



n.jet soldermask

TECHNICAL INFORMATION

INKJET PRINTING OF SOLDER MASK

Replacing subtractive process chains with additive process steps in electronics production has been one of the founding ideas of Notion Systems. It increases production efficiency and reduces waste. On top of this, the n.jet electronics series increase process stability and enables new features in today's electronics production. This pushes the limits of current production technology for rigid and flexible circuitry on any substrate material.

CURRENT PROCESS



INKJET PROCESS



ADVANTAGES ...

- Direct digital print
- Huge cost advantages
 - Less process steps
 - Less capital costs
 - Less labor costs
 - Less energy costs
 - Zero waste
- Faster order processing
- New technical possibilities
 - Legendsm
 - Printing of 3D structures
 - Matt & glossy effects
- No mask in holes
- Small and reliable dams
- Adjustable thickness
- No traps for chemical residues

... IN SOLDER MASK PRODUCTION

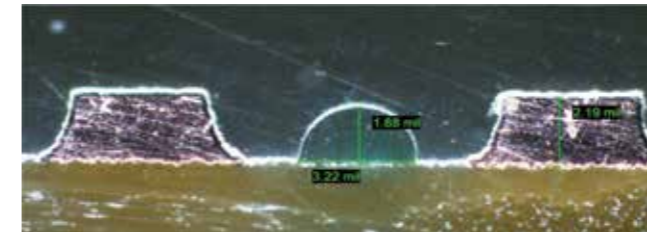
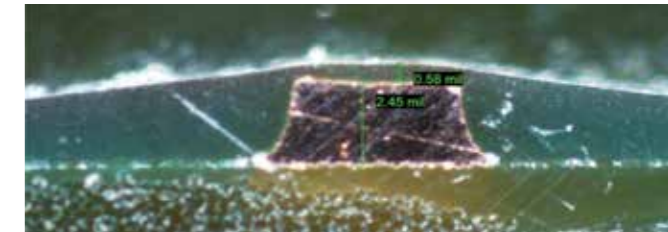
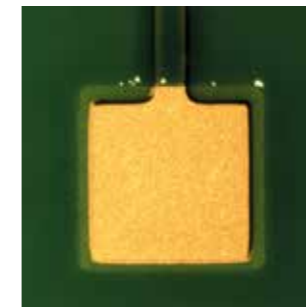


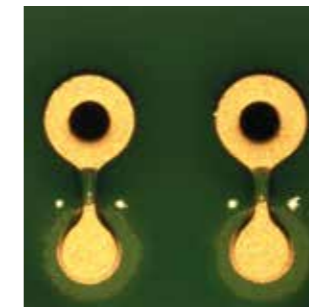
Image shows 3 mil dams:
Minimum dam size achievable is < 2 mil (40 microns).



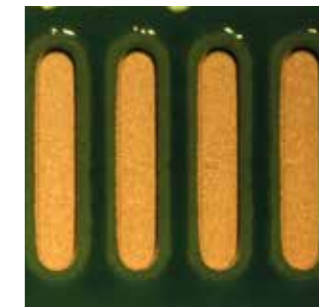
Edge coverage of traces can be adjusted.
For high copper thickness, only trace edges need additional ink.



Clear interface area between base material, edge and copper.



Solder mask edge printing
No bleeding

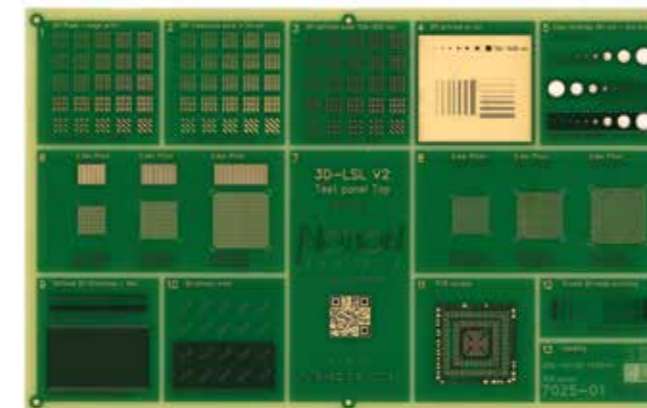


Superior edge definition
High uniformity
No bleeding



Matt & glossy effects

NOTION SAMPLE BOARD



Fully finished ENIG board

Available for different soldermask inks.

For validation tests such as:

- Adhesion test
- Cross sections
- Scratch tests
- Microscopic views

n.jet soldermask



Main features

- Digital printing of solder mask & legend
- Manual or fully automated load / unload
- Use of industrial available print heads
- Patented vacuum stage without mechanical clamps
- Integrated non-contact cleaning system
- Highest precision and reliability
- Self maintenance
- Easy to operate
- Automated nozzle calibration

OPTIONS



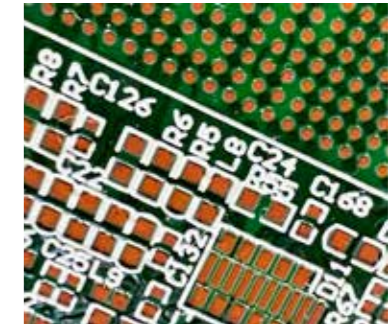
Inline automation.
Optical board alignment.
Flip function.
Adjustable gripper size.



