
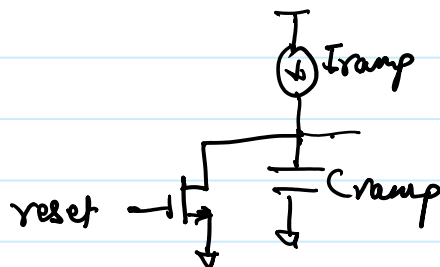


# Ramp Generator

① Saw-tooth 

② Triangular 

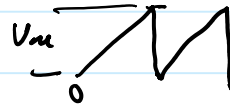
Using External clock source



$$i = C \frac{dv}{dt}$$
$$dv = \frac{i \cdot dt}{C}$$



$$dv = V_m$$



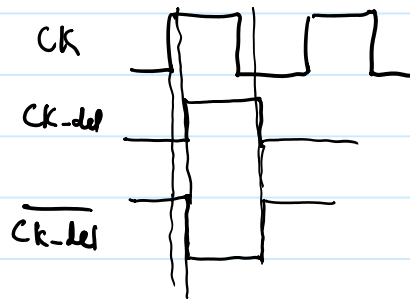
$$V_m = \frac{I_{ramp}}{C_{ramp} \times F_{sw}}$$

$$V_m = 1V, \quad C_{ramp} = 1pF$$

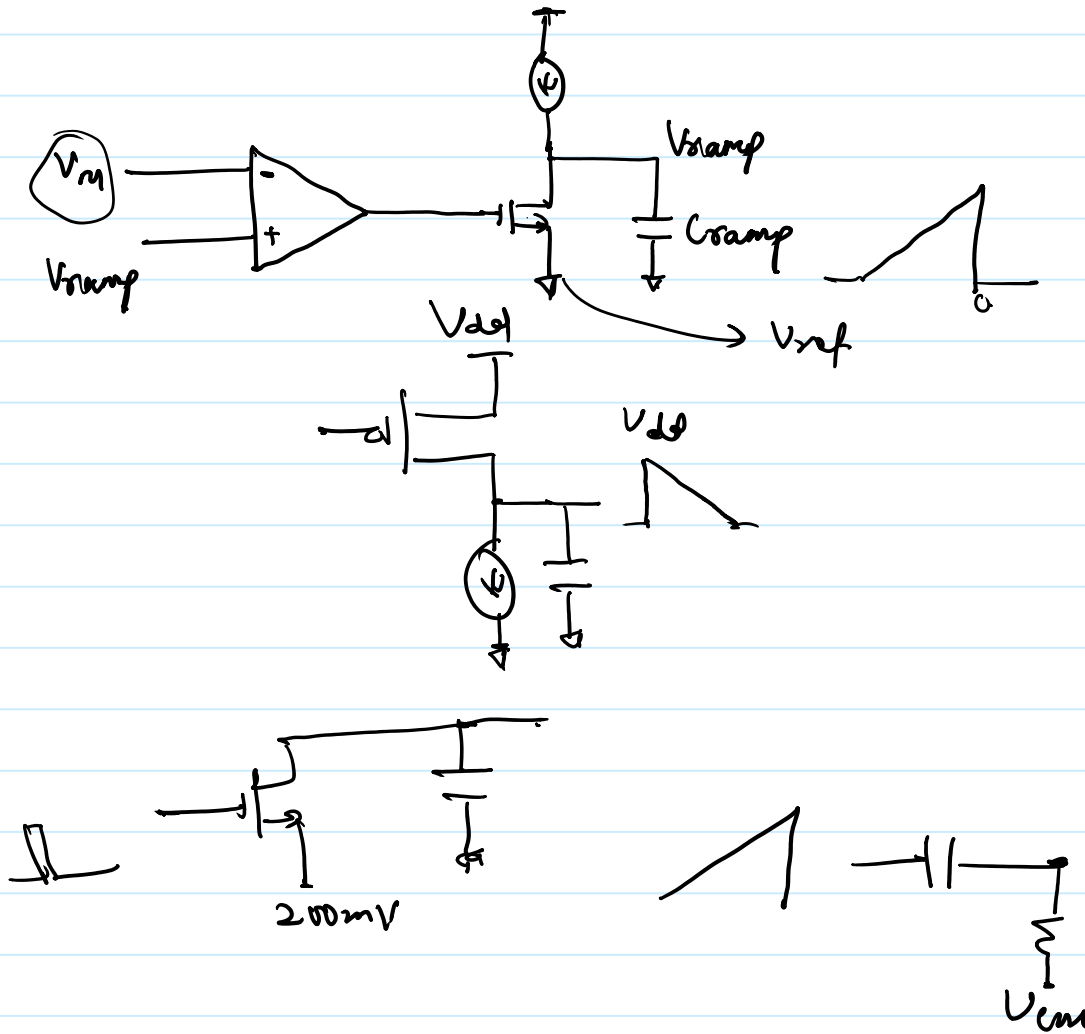
$$F_{sw} = 1MHz$$

$$I_{ramp} = 1 \times 1pF \times 1MHz = 1\mu A$$

