Abstracts

Design of a Multicoupled Loop-Gap Resonator Used for Pulsed Electron Paramagnetic Resonance Measurements

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The purpose of the present paper is to estabtish a method of design for a multicoupled loop-gap resonator used for pulsed electron paramagnetic resonance measurements. For the design of resonator characteristics, the method has an advantage of a systematic approach without iterative calculations. In this design, the number of loop-gap resonators used is first determined from the pass band required as the specifications of the resonator. To satisfy the specifications, electrical parameters of an equivalent circuit and the dimensions of the resonator are estimated. By the proposed method, a prototype resonator which has the operation frequency of 1.3 GHz is designed and fabricated. For the proto-type resonator, the characteristics of the return loss agree with the required ones. As a result, the validity of the design method is experimentally confirmed.

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