

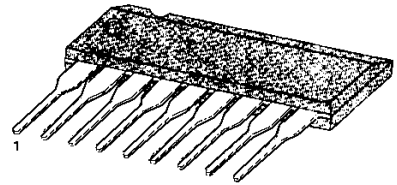
DUAL EQUALIZER AMPLIFIER WITH ALC

The KA2224 is a monolithic integrated circuit consisting of a dual equalizer amplifier with ALC, and it is suitable for stereo radio cassette tape recorders.

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
- Not necessary the input coupling capacitor
- Not necessary diode or transistor for ALC
- Built in power supply muting circuit
- Minimum number of external parts required

9 SIP



ORDERING INFORMATION

Device	Package	Operating Temperature
KA22241	9 SIP	$-20^{\circ}\text{C} \sim +75^{\circ}\text{C}$

BLOCK DIAGRAM

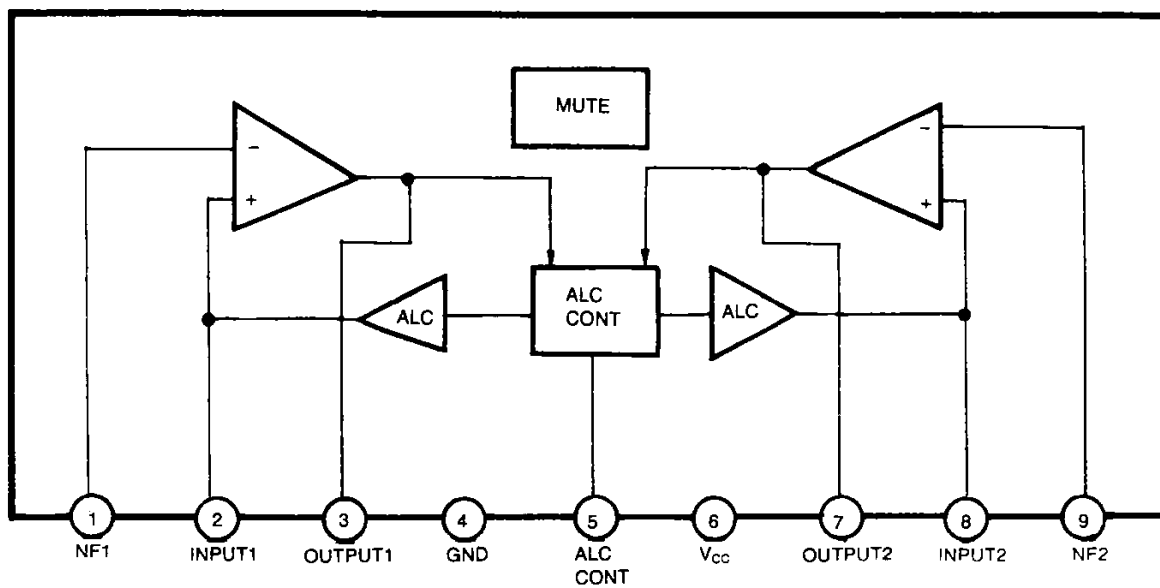


Fig. 1

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 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 _{CCQ}	V _I = 0	1.5	3.5	4.5	mA
Open Loop Voltage Gain	G _{VO}	V _o = 0.3V	70	80		dB
Closed Loop Voltage Gain	G _{VC}	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	ΔV _{ALC}	R _G = 3.9K, THD = 10%	40	45		dB
ALC Balance	CB _{ALC}	V _I = 1mV		0	2.5	dB

