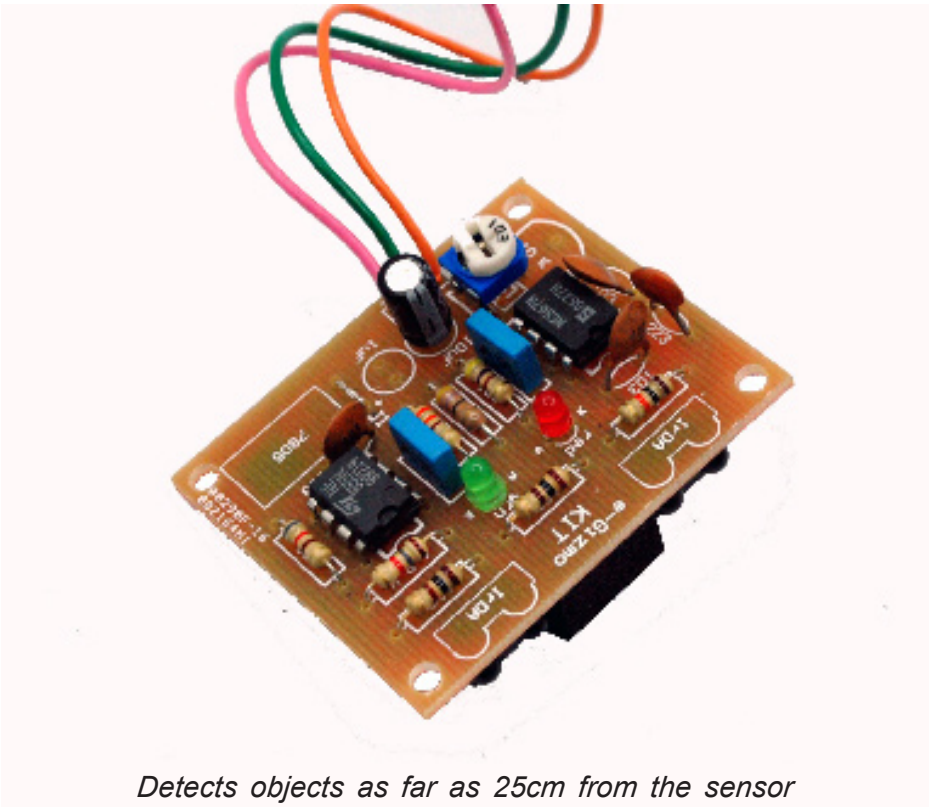
Infrared Proximity-Collision Sensor

Hardware Manual Rev 1r0



Detects objects as far as 25cm from the sensor face. Infrared beam makes it relatively insensitive to ambient light and color (of target object). Applications includes non contact object detection and collision sensor for mobile robots.

Features & Specifications

- 5VDC power supply.
- Optional 7805 regulator for extended operation voltage of 7-9VDC.
- 25cm (10 inches) typical detection range
- 2 IRDA sensors (1 for transmit and 1 for receive).
- 1 TTL active low logic output. (logic goes low when an object is detected)

