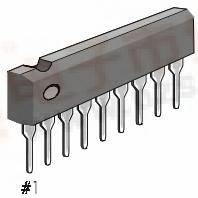
INTRODUCTION

The KA22241B is a monolithic integrated clrcuit consisting of a dual equalizer amplifier with ALC, and it is suitable for stereo radio cassette-tape recorders.

9–SIP



FEATURES

- Dual equalizer amplifier with built-in ALC circuit Low noise; V_{NI} = 1.0μ (Typ)
- High open loop voltage gain: 80dB (Typ)
- Wide operating supply voltage range: V_{CC} = 4.5V ~ 14V
- Good ALC response balance between channels
- Input coupling capacitor unnecessary
- Diode or transistor for ALC unnecessary
- Minimum number of external parts required

ORDERING INFORMATION]

Device	Package	Operating Temperature
KA22241C	9–SIP	–20°C~ + 75°C

BLOCK DIAGRAM

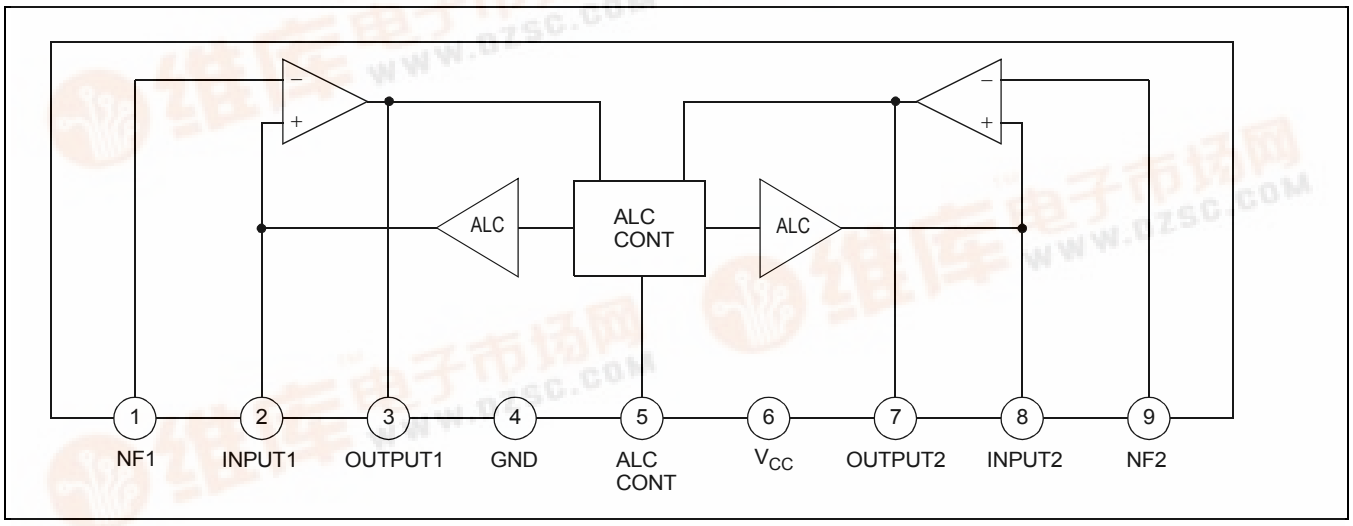


Figure 1.

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Power Dissipation	P_D	(NOTE) 550	mW
Operating Temperature	T_{OPR}	–20 ~ +75	°C
Storage Temperature	T_{STG}	–20 ~ +125	°C

NOTE: Derated above Ta = 25 °C in the propotion of 5.5 mW/°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 = 3.9kΩ, THD = 10%	40	45	–	dB
ALC Balance	CB_{ALC}	V_I = 1mV	–	0	2.5	dB

