

AD8476 Differential Amplifier Evaluation Board for 8-Lead MSOP Package

FEATURES

- Enables quick evaluation of **AD8476**
- Enables quick breadboarding/prototyping
- Allows for various circuit configurations
- Through-hole connector provisions
- Easy connection to test equipment and other circuits
- RoHS compliant

GENERAL DESCRIPTION

The **AD8476-EVALZ** makes it easy for designers to obtain quick performance results for their particular application circuit using the **AD8476** low power, fully-differential $G = 1$ amplifier.

The board layout is flexible enough to allow for different circuit configurations, including options for single-ended or differential inputs, and space for output loading and filtering. Most resistors and capacitors use 0603 packages.

The 4-layer evaluation board accepts through-hole SMA or SMB connectors on inputs, outputs, and VO_{CM}, which allows an efficient and quick connection to test equipment or other circuitry. There is also room for 2-pin BERG headers at the inputs and outputs for connection to differential probes, and test points at supply and ground pins. The board ground plane, component placement, and power supply bypassing have been optimized for maximum circuit flexibility and performance.

Figure 1 and Figure 2 show the component side and circuit side of the evaluation board. Figure 3 shows the evaluation board schematic.

Figure 4 shows the evaluation board assembly drawing. The metal layout pattern for connecting the board to the op amp and to the supporting circuitry is shown in Figure 5 and Figure 6.

The board accommodates the **AD8476** differential amplifier in an 8-lead MSOP. The **AD8476** data sheet for this device should be consulted in conjunction with this evaluation board user guide.

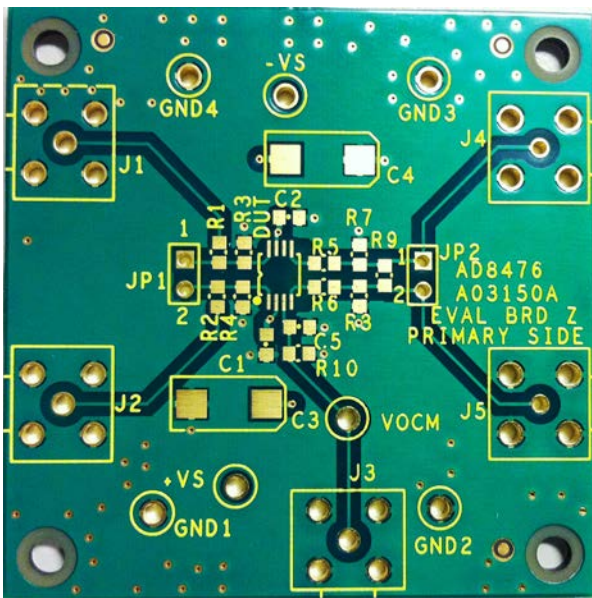


Figure 1. Component Side (MSOP)



Figure 2. Circuit Side (MSOP)

