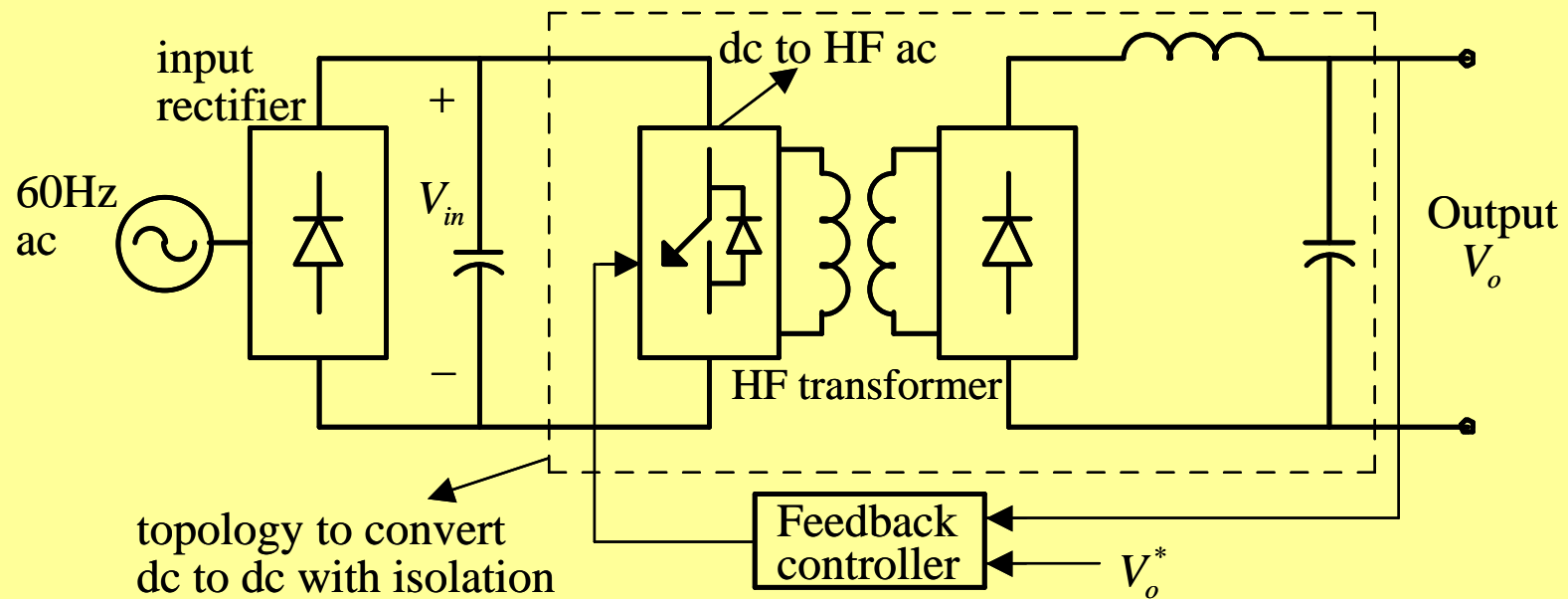


Isolated Switch-Mode DC Power Supplies

- Full-Bridge
- Half-Bridge
- Push-Pull

SWITCH-MODE DC POWER SUPPLIES

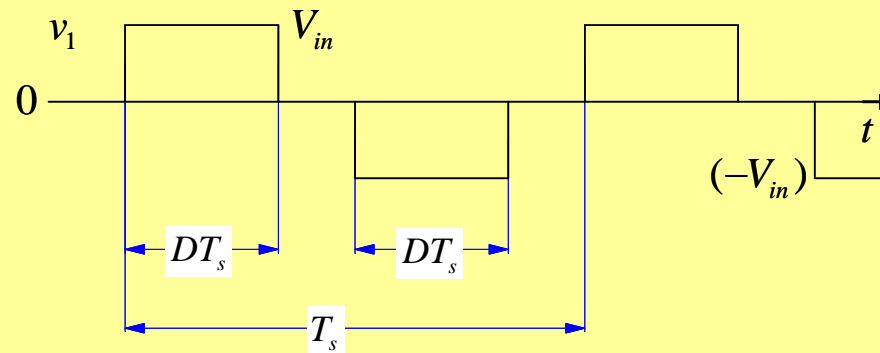
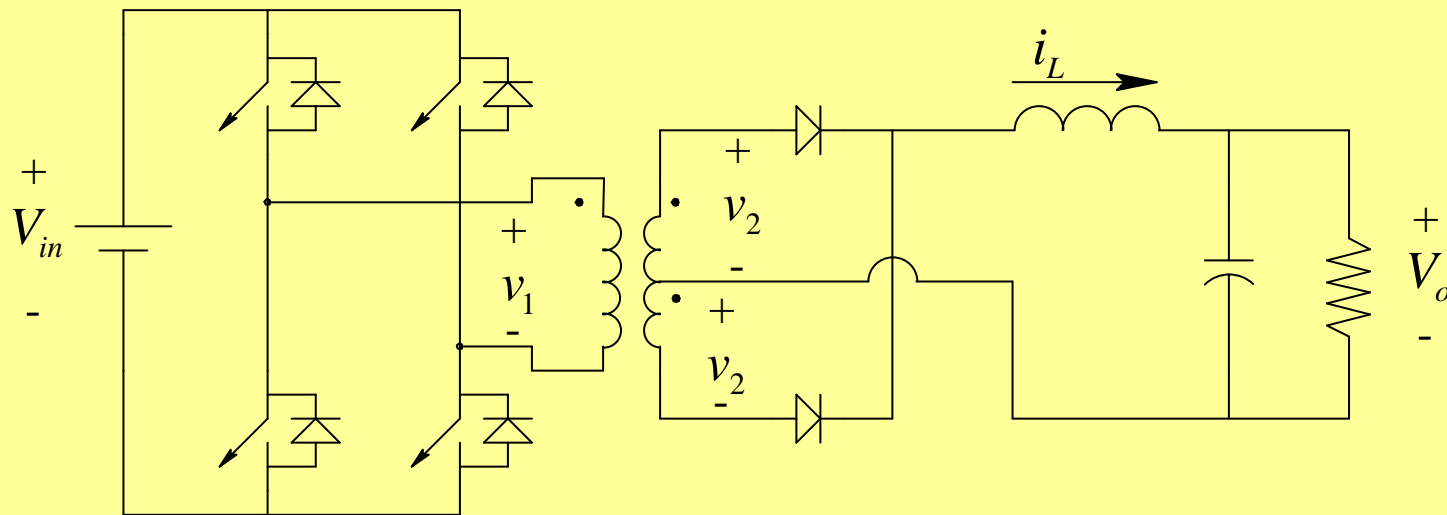


