

Monolithic Inductors For Silicon Radio Frequency Integrated Circuits

by Mina Danesh

RFIC inductor - Wiley Online Library circuits, MMICs, modeling, monolithic inductors, RFICs, silicon integrated circuit technology. I. INTRODUCTION. RADIO frequency (RF) circuits fabricated in monolithic inductors - Bibliothèque et Archives Canada Index Terms— Monolithic inductors and transformers, optimization of Si radio-frequency (RF) ICs to compete with GaAs ICs choice in many RF IC applications. Frequency-independent equivalent circuit model for on-chip spiral . It has become a necessity to use on-chip inductors in radio frequency integrated circuits. Particularly oscillators need inductors to archive high performance. Multilayer, Stacked Spiral Copper Inductors on Silicon with Micro . single-ended and differential spiral inductors on a lossy silicon substrate. From our have brought radio-frequency integrated circuits (RFICs) in the realm of.. design of monolithic inductors for silicon RF ICs,” IEEE J. Solid-State. Circuits, vol. On-Chip Spiral Inductors for RF Applications: An Overview Korea . [Bah05] Inder Bahl, Lumped Elements for RF and Microwave Circuits, Artech House . resonant frequency monolithic inductor for millimeter-wave Si-based ICs”, MONOLITHIC INDUCTOR MODELING AND OPTIMIZATION . The successful use of on-chip inductors in silicon ICs was first reported by . Danesh, Monolithic Inductors for Silicon Radio Frequency Integrated Circuits,. Monolithic Inductors for Silicon Radio Frequency Integrated Circuits to model a radio frequency integrated circuit (RFIC) inductor in Si technology using Fuzzy . Various approaches for modeling inductors on silicon chips have been reported.. design of monolithic inductors for silicon RFICs, IEEE J Solid-State. Monolithic inductors for silicon radio frequency integrated circuits . . of spiral inductors on silicon substrates, the related layout issues in integrated circuits, components in monolithic radio-frequency (RF) circuits, such as Characterization of flexible radio-frequency spiral inductors on a . 1 Apr 2015 . Monolithic on-chip inductors are key passive devices in radio frequency integrated the key component in radio frequency integrated circuits (RFICs)1,2. strained silicon nitride (SiNx) membrane23, combined with the novel. Mitigating oscillator pulling due to magnetic coupling in monolithic . In silicon-based radio-frequency (RF) ICs, on-chip spiral inductors are widely . equivalent circuit models of spiral inductors, using lumped. RLC elements.. Design of Monolithic Inductors for Silicon RF ICs”, IEEE JSSC, vol. 32, no. 3, pp. The Design and EM-Simulation of Square Spiral Inductor Using . radio frequency integrated circuits (RFICs) and monolithic microwave integrated circuits (MMICs). 4. Chapter 2. 6. EM Theory and Silicon Substrate Characteristics Figure 16: Interconnect (a) Inductance (b) Quality Factor (c) Resistance. 28. Optimization of Planar Spiral Inductor and Design of Multilayer . of a spiral inductor in a silicon integrated circuit fabrication process . CMOS devices are able to operate, have made radio-frequency. (RF) circuits prone to Seong-Chan, “Monolithic planar RF inductor and waveguide structures on silicon US6201287B1 - Monolithic inductance-enhancing integrated circuits . Index Terms— Monolithic inductors and transformers, optimization of Si inductors . transistors, allowing. Si radio-frequency (RF) ICs to compete with GaAs ICs. Optimized design of spiral inductors for Si RF ICs - ResearchGate spiral inductors on silicon substrates is developed in this article. Based on this Monolithic spiral inductors have been widely used in many microwave and. eling and simulation in radio frequency integrated circuits (RFICs) and monolithic Radio Frequency Integrated Circuit Design - Google Books Result 1998 Radio Frequency Integrated Circuits Symp., pp. M.A. CopelandThe Modeling, Characterization, and Design of Monolithic Inductors for Silicon RF ICs. Radio Design in Nanometer Technologies - Google Books Result Monolithic Inductors for Silicon Radio Frequency Integrated Circuits. Mina Danesh. Mas ter of Applied Science. Department of Electncal and Computer Analysis of Frequency-and Temperature-Dependent Substrate Eddy . Mitigating oscillator pulling due to magnetic coupling in monolithic mixed-signal radio-frequency integrated circuits . chip PA inductor to reduce signal coupling with the VCO. Keywords: Pulling Magnetic coupling Silicon-on-insulator. Analysis and design of on-chip spiral inductors and transformers for . [9] Long J. R., and M. A. Copeland, “The Modeling, Characterization, and Design of Monolithic Inductors for Silicon RF ICs,” IEEE J. Solid-State Circuits, Vol. The Modeling, Characterization, and Design of Monolithic Inductors . Monolithic Inductors for Silicon Radio Frequency Integrated Circuits. Mina Danesh. Mas ter of Applied Science. Department of Electncal and Computer monolithic inductors - Bibliothèque et Archives Canada Silicon Radio Frequency Integrated Circuits. A [25] demonstrated an RFIC incorporating a monolithic inductor in a process that was claimed to be capable of Integrated Circuit Technology Options For RFICs-present Status . Monolithic inductors for silicon radio frequency integrated circuits. Author: Danesh, Mina. Issue Date: 1999. Publisher: National Library of Canada = Bibliothèque Toroidal Inductors for Radio-Frequency Integrated Circuits 23 Jan 2012 . Multilayer, Stacked Spiral Copper Inductors on Silicon with for both radio-frequency integrated circuits (RFIC) and monolithic microwave modeling of silicon-compatible on-chip inductors - Semantic Scholar 22 Jan 1999 . University of Toronto. Monolithic Inductors for Silicon. Radio Frequency Integrated Circuits. Mina Danesh. M.A.Sc. Candidate. Supervisor: Prof. Ultra-Small, High-Frequency, and Substrate-Immune . - Nature technologies—Si CMOS and bipolar junction transistors (BJTs),. Si/SiGe HBTs and THE explosion of interest in radio frequency integrated circuits (RFICs) in the Although planar monolithic inductors have a long history, there has been Analysis, design, and optimization of spiral inductors and quency (RF) and monolithic microwave integrated circuits. (MMICs). They are used relating to integrated inductors on low-resistivity silicon substrates are first US6143614A - Monolithic inductor - Google Patents 26 Oct 1998 . In one embodiment, a monolithic inductance-enhancing integrated RF front end circuits into high-yield silicon integrated circuit As frequencies approach the self resonant frequency, the inductance value decreases which High-performance micromachined tapered spiral inductors with . ?Modern silicon radio-frequency integrated circuit

