



# SANYO Semiconductors DATA SHEET

## LA4227 — Monolithic Linear IC Audio Output for Radio Cassette Recorders 3W × 2ch Power Amplifier

### Overview

LA4227 is a 3W 2-channel power amplifier.

This IC requires few external components and is ideal for power amplifier used for radio cassette players/recorders.

### Functions

- 3W × 2 channel ( $V_{CC} = 9V$ ,  $R_L = 3\Omega$ )
- Standby switch on chip
- Thermal shutdown protector on chip

### Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter                   | Symbol              | Conditions                  | Ratings     | Unit             |
|-----------------------------|---------------------|-----------------------------|-------------|------------------|
| Maximum supply voltage      | $V_{CC\text{ max}}$ | $R_g = 0$ (No signal)       | 20          | V                |
| Allowable power dissipation | $P_d\text{ max}$    | Arbitrarily large heat sink | 4.0         | W                |
| Operating temperature       | $T_{opr}$           |                             | -20 to +75  | $^\circ\text{C}$ |
| Storage temperature         | $T_{stg}$           |                             | -55 to +150 | $^\circ\text{C}$ |

### Operating Conditions at $T_a = 25^\circ\text{C}$

| Parameter                       | Symbol             | Conditions                        | Ratings   | unit     |
|---------------------------------|--------------------|-----------------------------------|-----------|----------|
| Recommended supply voltage      | $V_{CC}$           |                                   | 9         | V        |
| Operating voltage range         | $V_{CC\text{ op}}$ | Not exceeding the maximum ratings | 4.2 to 18 | V        |
| Operating load resistance range | $R_L\text{ op}$    |                                   | 3 to 8    | $\Omega$ |
|                                 |                    | Bridge                            | 8         | $\Omega$ |

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**SANYO Semiconductor Co., Ltd.**

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# LA4227

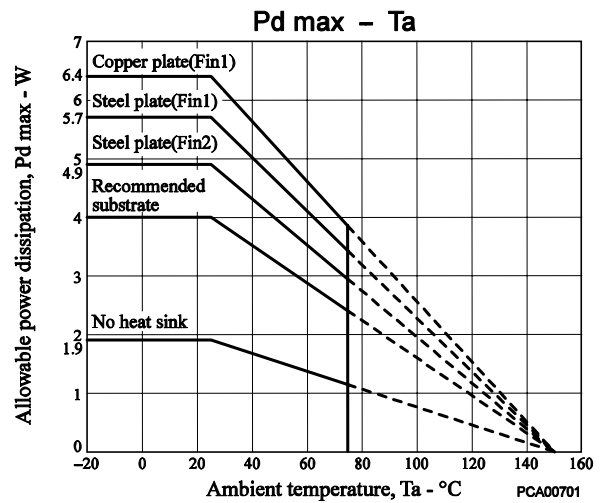
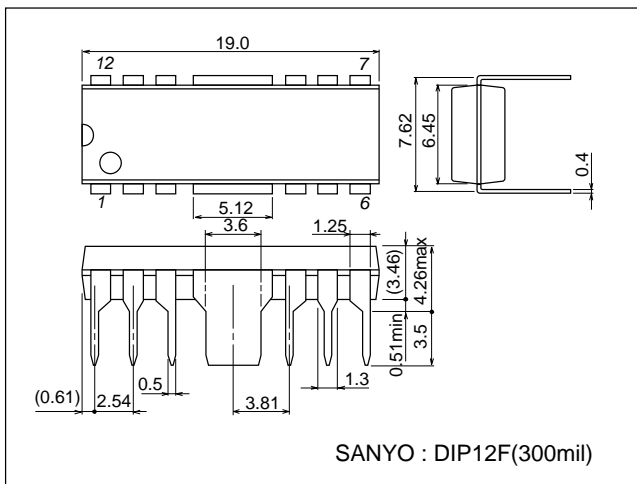
**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 9\text{V}$ ,  $R_L = 4\Omega$ ,  $f = 1\text{kHz}$ ,  $R_g = 600\Omega$ ,  $R_{NF} = 43\Omega$

