

AN-2244 LP5907 DSBGA Evaluation Board Information

1 Introduction

This evaluation board is designed to enable the evaluation of the LP5907 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 LP5907 is a linear regulator capable of supplying 250 mA output current. Designed to meet the requirements of RF/Analog circuits, the LP5907 provides low device noise, high PSRR, low quiescent current, and low line transient response. Using new innovative design techniques, the LP5907 offers class-leading noise performance without a noise bypass capacitor.

The device has been designed to work with 1.0 μF input and output ceramic capacitors down to 0603 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 LP5907 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:

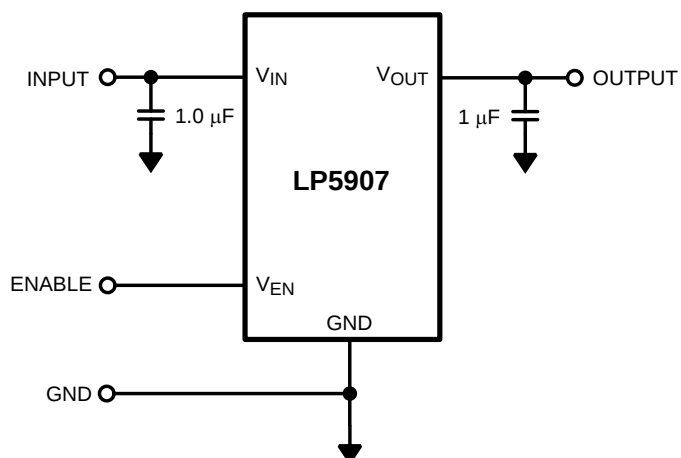


Figure 1. Evaluation Board Schematic

5 PCB Layout

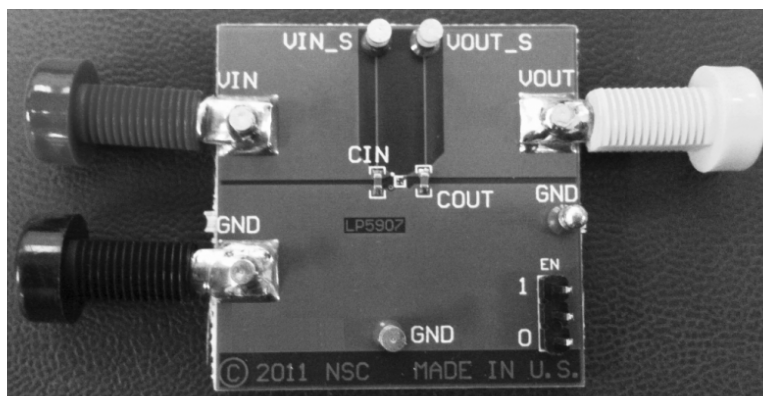


Figure 2. LP5907 Evaluation Board with Components (Top)

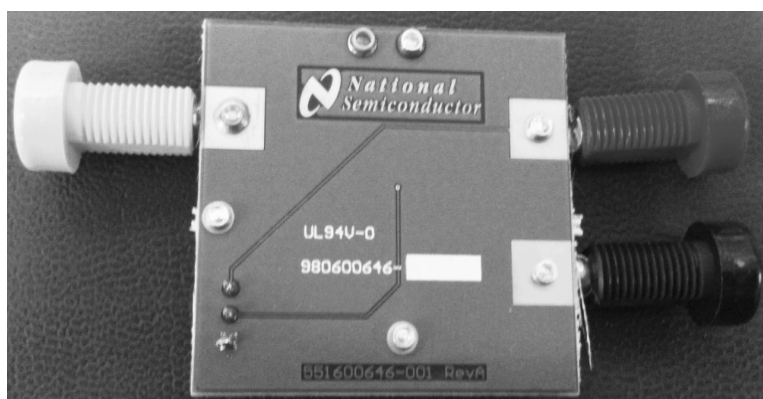


Figure 3. LP5907 Evaluation Board (Bottom)

6 Hardware

Designator	Value	Amount	Footprint	Note
DUT	LP5907	1	YKE0004AAA	
CIN	1.0 μ F	1	0603	X7R, X5R
COUT	1.0 μ F	1	0603	X7R, X5R
VIN, VOUT, GND, EN, VIN_S, VOUT_S pins	I/O and Test Pins	8		

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3.2 Canada

3.2.1 For EVMs issued with an Industry Canada Certificate of Conformance to RSS-210

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http://www.tij.co.jp/llds/ti_ja/general/eStore/notice_01.page

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3. Use of EVMs only after User obtains the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to EVMs. Also, do not transfer EVMs, unless User gives the same notice above to the transferee. Please note that if User does not follow the instructions above, User will be subject to penalties of Radio Law of Japan.

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