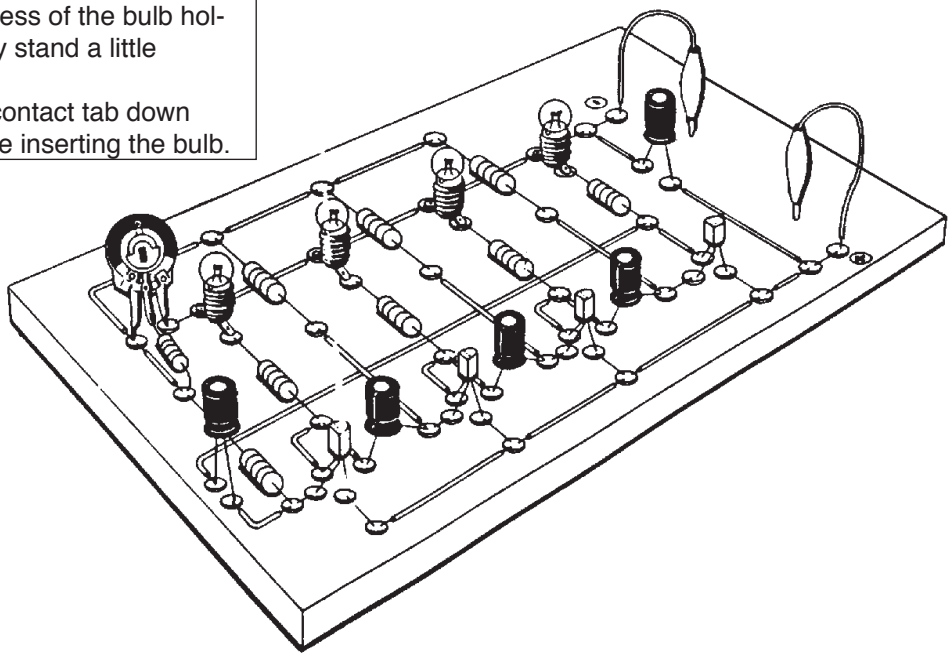
110.109
ALTERNATING LIGHTS

Please Note

Due to the manufacturing process of the bulb holders, the inner contact tab may stand a little proud.
We recommend pressing the contact tab down with a small screwdriver, before inserting the bulb.



General notes.

To make this circuit we suggest using any of the following methods:

1. Glue the circuit diagram on top of a 6mm thick piece of plywood and use copper coated hardboard pins as mounting points for the components.
2. Glue the circuit diagram on top of plaster board (Order No.873017) and insert drawing pins as mounting points for the components.
3. Mount the components on to Vero board
4. Use copper coated board to manufacture your own PCB.

All these parts are avaiable from our the main catalogue.

