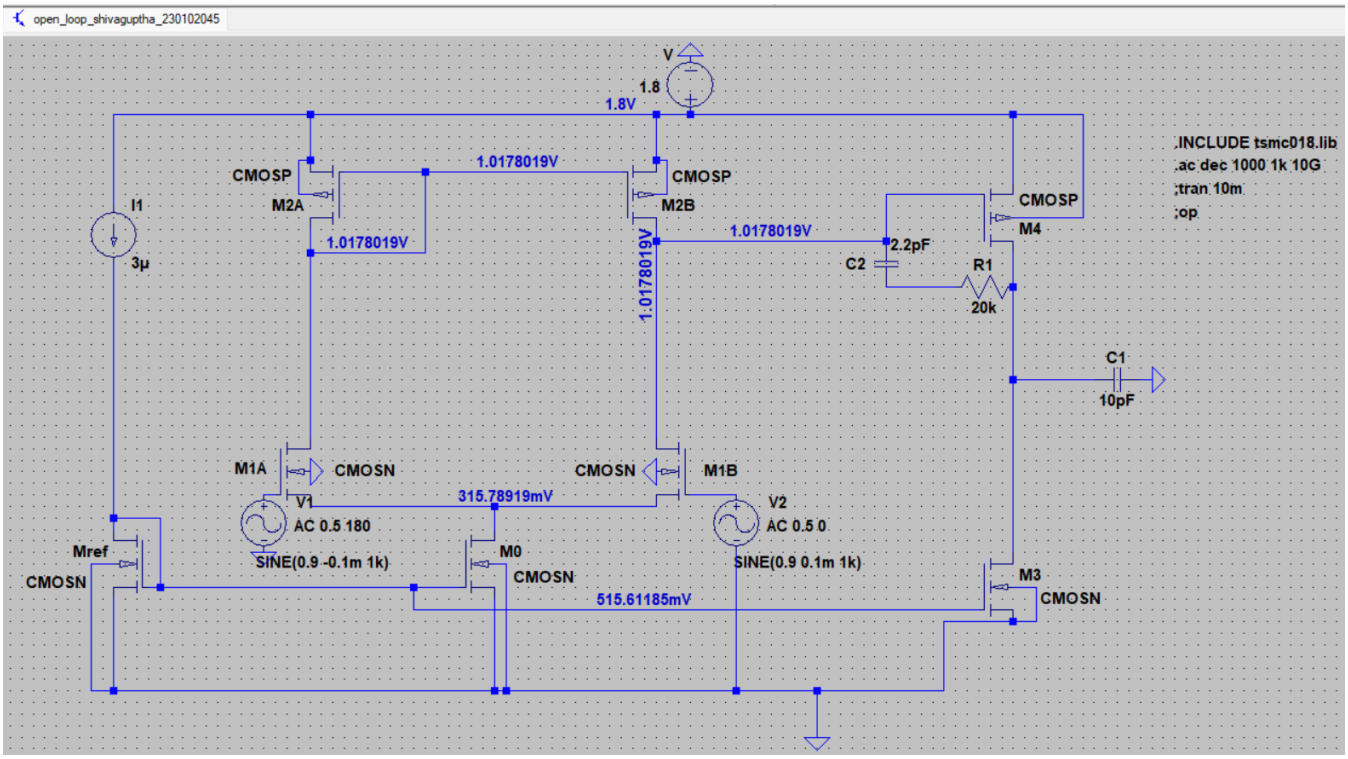
AC Analysis and Step response of Two Stage OTA

