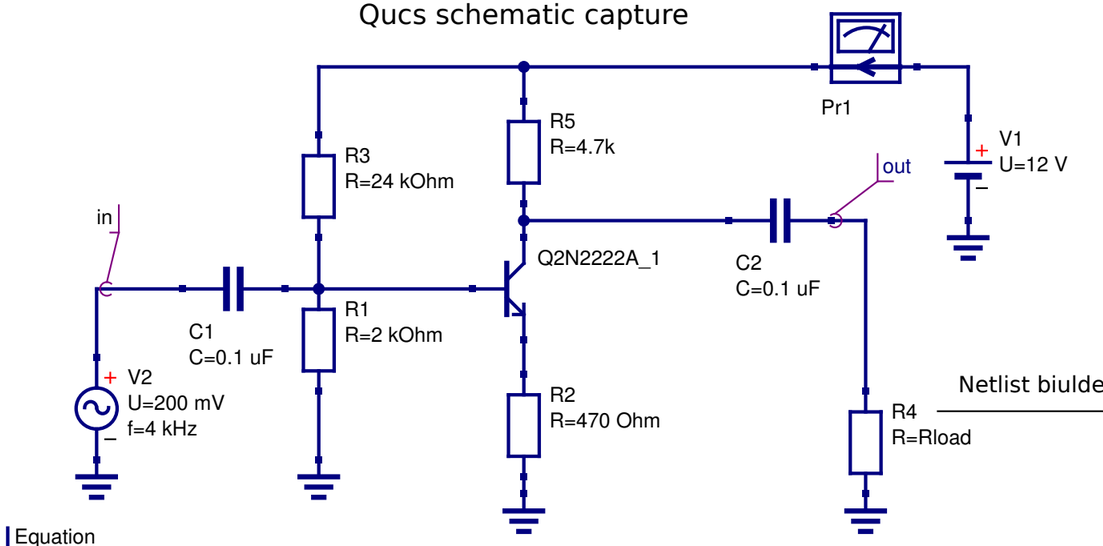
Qucs schematic capture



Equation

Eqn1
Rload=47k
K=out.v/in.v
Pwr=(out.Vt*out.Vt)/Rload

transient simulation

TR1
Type=lin
Start=0
Stop=1 ms

ac simulation

AC1
Type=lin
Start=100 Hz
Stop=10 MHz
Points=2000

dc simulation

DC1

Netlist biulder

Spice netlist

```
* Qucs 0.0.19  /home/vvk/.qucs/BJT.sch
.PARAM Rload={47k}
Q2N2222A_1 _net1 _net0 _net2
+ QMOD_Q2N2222A_1 AREA=1 TEMP=26.85
.MODEL QMOD_Q2N2222A_1 npn (Is=8.11e-14 Nf=1
+ Nr=1 Ikf=0.5 Ikr=0.225 Vaf=113 Var=24
+ Ise=1.06e-11 Ne=2 Isc=0 Nc=2 Bf=205 Br=4
+ Rbm=0 Irb=0 Rc=0.137 Re=0.343 Rb=1.37
+ Cje=2.95e-11 Vje=0.75 Mje=0.33 Cjc=1.52e-11
+ Vjc=0.75 Mjc=0.33 Xcjc=1 Cjs=0 Vjs=0.75
+ Mjs=0 Fc=0.5 Tf=3.97e-10 Xtf=0 Vtf=0 Itf=0
+ Tr=8.5e-08 Kf=0 Af=1 Ptf=0 Xtb=1.5 Xti=3
+ Eg=1.11 Tnom=26.85 )
R1 0 _net0  2K
R2 0 _net2  470
C1 in _net0  0.1U
R3 _net0 _net3  24K
C2 _net1 out  0.1U
R5 _net1 _net3  4.7K
V2 in 0 DC 0 SIN(0 200M 4K 0 0) AC 200M
R4 0 out  {RLOAD}
VPr1 _net4 _net3 DC 0 AC 0
V1 _net4 0 DC 12
.control
set filetype=ascii
echo "" > spice4qucs.cir.noise
let Rload=47k
TRAN 1e-06 0.001 0
let Pwr=(V(out)*V(out))/Rload
write BJT_tran.txt VPr1#branch v(in) v(out)  Pwr
destroy all
reset

AC LIN 2000 100 10MEG
let K=V(out)/V(in)
write BJT_ac.txt VPr1#branch v(in) v(out)  K
destroy all
reset

exit
.endc
.END
```

Ngspice/Xyce output parser

Qucs data visualization system

Magnitude response and output voltage waveform of a BJT amplifier