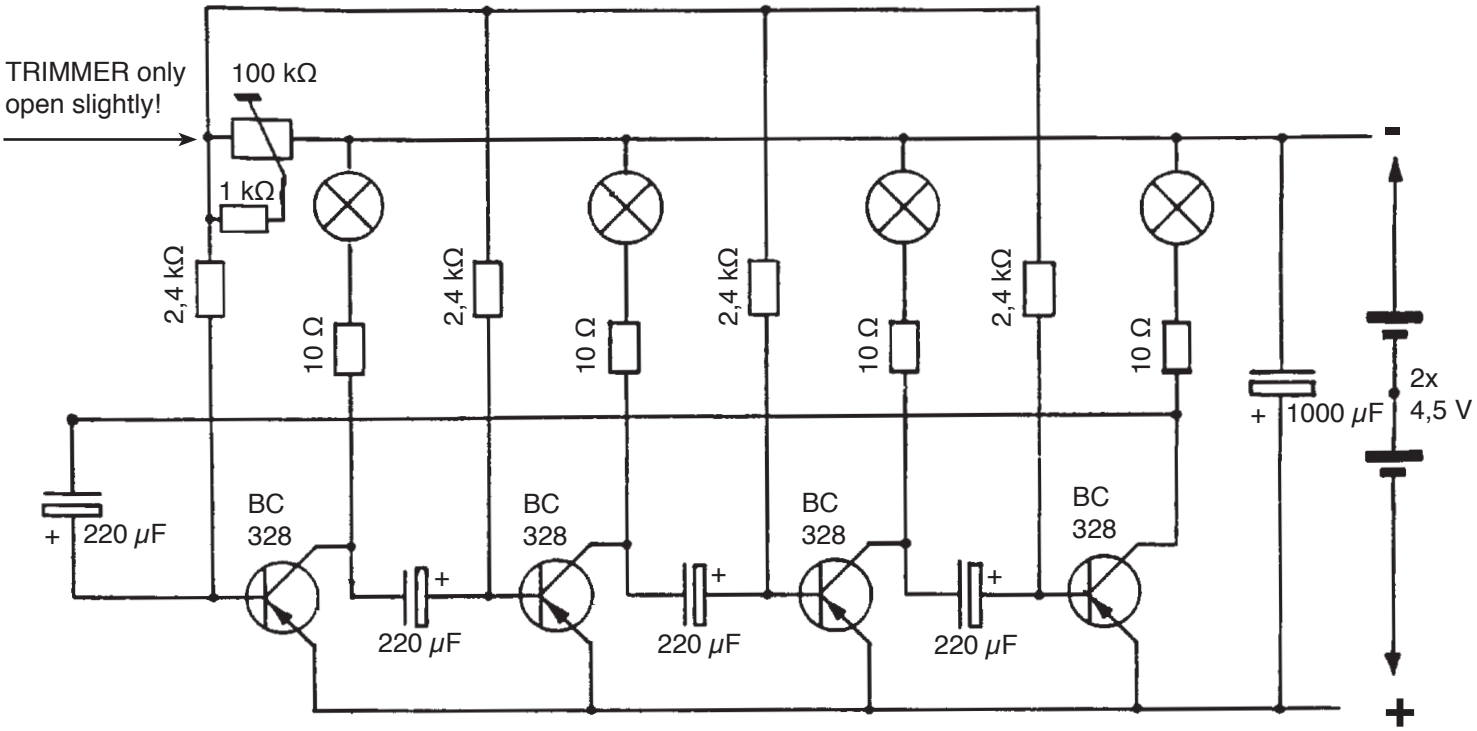
Alternating lights

Function description.
The lamps are turned on in sequence by the transistors, which are switched by the 220 microfarad capacitors. The capacitors are charged one after the other and then in turn activate the transistors and light- hence the running light effect. The signal from the output of the last transistor is fed back to the base of the first transistor, so that the process is repeated over again.
The 68 Ohm resistor in the collecter line of each transistor ensures that only the correct amount of current reaches the lamps. The potentiometer allows you to fine control the switching effect.

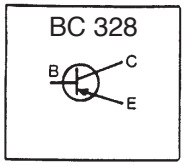
Please Note

The OPITEC range of projects is not intended as play toys for young children.They are teaching aids for young people learning the skills of Craft, Design and Technolo- gy.These projects should only be undertaken and tested with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Dan- ger of suffocation!

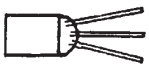
SCHEMATIC DIAGRAM



Zeichenerklärung

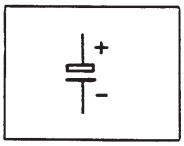


Transistor PNP
Arrangement of leads E, B, and C:

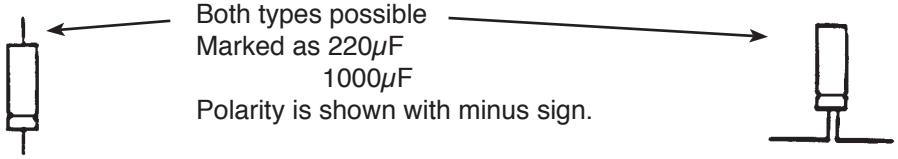


E = Emitter
B = Base
C = Collector

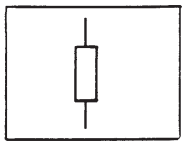
Warning: Wrong connection can lead to component damage.



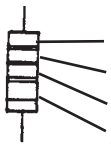
CAPACITOR



Both types possible
Marked as 220µF
1000µF
Polarity is shown with minus sign.

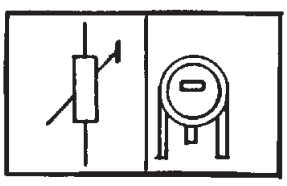


RESISTORS
Determination of resistors



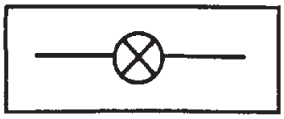
10 Ω	1 kΩ	2,4 kΩ
brown	brown	red
black	black	yellow
black	red	red
sillver/gold	sillver/gold	sillver/gold

Wire
Wire with joint (connection)
Crossed wire (no connection)



Variable potentiometer

100 kΩ
For adjusting the blinking time.
The 1kΩ resistor is hooked up to the center connection.



Bulb
3,8 V / 0,07 A

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