Sistemas e Sinais

Exponencial Positiva → $g(t) = 1 - e^{t}$

. Dados: $T_0 = 1s$; $f_0 = \frac{1}{T_0} = 1\,Hz$; $\omega_0 = 2\pi f_0 = 2\pi$

. Cálculo da Potência → $P_g = \frac{1}{T_0}\int_{T_0} g(t)^2 dt = 1 \cdot \int_0^1 (1-e^t)^2 dt = 0{,}758\,W$

$P_g = 0{,}758\,W \rightarrow P_y = 0{,}720\,W$

↳ 95% P_g

. Análise → $D_n = \frac{1}{T_0}\int_{T_0} g(t).e^{-jw_0nt} = 1 \cdot \int_0^1 (1-e^t).e^{-jw_0nt}\,dt$

$$D_n = \int_0^1 e^{-jw_0nt}\,dt - \int_0^1 e^{+t(-jw_0nt+1)}\,dt$$

$$D_n = \frac{-e^{(-jw_0nt)}}{(jw_0n)}\Bigg|_0^1 - \frac{e^{t(1-jw_0n)}}{(1-jw_0n)}\Bigg|_0^1$$

$$D_n = \frac{-e^{(-jw_0n)} + 1}{(jw_0n)} - \frac{e^{(1-jw_0n)} - 1}{(1-jw_0n)}$$