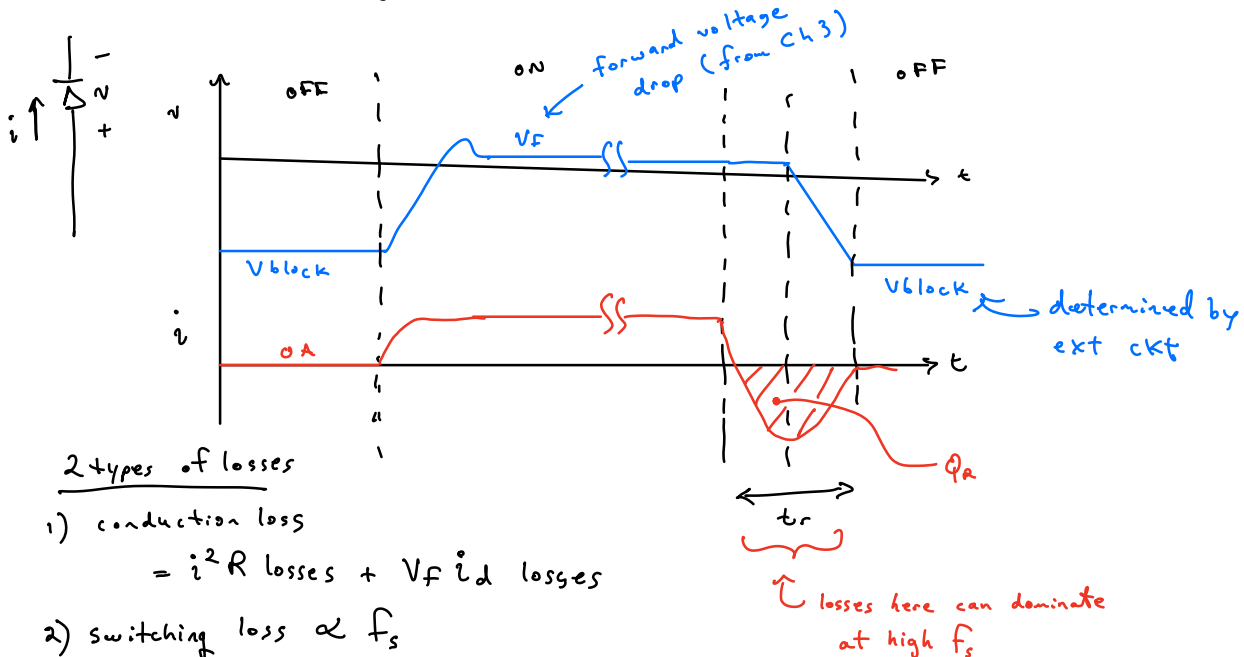


Today

→ Finish RR diode loss

→ Transistors

— Full diode sw. cycle (both on & off)



2 types of losses

1) conduction loss

$$= i^2 R \text{ losses} + V_f i_d \text{ losses}$$

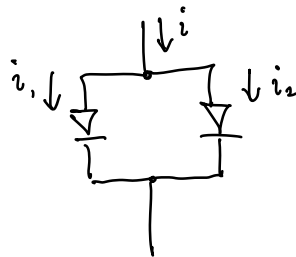
2) switching loss $\propto f_s$

• Other issues in book

— Ringing. Resonance w/ L's & C's in rest of ckt.

Can be caused by RR transient ... can cause higher losses.

