



FAILURE ANALYSIS

Progress of semiconductor devices has rapidly accelerated toward high integration, high density and high functionality.

Tessolve is a one stop hub for semiconductor companies to perform testing, debugging and characterizing of devices using advanced technologies cost effectively and quickly. Tessolve's semiconductor lab provides unique value added services such as **Focused Ion Beam**, an expensive technique used to perform circuit edit like metal cut, metal growth required to remove and electrical connectivity inside the silicon. We offer **Optical Microscopy Decapsulation, Failure Analysis**.



Optimized service offerings for maximum value through advanced analytical techniques, capabilities and proven Investigative methodology and rich expertise.



Our Services include:

VLSI circuit edit using FIB

FIB Features:

- CAD navigation through Knight software
- GAE through specially designed Quad/Tri gas nozzles
- Laser guided state movement

FIB Capabilities

- Circuit Edits for Semiconductor application using Micrion 9800FC
10nm beam resolution
- Milling and deposition of complex metal structure
- Probe Pad construction



IC Decapsulation

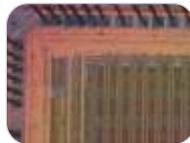
Decapsulation is a necessary step in the Physical Failure Analysis or modification of packaged devices. Decap is performed by using acids, or mixtures of acids, at elevated temperatures. A successful Decap will expose the integrated circuit while maintaining the electrical connections to the pins, allowing for FIB circuit editing, photon emission, liquid crystal or other Failure Analysis process to be completed.

Package Type:

DIP, SOIC, PDIP, BGA, SOP, TSSOP, QFN, MEMS, Multi DIE, Stack DIE etc.



Minimum of 1mm x 1mm
Selective area decapping



Polimide Removal



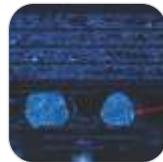
Bond Wire Integrity



Stacked Die

TDA (Tear Down Analysis)

Tessolve FA team has the experience, skills and equipment to accommodate customers requirement like soldering and de-soldering, solder mask removal, imaging and measurement (Die, Device, PCB, etc), BGA rework, BGA re-balling and IC/PCB/Die cross sectional analysis report.



Crosssection view of
NAND flash package

Optical Microscopy

A manual, nosepiece type microscope which meets the various needs of observation, inspection, research and analysis across a wide range of industrial fields with longer working distance and efficient digital imaging.

Features

- Magnification upto 1000x
- Bright/Darkfield inspection

Application

- Visual inspection
- Part identification / die / package
- Die Photography
- Measurement software



Delivering Excellence in Semiconductor Engineering

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