

Performance Analysis of 180 nm Low Voltage Low Power CMOS OTA for High Frequency Application

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Abstract : The performance analysis of low voltage low power CMOS OTA is presented in this paper. The differential input single output OTA is simulated in 180nm CMOS process technology. The simulation results indicate high bandwidth of the order of 7.04GHz with 0.766mW power consumption and transconductance of -71.20dB. The total harmonic distortion for 100mV input at a frequency of 1MHz is found to be 2.3603%. In addition to this, to establish comparative analysis of designed OTA and analyze effect of technology scaling, the differential input single output OTA is further simulated using 350nm CMOS process technology and the comparative analysis is presented in this paper.

Keywords : Operational Transconductance Amplifier, Total Harmonic Distortions, low voltage/low power, power dissipation

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