Averaging

$$\theta_1 = \frac{1}{J_L}$$

$$J_2 = \sqrt{J_L{}^2 - 1}$$

$$\beta = \pi + \sin^{-1}\left(\frac{1}{J_L}\right)$$

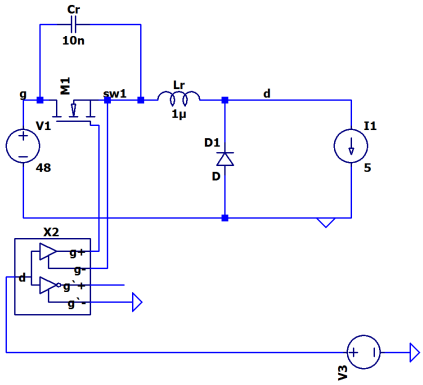
$$\theta_3 = J_2 + J_L$$

$$\frac{2\pi}{F} = \theta_1 + \beta + \theta_3 + \theta_4$$

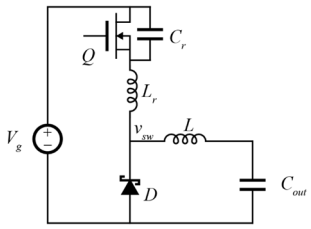
Complete Solution

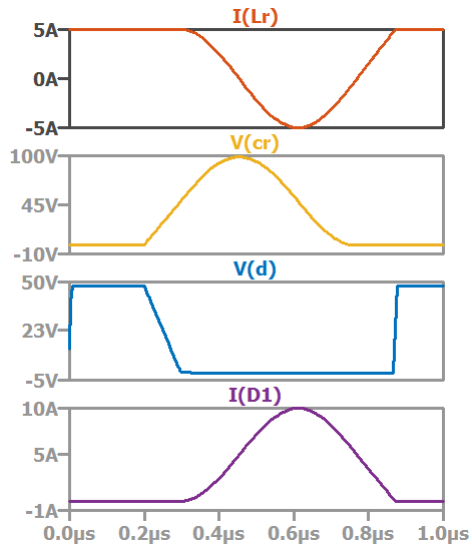
MOSFET Voltage Stresses

Test Circuit

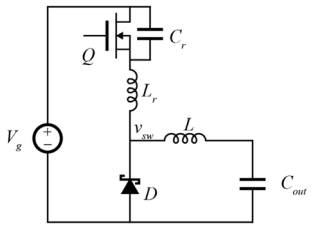


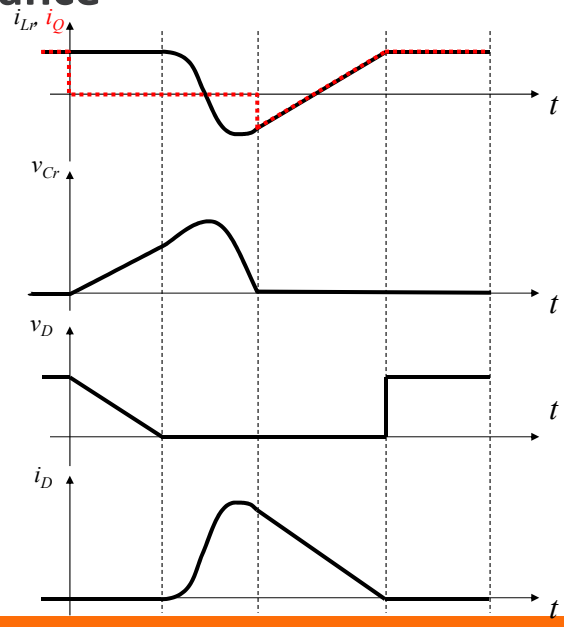
Simulation Results



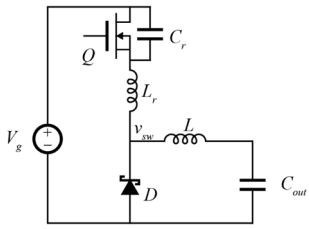


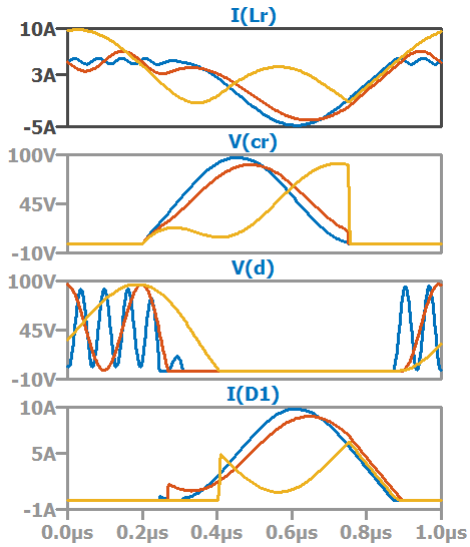
Diode Capacitance



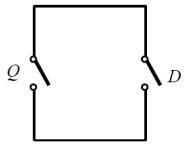


Simulation Results: Diode Capacitance

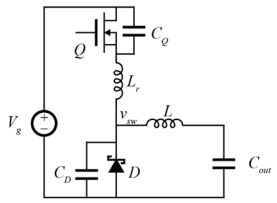




Wishlist: Multi-Resonant



ZVS-MR Buck



W. A. Tabisz and F. C. Lee, "Zero-voltage-switching multi-resonant technique-a novel approach to improve performance of high frequency quasi-resonant converters," *Power Electronics Specialists Conference, 1988.*

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