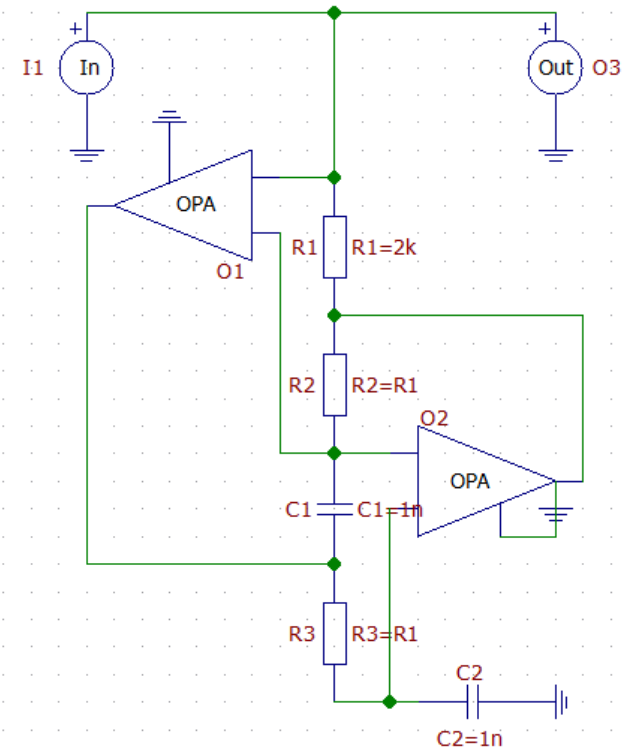
ESI projekt – SP-1

Tomáš Dočkal

230240

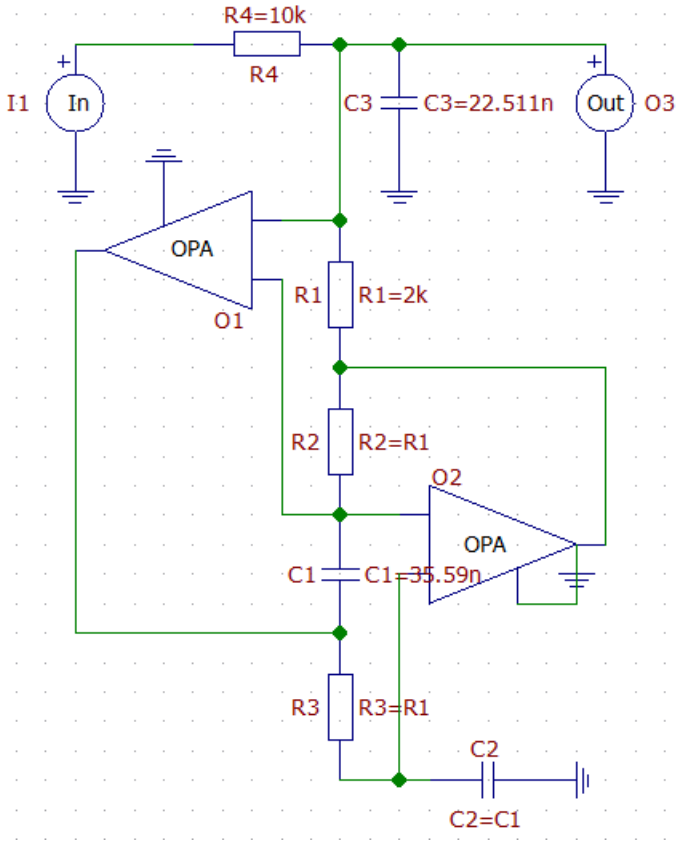
1. Symbolický výraz

```
1
-------------------
s^(2)*( R1*C1*C2 )
```



2.

