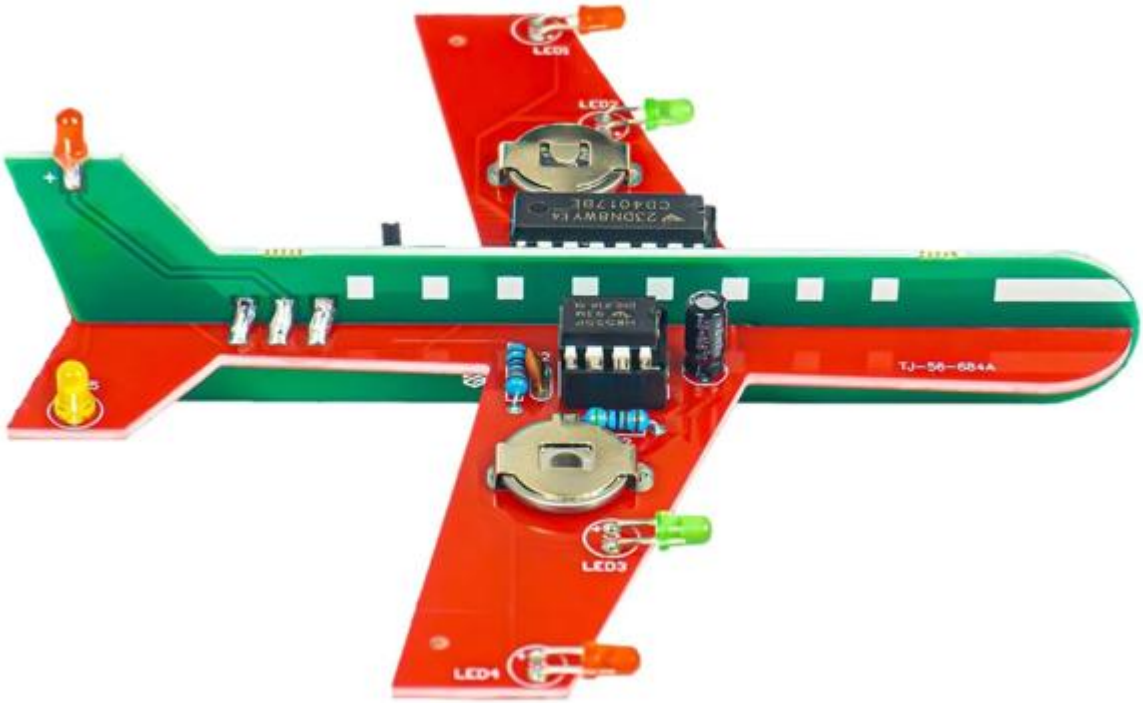
GK-EK-PLANE Airplane Flashing LED DIY Kit



This is a DIY Airplane Flashing LED Circuit Kit designed to replicate the flickering effect of real aircraft lights, making it a creative and eye-catching desktop decoration. Not only does it serve as a hands-on soldering project to help you better understand circuits and improve your soldering skills, but it also works as an excellent experimental tool for your workbench.

Parts List:

1 × CD4017BE Decimal Counter (DIP-16, U2)

1 × NE555P Timer (DIP-8, U1)

1 × DIP-16 IC Socket (U2)

1 × DIP-8 IC Socket (U1)

1 × 1 kΩ Metal Film Resistor (R3)

1 × 5.1 kΩ Metal Film Resistor (R2)

1 × 10 kΩ Metal Film Resistor (R1)

3 × 3mm Red LEDs (LED1, LED4, LED7)

2 × 3mm Green LEDs (LED2, LED3)

2 × 3mm Yellow LEDs (LED5, LED6)

1 × 0.01 µF (103) Ceramic Capacitor (C2)

1 × 10 µF Electrolytic Capacitor (C1)

