

AN-2161 LP5904 DSBGA Evaluation Board Information

1 Introduction

This evaluation board is designed to enable the evaluation of the LP5904 Voltage Regulator. Each board is assembled and tested in the factory. This evaluation board has the 4-bump DSBGA package mounted.

2 General Description

The LP5904 is a linear regulator capable of supplying 200 mA output current. Designed to meet the requirements of RF/Analog circuits, the LP5904 provides low device noise, high PSRR, low quiescent current, and low line transient response. Using new innovative design techniques the LP5904 offers class-leading noise performance without a noise bypass capacitor.

The device has been designed to work with 1.0 μ F input and output ceramic capacitors down to 0402 component size.

3 Operation

The input voltage, applied between V_{IN} and GND, should be at least 1.0V greater than V_{OUT} and no more than 5.5V. The minimum operating voltage is 2.2V. Loads can be connected to V_{OUT} with reference to GND. V_{OUT} and V_{IN} sense pins are provided on the board to allow accurate measurements directly onto the input and output pins of the device, eliminating any voltage drop on the PCB traces or connecting wires to the load.

ON/OFF control is provided by a two-way jumper on the V_{EN} pin. A minimum of 1.2V is required at this pin to enable the LDO. The LDO will be shut down when the V_{EN} pin is set to 0.4V or less.

In applications where the LP5904 is operated continuously from the battery, V_{IN} and V_{EN} can be tied together. However, if ON/OFF control is required, the V_{EN} pin should be driven from a separate signal to ensure correct operation of the fast startup circuit. The device has a 1M Ω internal resistor from V_{EN} to GND.

4 Hardware

The schematic and layout of the evaluation board are given below:

5 Schematic Diagram

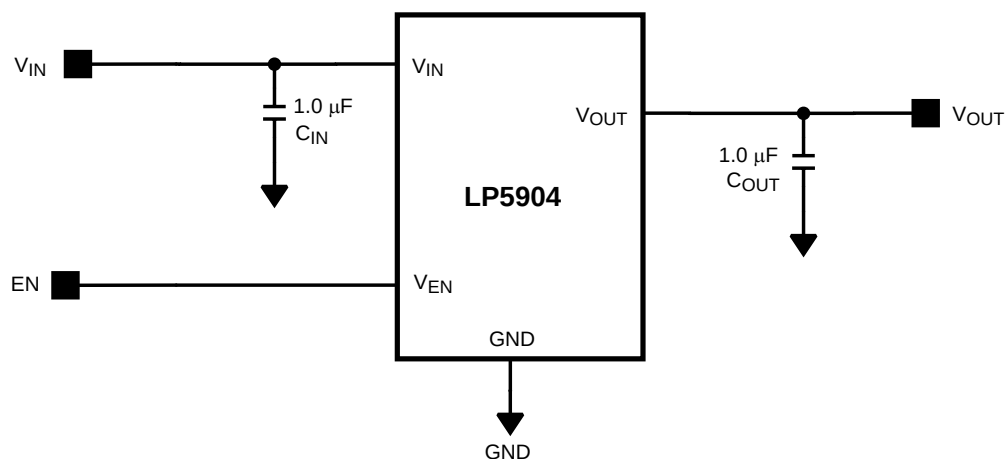


Figure 1. Evaluation Board Schematic.

6 PCB Layout

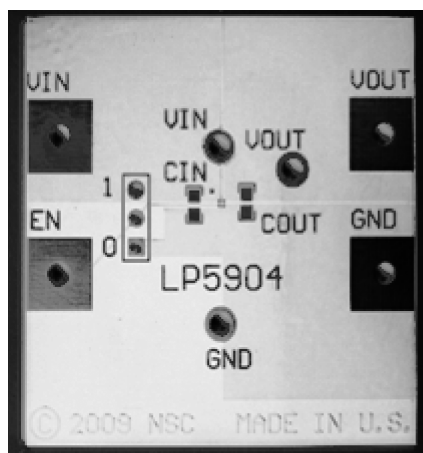


Figure 2. Evaluation Board Component

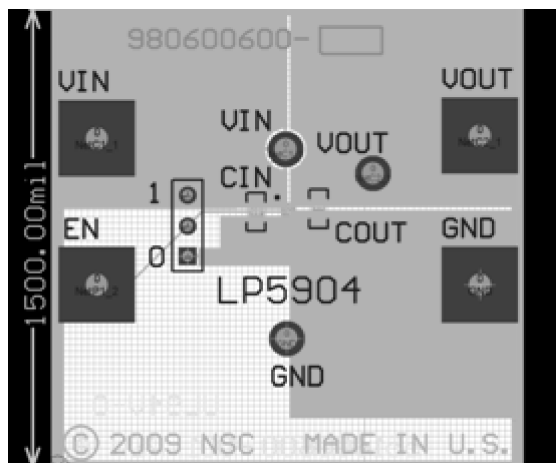


Figure 3. Pin Layout Board Size:- 21 mm x 21 mm

7 Hardware

Designator	Value	Amount	Footprint	Note
DUT	LP5904	1	YFQ0004AAA	
CIN	1.0 μ F	1	0402	X7R, X5R
COUT	1.0 μ F	1	0402	X7R, X5R
VIN, VOUT, VIN_TP, GND, GND_TP, EN, EN ON/OFF(EN1/0) pins	I/O and Test Pins	10		

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