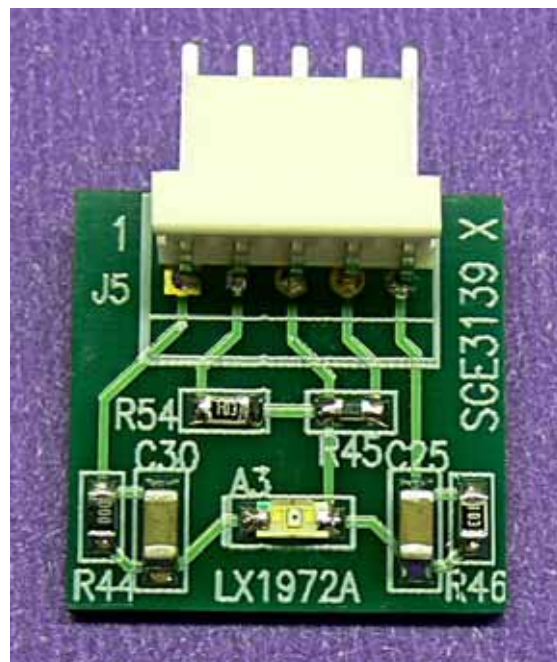


LX1972A AMBIENT LIGHT DETECTOR



INTRODUCTION TO PRODUCT

The LX1972A Evaluation Board is available from Microsemi for evaluating the functionality and performance of the LX1972A ambient light sensor. The component sizes used on the evaluation board facilitate easy probing, however, in practice, smaller component sizes are recommended to minimize the circuit physical size.

KEY FEATURES

- Nearly Perfect *Best Eye*™ Human Eye Spectral Response
- Very Low IR Sensitivity
- Highly Accurate & Repeatable Output Current vs. Light
- Scalable Output Voltage
- Temperature Stable
- Integrated High Gain Photo Current Amplifiers
- No Optical Filters Needed

APPLICATIONS

- Portable Electronic Displays
- LCD TV Backlight Systems
- Digital Still Cameras (DSC)
- Desk Top Monitors
- Notebook Computers

