

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets

(11) Publication number:

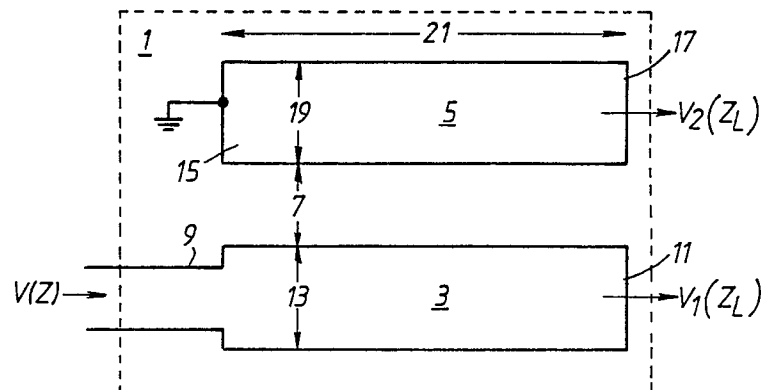
**0 213 864**  
**A3**

(12)

## EUROPEAN PATENT APPLICATION

(21) Application number: **86306357.4**(51) Int. Cl.4: **H01P 5/10**(22) Date of filing: **18.08.86**(30) Priority: **31.08.85 GB 8521727**(43) Date of publication of application:  
**11.03.87 Bulletin 87/11**(84) Designated Contracting States:  
**AT BE CH DE FR IT LI LU NL SE**(88) Date of deferred publication of the search report:  
**07.09.88 Bulletin 88/36**(71) Applicant: **PLESSEY OVERSEAS LIMITED**  
**Vicarage Lane**  
**Ilford Essex IG1 4AQ(GB)**(72) Inventor: **Oxley, Christopher Hunter**  
**67 Brackley Road**  
**Towcester Northants(GB)**  
Inventor: **Holden, Anthony James**  
**53 Pavillon Way**  
**Brackley Northants(GB)**(74) Representative: **Sorenti, Gino**  
**Intellectual Property Department The**  
**Plessey Company plc 2-60 Vicarage Lane**  
**Ilford Essex IG1 4AQ(GB)**(54) **Balun circuits.**

(57) A Balun circuit for an integrated circuit having a small area and constructed using known semi-conductor fabrication processes. The balun circuit comprises two metallic strips (3,5) on a dielectric substrate (1) the strips (3,5) being substantially parallel to one another with a gap (7) there between and the second strip (5) having a length (21) to be equal to a quarter wavelength of the input signal, the values of the gap and strip widths (13,19) being predetermined such that the output impedances of the first and second metallic strips (3,5) respectively are substantially equal.



*Fig. 1.*



EP 86 30 6357

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	US-A-3 991 390 (P.J. CONROY) * Column 2, line 67 - column 3, line 39; figure 4 * ---	1,3,4	H 01 P 5/10
X	EP-A-0 146 086 (POLSKA AKADEMIA) * Page 9, lines 10-13; page 10, lines 7-13; page 13, lines 10-14,24-28; page 15, lines 4-15; figures 1,5-6 *	1,3-7	
Y	---	2	
X	14TH EUROPEAN MICROWAVE CONFERENCE, Liège, 10th - 13th September 1984, pages 166-171, Microwave Exhibitions and Publishers Ltd, Tunbridge Wells, Kent, GB; W. MARCZEWSKI et al.: "The overlapped microstrip for MICs and MMICs" * Whole document * ---	1,3-9	
Y	US-A-3 848 198 (R.E. DE BRECHT et al.) * Figure 8 * ---	2	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	US-A-3 721 912 (G.F. ROSS) * Figures 6,7 * -----	1-9	H 01 P
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27-05-1988	Examiner LAUGEL R.M.L.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document			