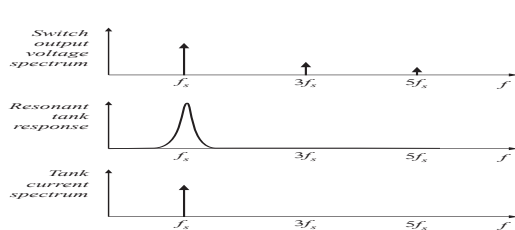


# Ex: Solving State Plane EQs Using Matlab

## 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

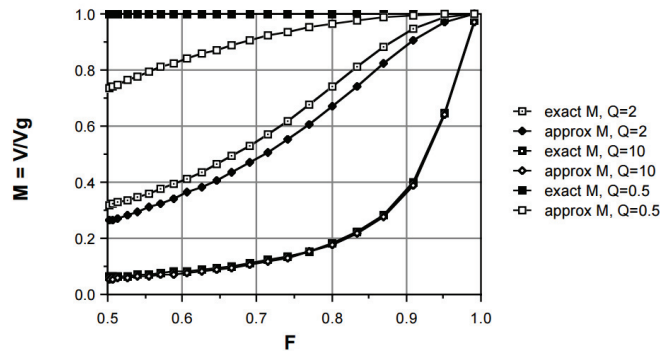
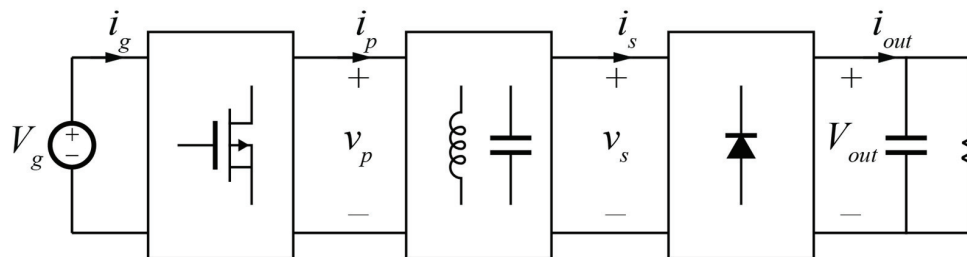
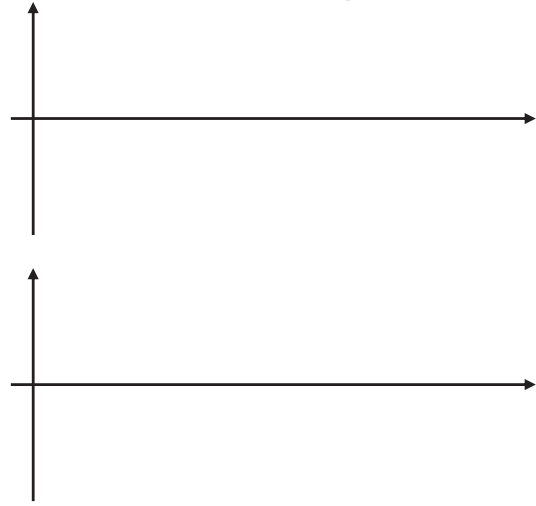
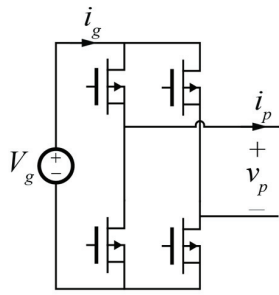


Fig. 2.14. Comparison of exact and approximate series resonant converter characteristics, below resonance.

## AC Link Waveforms

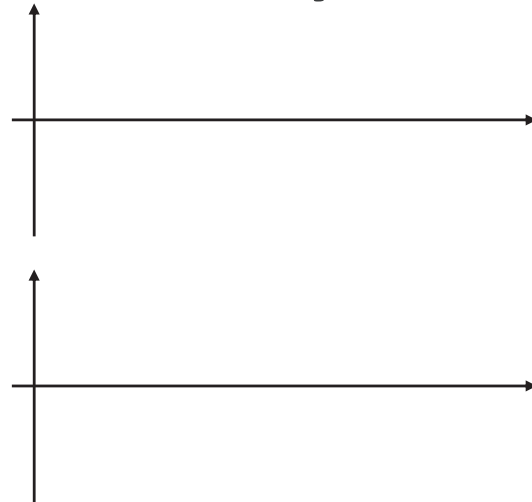
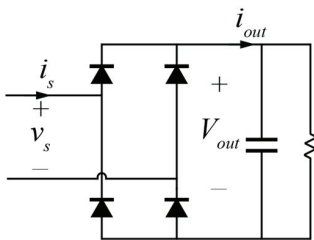


# Switch Network Sinusoidal Analysis



# Switch Network Equivalent Circuit

## Diode Rectifier Sinusoidal Analysis



# Diode Rectifier Equivalent Circuit