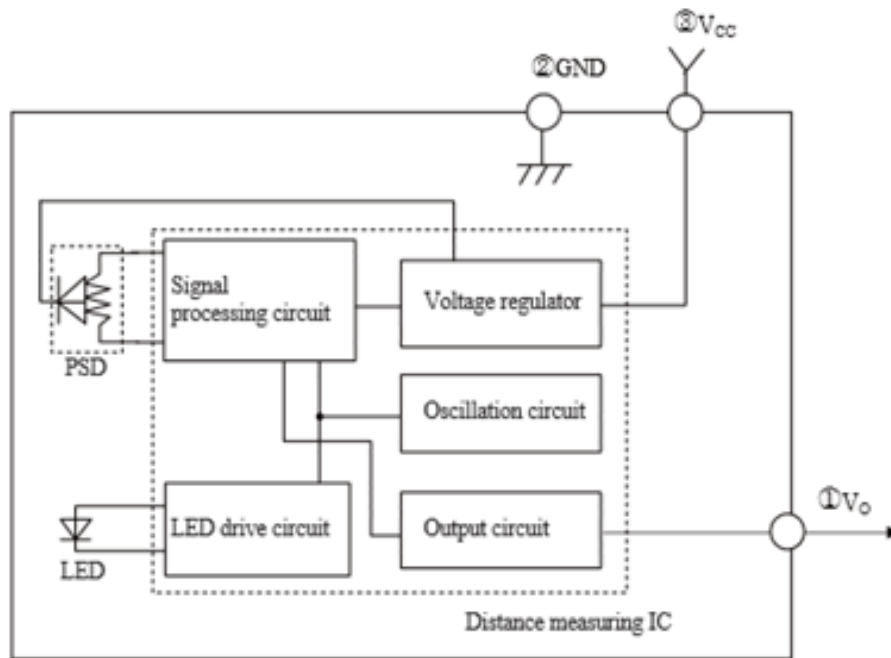# Sharp

2YA02 Long Range IR Proximity (Rev. 1)

General Description

Sharp 2Y0A02 Long Range IR is a distance measuring sensor unit, composed of an integrated combination of PSD (position sensitive detector), IRED (infrared emitting diode) and signal processing circuit. The variety of the reflectivity of the object, the environmental temperature and the operating duration are not influenced easily to the distance detection because of adopting the triangulation method. This device outputs the voltage corresponding to the detection distance. So this sensor can also be used as a proximity sensor.

Specifications

- Distance measuring range: 20 to 150 cm

- Analog output type

- 0 – 2.3V Output voltage

- Package size: 29.5×13×21.6 mm

- Consumption current: Typ. 33 mA

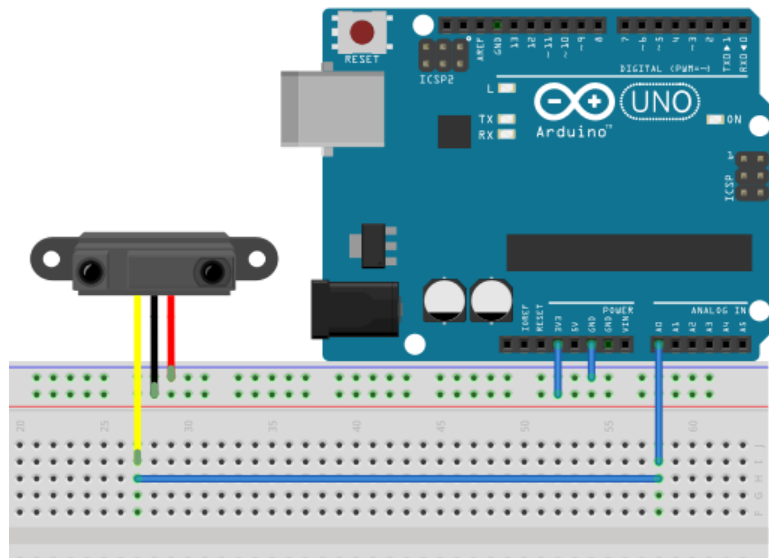- Supply voltage: 4.5 to 5.5 V

Block Diagram

Sample Program

You need:

Arduino

Sharp 2YA02 Long Range IR Proximity

Connecting Wires

Wiring Diagram

TINKBOX
www.tinkbox.ph

Sketch

This program will display the distance in inches of an object from the Sharp IR sensor. Calculations are based on an [article] on Acroname.

```
/*
  AnalogReadSerial
  Reads an analog input on pin 0, prints the result to the serial moni
tor.
  Attach the center pin of a potentiometer to pin A0, and the outside
pins to +5V and ground.

 This example code is in the public domain.
 */
int fsensorValue;
// the setup routine runs once when you press reset:
void setup() {
  // initialize serial communication at 9600 bits per second:
  Serial.begin(9600);
}

// the loop routine runs over and over again forever:
void loop() {
  // read the input on analog pin 0:
  int asensorValue = analogRead(A0);
  fsensorValue = (6787/(asensorValue-4)-8);
  // print out the value you read:
  Serial.print(fsensorValue);
  Serial.println("in.");
  delay(500);            // delay in between reads for stability
}
```

Result

```
COM9

                                                    Send

17in.
15in.
14in.
13in.
11in.
9in.
9in.
9in.
18in.
26in.
31in.
33in.
34in.
33in.
33in.
33in.
33in.
31in.
31in.

☑ Autoscroll          No line ending ⌄    9600 baud ⌄
```