TEST CIRCUIT

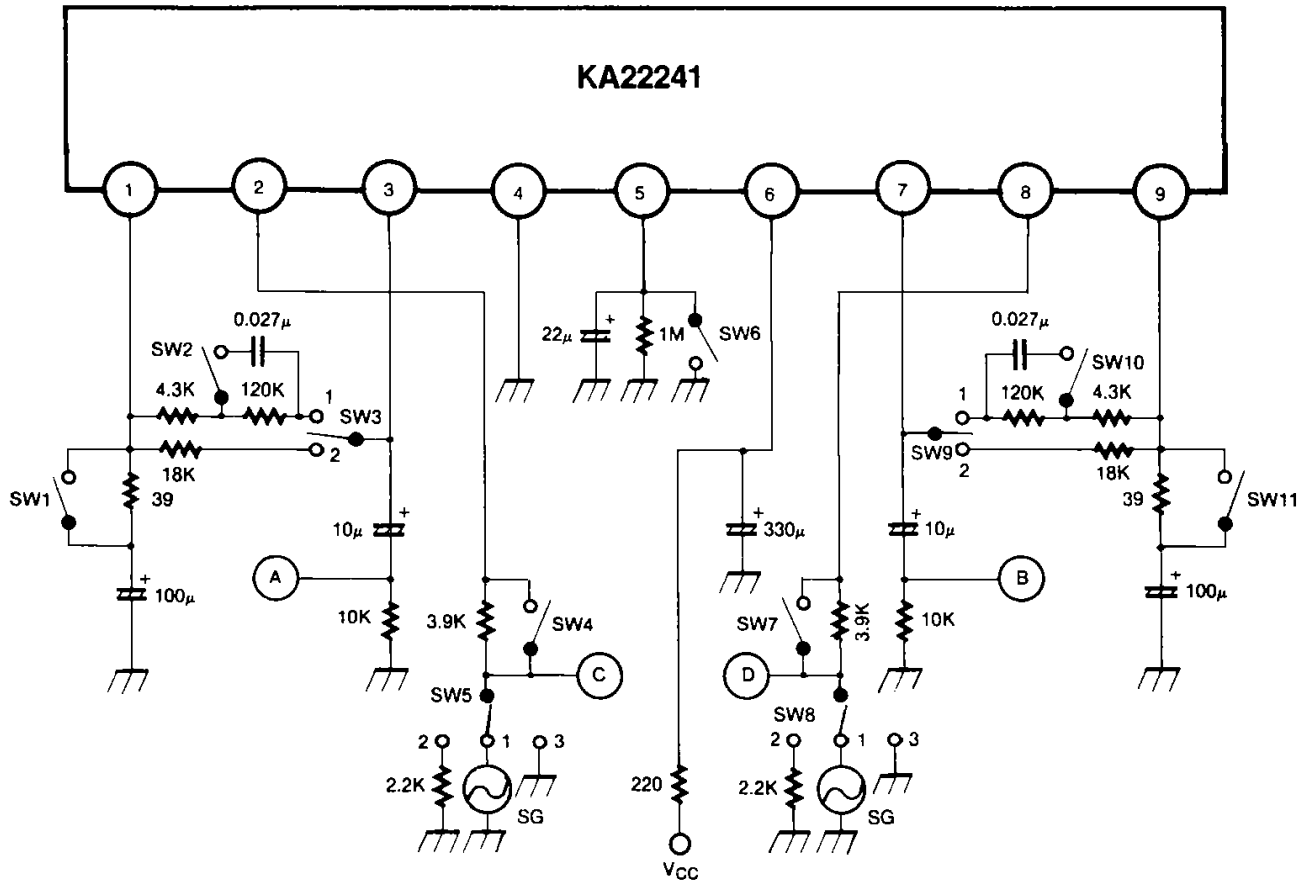


Fig. 2

TEST METHOD

Symbol	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	
I_{CCQ}	ON	OFF	1	ON	3	ON	ON	3	1	OFF	ON	
G_{VO}	ON	OFF	1	ON	1	ON	ON	3	1	OFF	ON	
G_{VC}	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_a	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
ΔV_{ALC}	CH-1	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
CB_{ALC}	OFF	OFF	2	OFF	1	OFF	OFF	OFF	1	2	OFF	OFF

