

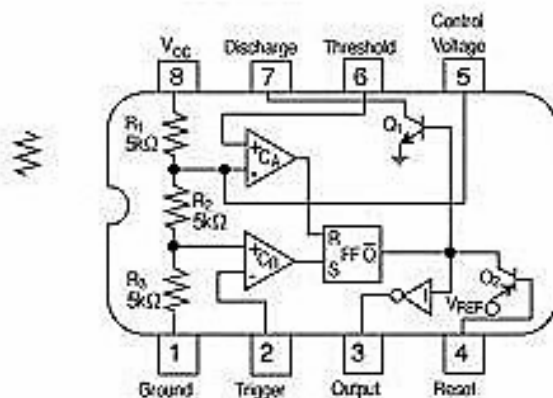
Appendix H

LED Specifications: RadioShack® part number 276-309

5mm Wide-Angle Red LED

- Typical MCD is 800.
- Typical wavelength is 660nm.
- Size is T-1-3/4 or 5mm.
- Clear lens color.
- Viewing angle is 40°.
- 20mA (max).
- Typical Voltage is 1.7, with a maximum voltage of 2.4V.

TLC555 Low-Power Timer IC: RadioShack® part number 276-1718



The TLC555/TLC555CP is a monolithic timing circuit. The timer is fully compatible with CMOS, TTL and MOS logic and operates at frequencies up to 2 MHz. Because of its high input impedance, this device uses smaller timing capacitors than those used by the NE555. As a result, more accurate time delays and oscillations are possible. Power consumption is low across the full range of power supply voltage.

Like the NE555, the TLC555 has a trigger level of approximately one-third of the supply voltage and a threshold level equal approximately to two-thirds of the supply voltage. These levels can be altered by use of the control voltage terminal (CONT). When the trigger input (TRIG) falls below the trigger level, the flip-flop is set and the output goes high. If TRIG is above the trigger level and the threshold input (THRES) is above the threshold level, the flip-flop is reset and the output is low. The reset input (RESET) can override all other inputs and can be used to initiate a new timing cycle. If RESET is low, the flip-flop is reset and the output is low. When the output is low, a low-impedance path is provided between the discharge terminal (DISCH) and GND. All unused inputs should be tied to an appropriate logic level to prevent false triggering [10].