PART SPECIFIC INFORMATION

PART NUMBER	PRODUCT DESCRIPTION
LX1972AIBC	Ambient Light Detector

Table 1 - PART INFORMATION

IC	EVALUATION BOARDS
LX1972AIBC	LX1972A EVAL KIT

Table 2 - EVALUATION BOARD INFORMATION

SCHEMATIC AND PCB LAYOUT

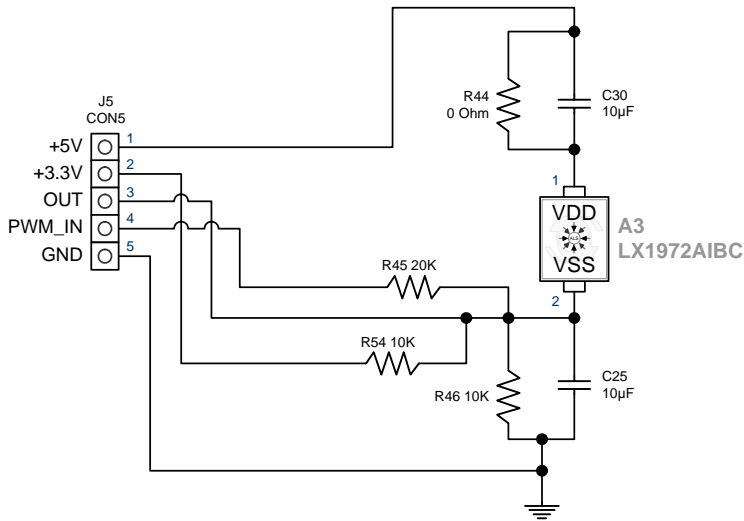


Figure 1 - LX1972A Evaluation Board Schematic

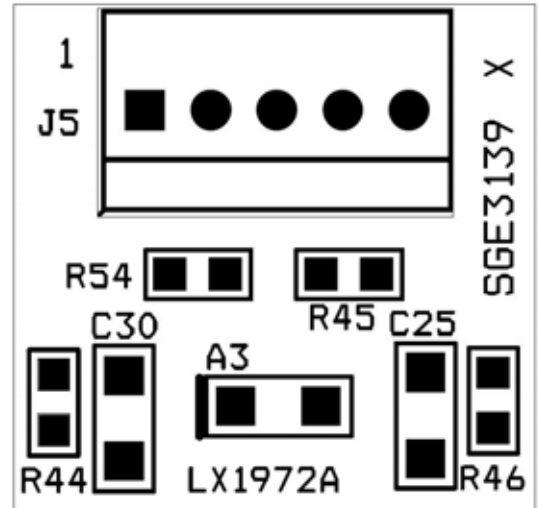


Figure 2 - LX1972A Evaluation Board PCB Layout

IC BLOCK DIAGRAM

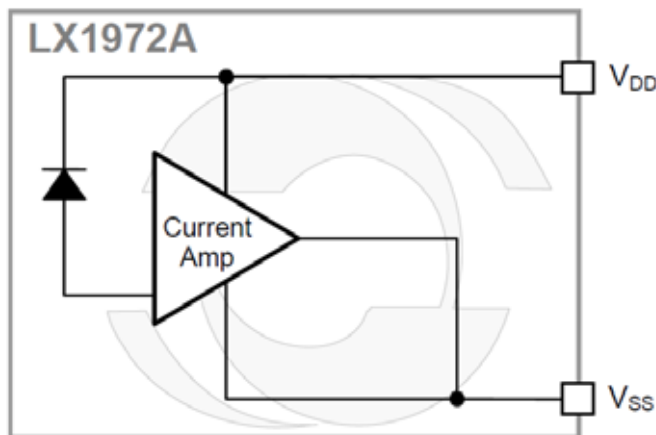


Figure 3 - Simplified Block Diagram

LX1972A EVAL BOARD

PCB Layout: The LX1972A Eval board layout is shown in Figure 2.

Connections: The LX1972A Evaluation Board has a 5-pin connector connecting to outside power and signals. The connection pin names and functions are listed below. Figure 4 is a suggested test connection diagram.

Pin #	Pin Name	Function
1	V _{DD}	Power Supply
2	+3.3V	+3.3V Bias
3	OUT	Sensor Output
4	PWM_IN	PWM Control Input
5	RTN	GND

Table 3 - Connector Pin Assignment

- 1) Make connections as shown in Figure 4. Apply 5V power source to the board. Measure Pin 1 and Pin 5 on connector J5 by using multimeter (Red lead to pin 1, black lead to pin 5) to verify +5V power is supplied to the board.
- 2) Disconnect pin 2 and pin 4 connections.
- 3) Change the light input (simply cover sensor with hand) while observing the scope, the waveform should change in conjunction to the light input change.
- 4) Connect +3.3V power to pin 2 while observing the scope waveform, the sensor output amplitude should change with the +3.3V connected. This +3.3V sets the minimum output voltage.
- 5) Disconnect +3.3V and connect +3V PWM signal to pin 4. Adjust PWM duty cycle while observing the sensor output. The output amplitude should change with the PWM duty cycle change

Basic Test Steps: The following is a demonstration scenario that can be used to evaluate the LX1972A.

