INGENIERÍA EN ELECTRÓNICA
CÁTEDRA: TEORÍA DE LOS CIRCUITOS II
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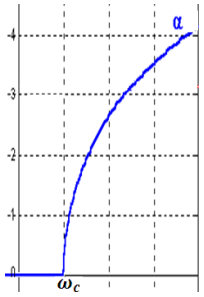
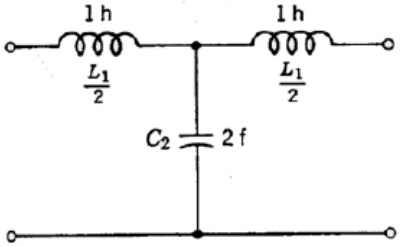
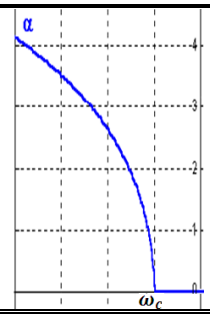
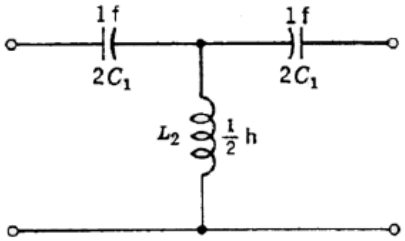
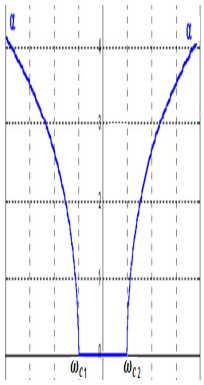
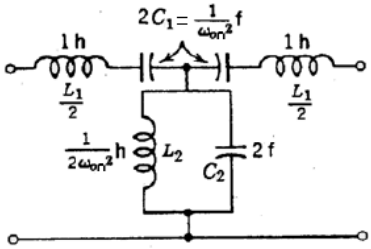
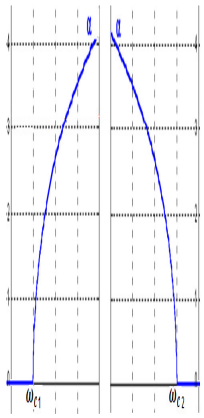
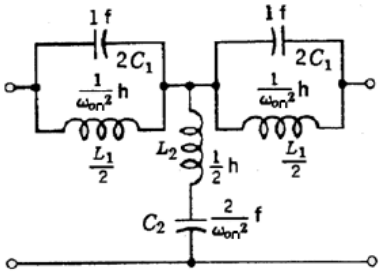
RESUMEN FILTROS KCTE

TIPO DE FILTRO	CURVA DE ATENUACIÓN	CIRCUITO APLICADO CON VALORES NORMALIZADOS	CÁLCULO DE LOS ELEMENTOS COMPONENTES DEL FILTROS
FILTRO PASA BAJOS KCTE			$L_1 = \frac{2R_O}{\omega_C} \quad \therefore \quad \frac{L_1}{2} = \frac{R_O}{\omega_C}$ $C_1 = \frac{2}{R_O \omega_C}$ $\omega_C = \frac{2}{\sqrt{L_1 \times C_2}}$ $\lvert X_K \rvert_{pb} = {}^{\omega}/_{\omega_C}$
FILTRO PASA ALTOS KCTE			$C_1 = \frac{1}{2R_O \omega_C} \quad \therefore \quad 2\ C_1 = \frac{1}{R_O \omega_C}$ $L_2 = \frac{R_O}{2\omega_C}$ $\omega_c = \frac{1}{2\sqrt{L_1 \times C_2}}$ $\lvert X_K \rvert_{pa} = -{}^{\omega_c}/_{\omega} = -{}^{1}/_{\lvert X_K \rvert_{pb}}$
FILTRO PASA BANDA KCTE			$L_1 = \frac{2R_O}{W} \quad \therefore \quad \frac{L_1}{2} = \frac{R_O}{W}$ $C_1 = \frac{W}{2R_O {\omega_O}^2} \therefore 2\ C_1 = \frac{W}{R_O {\omega_O}^2}$ $L_2 = \frac{R_O W}{2{\omega_O}^2}$ $C_2 = \frac{2}{R_O W}$ $\omega_O = \frac{1}{\sqrt{L_1 \times C_1}} = \frac{1}{\sqrt{L_2 \times C_2}}$ $W = \frac{2R_O}{L_1} = \frac{2}{\sqrt{L_1 \times C_2}}$ $\lvert X_K \rvert_{PB} = \frac{1}{W} X \frac{\omega^2 - {\omega_O}^2}{\omega}$
FILTRO ELIMINA BANDA KCTE			$L_1 = \frac{2R_O W}{{\omega_o}^2} \quad \therefore \quad \frac{L_1}{2} = \frac{R_O W}{{\omega_o}^2}$ $C_1 = \frac{1}{2R_O W} \therefore 2\ C_1 = \frac{1}{R_O W}$ $L_2 = \frac{R_O}{2W}$ $C_2 = \frac{2W}{R_O {\omega_O}^2}$ $\omega_o = \frac{1}{\sqrt{L_1 \times C_1}} = \frac{1}{\sqrt{L_2 \times C_2}}$ $W = \frac{1}{2R_O C_1} = \frac{1}{2\sqrt{L_2 \times C_1}}$ $\lvert X_K \rvert_{PB} = -W \times \frac{\omega}{\omega^2 - {\omega_o}^2} = -{}^{1}/_{\lvert X_K \rvert_{PB}}$

R_o = Impedancia de carga; ω_C = Pulsación de corte (pb y pa); ω_1 = Pulsación de corte inferior; ω_2 = Pulsación de corte superior; W = Ancho de banda = ω_2-ω_1 y ω_o = Pulsación de Resonancia.