Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

DESIGN A STYLISH LAMP WITH THIS

Micro USB Lamp Kit

Version 2.0

Micro USB Lamp Essentials

Kitronik
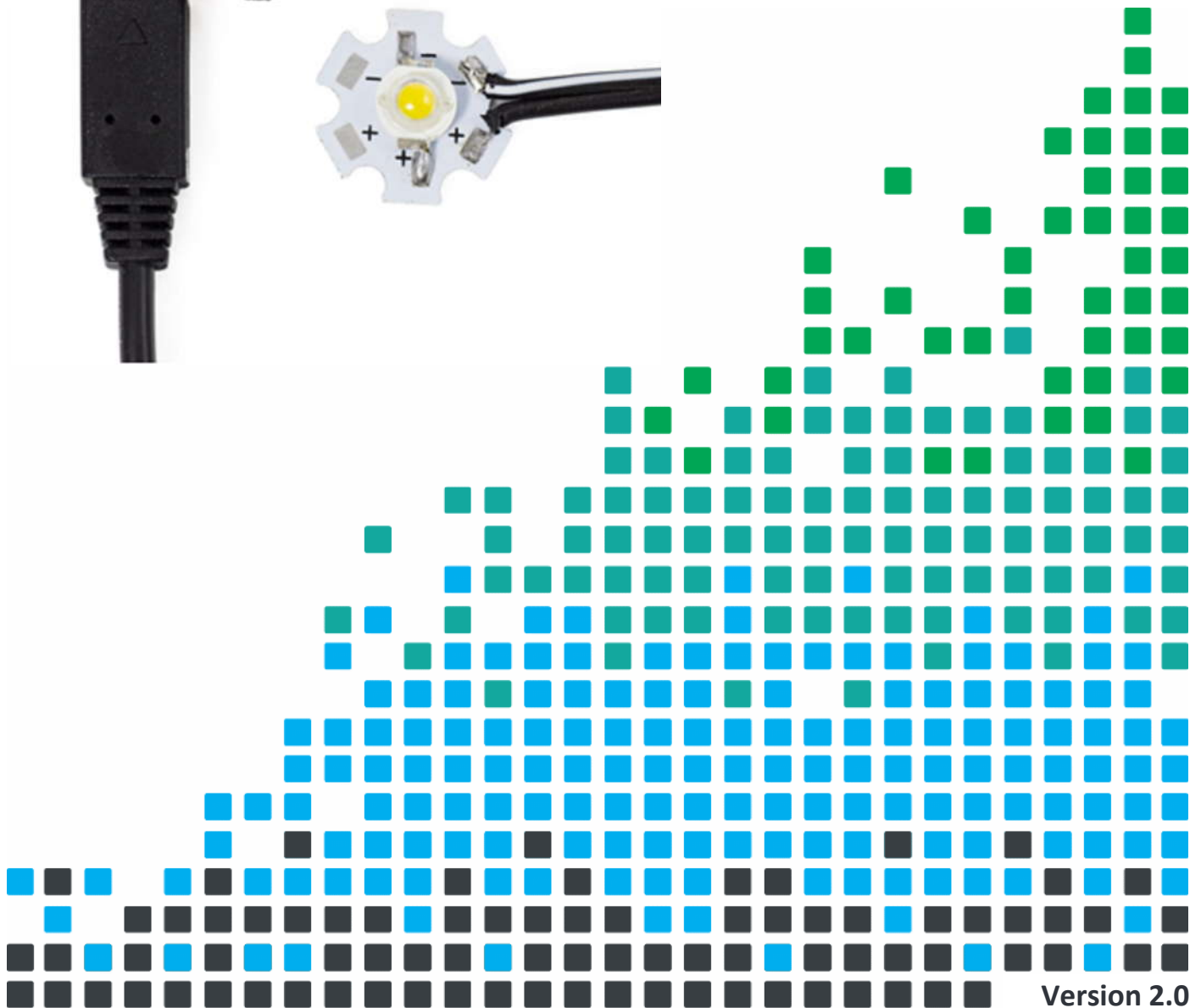
Build Instructions

Before you start, take a look at the Printed Circuit Board (PCB). The components go in the side with the writing on and the solder goes on the side with the tracks and silver pads.

