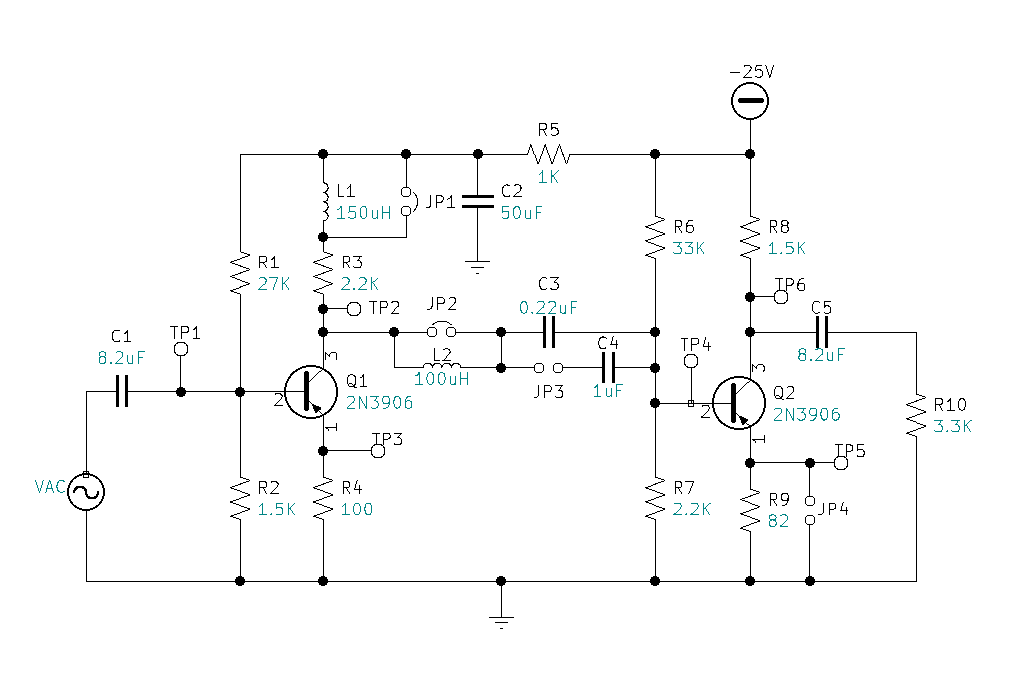
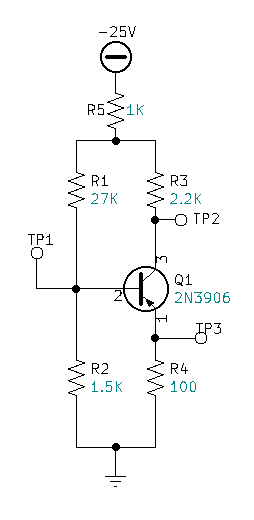
Consider the following circuit:

NOTE: On the 2-stage schematic, VCC=25V. There is a jumper on JP1 and JP2. No Jumper on JP3 and JP4.



DC Redraw for Stage 1:

DC Calculations for Stage 1:

Kirchhoff Loop Equation 1:

Kirchhoff Loop Equation 2:

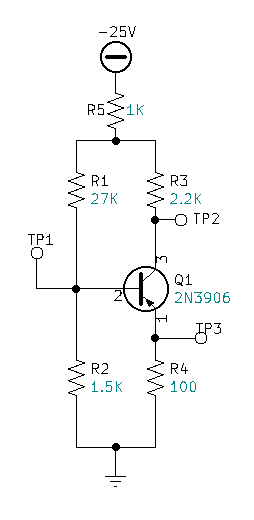
Kirchhoff’s Current Law:

Substitute Currents:

Manipulate into terms of IR1 and IB:

Beta = 100:

Simplify:

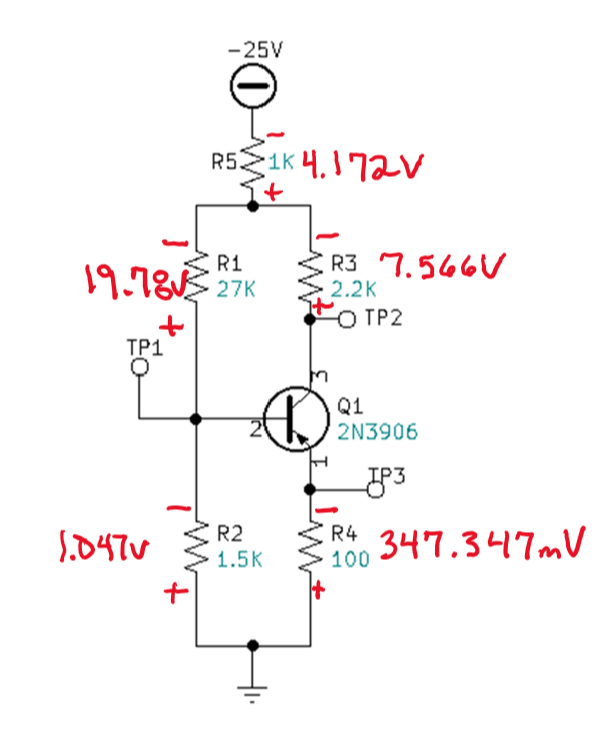
Simplify:

Simultaneous Equation Solution:

DC/Bias Voltages:

Kirchhoff, check math:

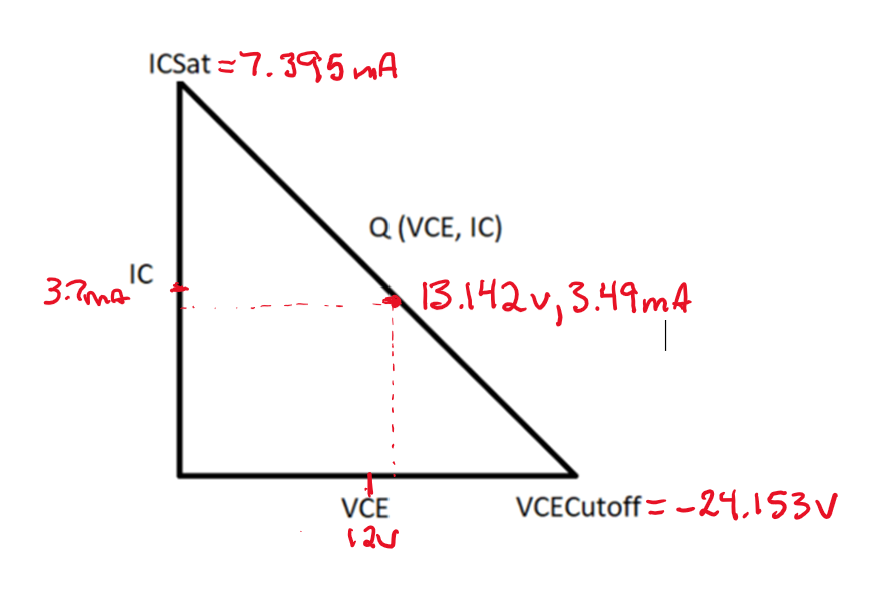
* 🗹

Find VCE:

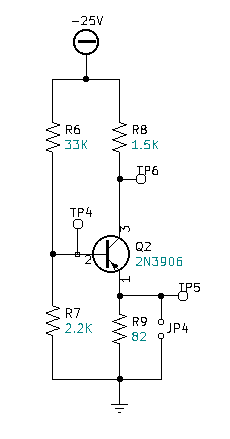
Test Point Voltages:

DC Load Line for Q1:

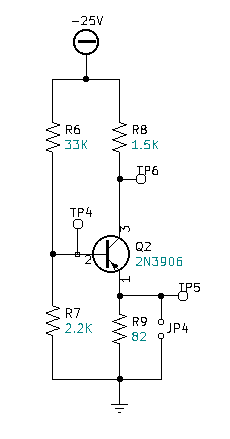
* *=*
  + - *=*
    - *=*
    - *=*
    - *=*