TEST CIRCUIT

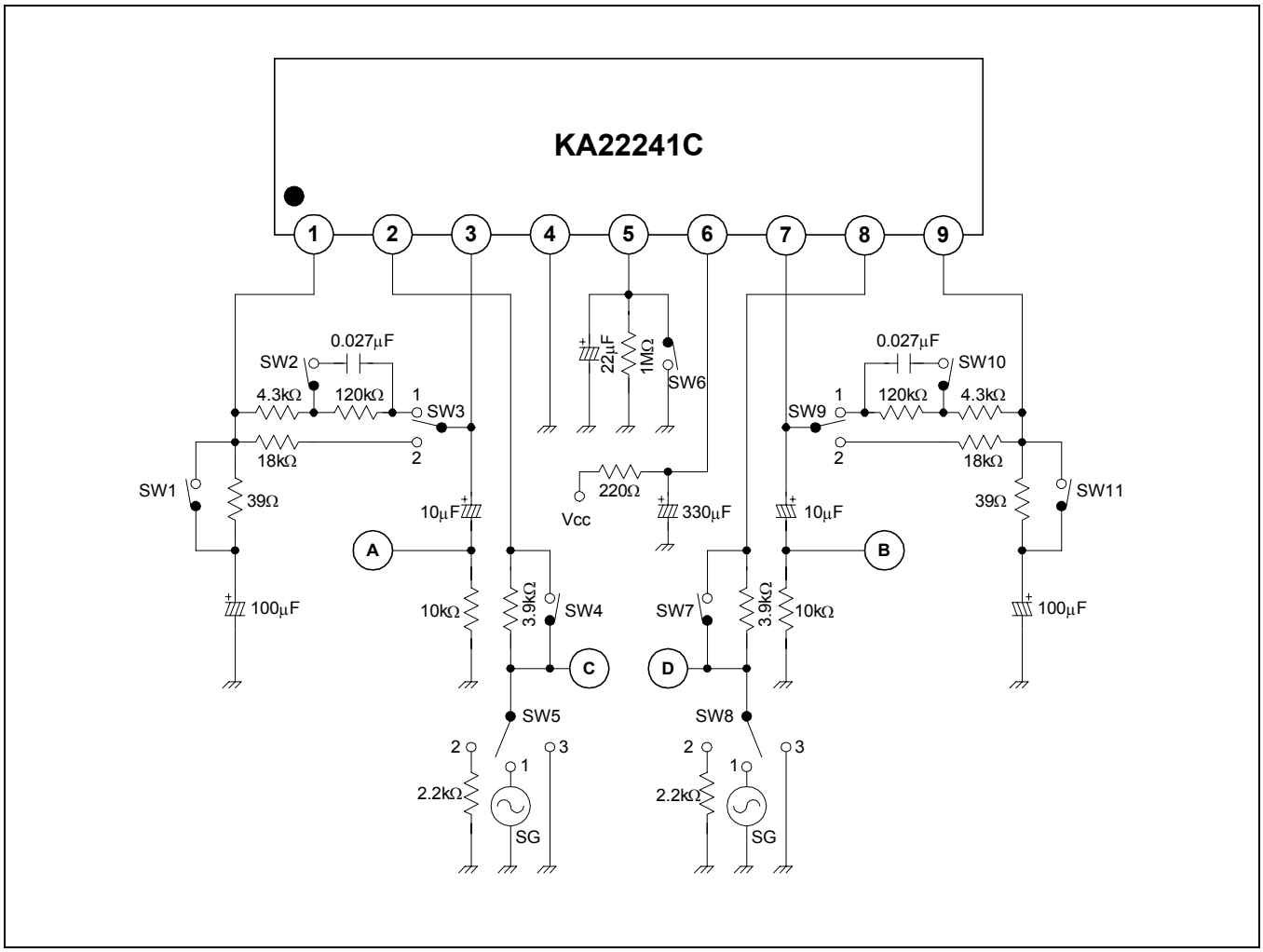


Figure 2.

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_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
ΔV_{ALC}	CH -1	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
CB_{ALC}		OFF	OFF	2	OFF	1	OFF	OFF	1	2	OFF	OFF

