Random Solder Balls

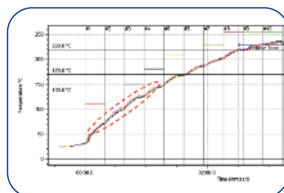
alpha®

Definition: After reflow, small spherical particles with various diameters are formed away from the main solder pool.

Possible Causes: Stencil

Description	Recommendations
Paste stuck under the stencil will be transferred onto the solder mask of the next PCB.	• Verify zero print gap set up. • Check minimum print pressure used. • Check cleaning efficiency such as wet/dry/vacuum. • Check wipe frequency.

Possible Causes: Reflow Profile



Description	Recommendations
Fast ramp-up rate or preheat rate will not allow sufficient time for the solvent to vaporize off gradually.	Slow preheat rate is recommended, typically < 1.5°C/sec from room temperature to 150°C.

Possible Causes: PCB Moisture

Description	Recommendations
Trapped moisture may result in explosive vaporization.	Especially for lower grade PCBs such as FR2, CEM1, tends to absorb moisture. Bake 120°C for 4 hours if necessary.

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Possible Causes: Solder Paste

Description	Recommendations
Especially for water-soluble solder paste which is hygroscopic, it tends to have limited stencil life because of moisture absorption.	• Minimize exposure time • Printer temperature and humidity to be within recommendation • Try new lot of solder paste to verify paste integrity. • Use coarser powder size if possible as fine powder size has more oxides and tends to slump more readily.