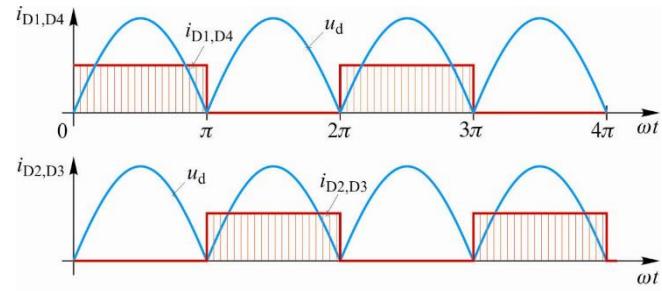


$$U_d = \frac{2U_s}{\pi} \quad I_d = \frac{U_d}{R_d} = \frac{2U_s}{\pi \cdot R_d}$$

$$\lambda = \frac{P}{S} = \frac{\frac{2U_s}{\pi} \cdot I_d}{\frac{U_s}{\sqrt{2}} \cdot I_d} = \frac{2\sqrt{2}}{\pi} = 0,9$$

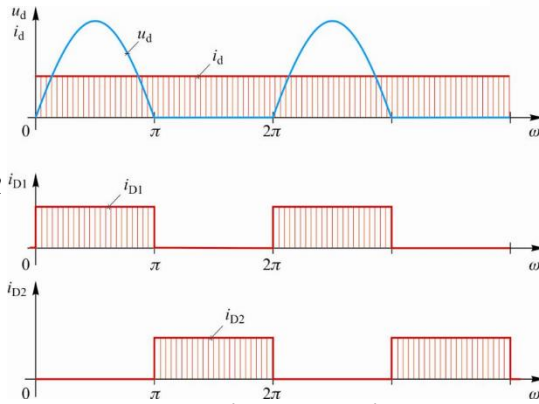
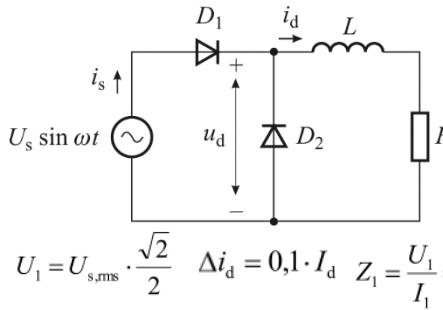
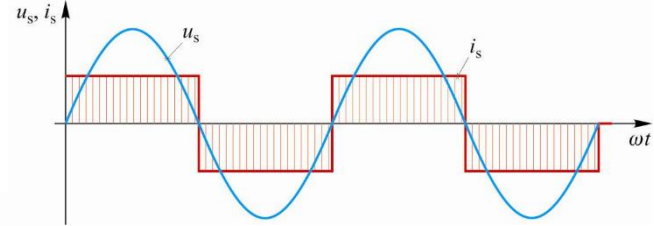


isprk

$$I_d = \frac{U_d - E_d}{R_d} = \frac{2U_s - E_d}{\pi \cdot R_d}$$

$$S_{TRn} = \frac{\frac{1}{2} \cdot 2 \cdot \frac{U_s}{\sqrt{2}} \cdot I_d}{\frac{2U_s}{\pi} \cdot I_d} = \frac{\pi}{2\sqrt{2}} = 1,11$$

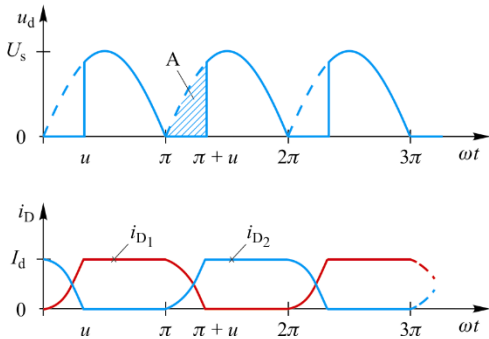
$$THD = \sqrt{\frac{I_d^2 - \frac{8I_d^2}{\pi^2}}{\frac{8I_d^2}{\pi^2}}} = \sqrt{\frac{\pi^2}{8} - 1} \quad I_1 = \frac{4I_d}{\sqrt{2}\pi}$$



