

Title (en)

Miniature dual-mode, dielectric-loaded cavity filter.

Title (de)

Miniaturisiertes Zweifachmodus-Resonator-Filter dessen Hohlräume dielektrische Elemente enthalten.

Title (fr)

Filtre miniaturisé à cavités bi-modes contenant des éléments diélectriques.

Publication

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Application

EP 82300831 A 19820218

Priority

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Abstract (en)

A ceramic resonator element (27) having high Q, high dielectric constant, and a low temperature coefficient of resonant frequency is enclosed within a cavity (3) to form a composite microwave resonator having reduced dimensions and weight as compared to a simple cavity resonator. A pair of tuning screws (29, 31) extend into the cavity (3) along orthogonal axes to tune the structure to resonance along these axes at frequencies near the fundamental resonance of the ceramic element. Several such cavities (3, 5, 7) can be formed in a short length of waveguide by the use of transverse partitions at spaced intervals and coupling between cavities can be accomplished by using simple slot (25), cross (21) or circular irises. In each cavity, a mode-perturbing screw (33) is positioned along an axis 45 DEG from each of the orthogonal tuning screws (29, 31), such that resonance along either of the orthogonal axes is coupled to excite resonance also along the other. The realization of complex filter functions requiring cross couplings is feasible by means of coupling separately to only one of the two orthogonal resonant modes in the cavities.

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IPC 8 full level

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CPC (source: EP)

H01P 1/2086 (2013.01); **H01P 7/105** (2013.01)

Citation (search report)

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- [Y] 5th EUROPEAN MICROWAVE CONFERENCE, 1st to 4th September 1975, pages 407-411, Sevenoaks, Kent (GB);
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- [A] L'ONDE ELECTRIQUE, vol. 60, no. 2, February 1980, pages 57-64, Paris (FR);
- [A] IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, vol. MTT-28, no. 10, October 1980, pages 1077-1085, New York (USA);
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