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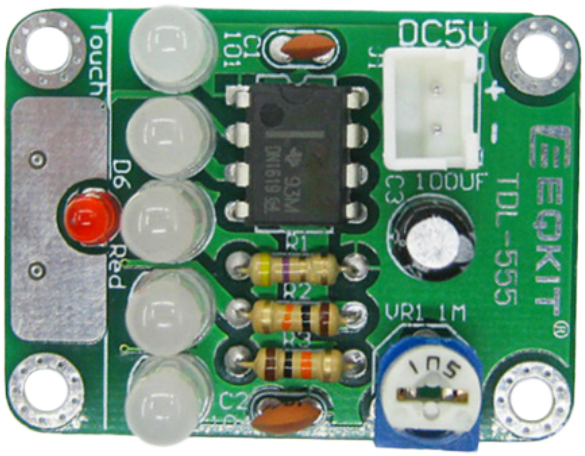
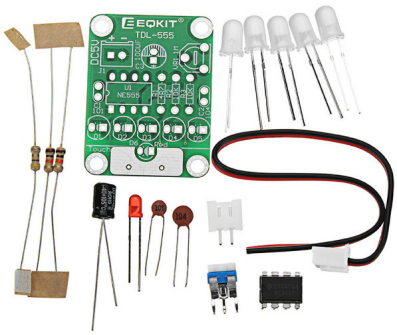
Touch Delay TDL-555 Timer with LEDs – Educational D.I.Y. Kit



AK-177

Component List:

- **PCB** – Printed Circuit Board
- **R1 Resistor** – 4.7Ω
- **R2 Resistor** – 10KΩ
- **R3 Resistor** – 10KΩ
- **C1 non-polarized (ceramic) capacitor** – 100pF
- **C2 non-polarized (ceramic) capacitor** – 100nF
- **C3 polarized (electrolytic) capacitor** – 100µF
- **U1 IC Chip** – NE555P
- **VR1 Variable Resistor (potentiometer)** – 1MΩ
- **J1 Header** – 2 pin power/ground
- **D1** – 5mm bright white LED
- **D2** – 5mm bright white LED
- **D3** – 5mm bright white LED
- **D4** – 5mm bright white LED
- **D5** – 5mm bright white LED
- **D6** – 3mm red LED



Assembly:

1. Take out all the components from the package and lay them down on your work bench.
2. Group the components into resistors and potentiometer, capacitors, LEDs, IC chip, header, jumper cable and finally the Printer Circuit Board.
3. *OPTIONAL* It is best practice to check component values using proper equipment (i.e. Digital Multimeter) before proceeding to the next step.
4. Prepare your soldering tools.
   a) Make sure the soldering tip size is correctly chosen and it is clean.
   b) The soldering iron temperature depends on the type of solder used.
   c) If you are using a typical 60/40 lead solder, depending on the thickness the temperature should be set anywhere between 370 to 500 °F (187 – 260 °C). If you are using a lead-free solder, increase above temperatures by 40 to 70 °F (5–20 °C).

* ATTENTION* Higher temperatures will damage the components.

d) It is recommended that you clean the board with a brush, isopropyl alcohol and lint-free cloth to get rid of any glue or dirt. This way the solder will create a better joint with the pads.

e) Have a wire cutter handy.

f) Having a roll of paper tape helps you to keep the components in place when soldering.

g) Have a rosin flux pen or paste handy. Adding flux to the pads before soldering the leads makes the process so much easier.

5) Place each component in its designated location and tape it down from the top side of he board. It is important to make rough measurements before cutting the leads. If you are not comfortable with cutting the leads before soldering, leave them on and cut them after. It is important to leave at least 3mm of the leads from the bottom side of the board. You can solder the components one by one or all at once depending on your skill level.

ATTENTION Solder the components with a lower profile or smaller size first.

Once all the components are soldered, proceed to the next step.

6) Again, using your brush, isopropyl alcohol and lint-free cloth, clean the board thoroughly and make sure no flux residue is left.

7) Prepare your power supply, alligator clips and jumper wire. The power supply should be set to 5 Volt DC. The current should be limited at 90mA.

8) Insert the jumper cable to the header (J1) on the board and connect the other end to your power supply.

9) Touch the bottom left corner of the board with your bare fingers to trigger the delay.

10) Adjust the delay using the variable resistor.