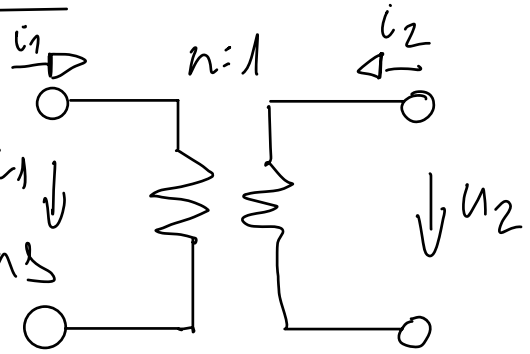
Ideális Transzformátor:

$u_1 = n \cdot u_2$

$i_2 = -n \cdot i_1$

nonenergikus komponens

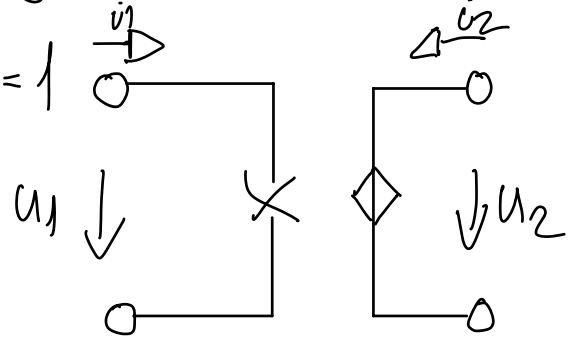
$P = 0$



Feszültségvezérelt feszültségforrás (FF)

$u_2 = \mu \cdot u_1 \quad [\mu] = 1$

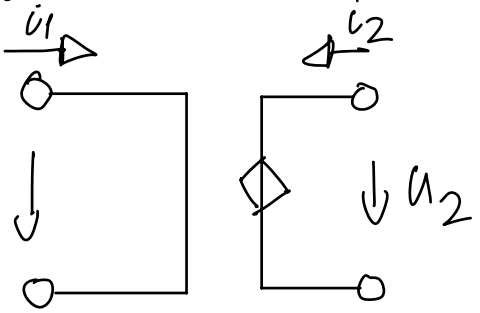
$i_1 = 0$



Áramvezérelt feszültségforrás

$u_2 = r \cdot i_1 \quad [r] = \Omega$

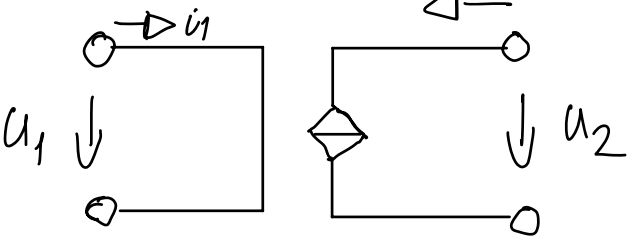
$u_1 = 0$



Áramvezérelt áramforrás (ÁÁ)

$i_2 = L \cdot i_1$

$u_1 = 0$

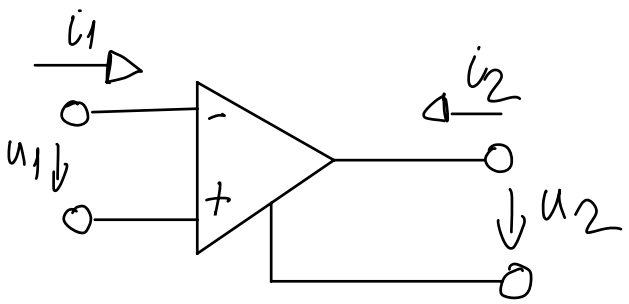


Ideális erősítő

$u_1 = 0$

$i_1 = 0$

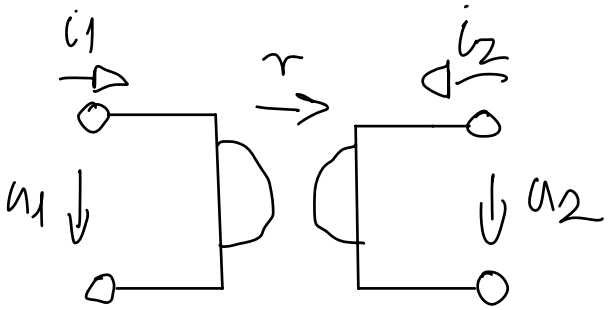
aktív elem!



