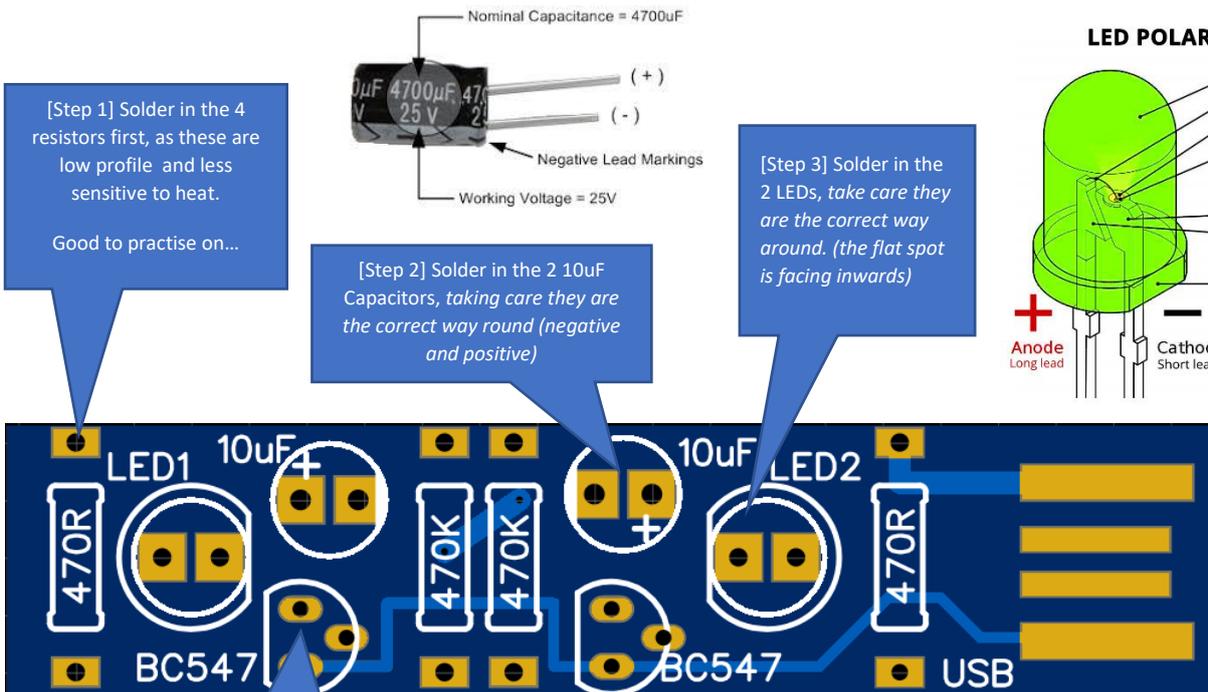


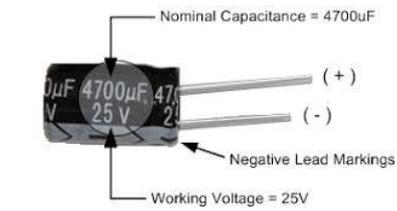
JOTA – USB Flasher



Part	Qty	Description	Check
USB Flasher Board	1		
Resistor 470R	2	Yellow-Purple-Black-Black-Brown	
Resistor 470K	2	Yellow-Purple-Black-Orange-Brown	
Capacitor 10uF	2		
Transistor BC547	2		
LED	2		

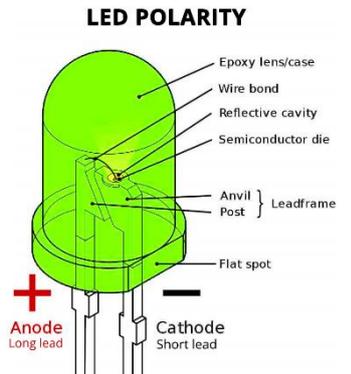


[Step 1] Solder in the 4 resistors first, as these are low profile and less sensitive to heat.
Good to practise on...

