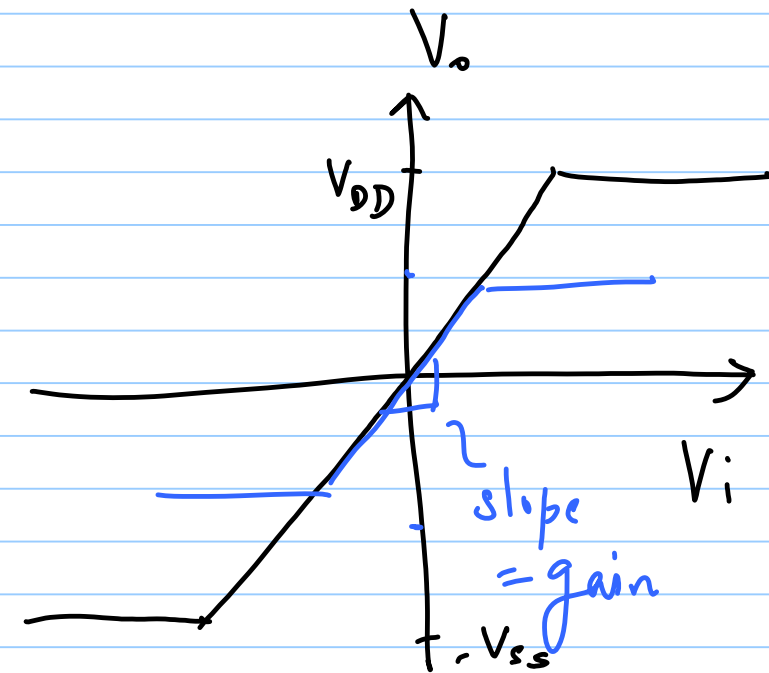
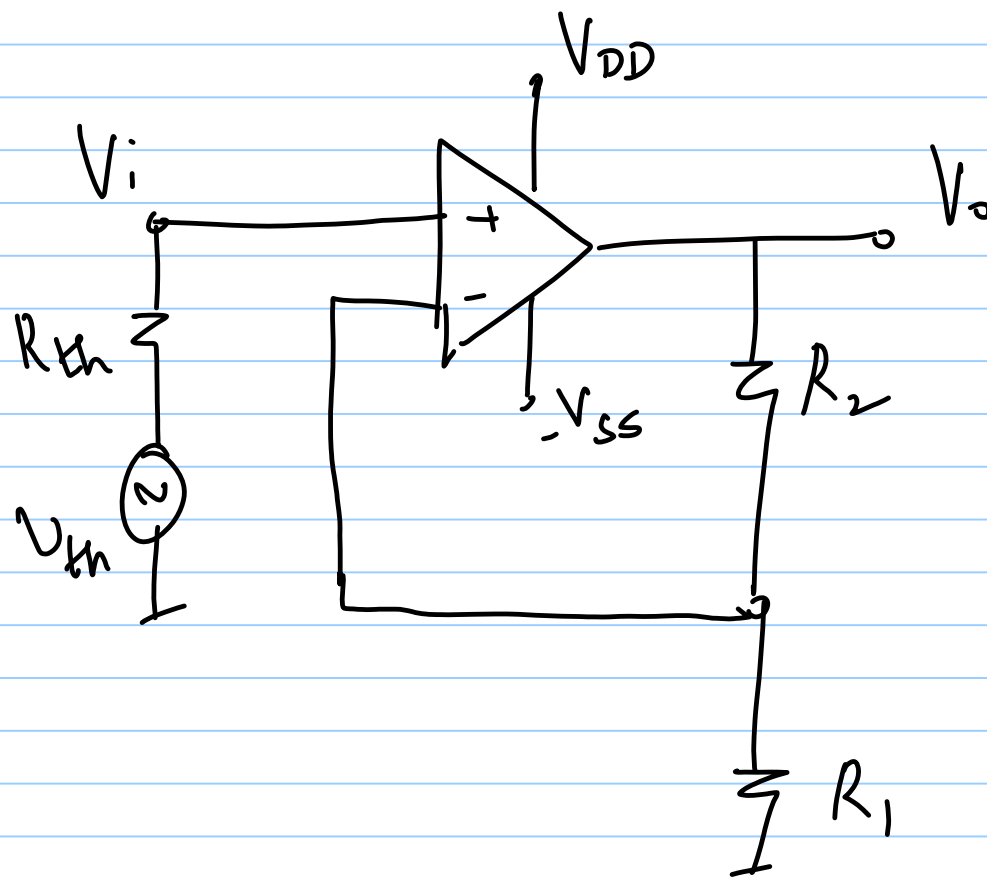


