20 \log \frac{Z}{R_F} \text{ (dB) at } f = 1\text{KHz, } G_v = 42\text{dB (Typ) } Z = R_1 // (R_2 + \frac{1}{2\pi f \cdot C_2})$$

B. Recording amplifier

$$G_v = 20 \log \frac{R_1}{R_F} \text{ (dB) at } f = 1\text{KHz, } G_v = 58\text{dB (Typ)}$$

2. ALC Circuit

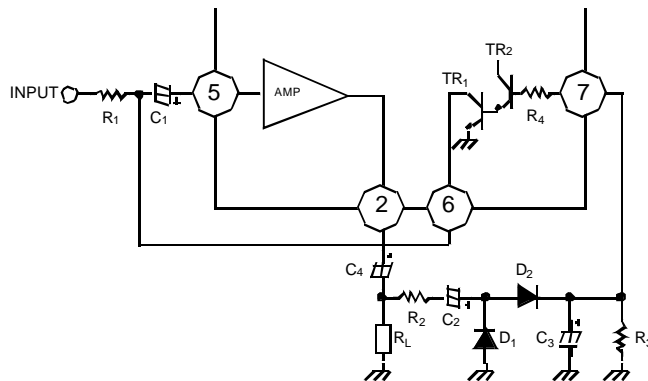


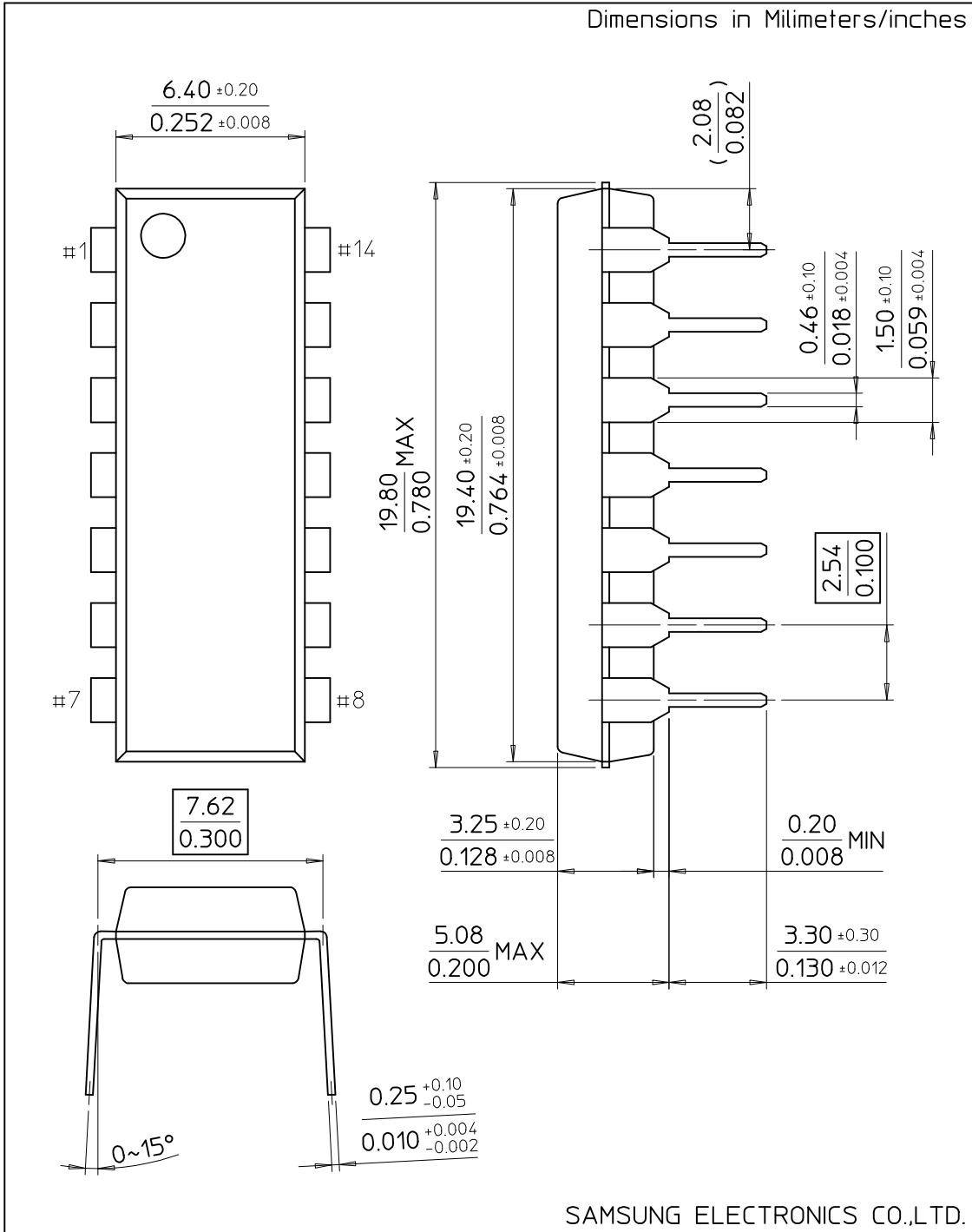
Fig. 4

The ALC circuit consists

of TR₁, TR₂ and some external component. The output level of the amplifier is rectified by external circuits. Since this DC level is applied to the ALC input terminal (Pin 7), the impedance between the collector and emitter of TR₁ can change its value, therefore the pre-amplifier input level can be controlled.

14-DIP-300

Dimensions in Millimeters/inches



SAMSUNG ELECTRONICS CO.,LTD.