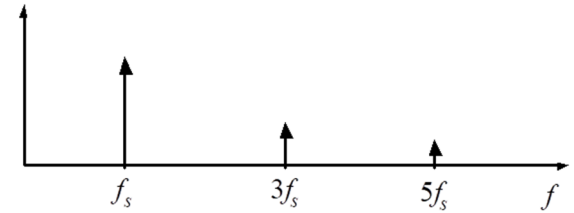
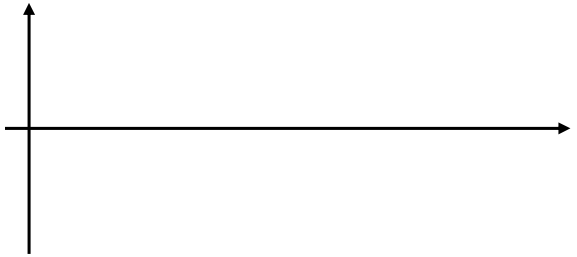
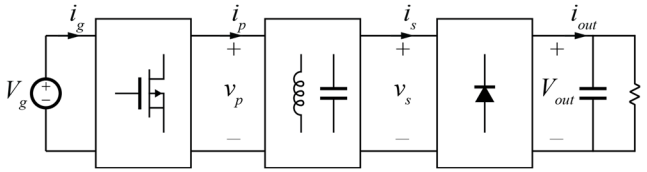
Sinusoidal Analysis (Ch 19)







Sinusoidal Analysis: Comments

- Generally most accurate when operating near resonance with a high Q
- Effective quality factor Q_e depends not only on resonant tank, but also on loading
- Analysis neglects switching intervals; can only predict where ZVS **cannot** be obtained

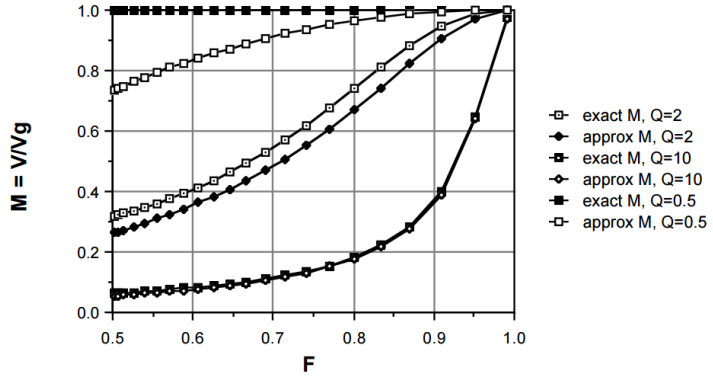
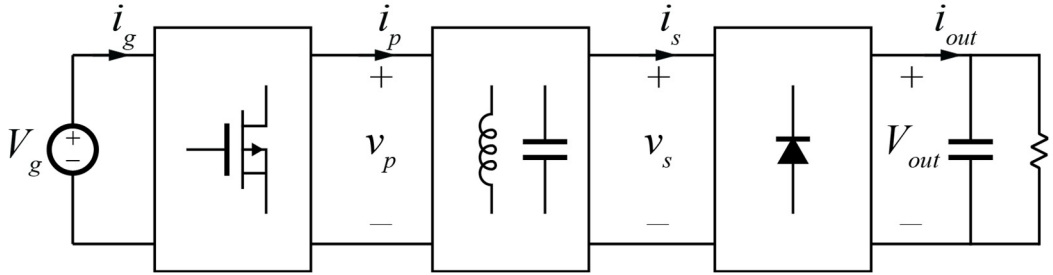
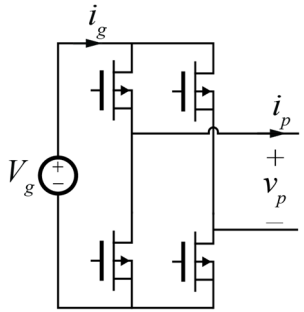


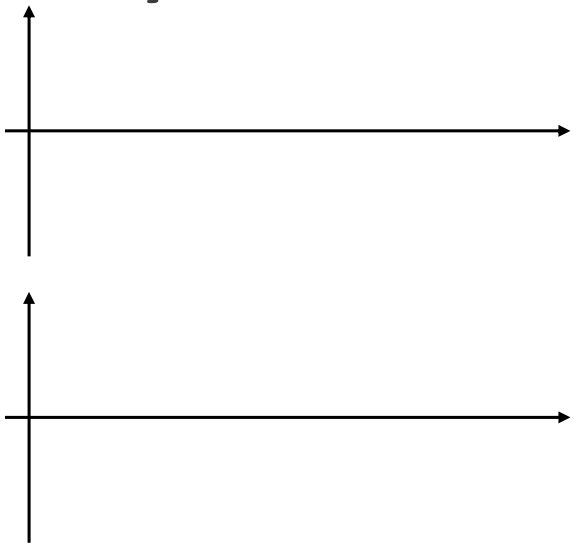
Fig. 2.14. Comparison of exact and approximate series resonant converter characteristics, below resonance.

AC Link Waveforms



Switch Network Sinusoidal Analysis





Input Current

Switch Network Equivalent Circuit