1 PLACE RESISTORS

Start with the resistor R1. The text on the PCB shows where R1 should go. It doesn't matter which way around the resistor goes into the board.

PCB Ref	Value	Colour Bands
R1	10Ω	Brown, black, black

2 SOLDER THE SWITCH

Solder the PCB Mount Right Angled On / Off Slide Switch into SW1. The row of three pins that exit the back of the switch must be soldered but it will not matter too much if you can't solder the other two pins.

3 SOLDER THE WIRES TO THE LED

Solder the wire with the white stripe to one of the negative pads on the LED, it doesn't matter which one. The negative pads are indicated with a '-' symbol. Solder the plain black wire to one of the positive pads, the positive pads are indicated with a '+' symbol.

4 PLUG IN THE POWER

Plug a 5V Micro USB power supply (such as a mobile phone charger) into the connector then slide the switch to the on position, labelled on the PCB.

Note: The LED and resistor will get quite warm to the touch, so avoid handling if it is on or has recently been on for a long time.
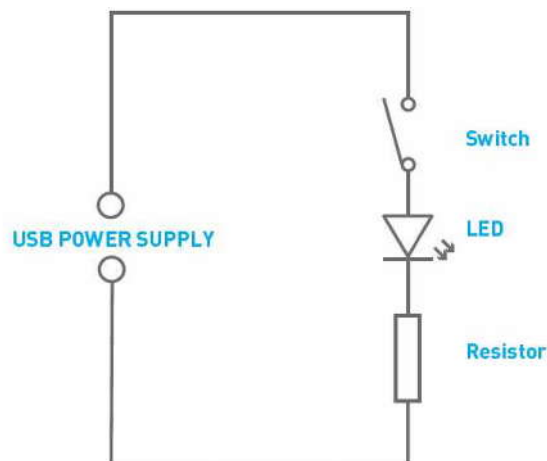
Checking Your Micro USB Lamp PCB

- Is the positive '+' pad on the LED wired to the terminal labelled '5V' on the PCB?
- Is the negative '-' pad on the LED wired to the terminal labelled 'GND' on the PCB?
- Have you soldered the resistor into the position marked R1 on the PCB?

How the Micro USB Lamp Works

The circuit diagram for the USB lamp is shown above. It is a very simple circuit. The 5V that powers the circuit is supplied from the micro USB connector.

LEDs can be damaged if the current through them is not limited.

A 10Ω resistor has been selected to limit the current through the white LED. This allows 150mA to flow through the LED so that it is at a good brightness.

