ECE3204 Lecture 14

Schmitt Trigger (17.4)
Key ideas

Review Lab 3

Clock Generation (17.5)
Square Wave Oscillator
LM555 Timer

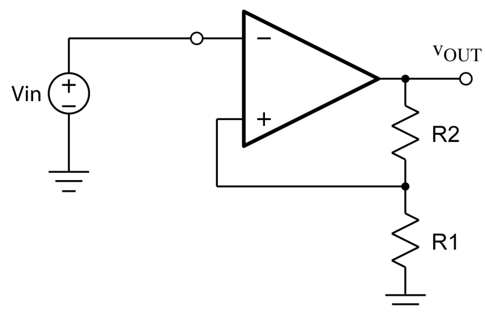
Schmitt Trigger Key Ideas

Positive feedback forces v_-, v_+ apart $\Rightarrow$ Output always at $\pm V_{SAT}$ rails (logic levels L_- or L_+)

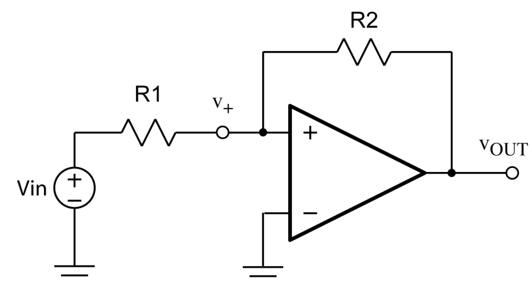
Condition for input trip points V_{TL}, V_{TH} $\Rightarrow$ When $v_- = v_+$ (this is an unstable equilibrium!)

Hysteresis loop in $v_{IN} \rightarrow v_{OUT}$ plot $\Rightarrow$ Need to know past history when v_{IN} between V_{TL}, V_{TH}

Inverting

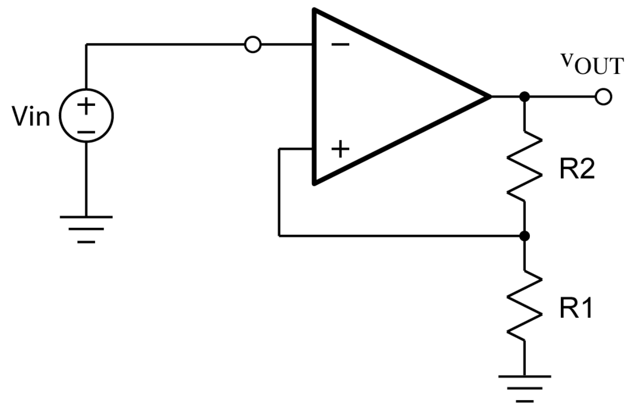


Non-Inverting

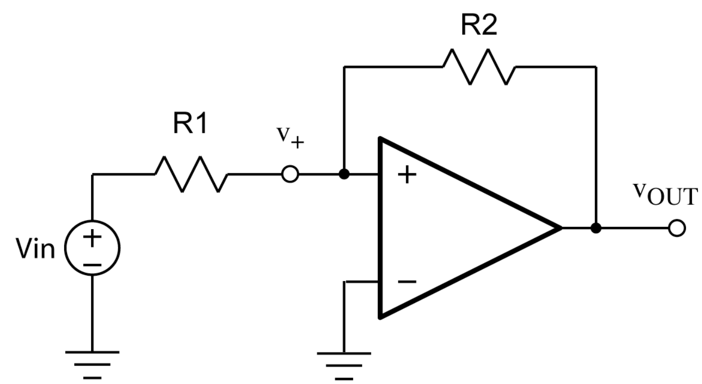


Schmitt Trigger: Asymmetric Trip Points

Inverting

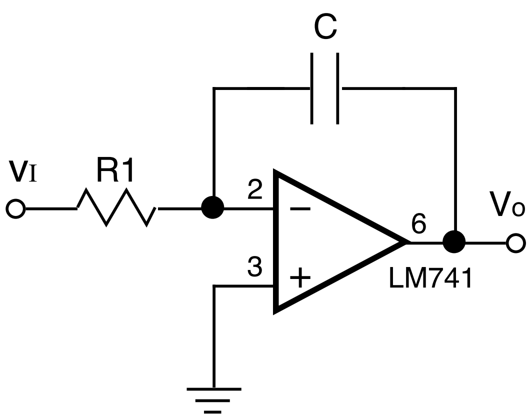


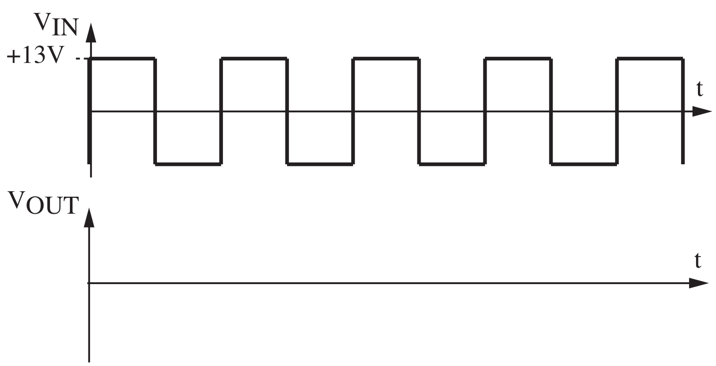
Non-Inverting



ECE3204 Lab 2

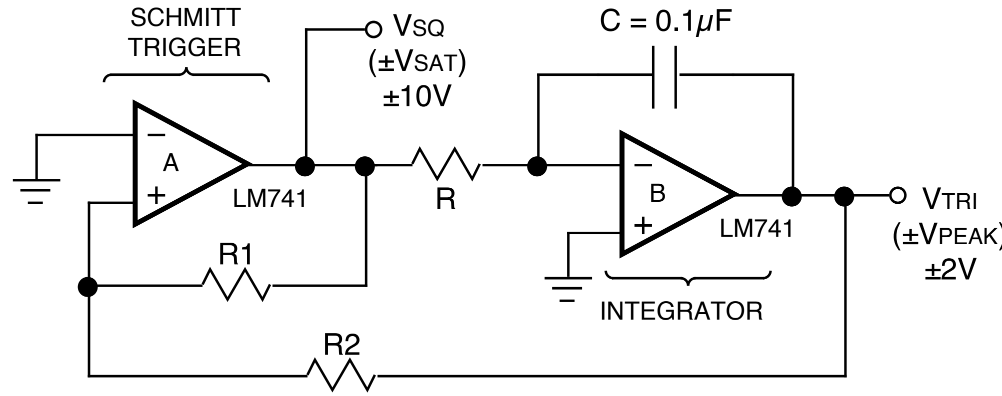
P4. Integrator





ECE3204 Lab 3

P1. Function generator: Figure 3.1 shows a function generator circuit that produces both square wave and triangular wave outputs.



Square Wave Oscillator (17.5)

Figure 17.24