— Diodes are hard parallelize



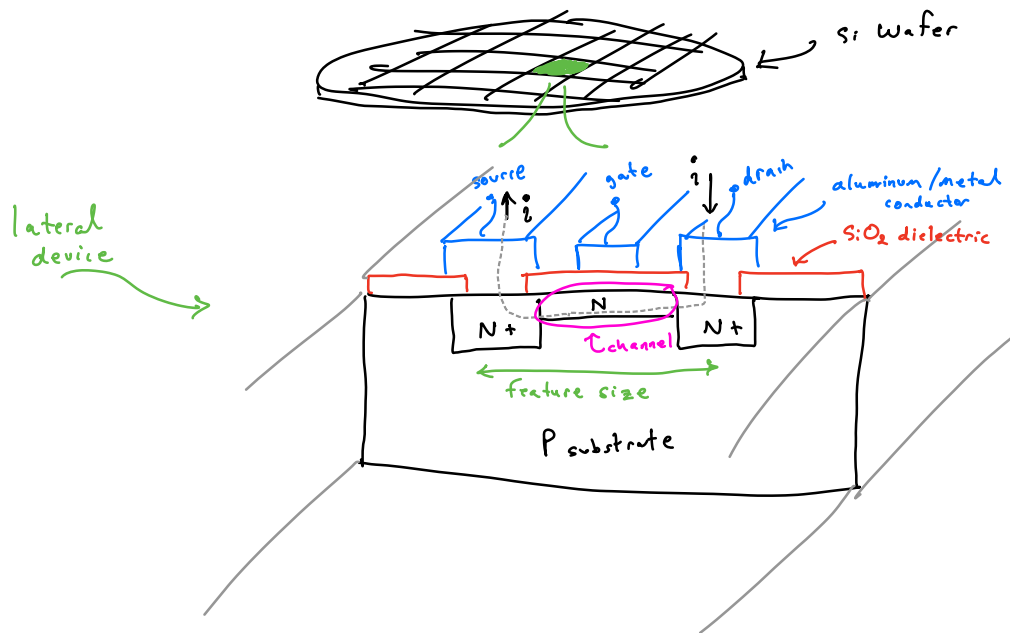
won't work. Why?

→ increase in current in diode leads to increased conductivity

→ Negative resistance thermal coefficient

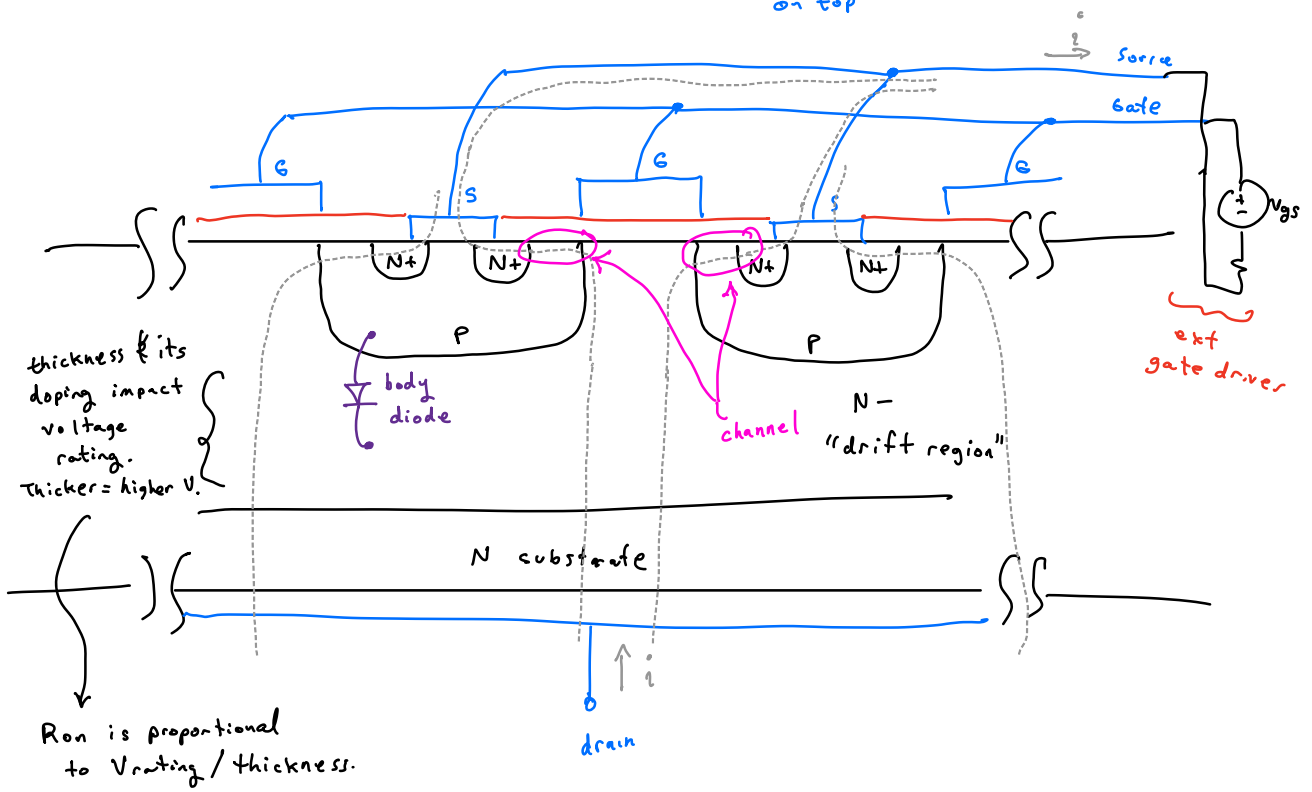
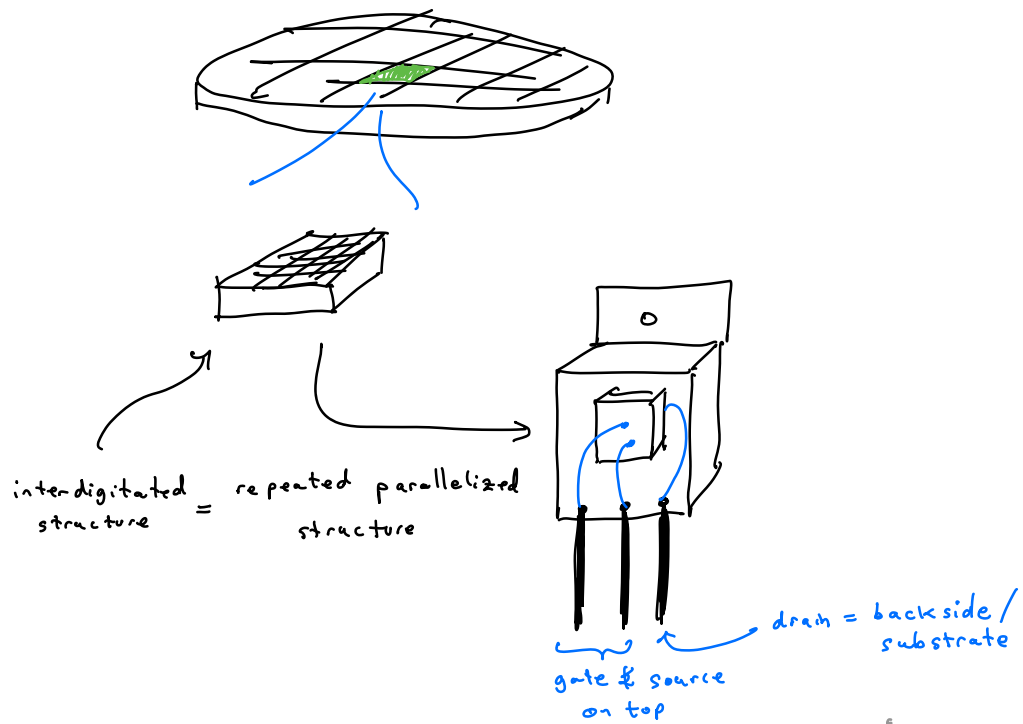
→ one diode will hog current

