

Title (en)

**BARRIER LAYER FOR COPPER METALLIZING**

Title (de)

**BARRIERESCHICHT FÜR KUPFERMETALLISIERUNG**

Title (fr)

**COUCHE D'ARRET POUR METALLISATION AU CUIVRE**

Publication

**EP 1042793 A1 20001011 (DE)**

Application

**EP 98965273 A 19981216**

Priority

- DE 19755869 A 19971216
- EP 9808255 W 19981216

Abstract (en)

[origin: WO9931722A1] The invention relates to an integrated electric circuit with a number of structure levels in which electrically active elements (20, 30, 40) are located on at least one element structure level, whereby at least one insulation layer (320) is arranged above the element structure level. Electric connection leads (330, 340, 350, 360, 410, 420, 430) are arranged within and/or above the insulation layer (320). At least one part of the connection leads (330, 340, 350, 360, 410, 420, 430) contain copper, and at least one diffusion blocker is arranged underneath said connection leads (330, 340, 350, 360, 410, 420, 430). The diffusion blocker impedes and/or prevents the diffusion of copper. According to the invention, this integrated electric circuit is configured such that the diffusion blocker is constructed as a blocker layer (160) which is interrupted only in the area of the contact holes (170, 180, 190, 200, 210, 220) and/or connection pieces. In addition, the blocker layer (160) is located between the element structure level and the insulation layer (320).

IPC 1-7

**H01L 21/285**; **H01L 21/768**; **H01L 23/31**; **H01L 23/532**

IPC 8 full level

**H01L 21/316** (2006.01); **H01L 21/318** (2006.01); **H01L 21/768** (2006.01); **H01L 23/522** (2006.01); **H01L 23/532** (2006.01)

CPC (source: EP KR US)

**H01L 21/76829** (2013.01 - EP US); **H01L 21/76834** (2013.01 - EP US); **H01L 21/76843** (2013.01 - EP US); **H01L 23/53238** (2013.01 - EP US); **H01L 23/5329** (2013.01 - EP US); **H01L 27/00** (2013.01 - KR); **H01L 2924/0002** (2013.01 - EP US)

Citation (search report)

See references of WO 9931722A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**WO 9931722 A1 19990624**; EP 1042793 A1 20001011; JP 2002509354 A 20020326; KR 100417725 B1 20040211; KR 20010032951 A 20010425; US 7064439 B1 20060620

DOCDB simple family (application)

**EP 9808255 W 19981216**; EP 98965273 A 19981216; JP 2000539521 A 19981216; KR 20007006296 A 20000609; US 59586000 A 20000616