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# NCP2993FCT2GEVB

# NCP2993FCT2 Evaluation Board User's Manual

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## EVAL BOARD USER'S MANUAL

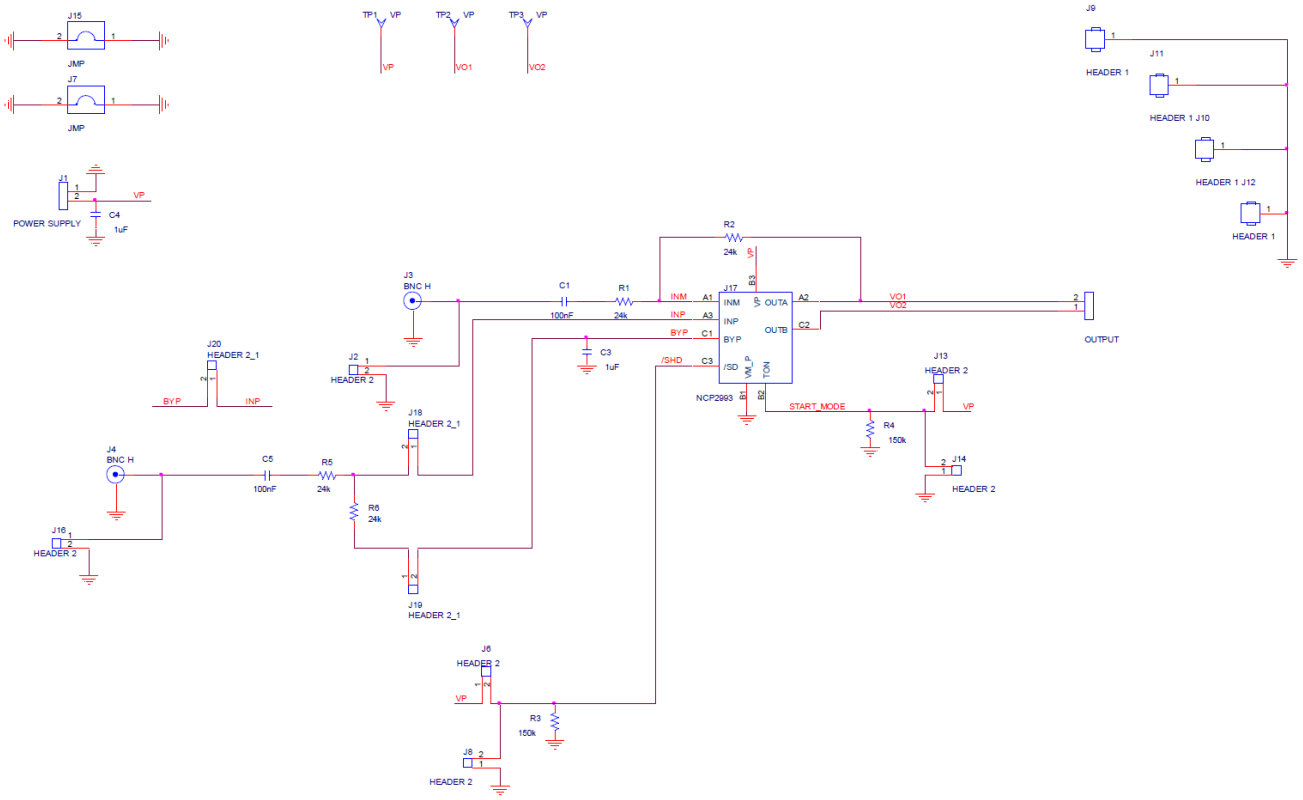


**Figure 1. NCP2993FCT2GEVB Board Schematic**

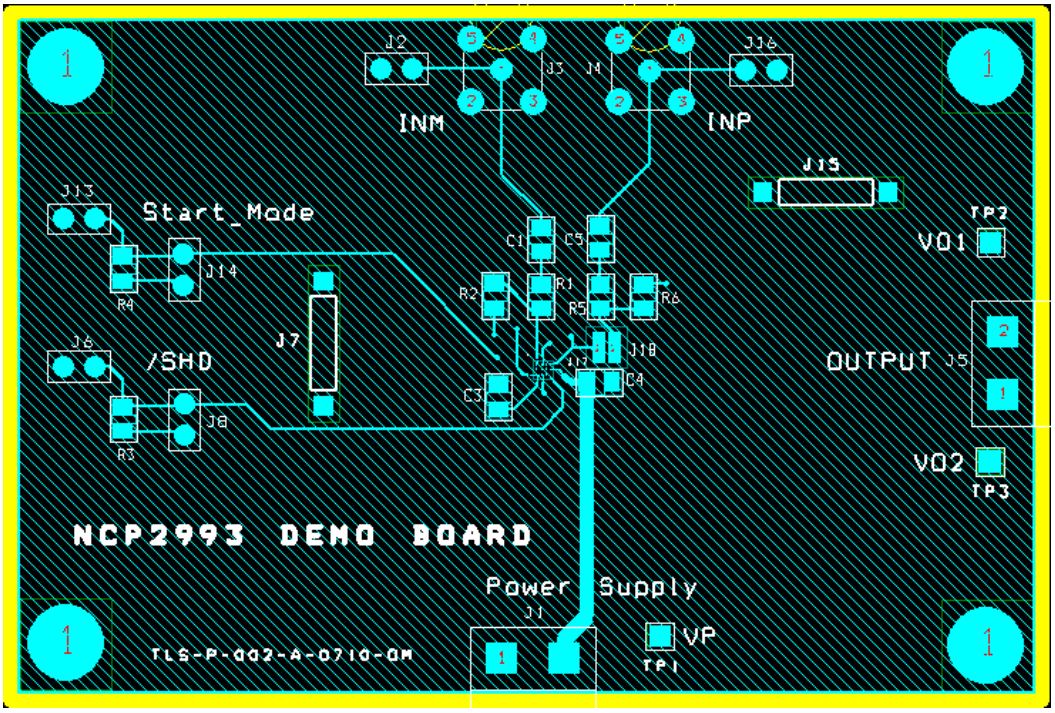


Figure 2. NCP2993FCT2GEVB Board Layout (Top View)

