Abstracts

Broad-Band Directional Couplers Using Microstrip with Dielectric Overlays

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This paper presents the development of two microwave integrated circuit (MIC) broad-band, high-performance directional couplers with dielectric overlays. The respective nominal coupling values of these components are 6 and 10 dB with useful bandwidths in excess of 3.4:1. Thorough descriptions of the design procedure, performance, and fabrication techniques are presented in sufficient detail to permit duplication of these couplers. The computer-aided design method used to develop these couplers is modeled to treat parallel-coupled microstrip lines with a dielectric overlay and is also suitable for developing directional filters and Schiffman phase shifters of similar construction. This and other design methods available for developing dielectric-overlay couplers are reviewed with particular attention given to related technological areas that warrant further investigation.

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