Abstracts

Broadside-Coupled Coplanar Waveguides and Their End-Coupled Band-Pass Filter Applications

C. Nguyen. "Broadside-Coupled Coplanar Waveguides and Their End-Coupled Band-Pass Filter Applications." 1992 Transactions on Microwave Theory and Techniques 40.12 (Dec. 1992 [T-MTT] (1992 Symposium Issue)): 2181-2189.

New broadside-coupled coplanar waveguides, suitable for applications requiring wide bandwidths, tight couplings, and large mode effective-dielectric-constant ratios, are presented. Their analysis and investigation are described. Simple equations relating the per-unit-length capacitances of the c- and pi-modes and the per-unit-length capacitance matrices of the coupled structures to those obtained when applying even- and odd-symmetric voltages are also derived. New broadside end-coupled band-pass filters have been developed at X-band (8-12 GHz) with less than 1.5 and 1.0 dB passband insertion losses using the proposed four-ground-plane and two-ground-plane coplanar waveguide structures, respectively. Good agreement between the experimental results and those predicted theoretically was also observed.

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