

# SMD @ NTC

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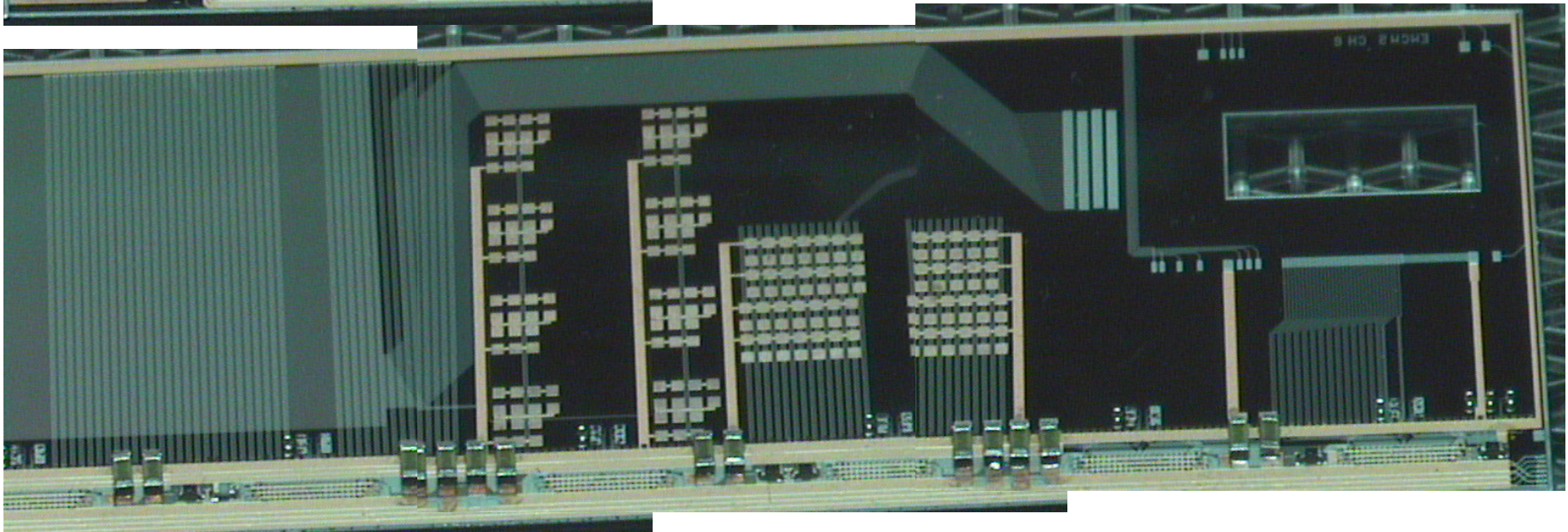
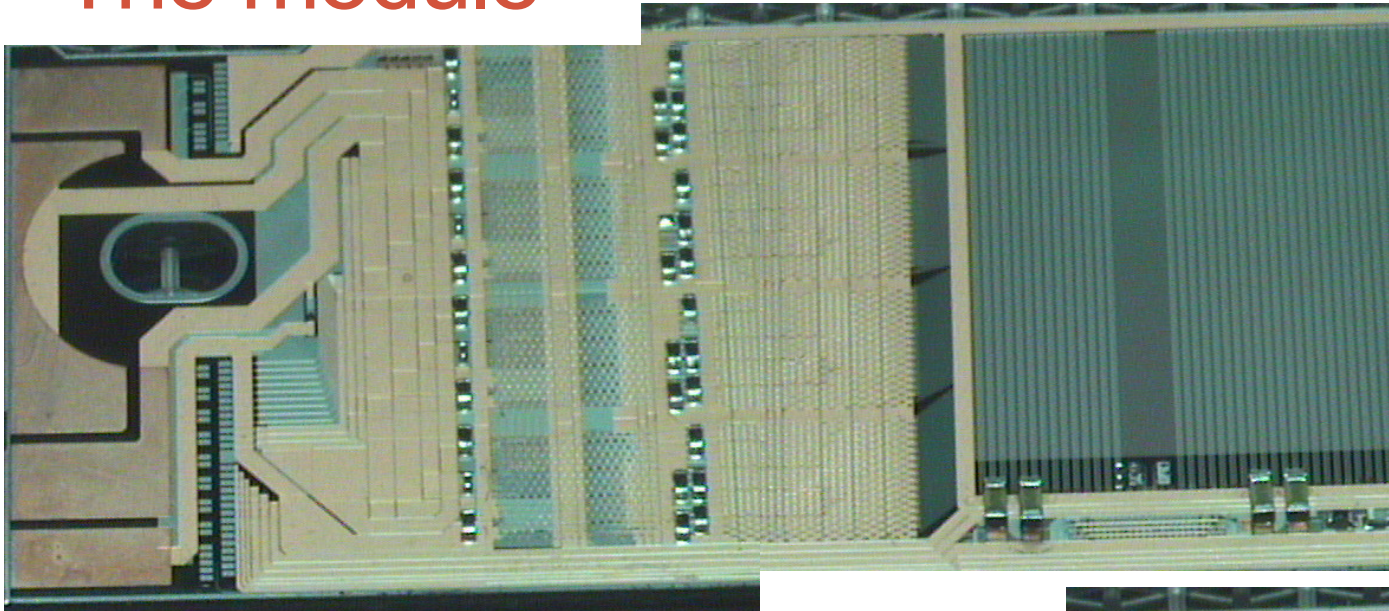
J. Ayucar, N. Sánchez, G. Preve @ NTC