NEED FOR ELECTRICAL ISOLATION

CLASSIFICATION

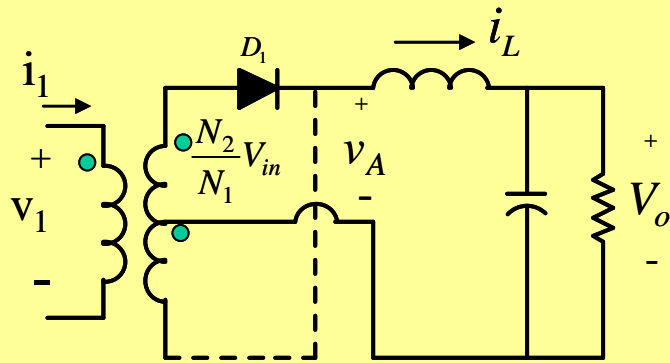
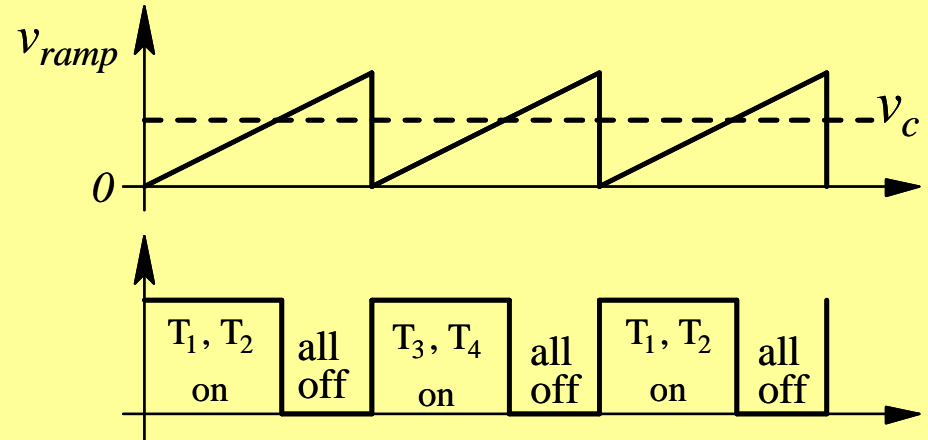
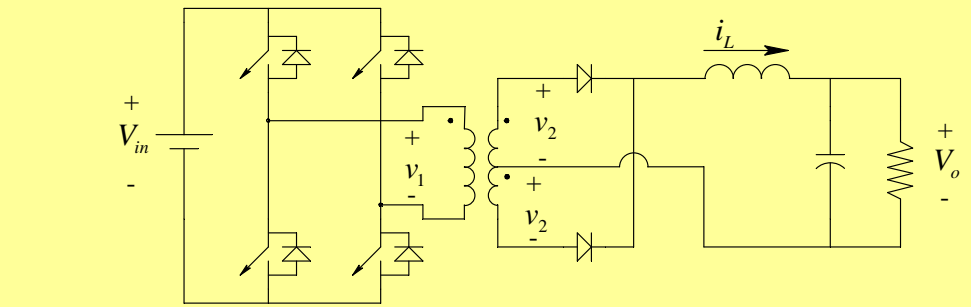
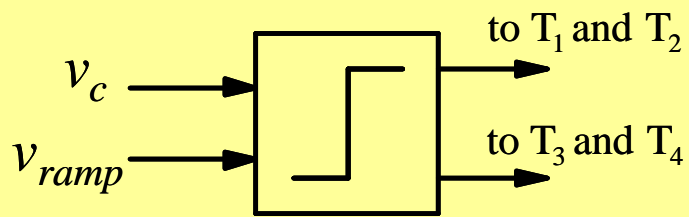
- Flyback converters derived from Buck-Boost dc-dc converters
- Forward converter derived from Buck dc-dc converters
- Full-Bridge and Half-Bridge converters derived from Buck dc-dc converters

FULL-BRIDGE CONVERTERS

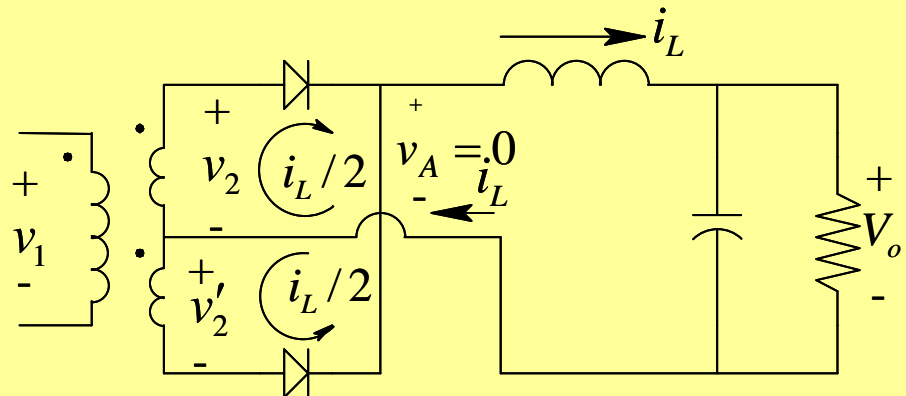


- Pulse-Width Modulated (PWM), and
- Phase-Shift Modulated (PSM)