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REVISION HISTORY

5/12—Revision 0: Initial Version

AD8476 EVALUATION BOARD SCHEMATIC

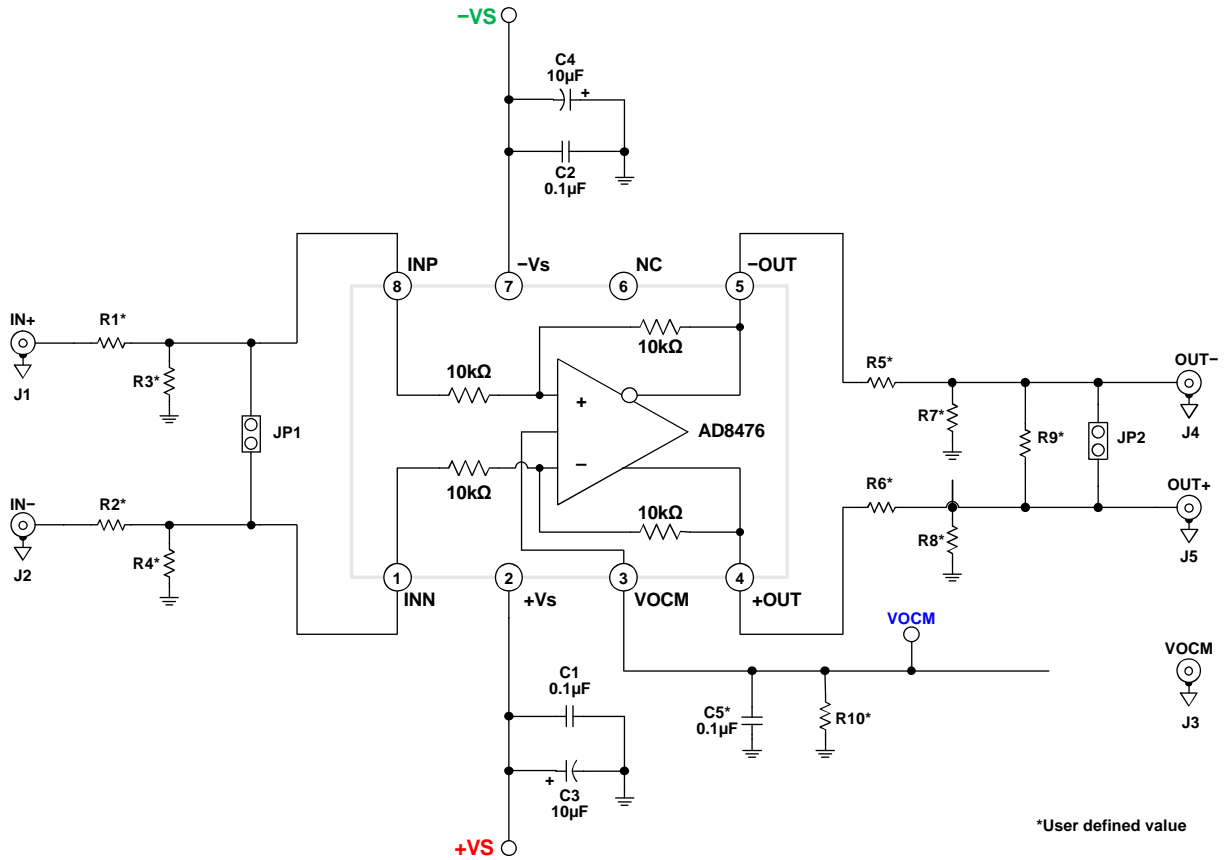


Figure 3. AD8476 Evaluation Board Schematic

10776-003

EVALUATION BOARD HARDWARE

POWER SUPPLIES

Power is applied to the board through test pins $+V_S$ and $-V_S$ (see Figure 3). The board accommodates single or dual supplies. For single-supply operation, connect the negative supply to the ground plane.

It is very important that the power supply pins of the device under test (DUT) have a broadband decoupling circuitry. The board layout facilitates this with footprints for a 0603 ceramic capacitor (C1 and C2) on each supply. Bulk decoupling is provided by C3 and C4; 10 μ F tantalum capacitors are recommended.

VOCM INPUT

To set the output common-mode voltage of the [AD8476](#), an external voltage can be applied to VOCM via J3 (referenced to the ground plane of the board) or the VOCM test point. In ADC driving applications, it is convenient to apply the ADC dc reference voltage output directly to J3. A 0.1 μ F capacitor (C5) is used in normal applications to provide bypassing for the dc voltage applied to the VOCM pin.

VOCM can also be left unconnected. The [AD8476](#) internally sets the output common-mode to mid-supply.

SMB INPUT/OUTPUT CONNECTORS

The inputs and outputs have through-hole SMB connector footprints (which are compatible with most SMA connector footprints) for convenient connection to coaxial cables. The recommended connector type is Johnson Components™, Part Number 131-0701-371 (jack) and 131-1801-371 (plug), or equivalent.

