

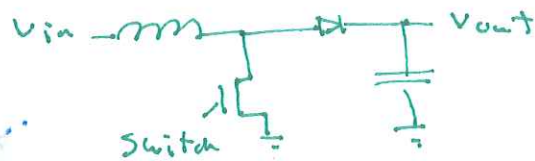
switching Power Supplies → use "conservative" behavior of switched inductor to control output voltage

→ High Efficiency; high freq "noise"

while not as simple as 7805 there are chips to make switches

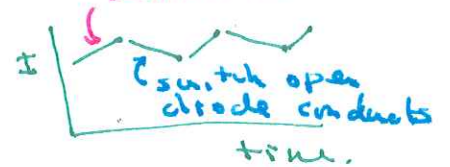
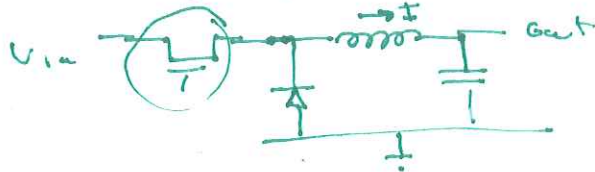
→ single block DC → DC [even DC+ → DC-] converters

Boost (buck + switch)



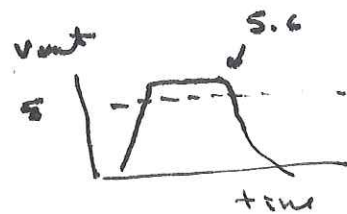
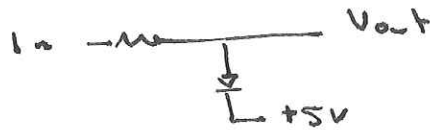
get a current going to GND then switch it to Vout

Buck

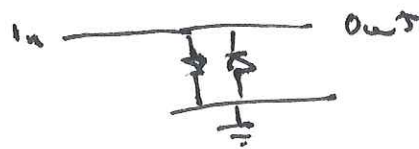


Other diode circuits

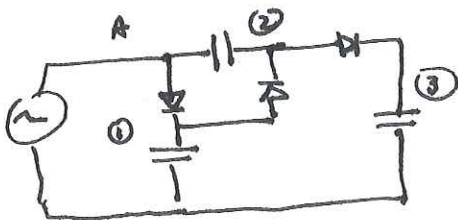
Clamp



small signal limit  
± 0.6 V

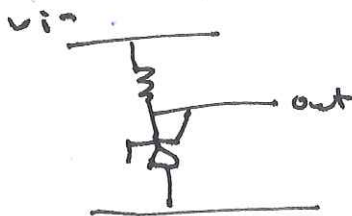


Voltage Multiplier (Cockcroft-Walton)

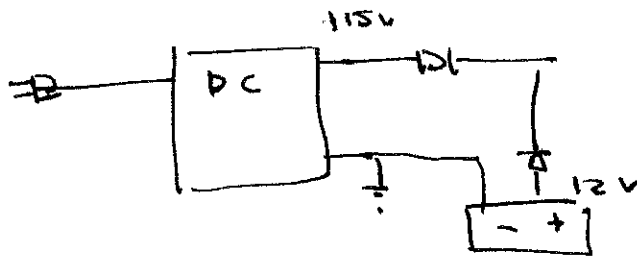


- ① charges to  $V_0$
- ② when A at  $-V_0$  charges to  $+V_0$
- ③ when A at  $+V_0$  charges to  $+3V_0$

Zener



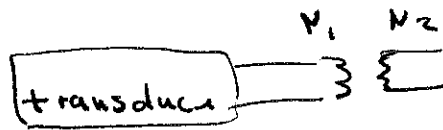
Gate



inductor



Transformers -



- power

- impedance match  
 ↳ after inductor =  $\left(\frac{N_2}{N_1}\right)^2 R_T$

- Free up ground

- insert a signal at a "floating" potential