3) $\left.\frac{V_2}{V_1}\right|_{I_2=0} = \frac{(s^2+1)}{2(s^2+\frac{1}{2})} = \frac{Z_{21}}{Z_{11}}$

3 IND 1 CAP ; 3 CAP 1 IND

ADOPTO $D = s$

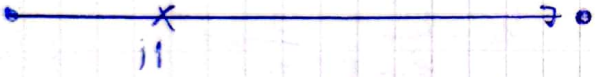
$Z_{11} = \frac{2(s^2+\frac{1}{2})}{s}$

T

Z_{11}

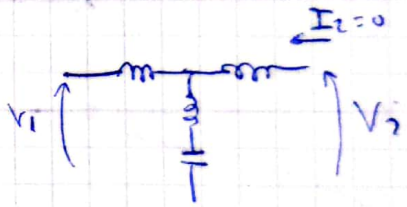
Z_2

Y_2



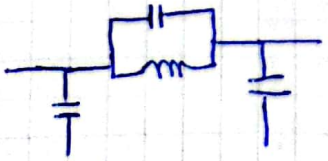
Y_4

$\frac{sk_1}{s^2+1}$



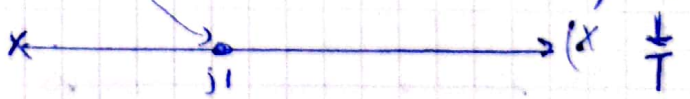
Le agrego un inductor en serie para tener 3 ind. Este último no afecta la Transferencia debido a las condiciones de medicion ($I_2=0$)

6) $\left.\frac{V_2}{V_1}\right|_{I_2=0} = \frac{-Y_{21}}{Y_{22}}$

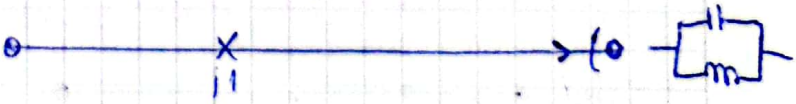


Y_{22}

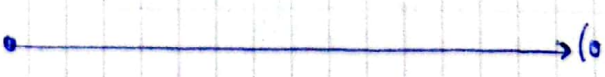
Y_2



Z_2



Z_4



Meto un capacitor en derivación como 1er elemento para que no afecte la Transferencia

$$Z_2 = Z_{11} - k'_\infty s \qquad k'_\infty = \lim_{s^2 \to -1} \frac{Z_{11}}{s} = 1$$

$$Z_2 = \frac{s^2+1}{s}$$

El último inductor puede Tomar cualquier valor

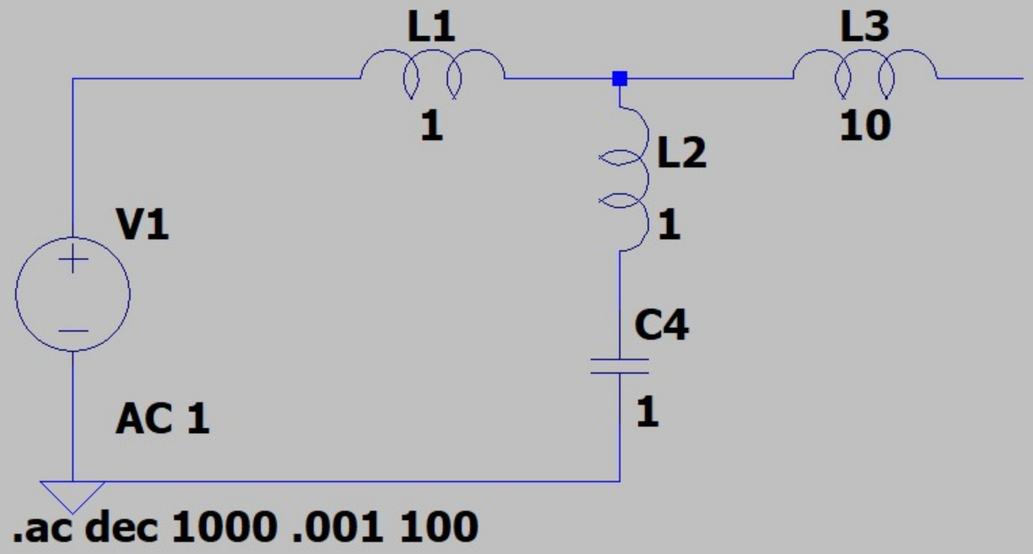
$$Y_{LC} = \frac{s}{s^2+1} \rightarrow k_1 = 1$$

