

# ISL21080XXEV1Z User's Guide

## 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, [FN6934](#)

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

TABLE 1. ORDERING INFORMATION (Continued)

BOARD NUMBER	OUTPUT VOLTAGE (V)	TYPE
ISL2108030EV1Z	3.0	Evaluation Board
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 ( $>0.47\mu F$ ) capacitors.

TABLE 2. COMPONENTS PARTS LIST

DEVICE #	VALUE	DESCRIPTION
$C_1$	10 $\mu F$	Bypass Capacitor
$C_2$	0.01 $\mu F$	Bypass Capacitor
$C_3$	0.01 $\mu F$	Load Capacitor
$C_4$	10 $\mu F$	Damper Capacitor
$R_1$	2.21k $\Omega$	Damper Resistor
$R_2$	DNP	Optional Load Resistor
$U_1$	ISL21080	SOT-23 3-Pin Package



FIGURE 1. VOLTAGE REFERENCE EVALUATION BOARD

## Voltage Reference Evaluation Board Layout

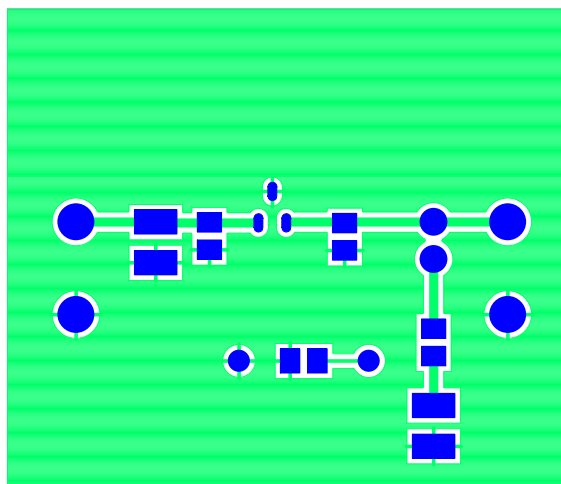


FIGURE 2. TOP COMPONENTS

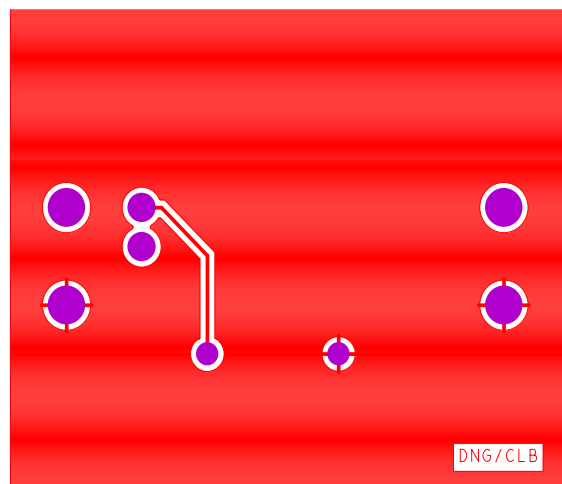


FIGURE 3. BOTTOM LAYER

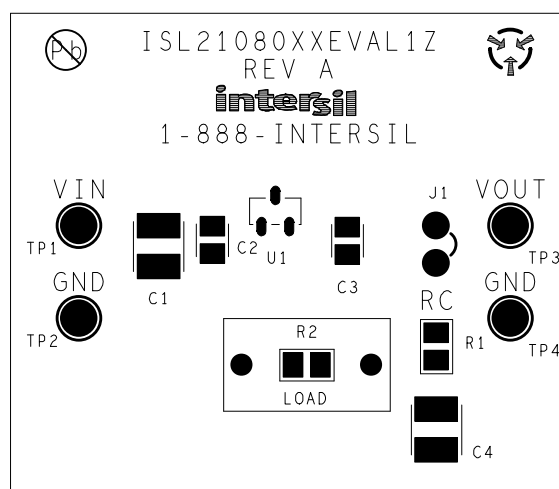


FIGURE 4. ASSEMBLY DRAWING

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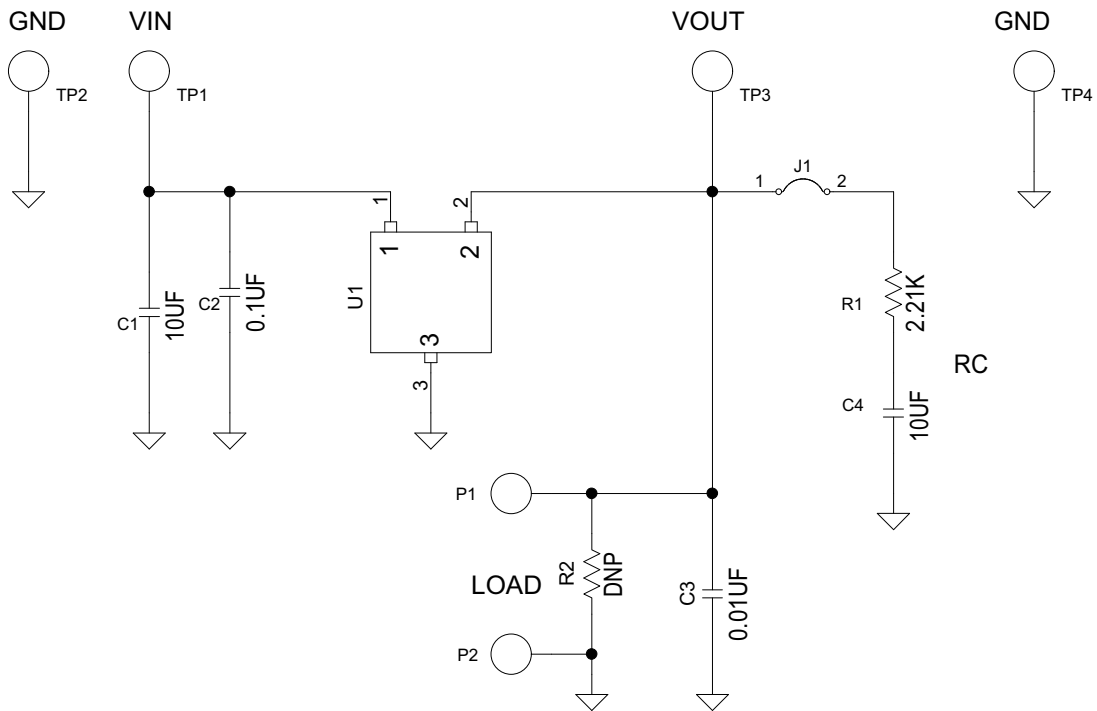


FIGURE 5. SCHEMATIC

## ISL21080XXEV1Z Schematic

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