



Project (01) clap controlled/ toggle AC light



By:

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Objective

- Learn how to drive AC loads
- Learn how to isolate control circuits from load circuits
- Learn how control circuits drive load circuits
- Learn the concept of modular engineering, and how to make different control circuits to communicate each other.

Part 01:

Status toggle and

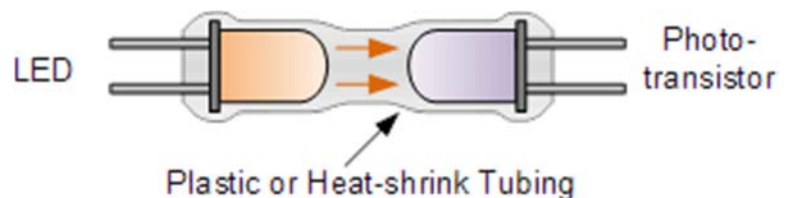
AC loads

interfacing

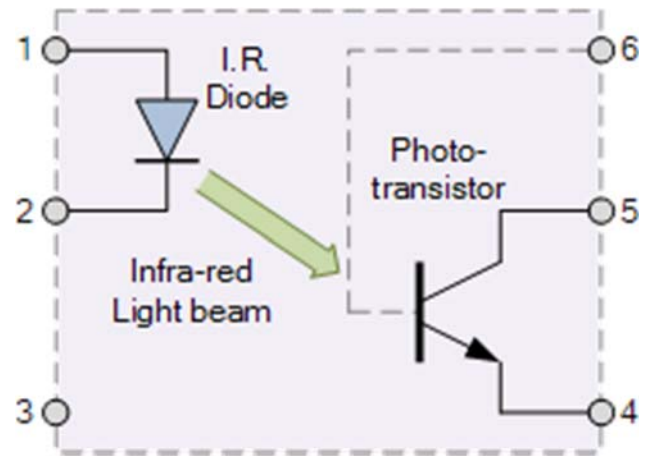
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4n33 opto-coupler isolator

- An **Optocoupler**, also known as an **Opto-isolator** or **Photo-coupler**, is an electronic components that interconnects two separate electrical circuits by means of a light sensitive optical interface

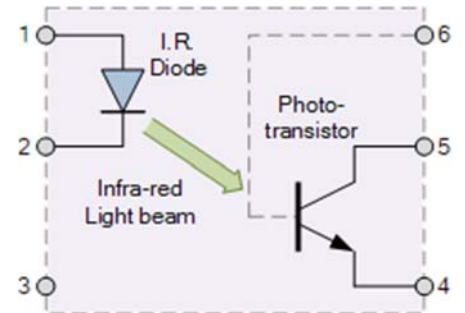


- Current from the source signal passes through the input LED which emits an infra-red light whose intensity is proportional to the electrical signal.
- This emitted light falls upon the base of the photo-transistor, causing it to switch-ON and conduct in a similar way to a normal bipolar transistor.



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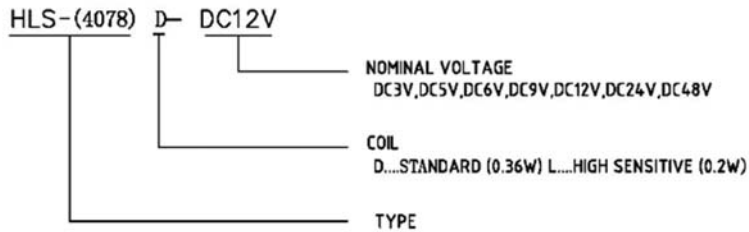
- The base connection of the photo-transistor can be left open (unconnected) for maximum sensitivity to the LEDs infrared light energy or connected to ground via a suitable external high value resistor to control the switching sensitivity making it more stable and resistant to false triggering by external electrical noise or voltage transients.



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Relay 12V Coil 8pin

ORDERING CODE 订购代码



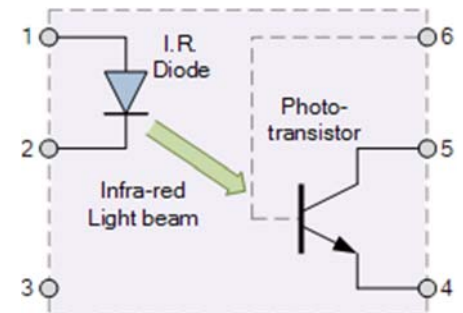
CONTACT DATA: 触点参数:

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|--------------------------------------|---------------------------------|
| Contact Form 触点形式 | 2C |
| Contact Material 触点材料 | Ag+Au |
| Contact Ratings 触点负载 | 1A 120VAC/24VDC |
| Max Switching Voltage 最大转换电压 | 240VAC/60VDC |
| Max Switching Current 最大转换电流 | 2A |
| Max Switching Power 最大转换功率 | 120VA/30W |
| Initial Contact Resistance 接触电阻 (首次) | 50mΩ Max at 6VDC 1A |
| Life Expectancy Electrical 电气寿命 | 100,000 Operations (rated load) |
| Life Expectancy Mechanical 机械寿命 | 10,000,000 Operations (no load) |

