

COORDINATION TEST GAME

The coordination test game is used to test the coordination between a person's eye and hand movements. Use the coordination test game to earn money for the school fete or church bazaar. The kit is also ideal for explaining the principle of current switching with a thyristor.

BEFORE YOU START

You will need to identify each component by observing the following characteristics.

RESISTORS

Do not have any polarity you can insert any terminal in to any respective hole.

LED (Light Emitting Diode)

LED's do have polarity and must be placed the correct way round into the circuit its polarity is indicated by a long and short terminal. The short terminal is the cathode (-) and the long terminal is the anode (+).

THYRISTOR (SCR) "Silicon Controlled Rectifier"

The Thyristor (2N5064) has three terminals Anode(a) Cathode (c) Gate(g). Viewing the thyristor with the flat side facing away from you then the anode is on the left the gate in the middle and the cathode on the right.

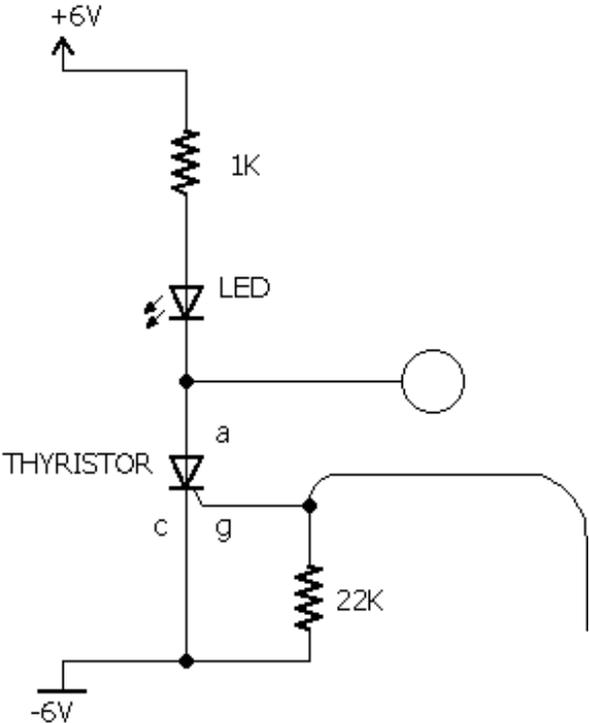
Happy building if you have any questions please contact us!

COMPONENTS REQUIRED

Electronic Workstation	JH656 X 1
7cm Red connecting wire	X 1
15cm Black connecting wire	X 1
3cm Yellow connecting wire	X 1

3cm Orange connecting wire	X 1
7cm Blue connecting wire	X 1
25cm Naked Copper wire	X 1
1kΩ Resistor 1/4 Watt 5% (brown, black, red, gold)	DB056 X 1
22kΩ Resistor 1/4 Watt 5% (red, red, orange, gold)	DB072 X 1
Thyristor 2N5064	HB046 X 1
5mm Red LED	HB077 X 1

30cm Orange connecting wire with ring	x 1
CONFIGURATION TABLE	
7cm Red connecting wire	+6V - A23
1kΩ Resistor 1/4 Watt 5% (brown, black, red, gold)	A25 - C25
5mm Red LED	
Anode (+) longer terminal	E25
Cathode (-) shorter terminal	E26
3cm Yellow connecting wire	G26 - H26



Thyristor 2N5064	
(The flat side of the thyristor must face away from You.)	
Anode	I26
Gate	I27
Cathode	I28
7cm Blue connecting wire	J26 - N26
3cm Orange connecting wire	H28 - H35
15cm Black connecting wire	-6V - I35
22kΩ Resistor 1/4 Watt 5% (red, red, orange, gold)	K27 - K35
15cm Naked Copper wire	L27 - L62
30cm Orange connecting wire with ring	N19

RULES OF THE GAME

The ring of the orange wire must be threaded through the naked copper wire without touching it. The player who manages to thread it through the furthest without the LED lighting up is the winner. There can also be a limited time factor, for example, 10 seconds. Use your imagination and make your own rules for the game. For example, two players playing simultaneously each with his own Electronic Workstation in a quick draw game. A lot of fun is provide if two players work together in a team. The one player is blind folded and must thread the ring through the wire while his teammate gives him/her instructions.

HOW TO RESET THE GAME

Switch the power supply of the electronic workstation off and on. The thyristor is now reset and ready for the next game.

CIRCUIT FUNCTIONING

The thyristor (SCR) is a four layer (p-n-p-n) three terminal electronic device which can pass (conduct) a large current through two of its terminals, anode/cathode, when a (+) potential is applied to its gate.

When the thyristor is in the conductive state (switched on),

the gate loses all control and it will remain on as long as there is a current (holding current) flowing through its anode/cathode circuit. If the holding current is discontinued, the thyristor will switch off, and must again be triggered by a (+) potential at the gate to switch it to conduct.

The thyristor is the same as a switch and has only two modes, either on or off. A very small (+) signal at the gate (millionth of an ampere) for a fraction of time (thousandths of a second) can trigger the thyristor to perform one or other function which requires a large current.

Thyristors are also used in circuits where high speed switching is required, and an ordinary mechanical switch with moving parts is inadequate, for example, where 100 switching's per second is required.

Sometimes thyristors have the problem of false triggering (self triggering). This can be prevented by applying a small constant (-) potential to the gate.

Thyristors are readily available in a wide variety of shapes,

sizes and power handling capabilities. Big water cooled thyristor are rated to handle many thousands of volts and several thousand amps! In microchips thyristor are so small they can not be seen with the naked eye.

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
 E-mail: jaco@electronics123.co.za
 Web site: www.electronics123.co.za

