

# ISL60002XXEVAL1Z User's Guide

## Introduction

The ISL60002XXEVAL1Z evaluation board is designed to measure the performance of the nano power ISL60002 voltage reference. The reference comes in a wide selection of output voltages ranging from 1.024V to 3.3V, and an initial accuracy as low as  $\pm 1\text{mV}$  with only 20ppm maximum output voltage temperature coefficient. With a typical supply current of 350nA, the ISL60002 is ideal for high resolution, low power data conversion systems.

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

- ISL60002 Datasheet, [FN8082](#)

**TABLE 1. ORDERING INFORMATION**

BOARD NUMBER	OUTPUT VOLTAGE (V)	TYPE
ISL6000210EVAL1Z	1.024	Evaluation Board
ISL6000211EVAL1Z	1.2	Evaluation Board
ISL6000212EVAL1Z	1.25	Evaluation Board
ISL6000218EVAL1Z	1.8	Evaluation Board
ISL6000220EVAL1Z	2.048	Evaluation Board
ISL6000225EVAL1Z	2.5	Evaluation Board
ISL6000226EVAL1Z	2.6	Evaluation Board
ISL6000230EVAL1Z	3.0	Evaluation Board
ISL6000233EVAL1Z	3.3	Evaluation Board

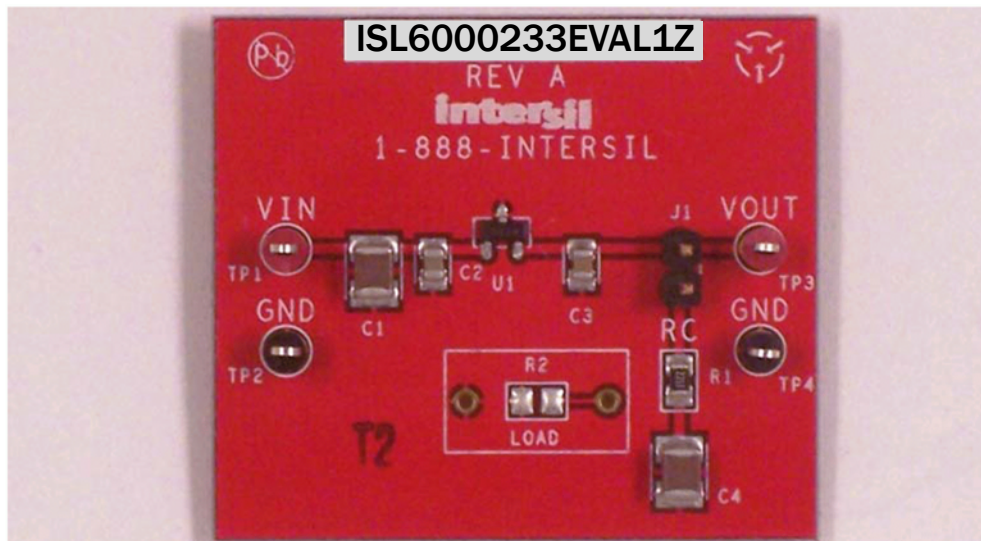
## ISL60002XXEVAL1Z Board

The schematic of the evaluation board is shown in Figure 5. The 60002XXEVAL1Z contains the ISL60002 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 ( $>0.47\mu\text{F}$ ) capacitors.

**TABLE 2. COMPONENTS PARTS LIST**

DEVICE #	VALUE	DESCRIPTION
$C_1$	10 $\mu\text{F}$	Bypass Capacitor
$C_2$	0.1 $\mu\text{F}$	Bypass Capacitor
$C_3$	1000pF	Load Capacitor
$C_4$	10 $\mu\text{F}$	Damper Capacitor
$R_1$	2.21k $\Omega$	Damper Resistor
$R_2$	DNP	Optional Load Resistor
$U_1$	ISL60002	SOT-23 3-Pin Package
$J_1$	Shunt	Damper Jumper



