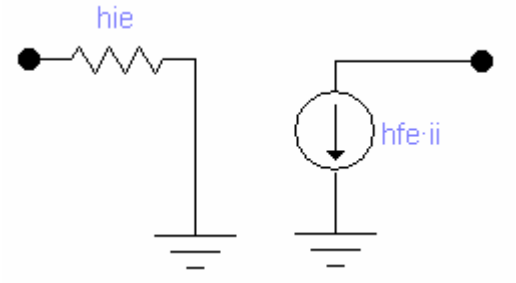
FORMULARIO ELETTRONICA

QUADRIPOLI

TRANSISTOR A EMETTITORE COMUNE



$\boldsymbol{Ri}=hie$ $\quad$ $\boldsymbol{Ai}=hfe$

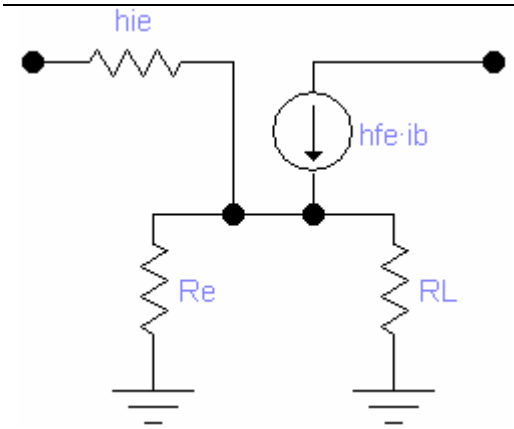
$\boldsymbol{Ru}=\infty$ $\quad$ $\boldsymbol{Rpc}=$*Resistenza destra*

$\boldsymbol{Av}=-\frac{Rpc}{Ri}Ai$ $\quad$ $\boldsymbol{Vu}=Vs\cdot AV_{tot}$

$\boldsymbol{Av_{tot}}=\frac{Vu}{Vs}=Av\cdot\alpha_v$ $\quad$ $\boldsymbol{Ve_q}=V_{AB}+RutI_1$

$\boldsymbol{\alpha_v}=\frac{Rit}{Rit+Rs}$ $\quad$ $\boldsymbol{Vce_{tot}}=Vce_q+Vu_{(t)}$

TRANSISTOR A COLLETTORE COMUNE



$\boldsymbol{Ri}=hie+Ai\cdot Rpe$ $\quad$ $\boldsymbol{Rit}=Ri//Rb$

$\boldsymbol{Ru}=\frac{hie+Rs}{hfe+1}$ $\quad$ $\boldsymbol{Rut}=Ru//Re$

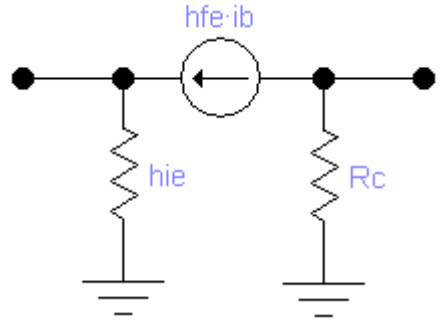
$\boldsymbol{Av}=\frac{Rpe\cdot Ai}{Ri}$ $\quad$ $\boldsymbol{Rpe}=$*Resistenza sotto (Re//Rl)*

$\boldsymbol{Av_{tot}}=\frac{Vu}{Vs}=Av\cdot\alpha_v$ $\quad$ $\boldsymbol{Ai}=hfe+1$

$\boldsymbol{\alpha_v}=\frac{Rit}{Rit+Rs}$ $\quad$ $\boldsymbol{Ai_{tot}}=\frac{Vu/RL}{Vi/Rit}$

$\boldsymbol{R's}=hie+Rs//(R_1//R_2)$

TRANSISTOR A BASE COMUNE



$\boldsymbol{Ri}=\frac{hie}{hfe+1}$ $\quad$ $\boldsymbol{Rit}=Re//hie$

$\boldsymbol{Ru}=\infty$

$\boldsymbol{Av}=-\frac{Rpc}{Ri}\cdot Ai\cong\frac{Rpc}{Ri}$ $\quad$ $\boldsymbol{Av_{tot}}=Av\cdot\alpha_v$

$\boldsymbol{Ai}=\frac{Iu}{Ii}=\frac{ic}{ie}\cong -1$ $\quad$ $\boldsymbol{\alpha_v}=\frac{Rit}{Rit+Rs}$

