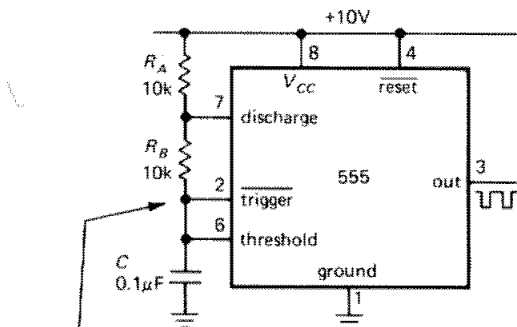


Figure 5.32. Simplified 555 schematic.



input is triggered, causing the output to go LOW and Q_1 to turn on, discharging C toward ground through R_B . Operation is now cyclic, with C 's voltage going between $\frac{1}{3}V_{CC}$ and $\frac{2}{3}V_{CC}$, with period $T = 0.693(R_A + 2R_B)C$. The output you generally use is the square wave at the output.

EXERCISE 5.8

Show that the period is as advertised, independent of supply voltage.

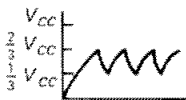


Figure 5.33. The 555 connected as an oscillator.

off, and the capacitor to begin charging toward 10 volts through $R_A + R_B$. When it has reached $\frac{2}{3}V_{CC}$, the THRESHOLD

The 555 makes a respectable oscillator, with stability approaching 1%. It can run from a single positive supply of 4.5 to 16 volts, maintaining good frequency stability with supply voltage variations because the thresholds track the supply fluctuations. The 555 can also be used to generate