

MOODLIGHT PIC CONTROLLER

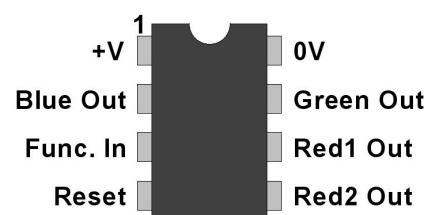
The IC is a pre-programmed PIC micro-controller which generates the PWM signals to drive the LEDs at different intensities.

The outputs can source around 20mA each. They can each drive a single LED with the appropriate series resistor calculated using

$$R \text{ in ohms} = (+V - V_f) / 0.02$$

Where +V is the supply voltage and V_f is the forward voltage of the LED you are using. The absolute maximum supply voltage (+V) for this IC is 5v.

The outputs can also be connected to drivers such as MOSFET or Darlington transistors to drive much large quantities of LEDs. See http://www.edutek.ltd.uk/CBricks_Pages/Transistor_Drivers.html for more details.



FUNCTION

The IC will gradually illuminate the LEDs in sequence causing a phasing effect between colours and generating a very wide range.

Red > Yellow > Green > Cyan > Blue > Mauve > Red

The change between main colours is about 5 seconds resulting in a full sequence taking around 30seconds.

There are 2 function modes when the "Function" button SW2 is pressed.

Pause

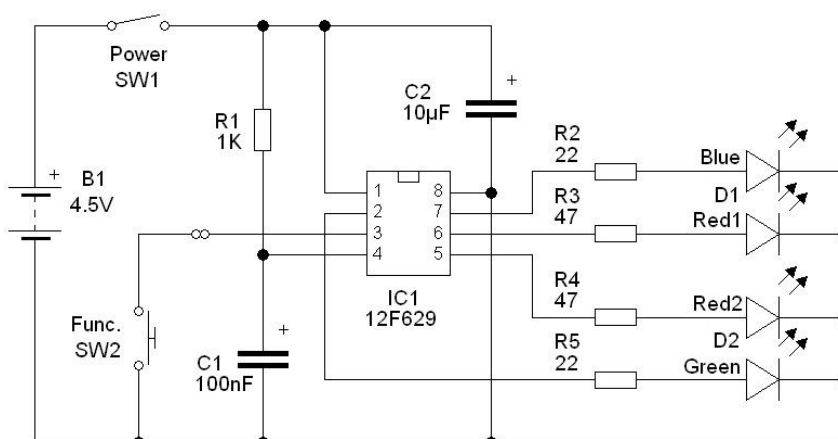
Pressing this button will cause the cycle of colours to pause and stay on the current colour until the button is pressed again.

Chase

Pressing and holding the button for more than 1.5 seconds will cause the sequence of the 6 main colours to flash quickly changing about 8 times per second until the button is pressed again.

CIRCUIT DIAGRAM

A suggested circuit diagram is shown below. This is taken from the Mood Light project at http://www.edutek.ltd.uk/Proj_KS3MoodLight.html



This circuit will run from 3v to 4.5v dc and draws an average of 40mA. Using AA batteries of reasonable quality, they should give a constant use of about 3 days, longer if used for short periods of time.

The IC was originally designed to operate with specific bi-colour LEDs, D1 and D2 which are Red/Green and Red/Blue types where 2 colours are in one package. As there are 2 red LEDs, there are 2 red outputs Red1 and Red2. These 2 outputs provide identical signals.

