Abstracts

Improved quality-factor of 0.18-/spl mu/m CMOS active inductor by a feedback resistance design

Chao-Chih Hsiao, Chin-Wei Kuo, Chien-Chih Ho and Yi-Jen Chan. "Improved quality-factor of 0.18-/spl mu/m CMOS active inductor by a feedback resistance design." 2002 Microwave and Wireless Components Letters 12.12 (Dec. 2002 [MWCL]): 467-469.

A novel CMOS active inductor approach, which can improve the quality-factor, was presented in this report. A cascode-grounded active inductor circuit topology with a feedback resistance was proposed, which can substantially improve its equivalent inductance and quality-factor. This feedback resistance active inductor was implemented by using a 0.18-/spl mu/m 1P6M CMOS technology, which demonstrates a maximum quality-factor of 70 with a 5.7-nH inductance at 1.55 GHz, where the self-resonant frequency is 2.5 GHz. The dc power consumption of this active inductor is less than 8 mW.

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