$Vin := 12$

$Vout := 200$

$Dcalc := 1 - \frac{Vin}{Vout} = 0.94$ $\qquad$ $Dreal := \frac{16}{16+2} = 0.889$

$Rload := 4 \cdot 10^{3}$

$L := 150 \cdot 10^{-6}$

$Cout := 4.7 \cdot 10^{-6}$ $\qquad$ $i := \sqrt{-1} = 1\mathrm{i}$

$ESR120Hz := 40$

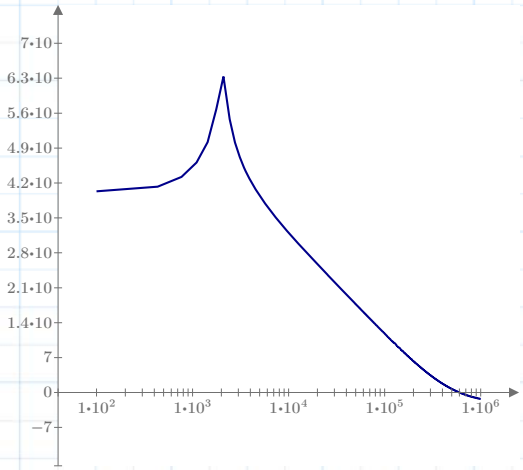
$ESR10kHz := 30$

$$Gdv(s, D, Rc) := \frac{\frac{Vin}{(1-D^2)} \cdot \left(1 - s \cdot \frac{L}{Rload \cdot (1-D^2)}\right) \cdot (1 + s \cdot Rc \cdot Cout)}{1 + s \cdot \frac{L}{Rload \cdot (1-D)^2} + s^2 \cdot \frac{L \cdot Cout}{(1-D^2)}}$$

$G1gain(f) := \left| Gdv(i \cdot 2 \cdot \pi \cdot f, Dcalc, ESR10kHz) \right|$

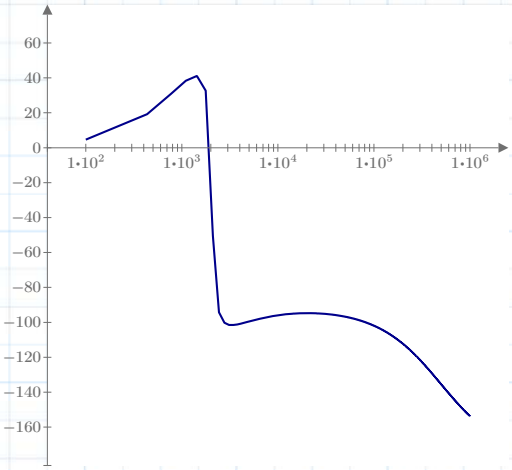
$G1gaindb(f) := 20 \cdot \log(G1gain(f))$

$G1phase(f) := \arg(Gdv(i \cdot 2 \cdot \pi \cdot f, Dcalc, ESR10kHz)) \cdot \frac{180}{\pi}$



$G1gaindb(f)$

f



$G1phase(f)$

f

$R2 := 1.5 \cdot 10^{6}$ $C2\_100 := 100 \cdot 10^{-9}$ $C2\_0 := 0 \cdot 10^{-9}$

$R1 := 11.33 \cdot 10^{3}$ $C1 := 0 \cdot 10^{-9}$

$Vref := 1.5$

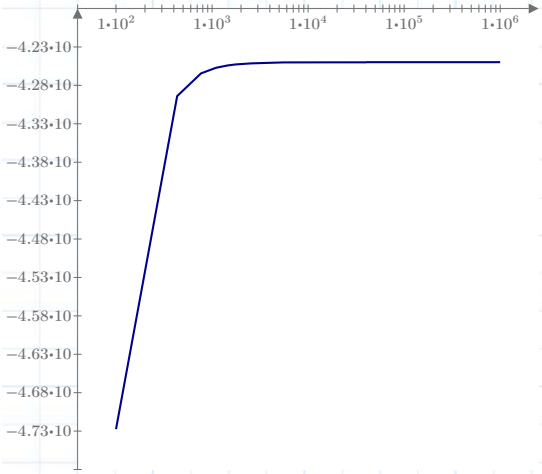
$Kref := \frac{Vref}{Vout} = 0.008$

$$K(s, C2) := Kref \cdot \frac{1 + s \cdot C2 \cdot R2}{1 + \frac{R2}{R1} + s \cdot C1 \cdot R2 + s \cdot C2 \cdot R2}$$

