

AN5262N

Preamplifier-Incorporated Volume IC for TV (1-channel)

■ Overview

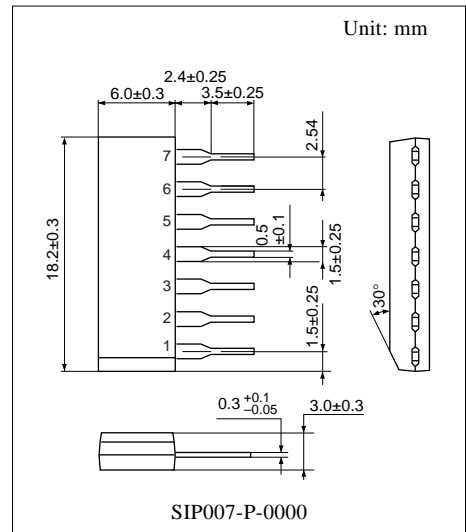
The AN5262N is an IC for sound volume control of TV set. It incorporates a DC-voltage controlled volume which has a linear characteristic to hearing sensation, sound preamplifiers and a mute function.

■ Features

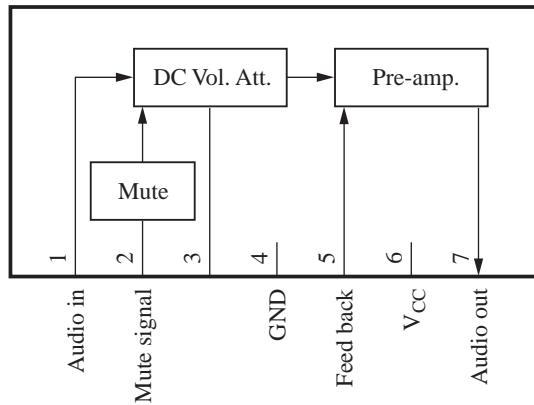
- Volume maximum attenuation = 95 dB
- Built-in preamplifier ($G_V = 22$ dB)
- Maximum output voltage = 2.9 V[rms]
- Operating supply voltage range; 8 V to 12 V

■ Applications

- TV



■ Block Diagram



■ Pin Description

| Pin No. | Description |
|---------|-------------------|
| 1 | Sound input |
| 2 | Mute signal input |
| 3 | Sound adjustment |
| 4 | Grounding |
| 5 | Feedback input |
| 6 | Power supply |
| 7 | Sound output |

■ Absolute Maximum Ratings

| Parameter | Symbol | Rating | Unit |
|----------------------------------|-----------|----------------|------|
| Supply voltage | V_{CC} | 12 | V |
| Circuit voltage | V_{2-4} | 0 to 7 | V |
| | V_{3-4} | 0 to V_{6-4} | |
| Supply current | I_{CC} | 18 | mA |
| Circuit current | I_2 | -10 to +5 | mA |
| | I_3 | -10 to +3 | |
| | I_5 | -5 to +1 | |
| | I_7 | -20 to +0.3 | |
| Power dissipation *2 | P_D | 216 | mW |
| Operating ambient temperature *1 | T_{opr} | -20 to +70 | °C |
| Storage temperature *1 | T_{stg} | -55 to +150 | °C |

Note) 1. Do not apply external currents or voltages to any pins not specifically mentioned.

For circuit currents, '+' denotes current flowing into the IC, and '-' denotes current flowing out of the IC.

2. *1: Except for the operating ambient temperature and storage temperature, all ratings are for $T_a = 25^\circ\text{C}$.

*2: $T_a = 70^\circ\text{C}$

■ Recommended Operating Range

| Parameter | Symbol | Range | Unit |
|----------------|----------|---------|------|
| Supply voltage | V_{CC} | 8 to 12 | V |

■ Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|----------------------------------|-----------|---|------|------|------|--------|
| Circuit current | I_6 | | 9 | 12 | 15 | mA |
| Pin voltage | V_{1-4} | | 3.3 | 4.5 | 5.7 | V |
| | V_{5-4} | | 0.7 | 1.4 | 1.8 | |
| | V_{7-4} | | 3.0 | 4.1 | 5.2 | |
| Voltage gain | A_{7-4} | $f = 1 \text{ kHz}, V_1 = 180 \text{ mV[rms]}$ $V_3 = V_{CC}$ | 19.5 | 22.0 | 23.5 | dB |
| Mute operating voltage | V_{2-4} | $f = 1 \text{ kHz}, V_1 = 180 \text{ mV[rms]}$ $V_3 = V_{CC}, V_O \leq 0.6 \text{ mV[rms]}$ | 2.45 | 2.7 | 2.95 | V |
| Maximum attenuation amount | A_{tt} | $f = 1 \text{ kHz}, V_1 = 180 \text{ mV[rms]}$ the ratio at $V_3 = V_{CC}$ to at $V_3 = 0 \text{ V}$ | 72 | 95 | — | dB |
| Harmonic distortion rate | THD | $f = 1 \text{ kHz}, V_1 = 180 \text{ mV[rms]}$ $V_3 = V_{CC}$ | — | 0.3 | 1.0 | % |
| Maximum undistorted power output | V_O | $f = 1 \text{ kHz}$ $V_3 = V_{CC}$ at THD = 10% | 2.6 | 2.9 | 3.2 | V[rms] |

■ Application Circuit Example

