

# ISL9211AEVAL1Z Evaluation Board User Guide

## Description

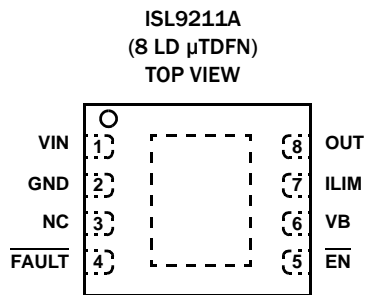
The ISL9211AEVAL1Z is an evaluation kit for evaluating Li-ion battery charger protection IC. This evaluation kit is designed to deliver up to 800mA charge current to battery application.

The ISL9211A protects the charging system from three circuit failures:

1. Input overvoltage
2. Short circuit in charging system
3. Battery over-charge

When any of the three parameters exceeds its limit, the IC turns off an internal N-channel MOSFET to disconnect the flow of power from the charging system to the battery.

The ISL9211A has three input OVP options: 4.8V, 5.8V and 6.8V. Please refer to the [ISL9211A](#) datasheet for more details.



## Ordering Information

PART #	DESCRIPTION
ISL9211AIRU48XE1Z	EVB for ISL9211A 4.8V OVP
ISL9211AIRU58XE1Z	EVB for ISL9211A 5.8V OVP
ISL9211AIRU68XE1Z	EVB for ISL9211A 6.8V OVP

## Key Features

- A complete evaluation platform for the ISL9211A charging system protection IC
- Accepts input voltage up to 24V
- Test points for key signal measurements
- RoHS compliant

## Required Equipment

The following equipment will be needed to perform testing:

- Power Supplies:
  - PS1: DC 30V/2A
  - PS2: DC 10V/2A
- DC Electronic Load: 20V/2A
- Multimeters
- Oscilloscope
- Cables and Wires

# Application Note 1749

## Quick Setup Guide

DO NOT APPLY POWER UNTIL STEP 6

- Step 1: Set power supply, PS#1 to 5V and current limit to 2A, and connect it to VIN pin of the board.
- Step 2: Connect a voltmeter #1 across VIN and GND.
- Step 3: Set PS#2 to 3.6V and current limit to 0.2A. Then connect the power supply to VBAT of the board.
- Step 4: Connect electronic-load in series with a current meter to OUT pin.
- Step 5: Connect the voltmeter #2 across OUT and GND.
- Step 6: Turn on PS#1. Voltmeter #1 should read 5V, and voltmeter #2 should read 5V.

## Test Procedure

### INPUT OVERVOLTAGE PROTECTION

- Step 1: Increase PS#1 to 4.8V  $\pm$ 200mV for 4.8V option IC, 5.8V  $\pm$  200mV for 5.8V option IC and to 6.8V  $\pm$ 200mV for 6.8V option IC.

- Step 2: Voltmeter #2 should read 0V.
- Step 3: Decrease voltage of PS#1 to 5V.
- Step 4: Voltmeter #2 should read 5V.

### OVERCURRENT PROTECTION

- Step 1: Turn on the E-load. Increase the current of the load to 1A  $\pm$ 70mA reading on the current meter.
- Step 2: Voltmeter #2 reads 0V.
- Step 3: Turn off the E-load.
- Step 4: Voltage #2 reads 5V

### BATTERY OVERVOLTAGE PROTECTION

- Step 1: Turn on PS#2.
- Step 2: Increase the voltage of PS#2 to 4.6V.
- Step 3: Voltmeter #2 reads 0V.
- Step 4: Decrease the voltage of PS#2 to 3.6V.
- Step 5: Voltmeter #2 reads 5V.

