

## CS6A4989 Stereo Audio Class A amplifier

### Features and Key Specification

- Minimum external components with integrated high current output MOSFETs
- Number of Output Channel                    2 (Stereo)
- External compensation                         $\beta$  feedback circuit possible
- Output capacitor less push pull topology
- Current Driven Class A                         $I_Q = 26\text{mA}$  (typ.)
- High operating voltage                         $\pm 11\text{V}$  (max.),  $\pm 9\text{V}$  (recom)
- Embedded output load adaptation         $2\ \Omega \leq R_L$   
( $2\ \Omega$  only recom. for low VDD)

### Applications

- Pro Audio
- Headphone amplifier

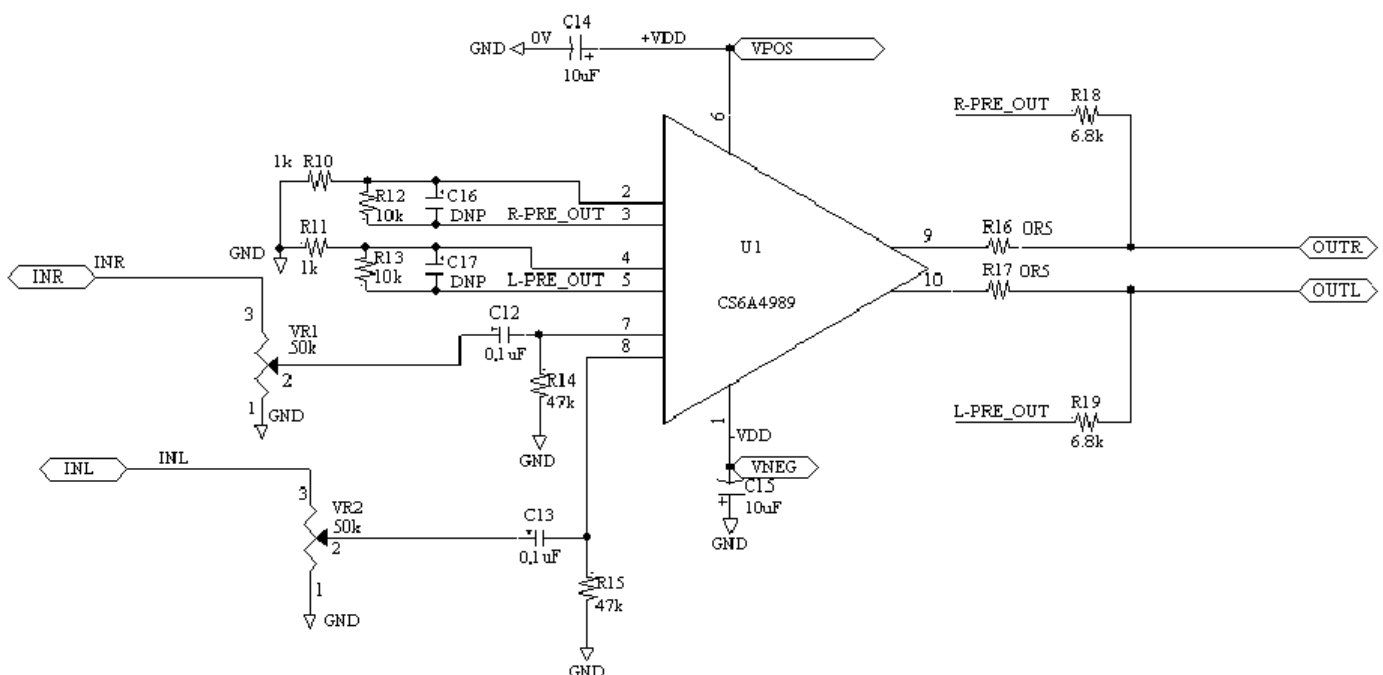
### Available Package

- SIP-10
- RoHS compliance

### General Description

The CS6A4989 is an integrated stereo audio power amplifier in new Class A operation for high fidelity stereo audio amplification with a minimum number of external components. The CS6A4989 can operate with up to  $\pm 11\text{V}$  power supply for high output power. However, to provide adequate voltage headroom to protect the device from breakdown, it is recommended to operate CS6A4989 at  $\pm 9\text{V}$  or lower, to obtain HiFi quality stereo audio with good performance stability. When the amplifier is working with a  $\pm 9\text{V}$  VDD, it can deliver  $4\text{Wrms}$  on a  $8\ \Omega$  speaker in an output capacitor-less amplifier topology that is free from cross-over distortion because of its Class A operation mode. The amplifier only requires a few external components to form the feedback circuit to operate, which also provide the advantage of allowing user to implement  $\beta$  feedback circuits for tonal and offset adjustment. The double current feedback sensing circuit will dynamically bias the CS6A4989 to drive large resistive and capacitive load with minimal power dissipation and without loss in fidelity. Such high performance amplifier not only minimizes the thermal noise problem, it also requires a small size heat sink (or no heat sink at all) and power supply to work with, and thus reducing the whole product size and cost.

### Application Circuit



**Figure 1. Typical Audio Amplifier Application Circuit**

## **IMPORTANT NOTICE**

The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable. Canaan Semiconductor (CS) does not assume any responsibility for use of any circuitry described, no circuit patent licenses are implied. CS reserves the right to make changes to its products or to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current. No liability will be accepted by CS for any consequence of its use.

Customer should obtain the latest storage, soldering and handling information of products from CS before placing orders. No liability will be accepted by CS for any mis-storage, mis-soldering and mis-handling of the products, and the consequence of its use.

A few applications using integrated circuit products may involve potential risks of death, personal injury, or severe property or environmental damage. CS integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life-support applications, devices or systems or other critical applications. Use of CS products in such applications is understood to be fully at the risk of the customer. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

In no event shall CS be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

All content, text, images, data, information and other material ("Content") displayed, available or present on this document, including any trademarks or copyrights, are the property of CS or the designated owner and are protected by applicable intellectual property laws. Customer agree not to infringe upon or dilute any intellectual property of CS, as well as not to remove or modify any trademark, copyright or other proprietary notice appearing on this document. You are not allowed to reproduce, sell, publish, distribute, modify, or display this document or any Content without the prior written permission of CS.