

CS6A4689 Stereo Audio Linear Headphone Amplifier

Features and Key Specification

- Output capacitor less push pull topology
- Integrated high current output MOSFETs
- Output impedance 1Ω (typ.)
- Number of output channel 2 (Stereo)
- External compensation β feedback circuit possible
- Current driven class A $I_Q = 16\text{mA}$ (typ.)
- High operating voltage $\pm 11\text{V}$ (max.), $\pm 9\text{V}$ (recom)
- Embedded output load adaptation $2 \Omega \leq R_L$
(2Ω only recom. for low VDD)

Applications

- Pro Audio
- Headphone amplifier

Available Package

- SIP-10
- RoHS compliance

General Description

The CS6A4689 is an integrated stereo audio power amplifier in current driven Class A operation for high fidelity stereo audio amplification with a minimum number of external components. The CS6A4689 can operate with up to $\pm 11\text{V}$ power supply for high dynamic range output. However, to provide adequate voltage headroom to protect the device from breakdown, it is recommended to operate CS6A4689 at $\pm 9\text{V}$ 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 up to 2W_{rms} on a 16Ω headphone in an output capacitor-less amplifier topology that is free from cross-over distortion because of its current driven Class A operation mode. The amplifier only requires a few external components to form the feedback circuit to operate, which also provides the advantage of allowing user to implement β feedback circuits for tonal and offset adjustment. The double current feedback sensing circuit will bias the linear current driver within CS6A4689 to output enough current to assist the high quality Class A amplifier 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 only requires a small size heat sink (or no heat sink at all), and a low current power supply circuit, which all add up to reduce the whole product size and cost without scarfifying the audio quality.

Application Circuit

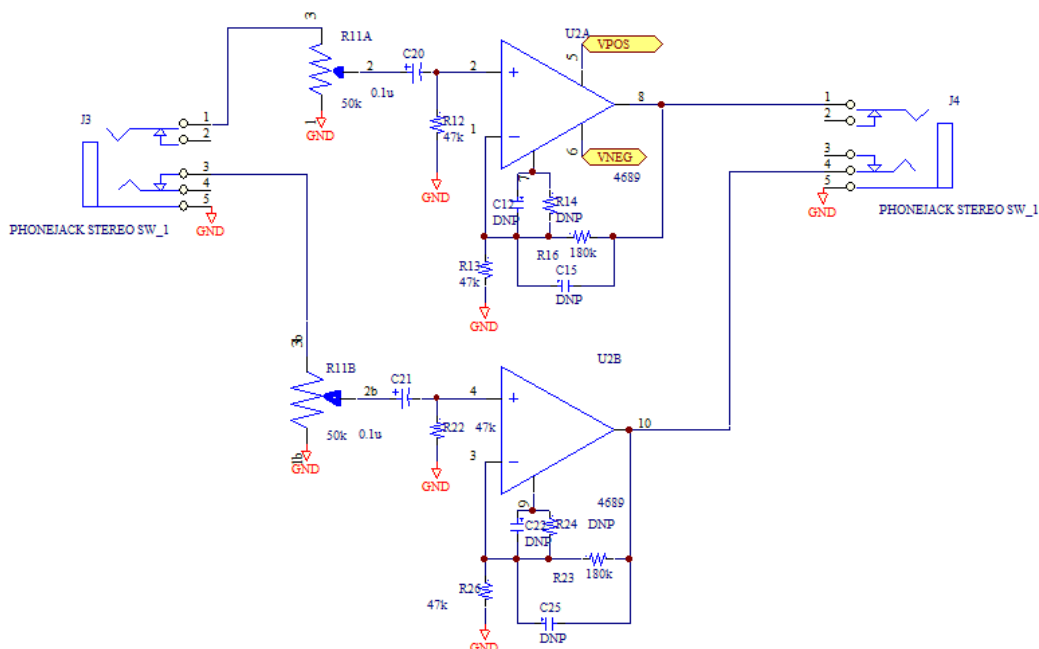


Figure 1. Typical Headphone Amplifier Application Circuit

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