

# PCB Through-Hole Conductivity without Chemicals

## LPKF ProConduct



# Through-Hole Plating without Chemicals

The LPKF ProConduct introduces revolutionary technology to produce plated through-holes, which does not require a plating tank or potentially hazardous processing chemicals. This compact system is extremely fast and easy to use. Its rapid parallel processing method delivers completely safe, reliable and thermally stable via plating results for double-sided or multilayer boards.

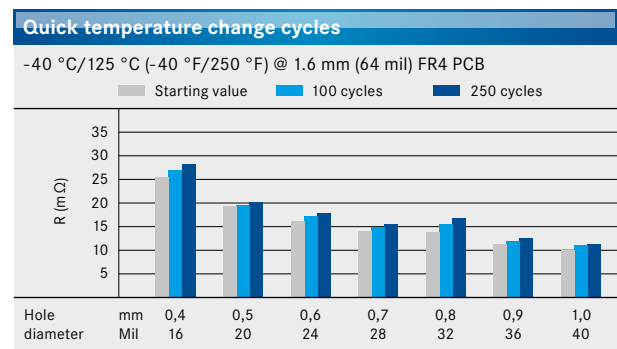
## Easy to Handle

Circuit board prototypes can be easily fabricated in-house in a single day when the LPKF ProConduct system is combined with an LPKF ProtoMat circuit board plotter. In-house PCB prototyping gets your designs to market faster by eliminating production delays and high costs that can occur with outside vendors. It also makes your precious design data secure by keeping it under your control.

## Perfect Results with Advanced Technology

LPKF ProConduct uses specially-developed plating technology to rapidly plate vias as small as 0.4 mm (15 mil) up to aspect ratio of 1:4. Even smaller holes are possible under special conditions. The entire process can be completed in just a few minutes for double-sided and even multilayer boards.

The electrical resistance of LPKF ProConduct plating is extremely low with 19.2 mΩ depending on the material thickness.



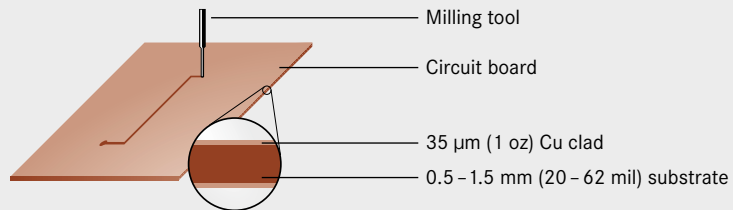
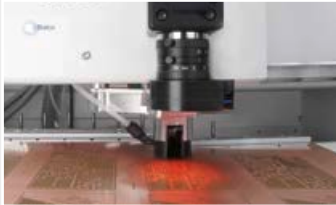
Basis: Double-sided FR4 PCB with 35 μm (1 oz/ft<sup>2</sup>) copper



LPKF ProConduct uses a specially-developed conductive polymer to quickly and easily plate vias in as little as three minutes. These are the simple processing steps:

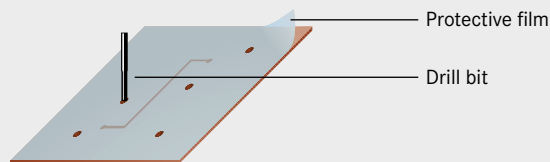
### 1. Mill the board

Mill the board layout using a LPKF circuit board plotter.



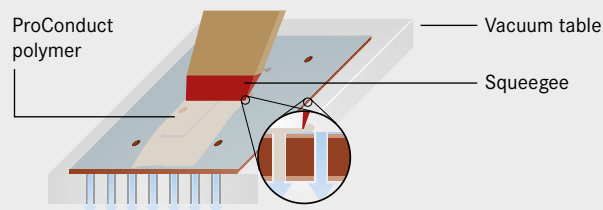
### 2. Apply the protective film and drill the holes

Apply a special protective film to the surface of a milled PCB and drill the through-holes.



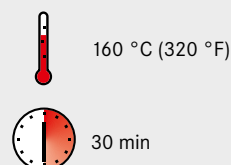
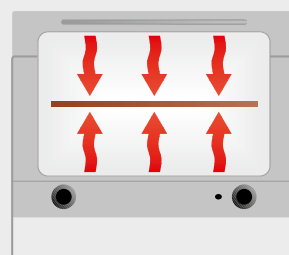
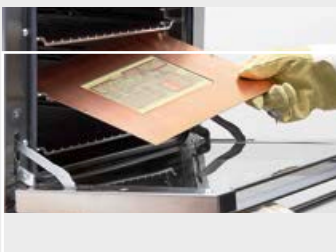
### 3. Apply the conductive polymer

Secure the board to the vacuum table and apply the conductive polymer to the protective film with the squeegee provided. The vacuum process draws the polymer through the holes. The board can be flipped and polymer can be applied to the opposite side to ensure that the holes are completely coated.



### 4. Cure the treated PCB

Remove the film after the conductive polymer is applied, then insert the board into a hot-air oven for 30 minutes to cure the treated PCB. After the board has cooled for a few minutes it can be populated with components and tested.



**LPKF**  
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distributor  
23 years  
of  
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electronics design

## Technical Specifications: LPKF ProConduct

<b>Max. material size</b>	229 mm x 305 mm (9" x 12")
<b>Min. hole diameter</b>	0.4 mm (15 mil) up to an aspect ratio of 1:4 <sup>a</sup>
<b>Number of plated holes</b>	No limit
<b>Number of layers</b>	4
<b>Solderability</b>	Reflow soldering 250 °C (482 °F), manual soldering 380 °C (716 °F) <sup>b</sup>
<b>Base material types</b>	FR4, RF- and microwave materials (incl. PTFE-based materials)
<b>Processing time</b>	Approx. 35 min
<b>Electric resistance</b> (Hole diameter 0.4 – 1.0 mm at 1.6 mm / 63 mil material thickness)	Average 19.2 mΩ with standard deviation of 7.7 mΩ

a Smaller hole diameters upon request

Technical specifications subject to change.

b Soldering agent recommendation upon request

**LPKF ProConduct**

Part no. 115790



**LPKF desktop vacuum table**

Part no. 115878



**Hot-air oven**

Part no. 115877



**LPKF vacuum pump**

Part no. 10033243



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