

This circuit is used to switch a LED on and off as the surrounding light decreases and increases.

In this circuit a LDR is used to determine the light intensity and then to switch a LED on or off. The 555 is set up as a Schmitt Trigger. The output of the 555 has two states (on and off) while the input is an analogue signal.

Happy building if you have any questions please contact us ©

#### **Tools required**

- 1. Electronic Workstation
- 2. Flat screwdriver 2mm
- 3. Side cutter 125mm
- 4. Sharp nose pliers 130mm

### **Component identification**

The following instructions will help you build a Light Dark Switch on to your Electronic Workstation. But you will only be able to follow these instructions if you can identify the electronic components used in these instructions.

I have created a electronic component document dedicated to the identification of electronic components. You can download this document from the foot section of our web site ( www.electronics123.co.za )

# **Component preparation**

Variable resistor: When viewed from the bottom the terminal's will look like this (I) now bend it all three terminals like this (/) bending the terminals at 45° will insure the terminal enter deep into the breadboard sockets.

# **Light Dark Switch**

Resistors: Cut the paper strip of the resistor this will ensure that no glue is left on the terminal the glue can cause the terminal not to conduct electricity!

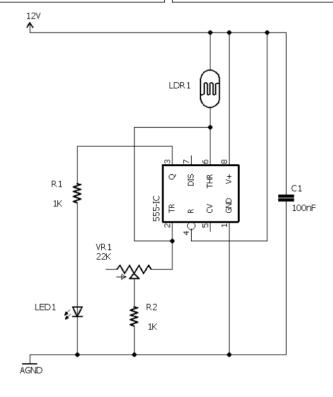
LED: Cut the terminals of the LED to equal lengths you will still be able to find the cathode ( - ) by the flat side on the body of the led.

IC: The terminal of the IC is at a slight angel bend them to a 90° angel.

## **Components required**

4cm Black connecting wire x2

4cm Blue connecting wire	x1
4cm Red connecting wire	x2
7cm Black connecting wire	x 1
7cm Blue connecting wire	x 1
15cm Red connecting wire	x 1
15cm Black connecting wire	x 1
1kΩ Resistor 1/4 Watt 5%	
(brown, black, red, gold)	DB056 x 2



22kΩ Variable Resistor		DB300 x 1
100nF 50V Ceramic Capacitor		DB202 x 1
5mm Red LED		HB077 x 1
555 IC Timer (DIP8)		HB100 x 1
LDR		DB152 x 1
Configuratio	n table	
4cm Black connecting wire		M21 - L21
4cm Black connecting wire		M28 - L28
4cm Blue connecting wire		122 - F23
4cm Red connecting wire		124 - F21
4cm Red connecting wire		B21 - C21
7cm Black connecting wire		M19 - G19
7cm Blue connecting wire		D23 - D32
15cm Red connecting wire		B17 - (+ 6V)
15cm Black connecting wire		M17 - (- 6V)
1kΩ Resistor 1/4 Watt 5%		
(brown, black, red, gold)		K23 - K27
1kΩ Resistor 1/4 Watt 5%		
(brown, black, red, gold)		M29 - L31
22kΩ Variable Resistor		
Т1		H31
Т2		F32
Т3		H33
100nF 50V Ceramic Capacitor		E19 - E21
5mm Red LED		
Anode (+)	H27	
Cathode (-) Flat side	H28	

555 IC Timer (reference mark must show towards the left) Pin1 H21 Pin8 G21 LDR B23 - C23 **Company details** Company name: Electronics123 Retail Store CC Physical address: Cnr. Codonia & Moulton Str. Waverley, 0135, Pretoria, South Africa. Postal address: PO Box 31113, Waverley, 0135, South Africa Tel: 012 332 2356 Fax: 012 332 0487

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