

$$2-4) \quad f_{\text{REZ}} = \frac{1}{2\pi} \frac{1}{\sqrt{LC}} \quad \left\{ \begin{array}{l} f_{\text{REZ}} = 118513 \text{ Hz} \\ L = 100 \mu\text{H} \\ C = 18,033 \text{ nF} \end{array} \right.$$

$$df_{\text{REZ}} = \frac{\partial f_{\text{REZ}}}{\partial L} \cdot dL + \frac{\partial f_{\text{REZ}}}{\partial C} \cdot dC =$$

$$= \left(-\frac{1}{2}\right) \cdot \frac{1}{2\pi} \cdot \frac{1}{\sqrt{C}} \cdot \frac{1}{(\sqrt{L})^3} \cdot dL + \left(-\frac{1}{2}\right) \frac{1}{2\pi} \cdot \frac{1}{\sqrt{L}} \cdot \frac{1}{(\sqrt{C})^3} \cdot dC$$

$$\frac{df_{\text{REZ}}}{f_{\text{REZ}}} = -\frac{1}{2} \frac{dL}{L} - \frac{1}{2} \frac{dC}{C}$$

$$\frac{1}{f_{\text{REZ}}} \cdot \frac{df_{\text{REZ}}}{dT} = -\frac{1}{2} \cdot \frac{1}{L} \frac{dL}{dT} - \frac{1}{2} \cdot \frac{1}{C} \frac{dC}{dT} = 0 \Rightarrow$$

$$\frac{1}{L} \frac{dL}{dT} = -\frac{1}{C} \frac{dC}{dT} \Rightarrow \Delta_C = -\Delta_L = -18 \text{ ppm/}^\circ\text{C}$$

$$C = \frac{C_1 C_2}{C_1 + C_2} \quad (\text{serijski spoj}) \quad \Delta_{C1} = \frac{1}{C_1} \frac{dC_1}{dT} = -100 \text{ ppm/}^\circ\text{C}$$

$$\Delta_{C2} = \frac{1}{C_2} \frac{dC_2}{dT} = 0 \text{ ppm/}^\circ\text{C}$$

C_2 me ovisi o temp.

$$dC = \frac{C_2^2}{(C_1 + C_2)^2} \cdot dC_1 = \frac{C_1 C_2}{C_1 + C_2} \cdot \frac{C_2}{C_1 + C_2} \cdot \frac{1}{C_1} \cdot dC_1$$

$$\frac{1}{C} \cdot \frac{dC}{dT} = \Delta_C = \frac{C_2}{C_1 + C_2} \cdot \frac{1}{C_1} \cdot \frac{dC_1}{dT} = \frac{C_2}{C_1 + C_2} \cdot \Delta_{C1}$$

$$\frac{C_2}{C_1 + C_2} = \frac{\Delta_C}{\Delta_{C1}} = \frac{-18 \text{ ppm/}^\circ\text{C}}{-100 \text{ ppm/}^\circ\text{C}} = 0,18 \Rightarrow \begin{array}{l} C_2 - 0,18 C_2 = 0,18 C_1 \\ C_2 = \frac{0,18}{0,82} C_1 \end{array}$$

$$C_1 = \frac{C}{\frac{C_2}{C_1 + C_2}} = \frac{18,033 \text{ nF}}{0,18} = \boxed{100 \text{ nF}} \quad \begin{array}{l} \uparrow \\ \text{(EL 100 nF)} \end{array}$$

$$C_2 = \frac{0,18}{0,82} C_1 = \boxed{21,35 \text{ nF}} \quad \begin{array}{l} \downarrow \\ \text{(EL 22 nF)} \end{array}$$