

Title (en)

Matching and isolating arrangement with ferrite circulator.

Title (de)

Anpassungs- und Einweganordnung mit Ferritzirkulator.

Title (fr)

Dispositif d'adaptation et d'isolement comportant un circulateur à ferrites.

Publication

EP 0100274 A1 19840208 (FR)

Application

EP 83401483 A 19830719

Priority

FR 8213105 A 19820727

Abstract (en)

1. A matching and isolating device for coupling a circuit to be matched (1) to a connection point (A), the device comprising a ferrite circulator having three branches (41, 42, 43) made of a metal plate comprising a resonator disk, the three branches being disposed there around at a mutual angular distance of 120 degrees, the first branch being connected to this connection point (A), the second branch to a biasing resistor (R), the third branch to the circuit to be matched, characterized in that said metal plate is disposed inside a structure constituted by two ground planes situated on either side of the plate, that the lengths of the first and of the second branches (41, 42) are substantially equal to a quarter wavelength in the circulator at a mean frequency, and that this length is substantially greater than that of the third branch (43) which is shown only by way of indication for purposes of connection to the circuit to be matched, and that the circulator is selected in such a way that the real part of the impedance of its third branch is equal to the real part of the impedance of the circuit to be matched and that the Q factors of said impedances are the same.

Abstract (fr)

Un circulateur à ferrites (20) est disposé entre un circuit à adapter (1) et un point de branchement (A) pour jouer le rôle d'isolateur directionnel. Pour assurer l'adaptation du circuit à adapter en évitant d'ajouter un circuit d'adaptation du type résonnant parallèle, il est mis à profit le fait que les impédances d'accès d'un circulateur à ferrites sont assimilables à celles de circuits résonnants parallèles; à cette fin le circulateur est choisi pour que l'impédance de son accès couplé au circuit à adapter (1) corresponde, d'autant près que possible, à l'impédance conjuguée du circuit à adapter. Eventuellement un transformateur d'impédance (3), par exemple, du genre transformateur quart d'onde, ne comportant par d'élément résonnant parallèle, peut être inséré entre le circuit à adapter et le circulateur. Application aux circuits micro-ondes.

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IPC 8 full level

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CPC (source: EP)

H01P 1/387 (2013.01)

Citation (search report)

- [A] US 3922620 A 19751125 - DEUTSCH JOSEF
- [A] US 3935548 A 19760127 - ROSENBAUM FRED J, et al
- [XD] DE 3034034 A1 19820325 - SIEMENS AG [DE]
- [A] DE 1293264 B 19690424 - FUJITSU LTD
- [A] IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, vol. MTT-29, no. 6, juin 1981, pages 572-578, IEEE, New York, USA
- [AD] IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, vol. MTT-13, no. 1, janvier 1965, pages 15-27, New York, USA
- [A] IEEE TRANSACTIONS ON CIRCUIT THEORY, vol. CT-11, no. 3, mars 1964, pages 30-50, New York, USA
- [A] E.A. GUILLEMIN: "INTRODUCTORY CIRCUIT THEORY", pages 305-309, John Wiley & Sons, Inc., Londres, GB.
- [A] IEEE TRANSACTIONS ON MAGNETICS, vol. MAG-11, no. 5, septembre 1975, pages 1270-1272, New York, USA
- [A] IEEE TRANSACTIONS ON ELECTRON DEVICES, vol. ED-15, no. 9, septembre 1968, pages 679-682, New York, USA

Cited by

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