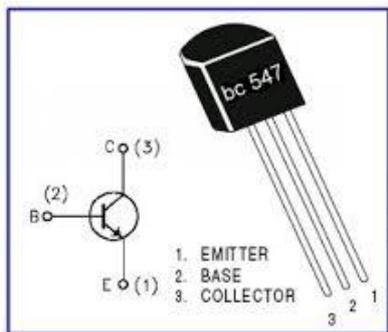


[Step 2] Solder in the 2 10uF capacitors, taking care they are the correct way round (negative and positive)

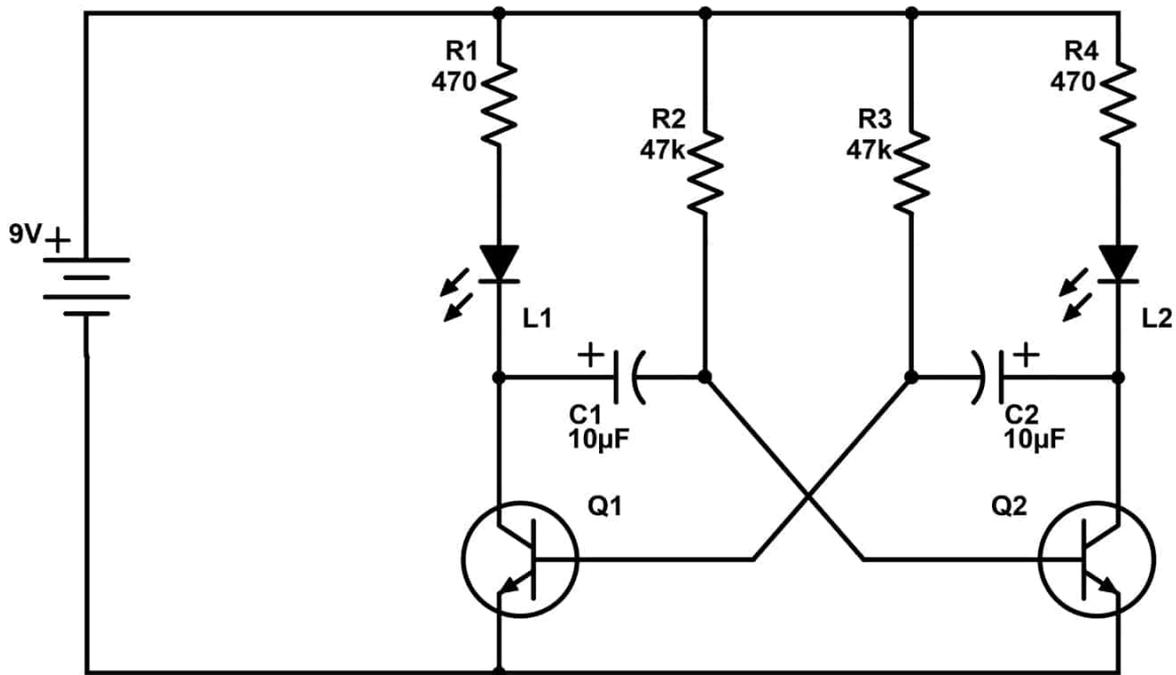
[Step 3] Solder in the 2 LEDs, take care they are the correct way around. (the flat spot is facing inwards)



[Step 4] Solder in the 2 Transistors,
 • take care they are the correct way round
 • minimise the heat to them by mounting them higher and giving them time to cool between soldering each leg



- Top Tips**
- Don't Rush It
 - Read through the soldering tips document
 - Remember your iron is hot. It could burn you, your neighbour or the power cord. Give yourself lots of room.
 - Sticky tape a clothes peg to a block of wood to make a simple holder.
 - Ask an adult if you have the components the right way round BEFORE you solder them in.
 - Make sure your solder joints are nice "volcanos"
 - Cut the legs off the component with side cutters, after you solder them
 - Check you have not joined any solder pads together by accident BEFORE you power it up
 - DO NOT test in an expensive laptop. Shorting out the power supply through a poorly soldered joint can end in tears...



How it all works

The two transistors (Q1 and Q2) are switches, allowing current to flow through the LEDs (L1 or L2), when they are switched on.

There are two tanks (Capacitors C1 and C2). As these tanks fill up with electrons through the pipes R1, R2, R3, and R4, they turn on and off the opposite transistor switch (C2 → Q1 or C1 → Q2), via the crossed over wires.

When one switch is on, the other is off, as the capacitor tanks drain and fill in opposite sequence.

This circuit is called a Multivibrator.