

KA22241

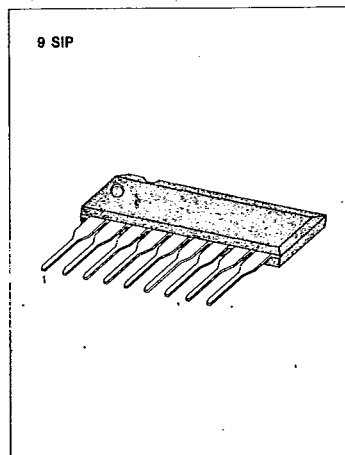
LINEAR INTEGRATED CIRCUIT

DUAL EQUALIZER AMPLIFIER WITH ALC

The KA22241 is a monolithic integrated circuit consisting of dual equalizer amplifier with ALC, and it is suitable for stereo radio cassette tape recorder.

FEATURES

- Dual equalizer amplifier with built in ALC circuit
- Low noise; $V_{NI} = 1.0\mu\text{V}$ (Typ)
- High open loop voltage gain; 80 dB (Typ)
- Wide operating supply voltage range; $V_{CC} = 4.5\text{V} \sim 14\text{V}$
- Good ALC response balance between channels
- Non necessary the input coupling capacitor
- Non necessary diode or transistor for ALC
- Built in power supply muting circuit
- Minimum number of external parts required



BLOCK DIAGRAM

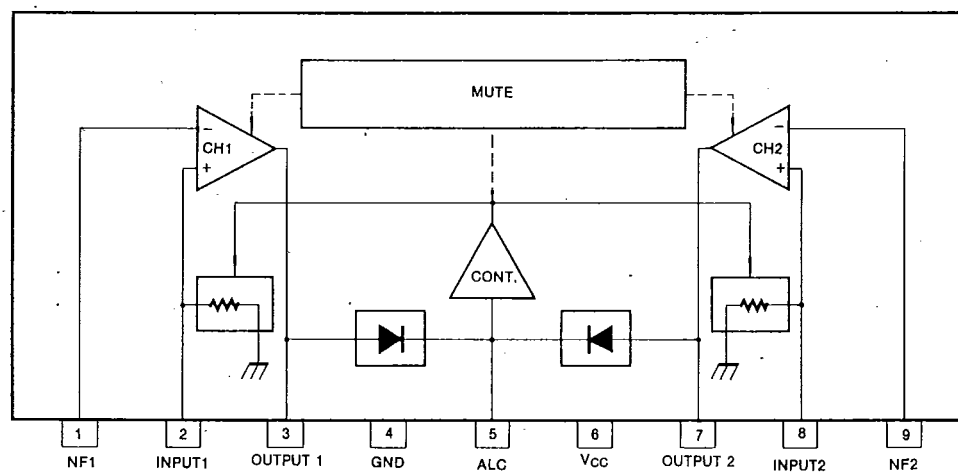


Fig. 1

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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	16	V
Power Dissipation	P _δ	*550	mW
Operating Temperature	T _{opr}	-20 ~ +75	°C
Storage Temperature	T _{stg}	-40 ~ +125	°C

*: Derated above Ta = 25°C in the proportion of 5.5mW/°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 7V, f = 1KHz, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I _{CC}	V _i = 0	1.5	3.5	4.5	mA
Open Loop Voltage Gain	A _{vo}	V _o = 0.3V	70	80		dB
Closed Loop Voltage Gain	A _v	V _o = 0.3V	45	48	50	dB
Output Voltage	V _o	THD = 1%	0.6	1.2		V
Total Harmonic Distortion	THD	V _o = 0.3V		0.1	0.3	%
Equivalent Input Noise Voltage	V _{NI}	R _g = 2.2KΩ, BW(-3dB) = 20Hz ~ 20KHz		1.0	2.0	μV
Input Resistance	R _i		15	25	45	KΩ
ALC Range	ALC(R)	R _g = 3.9K, THD = 10%	40	45		dB
ALC Balance	ALC(B)	V _i = 1mV		0	2.5	dB



