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Universal Evaluation Board for Single, 8-Lead LFCSP Operational Amplifiers

FEATURES

Enables quick breadboarding/prototyping
User defined circuit configuration
Edge mounted subminiature version A (SMA) connector provisions
Easy connection to test equipment and other circuits

GENERAL DESCRIPTION

The 8L LFCSP SINGLE AMP evaluation board aids in the evaluation of single, 8-lead LFCSP operational amplifiers. The 8L LFCSP SINGLE AMP evaluation board is a bare board with no components soldered on, which enables users to prototype a variety of operational amplifier circuits. The 8L LFCSP SINGLE AMP evaluation board supports any of the Analog Devices, Inc., single operational amplifiers with and without a dedicated feedback pin in 8-lead LFCSPs.

The 6-layer evaluation board accepts edge mounted SMA connectors on both inputs and outputs to allow an efficient connection to test equipment and other circuitry.

Optimized power and ground planes ensure low noise and high speed operation. Component placement and power supply bypassing are optimized for maximum circuit flexibility and performance. The evaluation board accepts 0402 or 0603 surface-mount technology (SMT) components, 1206 bypass capacitors, and 100 mil headers.

All components are placed on the primary side. No components are placed on the secondary side.

8L LFCSP SINGLE AMP EVALUATION BOARD IMAGES

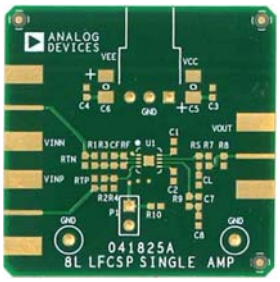

Figure 1. 8L LFCSP SINGLE AMP Evaluation Board, Primary Side

