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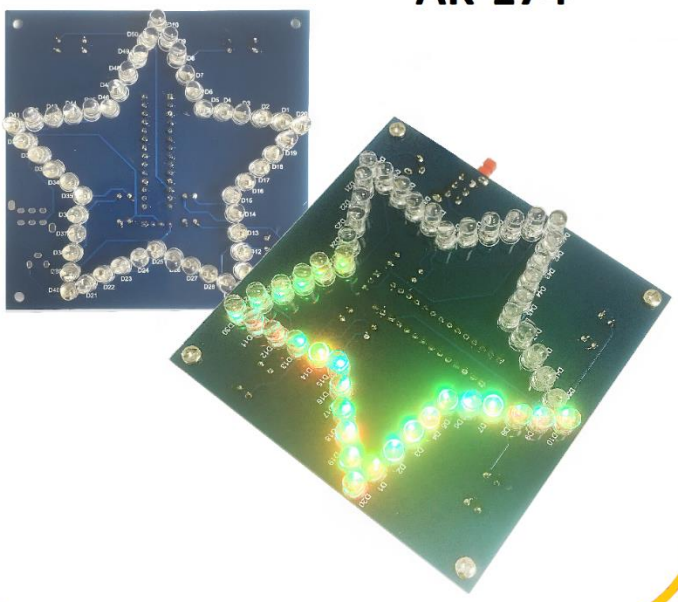
D.I.Y. RGB LED Star Kit

AK-174



List of Components:

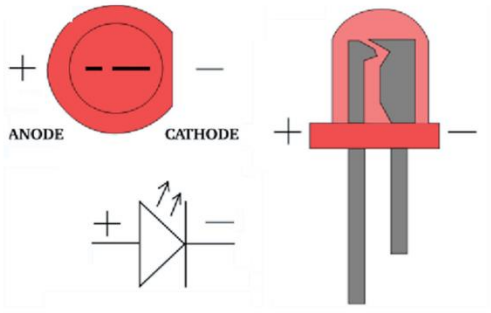
- 1x Printed Circuit Board
- 55x 5mm RGB LEDs (D1 - D50)
- 12x ¼ W Resistors (R1-R10 1KΩ)
- 1x 15F204 Microcontroller (U1)
- 1x DIP28 IC Socket
- 1x 1x4 Male Header
- 1x Latching Push Button
- 1x 3.5x1.35mm DC Barrel Plug
- 1x USB Power Cable
- 4x Standoff Screws and Brass Spacers

While assembling the kit, PAY ATTENTION to component polarity:

When dealing with polarized components, it is important to be able to identify which pins represent the anode (positive) and cathode (negative).

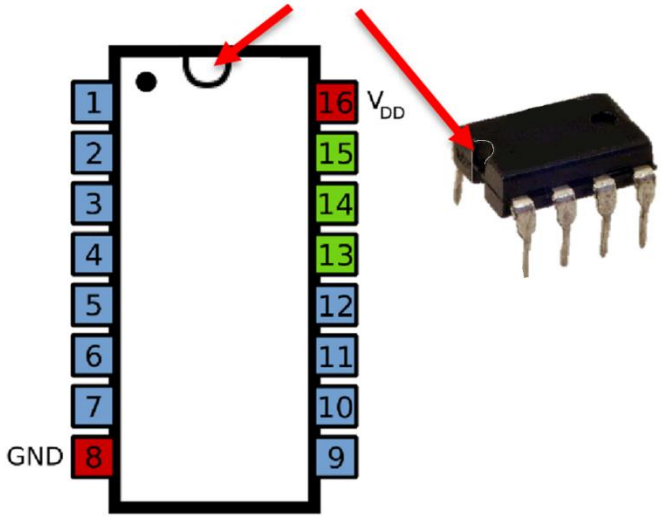
Here are a few ways of doing so for LEDs:

- The shorter pin usually is the cathode (negative). However, for LEDs if the leads are cut you can assume the cathode lead is on the side of the LED that has a flat cut. For capacitors, there usually is a sign on the component itself indicating which lead is the cathode (-).



While assembling the kit, PAY ATTENTION to the IC chip and socket orientation.

The notch and the dot are always on the top of the chip.



Assembly:

1) Turn on your soldering iron to 300°C (572°F). (recommended solder for this kit is 60 tin/40 lead).

