

Title (en)

Temperature compensated coaxial cavity resonator using anisotropic material

Title (de)

Temperaturkompensierter Koaxial-Hohlraumresonator mit anisotropen Material

Title (fr)

Résonateur de cavité coaxial à température compensée utilisant un matériau anisotrope

Publication

EP 2083471 A1 20090729 (EN)

Application

EP 08101021 A 20080128

Priority

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Abstract (en)

The invention relates to cavity resonators for usage in the field of telecommunications, notably radio frequency and microwave radio communications. A cavity resonator operable to exhibit a resonance frequency is disclosed, comprising a housing (41) made of a material with a first thermal expansion coefficient in the first direction and a first plate (42) made of a material with a first thermal expansion coefficient in a second direction, essentially perpendicular to the first direction. The cavity resonator further comprises an inner conductor (44) made of a material with a second thermal expansion coefficient in the first direction and a second plate (40) made of the same material as the inner conductor (44) with a second thermal expansion coefficient in the second direction. The cavity resonator is characterized in that the first and the second thermal expansion coefficient in the second direction are such that the mechanical stress at the joint between the first plate (42) and the housing (41) and the mechanical stress at the joint between the second plate (40) and the housing (41) caused by a significant temperature change is essentially zero. Furthermore the first and the second thermal expansion coefficient in the first direction are such that the resonance frequency remains within a preset bound, which is essentially zero, over the significant temperature change. Furthermore, as method for making such a cavity resonator is disclosed.

IPC 8 full level

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CPC (source: EP)

H01P 7/04 (2013.01); **H01P 11/008** (2013.01)

Citation (applicant)

EP 1760824 A1 20070307 - MATSUSHITA ELECTRIC IND CO LTD [JP]

Citation (search report)

- [X] EP 1760824 A1 20070307 - MATSUSHITA ELECTRIC IND CO LTD [JP]
- [X] WO 2006058965 A1 20060608 - FILTRONIC COMTEK OY [FI], et al
- [A] US 2103515 A 19371228 - CONKLIN JAMES W, et al

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