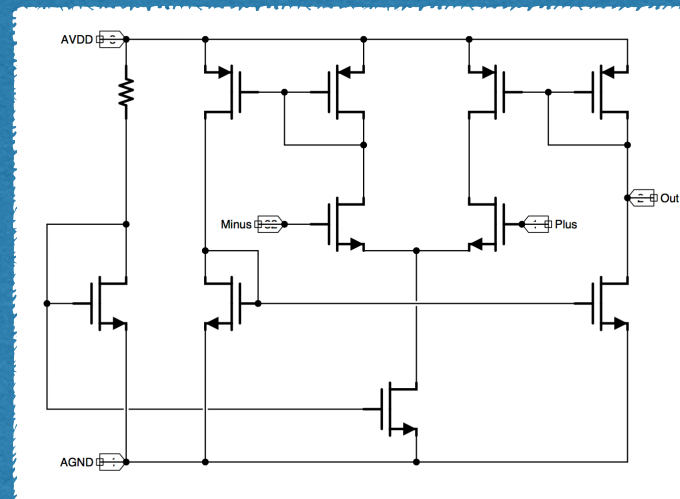
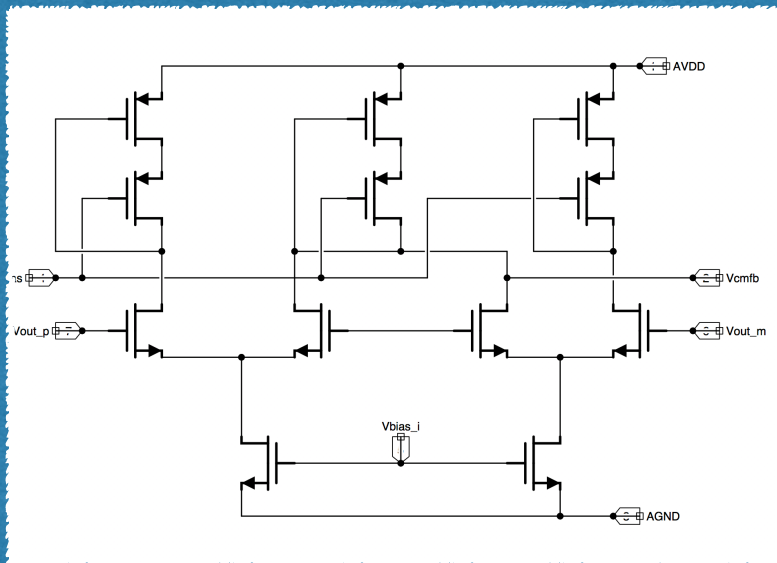
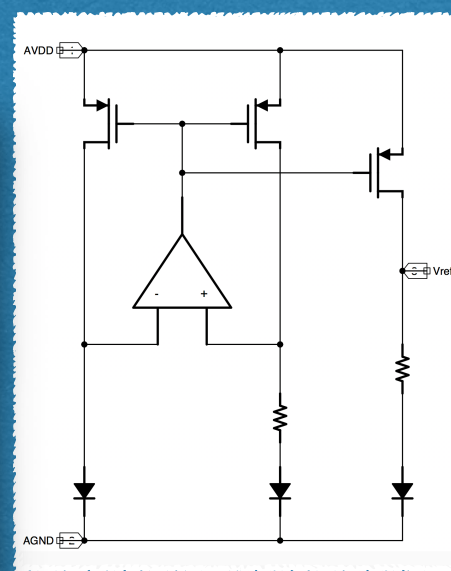
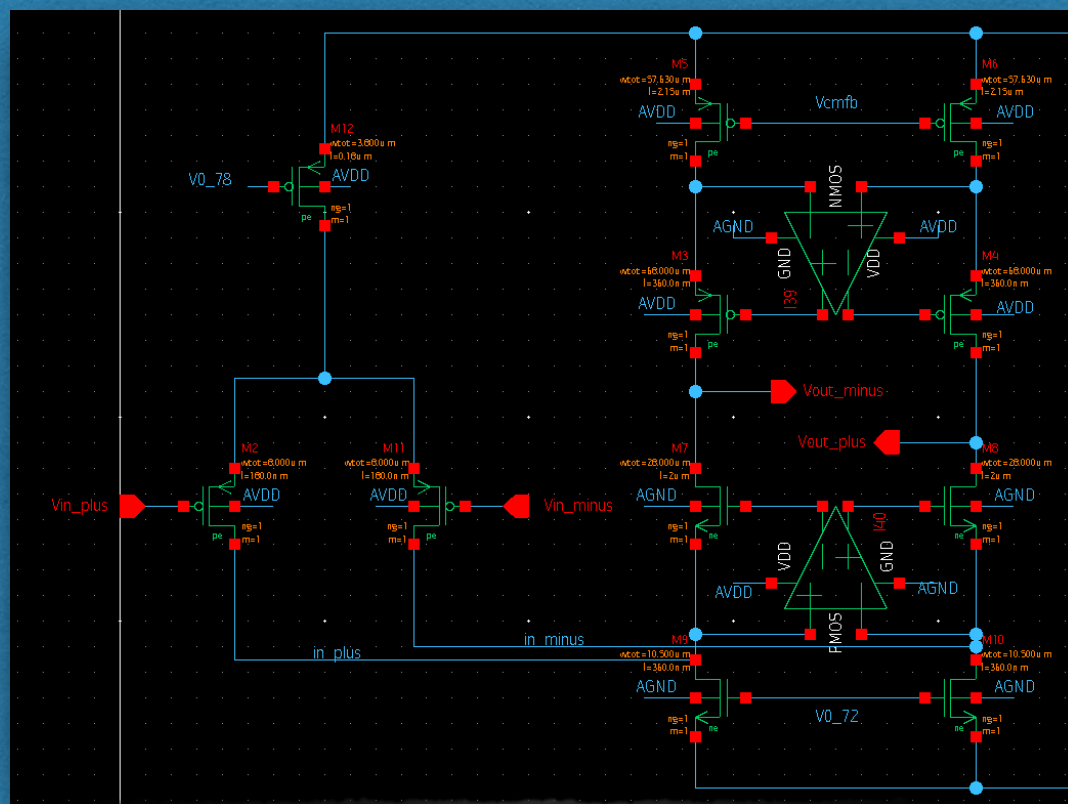