$\boldsymbol{Rpc}=$*Resistenza a dx del generatore hfe·ib*

TRANSISTOR A DOPPIO CARICO

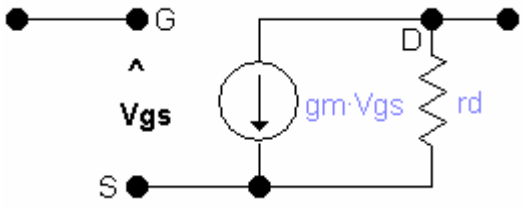
$\boldsymbol{Ri}=hie+hfe\cdot Rpe$ $\quad$ $\boldsymbol{Aic}\cong hfe$

$\boldsymbol{Rpc}=Rc//RL$ $\quad$ $\boldsymbol{Aie}\cong hfe$ $\quad$ $\boldsymbol{Rpe}=Re//Rle$

$\boldsymbol{Avc}=-\frac{Rpc\cdot Aic}{Ri}$ $\quad$ $\boldsymbol{Ave}=\frac{Rpe\cdot Aie}{Ri}$ $\quad$ $\boldsymbol{Rpl}=Rc//Rlc$

$\boldsymbol{Ruc}=\infty$ $\quad$ $\boldsymbol{Rue}=\frac{hie+R's}{hfe}$ $\quad$ $\boldsymbol{R's}=$*resistenza a sinistra del transistor*

JFET A SOURCE COMUNE (gm è un parametro dato)



$\boldsymbol{Ri} = \infty$ $\quad \boldsymbol{Rit} = Rg$

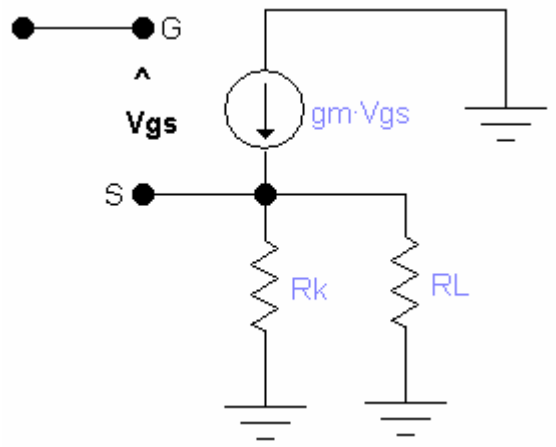
$\boldsymbol{Ru} = rd$ $\quad \boldsymbol{Rut} = Rd // rd$

$\boldsymbol{Av} = -gm \cdot rd // Rpd$ $\quad \boldsymbol{Av_{tot}} = Av \cdot \alpha_v$

$$\boldsymbol{\alpha_v} = \frac{Rit}{Rit + Rs}$$

$\boldsymbol{Ai} = \infty$ $\quad \boldsymbol{Ait} = Av \cdot \frac{Rg}{Rl}$

JFET A DRAIN COMUNE



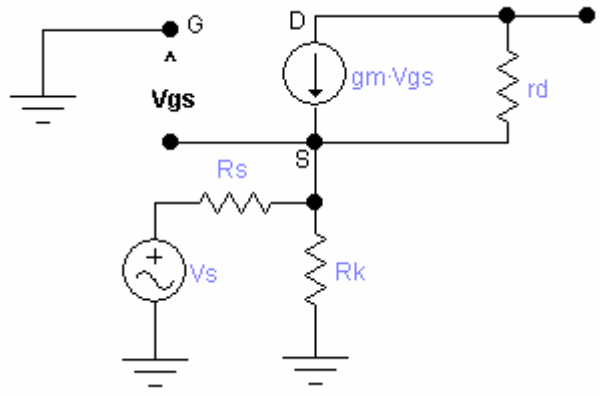
$\boldsymbol{Ri} = \infty$ $\quad \boldsymbol{Rit} = Rg$

$$\boldsymbol{Ru} = \frac{1}{gm}$$ $\quad \boldsymbol{Rut} = Ru // Rk$

$$\boldsymbol{Av} = \frac{Rk // Rl \cdot gm}{1 + gm \cdot Rk // Rl}$$ $\quad \boldsymbol{Av_{tot}} = Av \cdot \alpha_v$

$\boldsymbol{Ai} = \infty$

JFET A GATE COMUNE



$$\boldsymbol{Ri} = \frac{1}{gm}$$

$\boldsymbol{Ru} = rd(1 + R's(1 + gm \cdot rd))$ $\quad \boldsymbol{Rut} = Ru // Rd$

$\boldsymbol{Ai} = -1$

$$\boldsymbol{Av} = \frac{Rpd}{Ri} \cong gm \cdot Rpd$$

$\boldsymbol{Av_{tot}} = Av \cdot \alpha_v$

$$Vgs = Vp\left(1 - \sqrt{\frac{Ids}{Idss}}\right) \qquad Ids = Idss\left(1 - \frac{Vgs}{Vp}\right)^2 \qquad hfe = \frac{Ic}{Ib}$$

NB NON MI RITENGO RESPONSABILE SE LA VERIFICA VA MALE

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