$K1gain(f) := |K(i \cdot 2 \cdot \pi \cdot f, C2\_100)|$

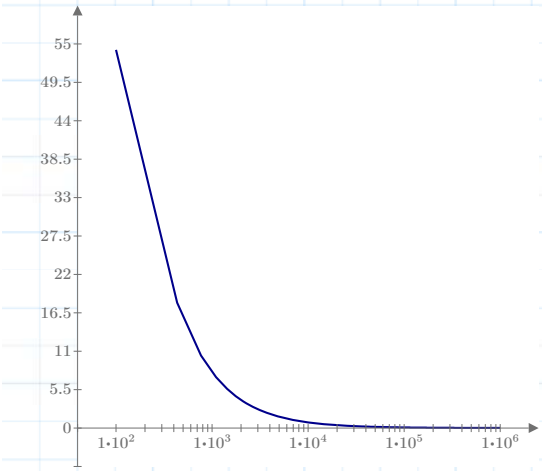
$K1gaindb(f) := 20 \cdot \log(K1gain(f))$

$$K1phase(f) := \arg(K(i \cdot 2 \cdot \pi \cdot f, C2\_100)) \cdot \frac{180}{\pi}$$



$K1gaindb(f)$

f



$K1phase(f)$

f

?

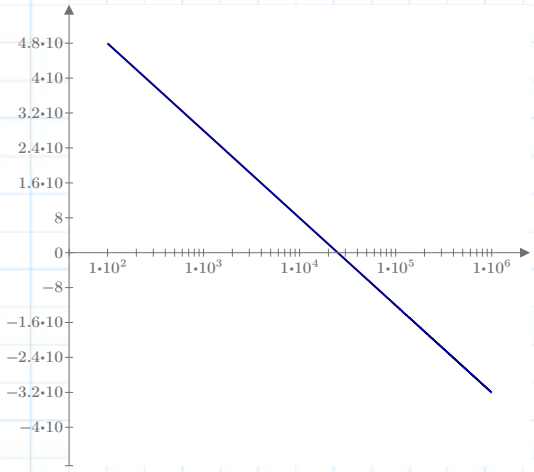
$A0 := 30000 \qquad \omega 1 := 300 \cdot \frac{\pi}{180}$

