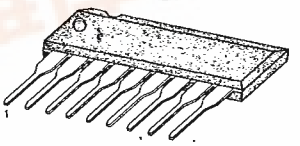
T-74-05-01

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.

9 SIP



FEATURES

- Dual equalizer amplifier with built in ALC circuit
- Low noise; $V_{NI} = 1.0\mu V$ (Typ)
- High open loop voltage gain; 80 dB (Typ)
- Wide operating supply voltage range; $V_{CC} = 4.5V \sim 14V$
- 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

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BLOCK DIAGRAM

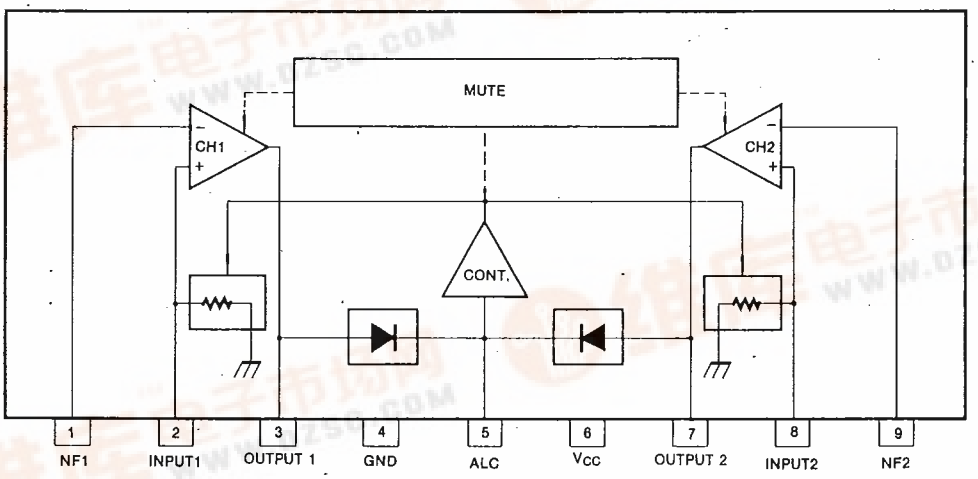

Fig. 1

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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Power Dissipation	P_d	*550	mW
Operating Temperature	T_{opr}	−20 ~ +75	°C
Storage Temperature	T_{stg}	−40 ~ +125	°C

* : Derated avobe Ta = 25°C in the propotion 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

