1

Multi-stage timer

Here's a nifty multi-stage timer you can use to time up to five sequential periods each ranging from a few seconds to 15 minutes or more. The circuit has just two ICs, five LEDs and a handful of common resistor and capacitor values. The whole project costs under $10.

Each time period is indicated by different LEDs, which light in sequence.

The period each LED stays on depends on the values of 10R and 10C, each of which must be at least 10 times greater than the values of R and C. So, if R is 1000 ohms, 10R must be at least 10,000 ohms. And if C is .01 uF, then 10C must be at least .1 uF.

As a rough guide, the value of 10R in ohms multiplied by the value of 10C in farads will give you the time in seconds its LED is on. You can add a variable resistor, shown in dashed line in the diagram, to fine tune the time period.

The timer is turned on by bridging the gap in the touchplate with your finger. Once on, the first LED will light for the predetermined time period. When the

first LED goes out, the second LED lights for its time period, and so on until the last LED lights. If you want the sequence to repeat, you can add a feedback line from the output stage back to the input through the spare 4009/4049 inverter and a diode, as shown in dashed line in the lower diagram. With this line installed, the first LED will light when the fifth LED goes out, and the entire sequence repeats until the line is opened.

Although parts layout is not critical, some care should be taken to keep wiring between components as short as possible, with a minimum of crossovers.

NOTES:

▷ Hex buffer, 4010 or 4050

▷o Hex inverter, 4009 or 4049

Touchplate of two metal strips about 1/16" apart

+9v. → To Pins 1 and 16 of both 4009/4049 and 4010/4050
→ To Pin 8 of both 4009/4049 and 4010/4050