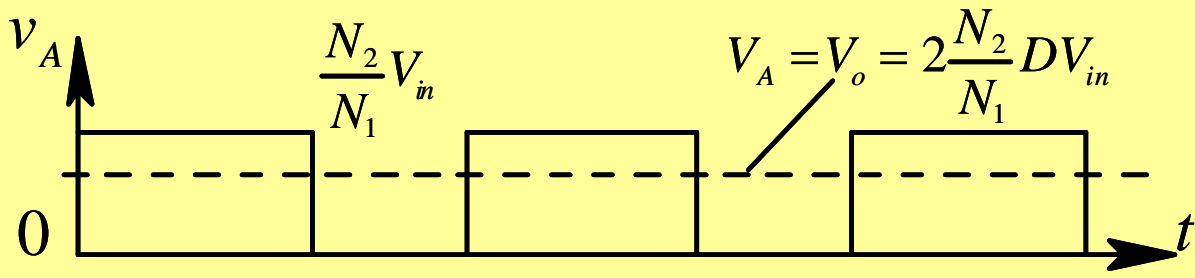
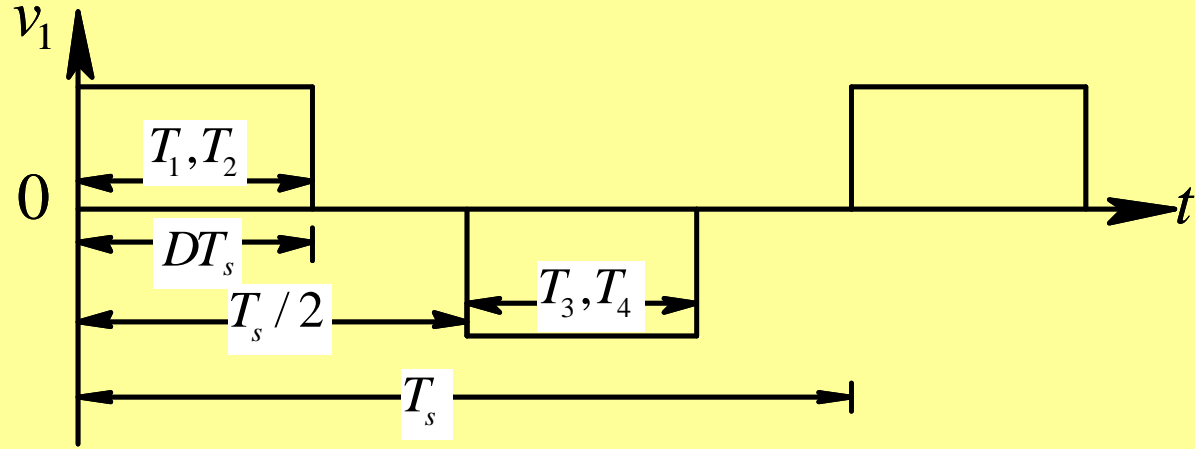
PWM Control



