



- Considering Fig.1 design, build and debug the multi-stage amplifier circuit for standard input sources.
 - You are required to design a buffer stage connected to the specified nodes.
 - Define the Z impedance, whether it is a resistor, capacitor or just wire.
 - Define the number of diodes cascaded.
 - Design the feedback circuit and connect it to the proper node.
 - Notice that you are an engineer so you can add excessive elements and stages wherever it needed. But you cannot remove them.
 - The resistors could be assigned to zero.
 - Find the proper model of the transistors and diodes from datasheets and verify that they can tolerate imposed voltage and current.
- Specifications:
 - The maximum output power of the 8Ω 's load ($P_{out} = 0.25W$) should happen when the amplifier input voltage is $V_{in} = 100mV$ rms.
 - The frequency response of your amplifier must be "flat" within 3 dB from 50Hz to 20kHz.
 - Quiescent DC power (when no signal is being amplified) should be as low as possible while eliminating cross-over distortion in the push-pull output stage.
 - Voltage gain should be more than 20dB.

You are required to show all design work in Project Report, including the calculations for all component values and verification of all component ratings.

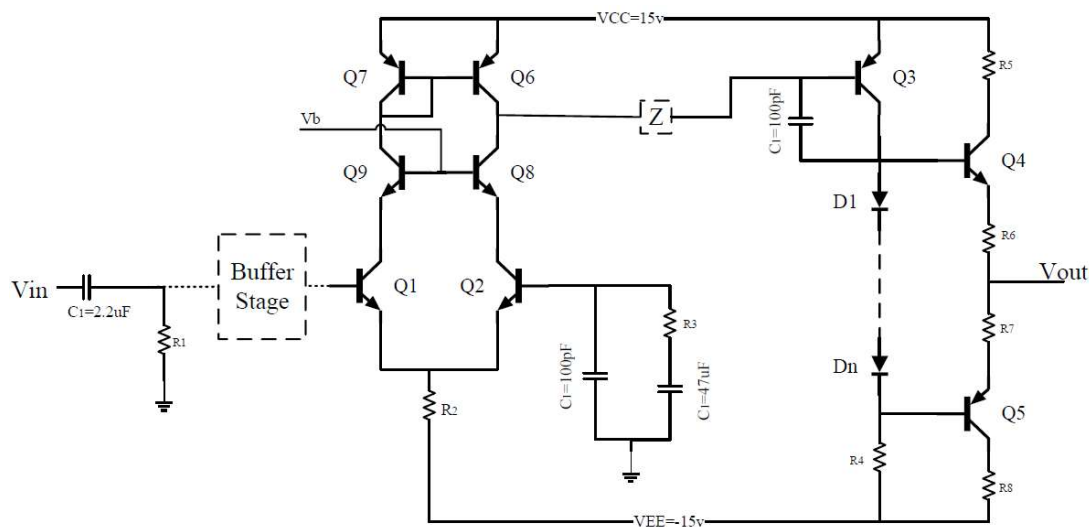


Fig. 1 Circuit schematic