

Characteristics of Single and Coupled Microstrips on Anisotropic Substrates

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In this paper, the effect of an anisotropic substrate on the characteristics of covered microstrip is presented for single and coupled lines. The Green's function is obtained in integral and series form for an arbitrary anisotropic substrate. Computer programs based on the method of moments approach are employed and results are presented in graphical form for impedance Z , coupling constant K , and phase velocity $v_{\text{sub } p}$ as functions of $n_{\text{sub } x} / n_{\text{sub } y}$ (the ratio of the substrate indices of refraction). Z , K , and $v_{\text{sub } p}$ are studied for various w/H , S/H , and B/H ratios where w is the line width ($w_{\text{sub } 1}$ and $w_{\text{sub } 2}$ for coupled lines), S is the separation between coupled lines, B is the separation between ground planes, and H is the substrate thickness.

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