

**LA4627****Two-Channel Audio Frequency Power Amplifier****Overview**

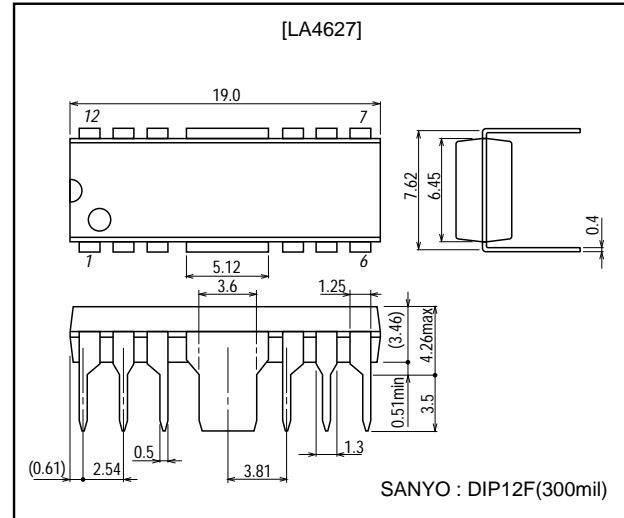
The LA4627 is a 2-channel power amplifier developed for use in radio/cassette player products. The LA4627 reduces the number of required external components by 50% over earlier products (BS/NF capacitors and oscillation prevention RC components) and thus can contribute significantly to space saving in end products.

Features

- Provided in the DIP12F.
- P_O : 2.0 W \times 2 ($V_{CC} = 9$ V, $R_L = 4 \Omega$)
2.5 W \times 2 ($V_{CC} = 9$ V, $R_L = 3 \Omega$)
- Standby function built in (supports direct microcontroller control).
- Built-in thermal protection circuit.

Package Dimensions

unit : mm

3022B-DIP12F**Specifications****Maximum Ratings at $T_a = 25^\circ\text{C}$**

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	$R_g = 0$	22	V
Allowable power dissipation	P_d max	When mounted on the Sanyo-recommended PCB	4.0	W
Operating temperature	T_{opr}		-25 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

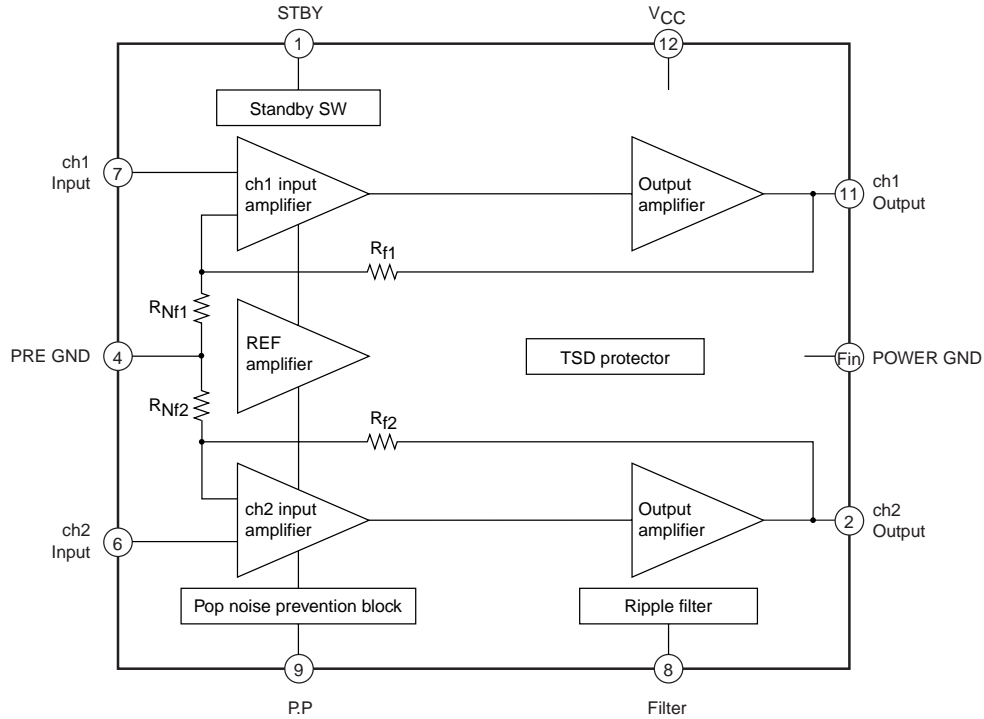
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		9	V
Recommended load resistance	R_L		3	Ω
Operating voltage range	V_{CC} op	Under conditions such that the maximum ratings are not exceeded.	5.0 to 20	V
Recommended operating load resistance	R_L op		2.7 to 8.0	Ω