MAJOR COMPONENTS PRESENTATION & OPERATIONS

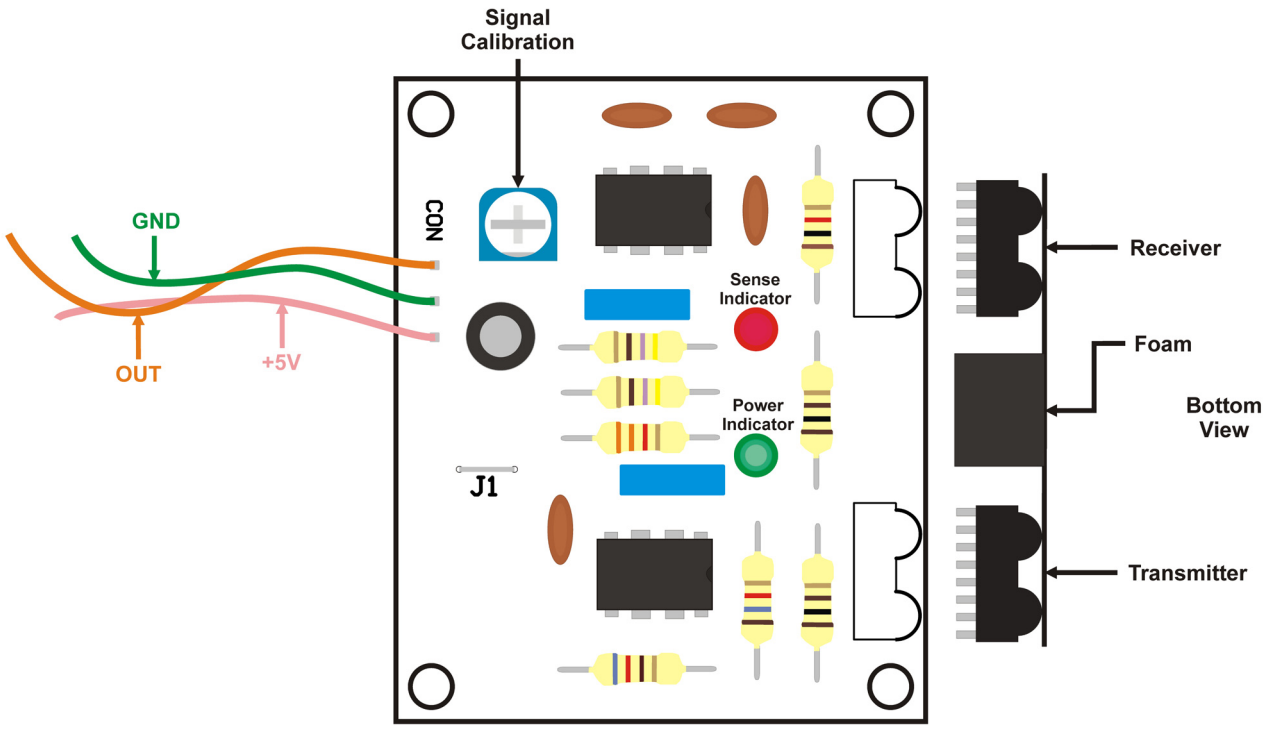


Figure 1. *Proximity Collision Sensor and it's major components*

To test the proximity collision sensor, first attach +5V power supply to the 'Pink Wire' and negative to the 'Green Wire', the 'Orange wire' is for 'Logic Output' logic goes low when an object is detected and can be connected to microcontrollers or through PC printer port., now the power indicator will light (Green LED), place your hand or any object in the front of the IrDA transmitter or receiver (10 inches maximum), if the sense indicator (Red LED) doesn't light, we will need the 'Signal Calibration' rotate the signal calibration partially either ^{o}CW or ^{o}CCW, then place again your hand or any object to detect, do this until the sense indicator lighted. And the 'Foam' for separation of the two sensors, it is very important because when the foam was lost and nothing to separate the sensors, the whole kit won't work.