| Parameter                 | Symbol            | Conditions  | Ratings |       |      | Unit             |
|---------------------------|-------------------|---|---------|-------|------|------------------|
|                           |                   |   | min     | typ   | max  |                  |
| Quiescent current         | $I_{CCO}$         | $R_g = 0$   | 10      | 20    | 40   | mA               |
| Voltage gain              | VG                | $V_O = 0\text{dBm}$   | 43.0    | 45.0  | 47.0 | dB               |
| Voltage gain difference   | $\Delta\text{VG}$ |   |         |       | 2.0  | dB               |
| Total harmonic distortion | THD               | $P_O = 0.25\text{W}$ ( $V_O = 1\text{V}$ )                          |         | 0.2   | 1.0  | %                |
| Output power              | $P_{O1}$          | THD = 10%   | 2.0     | 2.5   |      | W                |
|                           | $P_{O2}$          | $R_L = 3\Omega$ , THD = 10%   |         | 3.0   |      | W                |
|                           | $P_{O3}$          | Bridge, $R_L = 8\Omega$ , THD = 10%                                 |         | (4.7) |      | W                |
| Output noise voltage      | $V_{NO1}$         | $R_g = 0$ , DIN AUDIO   |         | 0.3   | 1.0  | mV               |
|                           | $V_{NO2}$         | $R_g = 10\text{k}\Omega$ , DIN AUDIO                                |         | 0.4   | 2.0  | mV               |
| Channel separation        | Chsep             | $V_O = 0\text{dBm}$ , $R_g = 10\text{k}\Omega$                      | 45      | 55    |      | dB               |
| Ripple rejection          | SVRR              | $V_r = 150\text{mV}$ , $R_g = 0$ , $f_r = 100\text{Hz}$ , DIN AUDIO | 40      | 52    |      | dB               |
| Standby current           | Ist               |   |         |       | 10   | $\mu\text{A}$    |
| Input resistance          | $R_i$             |   | 21      | 30    |      | $\text{k}\Omega$ |

