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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China









DEMO MANUAL DC417B

Multi-Footprint Single Op Amp Prototyping Boards

DESCRIPTION

The DC417B demo board set gives maximum flexibility for prototyping single op amp circuits. This demo manual lists which components to use for common op amp circuits and an example is given for a standard pinout single op amp circuit.

Design files for this circuit board are available at http://www.linear.com/demo

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OPERATING PRINCIPLES

The DC417B demo board comes as a two board set; one board for DIP8, S8, DFN8, and MS8 packages and the other board for SOT23-5 and SOT23-6 packages. Each board is laid out such that most of the general op amp circuits can be easily built. Both boards have decoupling cap positions included.

Component positions are included for common circuit configurations. Take your schematic and identify component positions on the board which correspond to the components in the schematic. Air-wire other components as needed, taking advantage of the exposed ground planes

as desired. Terminal posts at the sides of both boards give easy access to power, ground, inputs, and outputs. Access is provided to all IC pins. Pins 1, 5, and 8 are brought out to terminals for easy access on the DIP8, S8, DFN8, and MS8 board. Pin 5 is brought out to a terminal on the SOT23-5 and SOT23-6 board. These pins are typically used for offset adjustment, trimming VOS, or shutdown. The layout includes positions for BNC connectors for both inputs and outputs. Although component pads are marked as C for capacitors and R for resistors, any component that fits any footprint can be placed on the board.



CIRCUIT EXAMPLE

To build a noninverting amp using the DIP8/S8/MS8/DFN8 board use the R3 component position for the feedback resistor and R11 for the gain set resistor. C6 and C2 are the decoupling caps located close to the IC package and C3 and C5 the bulk decoupling caps located next to the power input terminals at the edge of the board. Jumper wires or 0Ω resistors would be used for the R8 component position on the input path to use the BNC connector J3, or R8 and R13 to use input terminal TP11 and at R7 on the output path to use BNC J2 or output terminal TP9 for connection input and output signals.

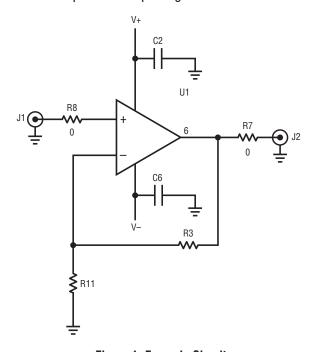
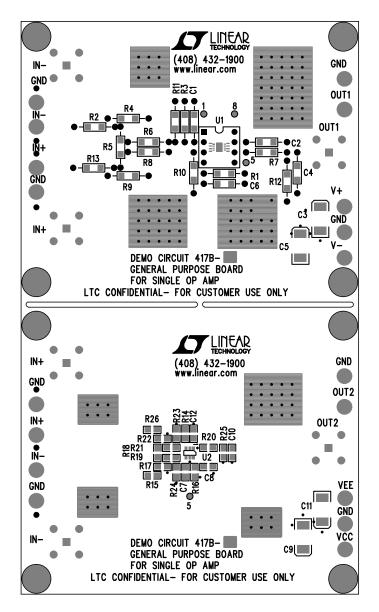


Figure 1. Example Circuit



SCHEMATIC DIAGRAM



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REVISION HISTORY ECO REV DESCRIPTION APPROVED DATE PRODUCTION GLEN B. 08-09-11 R1 R2 TP1 IN-V+ C3 4.7uF 50V GND R3 J1 TP2 499 1% IN-0 V-0 C5 4.7uF R4 50V TP5 0 GND R6 499 R7 **⊝**` OUT1 R8 IN+ 0 499 R9 ^{1%} R10 5 TP6 499 1% OUT1 TP11 -0 - C6 0.1uF GND ţ IN+ TP10 TP12 GND TP13 R14 R15 IN-0 Vcc 5.6pF GND (O R16 TP16 499 Vee C11 1% IN-0-4.7uF 50V C8 0.1uF TP17 GND ÷ R17 R18 R19 499 1% R20 Ř21 OUT2 • 50 Ohm IN+ 0-LT1806CS6 1% R25 R23 ₹ R24 R22 499 1% ⊸⊗ -0 OUT2 C12 TP21 −© TP20 R26 GND 0.1uF IN+ TP22 1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408)432-1900 www.linear.com GND O-**CUSTOMER NOTICE** LITEAR **APPROVALS** LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; Fax: (408)434-0507 LTC Confidential-For Customer Use Only HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO PCB DES. AK VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APP ENG. GLEN B. TITLE: SCHEMATIC APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT **GENERAL PURPOSE BOARD FOR SINGLE OPAmp** PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE. SIZE REV. **DEMO CIRCUIT 417B** N/A 1 THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SCALE = NONE SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS. DATE: Tuesday, August 09, 2011 SHEET 1 OF 1

DEMO MANUAL DC417B

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Please read the DEMO BOARD manual prior to handling the product. Persons handling this product must have electronics training and observe good laboratory practice standards. **Common sense is encouraged**.

This notice contains important safety information about temperatures and voltages. For further safety concerns, please contact a LTC application engineer.

Mailing Address:

Linear Technology 1630 McCarthy Blvd. Milpitas, CA 95035

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