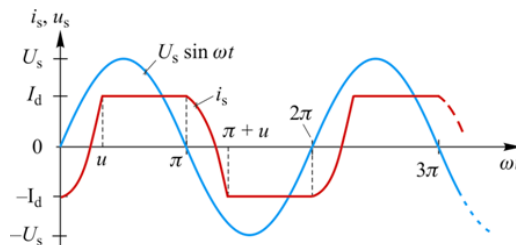
$$I_1 = \frac{\sqrt{2}I_d}{\pi} \quad U_d = \frac{U_s}{\pi} \quad I_d = \frac{U_d}{R_d} = \frac{U_s}{\pi \cdot R_d}$$

$$THD = \sqrt{\frac{\frac{I_d^2}{2} - \frac{2I_d^2}{\pi}}{\frac{2I_d^2}{\pi}}} \quad P_d = I_s^2 R_d \quad I_D = \frac{I_d}{2}$$

$$I_{s,rms} = \sqrt{\frac{1}{2\pi} \int_0^\pi I_s^2 d(\omega t)} \quad \lambda = \frac{P}{S} = \frac{P}{U_{s,rms} I_{s,rms}}$$

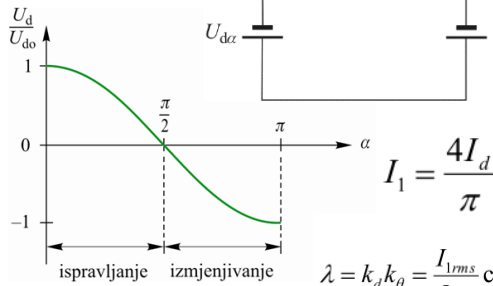
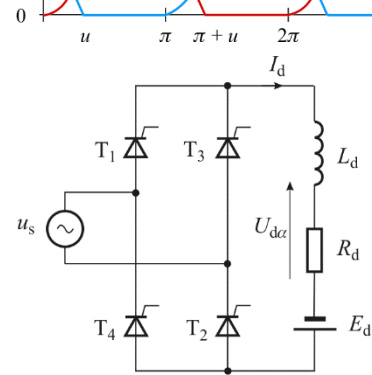


Komutacija(L iza izvora)



$$U_d = \frac{2U_s}{\pi} - 2f \frac{A}{\omega} \quad A = 2X_k I_d$$

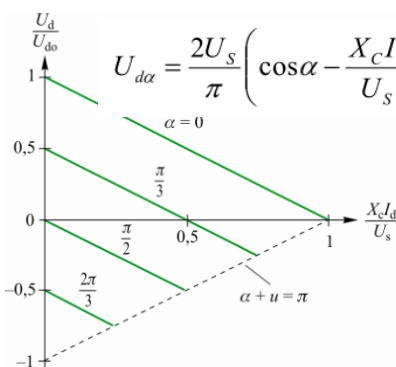
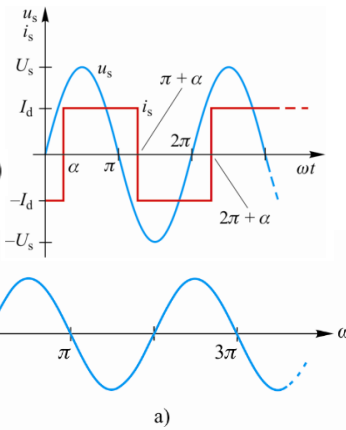
$$= \frac{2U_s}{\pi} \left(1 - \frac{X_k I_d}{U_s} \right) \quad U_{d0} = \frac{2U_s}{\pi}$$



$$U_{d\alpha} = \frac{2U_s}{\pi} \cos \alpha = U_{d0} \cos(\alpha)$$

$$I_d = \frac{E_d - U_{d\alpha}}{R_d}$$

$$I_1 = \frac{4I_d}{\pi}$$



$$U_{d\alpha} = \frac{2U_s}{\pi} \left(\cos \alpha - \frac{X_k I_d}{U_s} \right)$$

Na otporniku, izmj izvora, istosmjernog

Punjač: $U_{d\alpha} = \frac{2U_s}{\pi} \left(\cos \alpha - \frac{X_k I_B}{U_s} \right)$

