Abstracts

Confocal Resonator Bandpass Filters (1966 [MWSYM])

J. Cohen and J.J. Taub. "Confocal Resonator Bandpass Filters (1966 [MWSYM])." 1966 G-MTT International Microwave Symposium Digest 66.1 (1966 [MWSYM]): 170-175.

Direct-coupled confocal resonators are considered for use as band-pass filters at millimeter wavelengths in this paper. 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/sub u/. 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. In this summary, one- and two-resonator band-pass filters are described 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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