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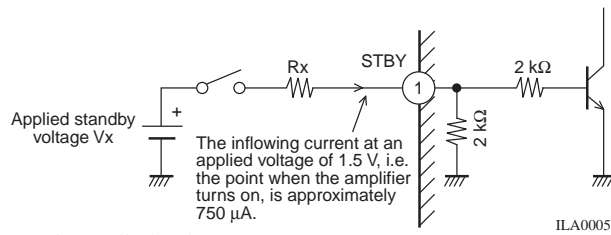
Block Diagram



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Pin Functions

1. Standby switch function (pin 1)



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STBY pin applied voltage: 5 V

To hold the pin 1 inflow current to about 750 μA insert a resistor (Rx) of 4.7 kΩ

STBY pin applied voltage: 12 V

To hold the pin 1 inflow current to about 750 μA insert a resistor (Rx) of 14 kΩ (12 kΩ).

STBY pin applied voltage: Other value (Vx)

To hold the pin 1 inflow current to about 750 μA insert a resistor (Rx) of (Vx - 1.5 V)/750 μA.

- If a microcontroller output signal is applied directly, insert a resistor in series and adjust the current to a level optimal for the drive capability of the microcontroller.

2. Input pins (pins 6 and 7)

The input pin voltage is about $2V_{BE}$ (1.4 V).

The input pin impedance is about 30 kΩ.

- Although the recommended value for the input capacitor is 0.22 μF, the starting time can be modified by changing the value of this capacitor. (The time from the point a voltage is applied to the standby pin to the point sound is emitted.)

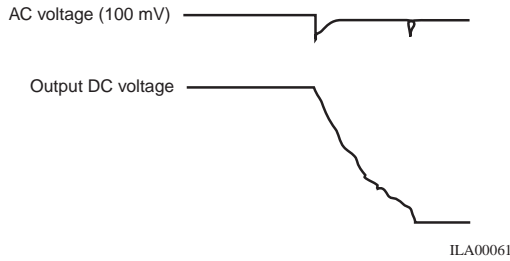
Input capacitor	1.0 μF	2.2 μF	3.3 μF	4.7 μF	10 μF
Starting time (ts)	0.2 s	0.3 s	0.5 s	0.65 s	1.5 s

3. FILTER (decoupling) pin (pin 8)

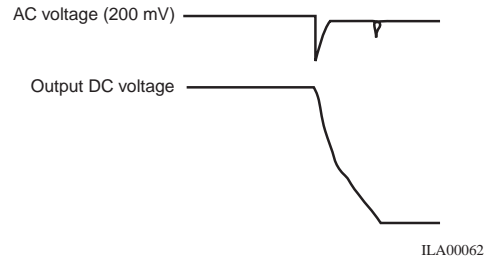
The pin voltage is about 1/2 VCC.

The recommended value for the filter capacitor is 100 μF.

The pulse noise that occurs when the standby pin is set low (power off) will be degraded if a value under 100 μF is used.



Filter capacitor = 100 μF



Filter capacitor = 47 μF

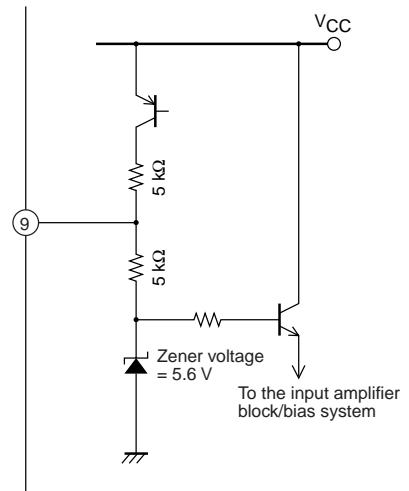
4. P.P (pulse noise) pin (pin 9)

$$\text{Pin 9 pin voltage} \approx \frac{V_{CC} - V_{CE} \text{ (about 0.3 V)} - 5.6 \text{ V}}{2 \text{ k}\Omega} + 5.6 \text{ V}$$

- The recommended value for the P.P capacitor is 4.7 μF.