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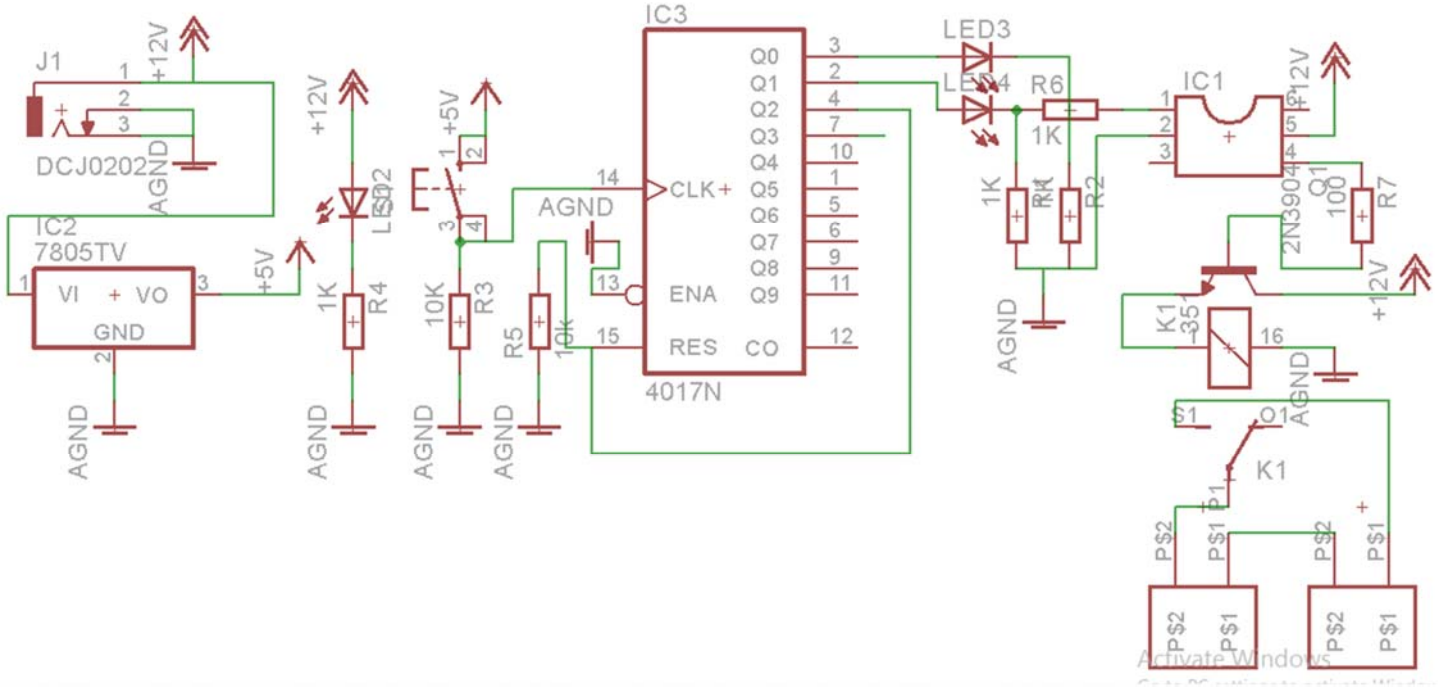
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- When the current flowing through the LED is interrupted, the infrared emitted light is cut-off, causing the photo-transistor to cease conducting. The photo-transistor can be used to switch current in the output circuit. The spectral response of the LED and the photo-sensitive device are closely matched being separated by a transparent medium such as glass, plastic or air. Since there is no direct electrical connection between the input and output of an optocoupler, electrical isolation up to 10kV is achieved.



