

Dane :

$$L_1 = 2,5 \text{ mH} = 2,5 * 10^{-3} \text{ H}$$

$$v_2 = 50v_1 \Rightarrow \frac{v_2}{v_1} = 50$$

$$L_2 = ?$$

$$v = \frac{1}{2\pi\sqrt{LC}}$$

// L – indukcyjność zwojnicy C – pojemność kondensatora

$$v_1 = \frac{1}{2\pi\sqrt{L_1C}}$$

$$v_2 = \frac{1}{2\pi\sqrt{L_2C}}$$

$$\frac{v_2}{v_1} = \frac{\frac{1}{2\pi\sqrt{L_2C}}}{\frac{1}{2\pi\sqrt{L_1C}}}$$

$$\frac{v_2}{v_1} = \frac{2\pi\sqrt{L_1C}}{2\pi\sqrt{L_2C}}$$

$$\frac{v_2}{v_1} = \frac{\sqrt{L_1}}{\sqrt{L_2}}$$

$$\frac{v_2}{v_1} = 50 \Rightarrow \frac{\sqrt{L_1}}{\sqrt{L_2}} = 50$$

$$\frac{L_1}{L_2} = 2500$$

$$L_1 = 2500L_2$$

$$L_2 = \frac{L_1}{2,5 * 10^3}$$

$$L_2 = \frac{2,5 * 10^{-3} \text{ H}}{2,5 * 10^3}$$

$$L_2 = 10^{-6} \text{ H}$$