

Title (en)

Pumping device using thermal-transpiration micropumps

Title (de)

Pumpvorrichtung mit Mikropumpen, die einen thermischen Transpirationseffekt nutzen

Title (fr)

Dispositif de pompage par micropompes à transpiration thermique

Publication

EP 1531267 A3 20060517 (FR)

Application

EP 04292591 A 20041102

Priority

FR 0312894 A 20031104

Abstract (en)

[origin: EP1531267A2] The device has heat transpiration micropumps (1, 6-9) placed on a semiconductor substrate (5) in several rows (A-D) and columns (a-d). Each micropump has a channel (3) and a heating unit (4) connected in series with a transistor whose base is connected to an output of an AND gate whose respective inputs are connected to a row control conductor and a column control conductor.

IPC 8 full level

B81B 1/00 (2006.01); **F04B 37/06** (2006.01); **B81B 7/02** (2006.01); **F04B 19/00** (2006.01); **F04B 19/24** (2006.01); **F04B 43/04** (2006.01); **F04B 49/06** (2006.01)

CPC (source: EP US)

F04B 19/006 (2013.01 - EP US); **F04B 19/24** (2013.01 - EP US)

Citation (search report)

- [A] US 6533554 B1 20030318 - VARGO STEPHEN E [US], et al
- [A] US 6422823 B2 20020723 - BERNARD ROLAND [FR], et al
- [A] US 5871336 A 19990216 - YOUNG ROBERT M [US]
- [A] US 2002076140 A1 20020620 - KOBRIN BORIS [US]

Designated contracting state (EPC)

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DOCDB simple family (publication)

EP 1531267 A2 20050518; **EP 1531267 A3 20060517**; **EP 1531267 B1 20081203**; AT E416311 T1 20081215; DE 602004018089 D1 20090115; FR 2861814 A1 20050506; FR 2861814 B1 20060203; JP 2005163784 A 20050623; US 2005095143 A1 20050505; US 7572110 B2 20090811

DOCDB simple family (application)

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