M. Boronat, F. González, M. Vos, C. Lacasta @ IFIC

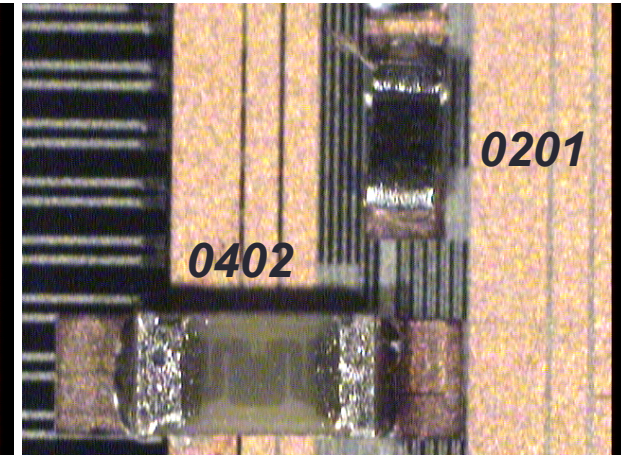
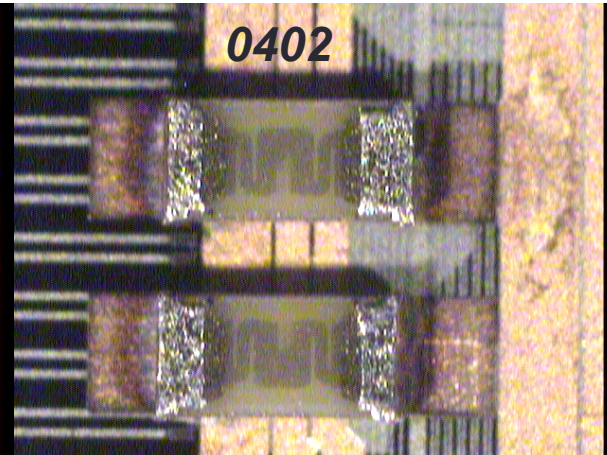
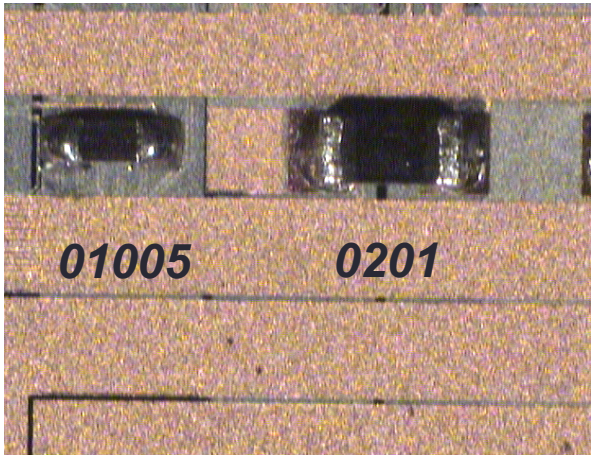
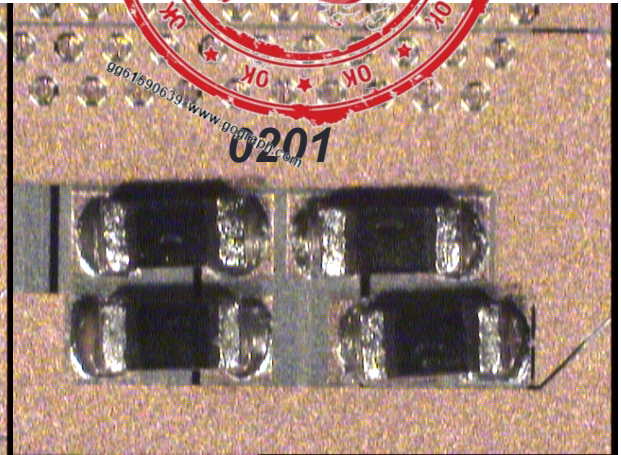
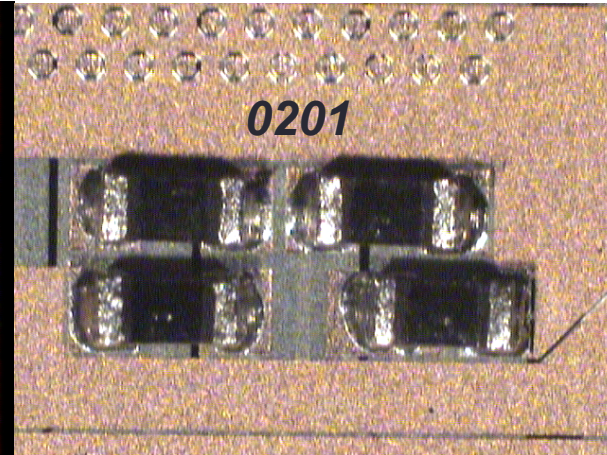
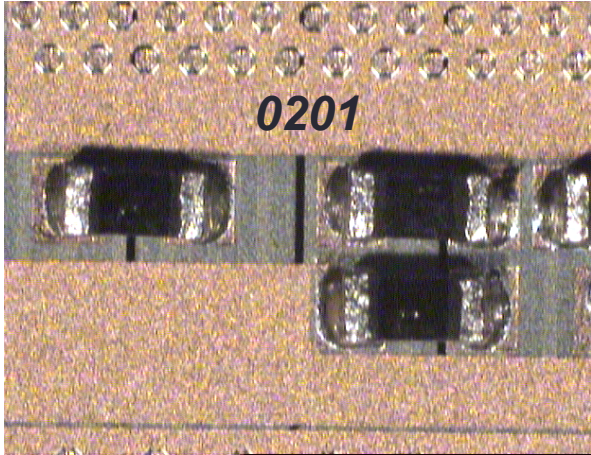
# A bit of History

