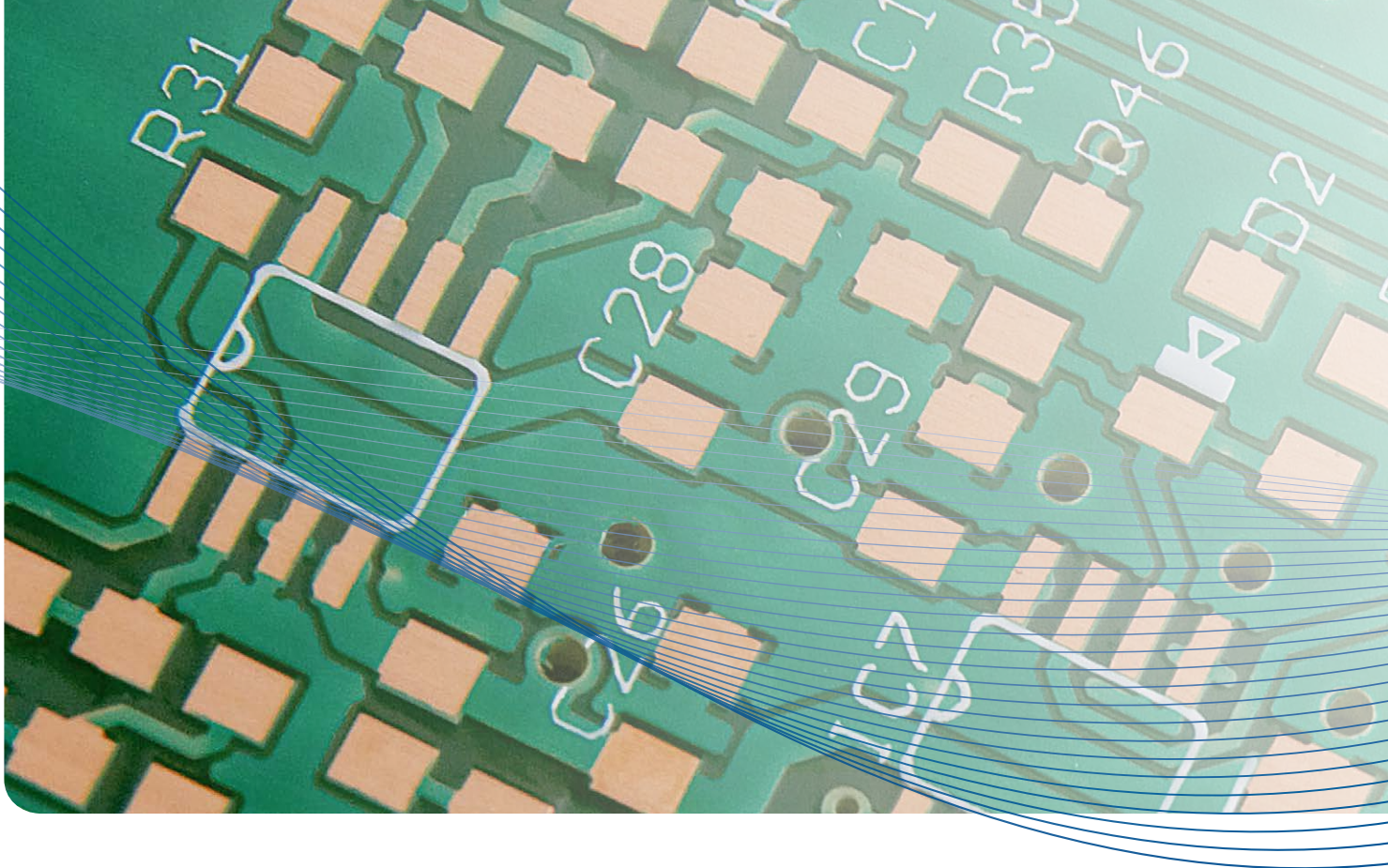


In-House System for Applying  
Solder Resist Masks and Assembly Layouts  
LPKF ProMask and LPKF ProLegend





## Two Usecases, One Solution

For years LPKF ProtoMat milling plotters have delivered excellent results in the production of printed circuit boards. LPKF offers two methods for professional surface finishing: solder resist with LPKF ProMask and assembly prints with LPKF ProLegend.

### **Solder Resist Masks and Assembly Print for In-House Prototyping**

Solder resist is a fundamental requirement for soldering certainty – especially for SMT. Professional quality solder resist masks can quickly and effectively be applied to structured PCBs using the LPKF ProMask.

The solder resist mask is printed onto a transparency from the CAD program, transferred onto the PCB, and developed. In four simple steps the structured PCB is given a perfect surface finish for soldering without short circuits.

