Abstracts

Asymmetric Coupled Transmission Lines with Anisotropic Coupling

P. Weaver and J.M. Pond. "Asymmetric Coupled Transmission Lines with Anisotropic Coupling." 1990 MTT-S International Microwave Symposium Digest 90.2 (1990 Vol. II [MWSYM]): 669-672.

The characteristics of asymmetric coupled transmission lines are derived for the case of general anisotropic coupling special cases of which are certain geometries of anisotropic materials or from distributed active devices. In addition to deriving the terminal characteristics for the uniform coupled-line four-port case with anisotropic coupling, it is shown that alternate equivalent expressions for the mode impedances and admittances can be derived which have a simplified form. These simplified expressions are useful when examining special cases where a good approximation can be achieved by considering either a generalized anisotropic mutual impedance or a generalized anisotropic mutual admittance.

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