

A15: Capacitors & Resistors

1001-act15 Introduction to Electronics

Summary

In this activity you will get a closer look at how capacitors work and how they interact with resistors. The previous circuit in act14 was a quick example of what capacitors do - store and discharge electricity quickly.

The circuit you will build here is comparatively simpler, but goes further in depth towards capacitor mechanics.

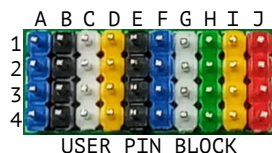
Note: From here on, circuit diagrams will have more complicated labelling.

What You Need

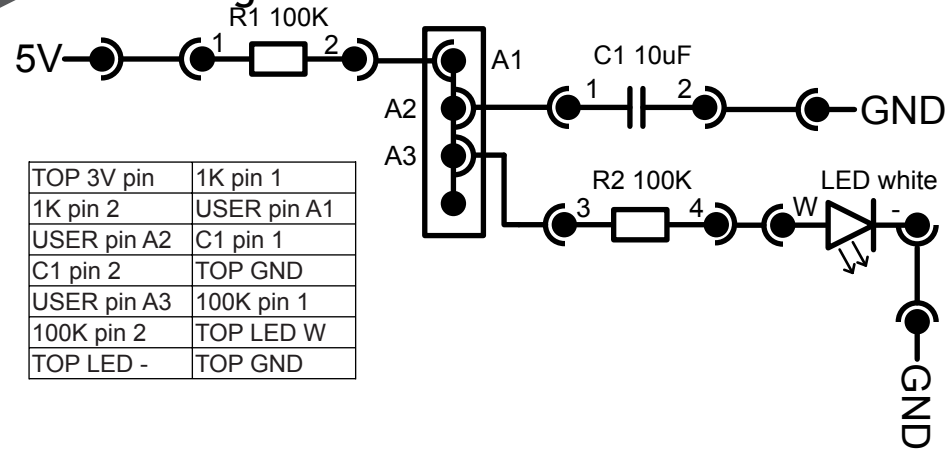
- JackBord
- JackBord TOP
- 10x 10cm Jumpers

Instructions

1. First, make sure that the JackBord TOP is already connected to the JackBord power pins and the two power LEDs are on (Check 1001-act5 if not). Turn off the JackBord.
2. Connect a TOP 5V pin to 100K pin 1. Then from 100K pin 2, connect to USER pin A1.
3. Connect USER pin A2 to C1 pin 1. Then from C1 pin 2, connect to ground
4. From USER pin A3, connect to 100K pin 3. From 100K pin 4, connect to TOP LED pin W. Then connect that LED to ground.
5. Now when you turn on the JackBord, you will notice the LED start off dim before gradually brightening as the capacitor charges. Turn it off and the LED will similarly slowly turn off. This is because the capacitor discharge keeps it lit initially before rapidly depleting.



Circuit Diagram



Completed Circuit