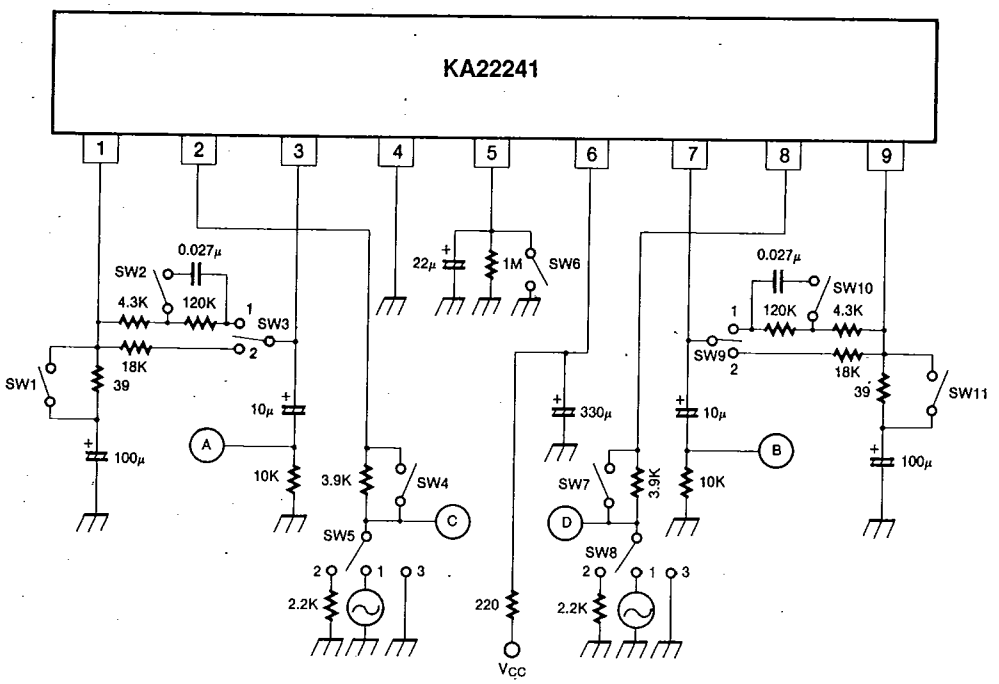


Fig. 2

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	1	2	OFF	OFF

APPLICATION CIRCUIT 1

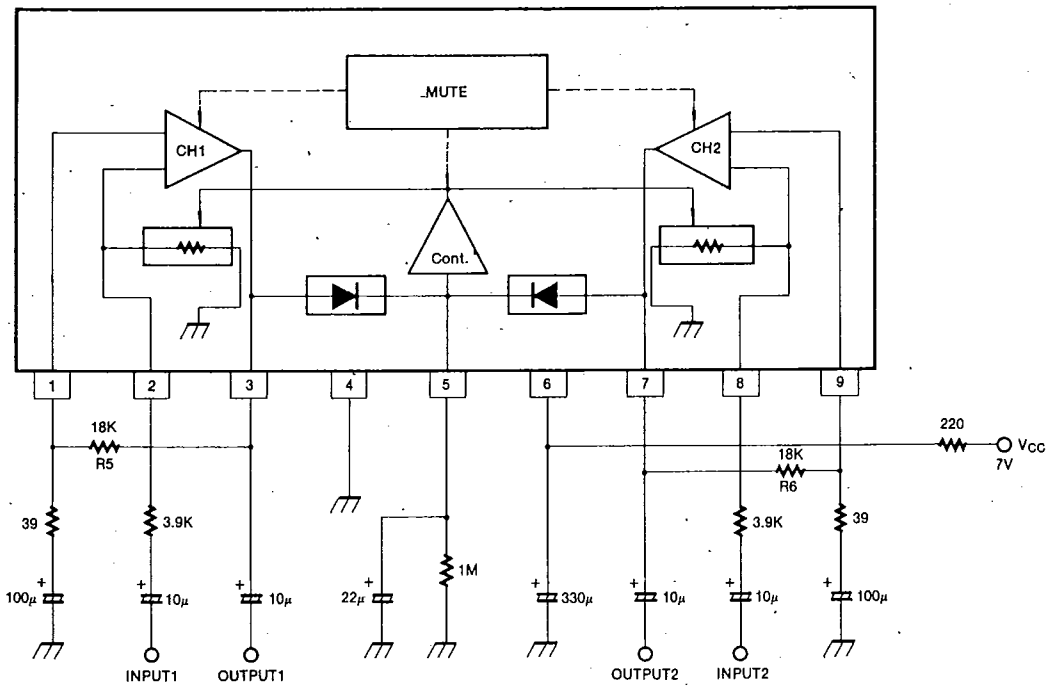
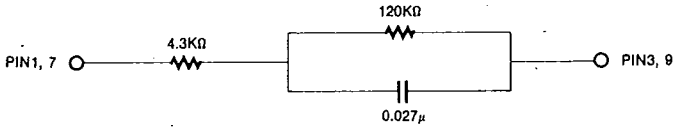


Fig. 3

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.



APPLICATION CIRCUIT 2

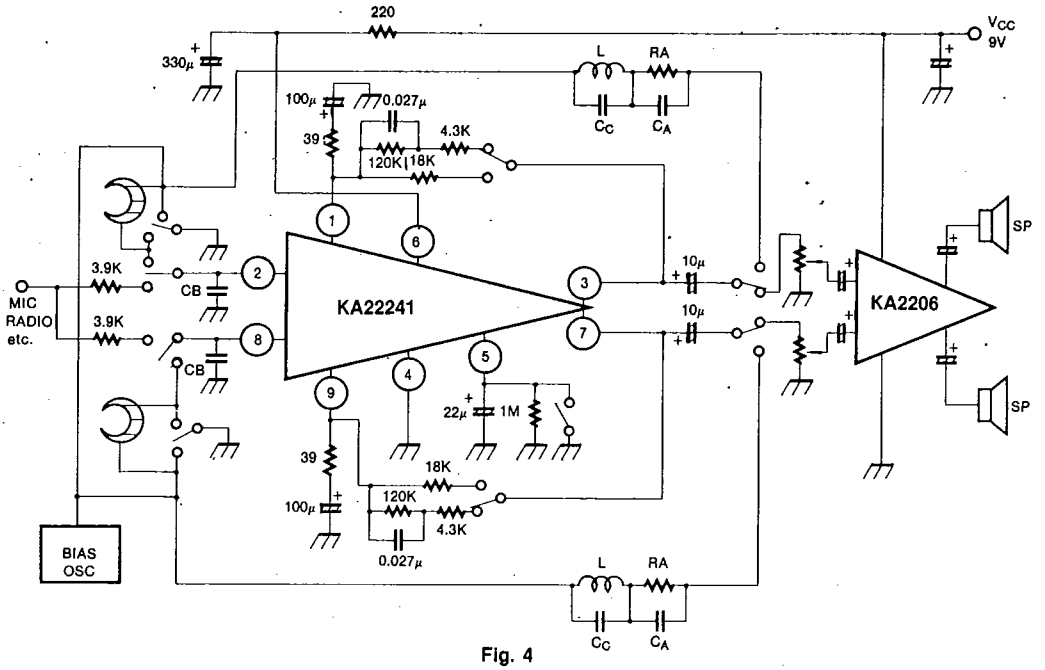


Fig. 4