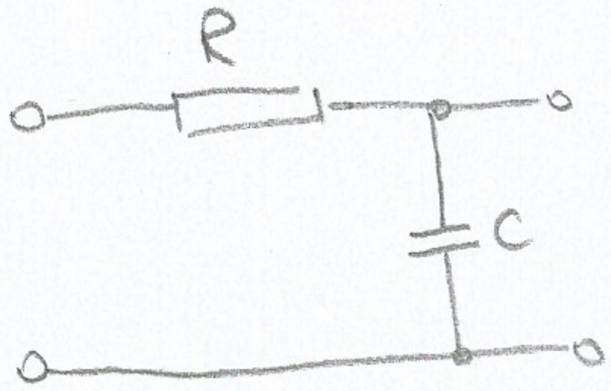
Tålpass:

Bauteile:

4x 10Ω R

1x 4,7µF



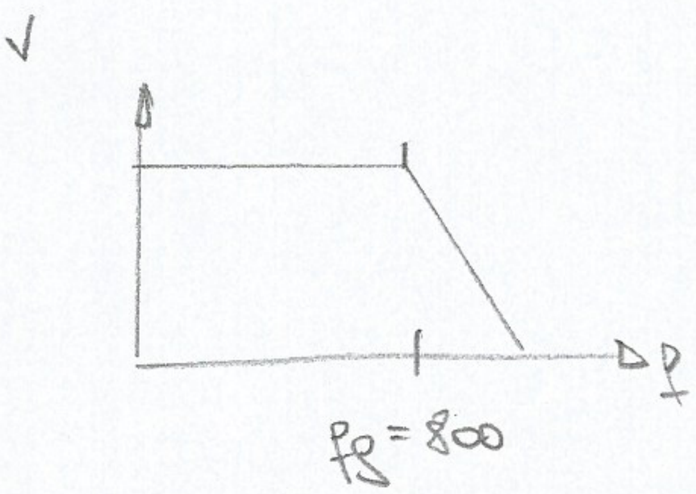
f_g = 800Hz

Beregninger:

$$f_g = \frac{1}{2\pi RC}$$

$$R = \frac{1}{2\pi f_g C}$$

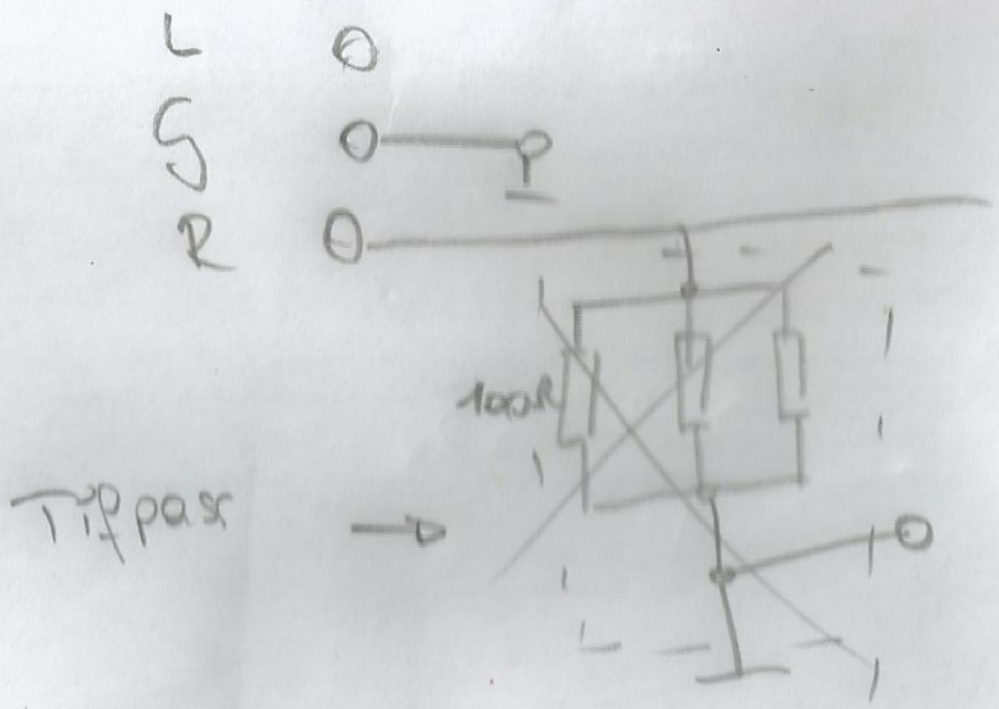
$$R = \frac{1}{2\pi 800\ 4{,}7\cdot 10^{-6}}$$



