

## Low-Pass Quasi-Second Order

$$f := 100 \text{ Hz}, 101 \text{ Hz}..10 \text{ kHz} \quad p(f) := 1j \cdot 2 \cdot \pi \cdot f$$

$$R := 8 \ \Omega \quad F_0 := 1 \text{ kHz} \quad a := 1$$

$$L := \frac{R}{a \cdot 2 \cdot \pi \cdot F_0} = 1.273 \text{ mH}$$

$$C := \frac{a}{R \cdot 2 \cdot \pi \cdot F_0} = 19.894 \ \mu\text{F}$$

$$\text{Num\_Low\_Pass}(f) := 1 + a \cdot p(f) \cdot \sqrt{L \cdot C}$$

$$\text{Den\_Low\_Pass}(f) := 1 + 2 \cdot a \cdot p(f) \cdot \sqrt{L \cdot C} + (p(f) \cdot \sqrt{L \cdot C})^2$$

$$\frac{20 \cdot \log(|\text{Num\_Low\_Pass}(f)|)}{\quad}$$

$$\frac{20 \cdot \log\left(\frac{1}{|\text{Den\_Low\_Pass}(f)|}\right)}{\quad}$$

$$\frac{20 \cdot \log\left(\frac{|\text{Num\_Low\_Pass}(f)|}{|\text{Den\_Low\_Pass}(f)|}\right)}{\quad}$$