- Logic / signal - level MOSFETs (from prior classes)

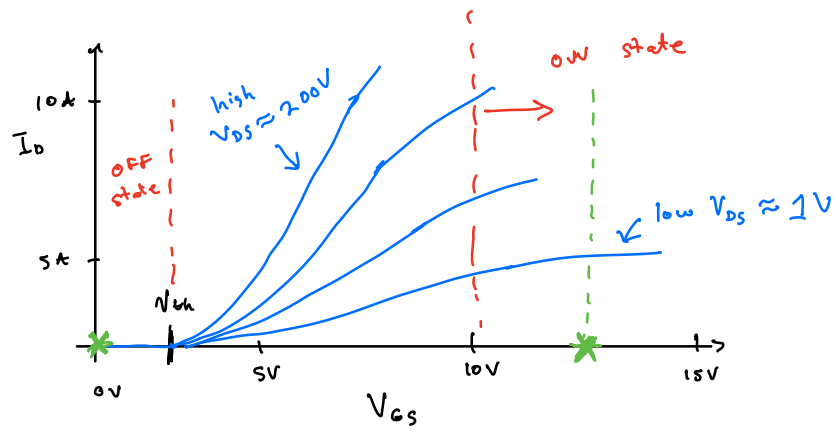


- Feature size is small \rightarrow hard to use for higher voltages ... can get arcing/discharge between drain, gate, source
- One exception
 \hookrightarrow GaN MOSFETs

— Power MOSFETs



Curves from past class (es)



Capacitances in MOSFET

