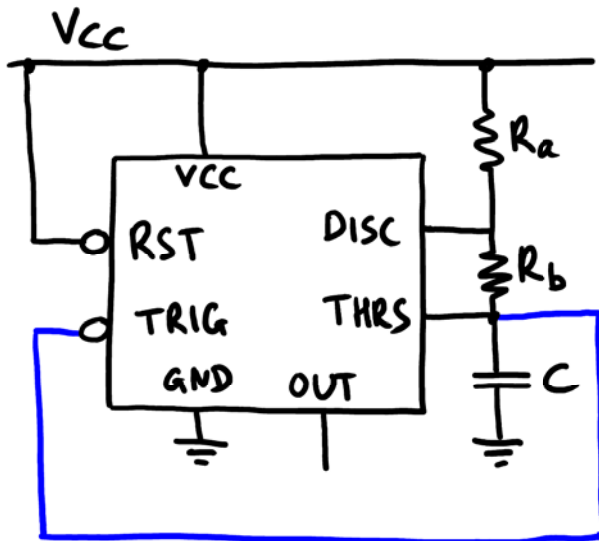


PHYS 3360 / AEP 3630
Lecture 31

Oscillator configuration of 555

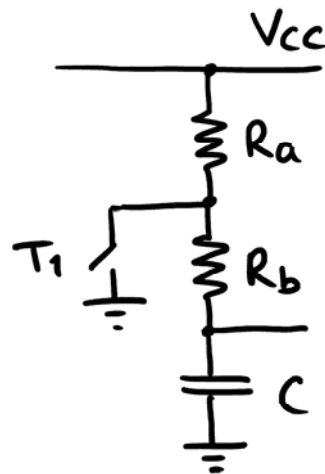


step 1) assume $v_c = 0$ @ $t = 0$

$$v_{\text{trig}} = 0$$

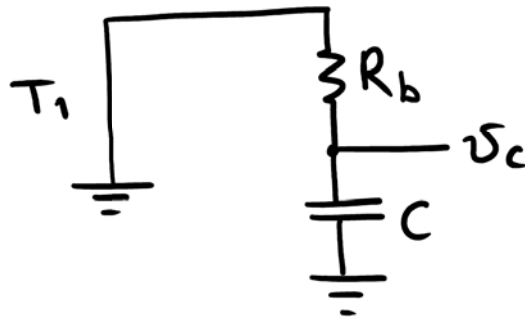
$$v_{\text{th}} = 0$$

\Rightarrow C charges to ___ thru ___



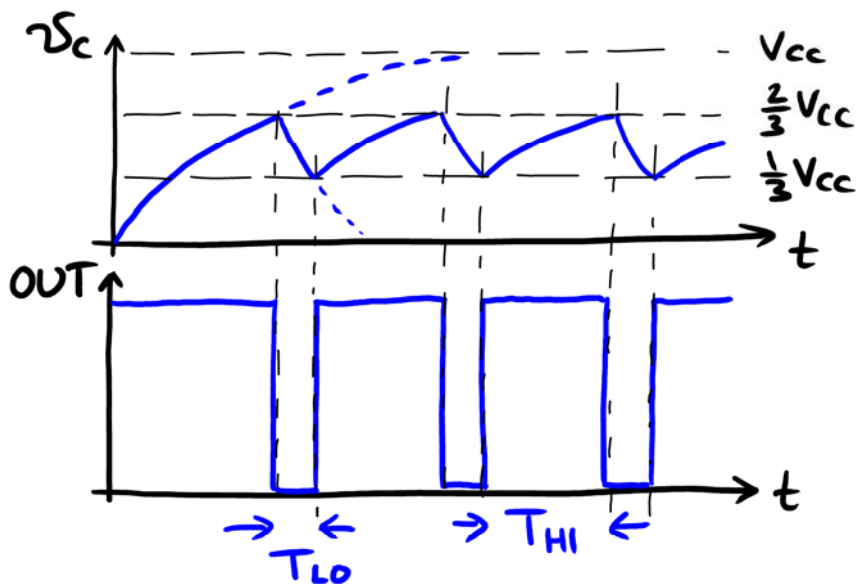
step 2) when $v_c > \frac{1}{3}V_{cc}$

step 3) when $v_c \geq \frac{2}{3}V_{cc}$



step 4) when $v_c < \frac{2}{3}V_{cc}$

step 5) when $v_c < \frac{1}{3}V_{cc}$



$$f = \frac{1}{T_{HI} + T_{LO}}$$

* f does not depend on V_{CC}

* f is stable ($< 1\%$)

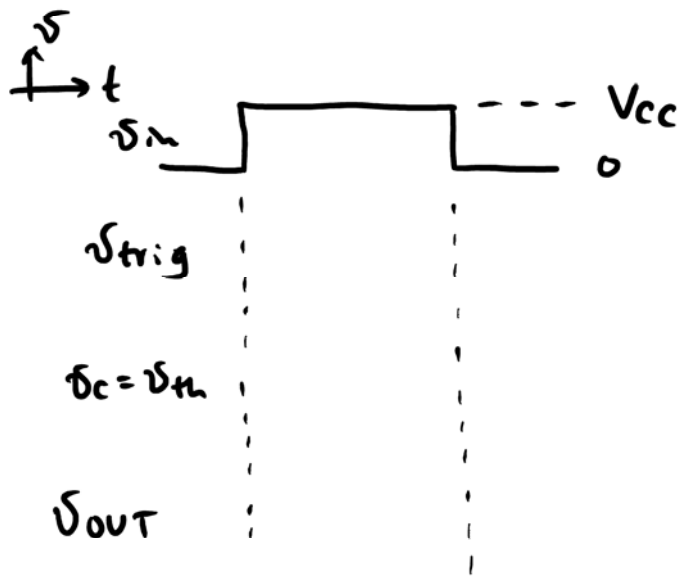
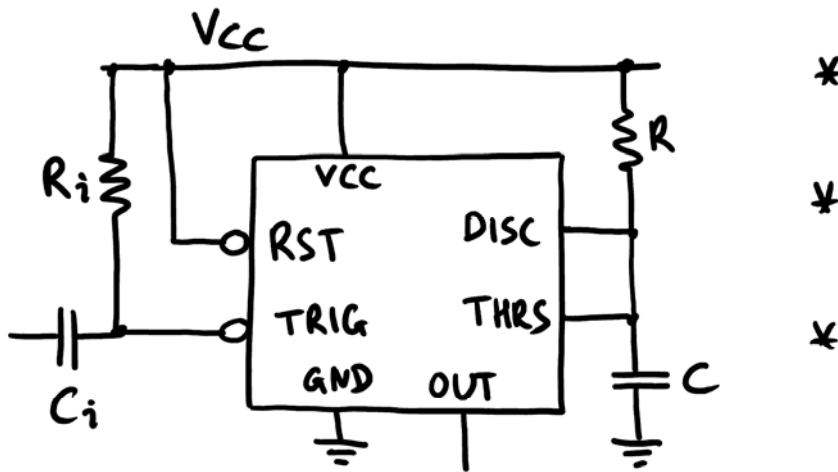
Q: what if want $T_{HI} < T_{LO}$?

1)

2)

3)

Monostable (on-shot) operation of 555



- * negative edge-active
- * choose $R_i C_i < R C$, otherwise
- * R_i, C_i can be eliminated if