Abstracts

Cylindrical Dielectric Resonators and Their Applications in TEM Line Microwave Circuits

M.W. Pospieszalski. "Cylindrical Dielectric Resonators and Their Applications in TEM Line Microwave Circuits." 1979 Transactions on Microwave Theory and Techniques 27.3 (Mar. 1979 [T-MTT]): 233-238.

A cylindrical sample of low-loss high epsilon/sub r/ placed between two parallel conducting plates perpendicular to the sample axis forms a microwave resonator. A simple approximate method for predicting the resonant frequencies of the TE modes of this structure is developed. The method becomes exact for the fitting case of this structure which is known as a dielectric post resonator. In all cases, the accuracy of the method is shown to be better than 3.5 percent. The TE/sub 01delta/ mode chart presented allows the determination of the resonant frequency and the tuning range of any cylindrical dielectric resonator for which epsilon/sub r/ >or= 10. The properties of the dielectric resonator as a TEM line element are demonstrated experimentally.

❑ Return to main document.