Finally, the on / off switch allows the circuit to be opened and closed: open the switch to turn the LED off and close the switch to turn the LED on.
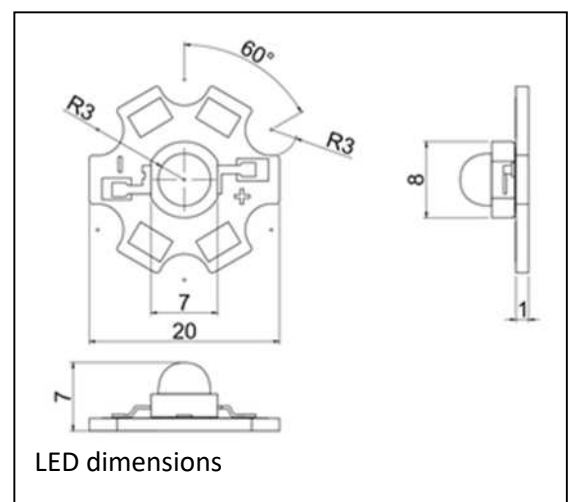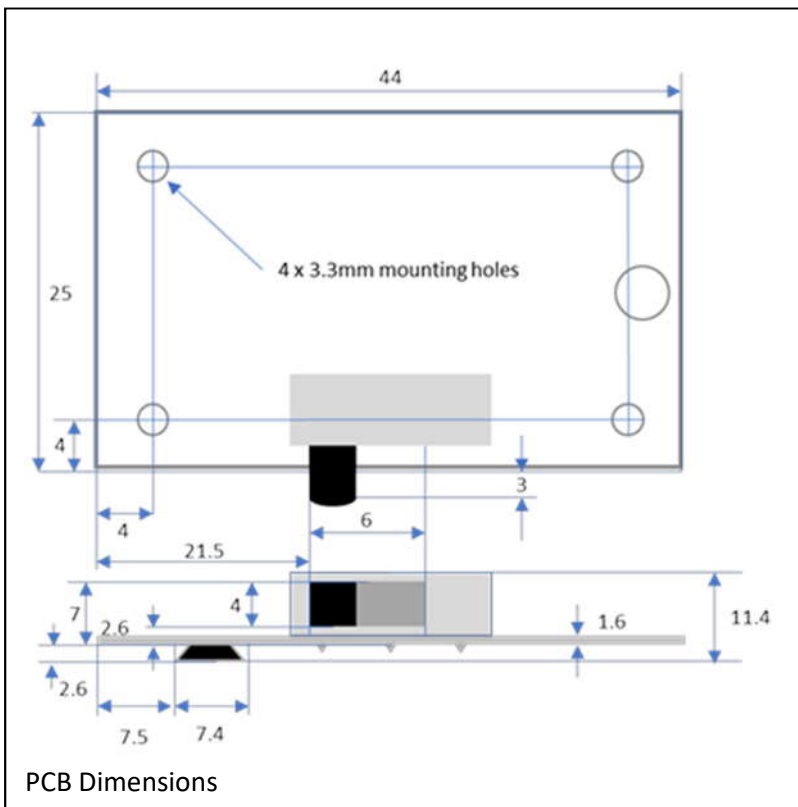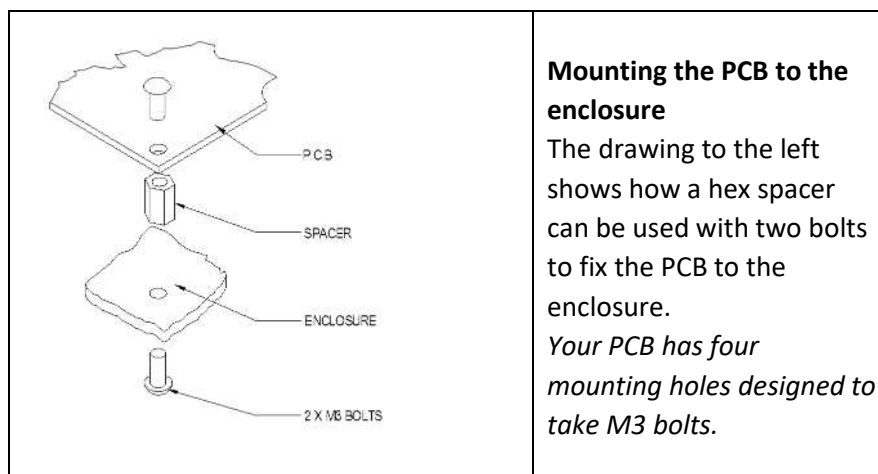
Designing the Enclosure

When you design the enclosure, you will need to consider:

- The size of the PCB and LED (below).
- Where the on / off switch is mounted.
- There are four 3.3mm holes in the corners of the PCB to secure the PCB in the enclosure.

These technical drawings of the built Micro USB Lamp PCB and the LED should help you to design your enclosure. All dimensions are in mm

PCB Dimensions

LED dimensions

If mounting the LED with metal fixings take care to ensure that the PCB pads are not shorted out.

Mounting the PCB to the enclosure
The drawing to the left shows how a hex spacer can be used with two bolts to fix the PCB to the enclosure.
Your PCB has four mounting holes designed to take M3 bolts.

Online Information

Two sets of information can be downloaded from the product page where the kit can also be reordered from. The 'Essential Information' contains all of the information that you need to get started with the kit and the 'Teaching Resources' contains more information on soldering, components used in the kit, educational schemes of work and so on and also includes the essentials. Download from:

www.kitronik.co.uk/2161

🇬🇧 This kit is designed and manufactured in the UK by Kitronik

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