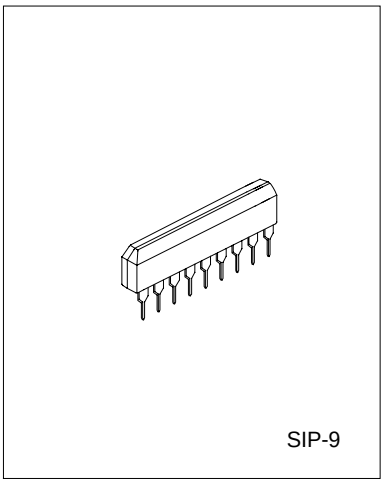
DUAL EQULIAZER AMPLIFIER WITH ALC



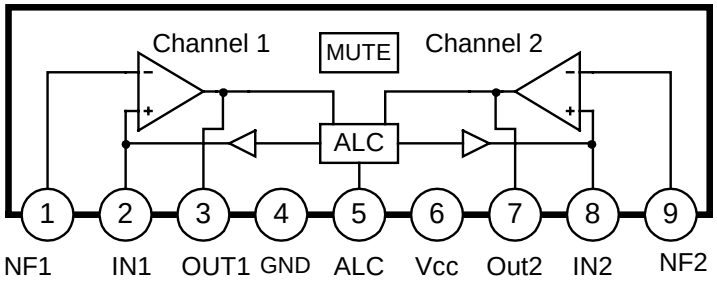
DESCRIPTION

The UTC22241 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 diode or transistor for ALC
*Built in power supply muting circuit
*Minimum number of external parts required

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

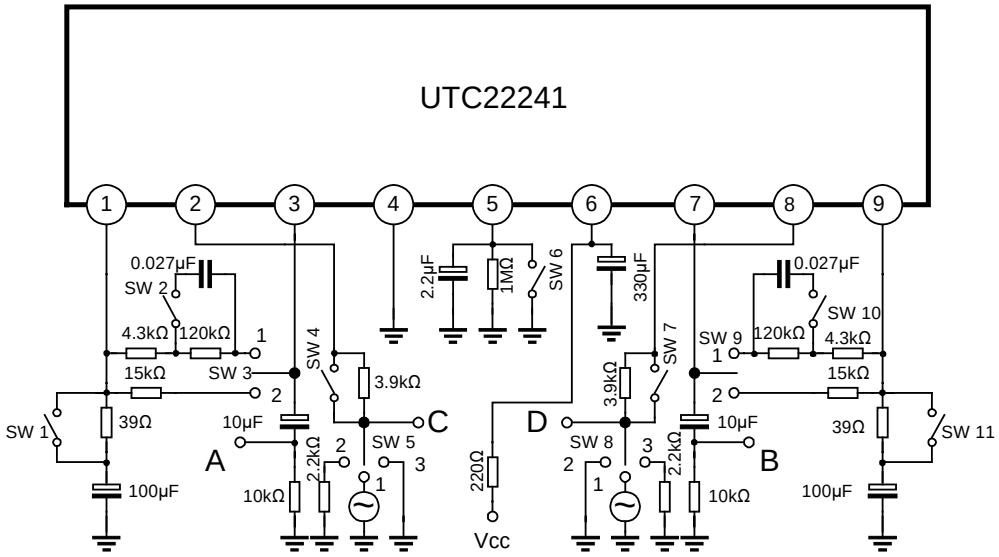
Characteristic	Symbol	Value	Unit
Supply Voltage	Vcc	16	V
Operating Temperature	Topr	-20 to +75	°C
Storage Temperature	Tstg	-20 to 125	°C
Power dissipation	PD	550	W

ELECTRICAL CHARACTERISTICS

(Ta=25°C,Vcc=7V,f=1kHz, unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Quiescent circuit current	I_{CCQ}	Vi=0	1.5	3.5	4.5	mA
Open loop voltage gain	Gvo	Vo=0.3V	70	80		dB
Closed loop Voltage Gain	Gvc	Vo=0.3V	45	48	50	dB
Output Voltage	Vo	THD=1%	0.6	1.2		W
Total Harmonic Distortion	THD	Vo=0.3V		0.3	1.0	%
Input resistance	Ri		15	25	45	kΩ
ALC Range	ΔV_{ALC}	R_G=3.9kΩ,THD=10%	40	45		dB
ALC Balance	CB_{ALC}	Vi=1mV		0	2.5	dB
Input Noise voltage	V_{NI}	R_G=2.2kΩ BW(-3dB)=20Hz~20kHz		1.0	2.0	mV

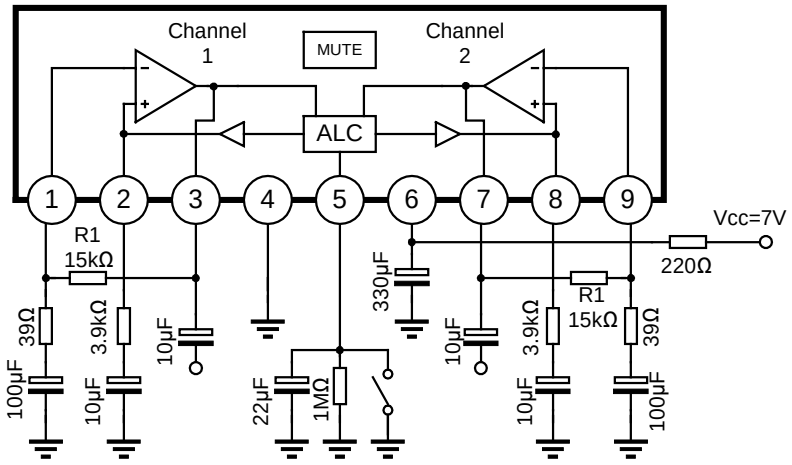
TEST CIRCUIT



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
Gvo	ON	OFF	1	ON	1	ON	ON	3	1	OFF	ON
Gvc	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
THD	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
Vo	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
V_{ALC}	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
CB_{ALC}	OFF	OFF	2	OFF	1	OFF	OFF	1	2	OFF	ON

TYPICAL APPLICATION CIRCUITS



Note: On PlayBack, connect the time constant circuit as follows below, instead of R1,R2 of Pins 1-3,7-9,which are used in the NAB.