

Test Procedure for the NCP4894 Evaluation Board

ON Semiconductor®



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Equipment Needed:

Sine Wave Generator with Differential Output
Oscilloscope
Power Supply
Digital Voltmeter
Digital Amp Meter

Signal Source Setup:

The NCP4894 requires a differential signal to drive the audio amplifier. This is done using a waveform generator with a differential output signal. Set a sinewave differential signal on the input connector (J2). The middle point is connected to ground while INM and INP signals are in opposite phases. For each signal, $V_{in} = 1 \text{ V}_{rms}$ and $f = 1 \text{ kHz}$.

NCP4894 Test:

- 1) Jumpers J5 & J4 should be open.
- 2) Set the Power Supply to 5 V with a current limit of at least 800 mA.
- 3) Connect Ground and $V_p = 5 \text{ V}$ to power supply connector (J1). There should be no current flowing from the V_p . The measurement should be at maximum 600 nA.
- 4) Connect an 8Ω load (resistance) across the output connector (J3). Close J4 connector. The dc current measurement on V_p line should be around 2.2 mA.
- 5) Connect oscilloscope probes on each output (OUTA & OUTB) and configure the scope for a differential measurement (OUTA-OUTB).
- 6) Connect the differential signal from the waveform generator to the differential input connector J2.
- 7) Measure (OUTA-OUTB), you should see a 2 V_{rms} output signal with a "perfect 1 kHz sinewave". That is to say no clipping at the minimum and maximum of the sinewave.

- 8) Increase input amplitude of differential waveform generator to 1.4 Vrms. Verify the voltage seen by the load should be 2.8 Vrms with no clipping. Move the input from 1.4 Vrms to 1.5 Vrms, the output voltage is clipping somewhere. Observe when this clipping occurs and record the output voltage before it starts. It should be at least 2.83 Vrms.
- 9) Remove J4 jumper. The dc current measurement on Vp line should be back to zero (max 600 nA)