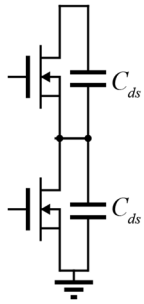
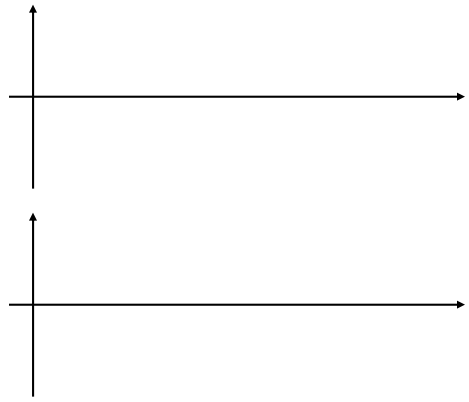
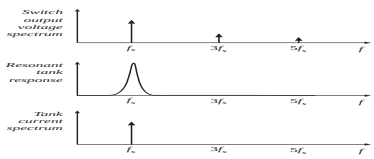
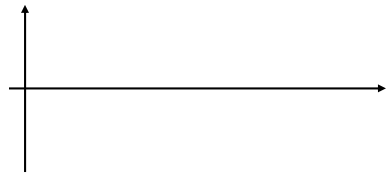
Generalized ZVS Analysis

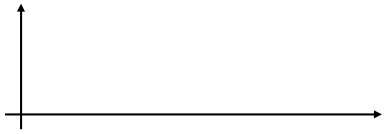




Sinusoidal Analysis (Ch 19)







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

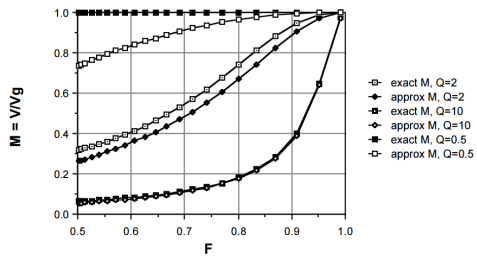
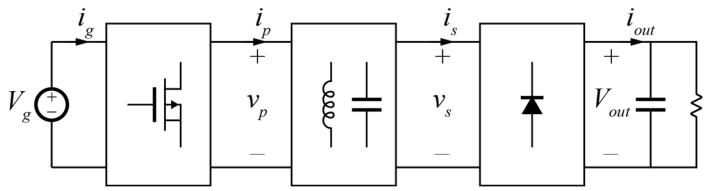
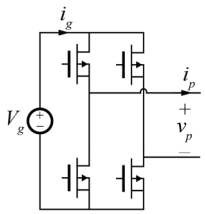


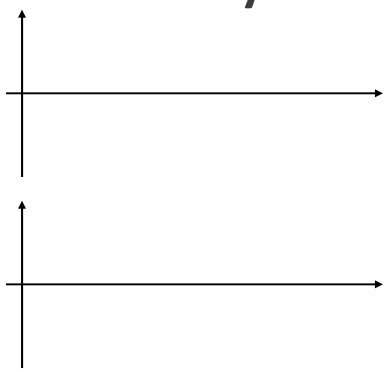
Fig. 2.14. Comparison of exact and approximate series resonant converter characteristics, below resonance.

AC Link Waveforms



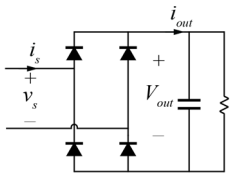
Switch Network Sinusoidal Analysis

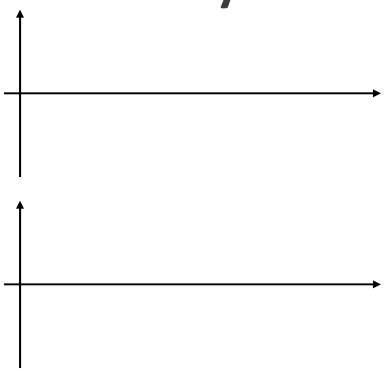




Switch Network Equivalent Circuit

Diode Rectifier Sinusoidal Analysis





Diode Rectifier Equivalent Circuit

Complete Equivalent Circuit