Shiva Guptha Kandibanda

230102045

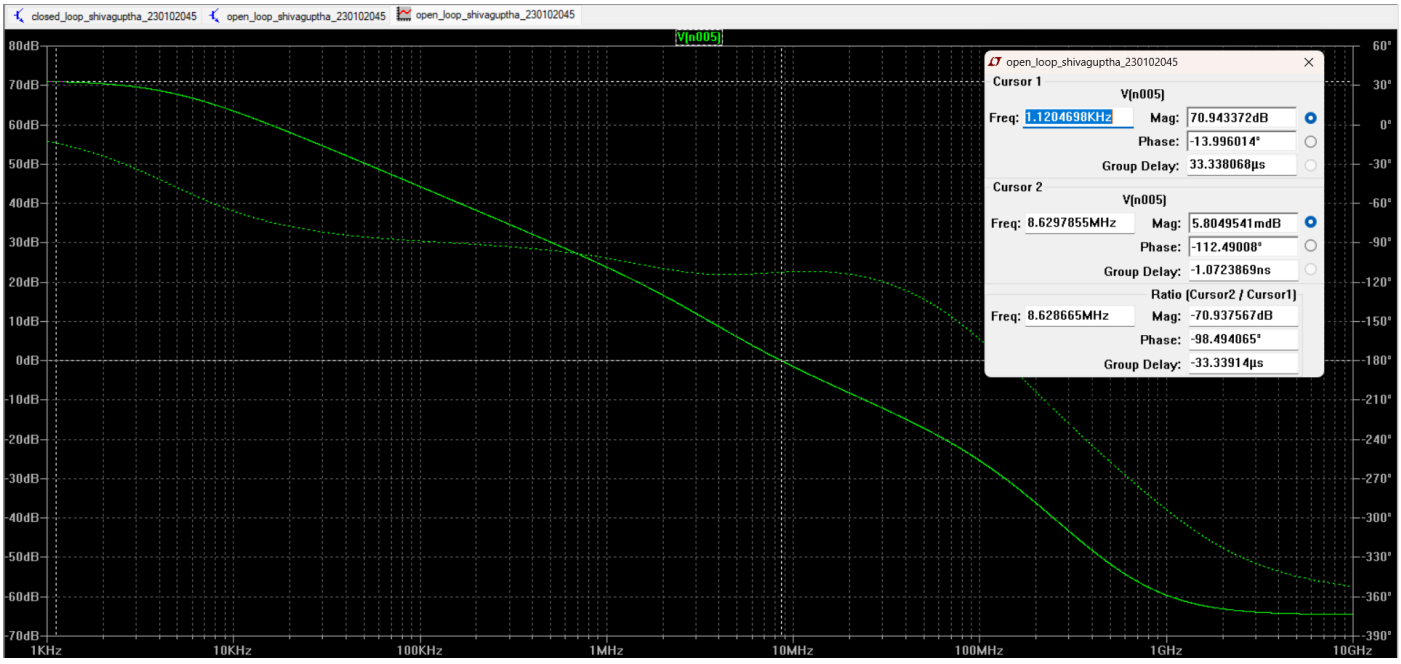
Open Loop Analysis

Circuit Diagram



Cc = 2.2pF, Rz = 20k, CL=10pF

Frequency Response (Open Loop)

