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Evaluation Board for Single, High Speed Operational Amplifiers (8-Lead SOIC with Dedicated Feedback Pin and Exposed Paddle)

FEATURES

Enables quick breadboarding/prototyping
User-defined circuit configuration
Edge-mounted SMA connector provisions
Easy connection to test equipment and other circuits

GENERAL DESCRIPTION

The 8-lead standard small outline package (SOIC), with a dedicated feedback pin and an exposed paddle, evaluation board is designed to aid in the evaluation of single, high speed operational amplifiers. The evaluation board is a bare board (that is, there are no components soldered to the board) that enables users to quickly prototype a variety of operational amplifier circuits, which minimizes risk and reduces time to market. The evaluation board supports any of the Analog Devices, Inc., single, high speed operational amplifiers in an 8-lead SOIC package with a dedicated feedback pin and an exposed paddle.

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

The 4-layer evaluation board accepts edge-mounted Subminiature Version A (SMA) connectors on both inputs and outputs, which allows efficient and quick connection to test equipment or other circuitry.

The board ground plane, component placement, and power supply bypassing are optimized for maximum circuit flexibility and performance. The evaluation board uses a variety of surface-mount technology (SMT) component case sizes: 0402, 0508, 0603, and 7343.

Figure 4 and Figure 6 show the evaluation board assembly drawings. The metal layout pattern for connecting the board to the op amp and to the supporting circuitry is shown in Figure 5 and Figure 7.

EVALUATION BOARD COMPONENT SIDE AND CIRCUIT SIDE DIAGRAMS

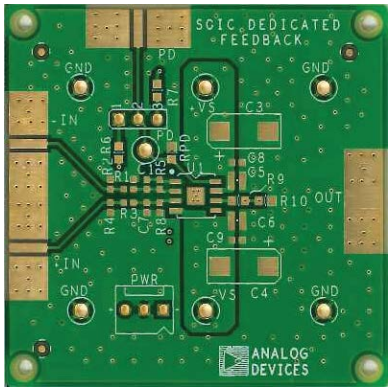

Figure 1. Component Side of the Evaluation Board

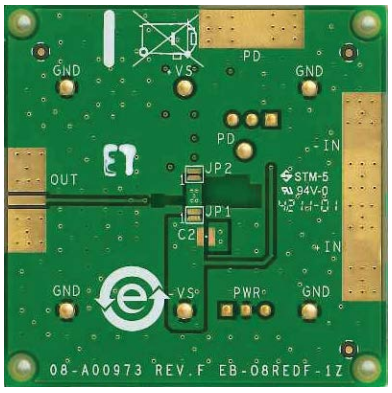

Figure 2. Circuit Side of the Evaluation Board

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REVISION HISTORY

12/12—Rev. A to Rev. B

Changes to General Description, Figure 1, and Figure 2 1
Changes to Figure 4 to Figure 7 4

3/10—Rev. 0 to Rev. A

Changed EB-O8RE-1Z to EB-O8REDF-1Z ..... Throughout
Added Noninverting Configuration Section 5
Added Ordering Information Section 6

