

Q Factors of Free and Shielded Cylindrical Dielectric Resonators

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In this paper, the radiation quality factor of cylindrical dielectric resonators has been evaluated by solving the characteristic equation of the chosen mode in the complex plane. In all cases this Q factor is too low for practical applications. So in order to prevent the losses by radiation we enclose the dielectric resonator in a metallic cylindrical shield. For such a geometry the unloaded quality factor of the shielded resonator has been calculated.

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