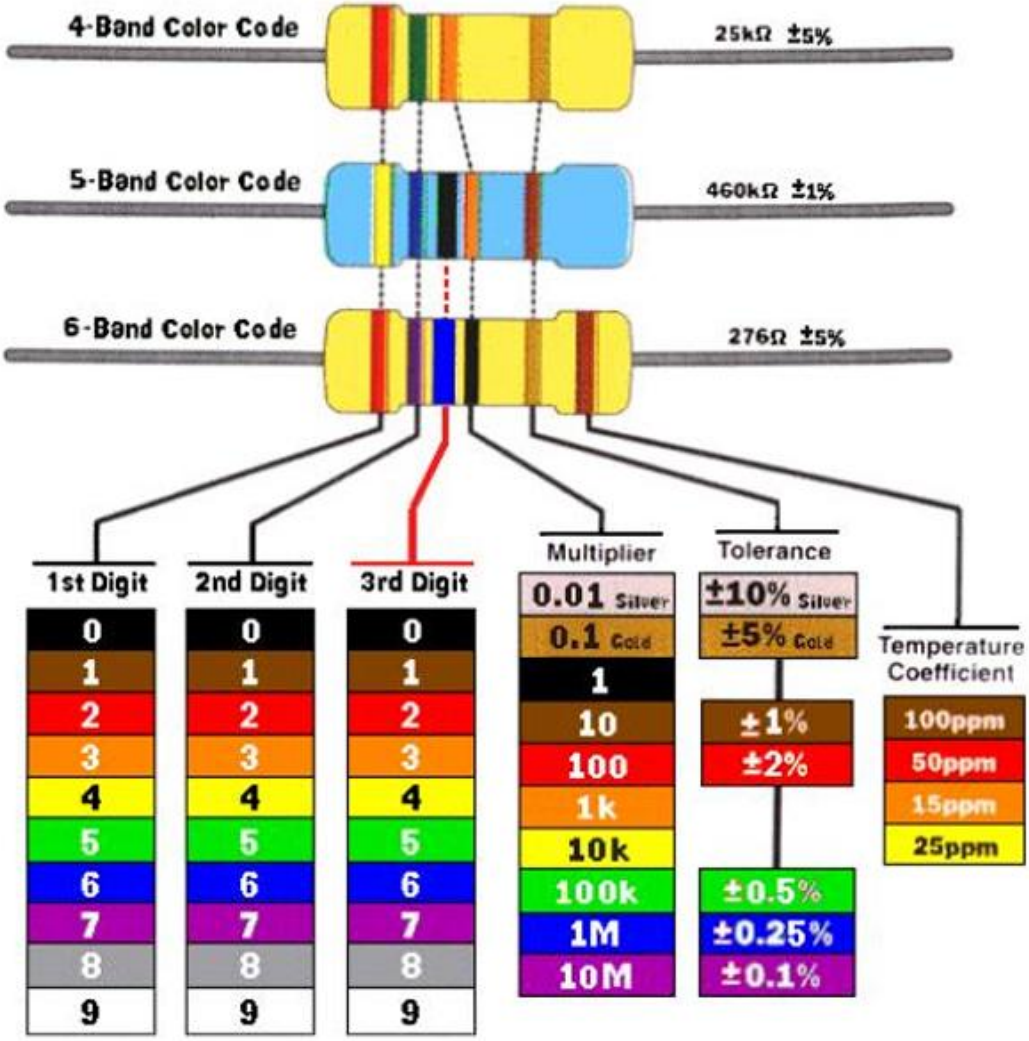
1 × Power Switch (SW)

1 × CR1220 Lithium Battery (BT1, BT2)

1 × CR1220 Battery Holder (BT1, BT2)

