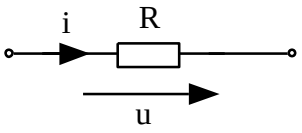
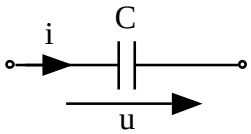
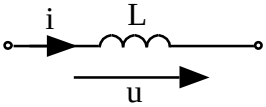
Formulaire

Unités

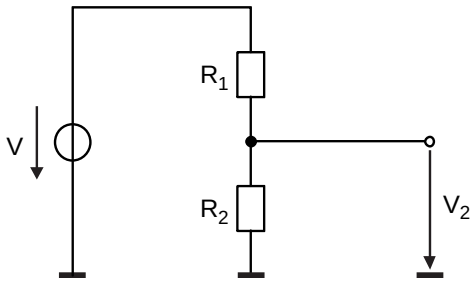
Facteur	Préfixe	Symbole
10^{9}	giga	G
10^{6}	méga	M
10^{3}	kilo	K
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p

Eléments passifs linéaires

Composant	Symbole	Equation	$\underline{Z}(j\omega)$ [Ω]	Combinaison	
				Série	Parallèle
Résistance		$u(t) = Ri(t)$	R	$R_{eq} = \sum_i R_i$	$\frac{1}{R_{eq}} = \sum_i \frac{1}{R_i}$
Capacité		$i(t) = C\frac{du(t)}{dt}$	$\frac{1}{j\omega C}$	$\frac{1}{C_{eq}} = \sum_i \frac{1}{C_i}$	$C_{eq} = \sum_i C_i$
Inductance		$u(t) = L\frac{di(t)}{dt}$	$j\omega L$	$L_{eq} = \sum_i L_i$	$\frac{1}{L_{eq}} = \sum_i \frac{1}{L_i}$

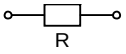
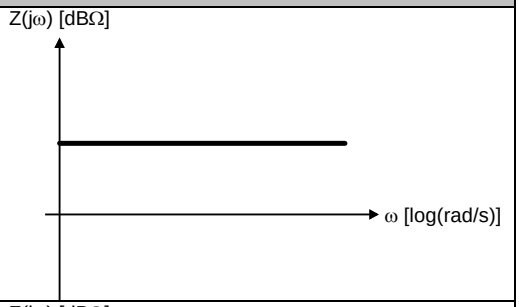
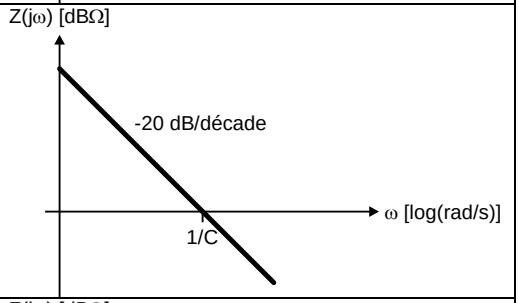
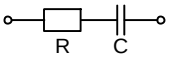
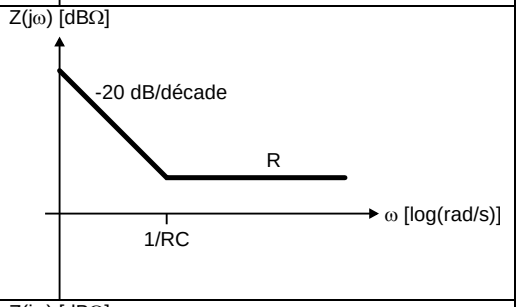
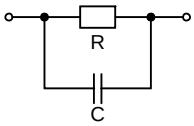
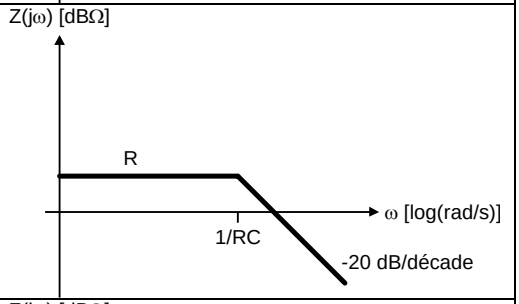
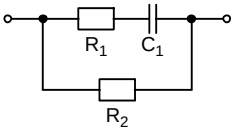
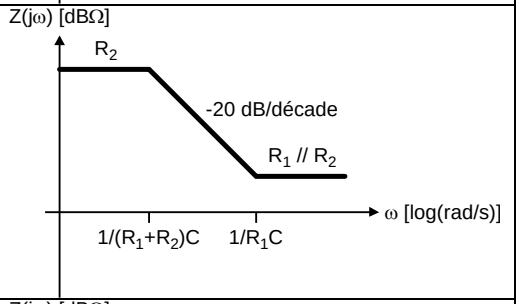
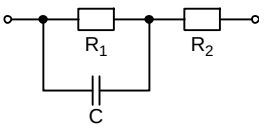
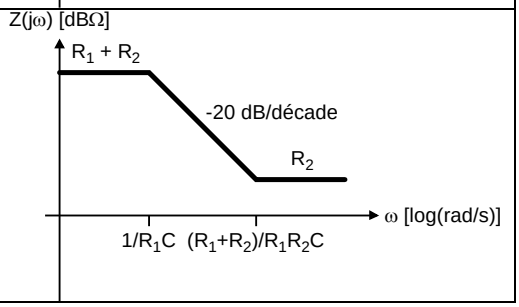
Note: $\frac{1}{R_{eq}} = \sum_{i=1}^{2} \frac{1}{R_i} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{R_1 + R_2}{R_1 R_2} \Leftrightarrow R_{eq} = \frac{R_1 R_2}{R_1 + R_2}$

Diviseur résistif



$$V_2 = V\frac{R_2}{R_1 + R_2}$$

Impédances de circuits simples

Circuit	Impédance $\underline{Z}(j\omega)$	
	Equation	Fonction
	R	
	$\frac{1}{j\omega C}$	
	$\frac{1+j\omega RC}{j\omega C}$	
	$\frac{R}{1+j\omega RC}$	
	$R_2 \frac{1+j\omega R_1 C}{1+j\omega(R_1+R_2)C}$	
	$(R_1+R_2)\frac{1+j\omega\frac{R_1R_2}{R_1+R_2}C}{1+j\omega R_1 C}$	

A Koukab