Abstracts

A Coupled Strip-Line Configuration Using Printed-Circuit Construction that Allows Very Close Coupling

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A new strip-line configuration is presented, applicable to printed-circuit construction, that allows very close coupling to be achieved without esorting to very small coupling gaps and excessively critical dimensions. Graphs of even- and odd-mode fringing capacitances are given. These graphs can be used with simple formulas, which also are given, to determine the dimensions of the configuration that will give specified even- and odd-mode characteristic impedances or shunt capacitances. The usefulness of the graphs and formulas was demonstrated by using them to design 3-db backward-couplers. The performance of the couplers in this new configuration was typical of similar couplers made in more conventional configurations, as expected. However, the devices shown have an advantage in that they can be manufactured by relatively inexpensive and rapid printed-circuit methods and, since the region between the conductors is solid dielectric, they are unusually rugged.

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