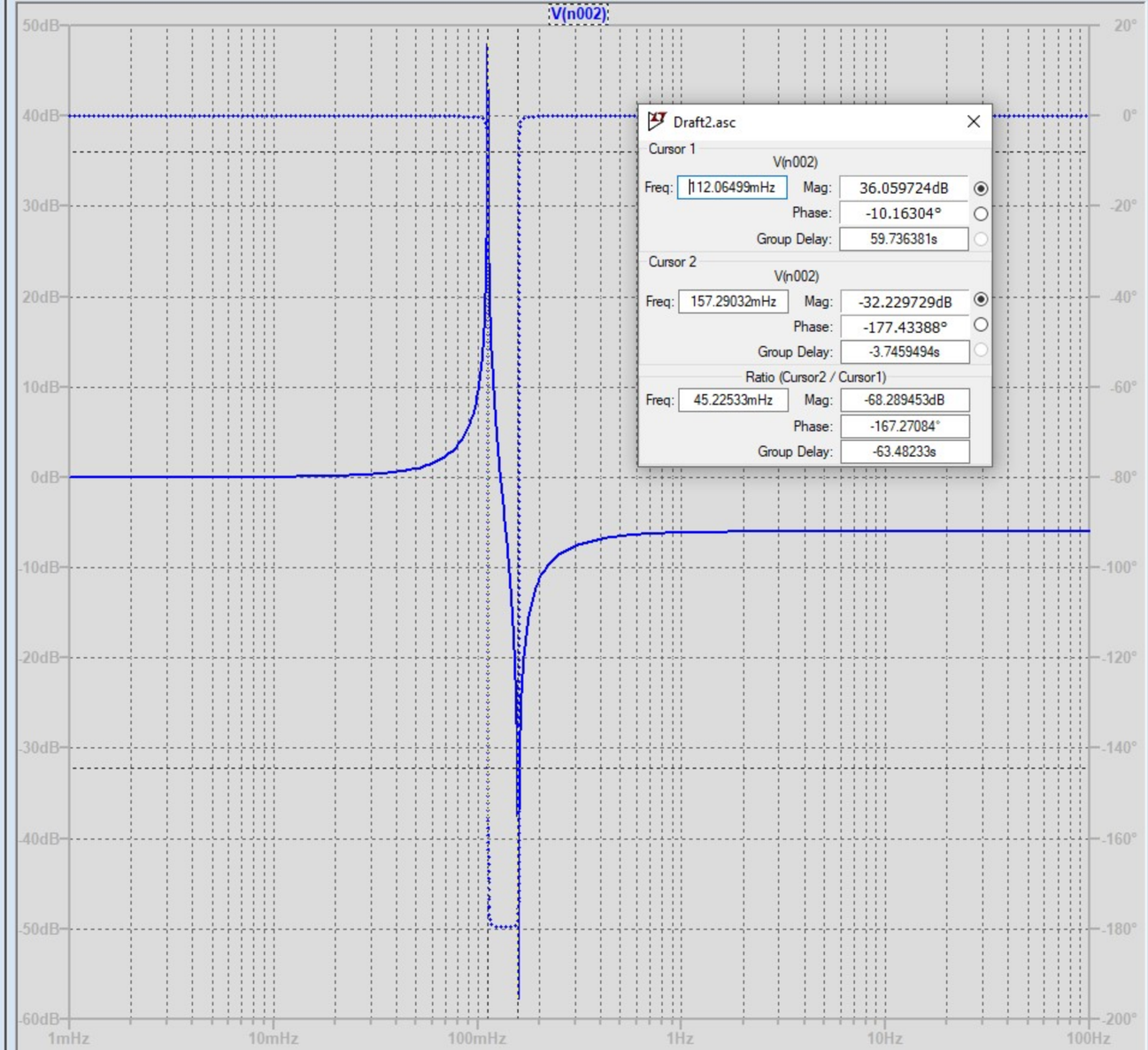
b)