logarythmisk aftrækkende

Using FFT

20 Hz - 20 kHz



→ transistor schaltung

euler = $e^{2\pi i f t}$ // counter clockwise

rotating vector

fourier

-euler

$= -e^{-2\pi i f t} \cdot g(t)$

→ $\frac{1}{N} \sum^{N} g(t_n) e^{-2\pi i f}$ N number of samples

$\frac{1}{t_2 - t_1} \int_{t_1}^{t_2} g(t) e^{-2\pi i f t} dt$ → centre of mass

A

time interval

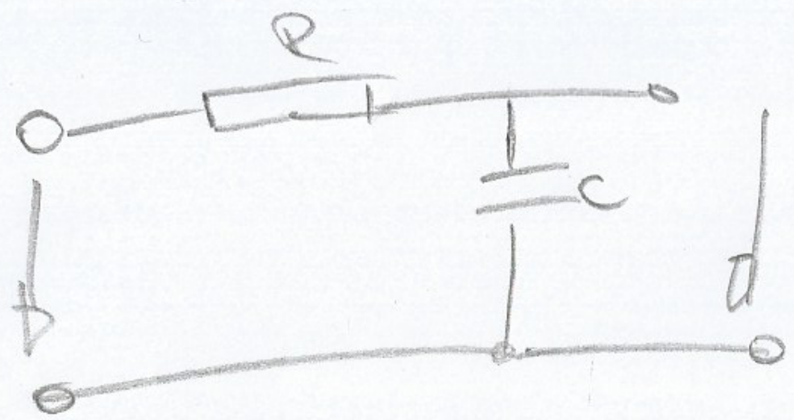
without

$= \overline{FT}$

$FT = \int g(t) e^{-2\pi i f t} dt$

10 nF
4,7 µ
10 µ F

Tiefpass



1000 → 255