2 × PCB Circuit Board

Resistor Color Coding

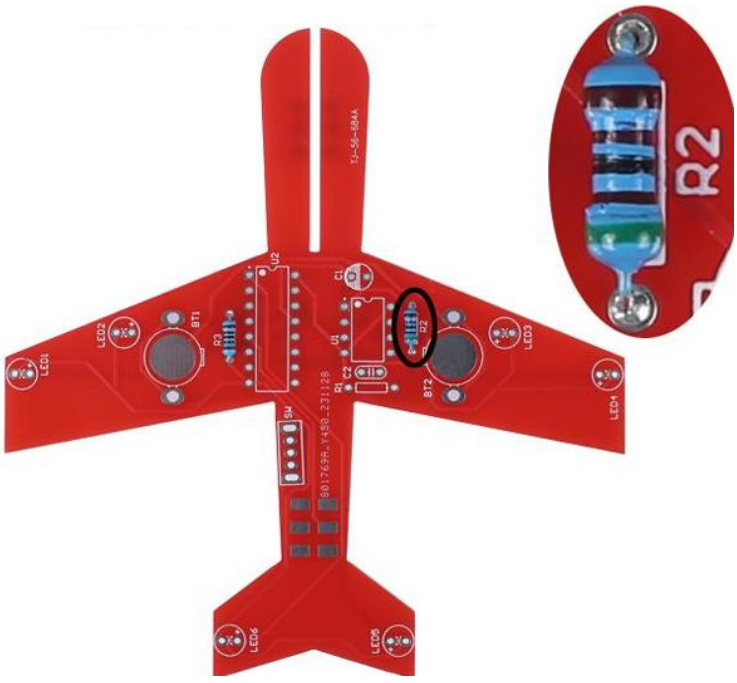


Resistors can have a different number of bands. Refer to the chart above to identify the value of your resistor. For example, [brown – black – black – red – brown] sequence of colors gives values [1 – 0 – 0 – 100 – 1%], which represents a 10kΩ resistor with 1% tolerance.

Guide:

Step 1: 1kOhm resistor at R3.

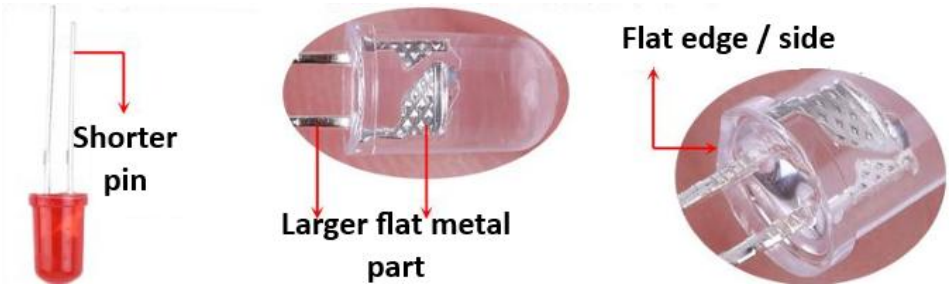
Step 2: 5.1kOhm resistor at R2.



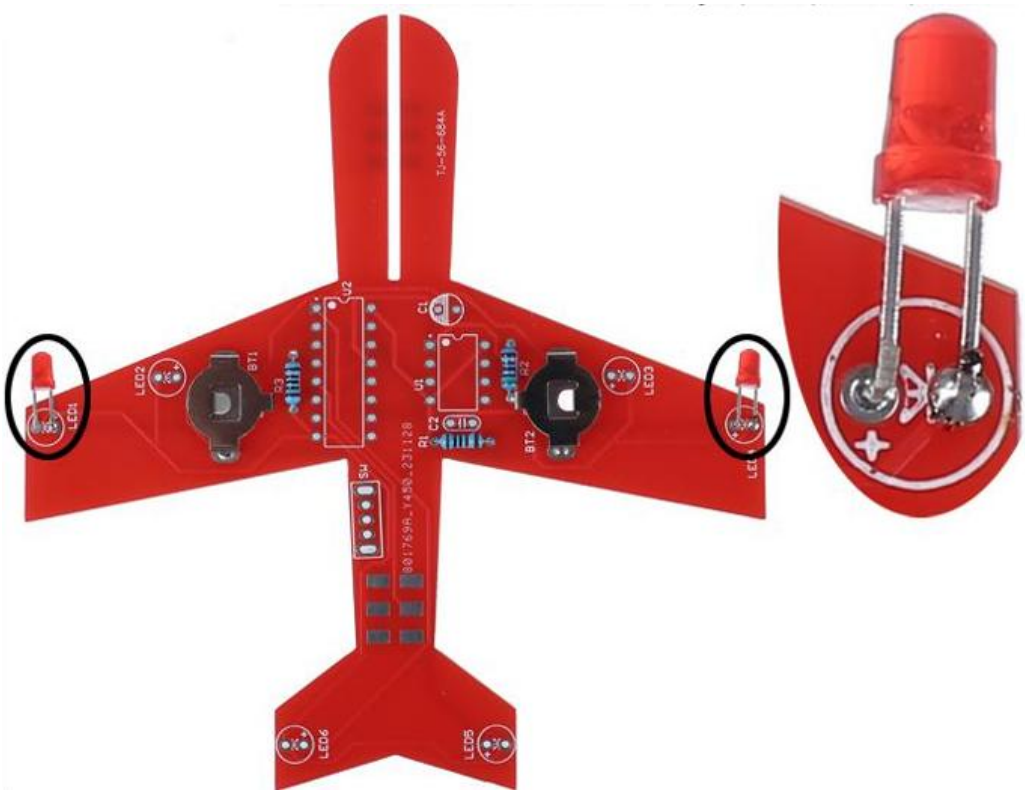
Step 3: 10kOhm resistor at R1.