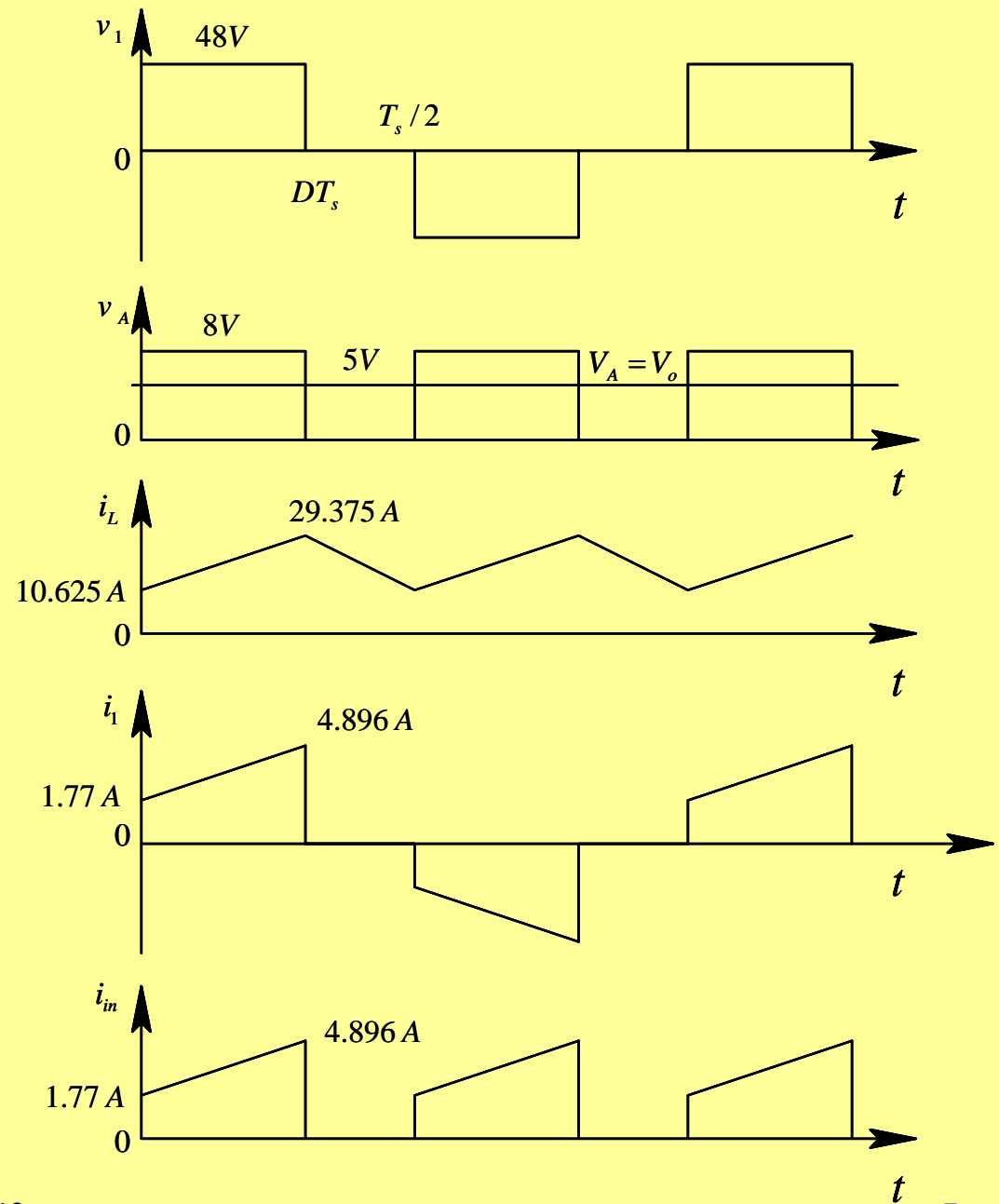
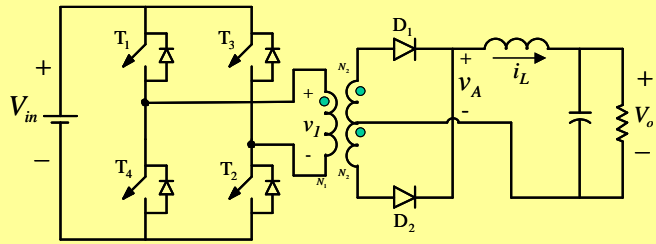