2/10—Revision 0: Initial Version

EVALUATION BOARD SCHEMATIC, ASSEMBLY DRAWINGS, AND BOARD LAYOUTS

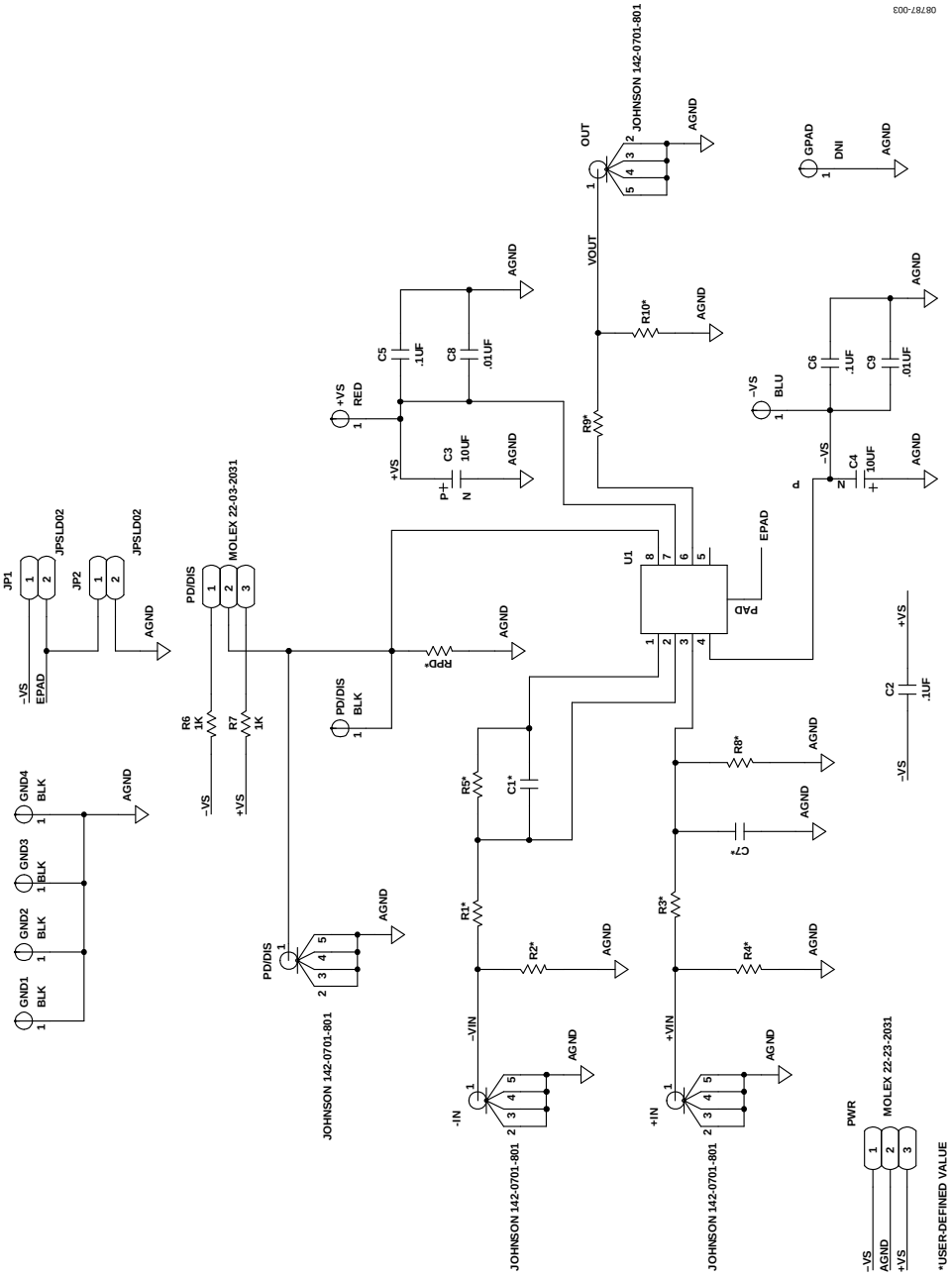

Figure 3. Evaluation Board Schematic

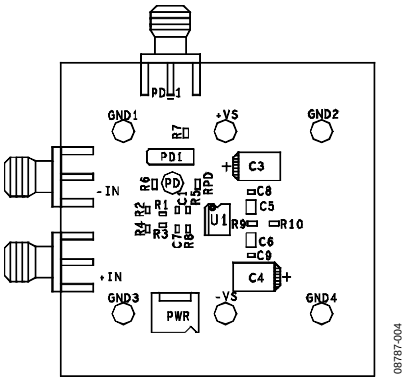

Figure 4. Board Assembly Drawing, Component Side

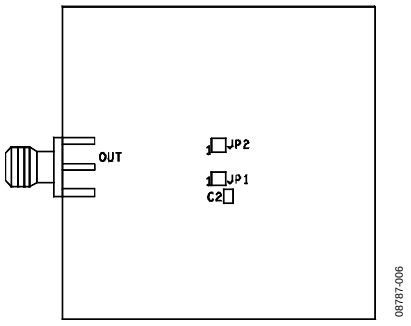

Figure 6. Board Assembly Drawing, Circuit Side

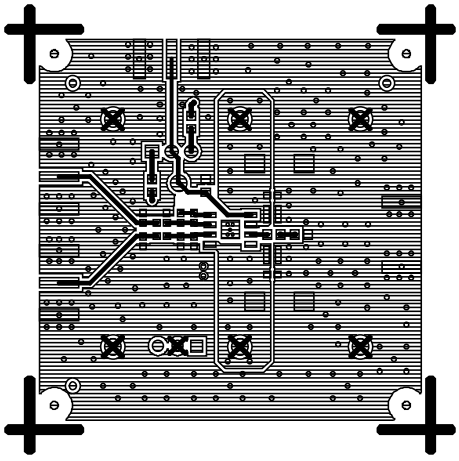

Figure 5. Board Layout Pattern, Component Side

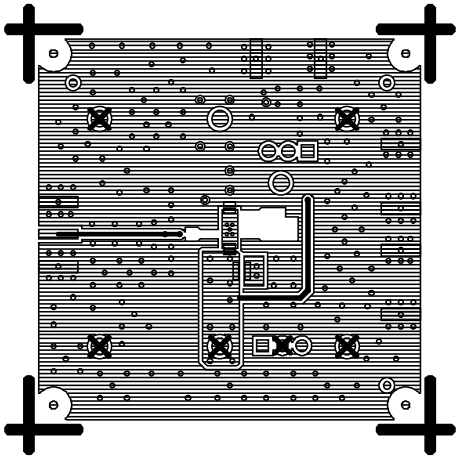

Figure 7. Board Layout Pattern, Circuit Side

NONINVERTING CONFIGURATION

When using this board in a noninverting configuration, with a gain larger than 1, there are two recommended ways to place the gain resistor. The first way is to place the gain resister in the R1 location and uses a 0 Ω for the R2 location to short to ground. The second way is to place the gain resister between the first pad of R1 and ground, without using a second resistor (see Figure 8).