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TEST CIRCUIT

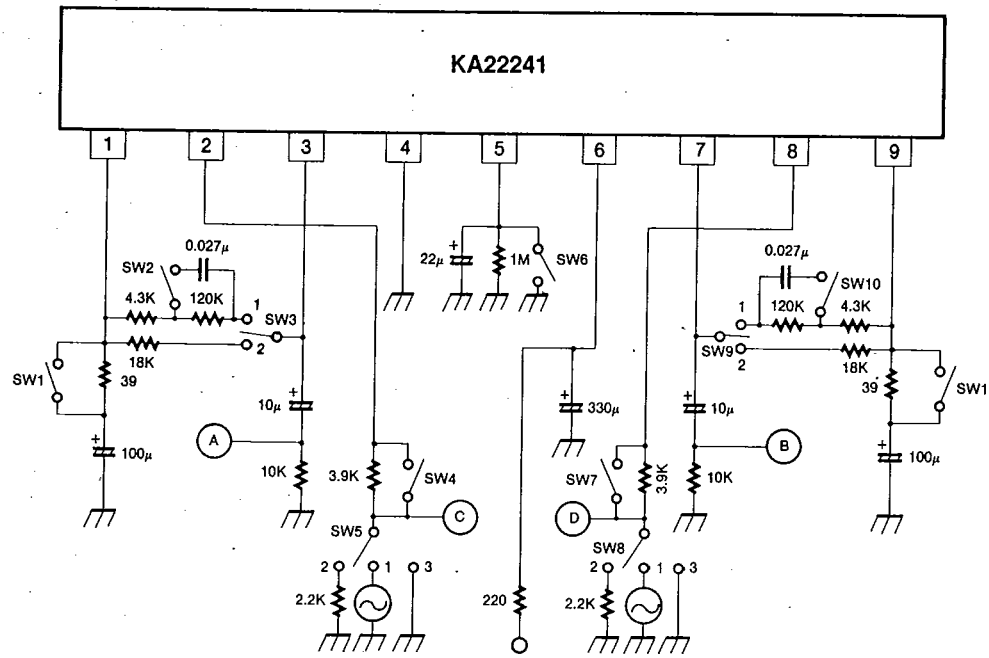


Fig. 2

TEST METHOD

Symbol	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	
I_{CC}	ON	OFF	1	ON	3	ON	ON	3	1	OFF	ON	
A_{vo}	ON	OFF	1	ON	1	ON	ON	3	1	OFF	ON	
A_v	CH-1	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
THD	CH-1	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V_o	CH-1	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V_{NI}	CH-1	OFF	ON	1	ON	2	ON	ON	3	1	OFF	ON
	CH-2	ON	OFF	1	ON	3	ON	ON	2	1	ON	OFF
ALC(R)	CH-1	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
ALC(B)	OFF	OFF	2	OFF	1	OFF	OFF	OFF	1	2	OFF	OFF

