

UTC KA22241 LINEAR INTEGRATED CIRCUIT

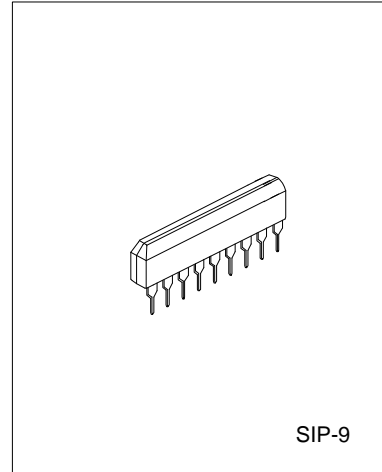
DUAL EQUALIZER AMPLIFIER WITH ALC

DESCRIPTION

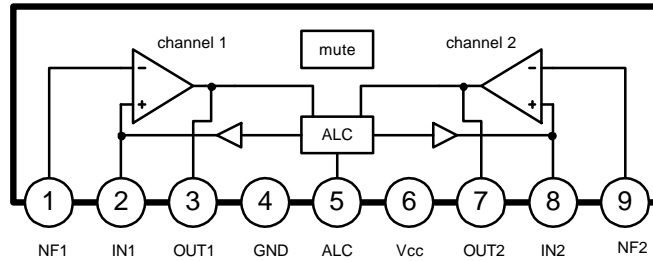
The UTC KA22241 is a monolithic integrated circuit, consisting of dual equalizer amplifier with ALC, and it is suitable for stereo radio cassette tape recorders.

FEATURES

- *Dual equalizer amplifier with built-in ALC circuit
- *Low noise $V_{NI}=1.0\mu V$ (Typical)
- *High open loop voltage gain: $G_v=80dB$ (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



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATING ($T_a=25^\circ C$)

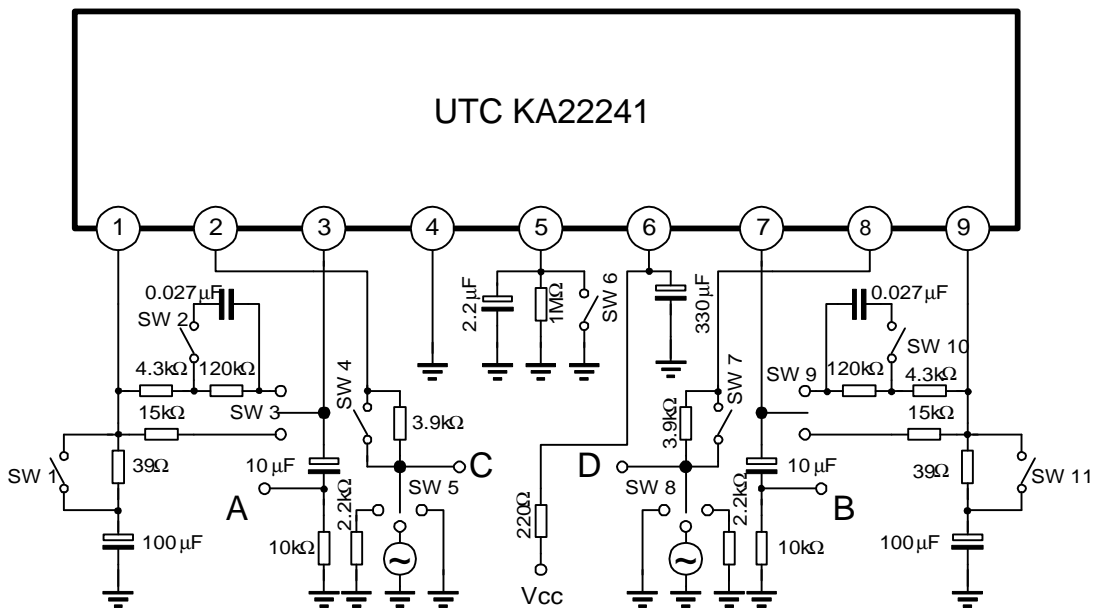
| PARAMETER | SYMBOL | VALUE | UNIT |
|-----------------------|--------|------------|------------|
| Supply Voltage | VCC | 16 | V |
| Operating Temperature | TOPR | -20 to 75 | $^\circ C$ |
| Storage Temperature | TSTG | -20 to 125 | $^\circ C$ |
| Power Dissipation | PD | 550 | mW |

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ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$, $V_{CC}=7\text{V}$, $f=1\text{KHZ}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------------|-----------|---|-----|-----|-----|------------------|
| Quiescent Circuit Current | ICCQ | $V_I=0$ | 1.5 | 3.5 | 4.5 | mA |
| Open Loop Voltage Gain | GVO | $V_O=0.3\text{V}$ | 70 | 80 | | dB |
| Closed Loop Voltage Gain | GVC | $V_O=0.3\text{V}$ | 45 | 48 | 50 | dB |
| Output Voltage | V_O | THD=1% | 0.6 | 1.2 | | V |
| Total Harmonic Distortion | THD | $V_O=0.3\text{V}$ | | 0.1 | 0.3 | % |
| Input Noise Voltage | VNI | $R_O=2.2\text{k}\Omega$ $BW(-3\text{dB})=20\text{KHZ}$ | | 1.0 | 2.0 | μV |
| Input Resistance | RI | | 15 | 25 | 45 | $\text{k}\Omega$ |
| ALC Range | V_{ALC} | $R_O=3.9\text{k}\Omega$, THD=10% | 40 | 45 | | dB |
| ALC Balance | CBALC | $V_I=1\text{mV}$ | | 0 | 2.5 | dB |

TEST CIRCUIT

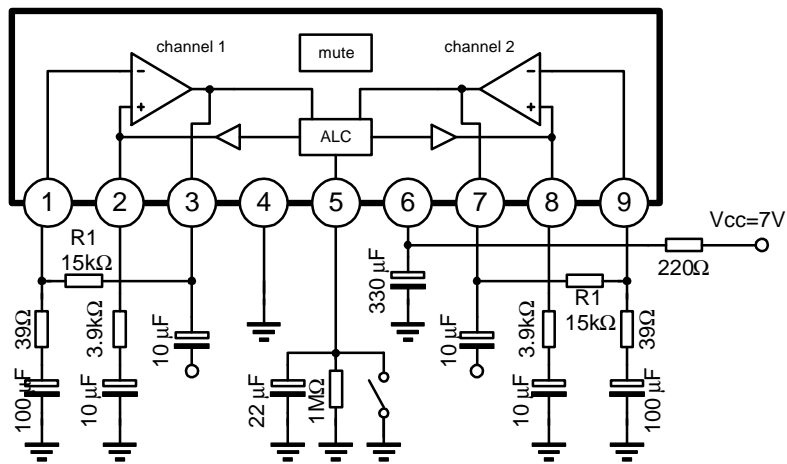


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TEST METHOD

| 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 _O | 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 |

APPLICATION CIRCUIT



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.

