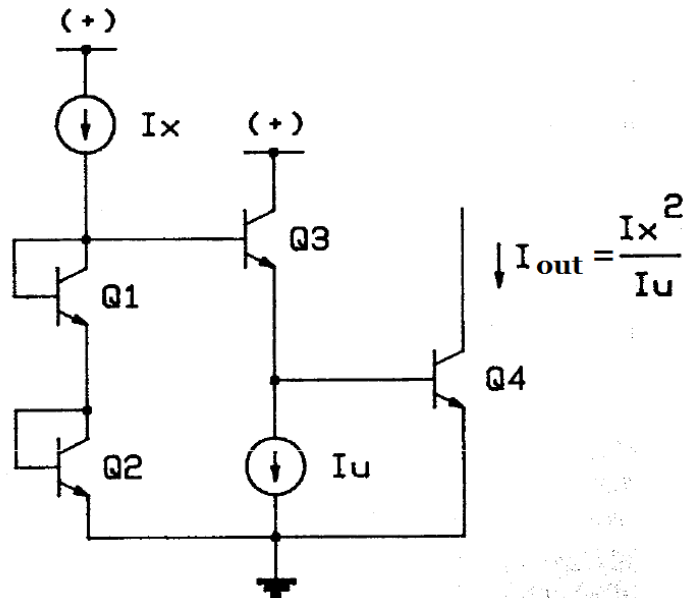


ELE509E

Current-Mode Analog Circuit Design

Homework 1 (19.10.2009)



A simple one quadrant TL Squarer/Divider circuit is shown in Figure 1. The supply voltage is given as 3V.

- a) Applying the TL principle prove that the output current is as shown in Figure-1

Using SPICE **simulation** program

- b) draw the the plot of I_{OUT} against I_X , choose an adequate value for I_U and an adequate range for I_X ,
c) specify the limits of the input current I_X and the output current I_{OUT} ,
d) repeat (b) and (c) for different values of I_U (take I_U as parameter),
e) Give a detailed evaluation of your results.

Note that this circuit requires both the numerator and denominator inputs to be unipolar.