Step 4: The CR1220 battery sockets at BT1 and BT2.

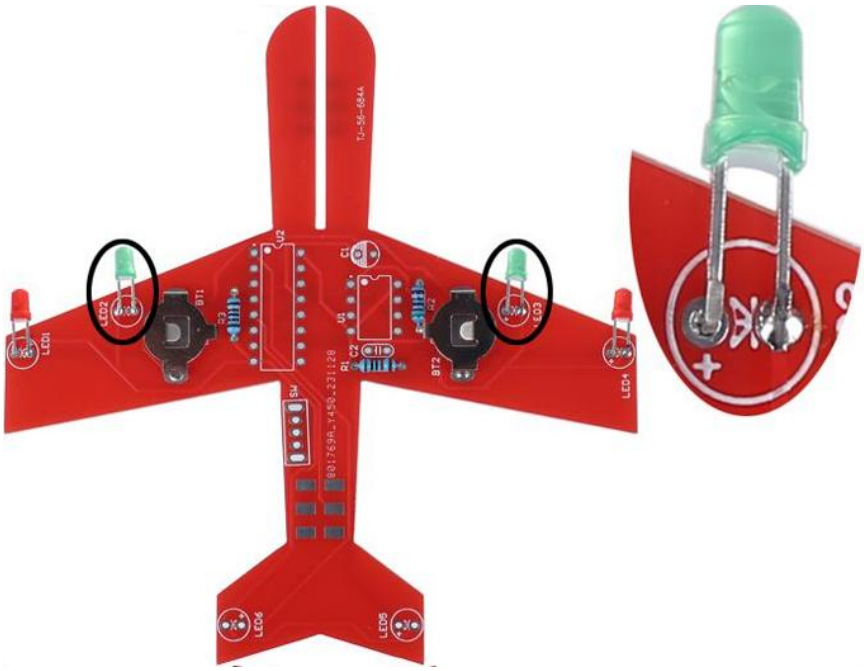
Step 5: Identify the anode (positive) and cathode (negative) leads of the LED. Here are some ways to distinguish the cathode:



Step 6: Red LEDs at LED1 and LED4.



Step 7: Green LEDs at LED2 and LED3.



Step 8: Yellow LEDs at LED5 and LED6.

Step 9: 0.01uF 103 ceramic capacitor at C2.

Step 10: Power switch at SW.

Step 11: DIP-16 IC socket at U2. Align the socket with the mark on the PCB silk as shown below.

