Abstracts

Slit-Coupled Strip Transmission Lines

S. Yamamoto, T. Azakami and K. Itakura. "Slit-Coupled Strip Transmission Lines." 1966 Transactions on Microwave Theory and Techniques 14.11 (Nov. 1966 [T-MTT]): 542-552.

Two types of slit-coupled strip-line configuration are presented which are especially useful for the realization of multi-section components using printed-circuit techniques. The slit-coupled configurations described consist of a pair of strips oriented face to face and either parallel or perpendicular to the outer ground planes. Coupling is achieved through a longitudinal slit. Exact conformal mapping solutions of the even- and odd-mode characteristic impedances are arranged in the forms of the design equations for both parallel and perpendicular cases. In order to facilitate design, nomograms are presented for the parallel case which give the physical line dimensions in terms of the even- and odd-mode characteristic impedances. Furthermore, the exact design equations for both parallel and perpendicular broadside-coupled strip configurations, which are considered to be special cases of the slit-coupled configurations, are presented. Formulas for the terminating lines are also included. The proposed parallel-coupled strip transmission line configurations permit smooth variation of coupling and applications to a wide variety of circuit components.

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