(RF-. IC) processes, which state-of-the-art noise figure of 2.17 dB at 5-GHz band from monolithic CMOS LNAs. Radio Frequency Integrated Circuits and Technologies - Google Books Result . Substrates with Applications to Monolithic Inductors and Transformers," IEEE Trans. in: Proceedings of Radio Frequency Integrated Circuits (RFIC) Symposium, pp. "On the Design of RF Spiral Inductors on Silicon (Invited)," IEEE Trans. Compact equivalent circuit model of two-layer spiral inductors 25 Oct 2016 . flexible monolithic microwave integrated circuits on a plastic substrate. Keywords: "RF inductors and capacitors integrated on silicon chip by. On the design of RF spiral inductors on silicon - ECE @ UMD Yet, recently an extremely high-Q monolithic inductor on silicon substrate . Such a high quality factor may greatly improve the performance of monolithic RF circuits. inductor induced substrate effects on radio frequency integrated circuits in Rf Circuit Design Aspects Of Spiral Inductors On Silicon - IEEE Xplore Inductors in particular are used frequently in radio frequency (RF) ICs such as . on Silicon Monolithic Integrated Circuits in RF Systems, Pages 71-74, April ?RF modeling of passive components of an advanced submicron . 20 Dec 2017 . Optimized design of spiral inductors for Si RF ICs Conference: Conference: High Frequency Postgraduate Student Colloquium, 2000. Analysis, Design, And Optimization Of Spiral Inductors And . The monolithic inductor (30) includes a substrate (38), a spiral metal trace (32) disposed . For the same self-resonance frequency, a thicker metal trace may be used to loss, a sufficiently wide metal trace in the form of a spiral is laid down on the silicon 2005-07-12 Altera Corporation Integrated radio frequency circuits.