2) Place in components and solder (make sure the side of the board with the silkscreen is facing up when inserting components):

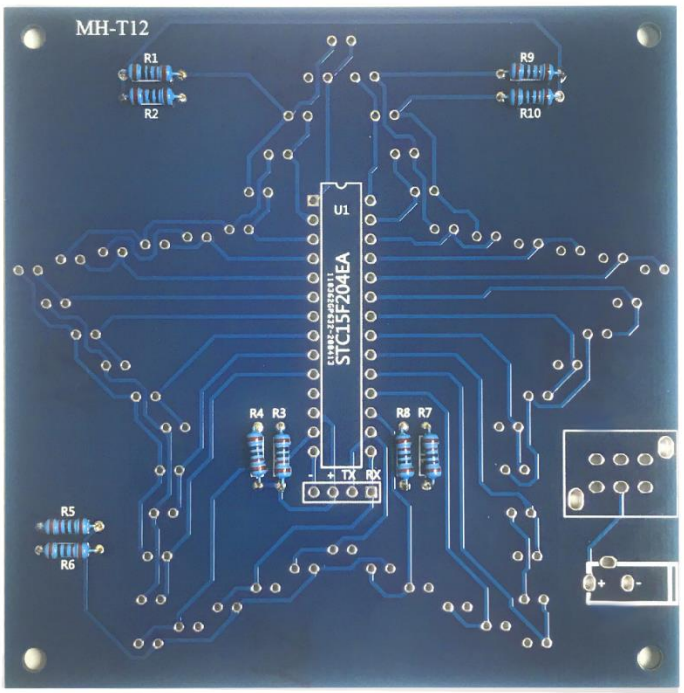
2.1) First place resistors on the board.
Tip: Bend the leads of the resistor outwards on the back of the board to provide minimal mechanical grip but ensure that the angle formed by the bend is not smaller than 45 degrees.

2.2) Solder the leads of the placed resistors to the pads and cut the excess off once done soldering. (using a flush cutter)

2.3) Next, begin placing the 28-pin IC socket on the board along with the 4-pin male header and solder them.

2.4) Begin soldering the LEDs on the opposite side of where you soldered the resistors, the IC socket and the header. You can solder the LEDs one-by-one or all at once depending on your skills.

2.2



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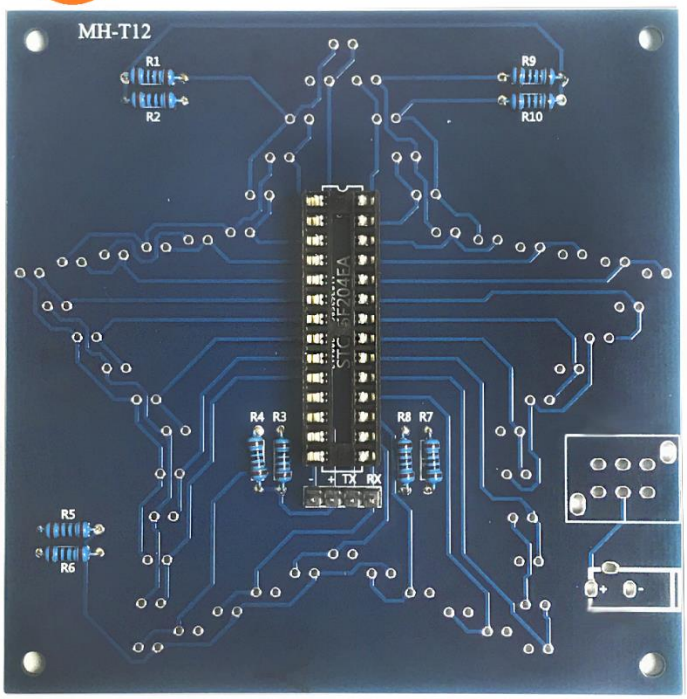