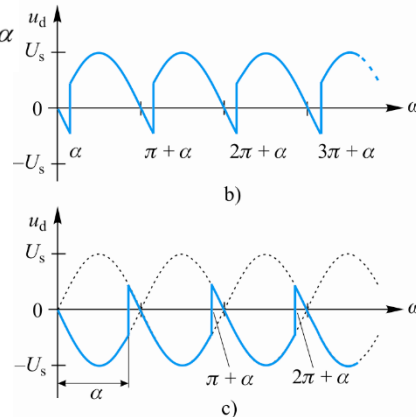
$$U_B = \frac{2U_s}{\pi} \left(\cos \alpha - \frac{X_k I_B}{U_s} \right) \quad I_B = \frac{U_s}{X_k} \cos \alpha - \frac{\pi \cdot U_B}{2X_k}$$

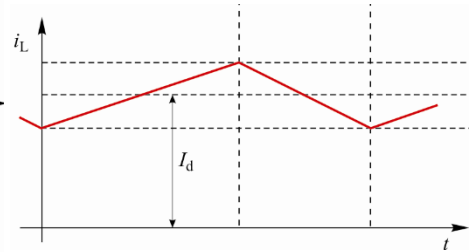
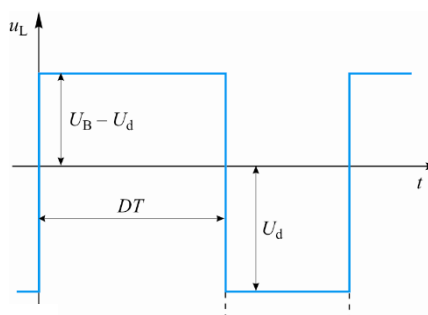
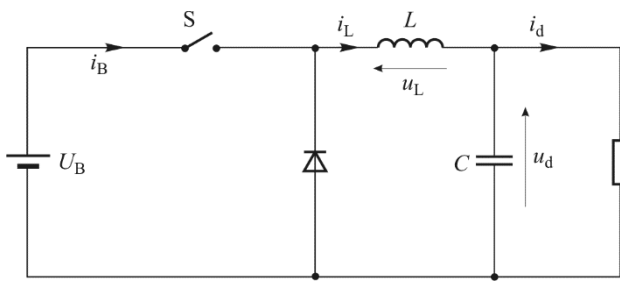
$$\lambda = k_d k_\theta = \frac{I_{1rms}}{I_{rms}} \cos \theta_1 = \frac{\frac{4I_d}{\pi} \cos \alpha}{I_d} = 0,9 \cos \alpha$$

$$P_R = I_d^2 \cdot R_d =$$

$$P_S = U_{davg} \cdot I_d =$$

$$P_{dc} = E_d \cdot I_d =$$





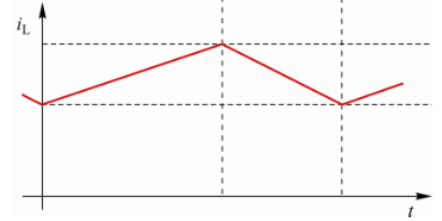
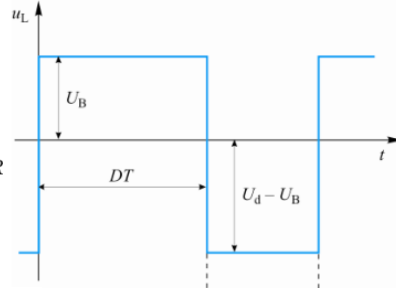
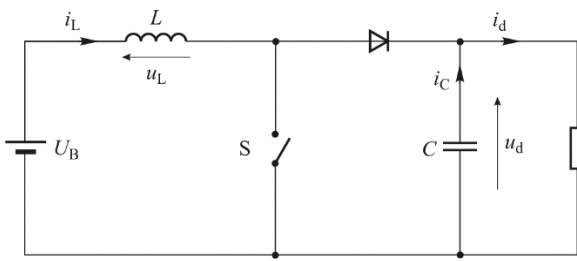
$$(U_B - U_d) \cdot D \cdot T = U_d \cdot (1-D) \cdot T$$

$$P_B = P_d$$

$$U_B \cdot D - U_d \cdot D = U_d - U_d \cdot D$$

$$U_B \cdot I_B = U_d \cdot I_d \quad I_d = \frac{1}{D} \cdot I_B$$

$$U_d = D \cdot U_B$$



$$U_B \cdot D \cdot T = (U_d - U_B) \cdot (1-D) \cdot T \quad U_B = U_d(1-D)$$

$$U_B \cdot D = U_d - U_B - U_d \cdot D + U_B \cdot D \quad \frac{U_d}{U_B} = \frac{1}{1-D}$$

