

Description

The ISL92115.8/6.8EVAL1Z is an evaluation kit which is used for evaluating Li-ion battery charger protection ICs. This evaluation kit is designed to deliver up to 800mA charge current to battery applications.

The ISL9211 protects the charging system from three circuit failures, as follows.

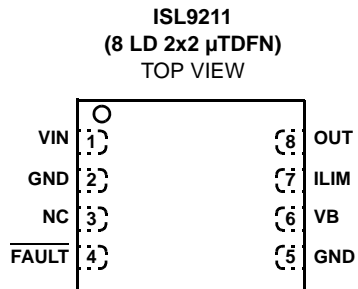
1. Input overvoltage
2. Short circuit in charging system
3. Overcharged battery

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

The ISL9211 has two input OVP options, which are 5.8V and 6.8V.

Refer to the ISL9211 datasheet for more details:
<http://www.intersil.com/data/fn/fn6658.pdf>

Pinout



Key Features

- A Complete Evaluation Platform for the ISL9211 Protection IC Evaluation
- Input Accepts Voltage up to 24V
- Flexible Power Connectors Each with a Hook and a Solder Pad Providing Variety to Users
- Test Points for Key Signal Measurement
- Pb-free (RoHS compliant)

What is Needed

The following instruments 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

Ordering Information

PART NUMBER	DESCRIPTION
ISL92115.8EVAL1Z	Evaluation Board for ISL9211
ISL92116.8EVAL1Z	Evaluation Board for ISL9211

Quick Setup Guide (Refer to Figure 1)

DO NOT APPLY POWER UNTIL STEP 6

- Step 1: Set power supply PS1 to 5V and current limit to 2A, and connect it to VIN pin of the board.
- Step 2: Connect Voltmeter V1 across VIN to ground.
- Step 3: Set PS2 to 3.6V and the current limit to 0.2A. Then connect the power supply to VBAT of the board.
- Step 4: Connect E-load in series with a current meter to OUT.
- Step 5: Connect Voltmeter V2 across OUT to ground.
- Step 6: Turn on PS1. Voltmeter V1 should read 5V, and Voltmeter V2 should read 5V.

Overcurrent Protection

- Step 11: Turn on the E-load. Increase the current of the load to 1A \pm 70mA reading on the current meter.
- Step 12: Voltmeter V2 reads 0V.
- Step 13: Turn off the E-load.
- Step 14: Voltmeter V2 reads 5V

Battery Overvoltage Protection

- Step 15: Turn on PS2.
- Step 16: Increase the voltage of PS2 to 4.6V.
- Step 17: Voltmeter V2 reads 0V.
- Step 18: Decrease the voltage of PS2 to 3.6V.
- Step 19: Voltmeter V2 reads 5V.

Test Procedures

Input Overvoltage Protection

- Step 7: Increase PS1 to 5.8V \pm 200mV for 5.8V option IC and to 6.8V \pm 200mV for 6.8V option IC.
- Step 8: Voltmeter V2 reads 0V
- Step 9: Decrease voltage of PS1 to 5V.
- Step 10: Voltmeter V2 reads 5V

