ISL21080xxEV1Z

Evaluation Boards

AN1761
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Introduction

The ISL21080XXEV1Z evaluation board is designed to measure the performance of the nano power ISL21080 voltage reference. The reference comes in a wide selection of output voltages ranging from 0.9V to 5.0V, and an initial accuracy as low as 0.2% (3.0V to 5.0V options). With a typical supply current of 500nA or less, the ISL21080 is ideal for extending battery life while reducing cost for general purpose portable applications.

The evaluation board includes voltage input test points (V_{IN} and GND) for a power supply input, as well as a pair of test points for the output (V_{OUT} and GND). Additionally, a jumperable R-C damper network can connect to V_{OUT} (J_1), and R_2 accepts surface mount or through-hole style resistors for output load testing.

Reference Documents

- ISL21080 Datasheet

TABLE 1. ORDERING INFORMATION

BOARD NUMBER	OUTPUT VOLTAGE (V)	TYPE
ISL2108009EV1Z	0.9	Evaluation Board
ISL2108010EV1Z	1.024	Evaluation Board
ISL2108012EV1Z	1.25	Evaluation Board
ISL2108015EV1Z	1.5	Evaluation Board
ISL2108020EV1Z	2.048	Evaluation Board
ISL2108025EV1Z	2.5	Evaluation Board
ISL2108030EV1Z	3.0	Evaluation Board

TABLE 1. ORDERING INFORMATION (Continued)

BOARD NUMBER	OUTPUT VOLTAGE (V)	TYPE
ISL2108033EV1Z	3.3	Evaluation Board
ISL2108040EV1Z	4.096	Evaluation Board
ISL2108050EV1Z	5.0	Evaluation Board

ISL21080XXEV1Z Board

The schematic of the evaluation board is shown in Figure 5. The ISL21080XXEV1Z contains the ISL21080 voltage reference (U_1), input decoupling capacitors (C_1, C_2), and a load capacitor (C_3). The power supply leads attach to TP1 and TP2 (V_{IN}, GND). The output is measured at test points TP3 and TP4 (V_{OUT}, GND).

The R-C damper network is populated and can be connected to the reference output by adding a shunt to the R-C jumper (J_1). The damper network improves stability by reducing transient load ringing with high value (>0.47µF) capacitors.

TABLE 2. COMPONENT PARTS LIST

DEVICE #	VALUE	DESCRIPTION
C_1	10µF	Bypass Capacitor
C_2	0.01µF	Bypass Capacitor
C_3	0.01µF	Load Capacitor
C_4	10µF	Damper Capacitor
J_1	2-Pin Header	Damper Jumper
R_1	2.21kΩ	Damper Resistor
R_2	DNP	Optional Load Resistor
TP_1 - TP_4	Test Point	Input and Output Test Points
U_1	ISL21080	SOT-23 3-Pin Package

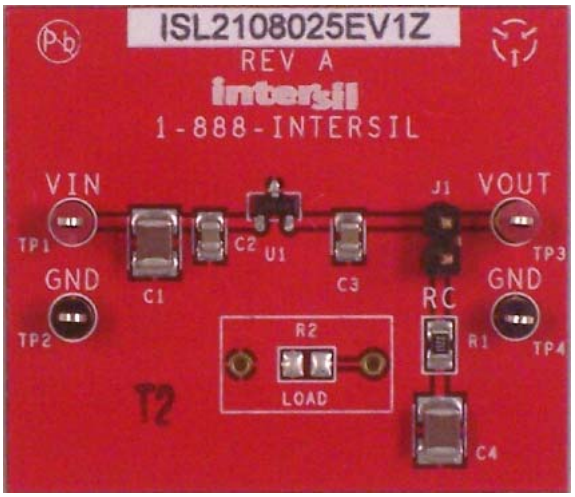

FIGURE 1. VOLTAGE REFERENCE EVALUATION BOARD (ISL2108025EV1Z)