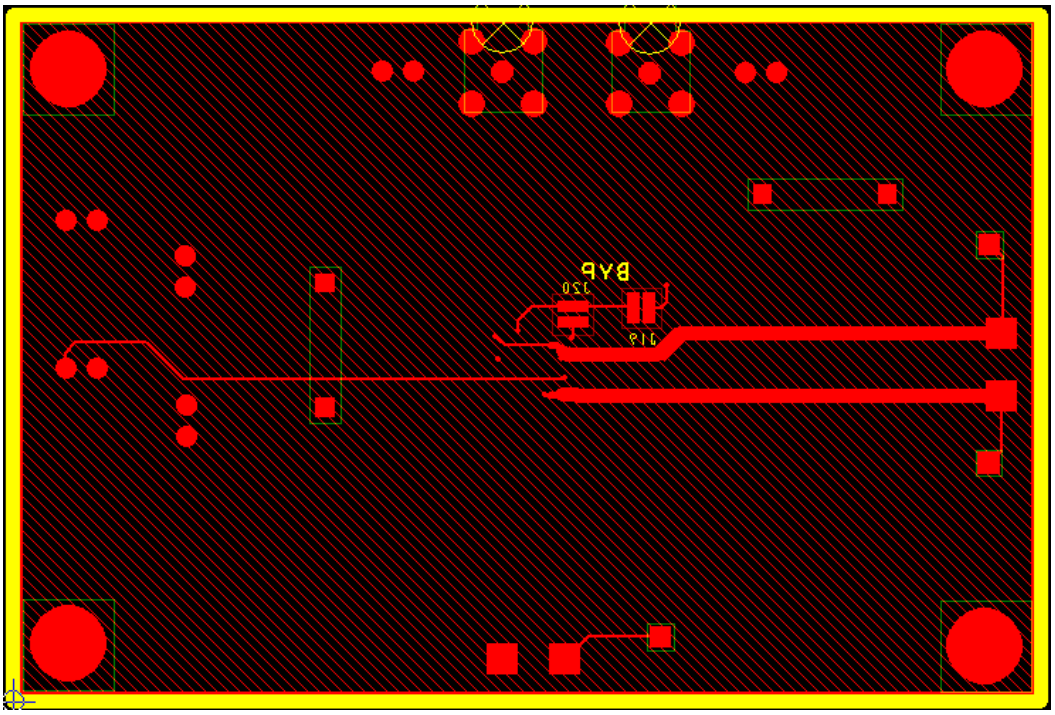

Figure 3. NCP2993FCT2GEVB Board Layout (Bottom View)

**Table 1. BILL OF MATERIALS**

| Item | Part Description | Ref. | PCB Footprint | Manufacturer | Manufacturer Reference |
|---|---|---|---|---|---|
| 1 | NCP2993FCT2 Audio Amplifier | | | ON Semiconductor | NCP2993FCT2 |
| 2 | SMD Resistor 24KΩ | R1, R2, R5, R6 | 0805 | Panasonic | ERJ−6GEY203V |
| 3 | SMD Resistor 150KΩ | R3, R4 | 0805 | Panasonic | ERJ−6GEY203V |
| 4 | Ceramic Capacitor 100 nF 16 V X5R | C1, C5 | 0805 | Murata | GRM21BR71E104KA01 |
| 5 | Ceramic Capacitor 1 μF 16 V X5R | C3, C4 | 0805 | Murata | GRM216R61C105KA88 |
| 6 | Jumper Header Vertical Mount, 2 positions, 100mils | J2, J6, J8, J13, J14, J16 | 100 mils | Tyco Electronics / AMP | 5−826629−0 |
| 7 | I/O Connector, 2 positions | J1, J5 | 200 mils | Phoenix Contact | 1757242 |
| 8 | Jumper Connector | J7, J15 | 400 mils | Harwin | D3082−B01 |
| 9 | Not Mounted | J3, J4 | | | |

