

# On the Design of Fully Differential Operational Amplifiers with High Gain-Bandwidth Product

István KOVÁCS, Anamaria OROS, Marius NEAG

## Abstract

*This paper presents the analysis and design of a two stage fully differential telescopic operational amplifier with and without gain-boosting. The op-amps were designed in a 0.35 $\mu$ m CMOS process, with 3V supply. Results of Spectre simulations are presented, showing open-loop gains larger than 75dB, gain-bandwidth products close to 410 MHz for phase margin larger than 60°. Conclusions are drawn based on the comparison between the two op-amp structures.*