

LOW COST ELECTRONICS:

Electronic Latch - Class Pack of 30 (code: 88P-002A)

Introduction

The *Electronic Latch* is one of five circuits designed to meet the requirements of KS3 systems and control at an affordable cost. The circuit can be run from a 9 volt PP3 battery but will work from as low as 3 volts (e.g., 2 x AA batteries) if the resistor values are reduced.

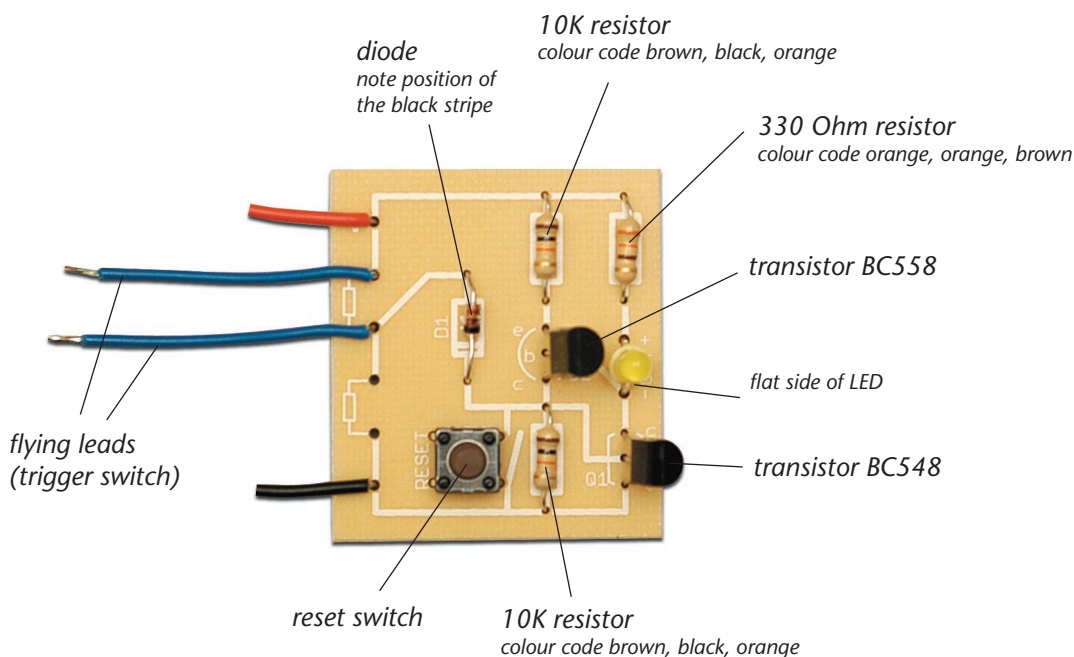
How it works

Some press-button switches only remain closed while you press them. Light switches stay latched in the on or off position. This circuit is the electronic version of the light switch: when you trigger it with a small current, it stays on until re-set. One transistor keeps the second transistor switched on.

Applications

1. Solder on the components as shown and add two flying leads.

Note: the two transistors are different types; please check the numbers printed on the transistors carefully.

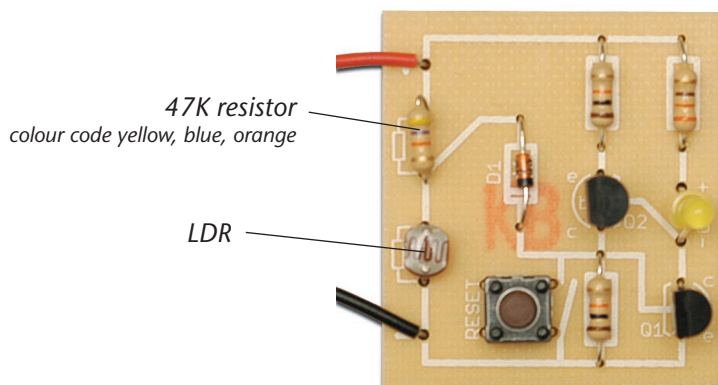


When you touch the leads together the LED comes on and stays on – until you press the re-set switch. (The re-set switch can itself be connected via flying leads if you want). You can now connect the flying leads to a suitable trigger switch – e.g., press switch, tilt switch, reed switch (magnetically operated), QTC switch or membrane panel switch that you make. When the switch is closed momentarily, the LED comes on and stays on. This will tell you, for example, if someone opened a door or interfered with something when you were out.

