

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number  
**WO 2005/064739 A1**

(51) International Patent Classification<sup>7</sup>: **H01P 3/02**

(21) International Application Number:  
PCT/US2004/043548

(22) International Filing Date:  
23 December 2004 (23.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/532,674 24 December 2003 (24.12.2003) US

(71) Applicant (for all designated States except US): **MOLEX INCORPORATED** [US/US]; 2222 Wellington Court, Lisle, IL 60532 (US).

(72) Inventors: **BRUNKER, David, L.**; 407 Verbena Court, Naperville, IL 60565 (US). **DAMBACH, Philip, J.**; 1246 Harvest Court, Naperville, IL 60564 (US). **REGNIER, Kent, E.**; 541 South Grace Street, Lombard, IL 60148 (US). **OGBUOKIRI, Martin, U.**; 502 Spruce Street, Aurora, IL 60506 (US).

(74) Agent: **PAULIUS, Thomas, D.**; Molex Incorporated, 2222 Wellington Court, Lisle, IL 60532 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

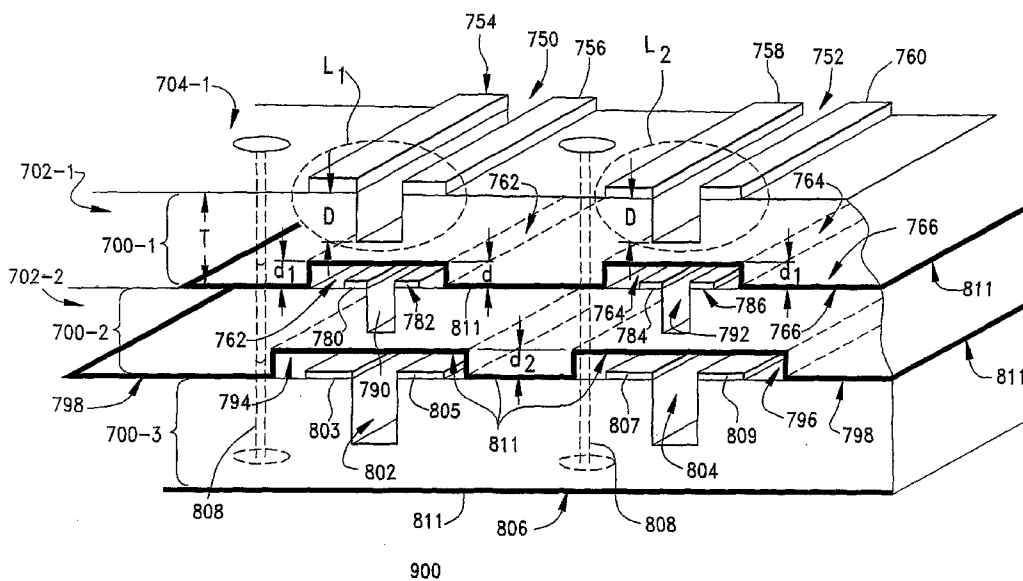
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTI-CHANNEL WAVEGUIDE STRUCTURE



(57) Abstract: Slot transmission lines are formed in dielectric substrates. Several of such substrates can be stacked together. When stacked together, the conductive surfaces that form the transmission lines can be terminated in the same plane whereat the conductive surfaces form contact terminals. The co-planar contact terminals can be coupled to contact points on a circuit board. Signals on the circuit board can thereby be coupled into the slot transmission lines that extend through the dielectric substrates.

WO 2005/064739 A1