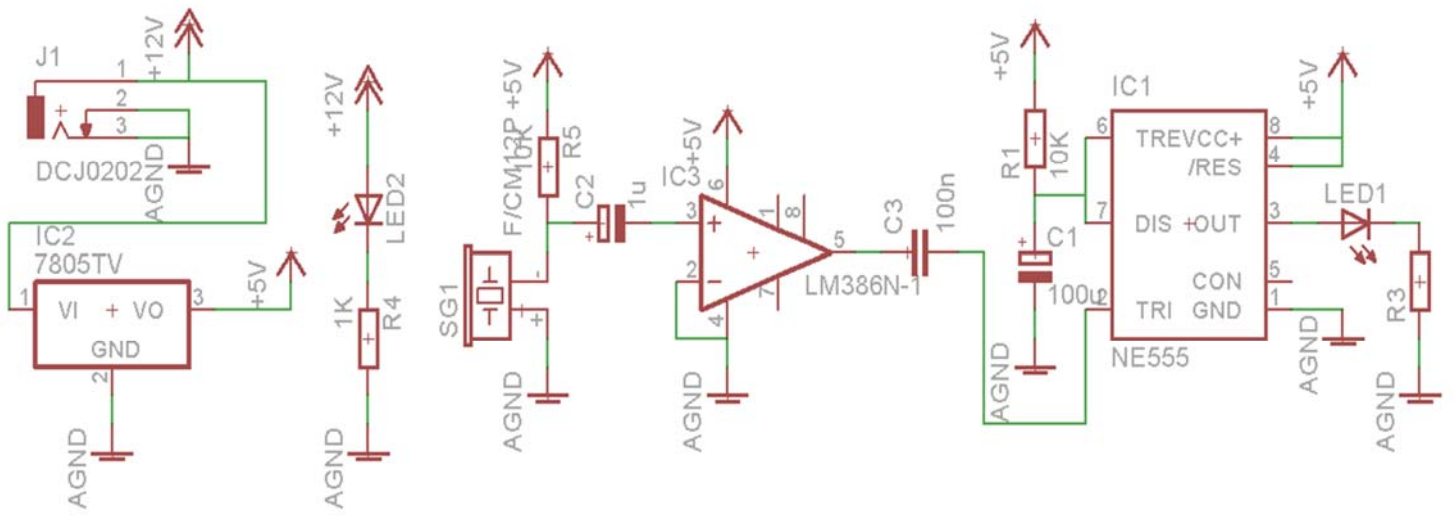
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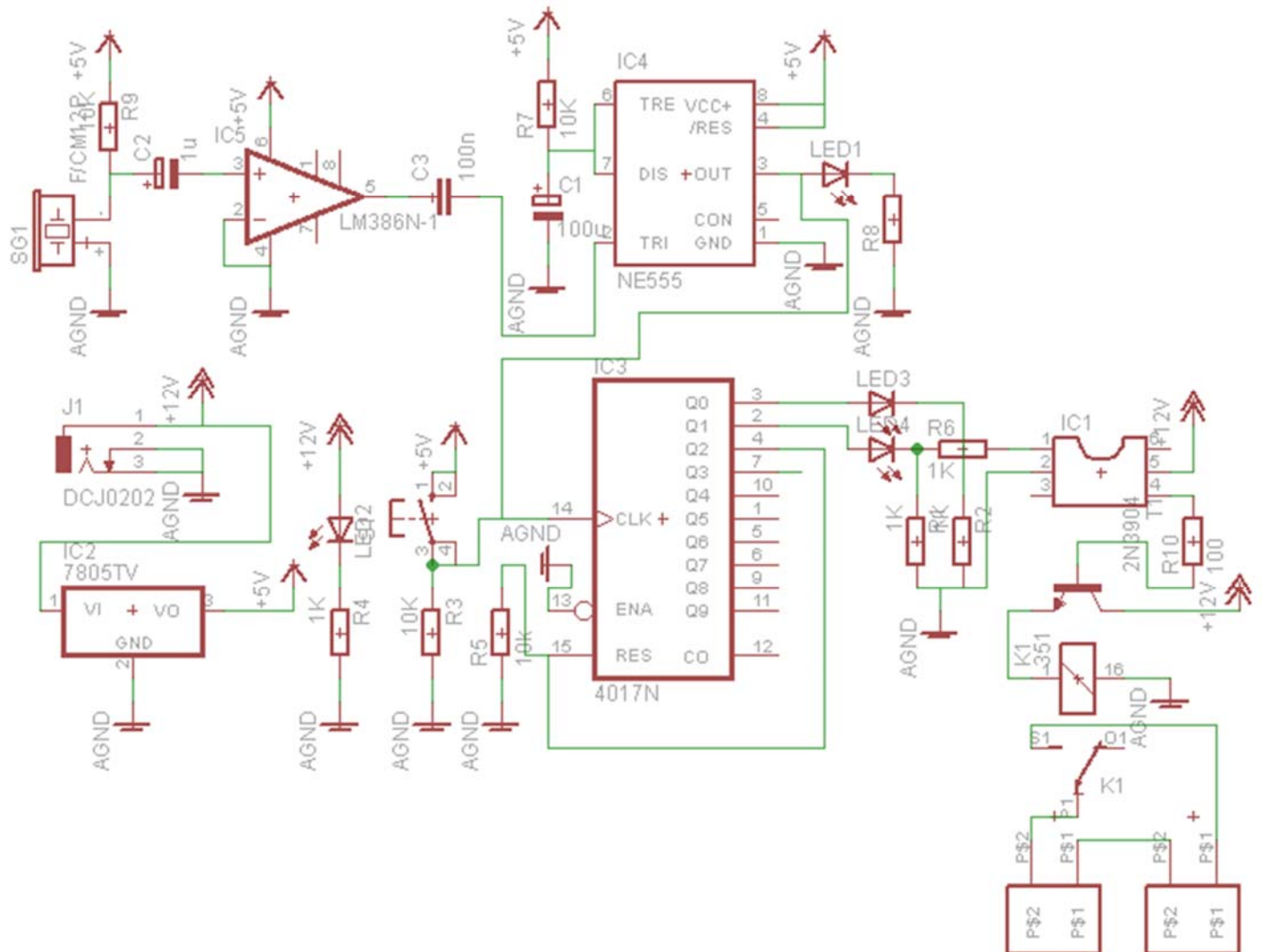
Part 02:

Interfacing 2 part 1 to old project (Clap led status toggle)



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Thanks,..

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