

RDL Adhesion Strength Measurement Packaging

Motivation:

- RDL (redistributed layer) adhesion for advanced substrate, FO-WLP and PLP is critical for packaging quality. Poor adhesion strength causes circuit patterning quality and package reliability issues. Exposure of the RDL to the manufacturing process may degrade the adhesion between the RDL and other materials such as encapsulant, insulation, die, carrier wafer, substrate or panel.
- There is no global standard available to measure narrow RDL adhesion strength. The only available measurement standard (IPC) is for wider Cu trace adhesion to printed circuit boards.

Objective:

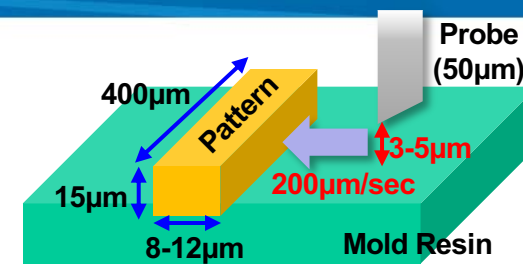
- Evaluate adhesion strength measurement methodologies and characterize RDL mechanical performances.
- Establish the potential common requirements for key material properties so that packaging companies and users have identical qualification requirements.

Strategy/Approach:

- Phase 1 - Evaluate the applicable adhesion strength measurement methodologies, validate the selected methodologies and develop the experimental guidelines.
- Phase 2 - Validate the test method(s) for characterizing RDL by experiment.
- Generate lifetime data from accelerated tests and conduct failure analysis.

Longer Term:

- Provide guidelines for narrow trace/RDL adhesion strength measurement and recommendations to a standards body for a global standardization test method(s).



Pattern Shear Strength Test Method



Status:

- Chaired by Intel and Unimicron
- Team working to develop SOW
- Project start expected Feb, 2021
- Open to new participants
- Contact Masahiro Tsuruya m.tsuruya@inemi.org