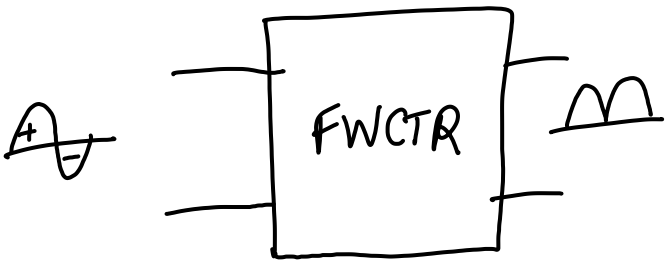
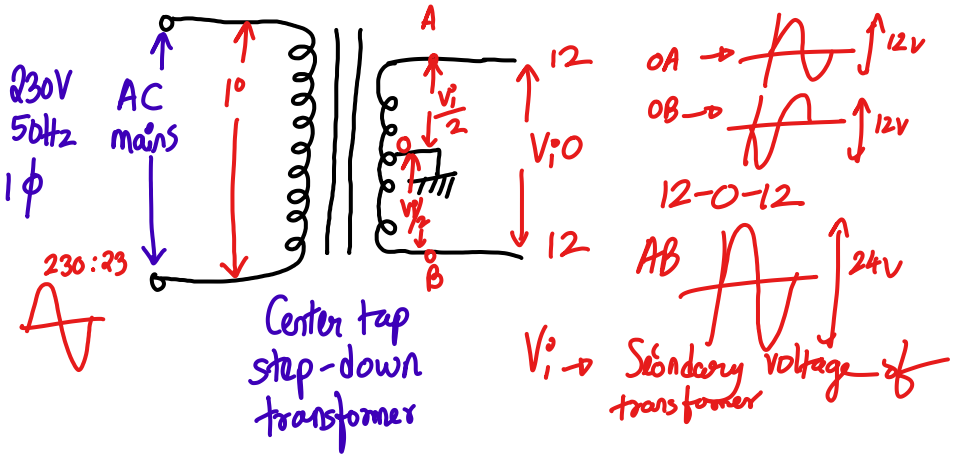
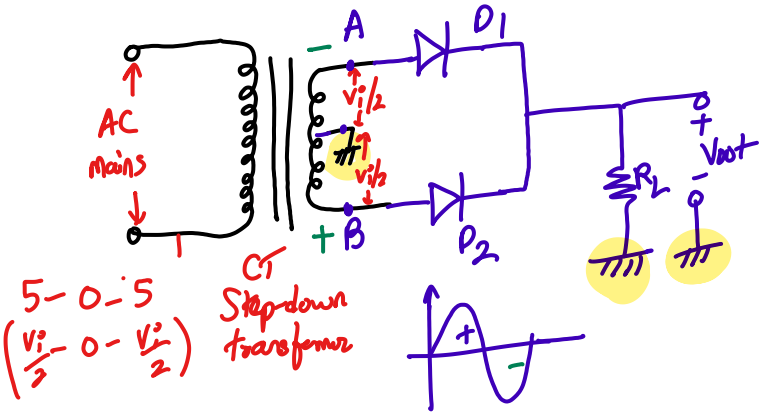
EEEE lec 33b 6/11/23

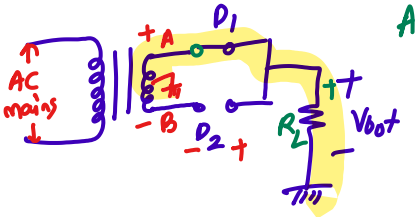
Full-wave Center tapped Rectifier:



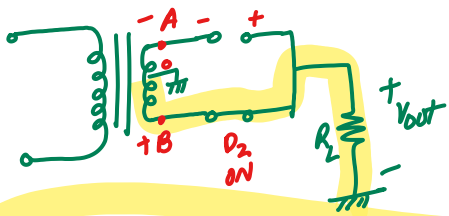




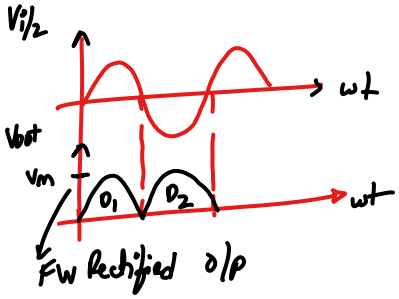
+ve h.c, D1 F.B → ON
D2 R.B → OFF



A - D1 - RL - A
Vout → Vi/2
Iout → Vout/RL

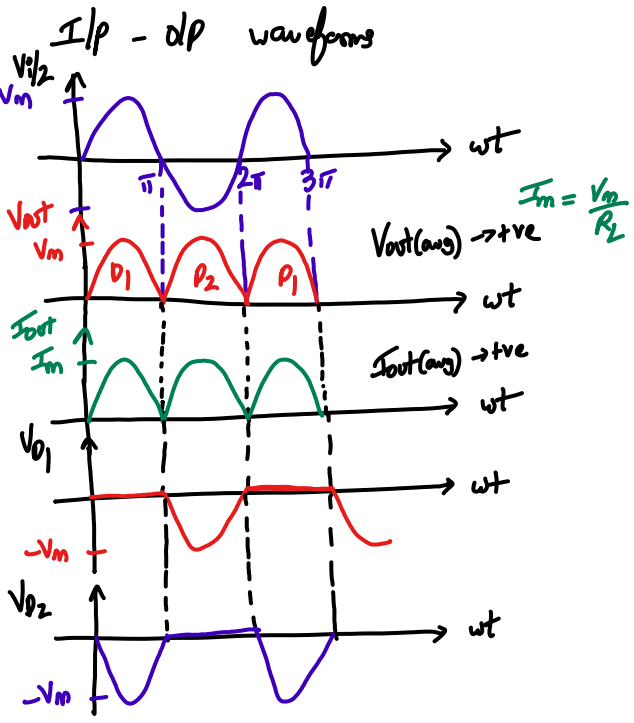


B - D2 - RL - B
Vout → +Vi/2
Iout flows



$$V_{out} = \frac{V_i}{2}(V_m \sin \omega t) \quad \text{if} \quad 0 < \omega t < \pi$$

$$= \frac{V_i}{2}(V_m \sin \omega t) \quad \text{if} \quad \pi < \omega t < 2\pi \quad -(1)$$


I/p - o/p waveforms
Vm/2
Vm
wt
π
2π
3π
Im = Vm/RL
Vout
Vm
D1
D2
D1
Vout(avg) → +ve
wt
Iout
Im
Iout(avg) → +ve
wt
VD1
wt
-Vm
VD2
wt
-Vm