Girátor

$u_2 = r \cdot i_1$

$u_1 = -r \cdot i_2$



nonenergikus komponens

$P = 0$

Kondenzátor:

$-i_2 = C \cdot u_2'$

KARAKTERISZTIKÁK

Impedancia – [R]

$u_1 = R_{11} \cdot i_1 + R_{12} \cdot i_2$

$u_2 = R_{21} \cdot i_1 + R_{22} \cdot i_2$

Admitanciа - [G] = S

$$i_1 = G_{11} \cdot u_1 + G_{12} \cdot u_2$$

$$i_2 = G_{21} \cdot u_1 + G_{22} \cdot u_2$$

Hibrid - [H]

$$u_1 = H_{11} \cdot i_1 + H_{12} \cdot u_2$$

$$i_2 = H_{21} \cdot i_1 + H_{22} \cdot u_2$$

Invers hibrid - [K]

$$i_1 = K_{11} \cdot u_1 + K_{21} \cdot i_2$$

$$u_2 = K_{21} \cdot u_1 + K_{22} \cdot i_2$$

Lánc - [A]

$$u_1 = A_{11} \cdot u_2 + A_{12} \cdot i_2$$

$$i_1 = A_{21} \cdot u_2 + A_{22} \cdot i_2$$

Invers Lánc - [B]

$$u_2 = B_{11} \cdot u_1 + B_{12} \cdot i_1$$

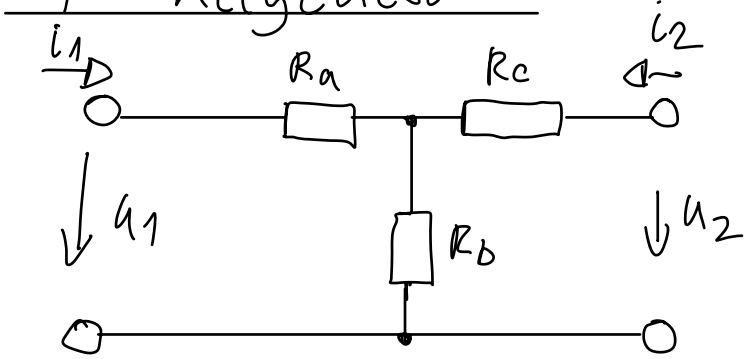
$$i_2 = B_{21} \cdot u_1 + B_{22} \cdot i_1$$

$R_{12} \neq R_{21} \Rightarrow$ nem reciprok $\Leftrightarrow$ nem szimmetrikus

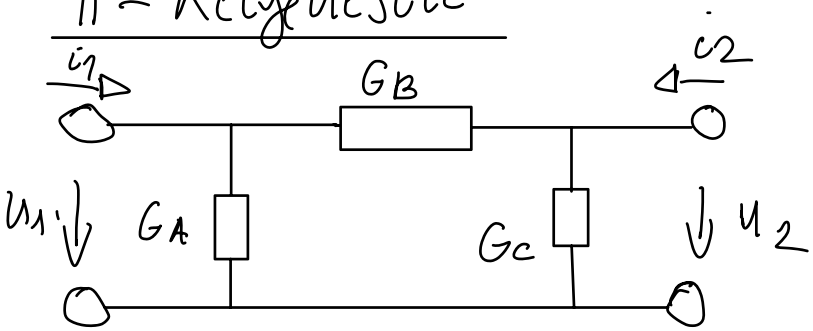
$R_{11} \cdot R_{22} \geq \left(\frac{R_{12}+R_{21}}{2}\right)^2 \Rightarrow$ passzív

HELYETTESÍTÉSEK

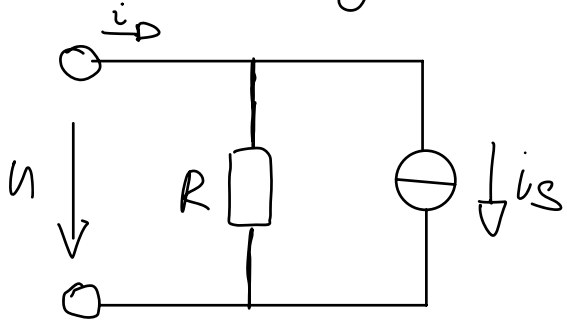
T - helyettesítő:



Π - helyettesítő:

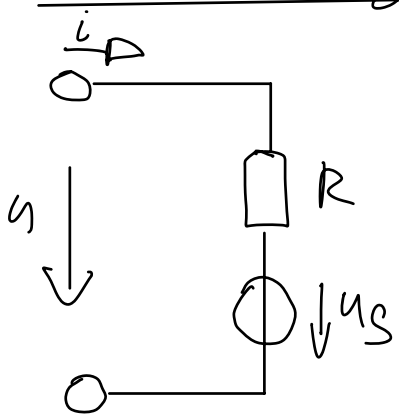


Norton generátor



$$i = i_S - \frac{u}{R_S}$$

Thévenin generator



$$u = u_S - R_S \cdot i$$