DC Redraw for Stage 2:



DC Calculations for Stage 2:

Kirchhoff Loop Equation 1:

Kirchhoff Loop Equation 2:

Substitute Currents & known values:

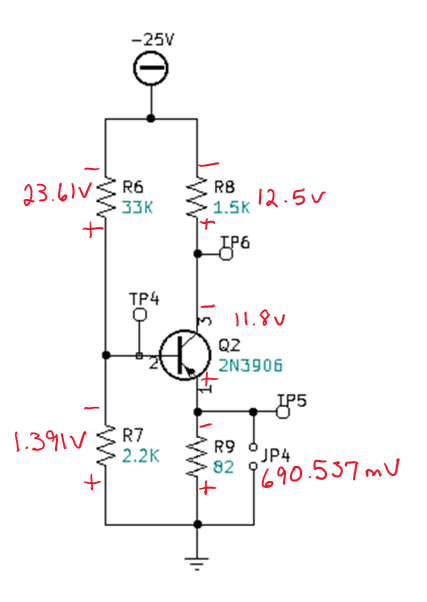
Substitute Currents in terms of IR6 & IB:

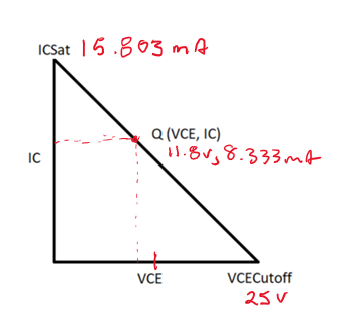
Simplify:

Simplify:

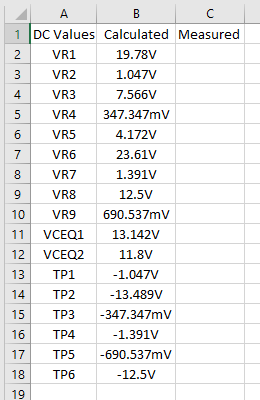
Simultaneous Equation Solution:

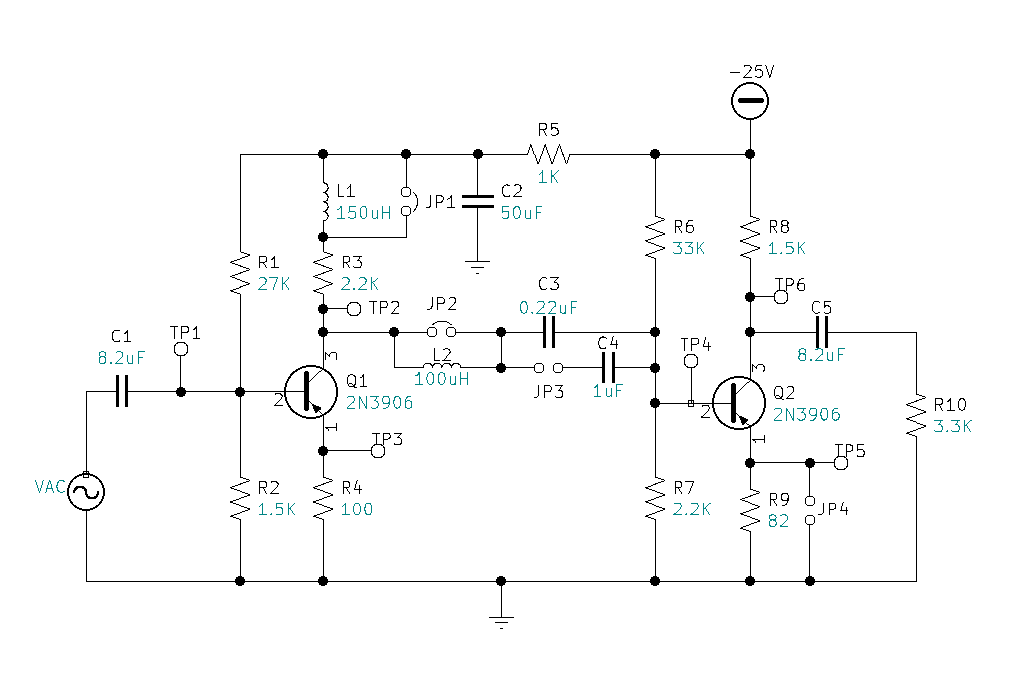
DC/Bias Voltages:

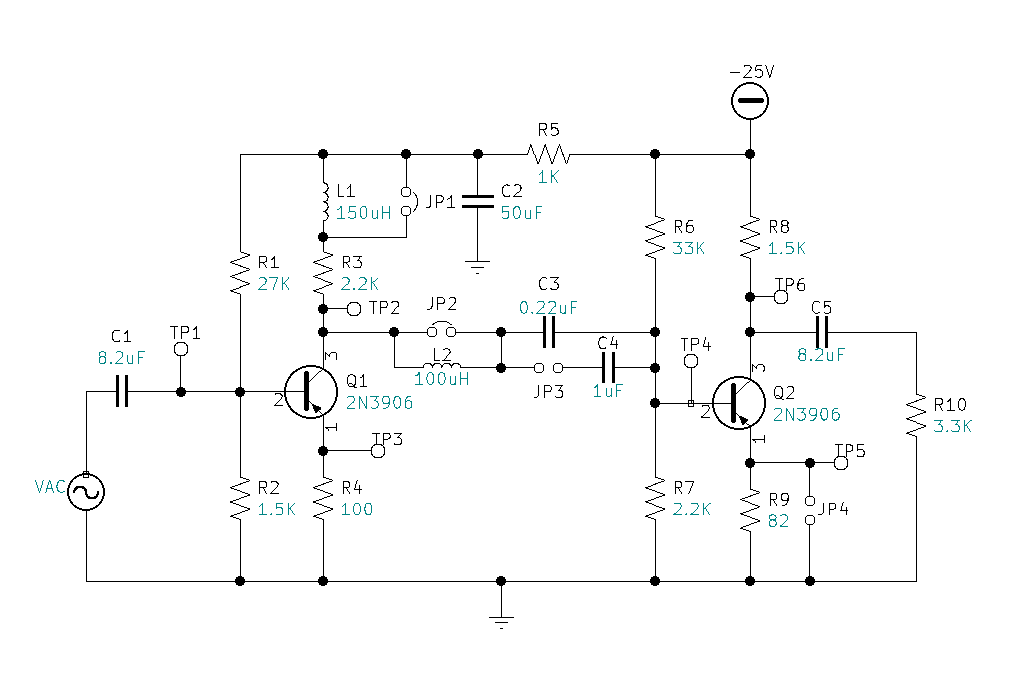


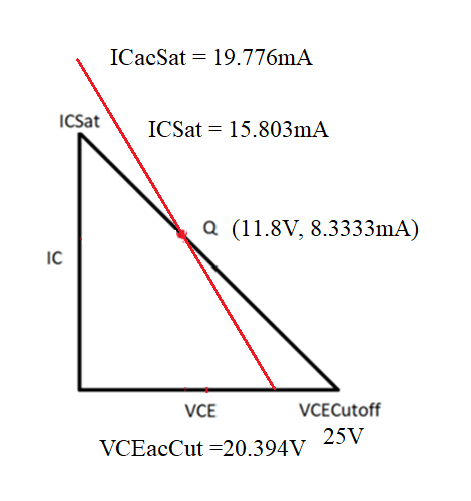
DC Load Line for Q2:

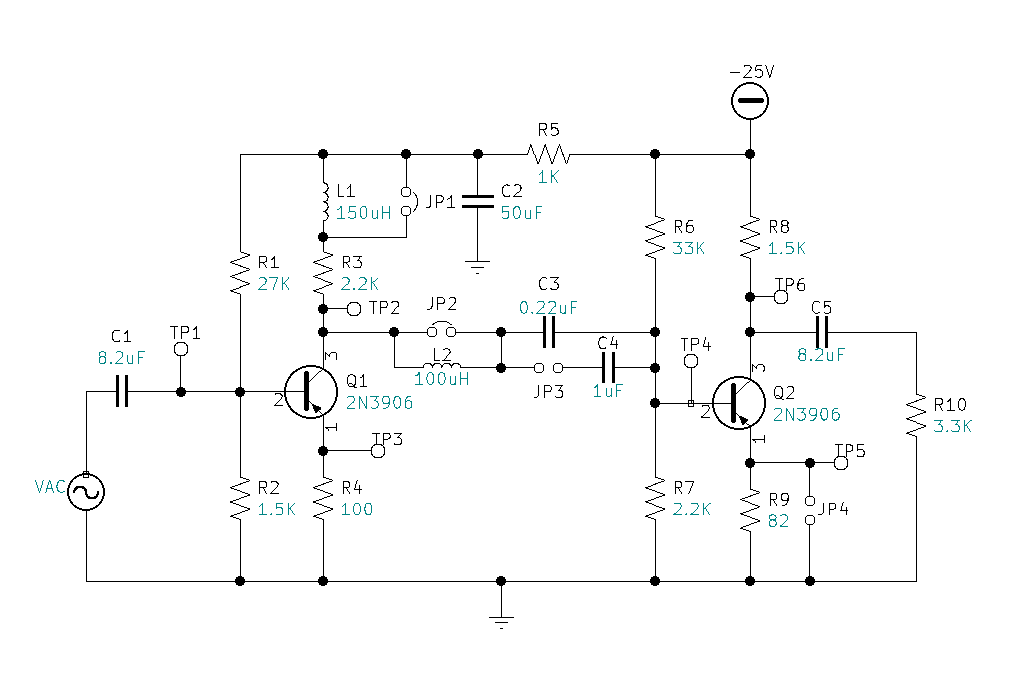
* *=*
  + - *=*

DC Calculations Tabulated:

AC Calculations:

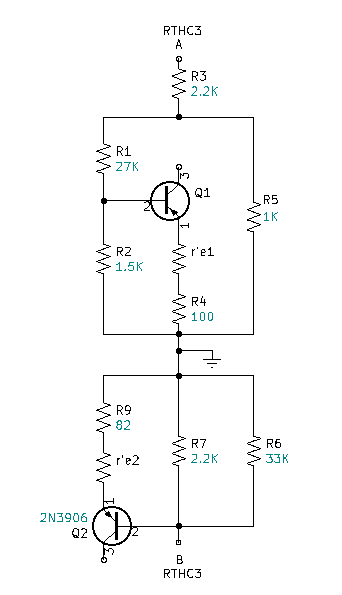
AC Calculations Continued:

* 

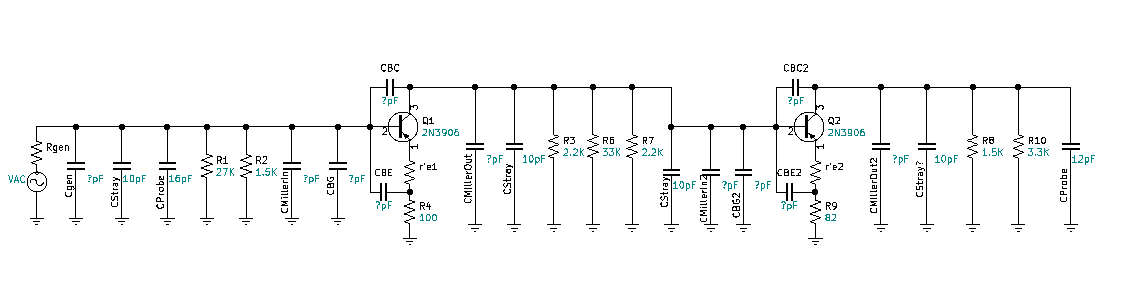
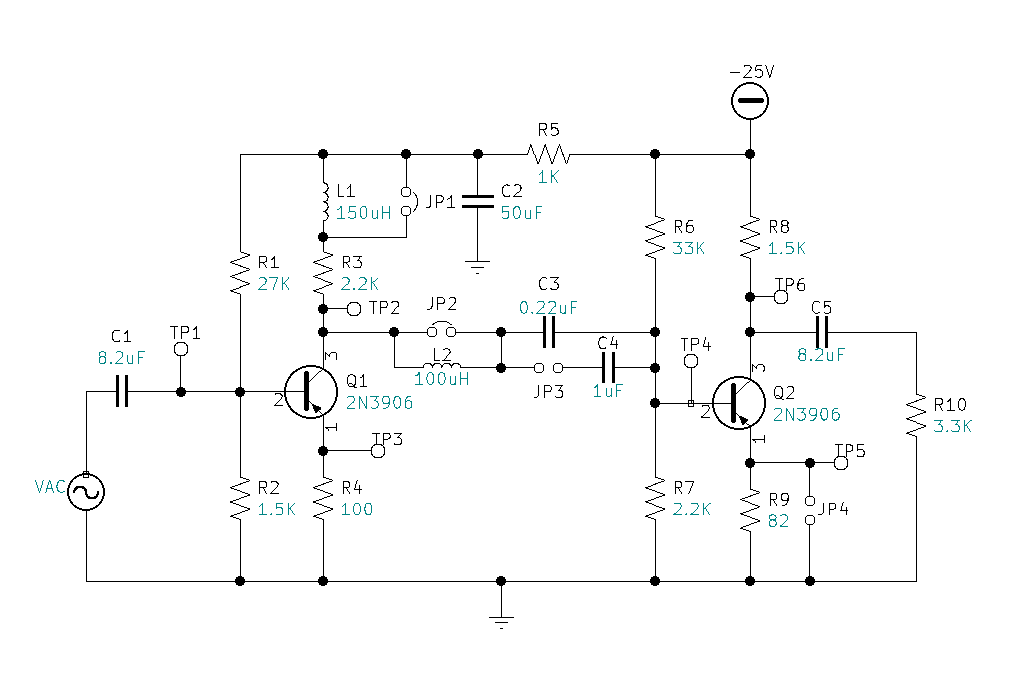


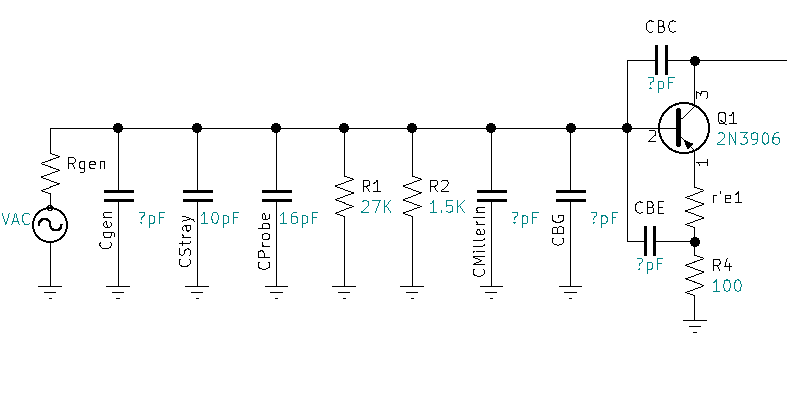
Frequency Response Low:

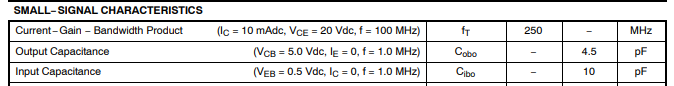
* Rules:
  + Treat all caps like opens.
  + Thevenize each and find Fc for each cap

