

Title (en)

THERMALLY-COMPENSATED MICROWAVE RESONATOR UTILIZING VARIABLE CURRENT-NULL SEGMENTATION

Publication

EP 0155296 B1 19900307 (EN)

Application

EP 84903381 A 19840604

Priority

US 50957283 A 19830630

Abstract (en)

[origin: WO8500698A1] In a microwave resonator (100 in Fig. 1), a variable cavity-wall segmentation (105) along the location of a propagational current null is employed for thermalcompensation purposes by utilizing it in conjunction with supplemental mechanisms (170, 175) which operate to counteract thermally-induced variations in the resonator's characteristic geometry. Because dimensional variations at a current null will have minimum impact on resonator coupling parameters, a variably-configured current-null segmentation serves in a minimal-impact fashion to absorb those thermally-induced dimensional variations which occur transverse to the null. Of the three specific mechanisms disclosed for variational counteraction in the typical context of a resonator having both longitudinal and transverse extent with respect to a propagational axis, the first is a thermally-invariant assembly which provides thermal stabilization by inhibiting variations in the resonator's characteristic longitudinal extent. The second is a thermally-responsive structure (470 in Fig. 4) configured to provide thermal compensation by affirmatively introducing longitudinal variations which are inversely proportional to otherwise-uncompensated transverse variations. The third mechanism, which may be employed in conjunction with either of the other two and which may take the form of thermally-invariant inserts configured as part of the resonant cavity's longitudinal walls, provides a further degree of thermal stabilization by inhibiting thermally-induced variations in the resonator's characteristic transverse dimensions.

IPC 1-7

H01P 1/30; **H01P 7/06**

IPC 8 full level

H01P 1/30 (2006.01); **H01P 7/06** (2006.01)

CPC (source: EP)

H01P 1/30 (2013.01); **H01P 7/06** (2013.01)

Cited by

DE19620594A1; US5889803A

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

WO 8500698 A1 19850214; AU 3430284 A 19850304; AU 577064 B2 19880915; CA 1219046 A 19870310; DE 3481572 D1 19900412; EP 0155296 A1 19850925; EP 0155296 B1 19900307; JP S60501736 A 19851011

DOCDB simple family (application)

US 8400866 W 19840604; AU 3430284 A 19840604; CA 457788 A 19840628; DE 3481572 T 19840604; EP 84903381 A 19840604; JP 50344084 A 19840604