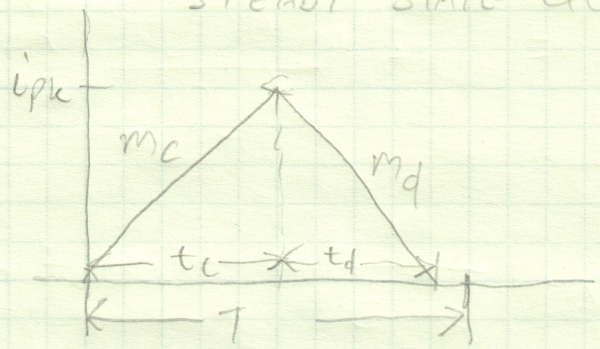
DISCONTINUOUS CONDUCTION MODE (DCM)
STEADY STATE QUANTITIES



$$t_{cl} = \frac{i_{pk}}{m_d}$$

$$t_c = \frac{i_{pk}}{m_c}$$

$$i_{CG} = \frac{\frac{1}{2} L i_{pk}^2}{T V_{CG}} = \frac{1}{2TV_{CG}} L i_{pk}^2$$

$$i_{DG} = \frac{1}{2TV_{DG}} L i_{pk}^2$$

$$i_{pk} = \sqrt{\frac{2TV_{DG}}{L} i_{DG}}$$

$$i_{pk} = \sqrt{\frac{2TV_{CG}}{L} i_{CG}}$$

Small-signal gain

$$\frac{\partial i_{CG}}{\partial i_{pk}} = \frac{1}{2TV_{CG}} L \cdot 2 i_{pk} = \frac{L}{TV_{CG}} i_{pk}$$

$$\hat{i}_{CG} = \frac{L I_{pk}}{T V_{CG}}$$

$$\hat{i}_{DG} = \frac{L I_{pk}}{T V_{DG}}$$