Ordering number: EN3848D

Monolithic Linear IC

LA4705

15 W 2-channel BTL AF Power Amplifier for Car Stereos

Overview

The LA4705 is a BTL two-channel power IC for car audio and radio-cassette players developed in pursuit of excellent sound quality. Low-region frequency characteristics have been improved through the use of a new NF capacitorless circuit, and crosstalk which causes ‘‘muddy’’ sound has been reduced by improving both circuit and pattern layout. As a result, the LA4705 provides powerful bass and clear treble. In addition, the LA4705 features on-chip protectors and standby switch.

Features

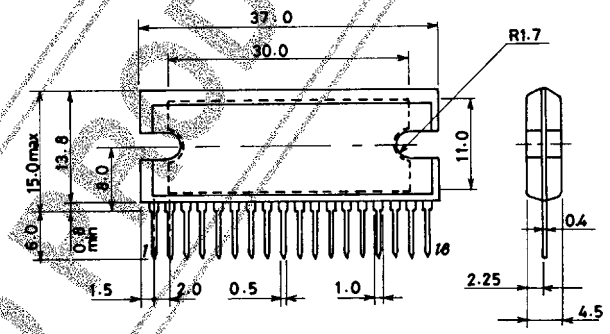
- High power: supports total output of 25 W + 25 W (V_{CC} = 14.4 V, THD = 30%, R_L = 4 Ω)
- Less pop noise
- Designed for excellent sound quality (f_L < 10 Hz, f_H = 130 kHz)
- Any on time settable by external capacitor
- Standby switch circuit on chip (microprocessor supported)
- Various protectors on chip (output-to-ground short/output-to-V_{CC} short/ load short/overvoltage/thermal shutdown circuit)
- NF capacitorless
- Supports R_L = 2 Ω

Package Dimensions

unit: mm

3109-SIP18H

[LA4705]



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Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max 1	No signal, t = 60 s	24	V
	V_{CC} max 2	With signal	18	V
Surge supply voltage	V_{CC} surge	t ≦ 0.2 s, single giant pulse	50	V
Allowable power dissipation	Pd max	Arbitrarily large heat sink	37.5	W
Operating temperature	Topr		–35 to +85	°C
Storage temperature	Tstg		–40 to +150	°C

* Set V_{CC}, R_L in a range that does not exceed Pd max = 37.5 W

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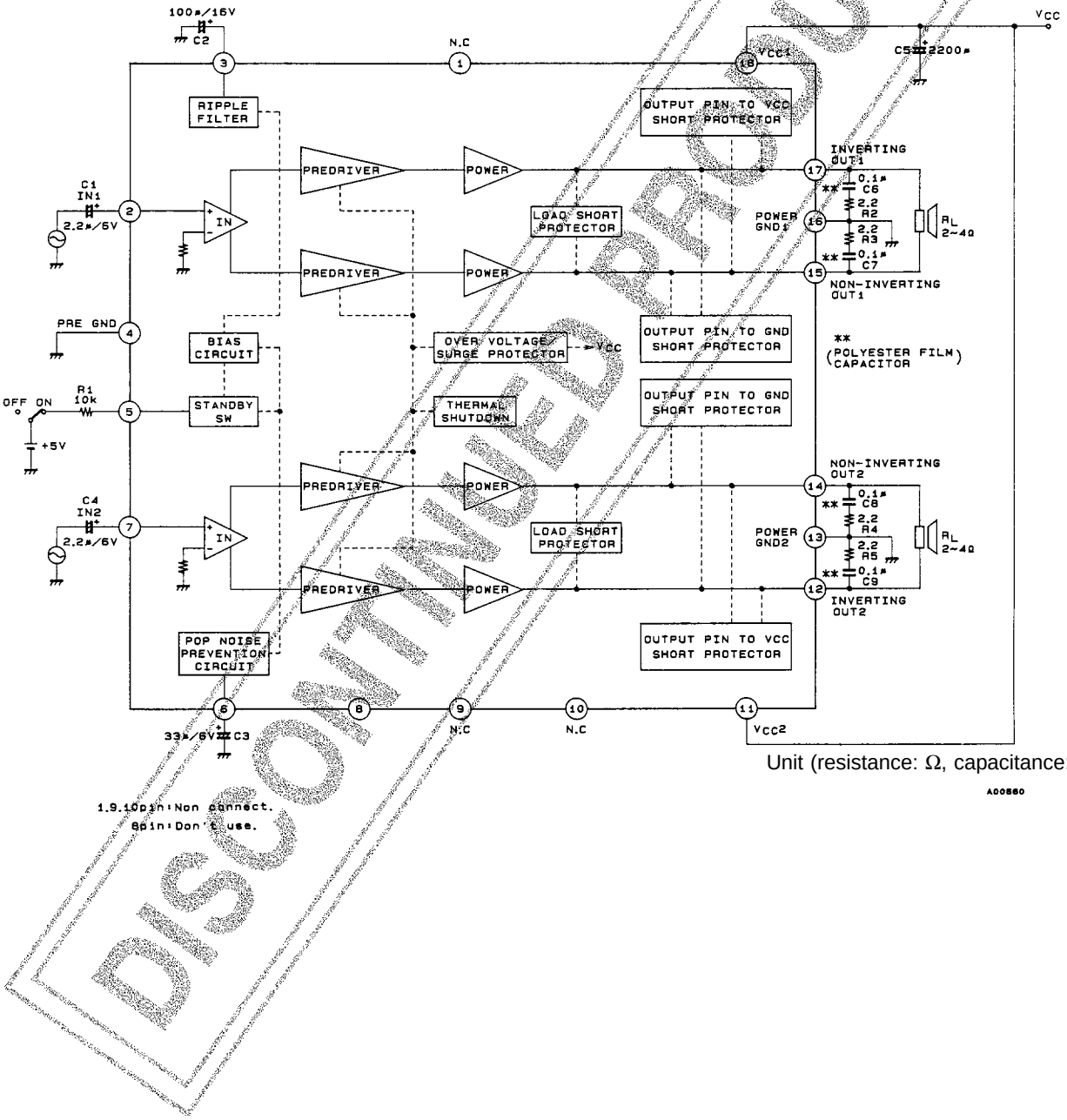
Features and Usage Notes

- Pin 5 is the standby switch pin. The amplifier is turned on by applying approximately 2 V or more to this pin through an external resistor (R1). The current flowing into pin 5 is 500 µA or less.
- Pin 6 is the mute pin. The amplifier on time can be set as desired through C3. By grounding pin 6, the amplifier can implement mute operation. In this case, the recovery time depends on C3.
- In order to prevent damage or degradation which may be caused by abnormally heated IC, the LA4705 has a thermal shutdown protector. Accordingly, in the case of inadequate heat dissipation, the thermal shutdown protector will operate to control the output gradually into attenuation.
- Also be fully careful of handling other protectors built in the LA4705.

Sample Application Circuit



Unit (resistance: Ω, capacitance: F)