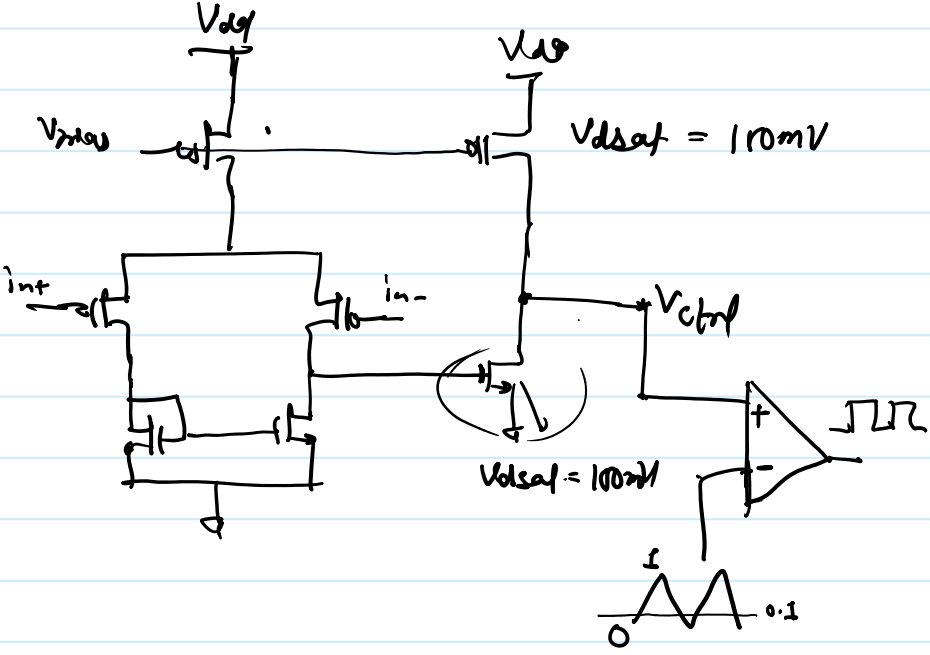
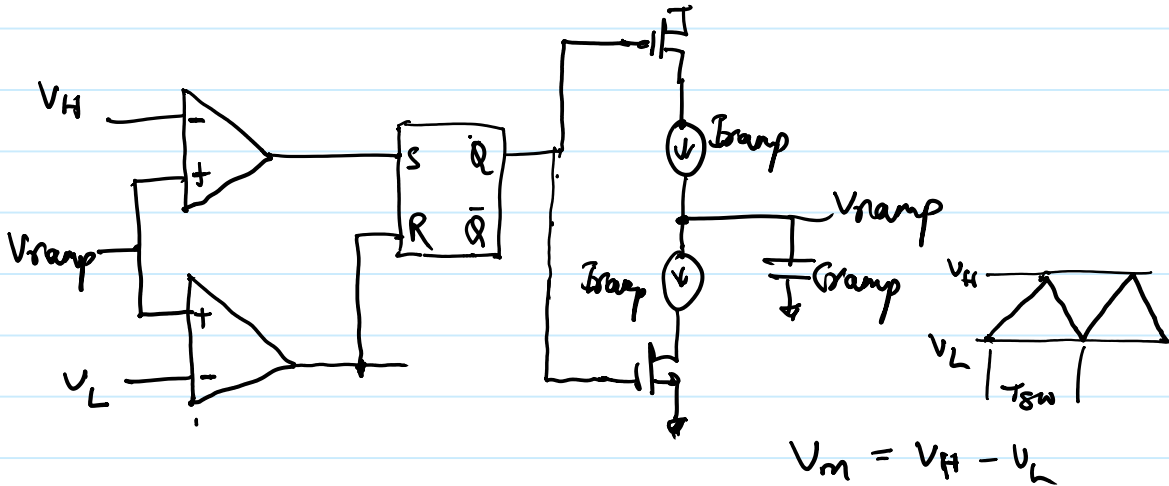
# Ramp Generator



## Built-in oscillator

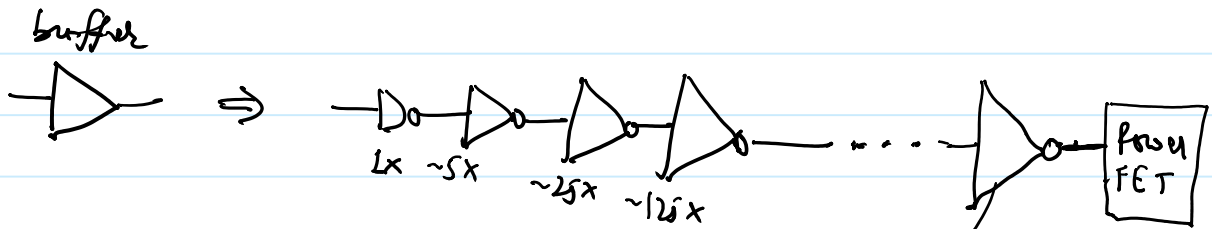
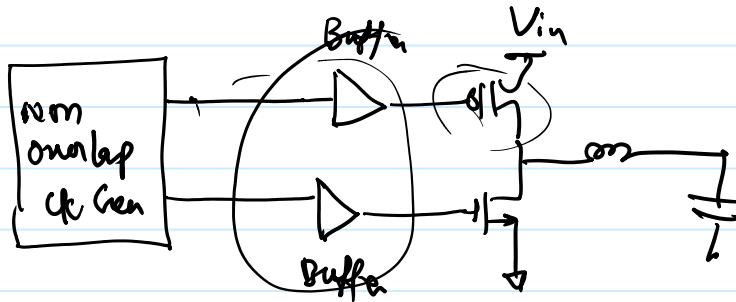


# Triangular Wave Generator



# Gate Driver

Use chain of inverters in buffer to drive the gate of power FETs  
Each inverter should be followed by 4-5x bigger inverter



last inverter should be capable of driving power FET's gate with required rise/fall time