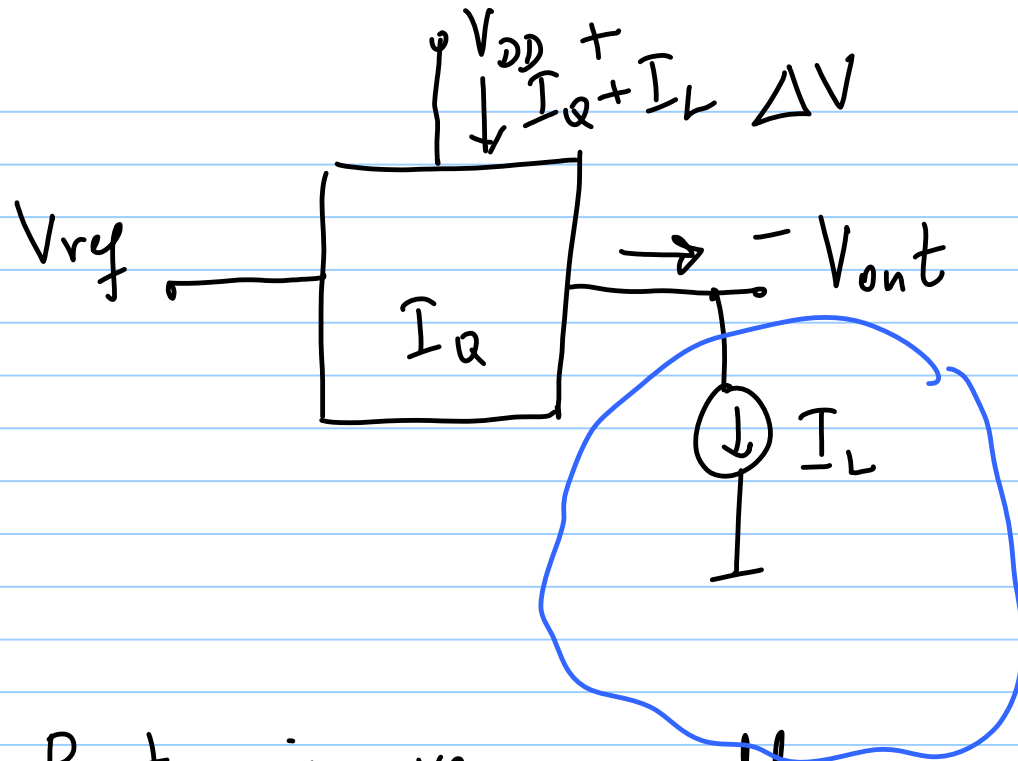
12/03/2019

Lecture 25

"Power Management"