(a)



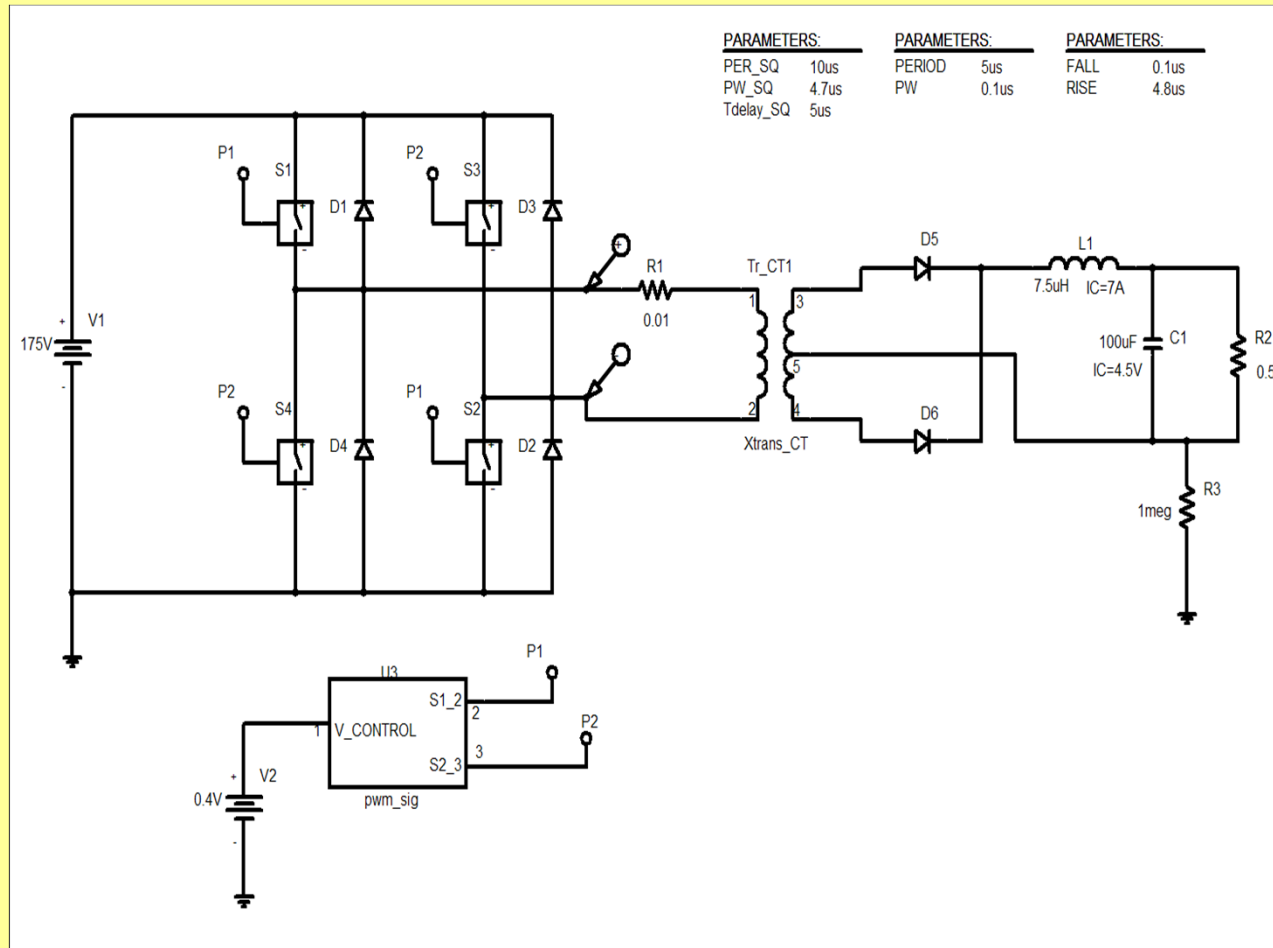
(b)