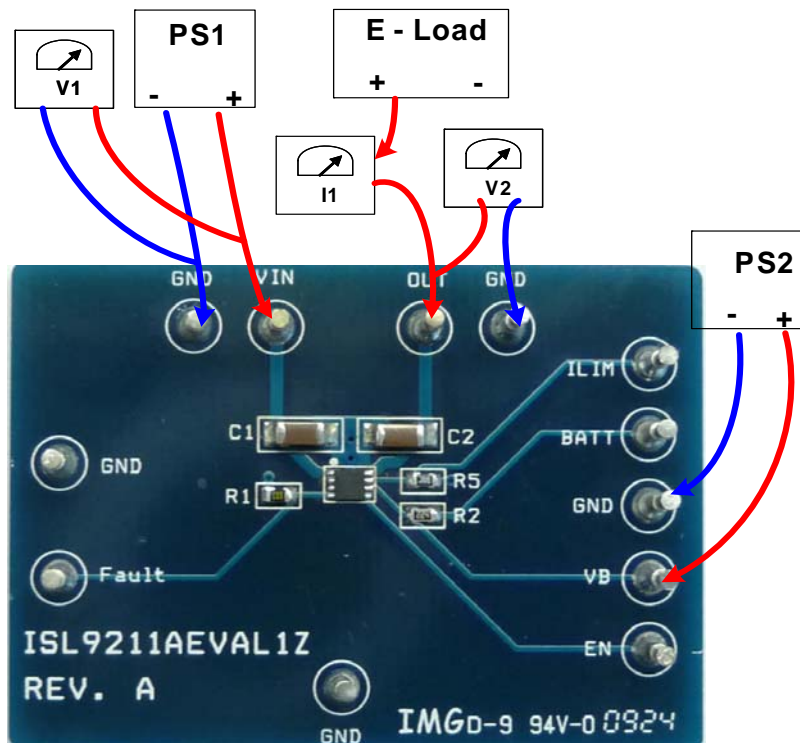


FIGURE 1. ISL9211AEVAL1Z EVALUATION BOARD TEST SETUP

## Board Design

### ISL911AEVAL1Z Schematic

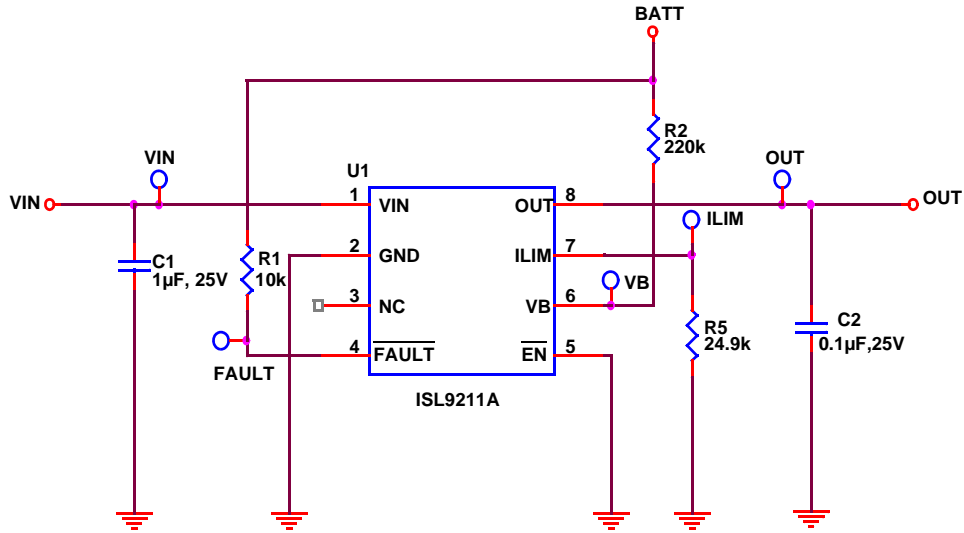


FIGURE 2. ISL9211AEVAL1Z EVALUATION BOARD SCHEMATIC

TABLE 1. ISL9211AEVAL1Z BILL OF MATERIALS

ITEM	QTY	REFERENCE	PART DESCRIPTION	FOOTPRINT	PART NUMBER	VENDOR
1	2	C1,C2	1µF, 25V	1206	C3216X7R1E105M	TDK
2	1	R1	10k	603	Resistor	Any
3	1	R2	220k	603	Resistor	Any
4	1	R5	24.9k	603	Resistor	Any
5	1	U1	ISL9211A	µTDFN2x2	ISL9211A	INTERSIL
6	7	VIN, OUT, ILIM, BATT, VB, EN, FAULT	Test Point	TERMINAL PIN TURRET 0.082	2110-2-00-80-00-00-07-0	MILL MAX
7	4	GND	Test Point	TERMINAL PIN TURRET 0.082	2110-2-00-80-00-00-07-0	MILL MAX

PCB Layout

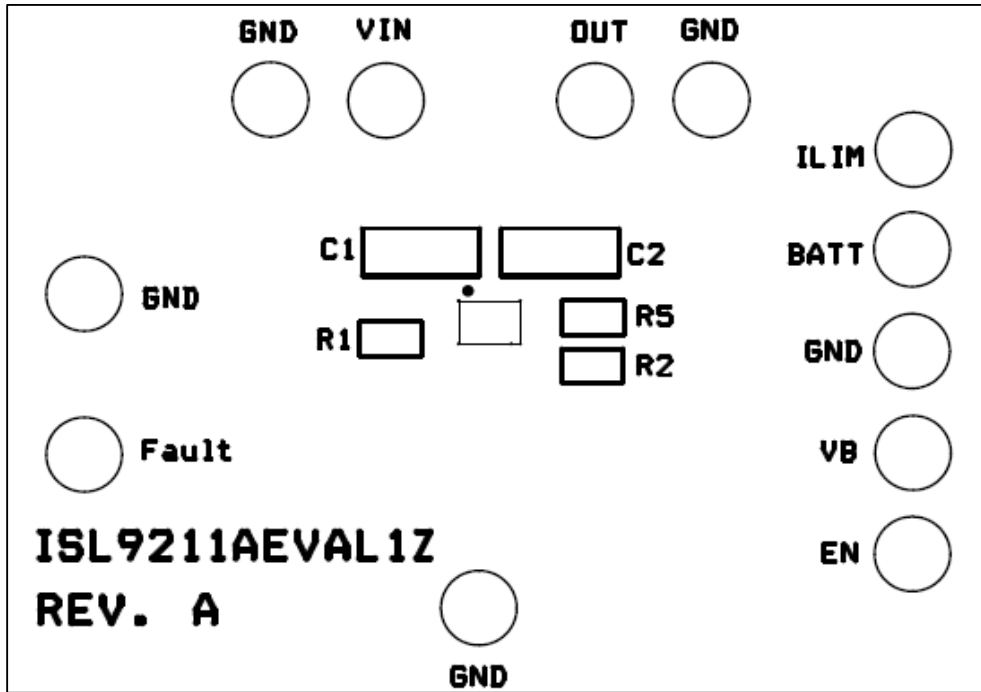


FIGURE 3. ISL9211AEVAL1Z SILKSCREEN TOP

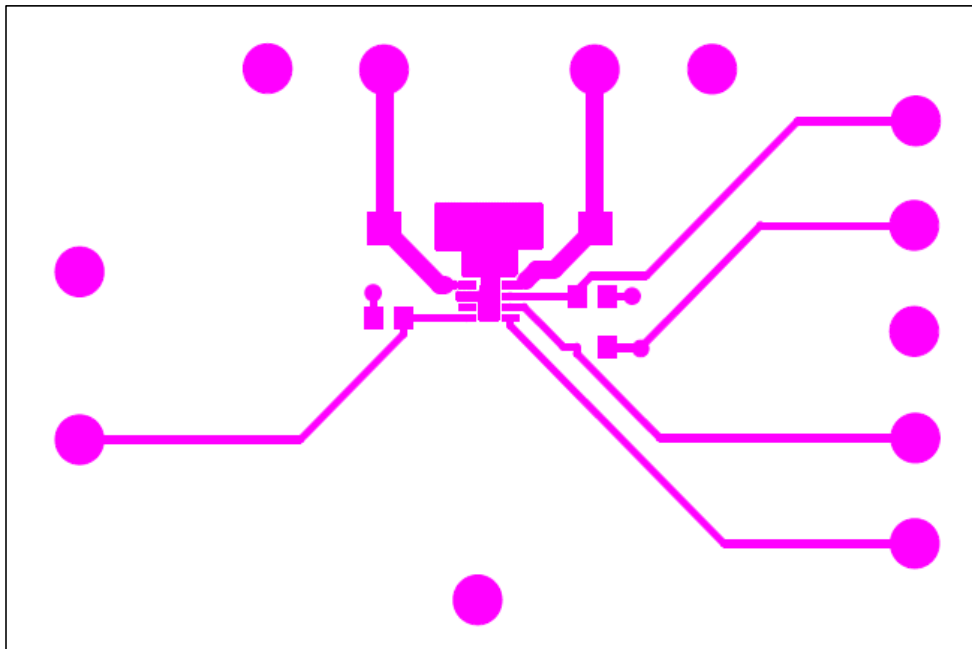


FIGURE 4. ISL9211AEVAL1Z TOP COPPER

## PCB Layout (Continued)

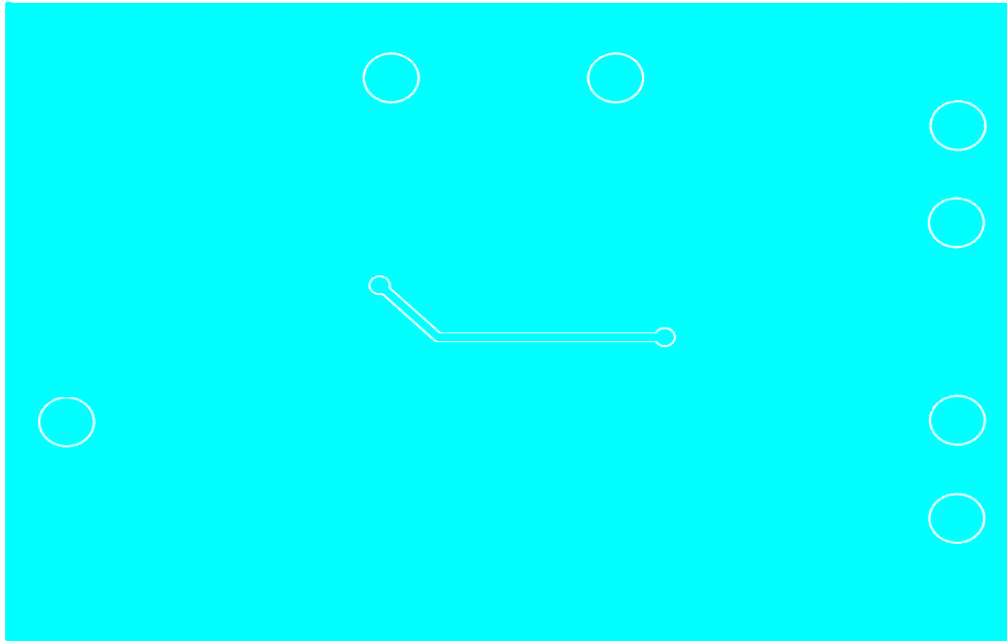


FIGURE 5. ISL9211AEVAL1Z BOTTOM COPPER

Intersil Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that the Application Note or Technical Brief is current before proceeding.

For information regarding Intersil Corporation and its products, see [www.intersil.com](http://www.intersil.com)