Abstracts

High Selectivity Varactor-Tuned MMIC Bandpass Filter Using Lossless Active Resonators (1994 [MCS])

U. Karacaoglu and I.D. Robertson. "High Selectivity Varactor-Tuned MMIC Bandpass Filter Using Lossless Active Resonators (1994 [MCS])." 1994 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 94.1 (1994 [MCS]): 237-240.

A novel MMIC varactor-tuned bandpass filter technique using lossless active resonators has been demonstrated. The resonator has a simple topology and uses only one FET, and yet can produce high values of negative resistance to compensate for losses in the filter. A monolithic three-resonator lumped-element/active filter design has been realised with a chip area of 3x2 mm^2. The filter has a 120 MHz 3dB bandwidth centred on 2.3 GHz, has 0 dB insertion loss with only ±0.1 dB ripple in the pass-band, and gives up to 100 dB of stop-band attenuation at low frequencies, and over 50 dB of rejection up to 6 GHz.

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