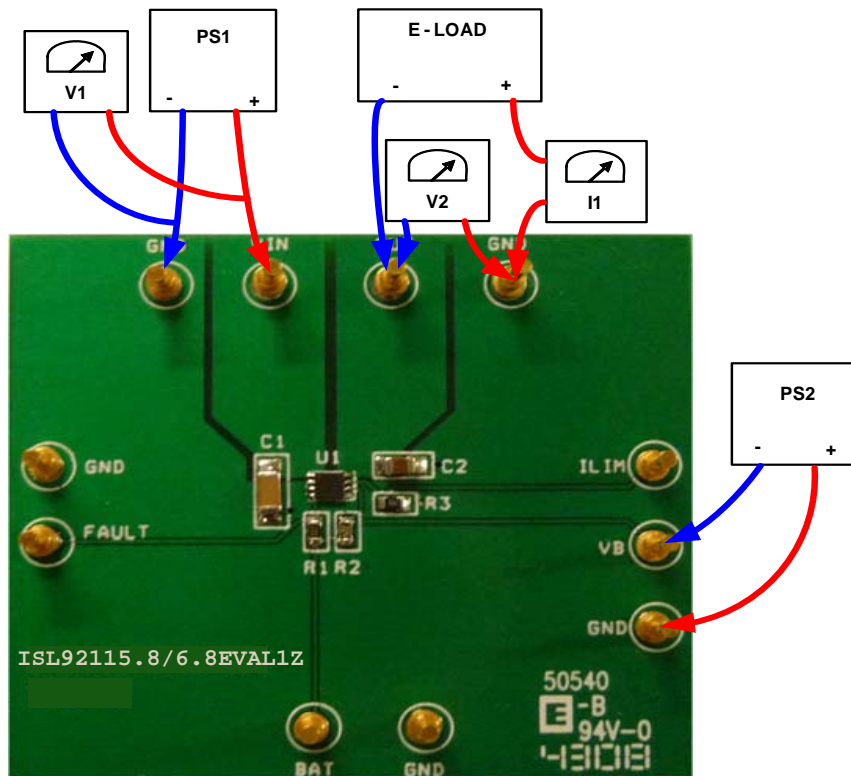


FIGURE 1. CONNECTION OF EQUIPMENT

Board Design

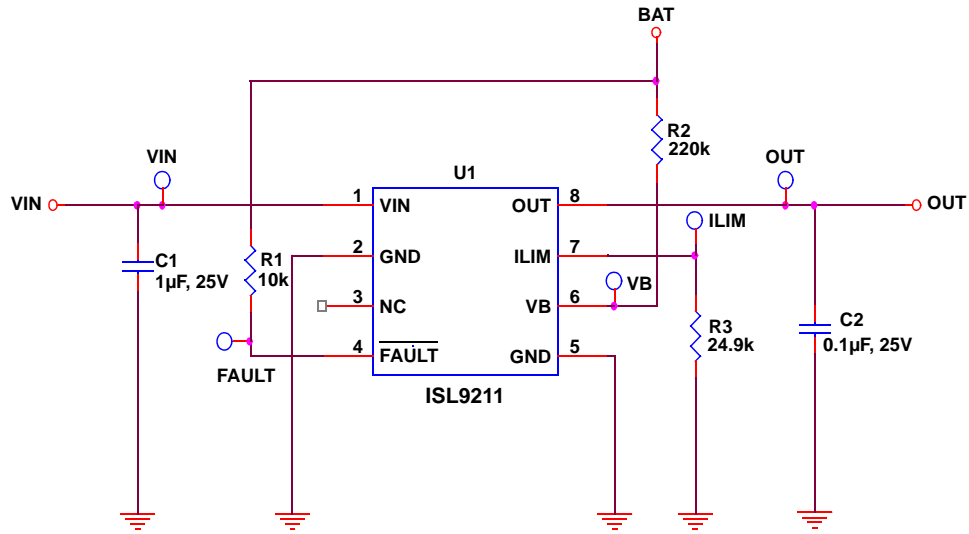


FIGURE 2. SCHEMATIC

TABLE 1. ISL92115.8/6.8EVAL1Z BILL OF MATERIALS

ITEM	QTY	REFERENCE	PART DESCRIPTION	FOOTPRINT	PART NUMBER	VENDER
1	1	C1	1µF, 25V	1206		PANASONIC
2	1	C2	1µF	805		PANASONIC
3	1	R1	10k	603		PANASONIC
4	1	R2	220k	603		PANASONIC
5	1	R3	24.9k	603		PANASONIC
6	3	VIN, BAT, OUT	Test point	Test point_red	5010	KEYSTONE
7	1	ILIM	Test point	Test point_yellow	5014	
7	5	GND	Test point	Test point_black	5011	
18	1	U1	ISL9211	Battery Protection IC	µTDFN 2x2	INTERSIL

