

Title (en)

Method of construction of a helical delay line and travelling-wave tubes utilising this method of construction.

Title (de)

Verfahren zur Herstellung einer wendelförmigen Verzögerungsleitung und Wanderfeldröhren zur Anwendung dieser Baumethode.

Title (fr)

Mode de construction d'une ligne à retard à hélice et tubes à ondes progressives utilisant ce mode de construction.

Publication

EP 0401065 A1 19901205 (FR)

Application

EP 90401213 A 19900507

Priority

FR 8907081 A 19890530

Abstract (en)

The invention relates to a method of construction in relation to helical travelling-wave tubes in which the helix (1) is supported by dielectric supports (3) ensuring insulation, characterised in that the dielectric supports are in their turn supported by support-forming elements (4) which project relative to the lower wall of the vacuum-sealed envelope 2 surrounding the whole, towards the helix, this reducing the radial dimensions of the dielectric supports. In most embodiments, these novel support-forming elements are metallic. The invention makes it possible to greatly simplify the construction of low-dispersion delay lines for very wide band travelling-wave tubes whilst increasing the precision of assembly which it is possible to obtain. An additional advantage of the reduction in the radial dimensions of the dielectric is an improvement in the possibilities for thermal conduction from the helix to the envelope which surrounds the whole. Another advantage of this reduction is the possibility of using expensive dielectric materials such as diamond or boron nitride with face-centred cubic lattice. <IMAGE>

IPC 1-7

H01J 23/26

IPC 8 full level

H01J 23/26 (2006.01); **H01P 9/00** (2006.01); **H01P 11/00** (2006.01)

CPC (source: EP US)

H01J 23/26 (2013.01 - EP US)

Citation (search report)

- [A] US 3397339 A 19680813 - BEAVER WILLIAM L, et al
- [A] US 4264842 A 19810428 - GALUPPI PAOLO
- [A] US 4689276 A 19870825 - JACQUEZ ANDREW E [US]
- [A] EP 0004492 A2 19791003 - THOMSON CSF [FR]
- [AP] EP 0347624 A1 19891227 - SIEMENS AG [DE]

Cited by

EP0462863A1; EP0507195A3; FR2787918A1; US6483243B1; WO0039832A3

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0401065 A1 19901205; EP 0401065 B1 19950705; DE 69020644 D1 19950810; DE 69020644 T2 19951130; FR 2647953 A1 19901207; FR 2647953 B1 19910816; JP H0320933 A 19910129; US 5132592 A 19920721

DOCDB simple family (application)

EP 90401213 A 19900507; DE 69020644 T 19900507; FR 8907081 A 19890530; JP 13517190 A 19900524; US 52805290 A 19900523