$A(s) := \frac{A0 \cdot \omega 1}{s + \omega 1}$

$Again(f) := |A(i \cdot 2 \cdot \pi \cdot f)|$

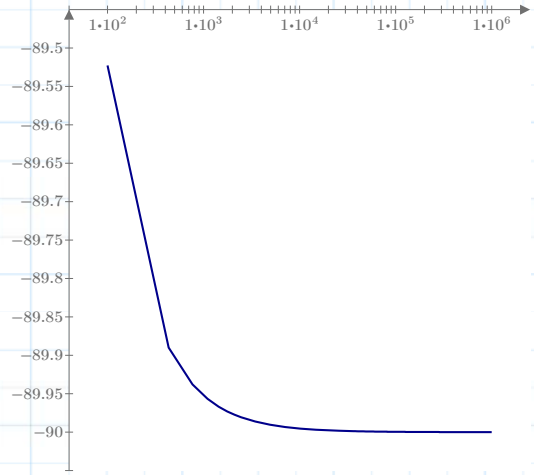
$Againdb(f) := 20 \cdot \log(Again(f))$

$Aphase(f) := \arg(A(i \cdot 2 \cdot \pi \cdot f)) \cdot \frac{180}{\pi}$



$Againdb(f)$

f



$Aphase(f)$

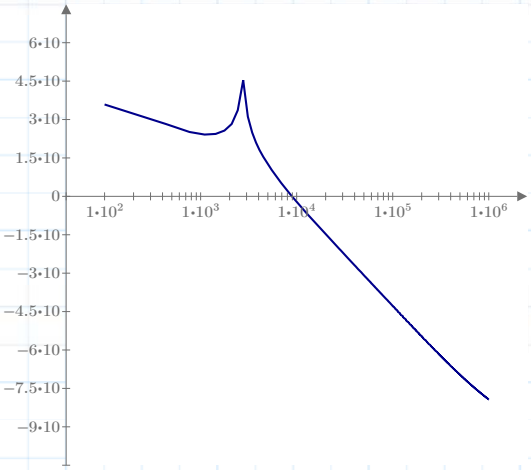
f

$$T(s) := Gdv(s, Dreal, ESR10kHz) \cdot K(s, C2\_100) \cdot A(s)$$

$$T1gain(f) := |T(i \cdot 2 \cdot \pi \cdot f)|$$

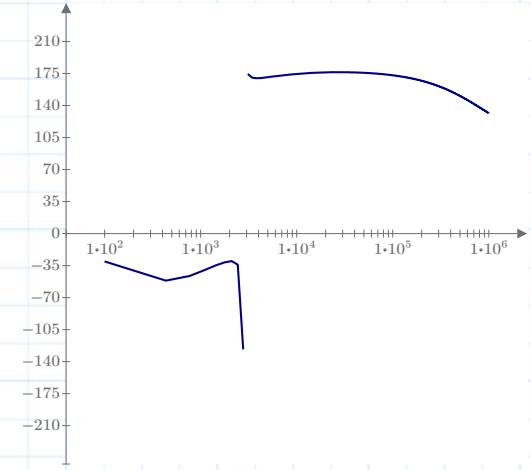
$$T1gaindb(f) := 20 \cdot \log(T1gain(f))$$

$$T1phase(f) := \arg(T(i \cdot 2 \cdot \pi \cdot f)) \cdot \frac{180}{\pi}$$



$T1gaindb(f)$

f



$T1phase(f)$

f

$N := 20000$ $Min := -10$ $Max := 10$

$k := 0 .. N$ $pow_k := Min + \frac{k}{N} \cdot (Max - Min)$

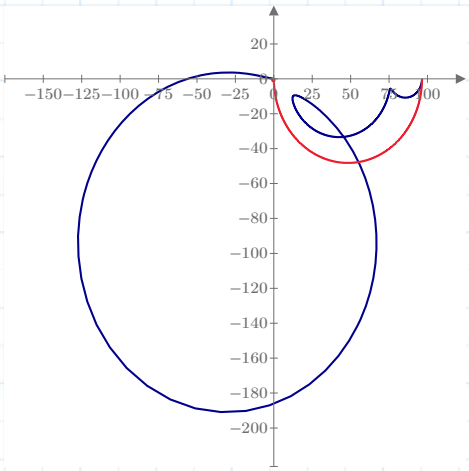
$Real\_T_k := \mathrm{Re}\left(T\left(i \cdot 10^{(pow_k)}\right)\right)$

$Imag\_T_k := \mathrm{Im}\left(T\left(i \cdot 10^{(pow_k)}\right)\right)$

$T0(s) := Gdv(s, Dreal, ESR10kHz) \cdot K(s, C2\_0) \cdot A(s)$

$Real\_T0_k := \mathrm{Re}\left(T0\left(i \cdot 10^{(pow_k)}\right)\right)$

$Imag\_T0_k := \mathrm{Im}\left(T0\left(i \cdot 10^{(pow_k)}\right)\right)$



$Imag\_T_k$

$Imag\_T0_k$

$Real\_T_k$

$Real\_T0_k$