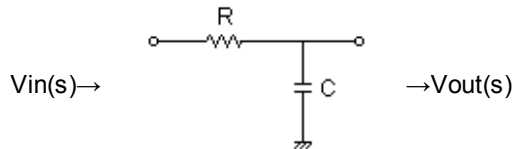


OKAWA Electric Design

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RC Low-pass Filter Design Tool - Result -

Calculated the Transfer Function for the RC Low-pass filter, displayed on graphs, showing Bode diagram, Nyquist diagram, Impulse response and Step response.



Transfer Function:

$$G(s) = \frac{25641.025641}{s + 25641.025641}$$

R = 390Ω

C = 0.1μF

Cut-off frequency

$$f_c = 4080.89597672[\text{Hz}]$$

$f_c = 4000$ Hz

$C = 0.1\mu$ F (Omitted C=1, 0.1, 0.01...)

Select Resistor Sequence: **E24** ▼

p:pico, n:nano, u:micro, k:kilo, M:mega

Frequency analysis

- ☒ Bode diagram
- ☐ Nyquist diagram($f'=0 \rightarrow \infty$)
- ☒ Pole, zero
- ☐ Phase margin
- ☐ Oscillation analysis

Transient analysis

- ☒ Step response ☐ Impulse response
- ☐ Overshoot
- ☒ Final value of the step response

Calculate

CR Filter

Rise/Fall time of step response

$f_c = 4000$ Hz

Stead-state value: 0 % → 90 %

Calculate

$tr = 9.16169498599E-5$ [sec]

Pole(s)

$$p = -4080.89597672[\text{Hz}]$$

$$|p| = 4080.89597672[\text{Hz}]$$

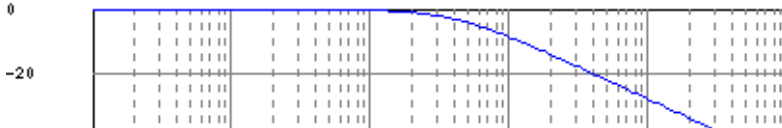
Final value of the step response (on the condition that the system converged when t goes to infinity)

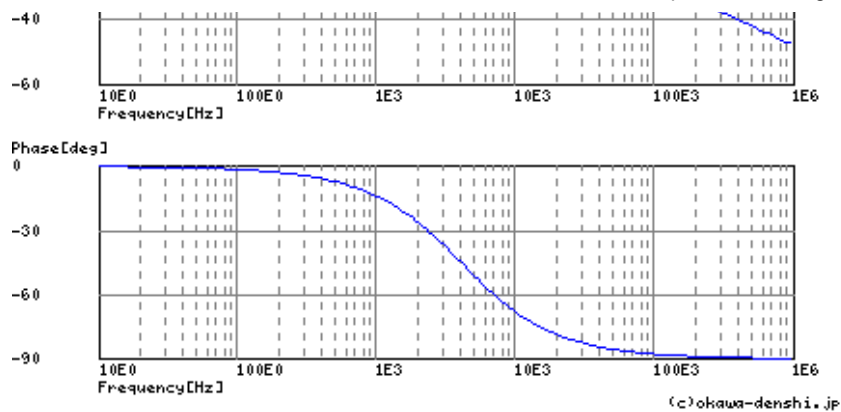
$$g(\infty) = 1$$

Frequency analysis

BodeDiagram

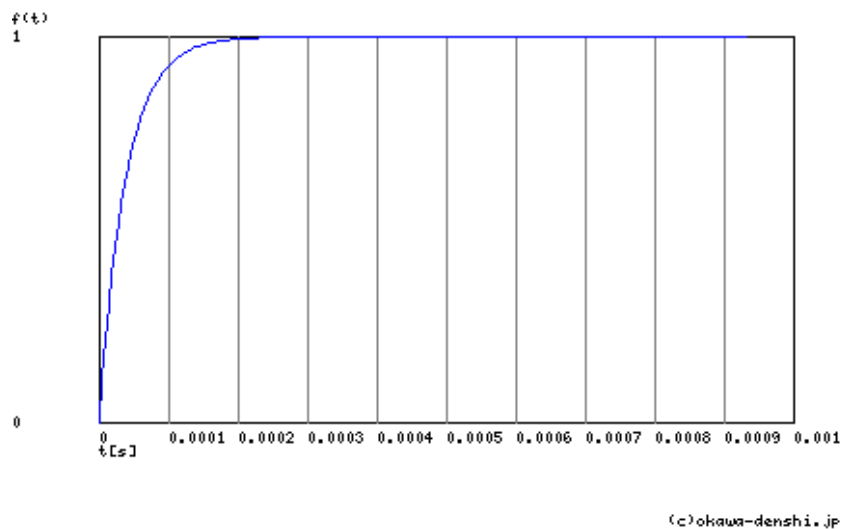
Magnitude[dB]





Transient analysis

StepResponse



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◆Suggestion box

We'll use your suggestion to improve site quality in future.

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