Abstracts

Influence of Conductor Shields on the Q-Factors of a TE /sub 0/ Dielectric Resonator

Y. Kobayashi, T. Aoki and Y. Kabe. "Influence of Conductor Shields on the Q-Factors of a TE /sub 0/ Dielectric Resonator." 1985 Transactions on Microwave Theory and Techniques 33.12 (Dec. 1985 [T-MTT] (1985 Symposium Issue)): 1361-1366.

Two approaches due to the complex frequency and to the perturbation theory are described to compute accurately the Q-factors of the circularly-symmetric TEO modes for dielectric rod resonators placed between two parallel conductor plates and in a conductor cavity. These techniques allow us to estimate separately the Q-factors due to radiation, conductor, and dielectric losses from only the computation of resonant frequencies by means of the mode-matching method. Validity of the theories is verified by experiments. The influence of the conductor shields on the Q-factors is discussed from the computed results. A possibility of realizing high-Q dielectric resonators is suggested.

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