

NCP2993FCT2GEVB

NCP2993FCT2 Evaluation Board User's Manual



ON Semiconductor®

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EVAL BOARD USER'S MANUAL

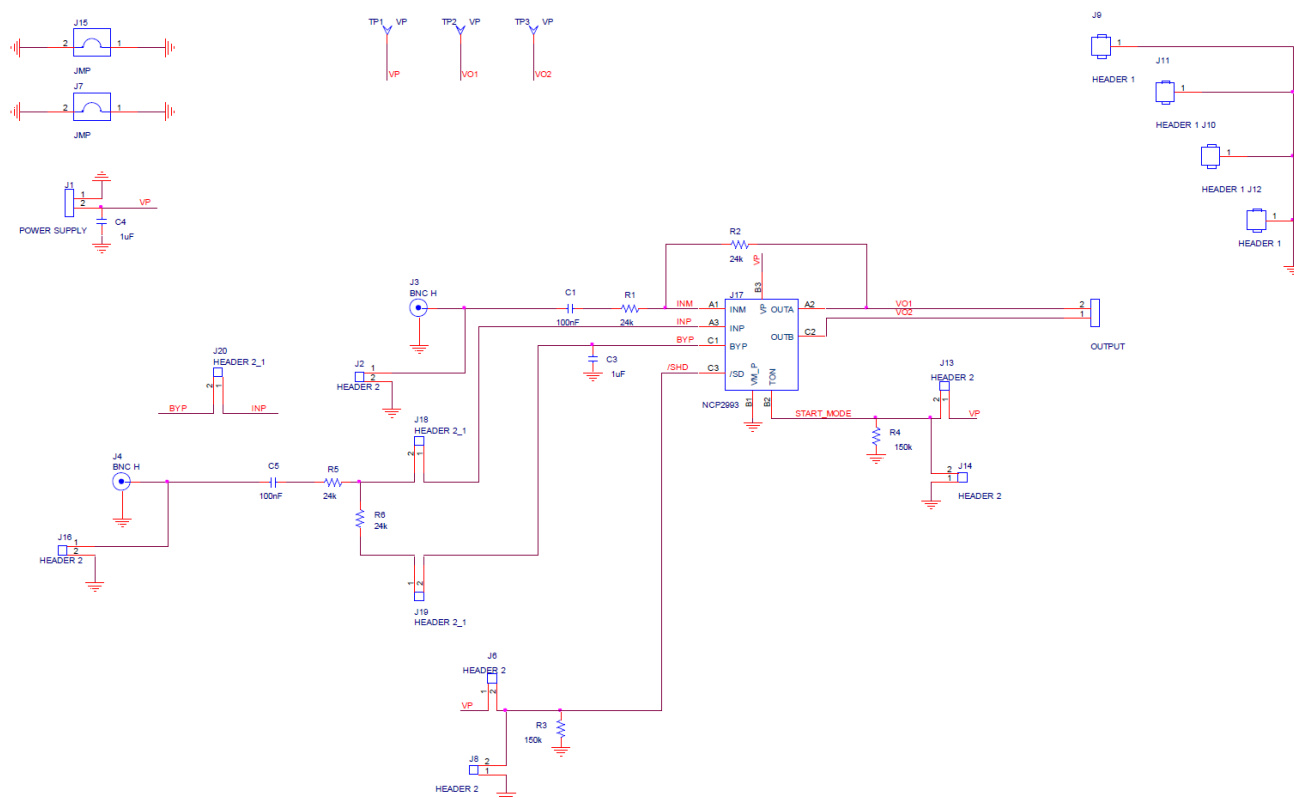


Figure 1. NCP2993FCT2GEVB Board Schematic

NCP2993FCT2GEVB

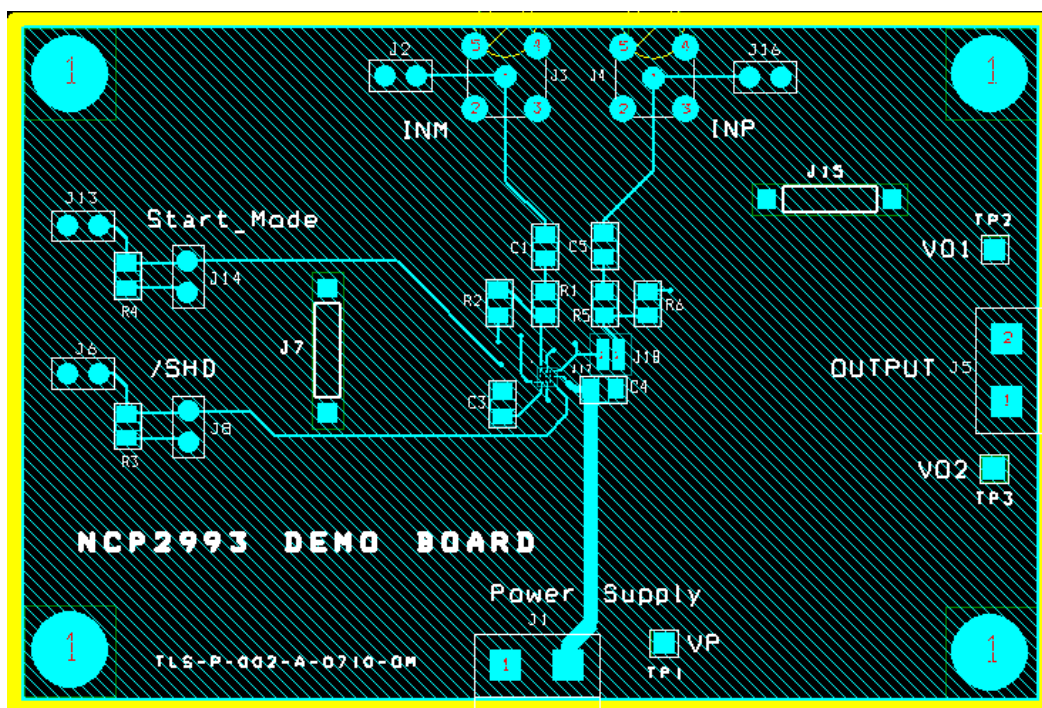


Figure 2. NCP2993FCT2GEVB Board Layout (Top View)

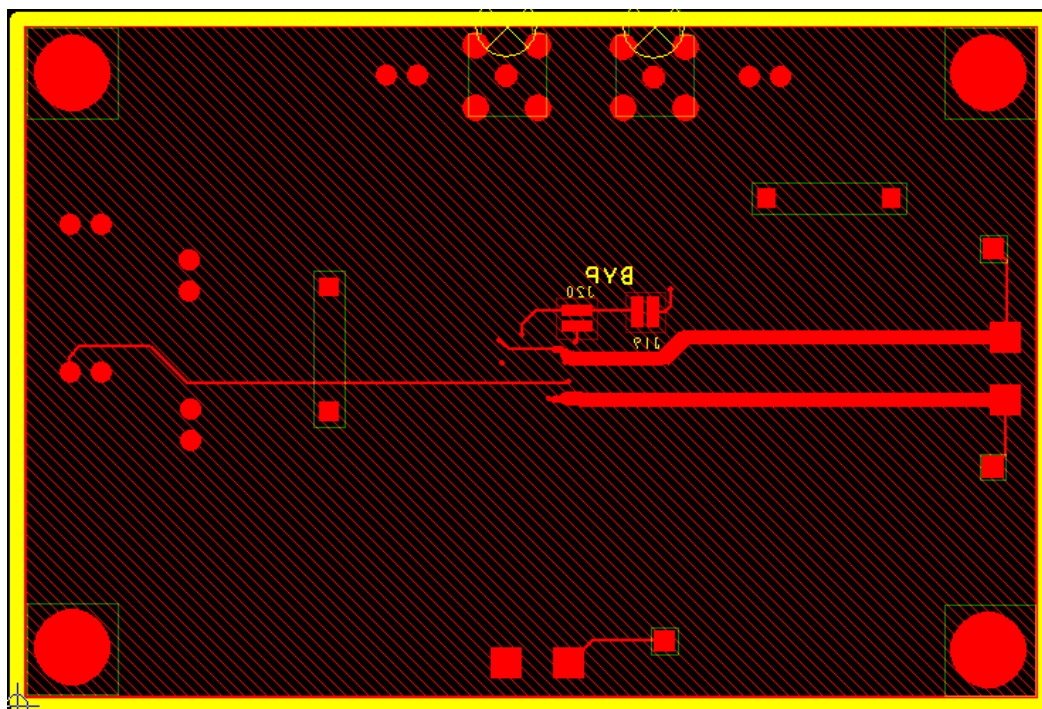


Figure 3. NCP2993FCT2GEVB Board Layout (Bottom View)

NCP2993FCT2GEVB

Table 1. BILL OF MATERIALS

Item	Part Description	Ref.	PCB Footprint	Manufacturer	Manufacturer Reference
1	NCP2993FCT2 Audio Amplifier			ON Semiconductor	NCP2993FCT2
2	SMD Resistor 24K Ω	R1, R2, R5, R6	0805	Panasonic	ERJ-6GEY203V
3	SMD Resistor 150K Ω	R3, R4	0805	Panasonic	ERJ-6GEY203V
4	Ceramic Capacitor 100 nF 16 V X5R	C1, C5	0805	Murata	GRM21BR71E104KA01
5	Ceramic Capacitor 1 μ F 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			