Voltage Reference Evaluation Board Layout

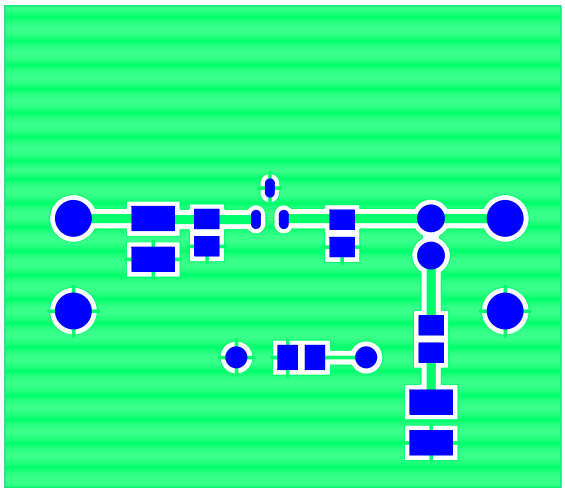

FIGURE 2. TOP COMPONENTS

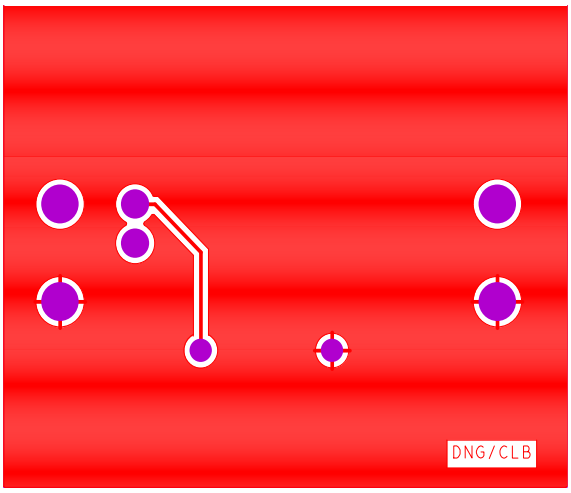

FIGURE 3. BOTTOM LAYER

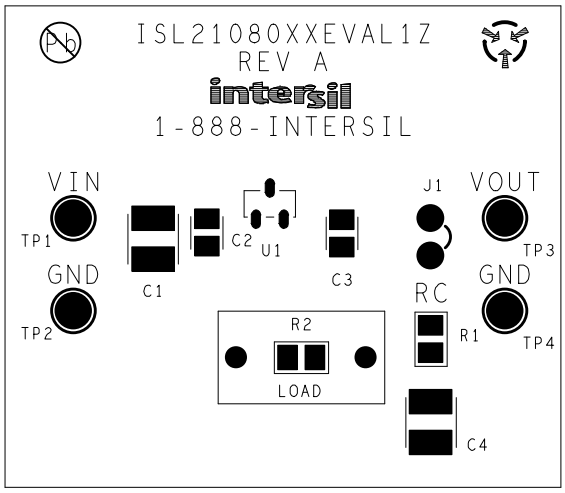

FIGURE 4. ASSEMBLY DRAWING

ISL21080XXEV1Z Schematic

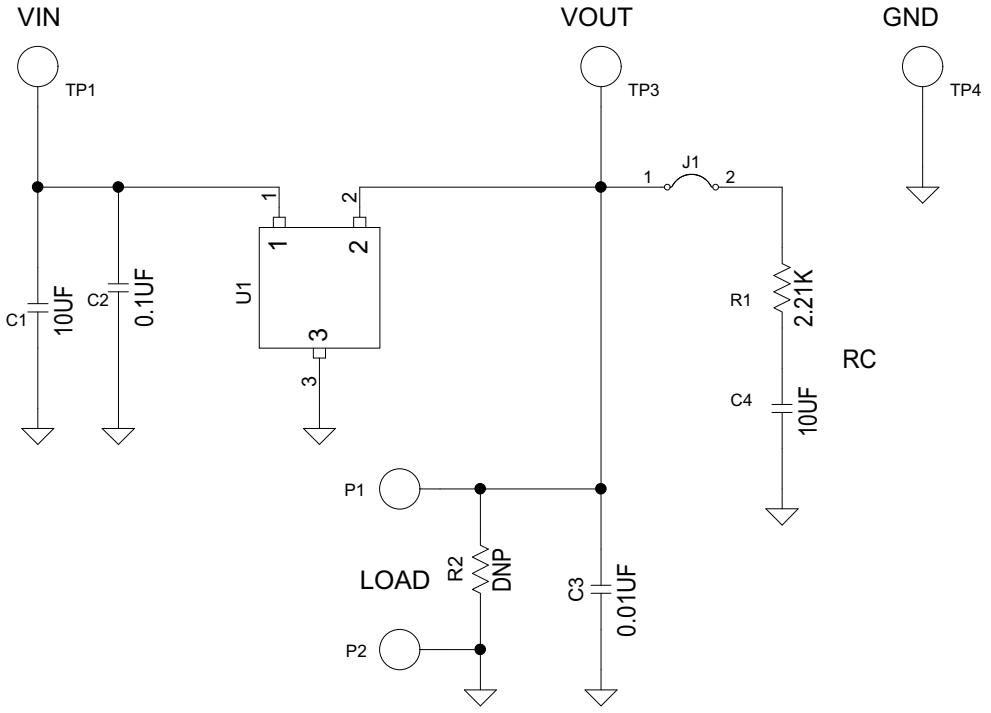

FIGURE 5. SCHEMATIC

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