Internship project 3: Integrated Circuit Design

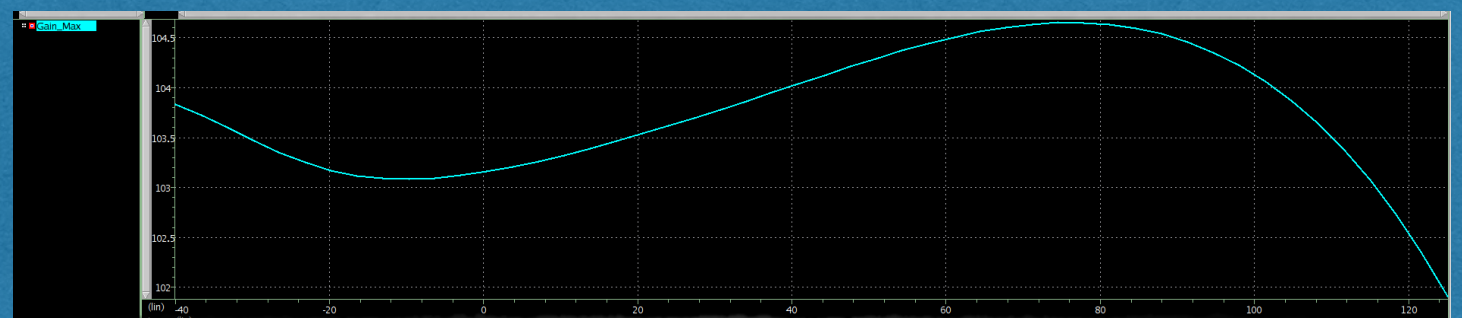


Summary

During this internship, a fully differential folded cascode OTA is designed with XFAB 0.18 μ process. Design includes a bandgap reference circuit with its own OTA. Bandgap reference circuit is used to create reference voltage that does not vary much with temperature. Designed OTA provides approximate open loop gain of 103 dB between -40 C° and 125 C°. In future work A class AB output stage is added to designed OTA.



Output	Expression	Analyses	Value
Gain_Max	db20(y _{max} (v(/Vout_AC)))	ac	103.641
Rout	y _{max} (mag(v(/Vout_res)))	ac	344.906M
3dB_BW	bw3db(v(/Vout_AC))	ac	106.942
UGBW	bw(v(/Vout_AC),db20(y _{max} (v(/Vout_AC))))	ac	16.0100M
Phase_Margin	phase_m(v(/Vout_AC),1)	ac	75.9039
PSRR_GND_Min	db20(y _{max} (v(/Vout_PSRr _{gnd})))	ac	-88.6963
PSRR_VDD_Min	db20(y _{max} (v(/Vout_PSRr _{vdd})))	ac	-80.0152



Company Background



Mikroelektronik has its roots in the design centre established in 1992 under the umbrella of the ITU-ETA Foundation in Istanbul, to provide ASIC solutions, principally to local electronics companies, forming a bridge with the worldwide electronics industry. The design center was transformed into "Mikroelektronik Ltd." in 2004 as a result of a joint initiative by ITU-ETA Foundation and AKÇASU Software Company. In 2010, buying all the shares except for the part belonging to ITU-ETA Foundation, ASELSAN became the main shareholder.

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Electronics Engineering
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4 week