Abstracts

A 2.4-GHz/5-GHz CMOS low noise amplifier with high-resistivity ELTRAN(R) SOI-Epi/sup TM/ wafers

J. Kodate, M. Ugajin, T. Tsukahara, T. Douseki, N. Sato, T. Okabe, K. Ohmi and T. Yonehara. "A 2.4-GHz/5-GHz CMOS low noise amplifier with high-resistivity ELTRAN(R) SOI-Epi/sup TM/ wafers." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1419-1422 vol.3.

The performance of radio frequency integrated circuits (RFICs) in silicon-on-insulator (SOI) technology can be improved by using a high-resistivity SOI substrate. We investigated the correlation between substrate resistivity and the performance of a low noise amplifier (LNA) on ELTRAN SOI-Epi wafers, whose resistivity can be controlled precisely. The use of high-resistivity ELTRAN wafers improves the Q-factor of spiral inductors, and increases the gain and narrows the bandwidth of the LNA.

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