# Abstracts

## 1/f noise of NMOS and PMOS transistors and their implications to design of voltage controlled oscillators

*K.K. O, Namkyu Park and Dong-Jun Yang. "1/f noise of NMOS and PMOS transistors and their implications to design of voltage controlled oscillators." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 59-62.*

Low frequency noise of NMOS and PMOS transistors in a 0.25 /spl mu/m foundry CMOS process with a pure SiO/sub 2/ gate oxide layer is characterized for the entire range of MOSFET operation. Surprisingly, the measurement results showed that surface channel PMOS transistors have about an order of magnitude lower 1/f noise than NMOS transistors especially at V/sub GS/-V/sub TH/ less than /spl sim/0.4 V The data were used to show that a VCO using all surface channel PMOS transistors can have /spl sim/14 dB lower close-in phase noise compared to that for a VCO using all surface channel NMOS transistors.

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