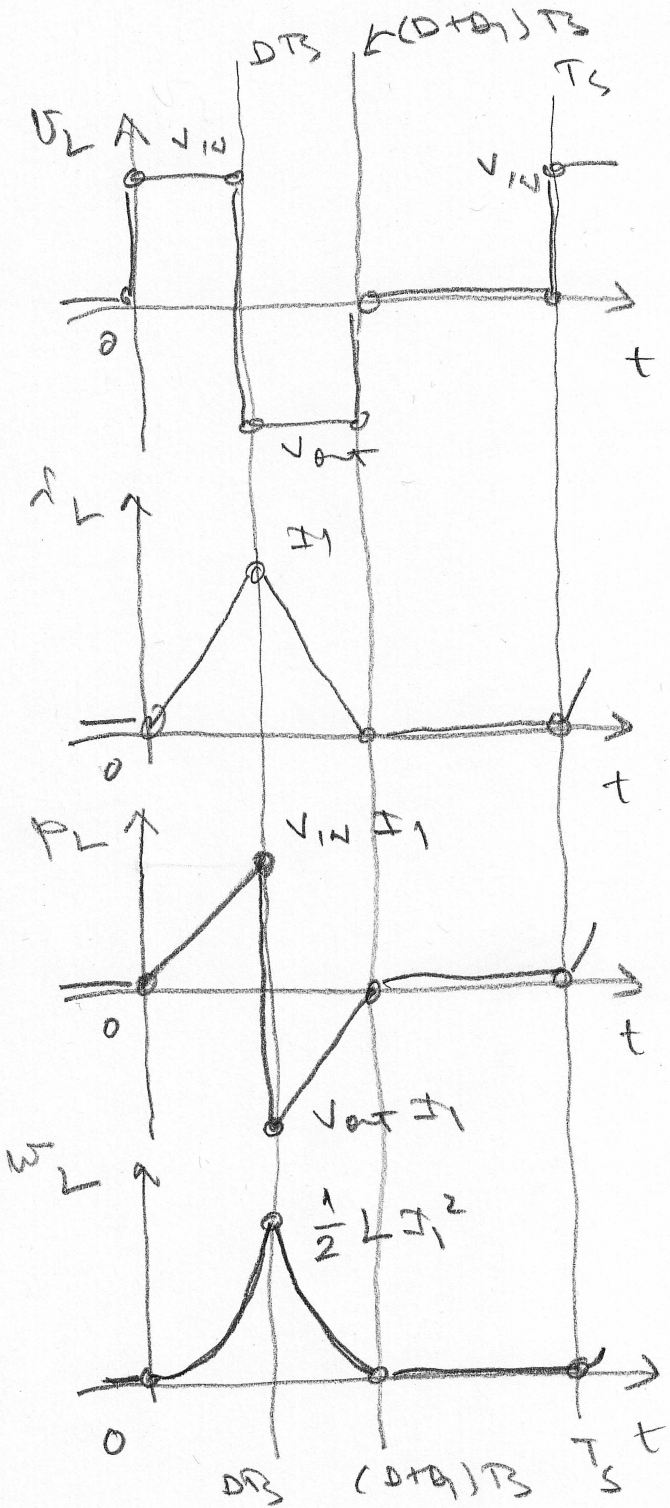


ПРЕДВАРИТЕЛЬНЫЕ ДА 24.04.2026. ДОНТНА

BUCK - BOOST, DCM



$$D V_{in} + D_1 V_{out} = 0$$

$$D_1 = -D \frac{V_{in}}{V_{out}}$$

$$I_1 = \frac{V_{in}}{L} \cdot DT_S$$

$$P_{Lmax} = V_{in} I_1 = \frac{V_{in}^2}{L} DT_S$$

$$\bar{P}_L = \frac{1}{T_S} \left( \frac{1}{2} DT_S V_{in} I_1 + \frac{1}{2} D_1 T_S V_{out} I_1 \right)$$

$$\bar{P}_L = \frac{1}{2} I_1 (D V_{in} + D_1 V_{out})$$

$$\bar{P}_L = \frac{1}{2} I_1 \left( D V_{in} - D \frac{V_{in}}{V_{out}} V_{out} \right)$$

$$\bar{P}_L = 0$$

$$W_{Lmax} = \frac{1}{2} L I_1^2$$

$$W_{Lmax} = \frac{1}{2} L \frac{V_{in}^2}{L^2} D^2 T_S^2$$

$$W_{Lmax} = \frac{V_{in}^2 D^2}{2 L f_s^2}$$

$$P_{in} = P_{out} = \frac{1}{T_S} W_{Lmax}$$

$$P_{in} = P_{out} = \frac{D^2}{2 f_s L} V_{in}^2$$

$$R_E \triangleq \frac{2 f_s L}{D^2}$$

$$P_{in} = P_{out} = \frac{1}{R_E} V_{in}^2$$

← HE ЗАТОНУТ ДА \$V\_{out}\$