Solder plus Support

CASE STUDY

AIM's H10 REL22 Type 5 Solder Paste Delivers Low Voiding and Underfill Elimination

PROBLEM

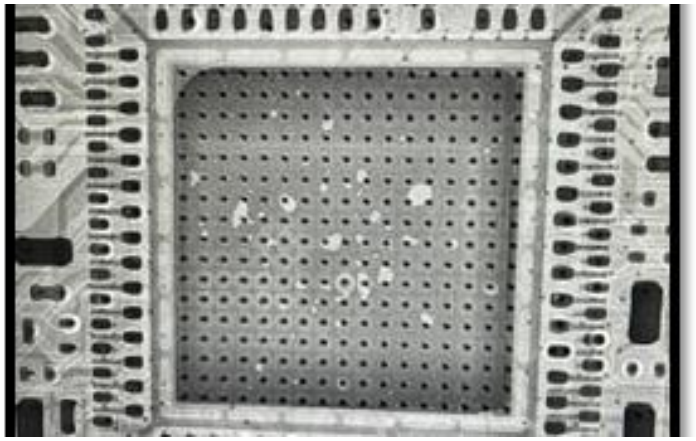
A contract manufacturer for an automotive company needed a high-reliability solder paste solution to eliminate the use of underfill in their assemblies. The existing SAC305 paste failed to meet voiding and reliability goals. They initiated a competitive evaluation among multiple vendors to identify the best solution.

SOLUTION

AIM's technical experts worked closely with the manufacturer to conduct a comprehensive process trial using AIM's H10 REL22 Type 5 solder paste. The evaluation focused on performance with micro BGA and QFN components, as well as the ability to maintain solder joint reliability while eliminating underfill. Testing was performed under vacuum nitrogen with an optimized reflow profile.

RESULTS

The H10 REL22 paste demonstrated superior results versus the incumbent material. Voiding levels in QFN and LGA components were reduced to approximately 5%, well below the incumbent's 10–15%. Printing and reflow processes showed no issues, and the paste delivered excellent performance despite challenges related to outgassing caused by RF shields.



PRODUCTS/SERVICES USED

- REL22 Lead Free High Reliability Solder Alloy
- H10 Halogen Free No Clean Solder Paste
- AIM Solder Technical Support

SUCCESS METRICS

- Voiding reduced by up to 50% compared to incumbent SAC305 paste
- Maintained process stability despite double-sided complexity and shielding
- Eliminated the need for underfill
- Improved wetting, printing and residues compared to incumbent

LEARN MORE

Learn more about Type 5 solder powder and QFN void reduction from AIM experts:

- Significant Reduction in QFN Voids with I/O Pad Overprinting
- Solder Paste Powder: When to Downsize