



ABSTRACT

The DEM-OPA-DSN-EVM is a demonstration fixture that helps designers evaluate the operation and performance of TI's high speed, wide bandwidth operational amplifiers. This unpopulated PC board is compatible with dual channel amplifier products offered in the 10-pin SON (DSN) package. The board is designed to accommodate multiple amplifier configurations to allow for maximum flexibility and ease of use.

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Trademarks

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1 Features

- Configurable for single or split-supply operation
- Includes optional termination resistors on inputs and outputs for easy use with 50-Ω test equipment
- Feedback network components for inverting and non-inverting configurations
- Standard SMA footprints for input and output signal connections
- High speed optimized layout to reduce parasitic effects

2 Power Connections

The DEM-OPA-DSN-EVM is equipped with test point connectors for easy connection of power. The positive supply input is red and is labeled V+. The negative supply input is yellow and is labeled V-. The ground is black and is labeled GND.

2.1 Split-Supply Operation

To operate as split supply, apply the positive-supply voltage to V+, negative-supply voltage to V-, and the ground reference from supply to GND.

2.2 Single Supply Operation

To operate as single supply, connect both the V- connector and the GND connector to ground and apply the positive-supply voltage to V+. Inputs and outputs must be biased per the specifications listed in the data sheet for proper operation.

3 Input and Output Connections

The DEM-OPA-DSN-EVM is equipped with footprints for SMA connectors for connection of signal generators and analysis equipment. For best results, the input and output to the EVM should be terminated to 50-Ω impedances and signals must be routed to and from the EVM with cables having 50-Ω characteristic impedance. INA+ (J2) and INB+ (J5) include termination resistors R5 and R15 respectively for non-inverting configurations. For inverting configurations an resistor network (R1, R2, and R3 for amplifier A; R11, R12, and R13 for amplifier B) is included to match the input impedance while maintaining a desired gain resistor value. OUTA (J3) and OUTB (J6) are the output connectors for amplifiers A and B respectively. A resistor network (R8, R9, and R10 for amplifier A; R18, R19, and R20 for amplifier B) at the output of the amplifiers can be used to convert the signal to 50-Ω single-ended source while providing a larger total load to the amplifier when terminated with 50-Ω load at J3 and J6.

4 Schematic

Figure 4-1 shows an example non-inverting configuration for the DEM-OPA-DSN-EVM using the OPA2863A. For details on configuring a specific amplifier for use with the evaluation module, please refer to the selected device's data sheet.