Figure 2. *Signal Calibration example rotations.*

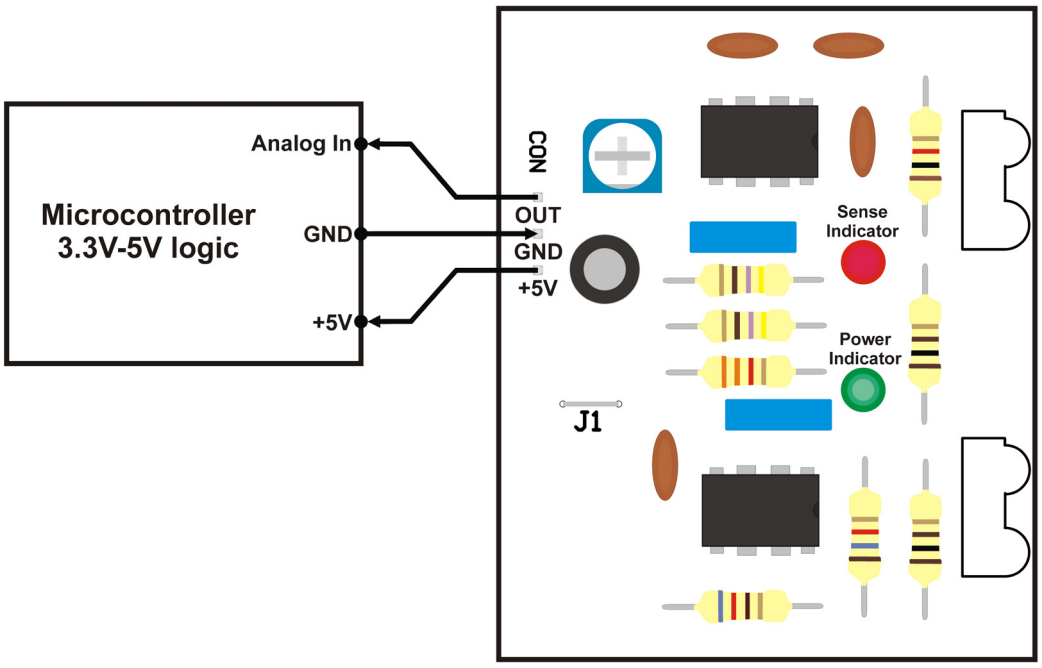


Figure 3. *Proximity Collision Sensor Connected to a microcontroller.*

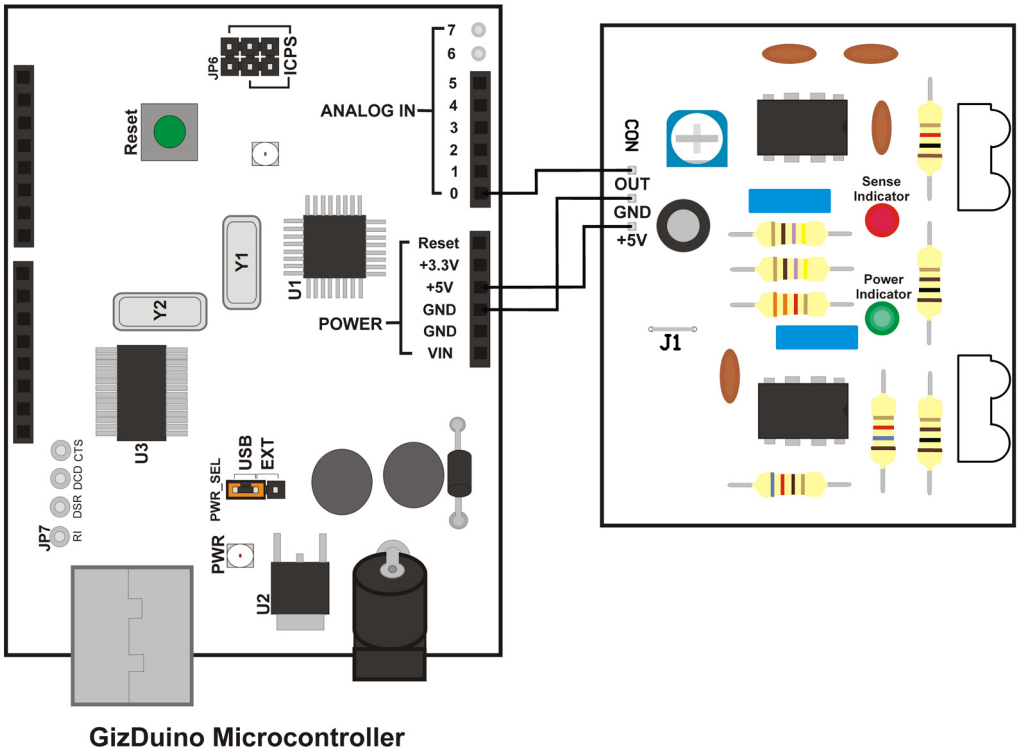


Figure 4. *Proximity Collision Sensor connected to gizDuino microcontrolle*

