

$$\text{Solve}\left[\text{Quantity}[78.3, \text{"kOhm"}] == \frac{50\,000}{f_o} - \text{Quantity}[5, \text{"kOhm"}], f_o\right]$$

Solve::ratnz: Solve was unable to solve the system with inexact coefficients. The

answer was obtained by solving a corresponding exact system and numericizing the result. >>

$$\{\{f_o \rightarrow 0.60024/\Omega\}\}$$

**Io = Quantity[4, "A"];**

**Vo = Quantity[5, "V"];**

**Vin = Quantity[12, "V"];**

**f = Quantity[600, "kHz"];**

**deltaVin = Quantity[0.05, "V"];**

$$\text{N}\left[\text{Solve}\left[\text{deltaVin} == \frac{I_o}{f * C_{in}} * \left(1 - \frac{V_o}{V_{in}}\right) * \frac{V_o}{V_{in}}, C_{in}\right]\right]$$

Solve::ratnz: Solve was unable to solve the system with inexact coefficients. The

answer was obtained by solving a corresponding exact system and numericizing the result. >>

$$\{\{C_{in} \rightarrow 0.0000324074 \text{ F}\}\}$$

**UnitConvert[0.0000324074` F, "uF"]**

32.4074  $\mu\text{F}$

**L = Quantity[22, "uH"];**

$$\text{deltaIL} = \frac{V_o}{f * L} * \left(1 - \frac{V_o}{V_{in}}\right)$$

**(\*ESRCo =Quantity[52.5+10,"kOhm"]\*)**

**deltaVo = Quantity[5, "mV"];**

$$\text{N}\left[\text{Solve}\left[\text{deltaVo} == \text{deltaIL} * \left(\frac{1}{8 * f * C_o}\right), C_o\right]\right]$$

$$\frac{7}{31\,680} \text{ V/ (kHz } \mu\text{H)}$$

$$\{\{C_o \rightarrow 9.20665 \times 10^{-6} \text{ F}\}\}$$

**fc = Quantity**