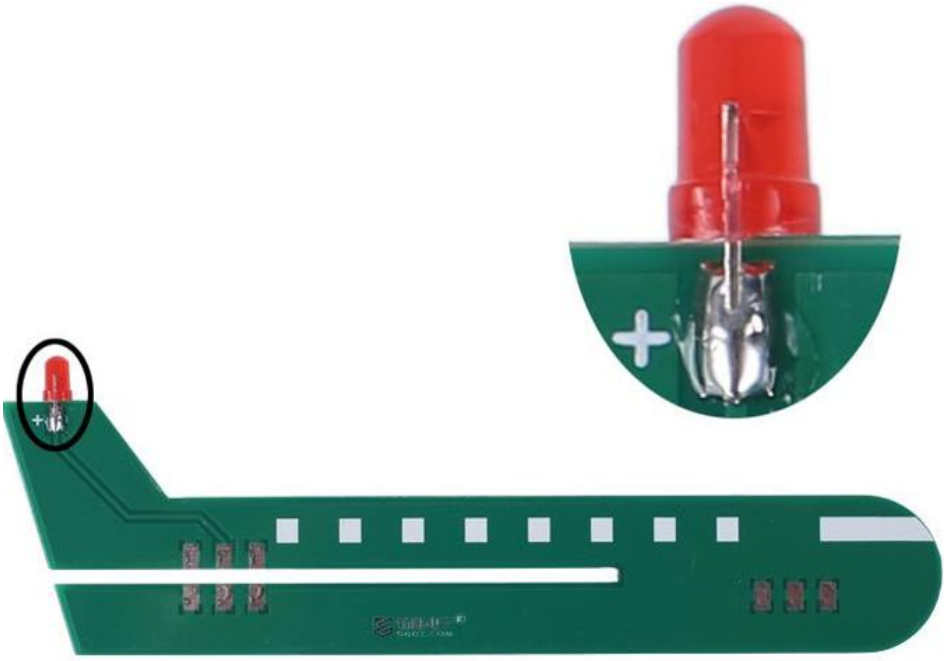
Step 12: DIP-8 socket at U1.

Step 13: 10uF Electrolytic capacitor at C1. Like the LED, the shorter pin is the negative. The side with the gray line also identifies the negative.

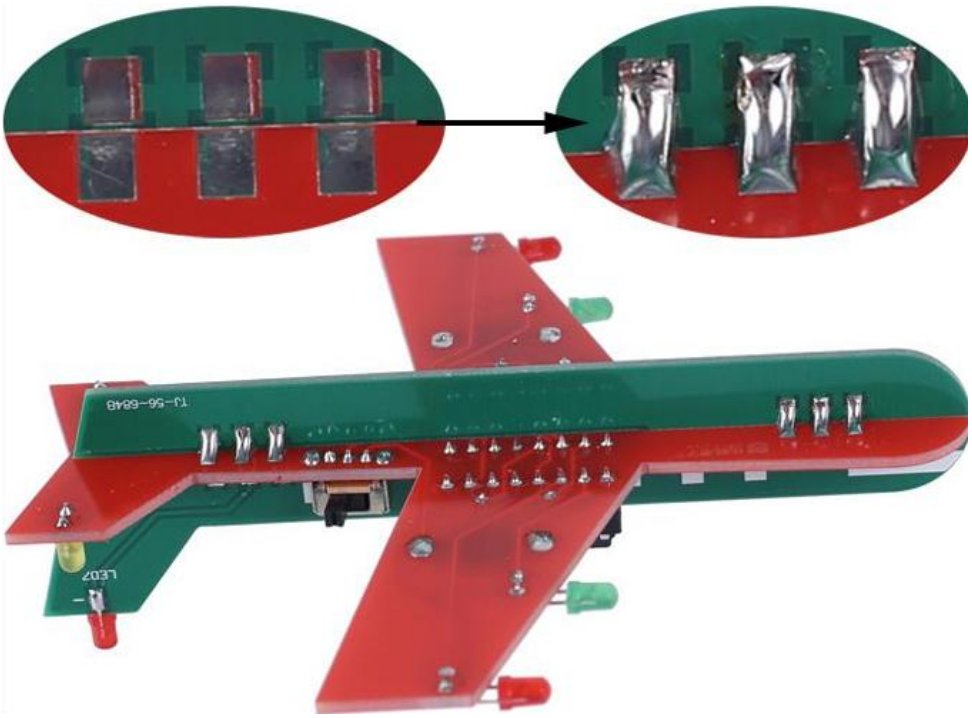
Step 14: DIP-16 IC CD4017BE at U2. Pay attention to the mark on the chip so it's aligned with the other marks when installed.

Step 15: DIP-8 NE555P at U1.

Step 16: Red LED at LED7.



Step 17: Splice both PCBs and solder the connecting pads to secure the merge.



Step 18: Put CR1220 batteries into their sockets and you're finished! Refer to image below for proper installation.