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APPLICATION CIRCUIT 1

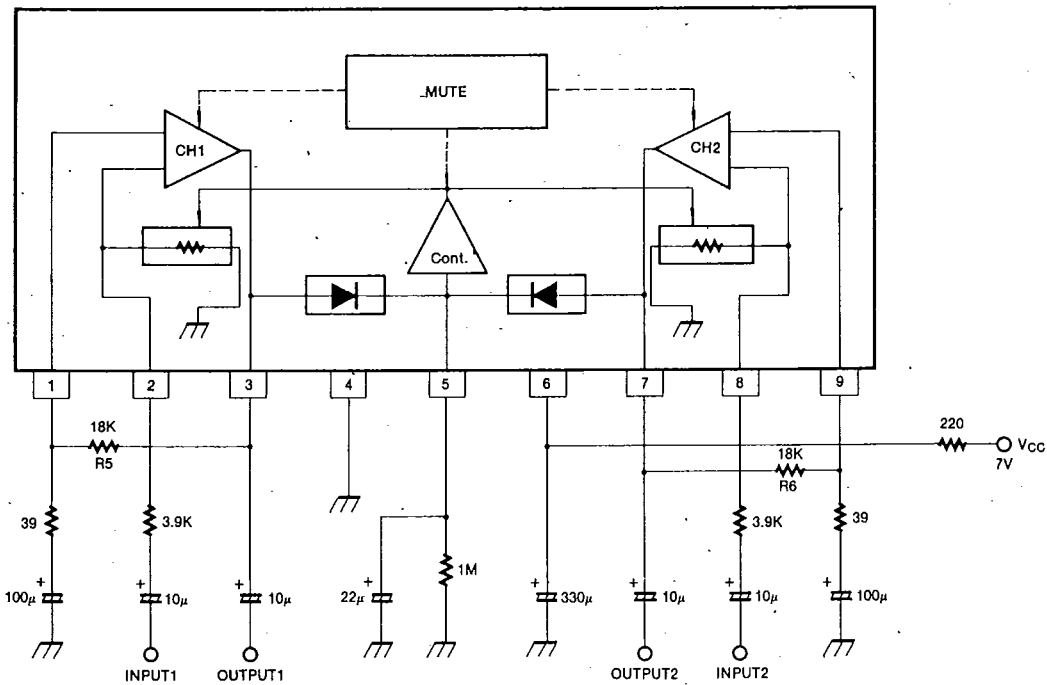
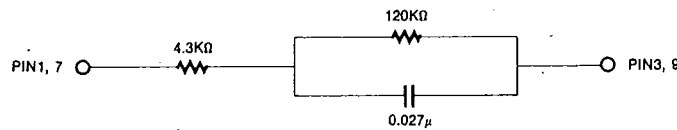


Fig. 3

NOTE

ON recording, connect the time constant circuit as shown below, instead of R5, R6 of pin 1-3, 7-9, which is used in NAB.



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LINEAR INTEGRATED CIRCUIT

APPLICATION CIRCUIT 2

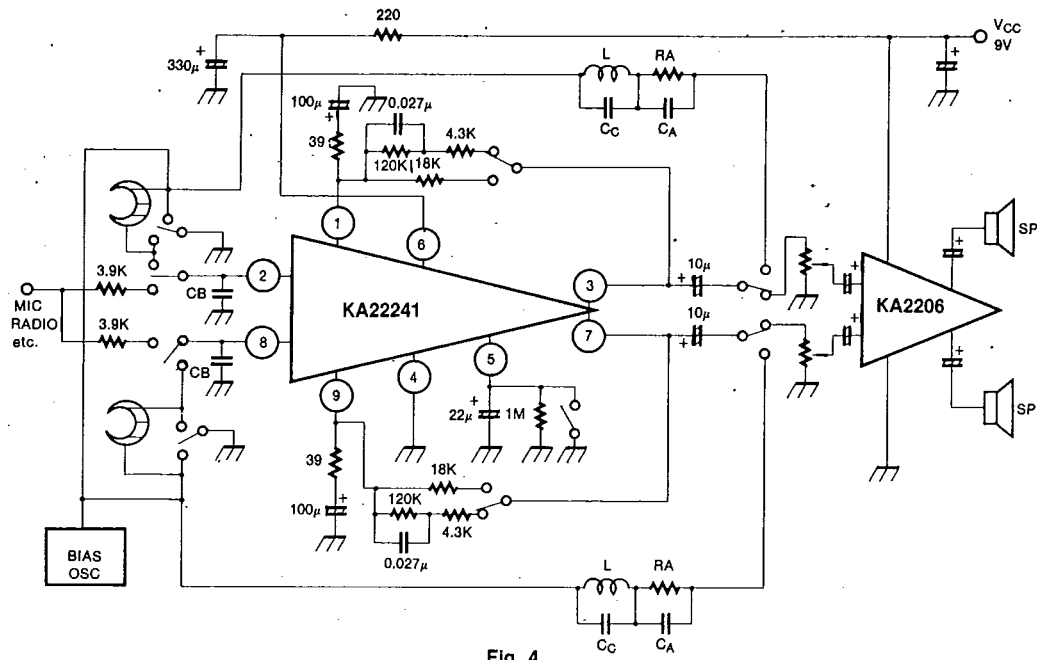


Fig. 4