Figure 2. 8L LFCSP SINGLE AMP Evaluation Board, Secondary Side

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REVISION HISTORY

3/16—Revision 0: Initial Version

SCHEMATIC, ASSEMBLY DRAWINGS, AND BOARD LAYOUT

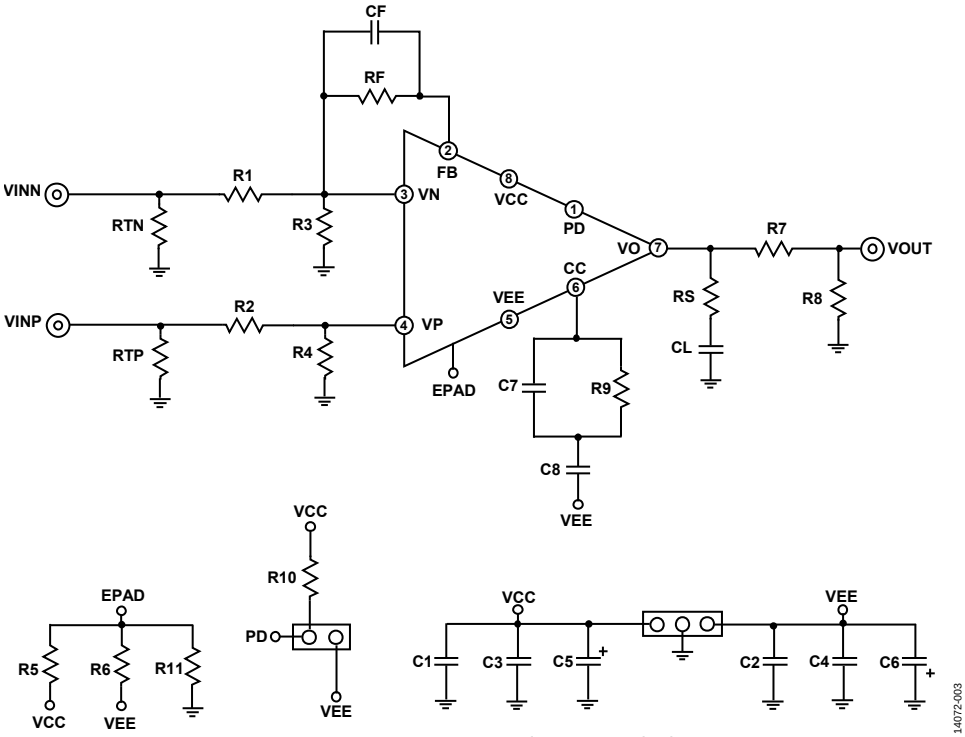

Figure 3. 8L LFCSP SINGLE AMP Evaluation Board Schematic

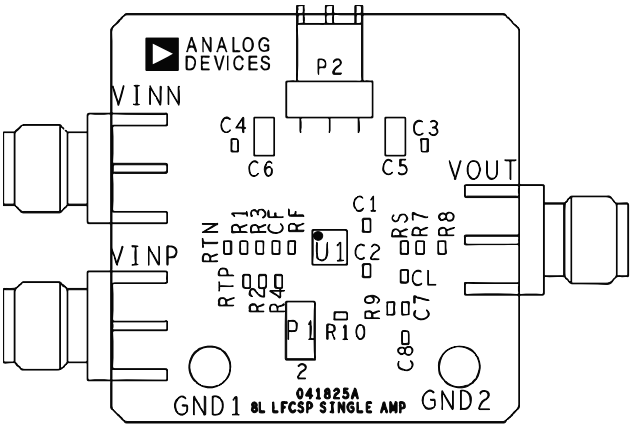

Figure 4. Component Side Assembly Drawing

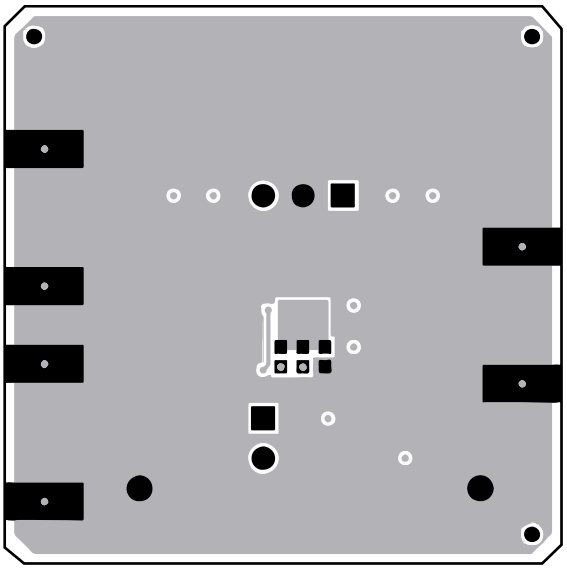

Figure 6. Circuit Side Assembly Drawing

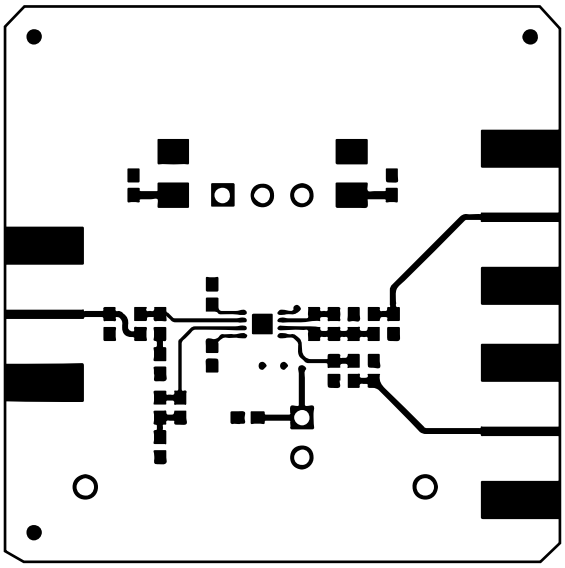

Figure 5. Component Side Layout Pattern

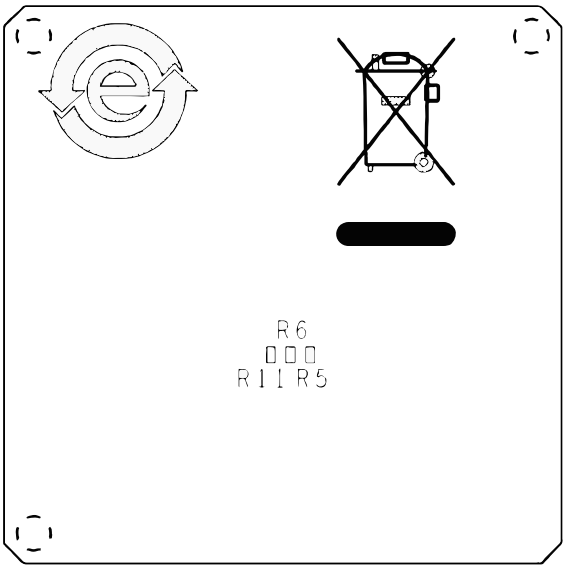

Figure 7. Circuit Side Layout Pattern

BOARD ASSEMBLY

POWER SUPPLY BYPASSING

Internal power planes provide adequate interplanar capacitance for certain applications. The external bypass capacitors, C1 and C2, provide additional high frequency bypassing at the amplifier power pins. The C3, C4, C5, and C6 capacitors provide additional board level bypassing.

EVALUATION BOARD STACK UP

This 6-layer FR4 board design provides optimized high speed and low noise performance. The first ground layer is spaced to provide a 50 Ω controlled impedance with the primary layer to optimize high frequency performance.

The VCC layer is sandwiched with the GND layer to provide mechanical stability and distributed interplanar capacitance between VCC and GND.

The bottom three layers sandwich the VEE plane layers between two GND layers, generating distributed interplanar capacitance.

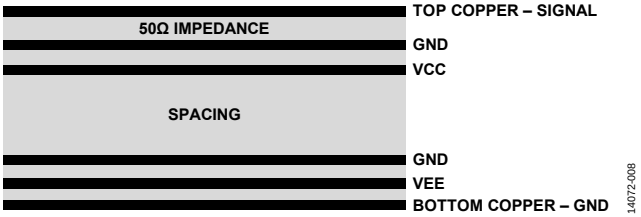

Figure 8. Stack Up