G-Plate®

mks Atotech

NEW HVM tool for next generation package substrates



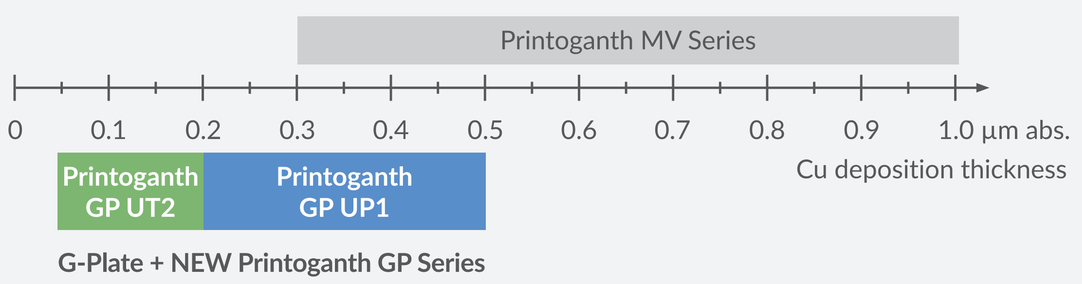


G-Plate® – Touch-free desmear & electroless copper processing equipment for L/S < 5/5 µm

G-Plate is the next-generation solution to overcome the major challenges that limit the yield rates in the build-up of package substrate redistribution layers (RDL) with fine lines and spaces.

It is a high-performance, mass-production tool fully compatible with semi-additive process (SAP) technologies. One of the new equipment's key features is a patented flooding device, which ensures homogeneous and laminar solution flow across the panel surface.

In conjunction with MKS' Atotech's dedicated Printoganth® GP series, electroless copper solutions, these systems enable thin and ultra-thin electroless copper deposits with best-in-class surface distribution and an excellent throwing power into blind microvias.

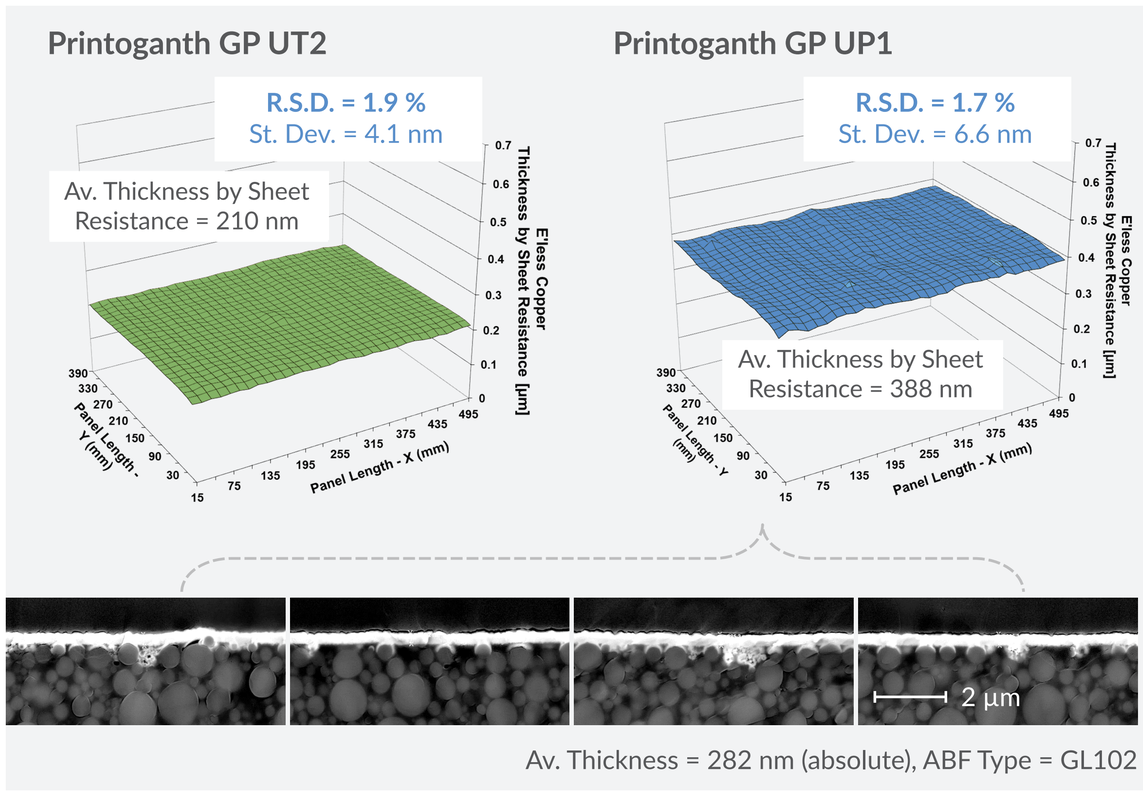


G-Plate + NEW Printoganth GP Series

Features and benefits

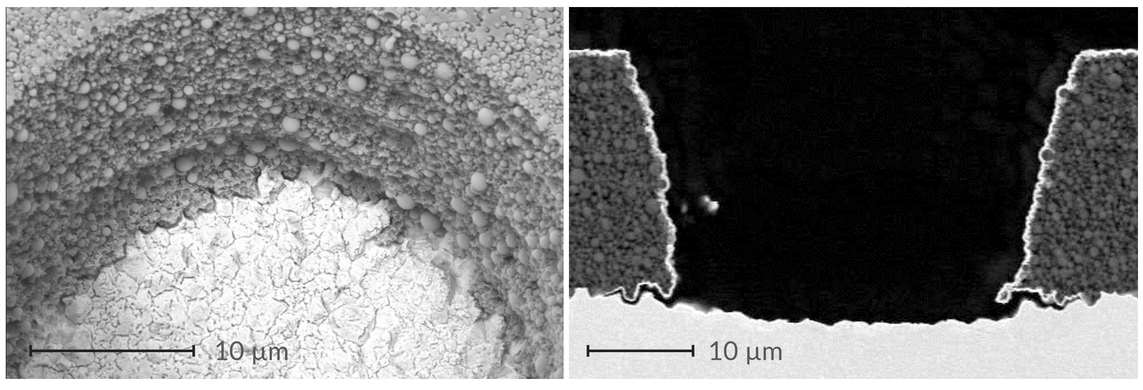
- High yield manufacturing of ultra fine-lines ≤ 5/5 µm L/S
- Touch-free transportation & single panel processing
- Integrated rinsing for minimised line length
- Full desmear, e'less copper and panel drying capabilities
- Particle control
  - 100% filtration of the solution delivered to panel
  - Clean room conditions for panel chamber
  - Vacuum dryer replaces the traditional fan dry systems
- Equalized curtain flow
  - Best-in-class surface distribution with standard performance of RSD < 2%, St. Dev. < 7 nm
  - Uniform laminar flow
  - Superior solution exchange into BMVs
  - Excellent throwing power
  - Minimized nano void occurrence
  - Full copper coverage including all panel edges
- HVM tool, 120 panels/h
  - Automated process control
  - Industry leading control software VCS by MKS

Superior plating uniformity



Av. Thickness = 282 nm (absolute), ABF Type = GL102

Enhanced desmear and metallisation



Micro via after desmear

Micro via after e'less Cu plating
Throwing Power > 90 %

R.S.D. = Relative Standard Deviation (Standard Deviation / Average Thickness)
ABF = Ajinomoto Build-up Film
FCBGA = Flip Chip Ball Grid Array

Enabling fine line capabilities for FCBGA technologies used in AI computing.