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SINGLE-ENDED OR DIFFERENTIAL CONFIGURATION

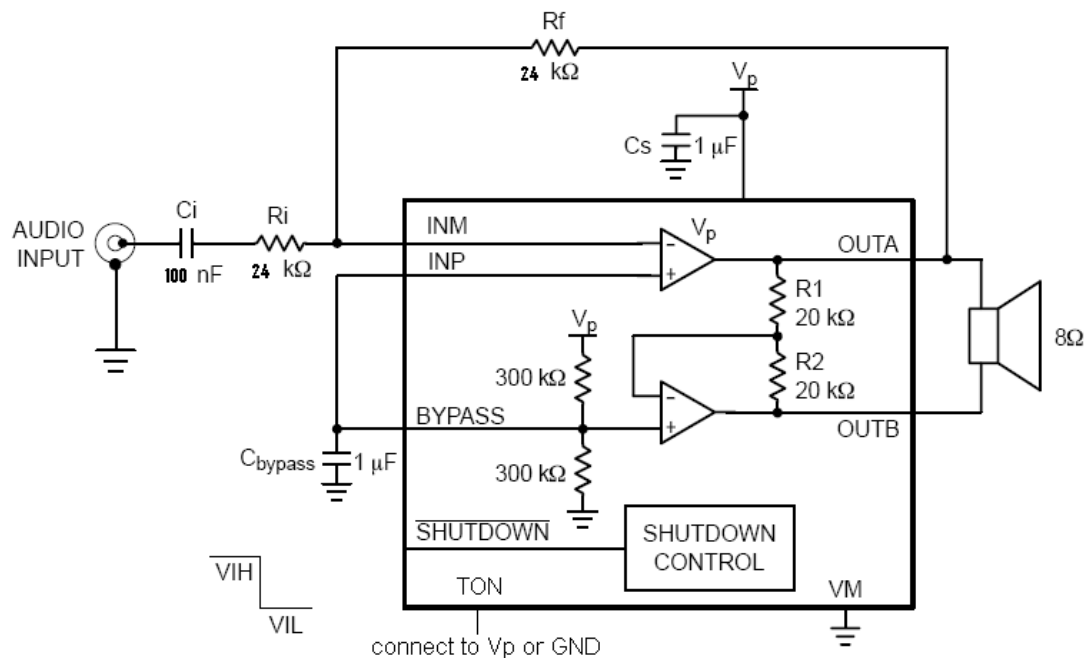


Figure 4. Single-ended Configuration

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

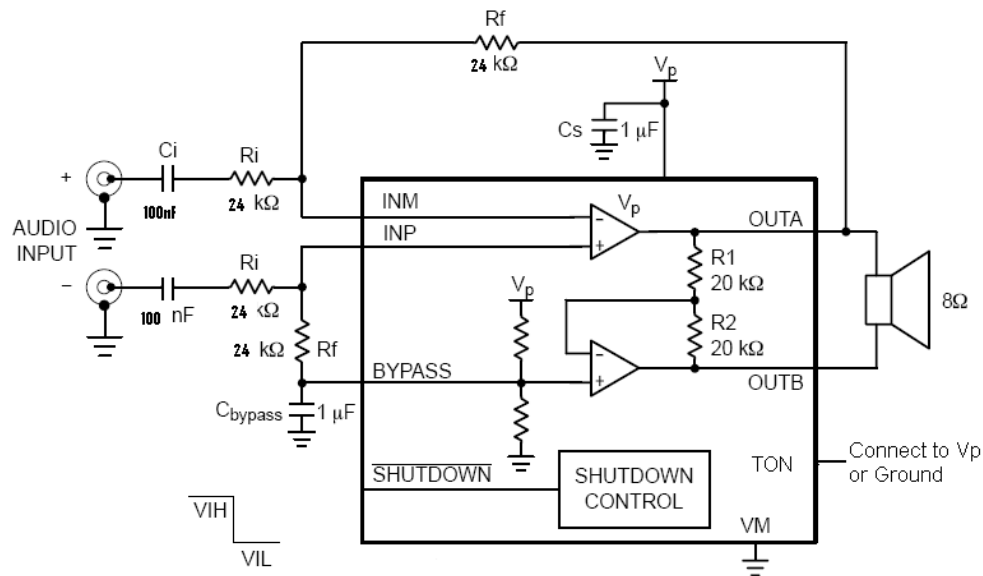


Figure 5. Differential Configuration

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

NCP2993FCT2GEVB

NCP2993FCT2 TEST PROCEDURE

Output Power:

1. Set $V_p = 5\text{ V}$ to power supply connector (J1).
2. Set an $8\ \Omega$ 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 $R_1=R_2=24\text{k}$, 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 $8\ \Omega$ load, no input signal. V_p set to 5 V and J6 closed. You should measure around 1.9 mA.

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