

ISL76671EVAL1Z

ISL76671 Low Power, <100 Lux Optimized, Analog Output Ambient Light Sensor **Evaluation Hardware**

AN1741 Rev 0.00 March 14, 2012

Description

The ISL76671 is a low light optimized analog output sensor. In normal operation, the device is intended to be mounted behind a smoked glass/plastic bezel which normally significantly attenuates received light. The ISL76671 will typically saturate at full scale with an incident illumination of around 150 lux, which is a fair deal lower than normal indoor ambient light conditions (2k to 10k lux).

The ISL76671EVAL1Z evaluation board is an RoHS compliant evaluation board prepared to speed up part evaluation. Note that the sensing range for this device is from 0.01 lux to 100 lux typically and the device has been optimized for use with a $100k\Omega$ output scaling resistor (R_{EXT}). The device and the evaluation board will work from a 3V supply.

Evaluation Package

- Evaluation Board ISL76671EVAL1Z, populated with all required components
- AN1741: "ISL76671 Low Power, <100 Lux Optimized, **Analog Output Ambient Light Sensor Evaluation Hardware** User Guide" (see Technical Documentation on the ISL76671 product information page)

Hardware Setup

The small ISL76671 evaluation board comprises the sensor device itself and a $100k\Omega$ resistor which sets the output scaling for the sensor. The part was characterized with the 100kΩ resistor. Larger or smaller values can be used, however, Intersil found that the $100k\Omega$ value worked well under a variety of conditions. Note that with larger scale setting resistors the sensor is likely to prematurely saturate at relatively low light levels. Please check Page 7 of the ISL76671 datasheet for a description of the output scaling factor relative to incident ambient light.

The jumpers and components on the printed circuit board (PCB) are as shown in Table 1.

TABLE 1. JUMPERS, COMPONENTS ON PCB

JUMPER	DESCRIPTION
JP1	$R_{EXT} = 100k\Omega (Default)$
JP2	R _{EXT} = 47kΩ
JP3	R _{EXT} = 147kΩ
JP4	R _{LOAD} = 10kΩ (Optional, Do not populate)
JP5	R _{LOAD} = 100kΩ (Optional, Do not populate)
JP6	R _{LOAD} = 1MΩ (Optional, Do not populate)
C1	0.1µF
D1	Optional
L1	Optional

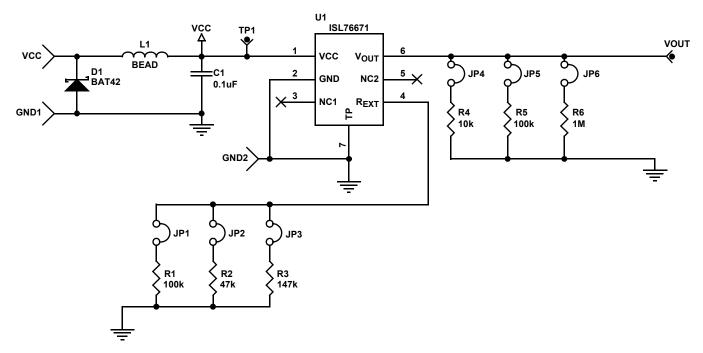


FIGURE 1. ISL76671EVAL1Z EVALUATION BOARD SCHEMATIC

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(Rev.4.0-1 November 2017)



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Renesas Electronics America Inc. 1001 Murphy Ranch Road, Milpitas, CA 95035, U.S.A. Tel: +1-408-432-8888, Fax: +1-408-434-5351

Renesas Electronics Canada Limited 9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3 Tel: +1-905-237-2004

Renesas Electronics Europe Limited Dukes Meadow, Milliboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K Tel: +44-1628-651-700, Fax: +44-1628-651-804

Renesas Electronics Europe GmbH

Arcadiastrasse 10, 40472 Düsseldorf, German Tel: +49-211-6503-0, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.
Room 1709 Quantum Plaza, No.27 ZhichunLu, Haidian District, Beijing, 100191 P. R. China Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.
Unit 301, Tower A, Central Towers, 555 Langao Road, Putuo District, Shanghai, 200333 P. R. China Tel: +86-21-2226-0898, Fax: +86-21-2226-0999

Renesas Electronics Hong Kong Limited

Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong Tel: +852-2265-6688, Fax: +852 2886-9022

Renesas Electronics Taiwan Co., Ltd. 13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

Renesas Electronics Singapore Pte. Ltd.

80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre, Singapore 339949 Tel: +65-6213-0200, Fax: +65-6213-0300

Renesas Electronics Malaysia Sdn.Bhd. Unit 1207, Block B, Menara Amcorp, Amco Amcorp Trade Centre, No. 18, Jin Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia

Unit 1207, Block B, Menara Amcorp, Amcorp Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

Renesas Electronics India Pvt. Ltd. No.777C, 100 Feet Road, HAL 2nd Stage, Indiranagar, Bangalore 560 038, India Tel: +91-80-67208700, Fax: +91-80-67208777

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