

Abstracts

Confocal Resonator Band-Pass Filters (Dec. 1966 [T-MTT])

J. Cohen and J. Taub. "Confocal Resonator Band-Pass Filters (Dec. 1966 [T-MTT])." 1966 Transactions on Microwave Theory and Techniques 14.12 (Dec. 1966 [T-MTT]): 698-699.

Direct-coupled confocal resonators are considered for use as band-pass filters at millimeter wavelengths in this correspondence. In previous work on band-pass filters for millimeter wavelengths, two flat reflectors were used to form resonators; these resonators could not produce high unloaded Q values because of the critical tolerances of maintaining parallelism between reflectors. To overcome these difficulties, resonators with curved spherical surfaces have been used at millimeter wavelengths to achieve high Q. Single-resonator Fabry-Perot interferometers and absorption wavemeters were considered (in these references), and the possibility of using them as band-pass filter elements was suggested. One- and two-resonator band-pass filters are described herein together with experimental data. Emphasis is placed on types of coupling structures, reduction of spurious responses, and an extension to filters of arbitrary numbers of resonators.

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