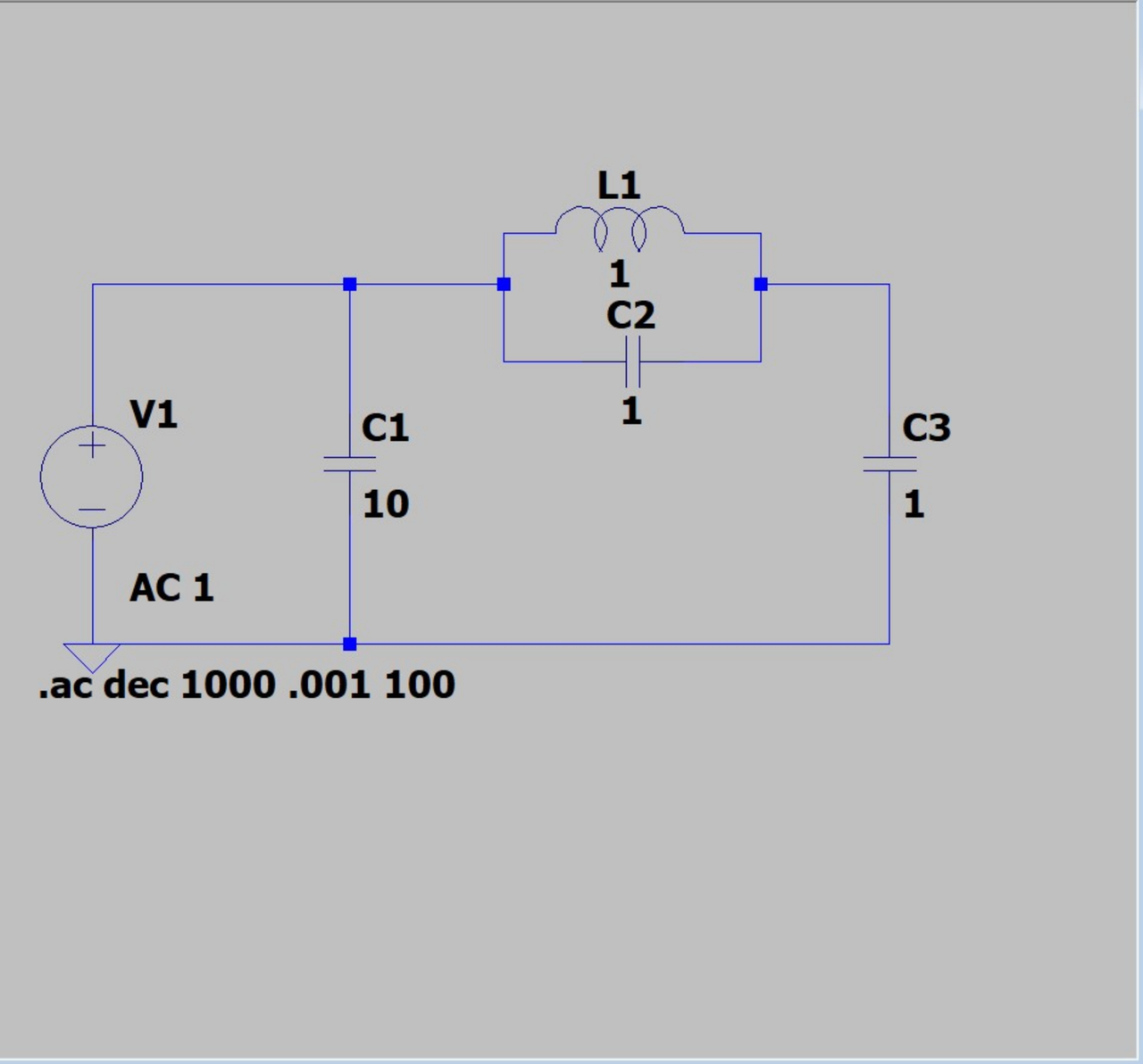
$$Y_2 = Y_{22} - k'_\infty s \qquad k'_\infty = \lim_{s^2 \to -1} \frac{Y_{22}}{s} = 1$$