- ✓ NTC had problems with efficient ball placement using their PacTech machine
- ✓ Apparently the laser was not strong enough and the balls would not stay on the pads.
- ✓ 4 e-mcm samples sent to PacTech to check
  - PacTech did not succeed with same machine as NTC
  - They succeeded with another machine with a stronger laser
- ✓ PacTech offered the machine they used to NTC for a “reasonable” price.
  - After some careful thought, NTC (with IFIC’s help) decided to buy the machine.
  - All the Spanish funds go to the machine.
    - ↳ NTC, puts for free the labour costs.
- ✓ PacTech sent back the modules. NTC has populated one.

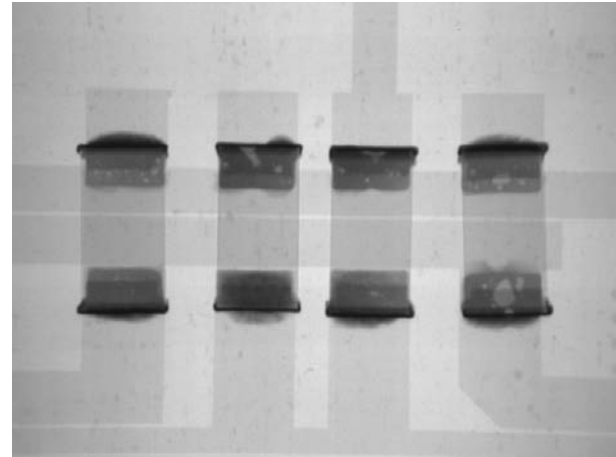
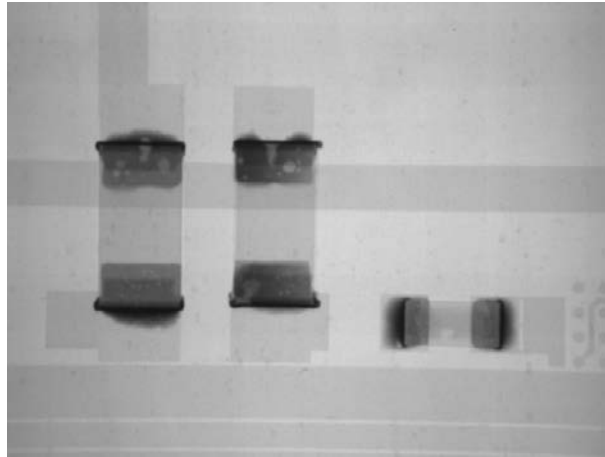
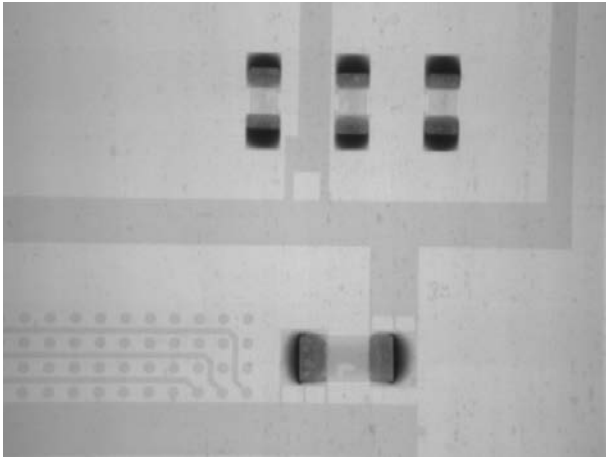
# The module



