

DISPLAY & CONTROL

TEC—Single Source for Discrete or I-C Systems

DATA ENTRY SYSTEMS

- Electronic Keyboards
- Keyboard Switches

DISPLAY & CONTROL SYSTEMS

- DATA-PANEL® Displays
- DATA-LINE Displays
- CRT Systems

READOUTS—

Drivers/Decoders

- Neon Display Tube
- Segmented Display
- Projection Display
- Digital Readout Assemblies

TRANSISTOR CONTROLLED INDICATORS & SWITCH/INDICATORS

- Subminiature
- Miniature
- Neon or Incandescent
- Low Voltage Supply
- Discrete Component or I-C input
- Integral Switches
- Alternate Action
- Momentary Action
- Special Action

INDICATORS & SWITCH/INDICATORS

- Subminiature
- Miniature
- Neon or Incandescent
- Replaceable Lamp
- Front or Rear Mounting

SWITCHES

- Subminiature
- Miniature
- Alternate Action
- Momentary Action
- Special Action
- Multi-Pole

POWER SUPPLIES

- For Readout Tubes
- For Neon Lamps



INFORMATION DISPLAY AND CONTROL DEVICES
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CIRCLE NO. 55 ON INQUIRY CARD

NEW PRINTED CIRCUIT PROCESS

*Simplified production technique
 permits highly-reliable
 plated-through boards
 for packaging integrated circuits*

Photocircuits Corp. of Glen Cove, N. Y. recently announced the development of a new, low-cost printed circuit production process called NT-1. The simplicity of the process is achieved by the elimination of the costly electroplating process. Reliability is assured since all the performance characteristics produced by conventional techniques are retained, while many of the inherent limitations of electroplated boards are eliminated. Photocircuits claims that the three following developments provide the essential elements for this improved lower cost process.

- **Catalytic copper-clad laminate** — conventional copper-clad laminates are used in the manufacture of NT-1 circuits, with one notable modification. The resin is impregnated with a small amount of inert catalyst to make all exposed surfaces, after etching and hole fabrication, susceptible to copper deposition.

- **Electroless deposited copper** — Photocircuits' CC-4 electroless copper process produces a fine-grain, pure, ductile copper which can be deposited with exceptional uniformity upon laminates and within punched or drilled holes in any required thickness. Because of its purity and grain structure, the CC-4 copper is said to exhibit very favorable solderability characteristics.

- **Permanent, non-registered solder mask** — the permanent, non-registered solder mask used on NT-1 circuit boards is a high-grade protective

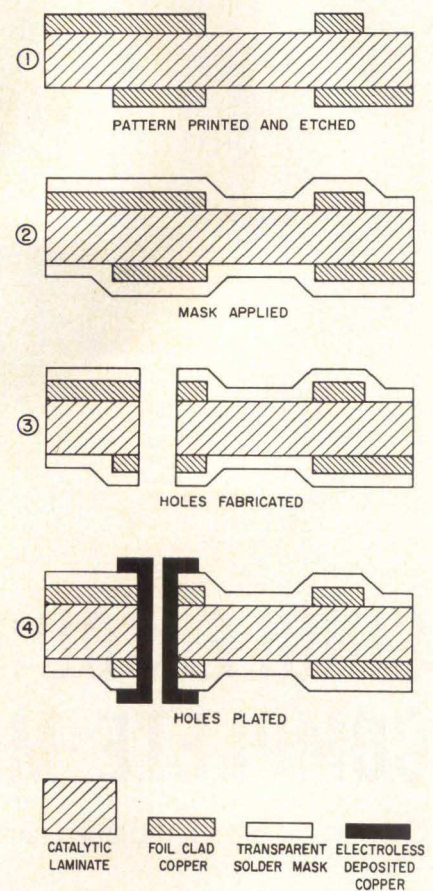


Fig. 1. The simplicity of the NT-1 process is indicated by the above procedure. (1.) The conductor pattern is printed on both sides of the copper-clad catalytic laminate. The patterns are then etched and the resist is stripped off. (2.) A thin, non-registered, transparent solder mask of non-catalytic epoxy resin is applied to the surface. (3.) Holes are drilled or punched through the mask, conductor pattern, and laminate. (4.) Copper is deposited on the walls of the holes by electroless deposition. The board is then ready for fabrication.