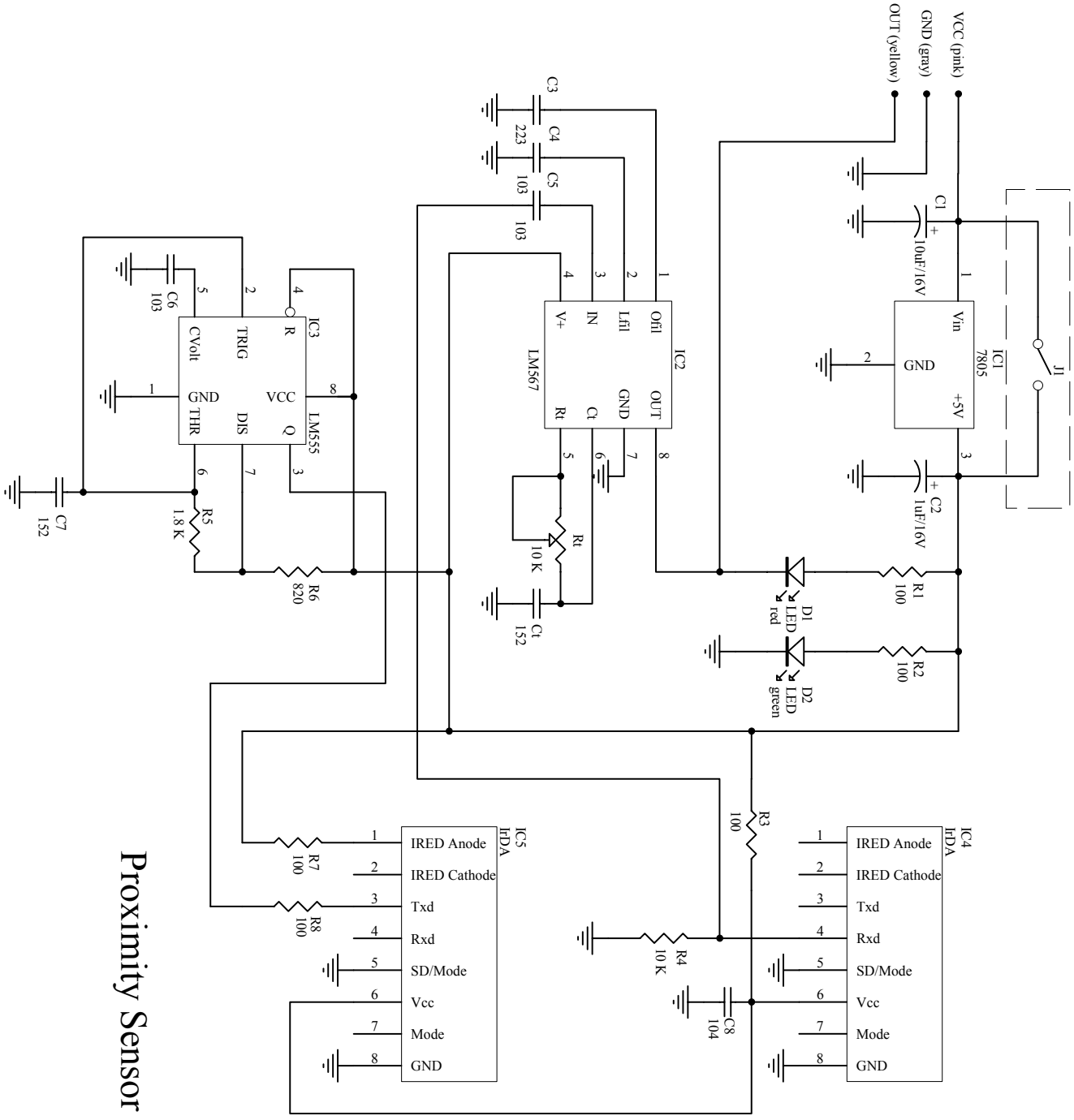


Figure 5. *Schematic Diagram of Proximity-Collision Sensor*

PCB BOARD PRESENTATION

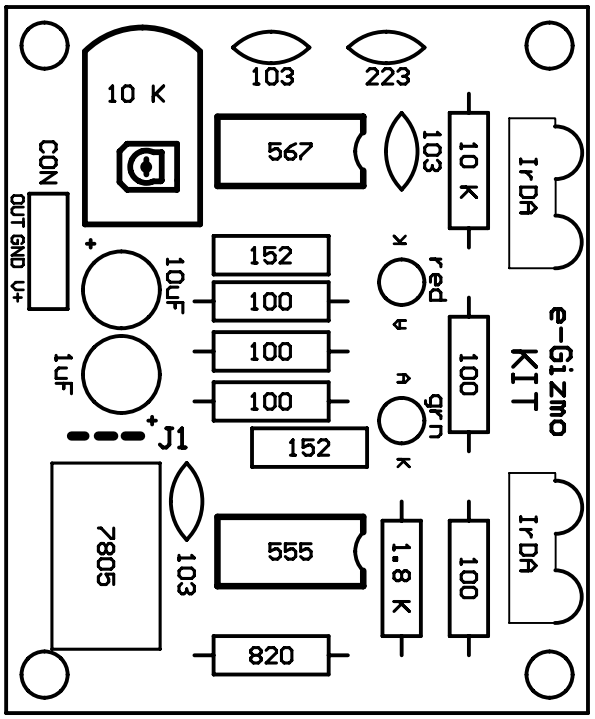


Figure 6. *Proximity-Collision PCB (silkscreen layout)*

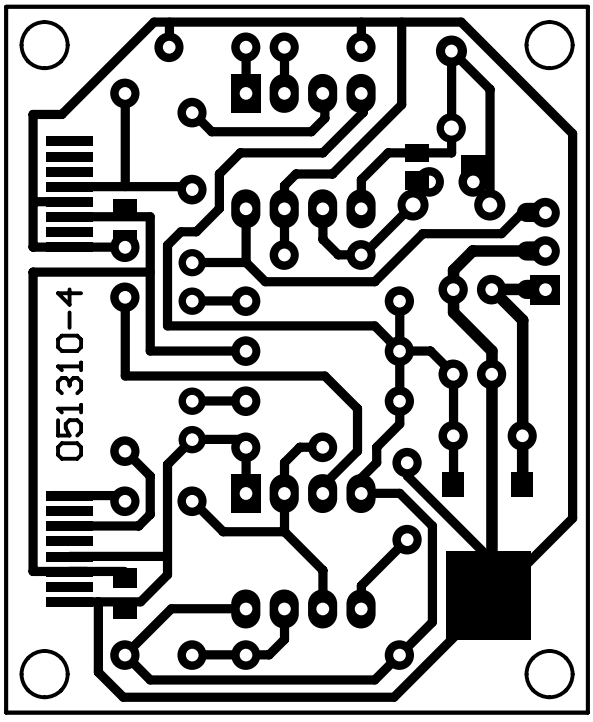


Figure 7. *Proximity-Collision PCB Copper Pattern*