

Abstracts

Analysis of Anisotropic Conductors on Anisotropic Substrates

M.A. Megahed and S.M. El-Ghazaly. "Analysis of Anisotropic Conductors on Anisotropic Substrates." 1995 MTT-S International Microwave Symposium Digest 95.2 (1995 Vol. II [MWSYM]): 353-356.

A full-wave finite-difference time-domain technique is used to study the anisotropy associated with anisotropic conductors on anisotropic substrates. The scheme is applied to analyze high temperature superconductor (HTS) YBCO film deposited on anisotropic sapphire substrate. The effect of the anisotropy on the performance of the coplanar wave guide and the microstrip line is evaluated. The losses and the dispersion characteristics, as well as the current distributions inside the HTS, are calculated. It is shown that the 90° r-cut sapphire substrate structure has lower loss and lower effective dielectric constant than the 0° r-cut substrate.

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