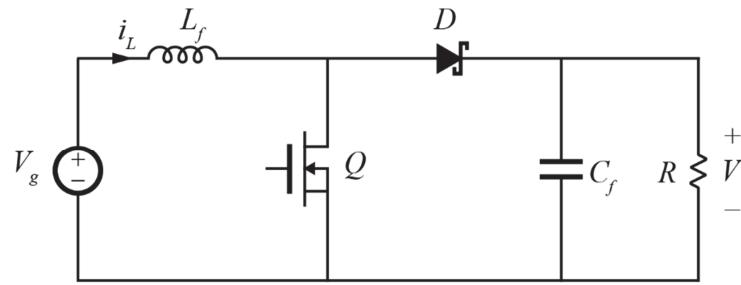
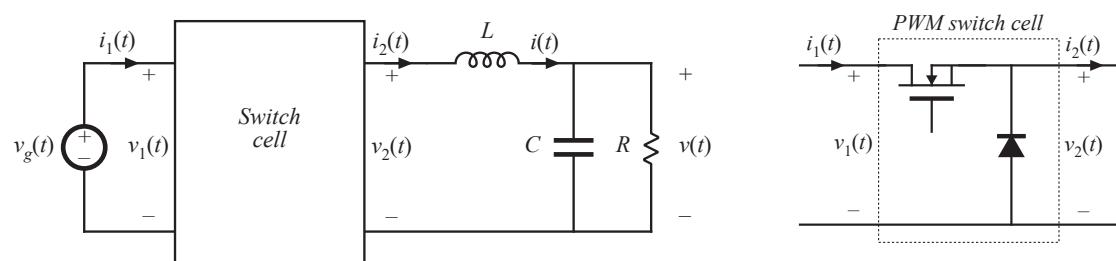


# ZCS-QR Boost

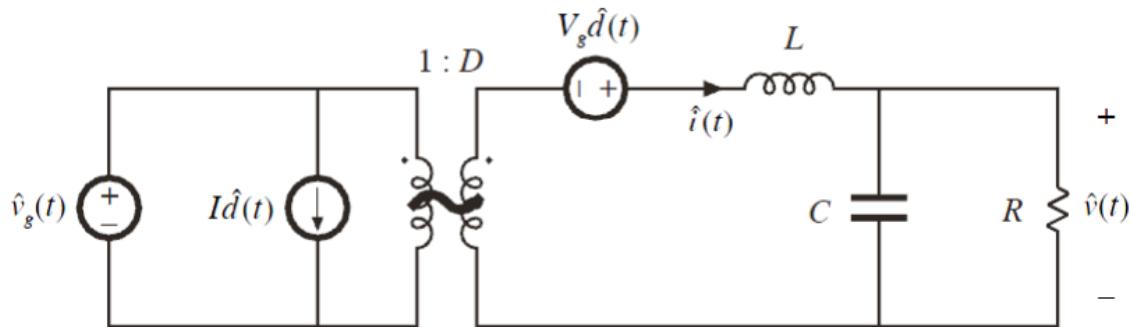


## SSM - PWM Parent



# SSM, PWM Case

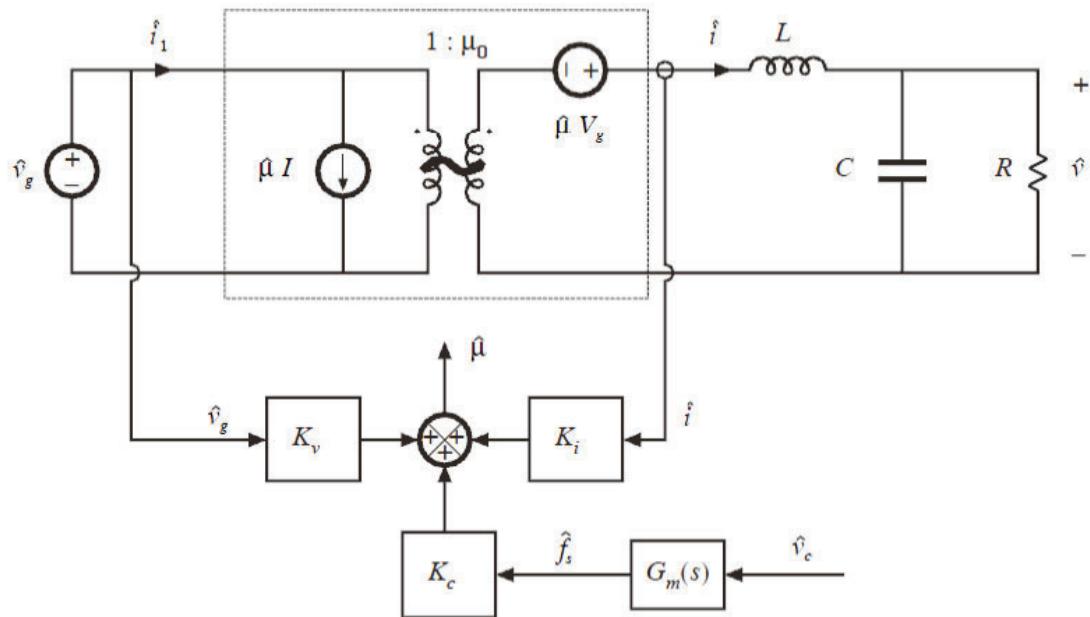
Textbook, Fig.7.17(a)



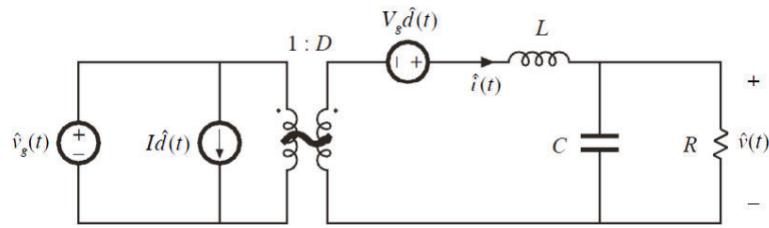
## ZVS-QR Switch Cell SSM

$$M = 1 - \frac{f}{2\pi} \left[ \frac{1}{2\zeta_L} + \pi + \sin^{-1}\left(\frac{1}{\zeta_L}\right) + \sqrt{\zeta_L^2 - 1} + \zeta_L \right]$$

# SSM, Soft-Switching Buck



# PWM Transfer Functions



# QR Transfer Functions