**FIGURE 1. VOLTAGE REFERENCE EVALUATION BOARD**

# Voltage Reference Evaluation Board Layout

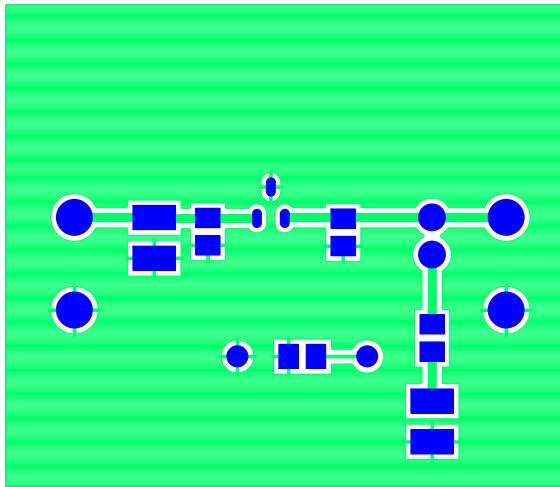


FIGURE 2. TOP COMPONENTS

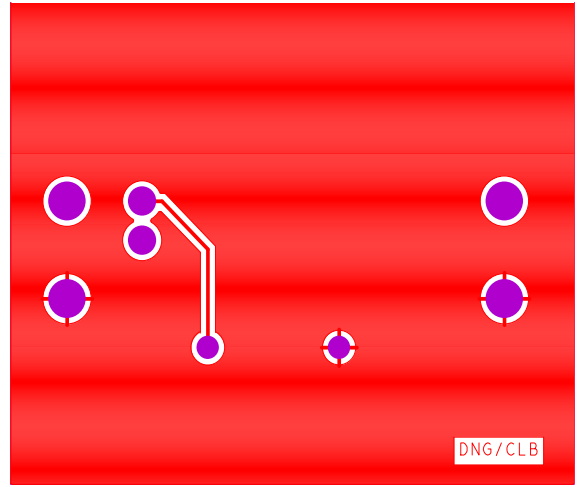


FIGURE 3. BOTTOM LAYER

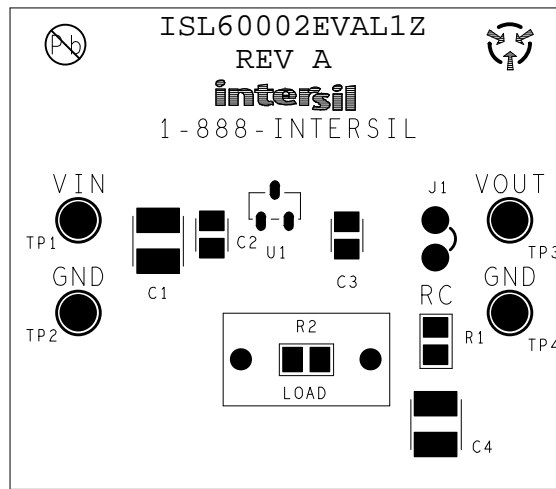


FIGURE 4. ASSEMBLY DRAWING

ISL60002XXEVAL1Z Schematic

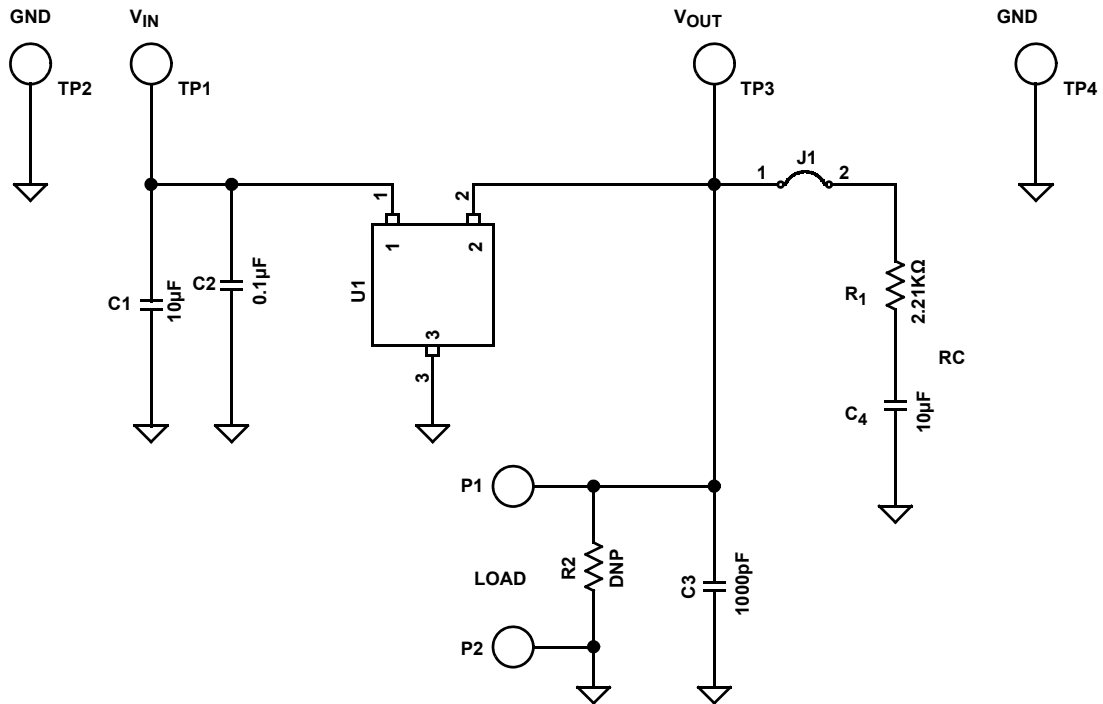


FIGURE 5. SCHEMATIC

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