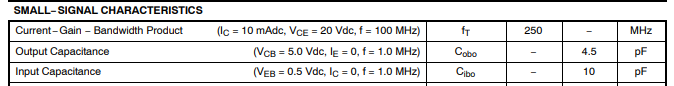
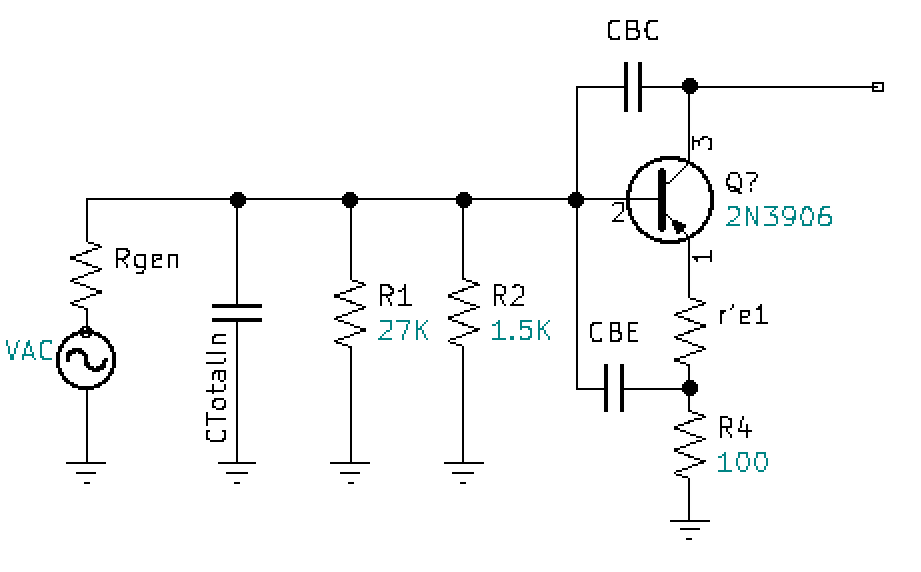




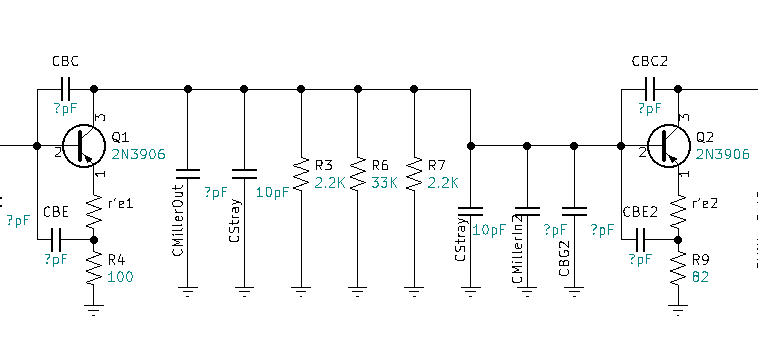
Frequency Response High:

Frequency Response High (Front End):

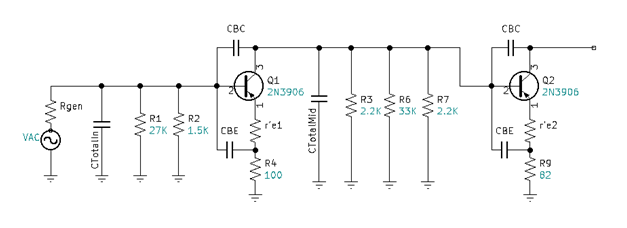
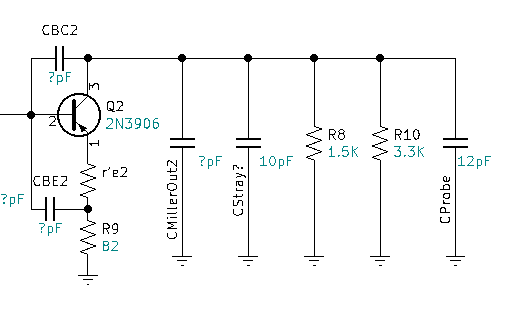