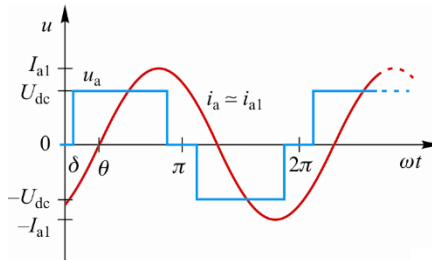
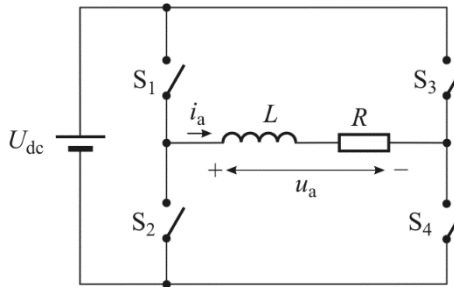
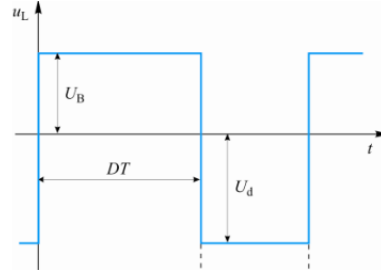
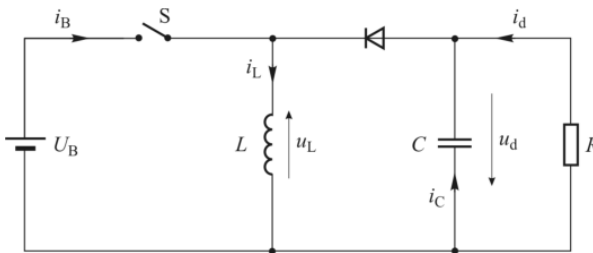
$$P_B = P_d \rightarrow U_B \cdot I_B = U_d \cdot I_d \quad \frac{I_d}{I_B} = \frac{U_B}{U_d} = \frac{1}{1-D}$$

$$U_B \cdot D \cdot T = U_d \cdot (1-D) \cdot T$$

$$\frac{U_d}{U_B} = \frac{D}{1-D}$$

$$P_B = P_d \rightarrow U_B \cdot I_B = U_d \cdot I_d$$

$$\frac{I_d}{I_B} = \frac{1-D}{D}$$



$$I_1 = \frac{U_1}{\sqrt{R^2 + (\omega L)^2}} \quad I_3 = \frac{aU_1}{\sqrt{R^2 + (3\omega L)^2}}$$

$$\theta = \tan^{-1}\left(\frac{\omega L}{R}\right) \quad I_{a1} = \frac{U_{a1}}{\sqrt{R^2 + (\omega L)^2}}$$

$$U_{a1} = \frac{2U_{DC}}{\pi} \int_{\delta}^{\pi-\delta} \sin(\omega L) d(\omega L) = \frac{4U_{DC}}{\pi} \cos \delta$$

$$U_{an} = \frac{4}{T} \int_0^T u_a(t) \sin n \frac{2\pi}{T} d(t) \quad U_{a3} = \frac{4U_{DC}}{3\pi} \cos 3\delta$$

uzlazni $D = 1 - U_B/U_d$ $T = t_{ON}/D$ $I_d = U_d/R$ $\Delta i_L = \frac{U_B}{L} DT$ $I_{LM} = I_B + \Delta i_L/2$ $\Delta U_d = \frac{TU_d D}{CR}$ $C > \frac{TD}{R(\Delta U_d/U_d)}$

$$f = \frac{1}{T} = \frac{(U_d - U_B)}{U_d} \cdot \frac{1}{T_1} \quad I_L = \frac{U_d^2}{R} \cdot \frac{1}{U_B}$$

$$I_{L, sr} = \frac{U_{dc}}{(1-D)^2 * R} \quad u-s \quad I_L = \frac{U_{DC} * D}{R * (1-D)^2}$$

da I ne bude manje od 50% njene sr vrijed $0,5I_L > 0,5\Delta i_L/2$ $\frac{U_{DC}}{(1-D)^2 * R} > \frac{U_{DC} * D * T}{L}$ $L > \frac{D(1-D)^2 * R}{f}$