The pulse noise that occurs when the standby pin is set low (power off) will be degraded if a value under 2.2 μF is used.

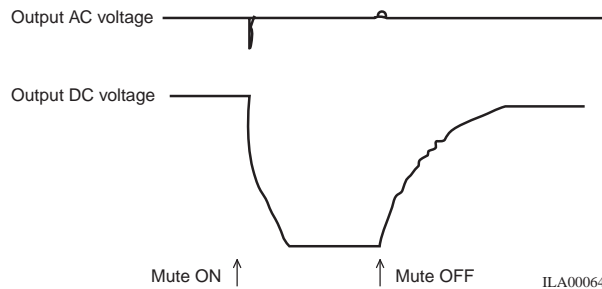
Furthermore, if a value over 10 μF is used, the signal may not be cut off and sound may remain audible when the standby pin is set low (power off).

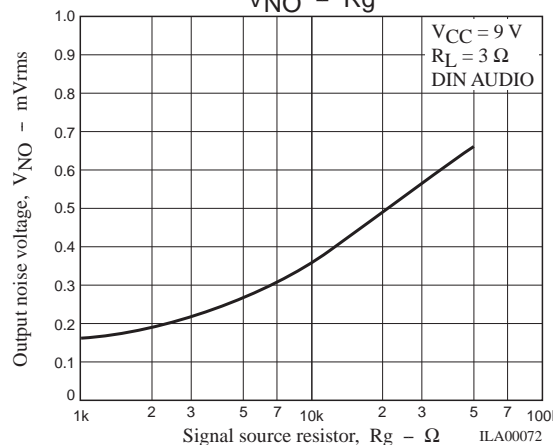
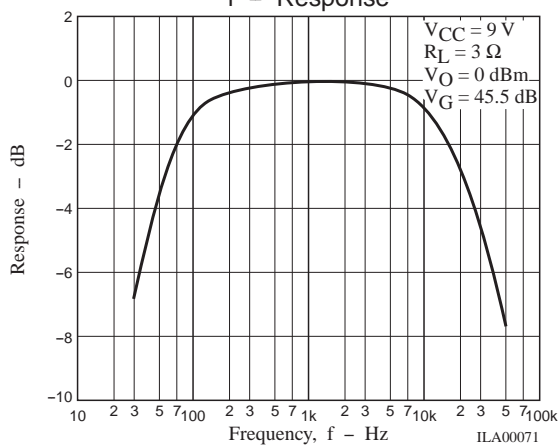
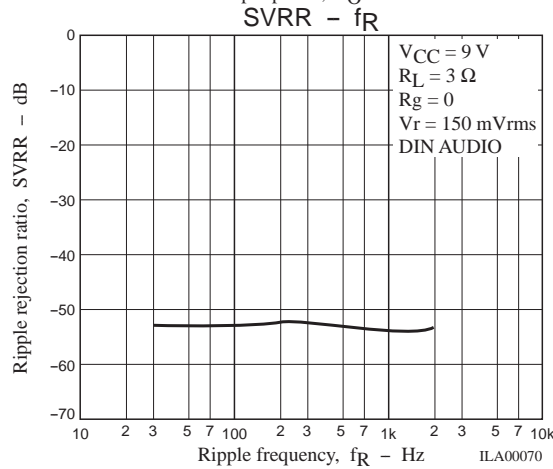
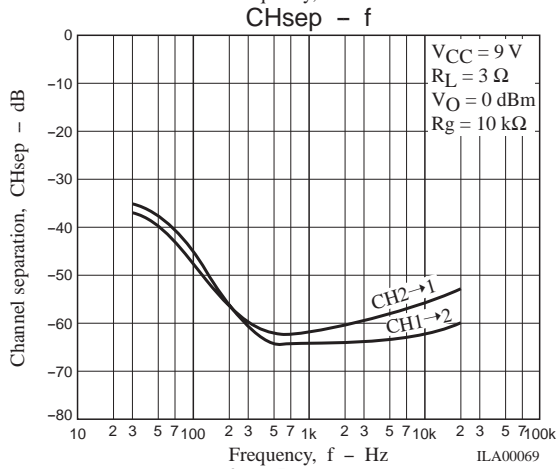
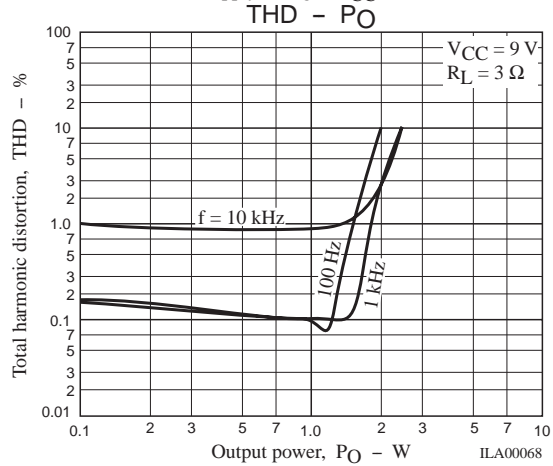
