Abstracts

Study of a combined millimeter-wave resonator

M.A. Shapiro and S.N. Vlasov. "Study of a combined millimeter-wave resonator." 1997 Transactions on Microwave Theory and Techniques 45.6 (Jun. 1997 [T-MTT]): 1000-1002.

We present a theoretical investigation and measurements of a multielement open resonator composed of corrugated waveguides and plane semitransparent reflectors. A periodic-transmission-line model is used to analyze the transverse mode structure and the diffraction Q-factor of the proposed resonator. The setup containing the resonator (equipped with Bragg reflectors), mode converters, and an elliptical mirror is employed for measurements in Ka-band. Two- and three-waveguide-section resonators have been studied. The proposed resonators demonstrate good mode selectivity that permits one to utilize them in high-power millimeter-wave sources.

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