## Package Dimensions

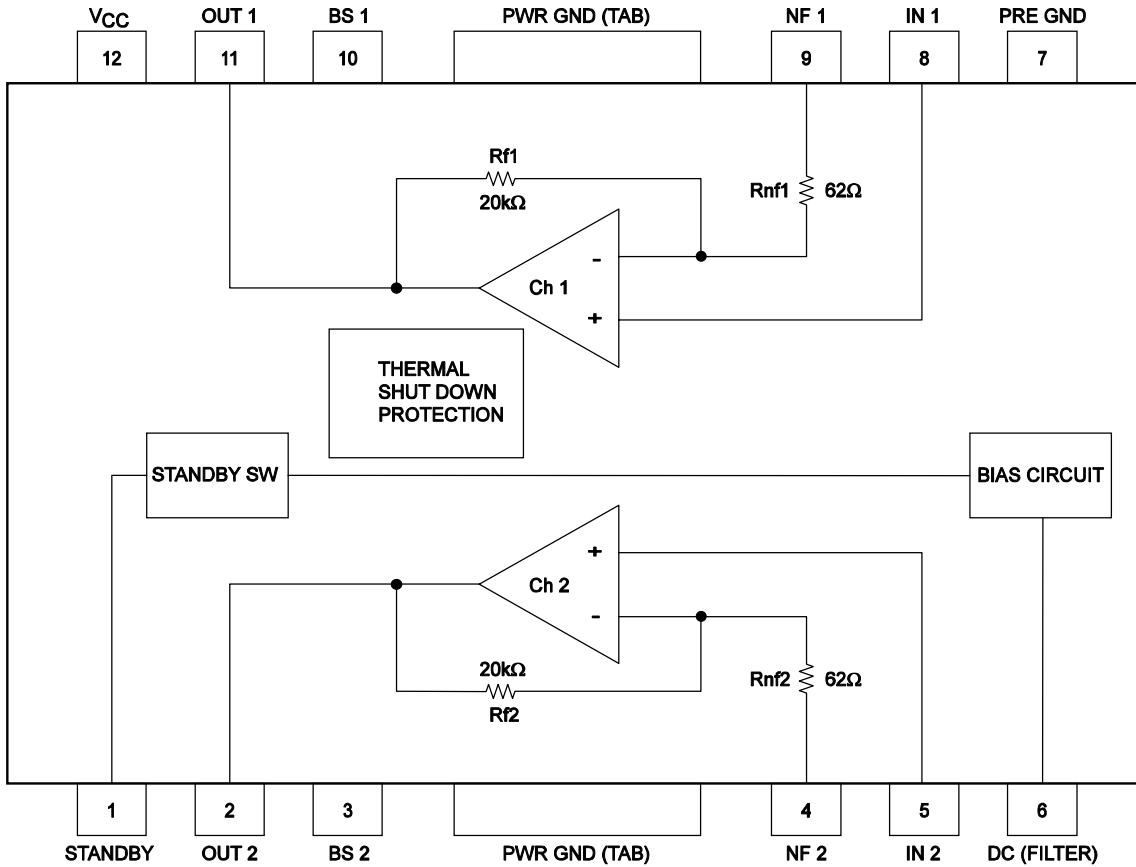
unit : mm

3022B

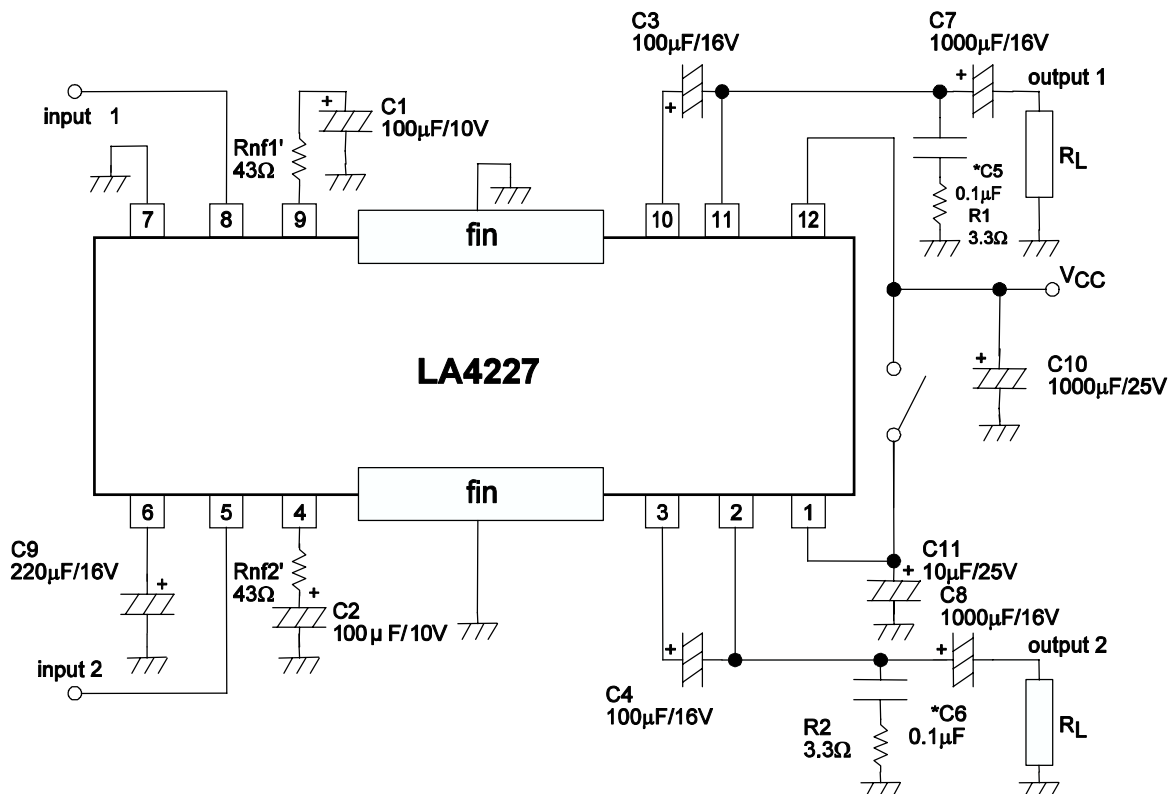


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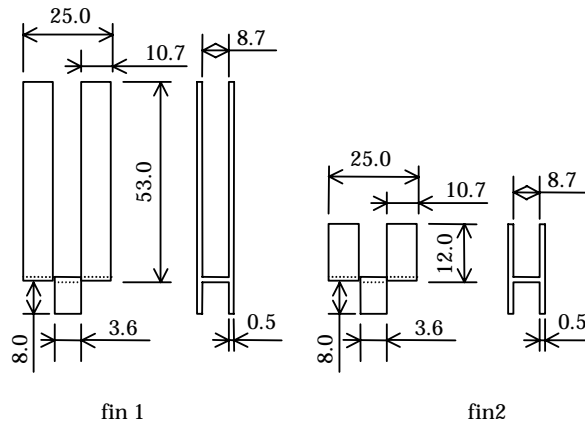
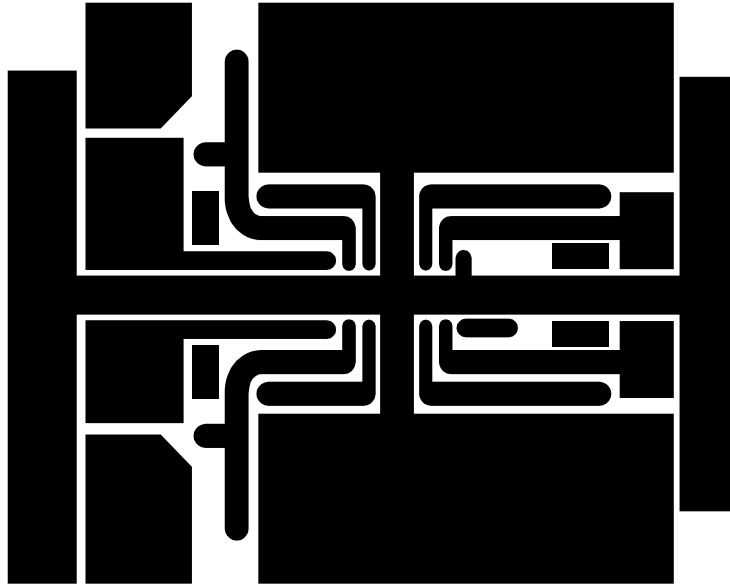
## Block Diagram



## Application Circuit Example



## Recommended board Cu-foiled pattern (Actual size)



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