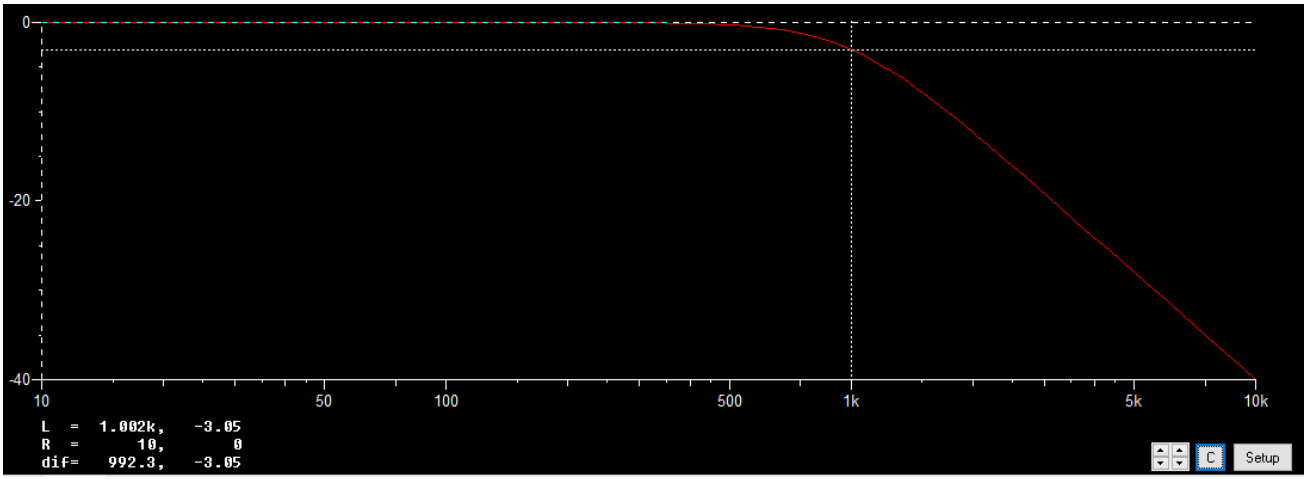
```
1
------------------------
1
+s*( R4*C3 )
+s^(2)*( R1*C1*C2*R4 )
```



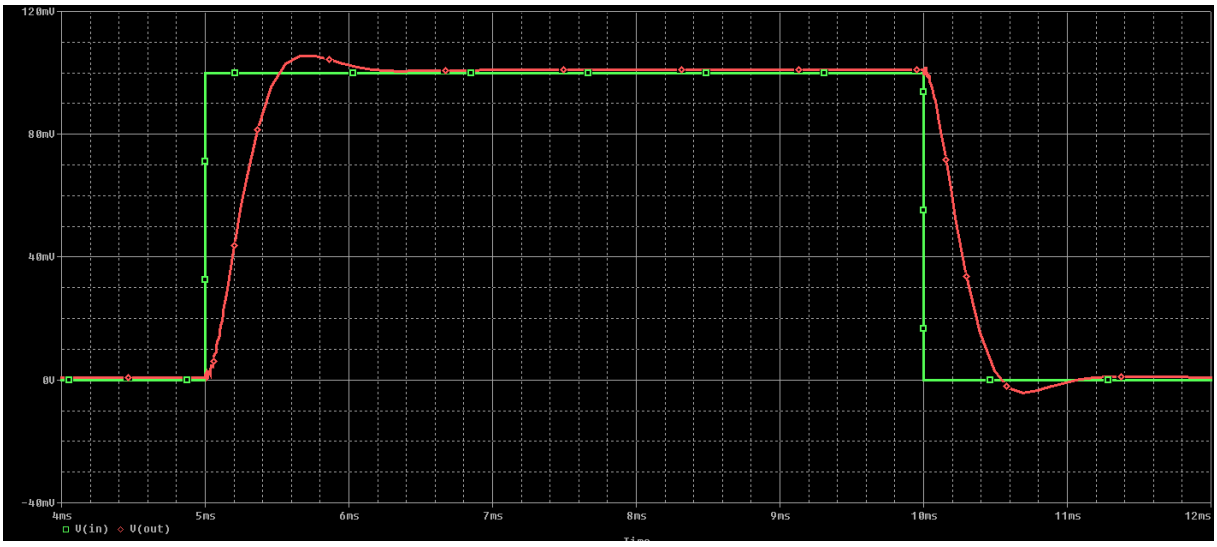
3.