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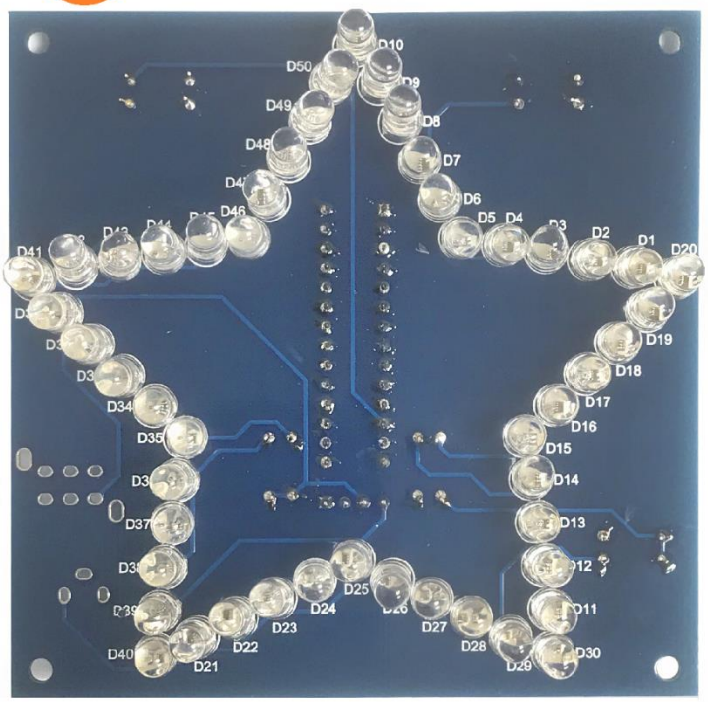

2.5) Insert the DC power plug and the push button and solder them onto the board.

2.6) Add the brass stand offs onto the board using provided screws.

2.7) Insert the USB power cord into a 5V source. (e.g. an iPhone adapter, USB port on a laptop/PC) and plug the DC male jack into the plug on the board.

2.8) FOR ADVANCED USERS:

It is possible to read the program on the microcontroller for further modification and re-programming through the provided male header which gives you access to the ROM of the 15F204 chip via UART (Tx/Rx).

Please consult the downloadable microcontroller datasheet provided on our website for details.

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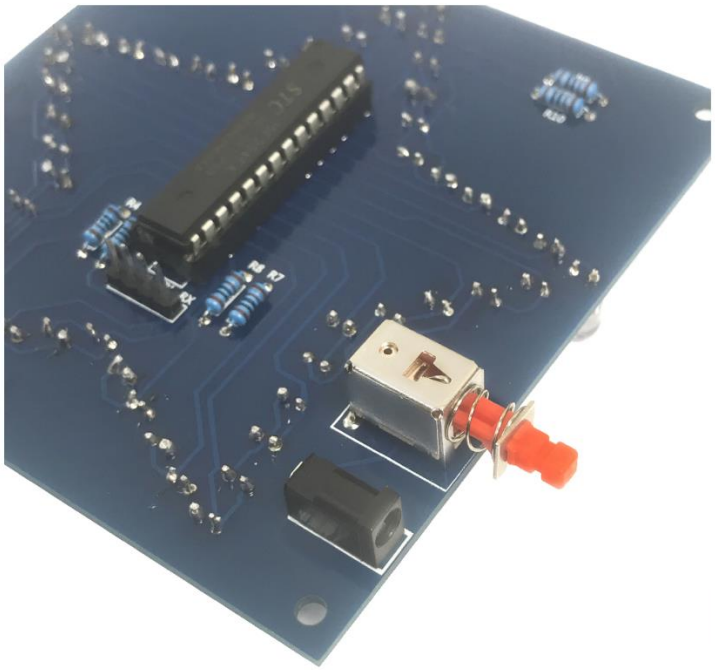

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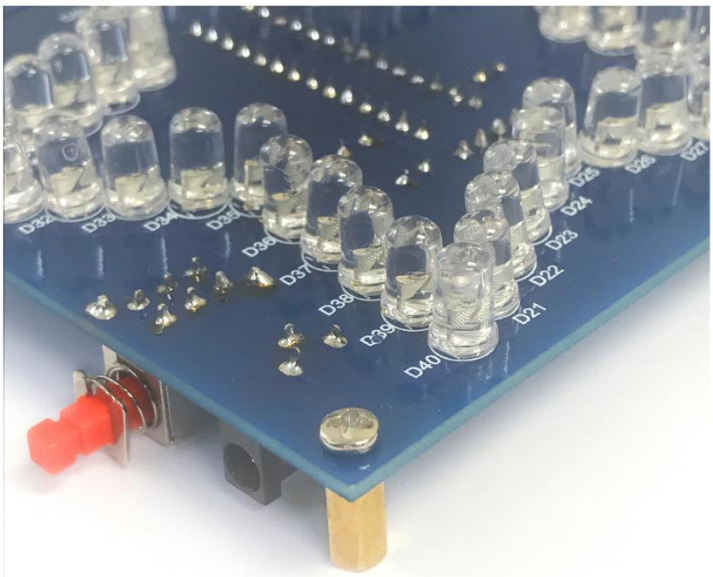

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