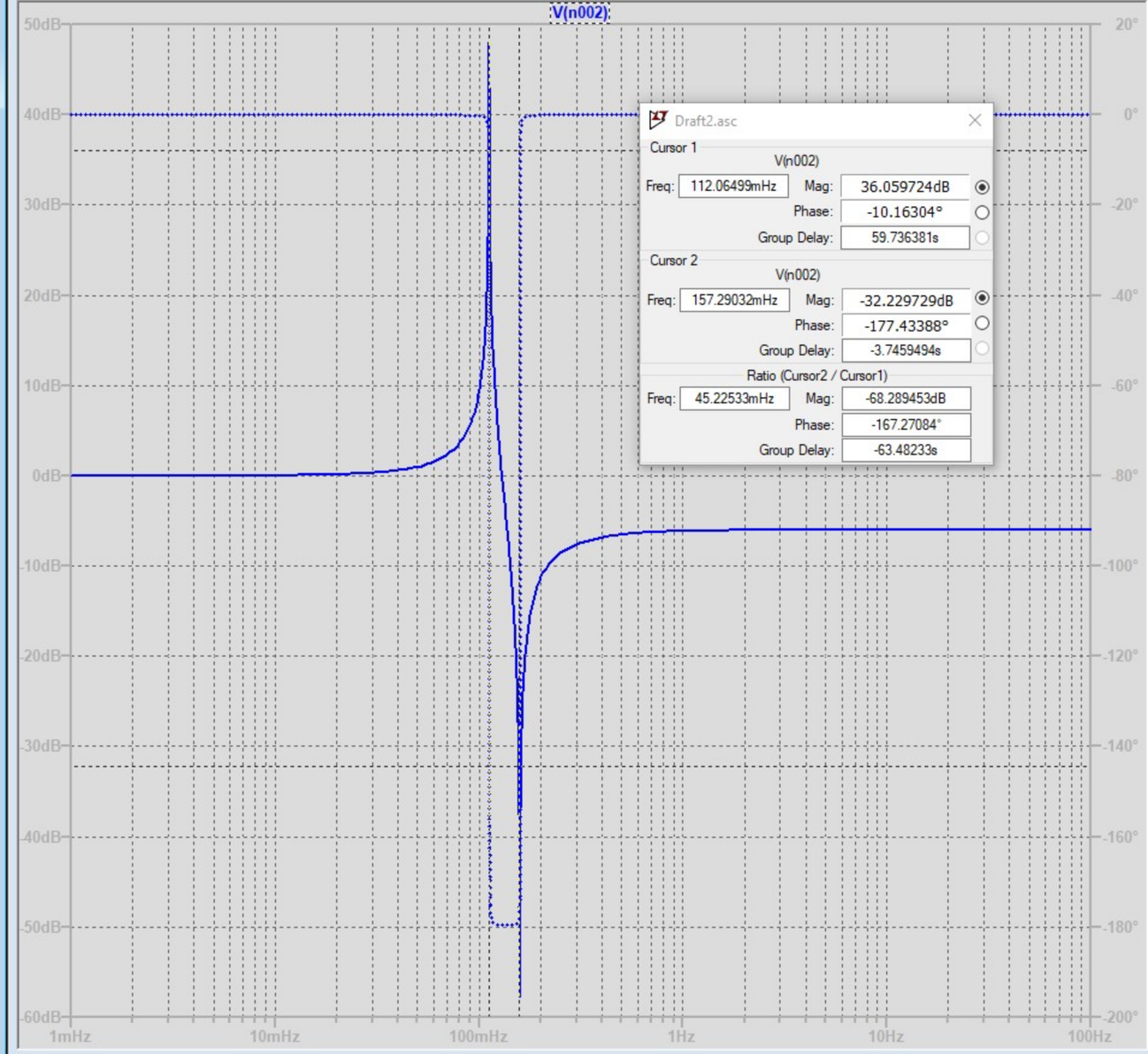
$$Z_2 = \frac{s}{s^2+1} \rightarrow k = 1$$

El primer capacitor puede Tomar cualquier valor


L1
1
L3
10
L2
1
V1
C4
1
AC 1
.ac dec 1000 .001 100


V(n002)
Draft2.asc
Cursor 1
V(n002)
Freq: 112.06499mHz
Mag: 36.059724dB
Phase: -10.16304°
Group Delay: 59.736381s
Cursor 2
V(n002)
Freq: 157.29032mHz
Mag: -32.229729dB
Phase: -177.43388°
Group Delay: -3.7459494s
Ratio (Cursor2 / Cursor1)
Freq: 45.22533mHz
Mag: -68.289453dB
Phase: -167.27084°
Group Delay: -63.48233s
50dB
40dB
30dB
20dB
10dB
0dB
-10dB
-20dB
-30dB
-40dB
-50dB
-60dB
20°
0°
-20°
-40°
-60°
-80°
-100°
-120°
-140°
-160°
-180°
-200°
1mHz
10mHz
100mHz
1Hz
10Hz
100Hz


L1
1
C2
1
V1
C1
10
C3
1
AC 1
.ac dec 1000 .001 100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40dB
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20dB
10dB
0dB
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-30dB
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-50dB
-60dB
20°
0°
-20°
-40°
-60°
-80°
-100°
-120°
-140°
-160°
-180°
-200°
1mHz
10mHz
100mHz
1Hz
10Hz
100Hz