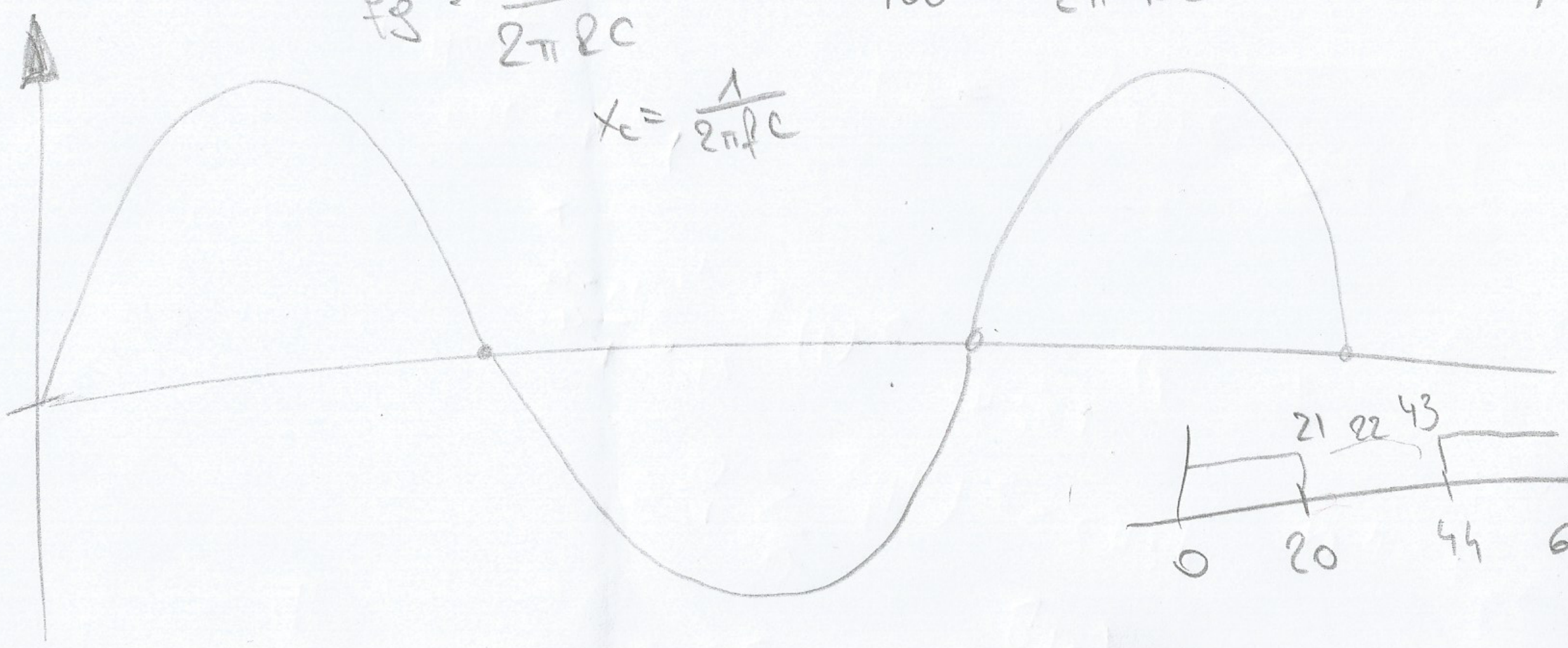
800/800

+2,5

Grenzfrequenz

$f_g = \frac{1}{2\pi RC}$ → $900 = \frac{1}{2\pi RC}$

$X_c = \frac{1}{2\pi fC}$



$X_c = \frac{1}{2\pi fC} = \frac{1}{2\pi \cdot 900 \cdot 4{,}7 \cdot 10^{-6}}$

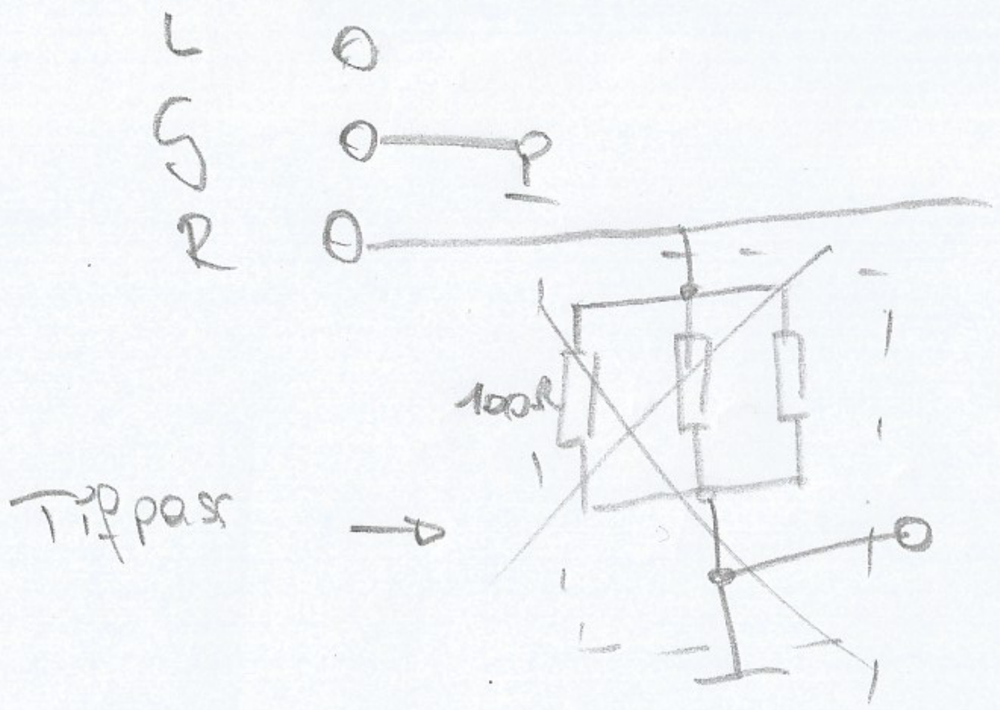
R = 37 . . . . Ω

→ 33 Ω 0 2W 3x100 Ω ||

40 Ω

mit f_g = ~~1000~~ 800

20 Hz - 20 kHz



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↑

time interval

without

$= \overline{FT}$

$\overline{FT} = \int g(t) e^{-2\pi i f t} dt$