



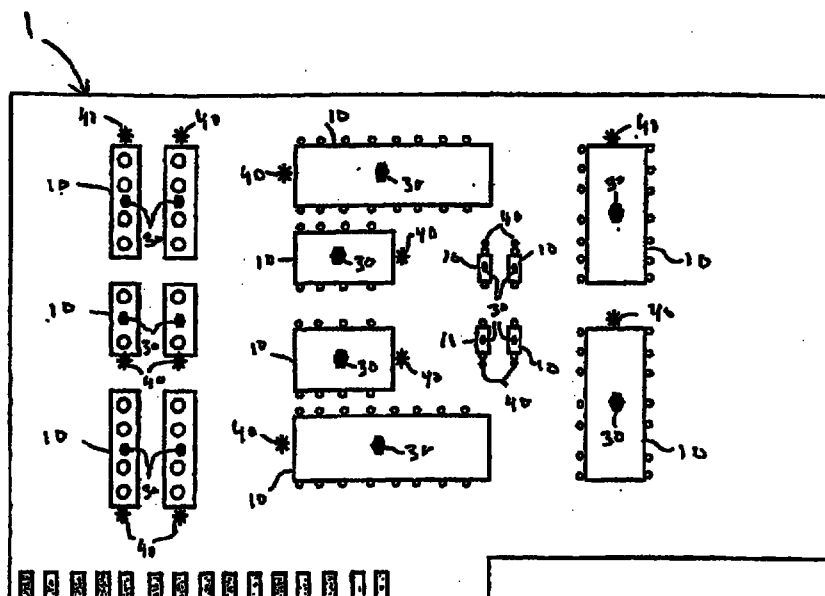
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(21) International Application Number: PCT/CA00/00129 (22) International Filing Date: 11 February 2000 (11.02.00) (30) Priority Data: 09/247,811 11 February 1999 (11.02.99) US (71) Applicant: ORIGINAL SOLUTIONS INC. [CA/CA]; 3782 Van Horne, Montreal, Quebec H3S 1R8 (CA). (72) Inventors: FELD, Michael; 6884 Heywood Road, Côte St.-Luc, Quebec H4W 1L1 (CA). TORDJMAN, David; Apartment 710, 6865 Norwalk, Côte St.-Luc, Quebec H4W 2X7 (CA). FELD, Alex; Apartment 85, 5889 Centennial, Côte St.-Luc, Quebec H4W 1T2 (US). (74) Agent: ROBIC; 55 St.-Jacques, Montreal, Quebec H2Y 3X2 (CA).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: METHOD FOR THE VERIFICATION OF THE POLARITY, PRESENCE, ALIGNMENT OF COMPONENTS AND SHORT CIRCUITS ON A PRINTED CIRCUIT BOARD

(57) Abstract

The invention relates to a method for the verification of the presence and proper orientation of a component on a printed circuit board (1). The board has a plurality of areas (10) for receiving a component (20) respectively. Each area is marked in the center thereof with a first marker (30). Adjacent each area, and indicative of the polarity of the component, a second marker (40) is marked on the board. The presence or absence of a component can be evaluated by inspecting the board after it has been populated and determining whether any of the first markers appear, indicating that a component is missing. Verification of the polarity of a component is done by placing a marker (40) on a portion of a component required to be installed in a predetermined



position indicative of polarity. Inspection of the board once it has been populated will determine if the component is in the proper orientation by verifying if the second marker and the marker on the component are in alignment. Preferably, the first marker and the second marker are of different colours, and are preferably UV compatible layers. Additionally, the method of the invention, when applied between the leads of a multi-legged component or between discrete components, such as by the etching of additional portions of the solder mask or by adding an additional layer, will produce a shadow on the reflective surface, thereby identifying a short at that location.