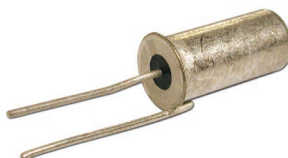
2. If you substitute a buzzer for the LED, you have a true burglar alarm: the buzzer makes a noise until the alarm is re-set.

Application using trigger components

3. You can use an LDR, thermistor or other suitable components to trigger the alarm. These components are connected as part of a potential divider as in the circuit 4. You can juggle with the values of the 'balancing' resistor to give the circuit different sensitivity to heat, light, etc. – or you might use a variable resistor to do this. The example below shows an LDR used as the trigger component. If the LDR is in darkness for just a moment (e.g. a light beam is broken), the circuit will be triggered. Your kit includes a 47K resistor and an LDR to demonstrate this.



To adjust the sensitivity of the circuit a 100K variable resistor (code: ER1 100K) may be used in place of the 47K resistor.



Other components for triggering the circuit include a tilt switch (code: ES1 011) and a microswitch (code: ES1 004).



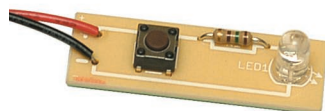
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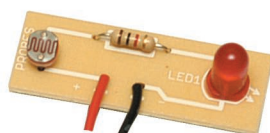
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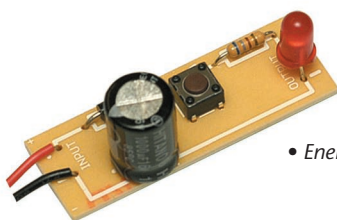
The Low Cost Electronics Product Range



• LED light with switch

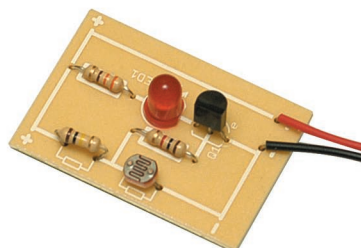
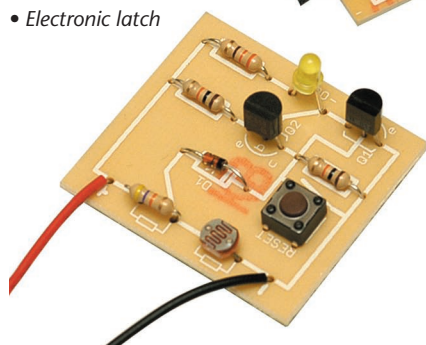


• LED light with sensor



• Energy storage

• Electronic latch



• Transistor switch/amplifier

Class Packs of Circuits

Product

LED light with switch

LED light with sensor

Energy storage

Transistor switch/amplifier

Electronic latch

Class pack of 30

Class pack of 30

Class pack of 30

Class pack of 30

Class pack of 30

Code

88P-001A

88P-003A

88P-004A

88P-005A

88P-002A

Class Packs of Blank Circuit Boards

Blank, unpopulated circuit boards for each kit are also available in packs of 30.

Product

LED light with switch

LED light with sensor

Energy storage

Transistor switch/amplifier

Electronic latch

pack of 30 blank PCBs

pack of 30 blank PCBs

pack of 30 blank PCBs

pack of 30 blank PCBs

pack of 30 blank PCBs

Code

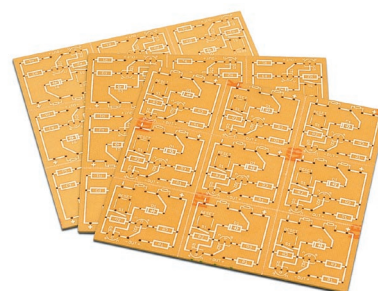
88P-001B

88P-003B

88P-004B

88P-005B

88P-002B



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