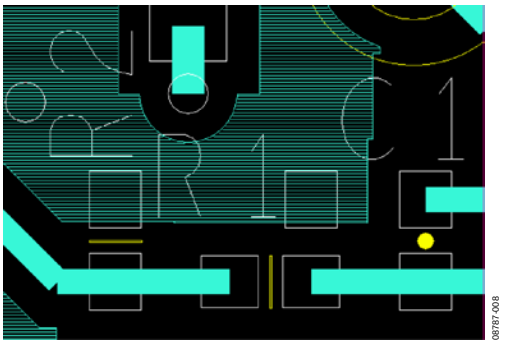

Figure 8. Noninverting Configuration with a Gain of Higher Then 1

ORDERING INFORMATION

BILL OF MATERIALS

Table 1.

Quantity	Reference Designator	Description	Package
3	+IN, −IN, OUT	Subminiature Version A/surface-mount technology	SMA/SMT
2	C1, C7	User-defined capacitors	C0402
2	C8, C9	0.01 µF capacitors	C0402
3	C2, C5, C6	0.1 µF capacitors	C0508
2	C3, C4	10 µF capacitors	C6032
6	R1, R2, R3, R4, R5, R8	User-defined resistors	R0402
3	R9, R10, RPD	User-defined resistors	R0603
2	R6, R7	1 kΩ resistors	R0603
7	PD/DIS, GND1, GND2, GND3, GND4, +VS, −VS	Test points	TP
1	PWR	Header 3 POS	Molex 22-23-2031
1	PD/DIS	3-pin straight header	Molex 22-03-2031
2	JP1, JP2	User-defined jumpers	Solder jumper
1	U1	Amplifier	8-lead SOIC

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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