External ink supply.



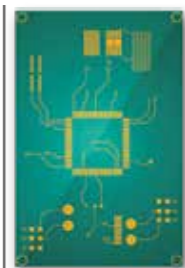
Legendsm printing
with solder mask ink.



Standard legend.

DATA PREPARATION

1 Input



Panel data
.gbr data
.odb++ data



Additional data
e. g. Copper thickness
Panel thickness

2 Preparation



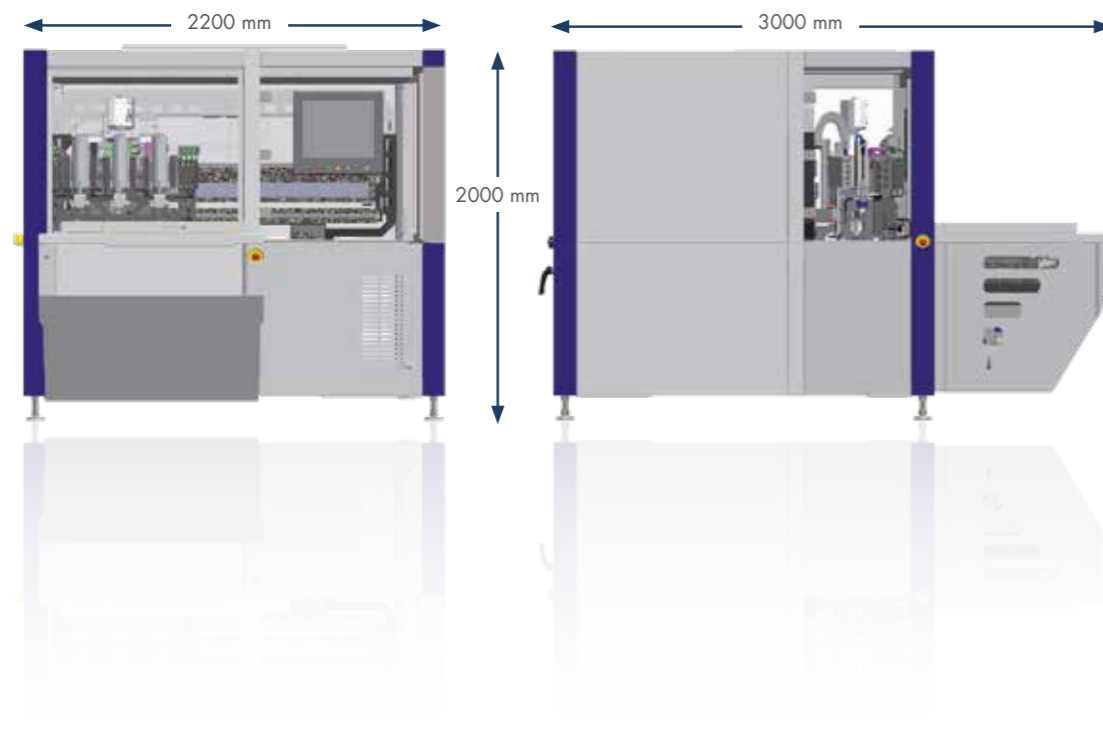
n.jet cam station
Automatic data preparation
for the inkjet printer
or multiple printers

3 Printing



Automatic job generation & transfer
According to manufacturers' specific requirements





DIMENSIONS & SPECIFICATIONS

- Machine dimensions (WxDxH): 2200mm x 3000mm x 2000mm (87"x118"x79")
- Machine weight: 3500 kg (7720 lbs)
- Max. panel size: 610 x 610mm² (24"x24") larger on request
- Number of printheads: Up to 9 industrial printheads for soldermask printing
In combination with legend printing: 2 for legend & 7 for soldermask
- Printing time per side: Depends on copper thickness
Please consult for individual cycle time calculation
- Alignment: Optical: 2, 3, 4 fiducials / panel or subpanel
- Load/unload: Manual (standard)
- Automatic load/unload: Yes, optional can be retrofitted after machine installation
- Ink supply: Manual or automatic (option)
- Facility connections: 400V, 16A, 3P, N, PE & CDA 6,5 - 8 bar



NOTION - PROCESS SUPPORT FOR SOLDER MASK & LEGEND PRINTING

Notion's process support team relies on decades of expertise in scaling up functional inkjet processes. We support our customers in the entire inkjet printing process of solder mask and legend printing.

COMERCIAALLY AVAILABLE INKS

AGFA 

 **ELECTRA**

 **TAIYO**
AMERICA

 **RONGDA**

All inks are UL certified and fulfill IPC-SM-840 E norm.

NOTION

S Y S T E M S



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THE FUTURE OF ADDITIVE MANUFACTURING

DISPLAY

n.jet display RGB

n.jet display TFE

ELECTRONICS

n.jet soldermask

n.jet etchresist

n.jet roll2roll

SEMICONDUCTOR

n.jet photoresist

n.jet hybrid

3D PRINTING

n.jet optics

n.jet lab