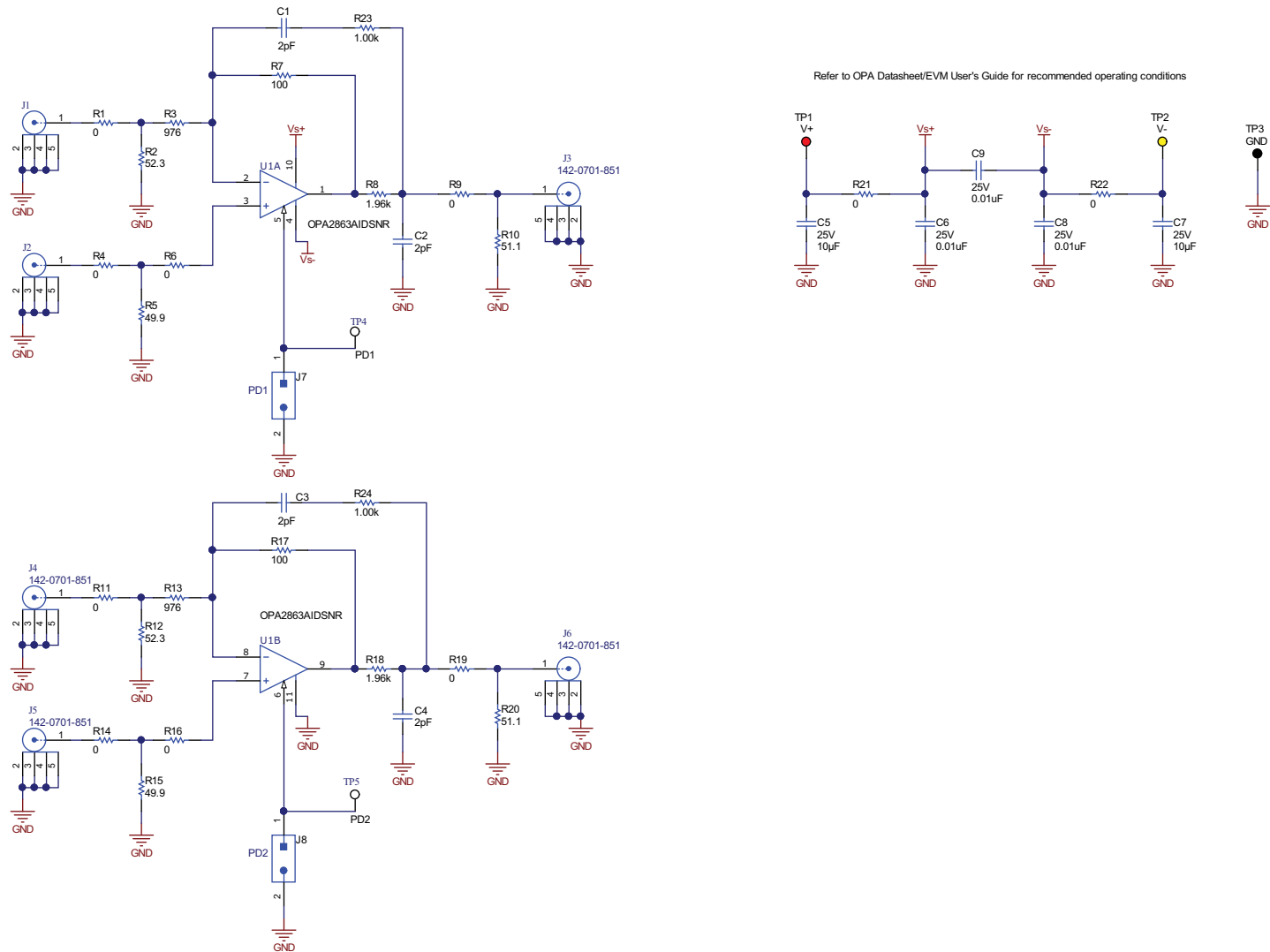


Figure 4-1. DEM-OPA-DSN-EVM Schematic

5 Layout

Figure 5-1 through Figure 5-4 show the respective PCB layers from top to bottom.

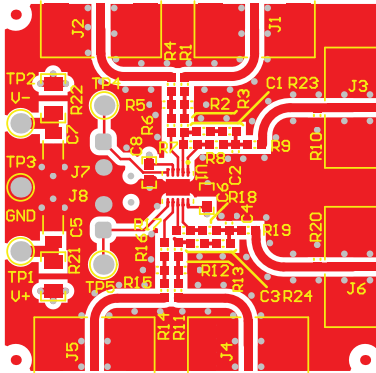


Figure 5-1. DEM-OPA-DSN-EVM Top Layers

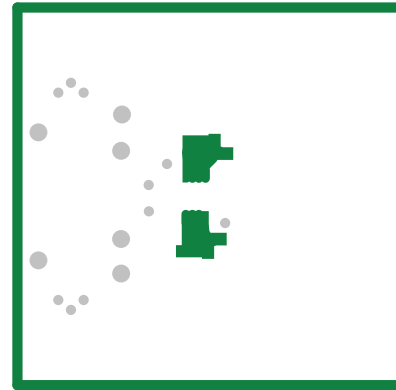


Figure 5-2. DEM-OPA-DSN-EVM Ground Layer (Layer 2)

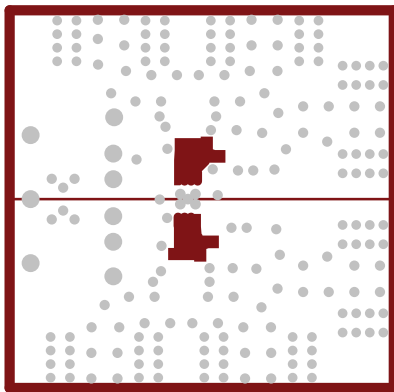


Figure 5-3. DEM-OPA-DSN-EVM Power Layer (Layer 3)

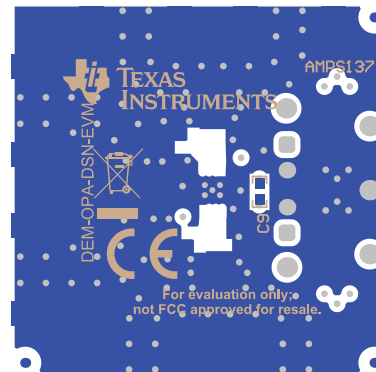


Figure 5-4. DEM-OPA-DSN-EVM Bottom Layers

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