Assembly print uses a similar process. ProMask and ProLegend include all the tools and materials required for perfect results.

LPKF ProMask and LPKF ProLegend are essential tools for quick, easy and inexpensive PCB prototyping or small batches. A photo-optical exposure process transfers all structures or legends onto the PCB in just a few steps.

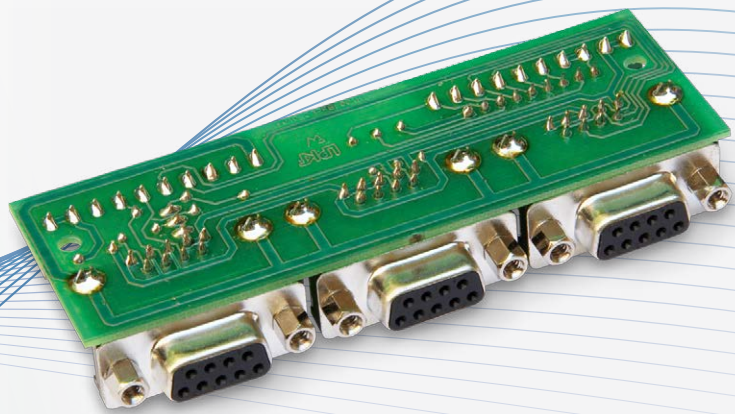
#### **Benefits of LPKF ProMask:**

- Quick, easy and cost-effective
- Clean electric insulation
- Protects against corrosion and oxidation

#### **Benefits of LPKF ProLegend:**

- High adhesion when using cleaners
- Simple process similar to LPKF ProMask
- Minimum character height of 2 mm (75 mil)

- Four simple steps
- Compact, quick and easy
- Effective soldering
- Professional legend



Application sample from a small batch, machined with LPKF ProMask

## LPKF ProMask and ProLegend Provide Professional Finishing in Four Simple Steps:



### 1. Print photo template

The photo template with the desired layout is printed onto a transparency using LPKF CircuitPro and a standard laser printer.



### 2. Apply paint

Mix the solder resist from the pre-proportioned paint and hardener. Apply the solder resist onto the structured PCB with the included roller. The PCB is then pre-dried in a convection oven for 10 minutes.



### 3. Expose photo template

Position the photo template on the PCB and place both in the UV-exposer. Activate the laser setter for 30 seconds. Remove the PCB and remove the photo template.



### 4. Develop and harden solder resist mask

Prepare the developing bath with the developing powder and hot water. Use a brush to release the unexposed solder resist in the developing bath. The solder resist is then hardened and cleaned in a convection oven for 30 minutes. A powder pH-conditioner then neutralizes all chemical components for eco-friendly disposal.

Technical Specifications	LPKF ProMask	LPKF ProLegend
<b>Part no.</b>	117072	117584
<b>Max. material size</b>	229 mm x 305 mm (9" x 12")	
<b>Max. layout area of image exposer</b>	240 mm x 340 mm (9.5" x 13")	
<b>Processing time</b>	Approx. 60 min/cycle	
<b>Pad separation</b>	≥0.5 mm (20 mil) fine pitch	
<b>Adhesive strength</b>	Class H and T, test method: IPC-SM-840 C, item 3.5.2.1	
<b>Solder bath resistance</b>	20 s at 265 °C (509 °F), test method: IPC-SM-840 C, item 3.7.2 10 s at 288 °C (550 °F), test method: MIL-P 55 110 D 20 s at 288 °C (550 °F), test method: UL 94 (lead-free)	
<b>Surface resistance</b>	2 x 10 exp 14 Ω, test method: VDE 0303, Part 30, DIN IEC 93	
<b>Moisture resistance and isolation resistance</b>	Class H and T, test method: IPC-SM-840 C, item 3.9.1	
<b>Solving/cleaning agent resistance</b>	IPC-SM-840 C, item 3.9.1 (10 percent alkaline cleaner, Isopropanol, monoethanolamine)	
<b>Minimum capital height</b>	2.0 mm (with 1 200 dpi laser printer)	
<b>Minimum capital strength</b>	0.1 mm (with 1 200 dpi laser printer)	
<b>Hardware requirements</b>	Min. 600 dpi laser printer	
<b>Software requirements</b>	LPKF CircuitCAM 5.1 (or higher) or LPKF CircuitPro	

Technical specifications subject to change.

## Required for Processing:



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LPKF Laser & Electronics AG sells and markets products and provides support in more than 50 countries. Find your local representative at [www.lpkf.com](http://www.lpkf.com).