Laby 4

środa, 10 stycznia 2024 17:04

$U_m = 1{,}6\,V$, 8×10 cm

$f = 1{,}9\,kHz$

$k = 2$

$y(t) = U_m \cdot \sin(2\pi f \cdot t)$

$T = \frac{1}{f} = \frac{1}{1{,}9 \cdot 10^3} = 526\,\mu s$

Dla $k = 2$, $C_x = 200\ \frac{\mu s}{cm}$

wartość międzyszczytowa: $1{,}6\,V \cdot 2 = 3{,}2\,V$

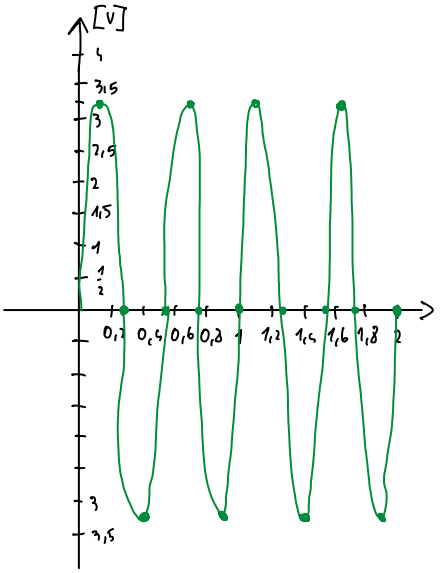
$C_y = 500\ \frac{mV}{cm}$

$\sin(2\pi f t) = 1$

$2\pi f t = \frac{\pi}{2}$

$2 f t = \frac{1}{2}$

$t = \frac{1}{4f} = \frac{1}{4 \cdot 1{,}9} = 131\,\mu s$



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$L_y = 3{,}2\ dz$

$\sigma_1 L_y = \frac{0{,}1}{3{,}2} \cdot 100\% = 3{,}125\%$

$\sigma_p C_y = 3\%$

$u_{rel} = \sqrt{\frac{1}{3} \cdot \left((3{,}125\%)^2 + (3\%)^2 \right)} = 2{,}5\%$

$L_x = 2{,}8\ dz$

$\sigma_1 L_x = \frac{0{,}1}{2{,}8} \cdot 100\% = 3{,}57$

$L_x = 2{,}8\ d_2$

$\delta_q L_x = \frac{0{,}1}{2{,}8} \cdot 100\% = 3{,}57$

$u_{rel} = \sqrt{\frac{1}{3} \cdot \left((3{,}57\%)^2 + (5 \cdot 10^{-3}\%)^2 \right)} = 2{,}06\%$