

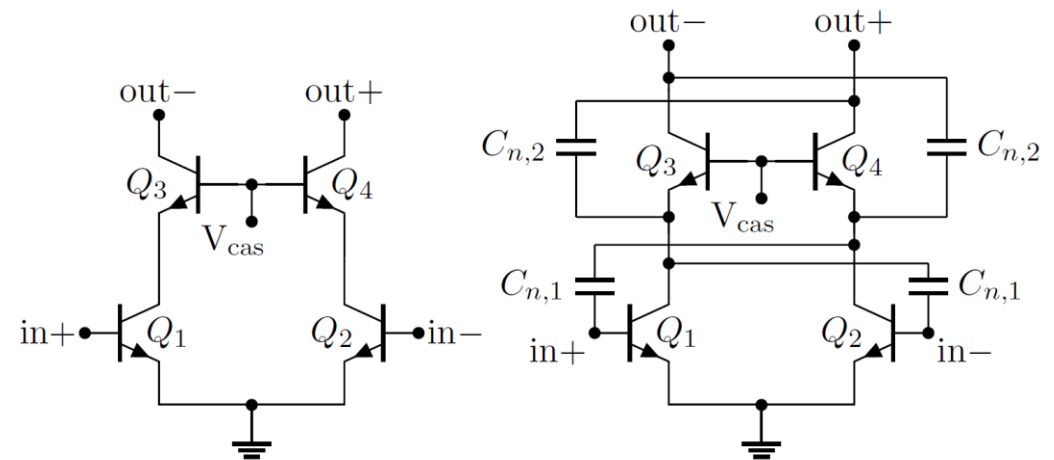
Analysis and Design of a Power Amplifier with Neutralization Technique in H-Band

The higher frequency of operation is necessitated by the increasing demand for the high-data-rate applications and communication systems requiring larger bandwidth. As the frequency of operation increases, it is getting more challenging to design a Power Amplifier with a high output power and decent efficiency. To overcome these challenges, differential cascode topology is more commonly used in the state-of-the-art. On the other hand, differential amplifier brings another challenge in terms of stability.

The aim of this thesis is to analyze the effect of different Neutralization techniques on the output power, efficiency and stability performance of the differential cascode power amplifiers in H-Band. The task includes schematic simulations and the layout design.

Tasks:

- Design and simulation of the circuits in a 0.13- μm SiGe BiCMOS technology with RFIC design tools(Cadence, ADS)
- Theoretical analysis of Neutralization technique in differential cascode topology



Requirements:

- Good understanding of circuits (e.g. ES, RFE or RFIC)

Language: English

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