AN5275

15W \times 2Ch. Low Frequency Power Amplifier Circuit for TV

Overview

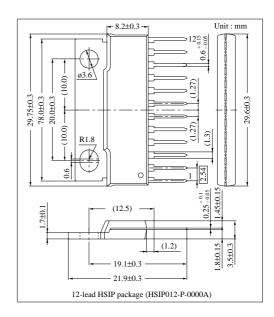
The AN5275 is an audio power IC developed for TV sound output (15W \times 2Ch.).

High density mounting is possible and it can contribute to cost reduction, because it requires fewer external components.

It incorporates various protective circuits to provide high reliability and breakage resistance.

Features

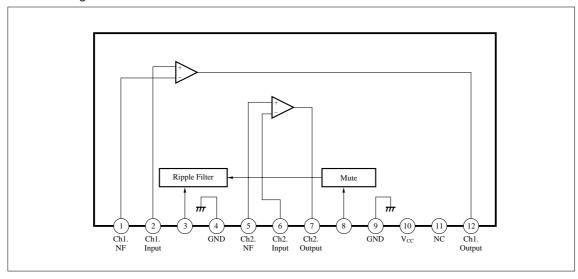
- Wide operating supply voltage range (10 to 40V)
- Little distortion and noise
- Fewer external components
- \cdot BS (boot-strap) electrolytic capacitor not required
- Audio muting function built-in
- Very small shock noise at power ON/OFF
- Various protective circuits built-in
- Load short-circuit protection. Protection against overvoltage and – current. Temperature protection



Pin Description

| Pin No. | Pin Description | Pin No. | Pin Description |
|---------|------------------------|---------|-------------------------|
| 1 | Ch.1 NF pin | 7 | Ch.2 output pin |
| 2 | Ch.1 input pin | 8 | Muting pin |
| 3 | Ripple filter pin | 9 | GND (sound output side) |
| 4 | GND (sound input side) | 10 | Supply voltage |
| 5 | Ch.2 input pin | 11 | NC |
| 6 | Ch.2 NF pin | 12 | Ch.1 output pin |

Block Diagram



AN5275

■ Absolute Maximum Ratings (Ta= 25°C)

| Parameter | Symbol | Rating | Unit | |
|-------------------------------|--------------------|--------------|------|--|
| Supply Voltage | V _{CC} | 4.5 | v | |
| Supply Current | I _{CC} | 4.0 | А | |
| Power Dissipation Note 1) | PD | 25 | W | |
| Peak Supply Voltage Note 2) | V _{surge} | 60 | v | |
| Operating Ambient Temperature | T _{opr} | - 25 ~ + 80 | °C | |
| Storage Temperature | T _{stg} | - 55 ~ + 150 | °C | |

Note 1) $R_{\theta j-c} = 2^{\circ}C/W$ Note 2) t = 0.2s

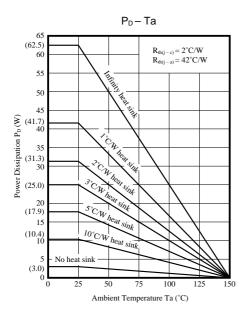
Recommended Operating Range ($Ta = 25^{\circ}C$)

| Parameter | Symbol | Range | | |
|--------------------------------|-----------------|---------------|--|--|
| Operating Supply Voltage Range | V _{CC} | 10.0V ~ 40.0V | | |

$\blacksquare \text{ Electrical Characteristics } (V_{CC}=32V, f_{req.}=1 \text{kHz}, Ta=25\pm2^{\circ}\text{C})$

| Parameter | Symbol | Condition | min. | typ. | max. | Unit |
|----------------------------------|-----------------|---|------|------|------|-------|
| Static Circuit Current | I _{CQ} | $V_{IN}=0mV, R_L=8\Omega$ | | 100 | 200 | mA |
| Output End Noise Voltage Note 1) | V _{NO} | $Rg=4.7k\Omega, R_L=8\Omega$ | | 0.12 | 0.4 | mVrms |
| Voltage Gain | Gv | V_{IN} = 57mV, R_L = 8 Ω | 32 | 34 | 36 | dB |
| Total Harmonics Distortion | THD | V_{IN} = 57mV, R_L = 8 Ω | | 0.05 | 0.40 | % |
| Max. Output Power | Po | THD= 10%, $R_L = 8\Omega$ | 11 | 15 | | W |
| Ripple Rejection Ratio Note 1) | RR | $R_L = 8\Omega$, $Vr = 1Vrms$ $f_r = 120Hz$, $Rg = 4.7k\Omega$ | 45 | 57 | | dB |
| Channel Balance | CB | V_{IN} = 57mV, R_L = 8 Ω | -1 | 0 | 1 | dB |

Note 1) 15Hz to 30kHz (12dB/OCT) filter is used for measurement.



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