

InPro[®] Pulse TVF

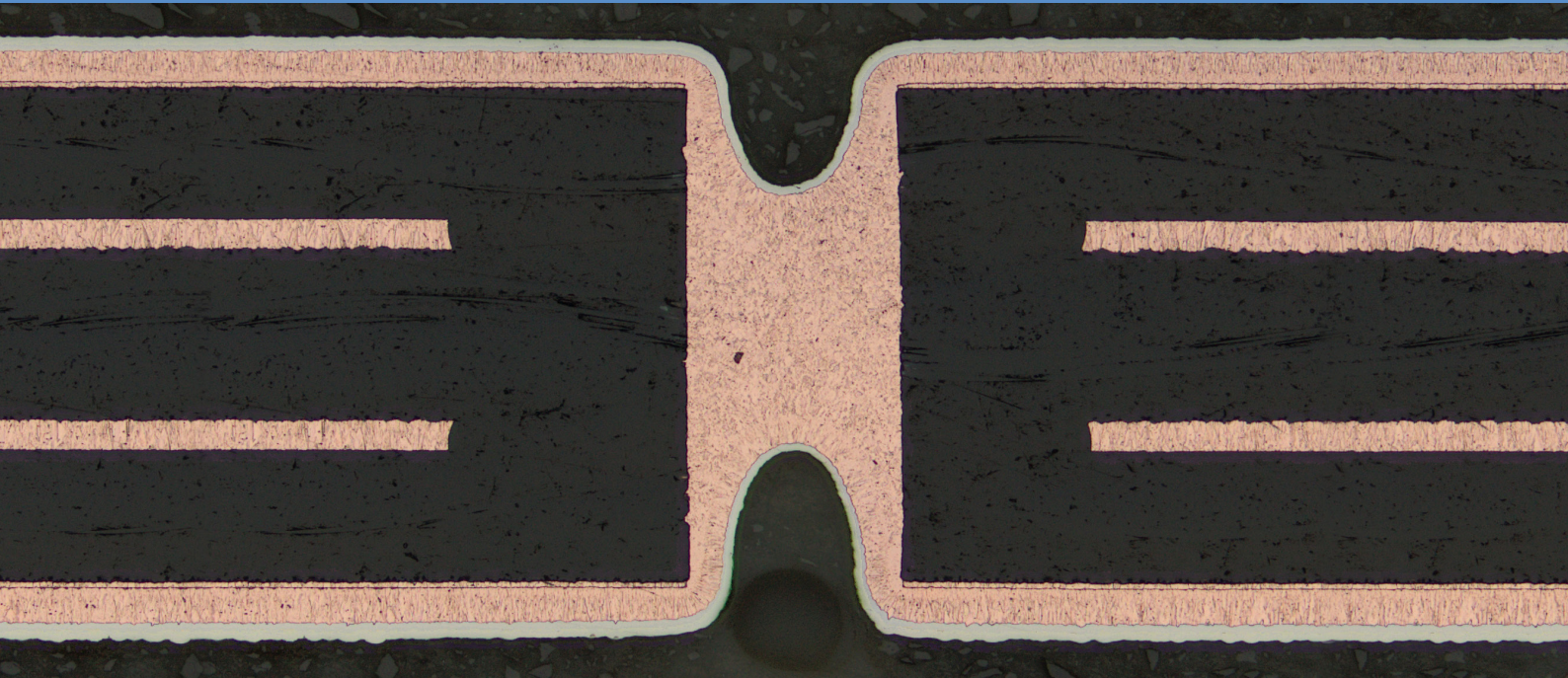
Vertical THF in pulse systems



Electronics

Panel and pattern plating

atotech.com



The ideal solution for high AR TH filling with best reliability

Up to

3:1

void free through hole filling
at higher AR

Less plating time, higher productivity

Our new InPro[®] Pulse TVF tackles the growing market demand for improved thermal management in 5G and LED applications and assures a higher targeted core thickness for MTH/LTH filling.

Our patented bridge plating technology for inclusion-free core filling of through holes is now available also for pattern through hole filling in VCP mode and at a low cost. At the same time, InPro[®] Pulse TVF has a long lifetime with reduced activation times and can be applied at high current densities. It leads to higher productivity at less plating time and is also applicable for BMV filling.

High throughput for void-free THF

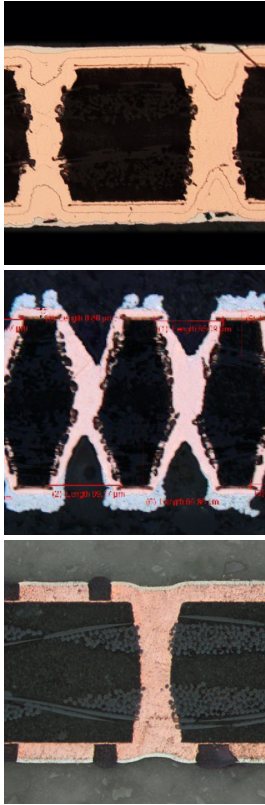


Figure 1:
Panel TH filing: 80 min
(26 μm CuT), 200 \times 100 μm
Figure 2:
Pattern bridging: 30 min
(8-9 μm CuT), 200 \times 75 μm
Figure 3:
Pattern TH filling: 45 min
(23 μm CuT), 200 \times 75 μm

InPro® Pulse TVF

Our patented bridge plating is now available for vertical application. In contrast to through hole filling in DC mode, the bridging by pulses enables void-free through hole filling, which is critical for best reliability. InPro® Pulse TVF ensures a higher throughput for THF than comparable DC POR. This reduces the overall sustainability footprint and leads to a longer electrolyte lifetime with fewer new make-ups being necessary. The process can be operated in panel and pattern plating.

Advantages and features

As a void-free MTH/LTH filling process, InPro® Pulse TVF ensures the best reliability for TH filling and is suitable for heat dissipation because of the excellent thermal conductivity of copper. This allows for new designs to be manufactured. The process uses high current density pulse plating, which leads to less plating time, higher productivity, and higher throughput compared to DC POR. The long lifetime process provides a stable filling production at reduced costs for chemicals and maintenance. It is also applicable for BMV filling making it unnecessary to change the process. Further advantages include a reduced activation time and the capability for finer lines and spaces in pattern-plating mode.

Features and benefits

- High reliability for TH filling
- Copper filling for best heat dissipation
- High throughput at reduced costs
- Enabling finer lines and spaces
- Applicable for BMV and TH filling
- Higher throughput than DC POR
- Reduced maintenance and chemicals costs compared to plugging processes

