

Colour Sensor

This color sensor identifies color and gives serial output of RGB value. The detected color is identified as amount of three primary color values namely Red, Green & Blue with 8 bit accuracy for each primary color. Any color can be separated or combined into three primary colors Red, Green and Blue using the RGB values.



Features

- Individual RGB color detected.
- Serial data output for complete RGB values.
- High resolution conversation of light intensity to frequency.
- Communications directly to a microcontroller.
- Power down feature.
- Pb free and RoHS compliant surface mount package.

Applications

- Color detection applications.
- Robotics and control systems.

Specifications

Parameter	Value
Supply voltage	2.7v to 5.5v
Nonlinearity error	0.2%
Temperature range	-40C to +70C

Pin Details

Pin	Name	Details
1	GND	Power supply
2	S0	Selection input
3	S1	Selection input
4	LED	out
5	GND	ground



Working

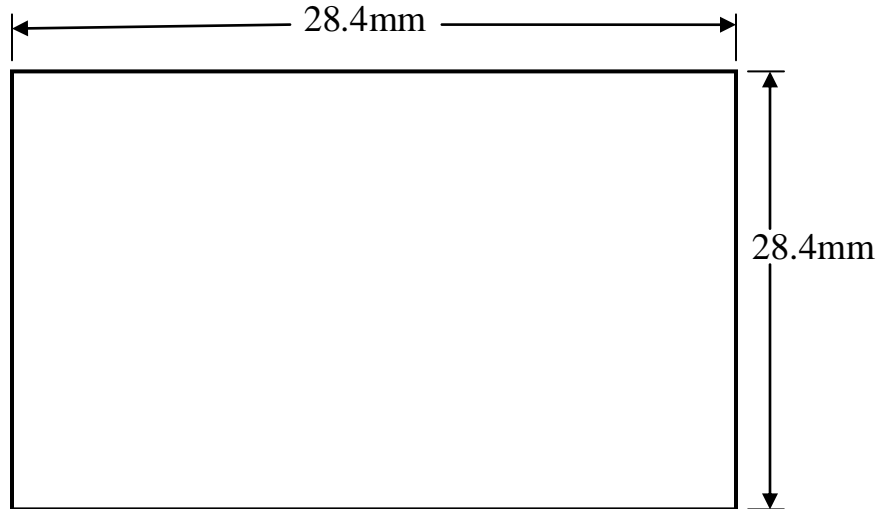
The TCS3200 and TCS3210 programmable color light-to-frequency converters that combine configurable silicon photodiodes and a current-to-frequency converter on a single monolithic CMOS integrated circuit. The output is a square wave (50% duty cycle) with frequency directly proportional to light intensity (irradiance). The full-scale output frequency can be scaled by one of three preset values via two control input pins. Digital inputs and digital output allow direct interface to a microcontroller or other logic circuitry. Output enable (OE) places the output in the high-impedance state for multiple-unit sharing of a microcontroller input line. In the TCS3200, the light-to-frequency converter reads an 8 x 8 array of photodiodes. Sixteen photodiodes have blue filters, 16 photodiodes have green filters, 16 photodiodes have red filters, and 16 photodiodes are clear with no filters. In the TCS3210, the light-to-frequency converter reads a 4 x 6 array of photodiodes. Six photodiodes have blue filters, 6 photodiodes have green filters, 6 photodiodes have red filters, and 6 photodiodes are clear with no filters. The three types (colors) of photodiodes are inter digitated to minimize the effect of non-uniformity of incident irradiance. All photodiodes of the same color are connected in parallel.

Sample Application

To view sample code and schematic click the below link:

<http://researchdesignlab.com/index.php/sensors/colour-sensor.html>

Board Dimensions



To buy this product click the below link

<http://researchdesignlab.com/index.php/sensors/colour-sensor.html>

To view the complete datasheet of colour sensor click the below link:

<http://forum.researchdesignlab.com/datasheet/coloursensor>