## SINGLE−ENDED OR DIFFERENTIAL CONFIGURATION

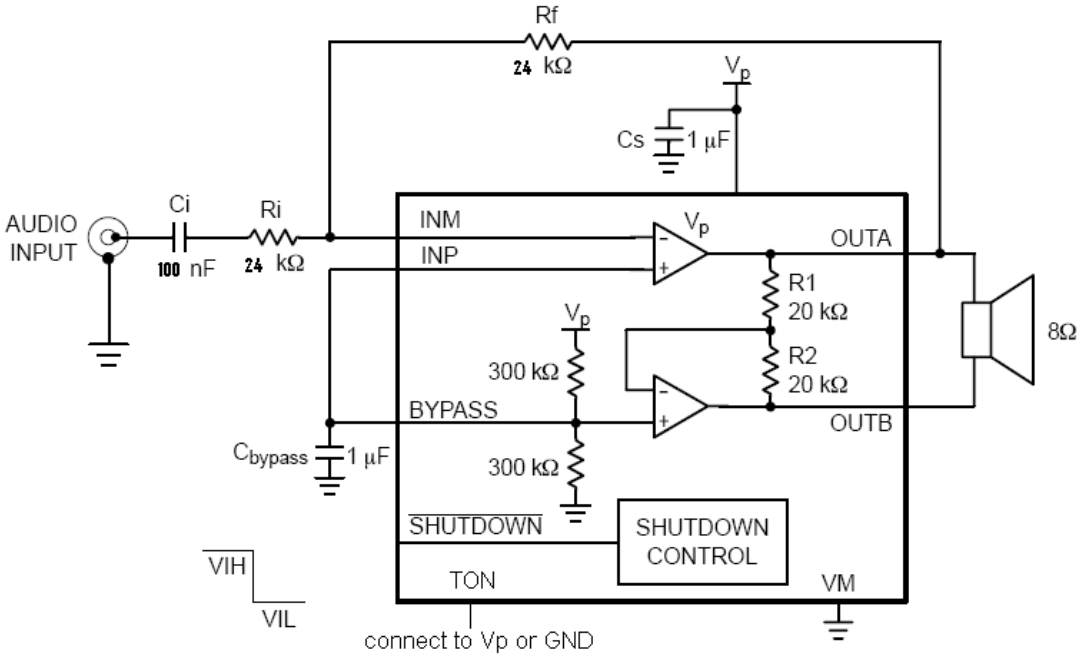


**Figure 4. Single−ended Configuration**

Connect J20, disconnect J18 and J19 to use the evaluation board in Single-ended configuration.

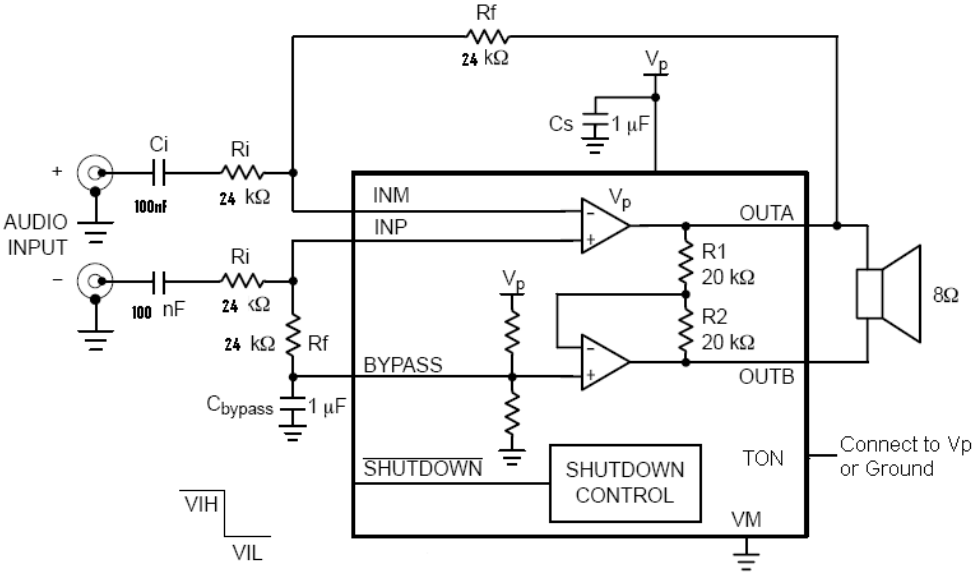


**Figure 5. Differential Configuration**

Connect J18 and J19, disconnect J20 to use the evaluation board in Differential configuration.

# NCP2993FCT2GEVB

## NCP2993FCT2 TEST PROCEDURE

**Output Power:**

1. Set Vp = 5 V to power supply connector (J1).
2. Set an 8 Ω load (resistance) on the output connector (J5).
3. With the function generator, set a single ended signal at 1 kHz and 0.5 Vrms input signal on the negative input. Apply this signal either on J2 or J3 connectors. As R1=R2=24k, VO1 will see 0.5 Vrms. As VO1 signal is inverted by the second amplifier, VO2 will also see 0.5 Vrms with 180° delay. Thus, the load between VO1 and VO2 will see 1 Vrms.
4. Place 2 oscilloscope probes on the output (differential measurement). You should get 1 Vrms output signal with a “perfect sine wave”. That is to say no clipping at the minima and maxima of the sine wave.

**Quiescent Current:**

Check the quiescent current. Place an 8 Ω load, no input signal. Vp set to 5 V and J6 closed. You should measure around 1.9 mA.



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