



SANYO Semiconductors
DATA SHEET

LA4225 — **Monolithic Linear IC**
Audio Output for TV application
5W Monaural Power Amplifier

Overview

LA4225 is a 5W monaural power amplifier intended for television audio output. This IC requires only two external components (capacitors) to construct amplifiers and is ideal for realizing substantial cost reduction of electronic devices.

Functions

- 5W monaural power amplifier ($V_{CC} = 18V, R_L = 8\Omega$)
- Full complement of protection circuits
 Thermal shutdown protector on chip
 Short between an output and DC protection circuit
- On-chip pop noise reduction circuit

Maximum Ratings at $T_a = 25^\circ C$

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|---------------|-----------------------------|-------------|------------|
| Maximum supply voltage | $V_{CC\ max}$ | $R_g = 0$ | 24 | V |
| Maximum output current | $I_{O\ peak}$ | | 3.3 | A |
| Allowable power dissipation | $P_d\ max$ | Arbitrarily large heat sink | 7.5 | W |
| Operating temperature | T_{opr} | | -25 to +75 | $^\circ C$ |
| Storage temperature | T_{stg} | | -40 to +150 | $^\circ C$ |

Operating Conditions at $T_a=25^\circ C$

| Parameter | Symbol | Conditions | Ratings | unit |
|-----------------------------------|--------------|-----------------------------------|---------|----------|
| Recommended supply voltage | V_{CC} | | 13.2 | V |
| Recommended load resistance | R_L | | 4 | Ω |
| Allowable operating voltage range | $V_{CC\ op}$ | Not exceeding the package P_d . | 5 to 22 | V |
| Recommended load resistance range | $R_L\ op$ | | 4 to 8 | Ω |

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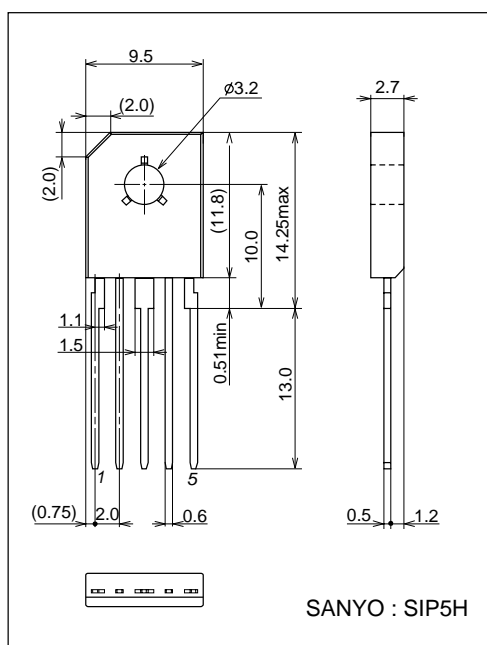
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 13.2\text{V}$, $R_L = 4\Omega$, $f = 1\text{kHz}$, $R_g = 600\Omega$, Designated substrate and circuit

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------|-----------|--|---------|------|-----|-----------|
| | | | min | typ | max | |
| Quiescent current | I_{CCO} | $R_g = 0$ | | 65 | 130 | mA |
| Voltage gain | VG | $V_O = 0\text{dBm}$ | 43 | 45 | 47 | dB |
| Output power | P_{O1} | $V_{CC} = 13.2\text{V}$, $R_L = 4\Omega$, THD = 10% | 4 | 5 | | W |
| | P_{O2} | $V_{CC} = 18\text{V}$, $R_L = 8\Omega$, THD = 10% | | 5 | | W |
| Total harmonic distortion | THD | $P_O = 1\text{W}$ | | 0.1 | 1.0 | % |
| Output noise voltage | V_{NO} | $R_g = 0$, DIN AUDIO | | 0.15 | 0.5 | mV |
| Ripple rejection | SVRR1 | $R_g = 0$, $f_R = 100\text{Hz}$, $V_f = 0\text{dBm}$, DIN AUDIO | 30 | 40 | | dB |
| | SVRR2 | $R_g = 0$, $f_R = 1\text{kHz}$, $V_f = 0\text{dBm}$, DIN AUDIO | | 47 | | dB |
| Input resistance | R_i | | | 50 | | $k\Omega$ |

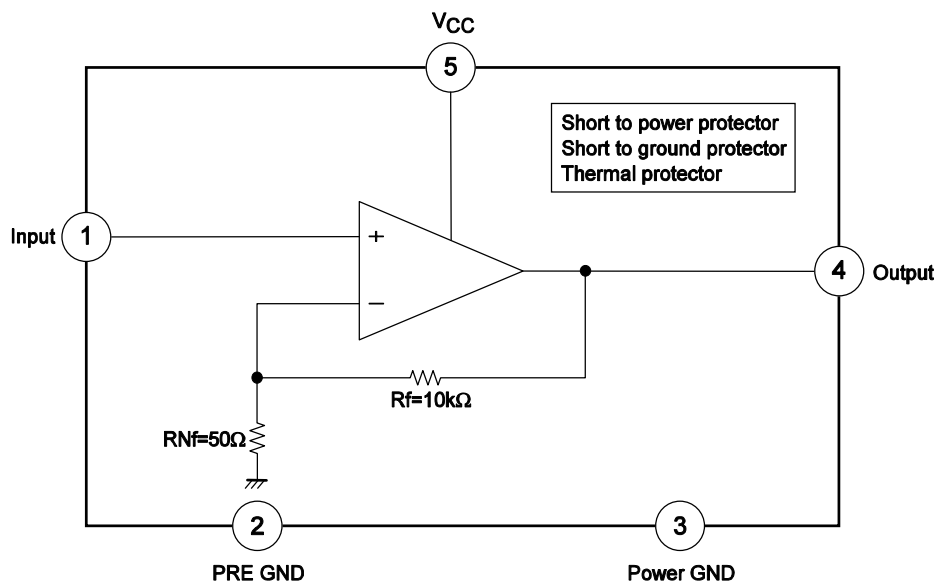
Package Dimensions

unit : mm

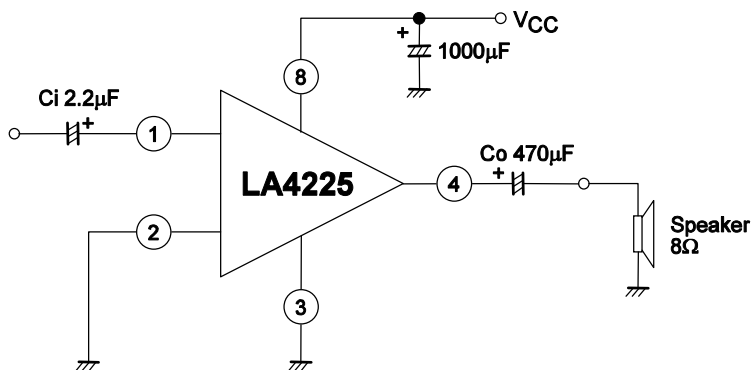
3031C



Block Diagram



Application Circuit Example



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