

$$S_4 = -(S_3 + S_1) \Rightarrow \frac{S_4}{e} = - \left(\frac{S_3}{e} + \frac{S_1}{e} \right)$$

$$\frac{S_4}{e} = - \left(\frac{1}{D} + \frac{(jRC\omega)^2}{D} \right)$$

$$\frac{S_4}{e} = - \frac{1 + (jRC\omega)^2}{1 + jRC\omega + (jRC\omega)^2}$$

$$\left| \frac{S_4}{e} \right| = \frac{\sqrt{[1 - (RC\omega)^2]^2}}{\sqrt{[1 - (RC\omega)^2]^2 + (RC\omega)^2}}$$

$$\omega \rightarrow 0 \quad \left| \frac{S_4}{e} \right| \rightarrow 1 \quad \left| \frac{S_4}{e} \right|_{dB} \rightarrow 0 \text{ dB}$$

$$\omega \rightarrow \infty \quad \left| \frac{S_4}{e} \right| \rightarrow 1 \quad \left| \frac{S_4}{e} \right|_{dB} \rightarrow 0 \text{ dB}$$

Coupe Bande

$$\omega = \frac{1}{RC} \quad \left| \frac{S_4}{e} \right| = \frac{\sqrt{[1 - (1)^2]^2}}{\sqrt{[1 - 1^2]^2 + 1}} = 0 \Rightarrow -\infty \text{ dB}$$