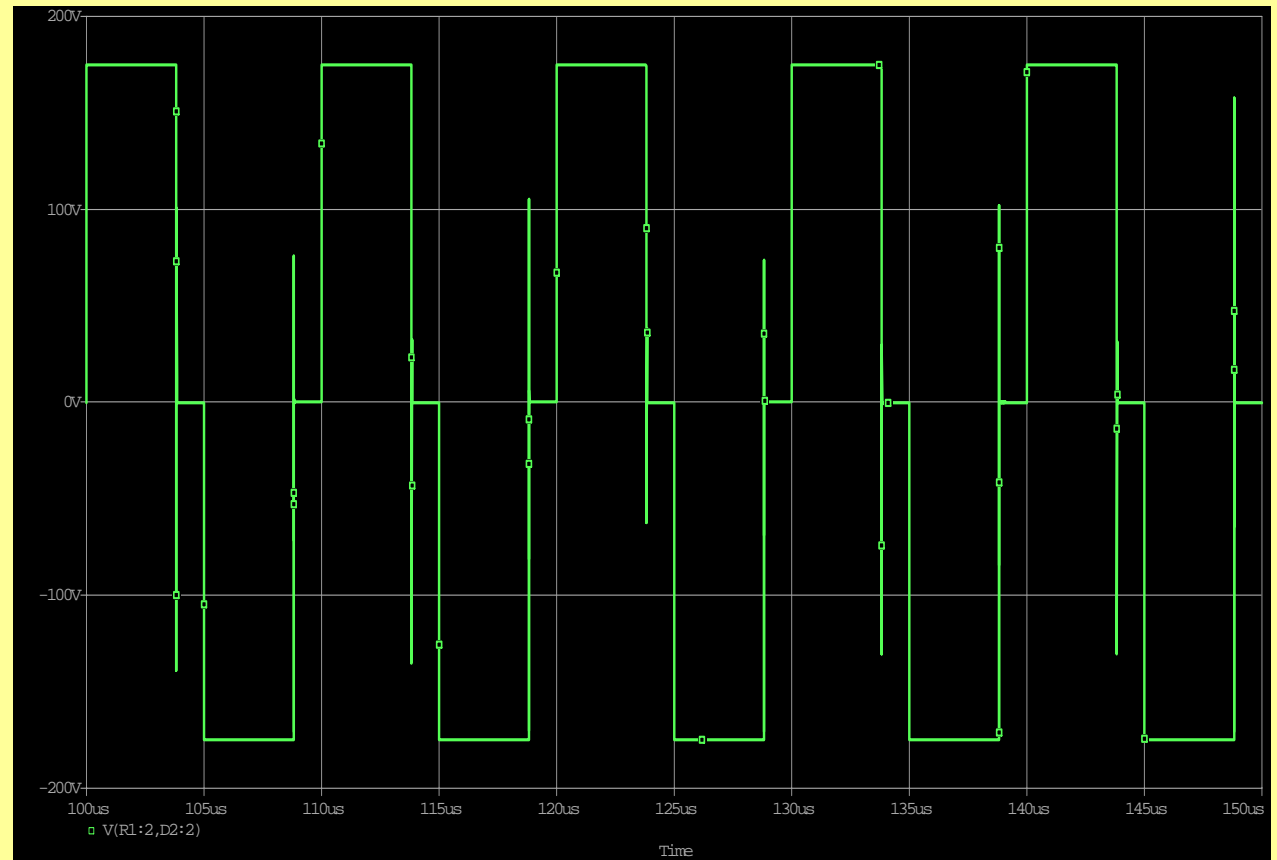
$$\frac{V_o}{V_{in}} = 2 \left(\frac{N_2}{N_1} \right) D$$