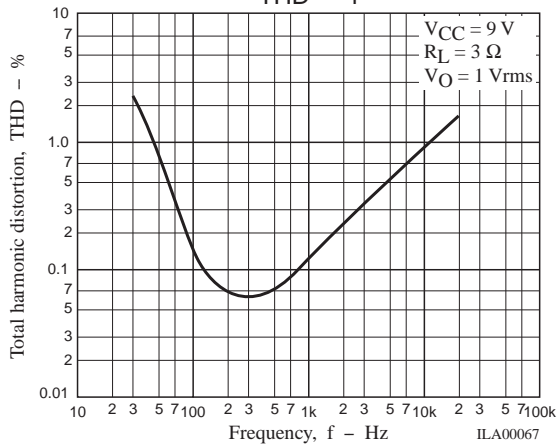
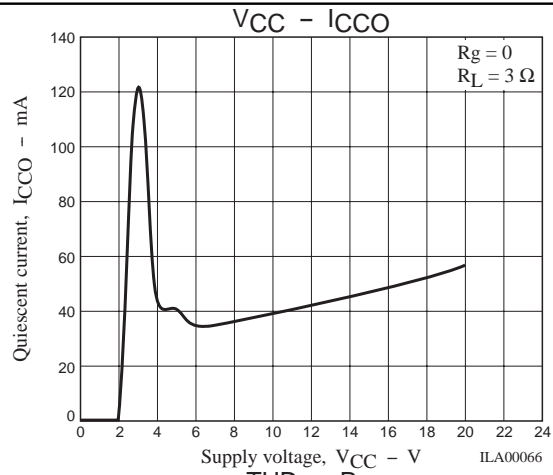
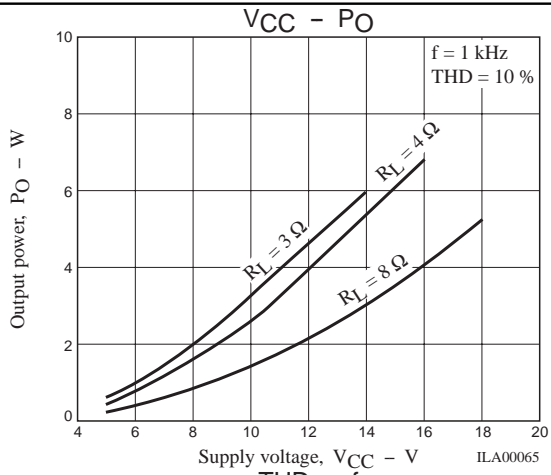


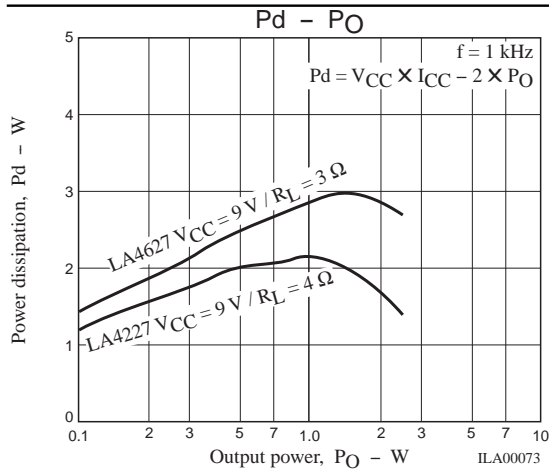
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5. MUTE (Muting)

The output signal can be controlled by shifting the pin 8 (FILTER) level towards ground with a 300 to 500 Ω resistor. However, note that the degree of suppression is reduced if a value of 750 Ω or more is used.







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