

Tuned LNA for RFICs using boot-strapped inductor

F. Albertoni, L. Fanucci, B. Neri and E. Sentieri. "Tuned LNA for RFICs using boot-strapped inductor." 2001 Radio Frequency Integrated Circuits (RFIC) Symposium 01. (2001 [RFIC]): 83-86.

In this paper, the principle of operation of a new type of active inductor and its application to a tuned LNA are described. The design is optimized at 1.8 GHz. An integrated transformer in connection with a current amplifier realizes a "boot-strapped" inductor with a $L/spl \times Q$ factor never obtained before at this frequency. This way a selective LNA with a 60 MHz bandwidth, corresponding to a Q of 30, was designed. The circuit exhibits a matched noise figure of 1.8 dB with 25.5 dB transducer power gain while dissipating 20.7 mW from a 3 V power supply.

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