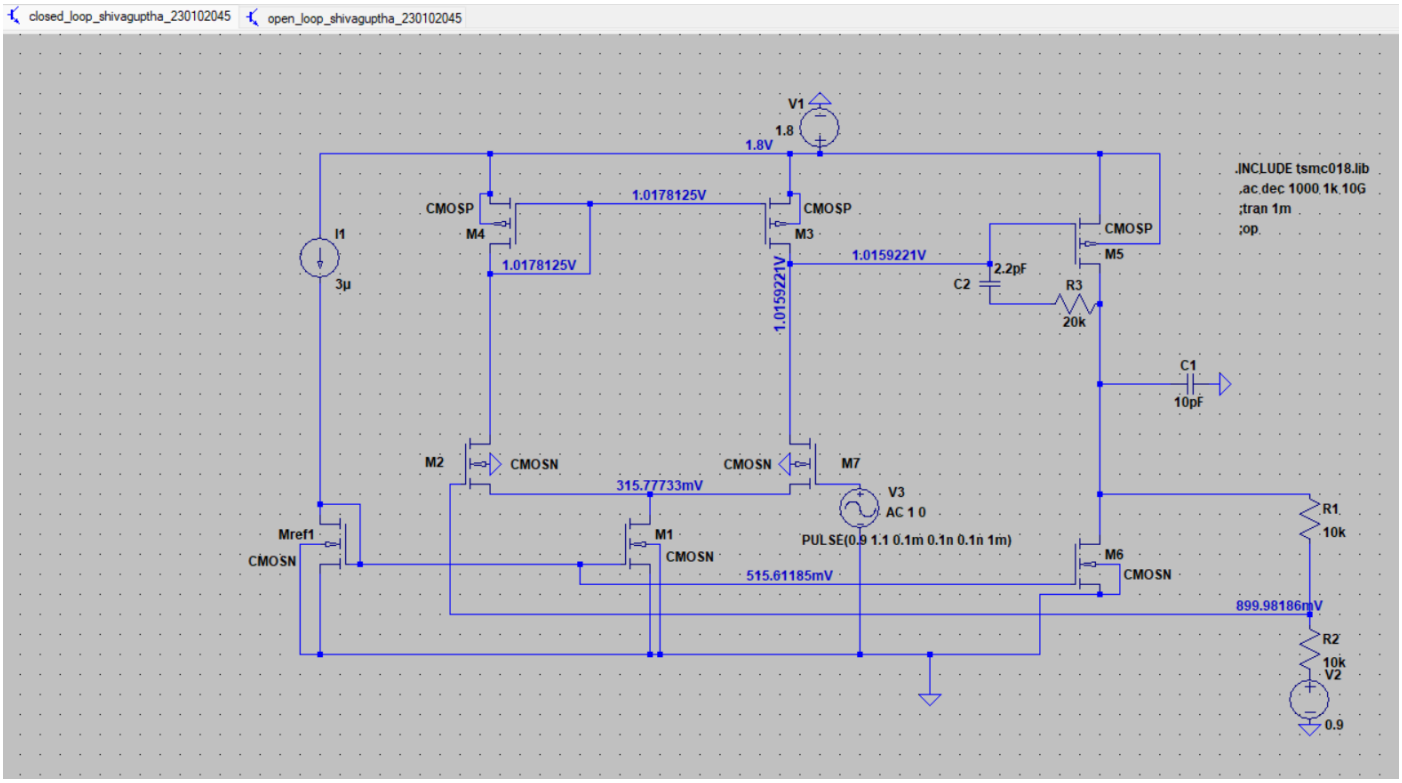


Low frequency gain : 70.94db (3060)