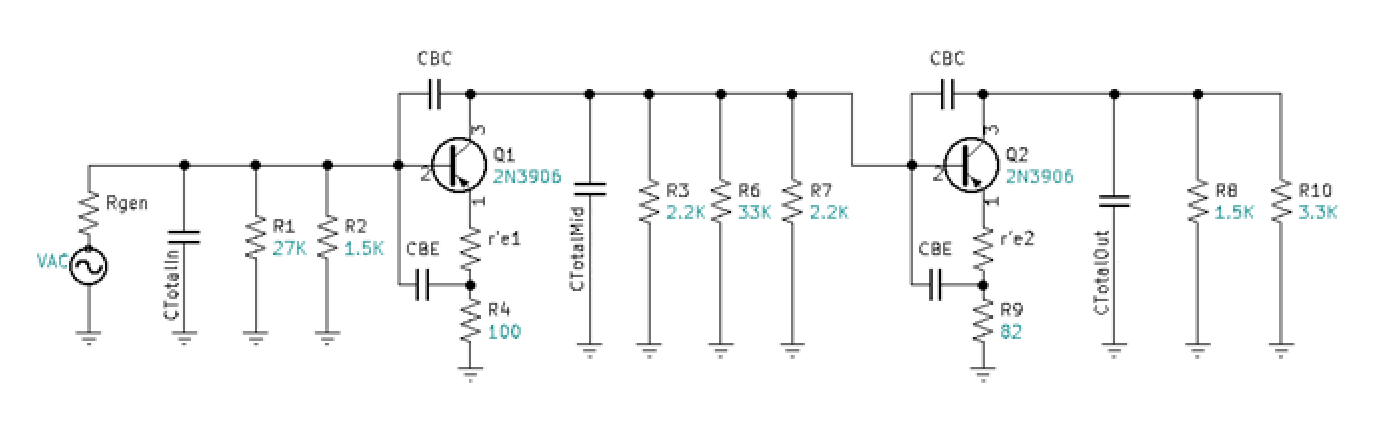
* + - or
    - =

Frequency Response High (Middle):

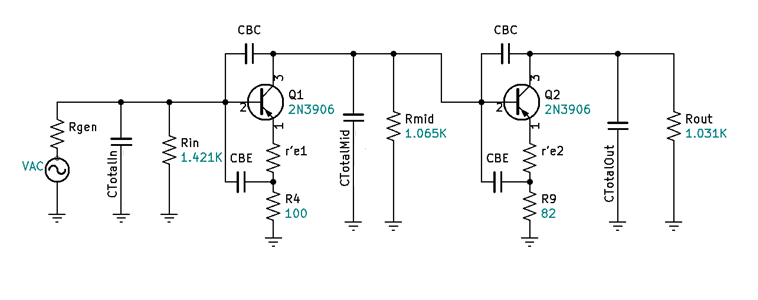
* + - or
    - =

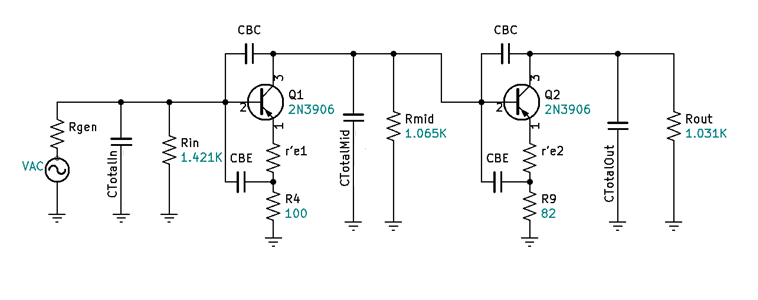
Frequency Response High (Back End):

* )
  + - )



Simplify parallel resistances:





Thevenize for CTin, CTmid, & CTout:



Find FCH for each stage:

Find FCHtotal:

