Abstracts

Accurate Study of Q-Factor of Resonator by a Finite-Difference Time-Domain Method

C. Wang, B.-Q. Gao and C.-P. Deng. "Accurate Study of Q-Factor of Resonator by a Finite-Difference Time-Domain Method." 1995 Transactions on Microwave Theory and Techniques 43.7 (Jul. 1995, Part I [T-MTT]): 1524-1529.

This paper describes the application of the finite-difference time-domain method to find the resonators' Q-factors. There are some techniques which can be used to reach it. One way is to directly compute the power loss using the surface impedance boundary condition (SIBC). The other is to incorporate the perturbation techniques to calculate the Q-value. The rectangular and cylindrical cavities have been studied by these method. A number of super conductor-sapphire microwave resonators with extra high Q-values have been studied. The results are very good in accuracy.

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