APPLICATION CIRCUIT

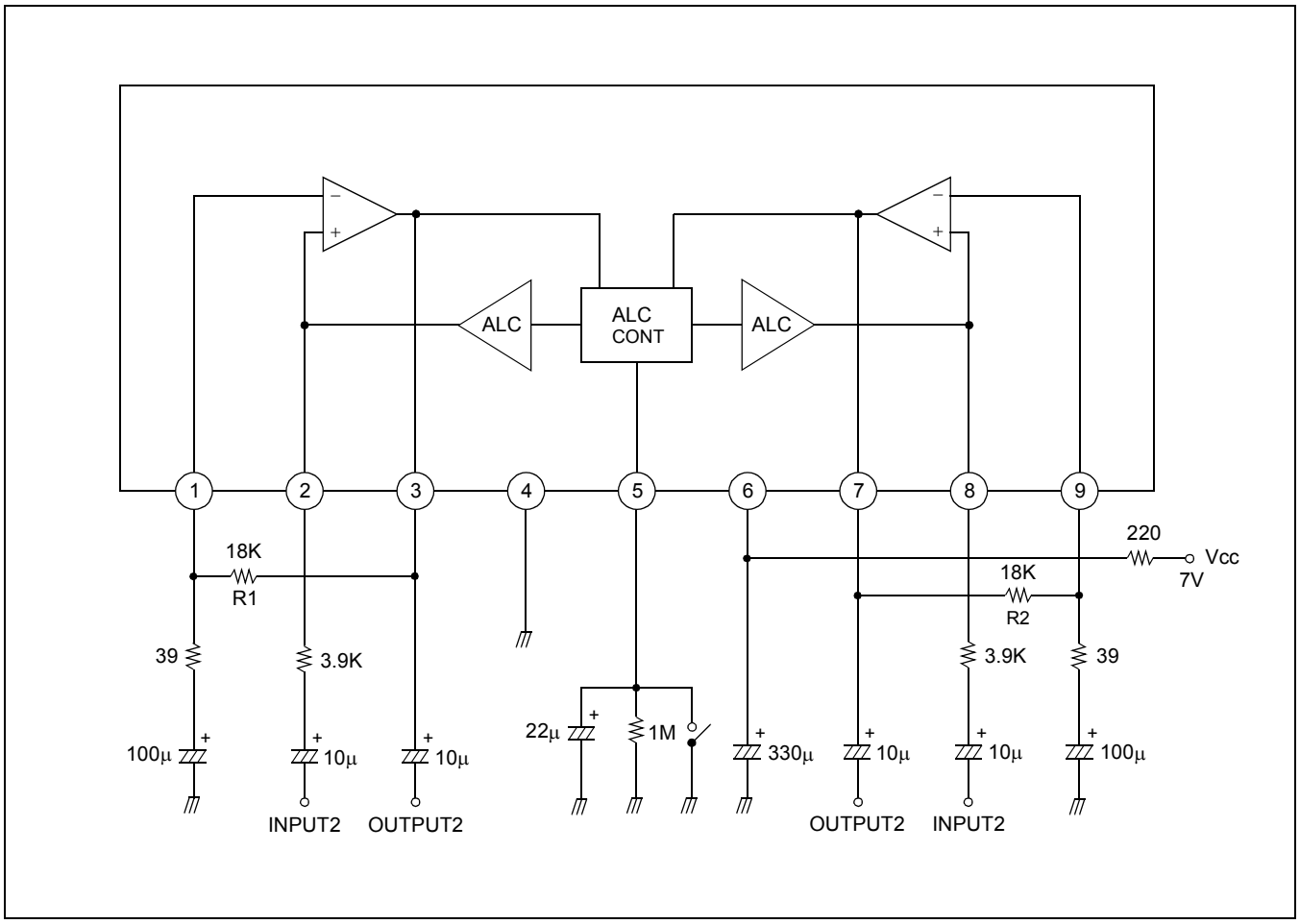
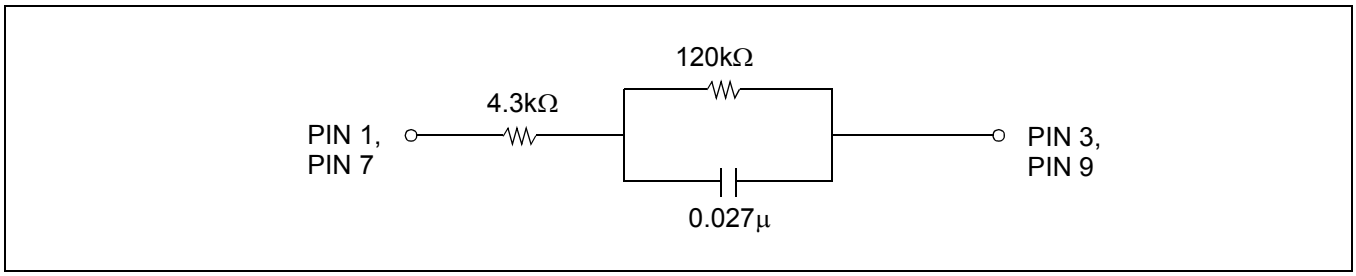


Figure 3.

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



APPLICATION CIRCUIT 1

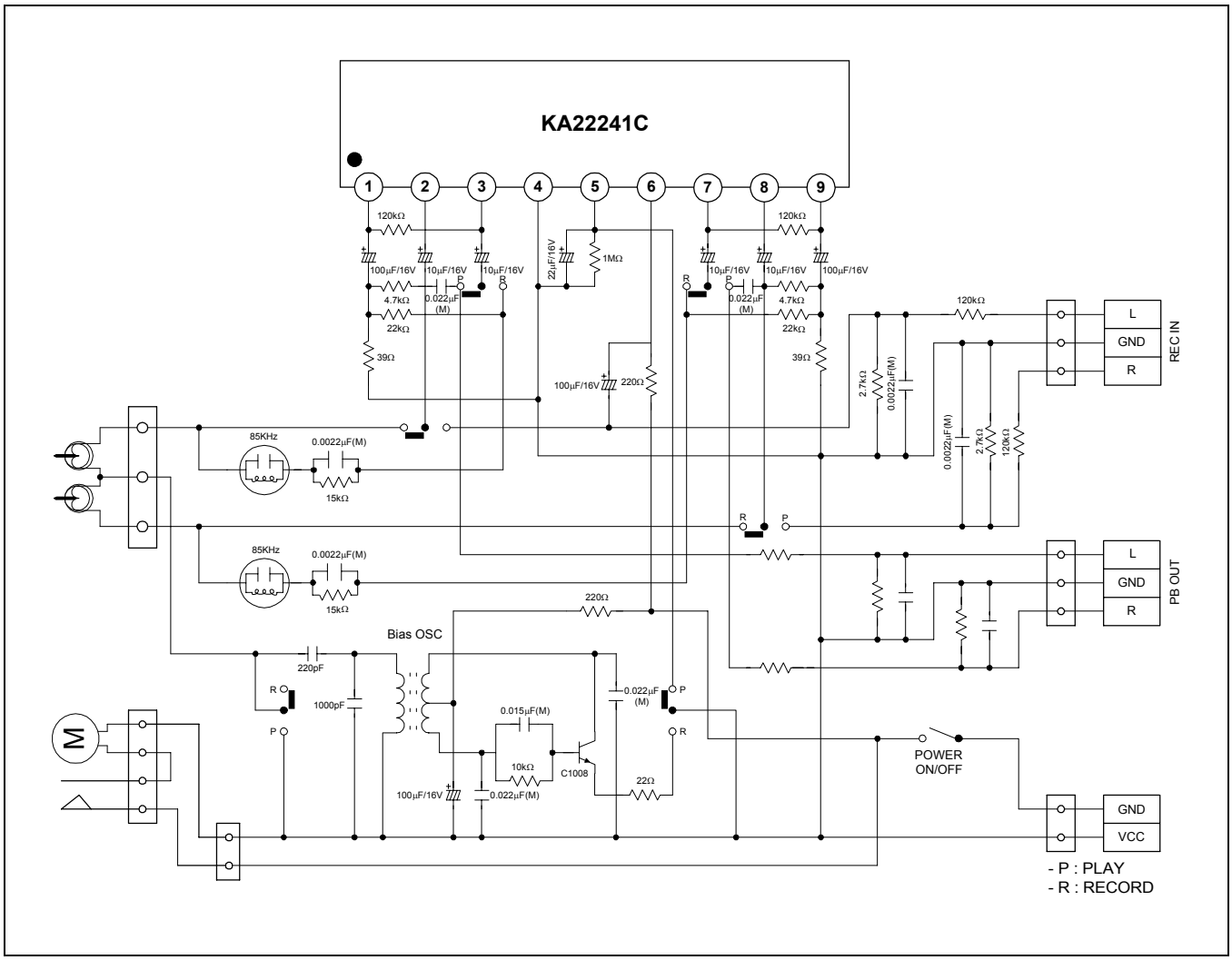


Figure 4.