EVALUATION BOARD LAYOUT

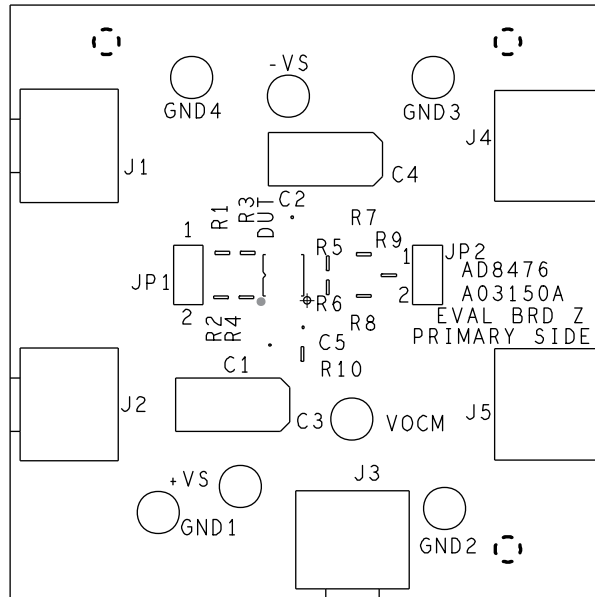


Figure 4. Assembly Drawing Component Side

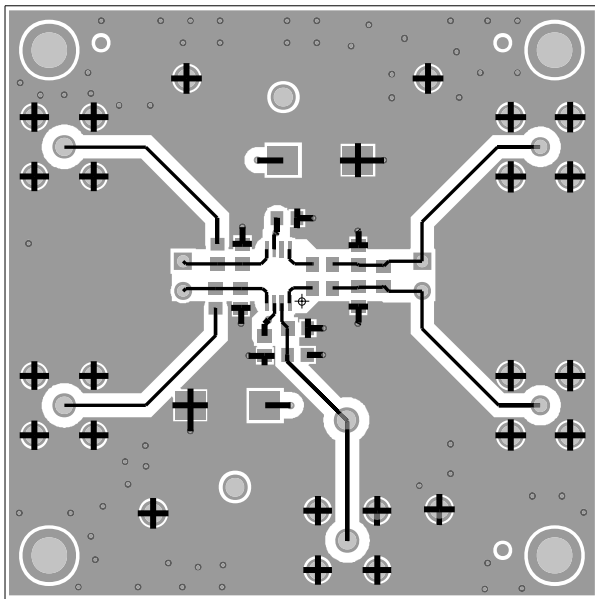


Figure 5. Component Side Metallization (MSOP)

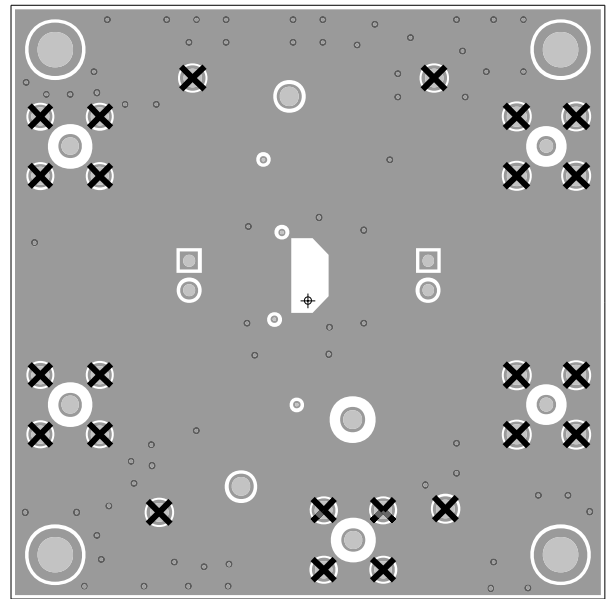


Figure 6. Circuit Side Metallization (MSOP)

ORDERING INFORMATION**BILL OF MATERIALS**

Table 1.

| Qty | Reference Designator | Package | Description |
|-----|------------------------------|--------------|--------------------------------------|
| 2 | C3, C4 | C7343 | 10 μ F capacitor |
| 2 | C1, C2 | C0603 | Capacitor, 0.1 μ F |
| 5 | J1 to J5 | SMB PCM | SMB connector |
| 9 | R1 to R12 | R0603 | Resistor, user defined value |
| 7 | +VS, -VS, VOVM, GND1 to GND4 | TP1 | Test point |
| 2 | JP1, JP2 | 2-pin header | 2-pin Berg II 0.100" straight header |
| 1 | DUT1 | 8-lead MSOP | Device under test |
| 1 | | | PC board |

RELATED LINKS

Table 2.

| Resource | Description |
|------------------------|---|
| AD8476 | Product page, low power, unity gain fully differential amplifier and ADC driver |

NOTES

NOTES

**ESD Caution**

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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