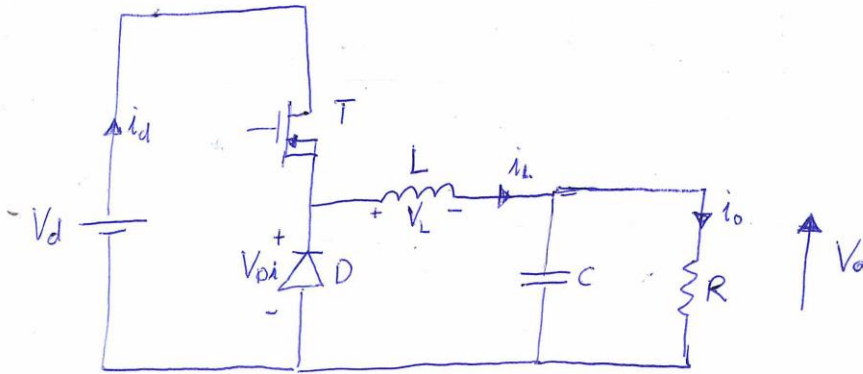


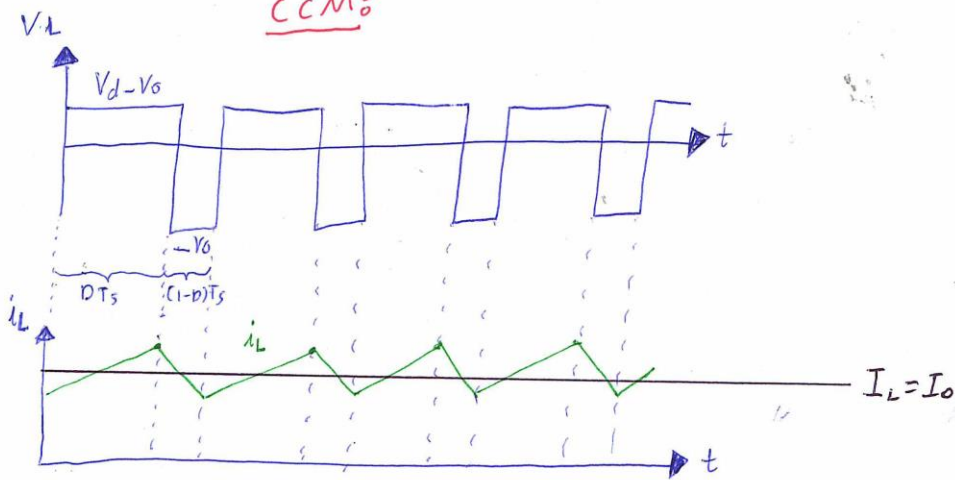
Contents

Buck.....	1
Boost.....	3
Buck-Boost.....	5
Flyback.....	7
Forward.....	9
Rectifiers.....	11
Boost (extended).....	16
Buck (extended).....	18

Buck



CCM



Duty Cycle Derivation ($\frac{V_o}{V_d} = D$)

$$\frac{(V_d - V_o) D T_s}{L} = \frac{V_o (1-D) T_s}{L} \quad (\text{equal areas})$$

$$V_d D T_s - V_o D T_s = V_o T_s - V_o D T_s$$

$$V_d D T_s = V_o (T_s - D T_s + D T_s)$$

$$V_d D T_s = V_o T_s$$

$$\frac{V_o}{V_d} = D = \frac{I_d}{I_o}$$

as $P_d = P_o$ (lossless converter)