

A Simple Technique for the Design of MMIC 90° Phase-Difference Networks

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In this paper, a simple technique for the design of broadband 90° phase-difference networks, using balanced and unbalanced all-pass network topologies, is presented. In the developed method, the element values of the structures are calculated as function of two design variables: Q/ω and r . Utilizing this approach, a 90° phase shifter has been realized, having less than 2° phase error and better than 0.5 dB amplitude error in the operating band from 0.7 to 3.5 GHz.

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