Abstracts

Field theory analysis of conically shaped coupling elements in dual mode filters and polarizers

U. Balaji and R. Vahldieck. "Field theory analysis of conically shaped coupling elements in dual mode filters and polarizers." 1997 MTT-S International Microwave Symposium Digest 3. (1997 Vol. III [MWSYM]): 1247-1250.

The S-parameters of conically shaped coupling elements in dual mode filters and polarizers in circular waveguides have been derived using the mode matching method. The coupling elements are single or double ridges of uniform angular thickness placed at any arbitrary angle to the excitation in order to couple the orthogonal polarizations. Using ridges of this shape enables the analysis entirely in cylindrical coordinates and the evaluation of some of the coupling integrals analytically. A 90/spl deg/ differential phase shift between the orthogonal modes for a polarizer application has also been realized using a double ridged circular waveguide.

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