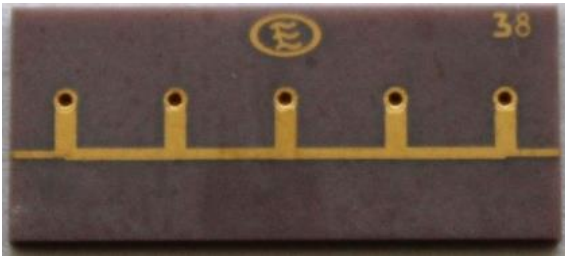E157 Lecture 8 Day Plan

No quiz! Any questions?
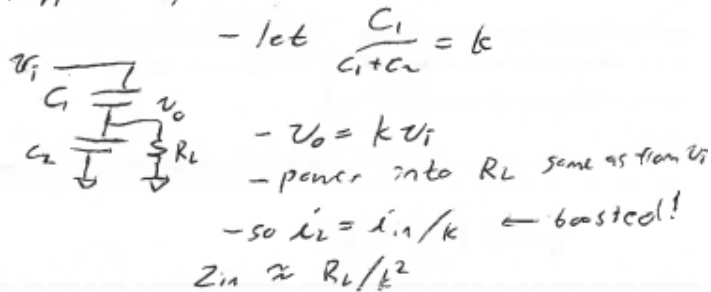
Matching networks with transmission lines – impedance cancellation, single stub

- lambda/4 turns opens to shorts
- Draw a stub
- Imply existence of filters

Tapped Capacitors, Tapped Inductors and Transformers

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- For transformer – same but voltage boosted! vo = k*vi, k>>1

Run the VNA sim, work through it as a class, get everyone up and running with s1p import.

- Everyone do the VNA sim from lab 3
- Export in proper format.
    - Simulate
    - Right click in sim pane
    - File -> Export Data as text -> Format Dropdown is Cartesion Re,Im
    - Name must have .s1p suffix
    - Edit file in text editor, add
    - Import as Network using skrf, or use Matlab

Make a spreadsheet/script to design a T-match from 200 Ohms, 2*pi*100 MHz, Q=3

- Check vs. https://home.sandiego.edu/~ekim/e194rfs01/jwmatcher/matcher2.html
- Qoverall → Ri, 2Qoverall = sqrt(Ri/Zo-1)+sqrt(Rp/Zo-1)
- Ri and w0 → C1 and C2 through component Qs, Qdes1=1/(w0*Ri*C1s)
- Use w0 to find L, and come out frome series-parallel or parallel-series

Check-in, office hours for lab 3