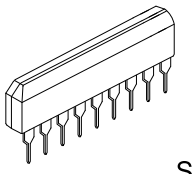
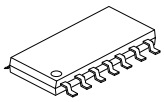
KA22241 *LINEAR INTEGRATED CIRCUIT*

DUAL EQUALIZER AMPLIFIER WITH ALC



SIP-9



SOP-14

■ DESCRIPTION

The UTC **KA22241** is a monolithic integrated circuit, consisting of 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}=1.0μV(Typical)
* High open loop voltage gain: Gv=80dB(Typical)
* Good ALC response balance between channels
* Not necessary the input coupling capacitor
* Not necessary the diode or transistor for ALC
* Built in power supply muting circuit
* Minimum number of external parts required

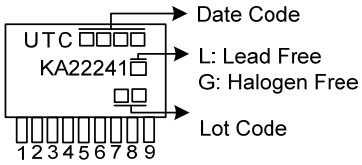
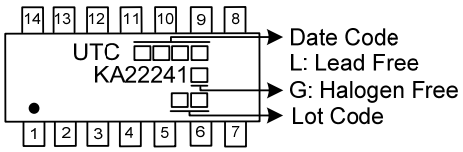
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
KA22241L-G09-T	KA22241G-G09-T	SIP-9	Tube
KA22241L-S14-R	KA22241G-S14-R	SOP-14	Tape Reel

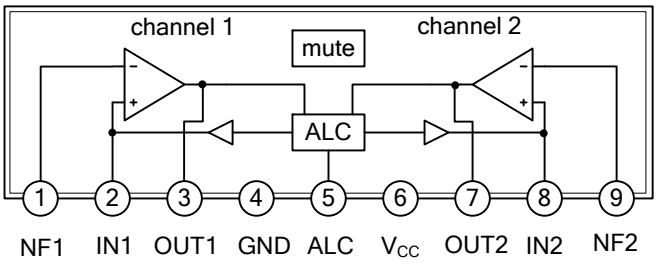
KA22241G-G09-T
(1)Packing Type
(2)Package Type
(3)Green Package

(1) T: Tube, R: Tape Reel
(2) G09: SIP-9, S14: SOP-14
(3) G: Halogen Free and Lead Free, L: Lead Free

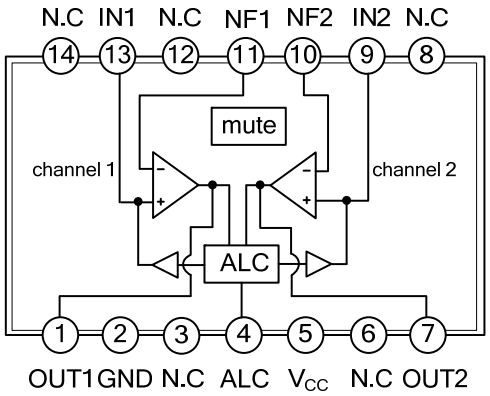
■ MARKING

SIP-9	SOP-14
	

■ BLOCK DIAGRAM



SIP-9



SOP-14

■ ABSOLUTE MAXIMUM RATING (T_A = 25°C)

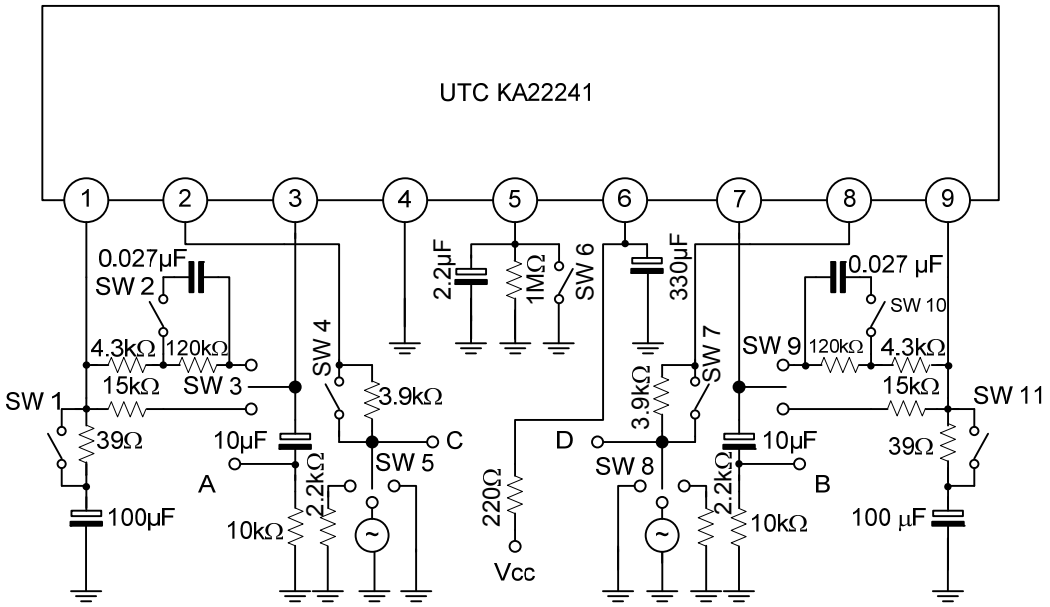
PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	16	V
Power Dissipation	SIP-9	P_D	550	mW
	SOP-14		450	
Operating Temperature		T_{OPR}	-20 ~ +75	°C
Storage Temperature		T_{STG}	-20 ~ +125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A = 25°C, V_{CC}=7V, f=1KHZ, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Noise Voltage	V_{IN}	R_G=2.2KΩ BW(-3dB)=20HZ~20KHZ		1.0	2.0	μV
Output Voltage	V_{OUT}	THD=1%	0.6	1.2		V
Quiescent Circuit Current	I_{CCQ}	V_{IN}=0	1.5	3.5	4.5	mA
Open Loop Voltage Gain	G_{VO}	V_{OUT}=0.3V	70	80		dB
Closed Loop Voltage Gain	G_{VC}	V_{OUT}=0.3V	45	48	50	dB
ALC Range	ΔV_{ALC}	R_O=3.9KΩ, THD=10%	40	45		dB
ALC Balance	CB_{ALC}	V_{IN}=1mV		0	2.5	dB
Total Harmonic Distortion	THD	V_{OUT}=0.3V		0.1	0.3	%
Input Resistance	R_{IN}		15	25	45	kΩ

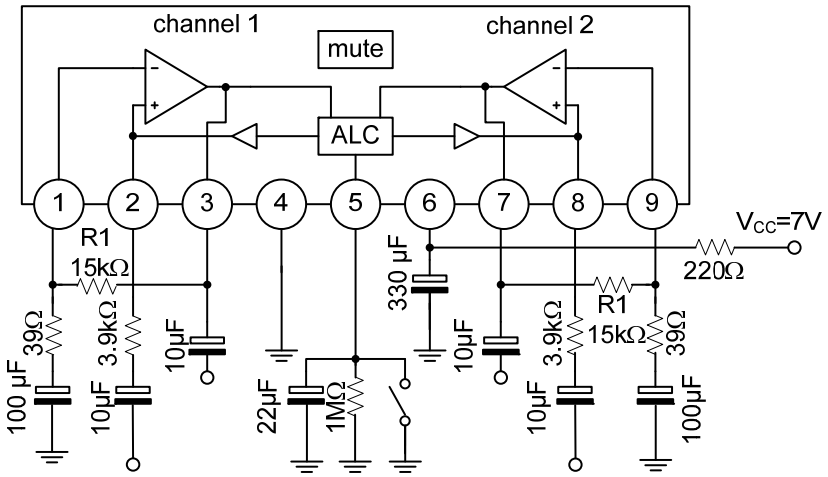
■ TEST CIRCUIT



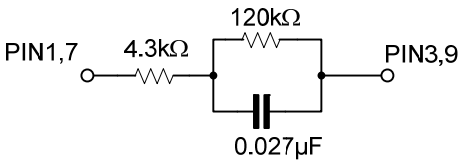
TEST METHOD

SYMBOL	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	SW11
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}	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
THD	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V_{OUT}	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V_{NI-1}	OFF	ON	1	ON	2	ON	ON	3	1	OFF	ON
V_{NI-2}	ON	OFF	1	ON	3	ON	ON	2	1	ON	OFF
ΔV_{ALC}	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
CB_{ALC}	OFF	OFF	2	OFF	1	OFF	OFF	1	2	OFF	OFF

■ TYPICAL APPLICATION CIRCUIT

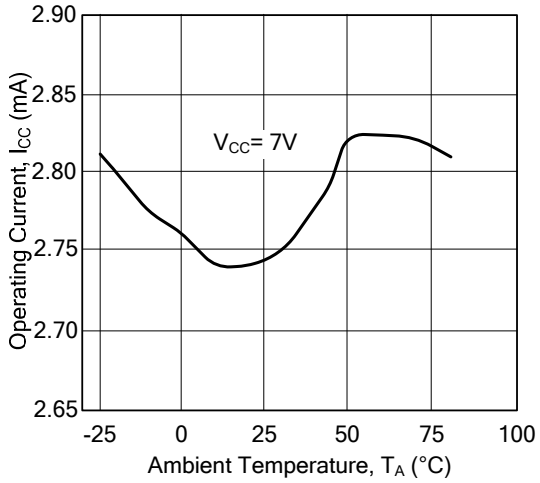


Note: On playback, connect the time constant circuit as follows below, instead of R1 of PINS 1, 3, 7, 9, which are used in the NAB.



■ TYPICAL CHARACTERISTICS

Operating Current vs. Temperature



Maximum Output Voltage vs. Temperature