Low Dropout Regulators (LDO) Circuits





$$V_{out} = f(V_{ref}, V_{DD})$$

$$\Delta V > \Delta V_{min}$$

↳ V_{out} is

independent of V_{DD} , I_L

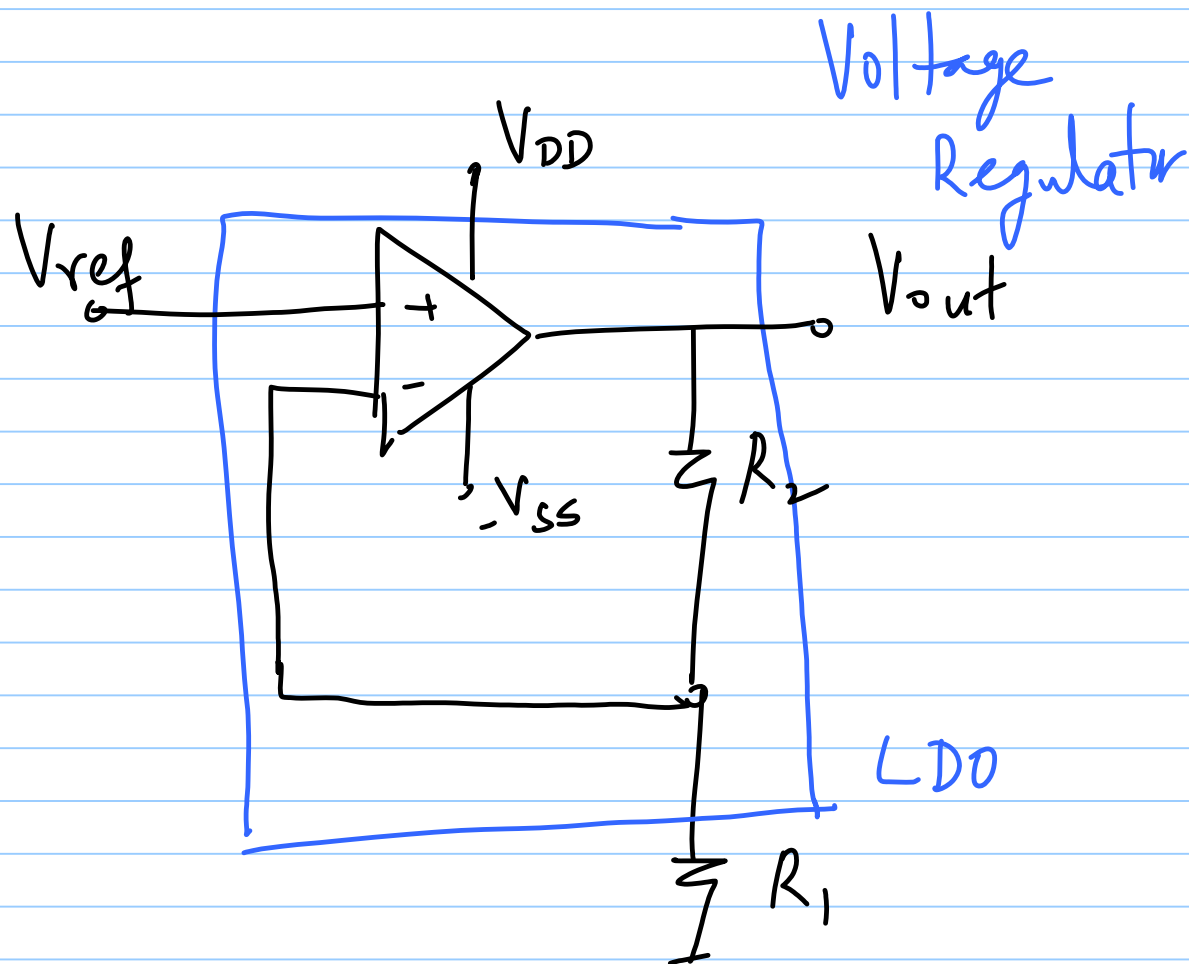
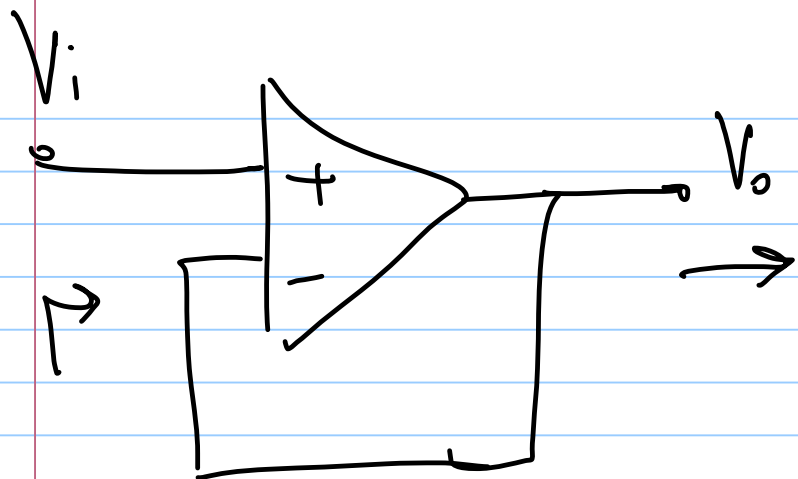
* R_{out} is very small

* Looks like a VCVS

$$\rightarrow V_{out} = k V_{ref}$$

both k & V_{ref} should be constant

ΔV positive



power
efficiency

$$\eta = \frac{V_{out} \cdot I_L}{V_{DD} \cdot (I_L + I_a)} = \frac{V_{out}}{V_{out} + \Delta V} \cdot \frac{I_L}{I_L + I_a}$$

ΔV = as small as possible

I_a = " " " "

