

Title (en)  
Matched microwave variable attenuator

Title (de)  
Angepasstes veränderbares Mikrowellendämpfungsglied

Title (fr)  
Atténuateur micro-ondes variable adapté

Publication  
**EP 1544941 B1 20080409 (EN)**

Application  
**EP 03425804 A 20031217**

Priority  
EP 03425804 A 20031217

Abstract (en)  
[origin: EP1544941A1] The invention discloses a variable attenuator consisting of a dielectric substrate supporting a microstrip layout plus some discrete components mounted on it, comprising: 1) a first branch connected between the input and output ports of the attenuator including a transmission line with a given characteristic impedance  $Z_0$  along which two contiguous tracts of  $\lambda/4$  electrical length at the centre of the operating frequency band is delimited in order to constitute a first line section (LIN1); 2) a first pin diode connected across the first line section between the two  $\lambda/4$  tracts; 3) a second branch connected in parallel to the first one, including a series connection of a second line section (LIN2) having  $\lambda/2$  electrical length and impedance  $Z$ , and two fixed resistors  $R_0 = Z_0$ ; 4) a second pin diode (R2) connected between ground and either the two fixed resistors  $R_0$  either one of the ends of the second line section (LIN2) when interposed between the two  $R_0$  resistors. The two diodes are serially biased. 5) pin diode DC-bias control means (AI) for varying the resistance of the two pin diodes of the same entity. The impedance  $Z$  of the second line section (LIN2) can be either equal to, or different from,  $Z_0$ . In the former case the two microstrips can be either parallel straight-line or semicircular lines forming a ring. In the second case,  $Z \neq Z_0$ , the metallic layout is differently shaped (fig.3b and 3c). <IMAGE> <IMAGE>

IPC 8 full level  
**H01P 1/22** (2006.01)

CPC (source: EP)  
**H01P 1/227** (2013.01)

Cited by  
RU2469443C1; US8279019B2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)  
**EP 1544941 A1 20050622; EP 1544941 B1 20080409**; AT E392022 T1 20080415; DE 60320271 D1 20080521; DE 60320271 T2 20090514

DOCDB simple family (application)  
**EP 03425804 A 20031217**; AT 03425804 T 20031217; DE 60320271 T 20031217