Abstracts

New cross-coupled filter design using improved hairpin resonators

Sheng-Yuan Lee and Chih-Ming Tsai. "New cross-coupled filter design using improved hairpin resonators." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2482-2490.

Stepped-impedance resonators have been thoroughly studied in this paper. Two equations for odd- and even-mode resonance are derived from a new network model. The size and resonant frequencies of the resonator could then be designed based on these two equations. A new resonator-embedded cross-coupled filter, constructed by stepped-impedance hairpin resonators and miniaturized hairpin resonators is presented. This new filter is very compact and has lower spurious response. A 0/spl deg/ feed structure, which adds two transmission zeros to the filter response, is also studied. The two zeros are so close to the passband that the selectivity and out-of-band rejection of the filter are significantly increased. The design has been verified by experiment results.

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