APPLICATION CIRCUIT

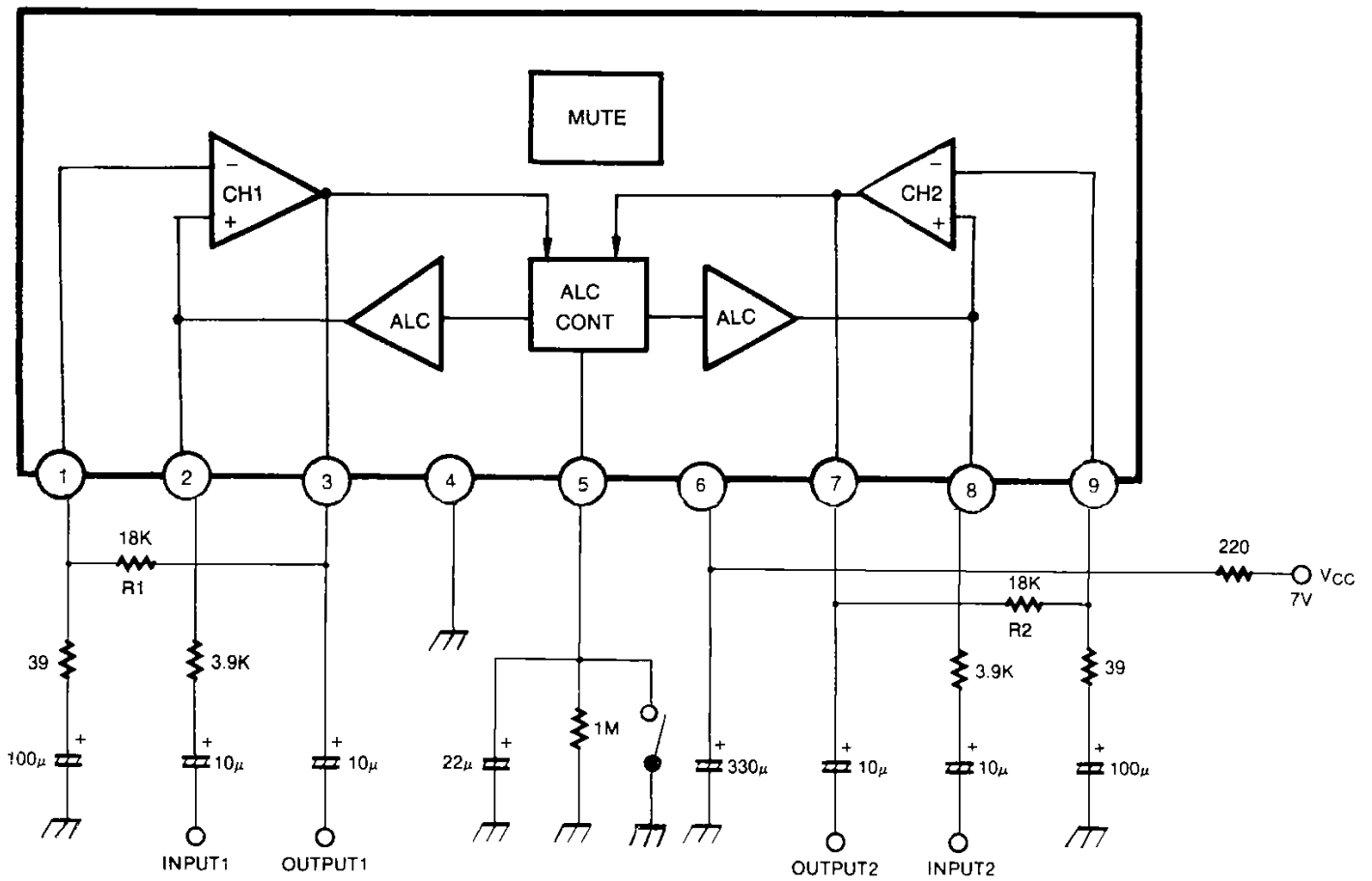


Fig. 3

NOTE

ON recording, connect the time constant circuit as shown below, instead of R1, R2 of Pins 1-3, 7-9, which are used in the NAB.