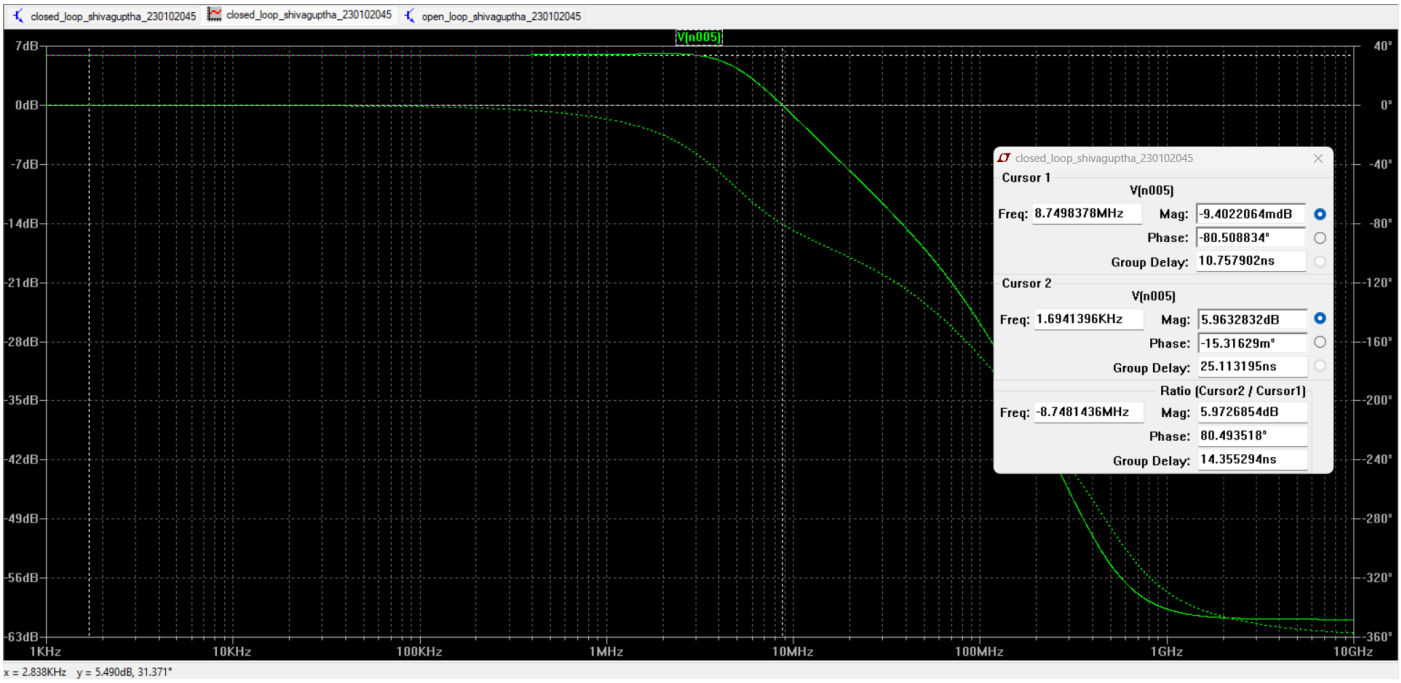
Phase Margin : 67.51 degrees

Closed Loop Analysis

Circuit Diagram



Frequency Response (Closed Loop)