PCB Layout

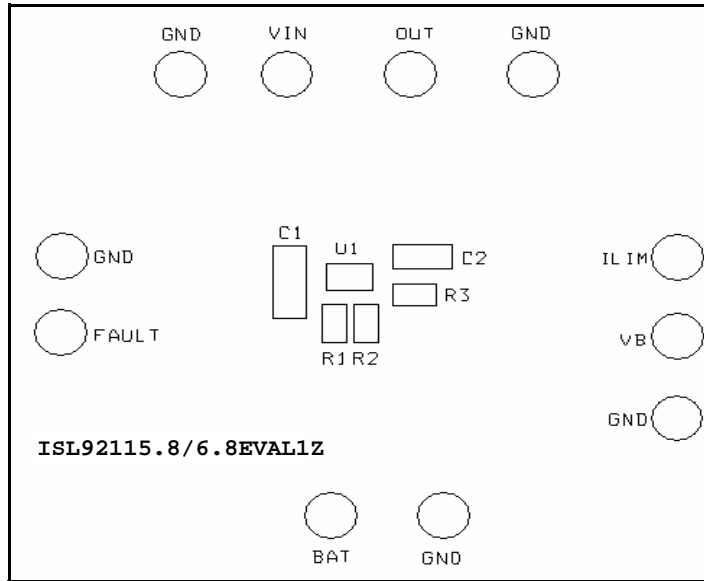


FIGURE 1. SILK LAYER

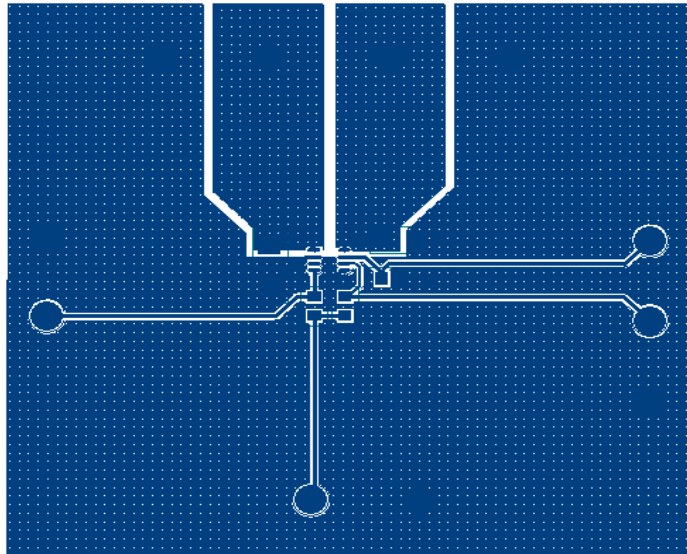


FIGURE 2. TOP LAYER

PCB Layout (Continued)

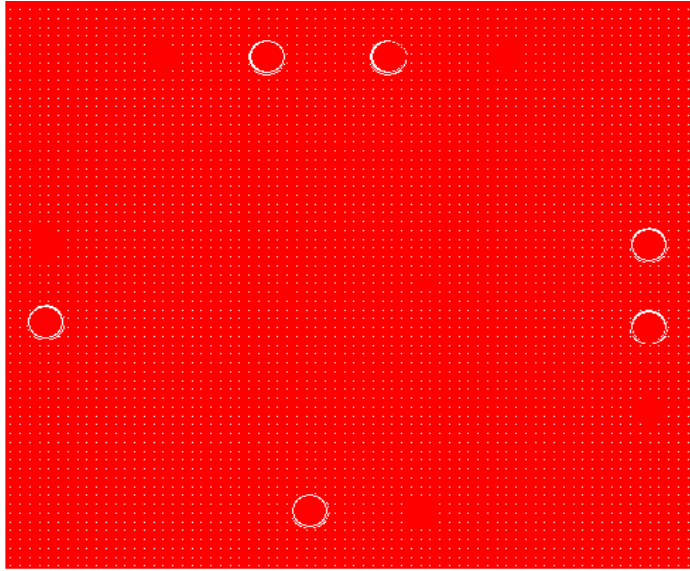


FIGURE 3. BOTTOM LAYER

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