

## LPKF ProMask®

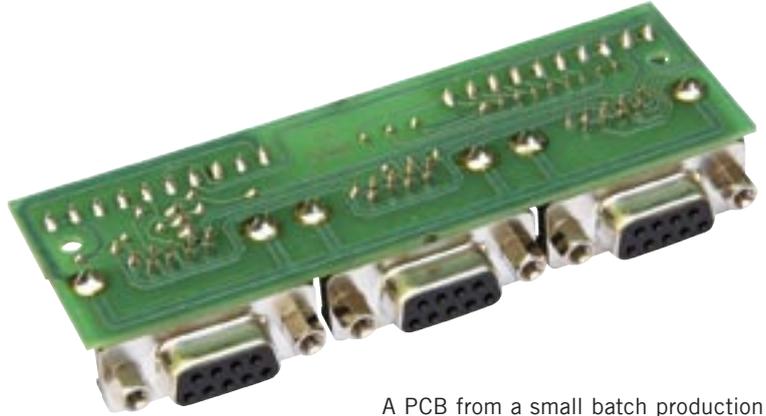
### In-house production of solder-resist masks

- Compact, quick and easy to use
- Professional finish and perfect soldering
- Four simple steps

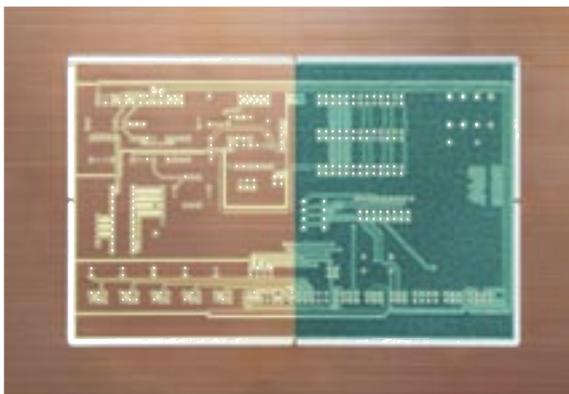
# LPKF ProMask® Professional solder-resist masks for in-house prototyping

## The LPKF ProMask® advantages:

- A quick, simple, cost effective solution
- Clean electrical insulation between tracks and components
- Optimal preparation for short free soldering
- Completely protects PCBs from environmental corrosion or oxidation



A PCB from a small batch production showing the professional finish of LPKF ProMask®



Circuit board without solder-resist lacquer (left), with solder-resist lacquer (right)

## Perfect results for in-house prototyping

For many years now LPKF ProtoMat® circuit board plotters have provided Electronics designers with the ability to produce their own circuit boards in house, but these boards lacked the professional finish of a green solder mask which today, with SMT components, is essential for soldering safely. LPKF ProMask® is the answer. This easy to use system will apply a professional solder resist mask to the already milled prototype circuit board. It is a quick and easy process even for people with no prior experience.

LPKF ProMask® gives prototype PCB's the professional finish they deserve and enables the soldering of SMD or conventional components with no fear of short circuits.

In house PCB prototyping gets your designs to market faster by eliminating production delays and high costs that can occur with outside vendors. Plus all your data remains securely within your own facility.

## Easy-to-use, fast, environmentally friendly

All the components required for the LPKF ProMask® system come in pre-weighed packets for simple mixing in the correct proportions. After development is complete, a pre-proportioned pH conditioner in powder form is added to the bath and results in an environmentally friendly adjustment to its pH level. This allows for a safe and simple disposal.

The system comes with all the necessary tools and a large package of consumables.



# Apply the solder-resist mask in four simple steps

## 1 Producing the artwork

The artwork template is easily produced by printing it from LPKF CircuitCAM (version 5.0 or above) on a standard laser printer (for best results 600 or 1200 dpi).



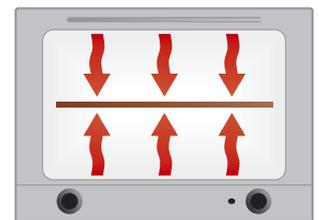
Printing the solder mask artwork

## 2 Applying the solder-resist lacquer

The lacquer is simply mixed using the single portion packets of lacquer and hardener. It is then applied to the finished prototype PCB using a disposable roller. After application the PCB is pre-dried for 10 minutes in the hot-air oven.



Applying the solder-resist lacquer



Pre-drying in a hot-air oven

## 3 Exposing PCB with the artwork

The PCB is placed in the image exposure unit and the artwork is placed over it using registration marks. The exposure unit is switched on for 30 seconds after which the board is removed and the artwork film pulled off.



Positioning the artwork



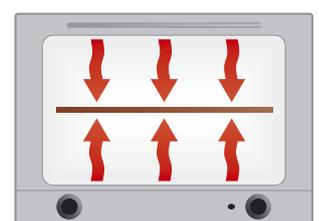
Activating the image exposper

## 4 Developing and hardening the solder-resist mask

A bath of developer is prepared from the developer powder and hot water. The PCB is immersed in the bath and the non exposed resist is removed by gently brushing. The lacquer residue is rinsed off under flowing water, then the resist is hardened for 30 minutes in the hot-air oven after which the board can be cleaned with LPKF cleaner and rinsed with water.



Developing the solder-resist mask



Hardening in a hot-air oven

<b>Specifications LPKF ProMask®</b>	
Max. base material dimensions	229 mm x 305 mm (9" x 12")
Max. working area of image exposer	240 mm x 340 mm (9,5" x 13")
Base material types	FR4, FR3, RO 3000, RO4000, etc.
Processing time	approx. 60 min
PAD separation	≥0.5 mm (20 mil) fine pitch
Adhesion strength	Class H and T, testing method: IPC-SM-840 C, Subsection 3.5.2.1
Solder bath resistance	20 sec at 265 °C (509 °F), testing method: IPC-SM-840 C, Subsection 3.7.2
	10 sec at 288 °C (550 °F), testing method: MIL-P 55 110 D
	20 sec at 288 °C (550 °F), testing method: UL 94 (lead-free)
Surface resistance	20 kOhm, testing method: VDE 0303, Section 30, DIN IEC 93
Moisture resistance an insulation resistance	Class H and T, testing method: IPC-SM-840 C, Subsection 3.9.1

Hardware requirements: 600 dpi laser printer, Software requirements: CircuitCAM 5.0 or higher



**LPKF ProMask®**  
Part number 117072



**LPKF image exposer**  
Part number 117050 (230/240 V, 50Hz)  
Part number 117192 (110/120 V, 60 Hz)



**Hot-air convection oven**  
Part number 115877

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