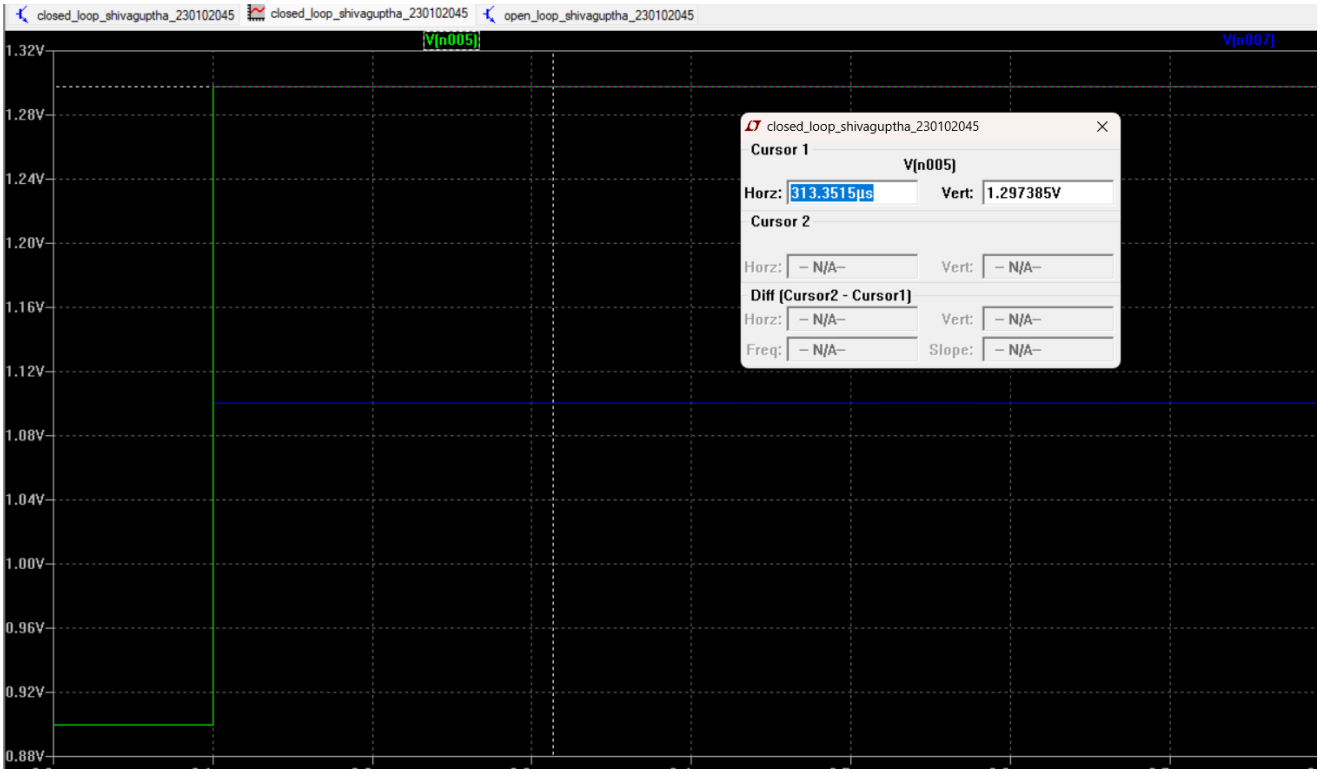


Low Frequency Gain : 5.96db (2)

Phase Margin : 100 degrees

Step Response of Closed Loop Circuit

Step Response

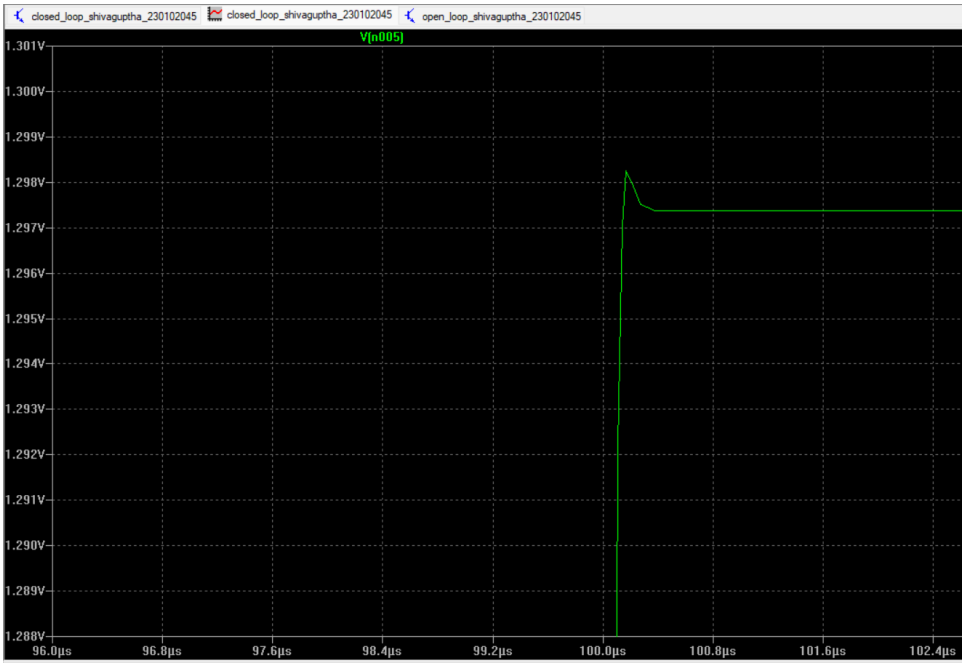


Blue plot is input (offset 0.9, steady state 1.1, Amplitude 0.2)

Green plot is output (offset 0.9, steady state 1.29, Amplitude 0.39)

Gain = 0.39/0.2 = 1.95 ~ 2

Zoomed Version to See Damping



This overshoot here is very low so it’s a good response