Abstracts

F-inductor and BC-MOS technology for monolithic silicon RFICs

J.S. Kim, C.H. Park, S.H. Kim, G.H. Ryu and K. Seo. "F-inductor and BC-MOS technology for monolithic silicon RFICs." 1998 Radio Frequency Integrated Circuits (RFIC) Symposium 98. (1998 [RFIC]): 165-168.

A high performance spiral inductor and a RF-optimized MOSFET are developed for monolithic silicon RF application. The new inductor is made on the standard CMOS processed wafer using flip-chip bonding technology. Its floating-in-air structure enables to achieve more than 18 GHz resonant frequency at 4.8 nH inductance, as well as the good Q-factor. The RF-optimized MOSFET adopts the buried channel and the profiled junction structure for larger Gm and smaller C/sub GD/. The measurement results show the improvement of Gm by 30% and f/sub T/, by 45%, and the decrease of C/sub GD/ by 52%, compared with that of the conventional MOSFET.

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