LX1972A TYPICAL TEST HOOKUP

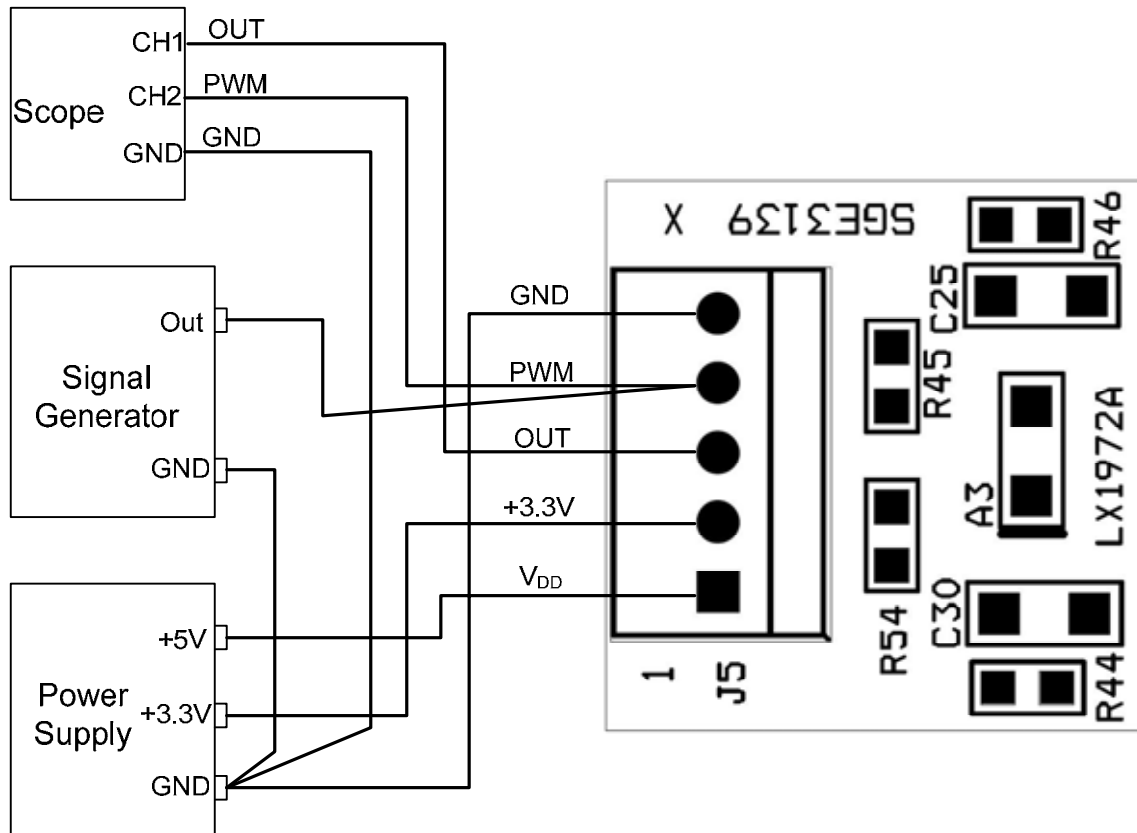


Figure 4 - LX1972A Evaluation Board Typical Test Hookup

LX1972A EVALUATION BOARD BILL OF MATERIALS

MISCELLANEOUS COMPONENTS

Line Item	Part Description	Manufacturer & Part #		Case	Reference Designators	Qty
1	Microsemi IC – Ambient Light Sensor	MICROSEMI	LX1972AIBC	1206	A3	1
2	CONN HEADER RTANG 5POS .100	AMP	640457-5	Through Hole	J5	1

CAPACITORS

Line Item	Part Description	Part Description		Case	Reference Designators	Qty
1	Capacitor, 10 μ F, 16V, \pm 20%	PANASONIC	ECJ-MFF1C106Z	1206	C25,30	2

RESISTORS

Line Item	Part Description	Part Description		Case	Reference Designators	Qty
1	Resistor, 0 Ohm, 5%, 1/8W	PANASONIC	ERJ-6GEY0R00V	0805	R44	1
2	Resistor, 10K, 1%, 1/8W	PANASONIC	ERJ-6ENF1002V	0805	R46,54	2
3	Resistor, 20K, 1%, 1/8W	PANASONIC	ERJ-6ENF2002V	0805	R45	1