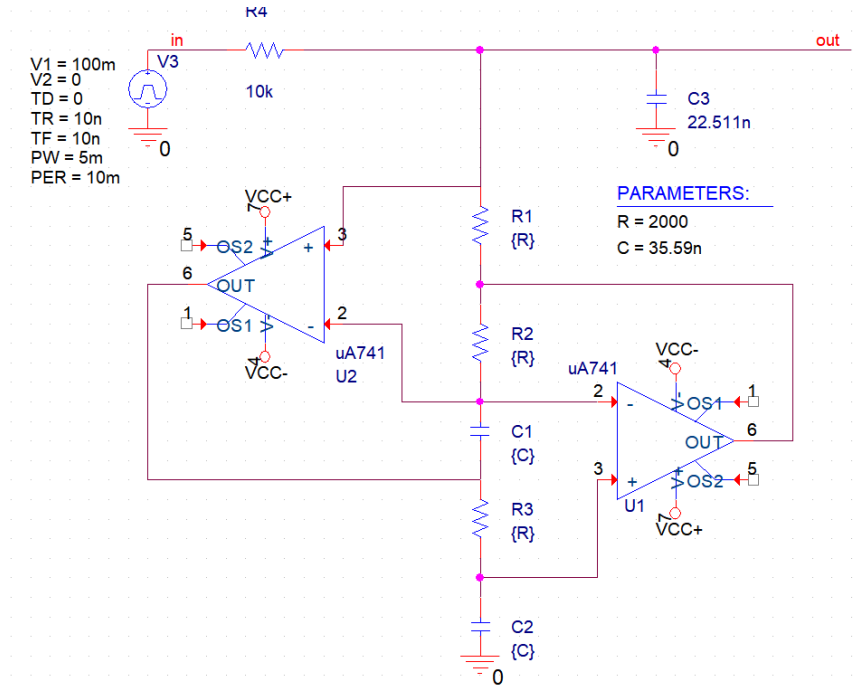
$$C3 = \frac{1}{2*\pi*f*Q*R4} = \frac{1}{2*\pi*1000*0{,}707*10000} = 22.511\ \text{nF}$$

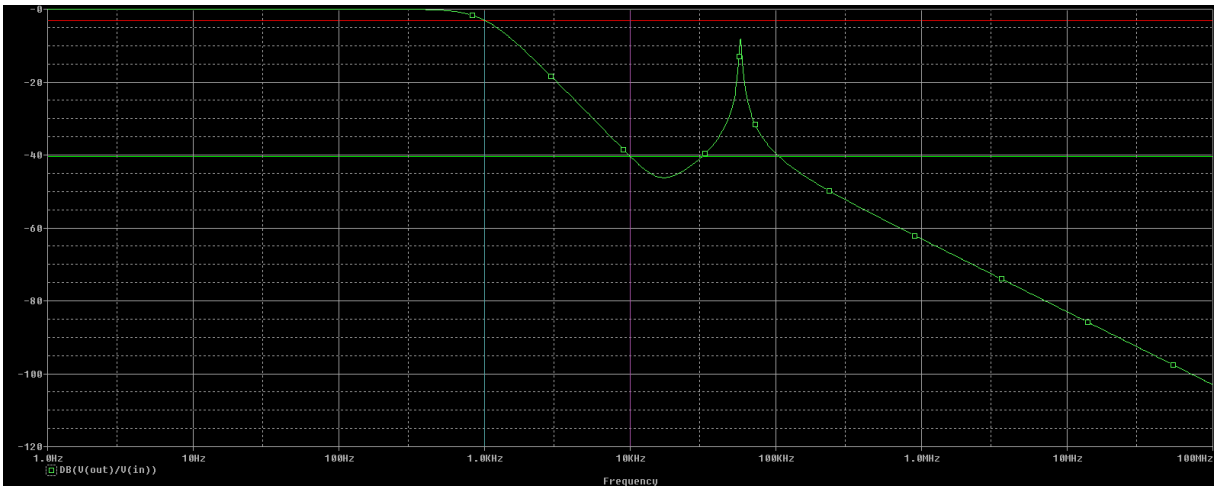
$$C1 = C2 = \sqrt{\frac{1}{(2*\pi*f)^2*R4*R1}} = \sqrt{\frac{1}{(2*\pi*1000)^2*10000*2000}} = 35{,}59\ \text{nF}$$



4.




R4
in
out
V1 = 100m
V2 = 0
TD = 0
TR = 10n
TF = 10n
PW = 5m
PER = 10m
V3
10k
C3
22.511n
0
PARAMETERS:
R = 2000
C = 35.59n
VCC+
OS2
OUT
OS1
VCC-
uA741
U2
R1
{R}
R2
{R}
C1
{C}
R3
{R}
C2
{C}
U1


-0
-20
-40
-60
-80
-100
-120
1.0Hz
10Hz
100Hz
1.0KHz
10KHz
100KHz
1.0MHz
10MHz
100MHz
DB(V(out)/V(in))
Frequency