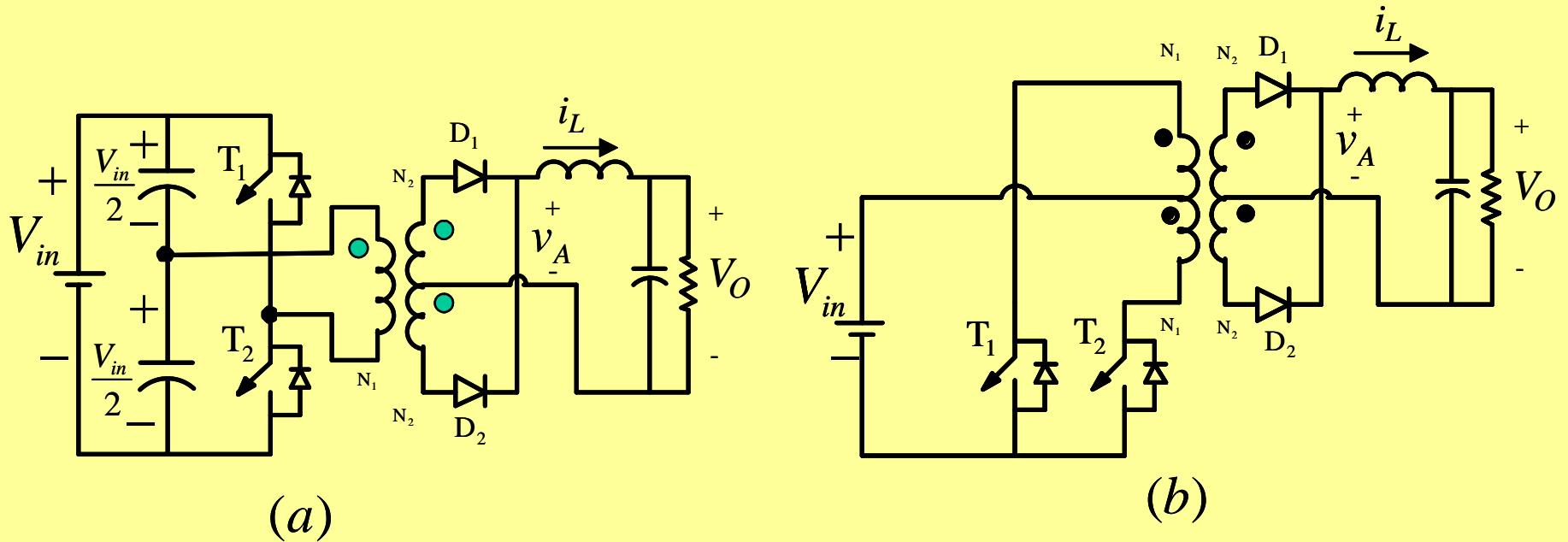
PSpice Modeling:



Simulation Results



Half-Bridge and Push-Pull Converters



Summary

Switch-Mode DC Power Supplies

- Full-Bridge
- Half-Bridge
- Push-Pull