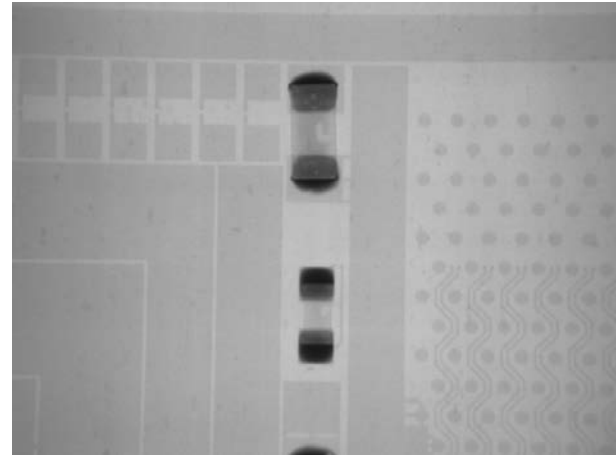
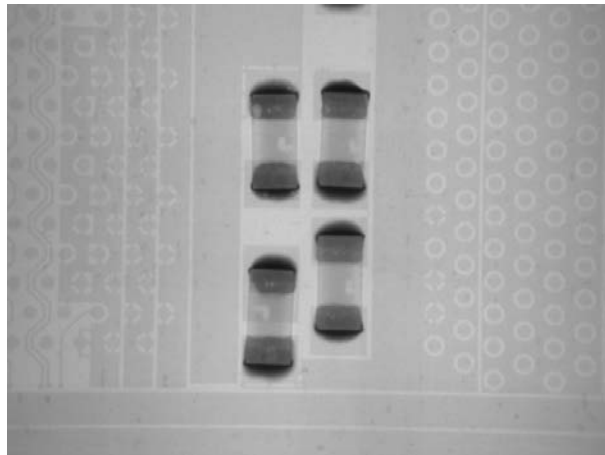
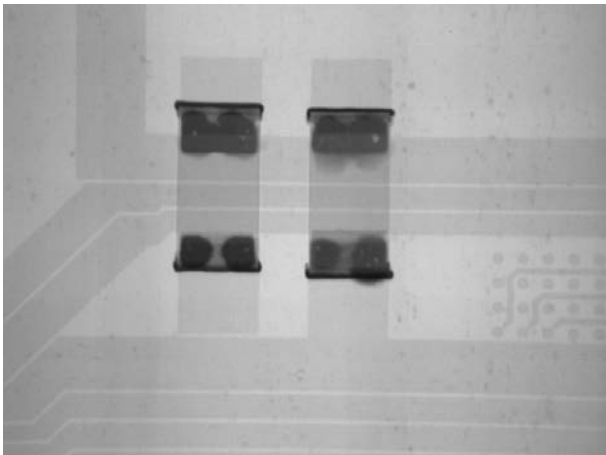
# Visual Inspection



# X-ray inspection



Healthy looking. Some optimization might be needed when two balls used.



# Shear test

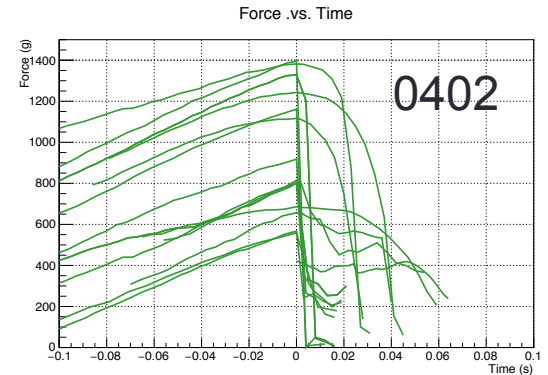
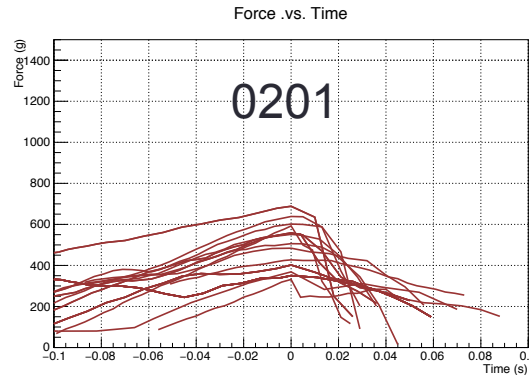
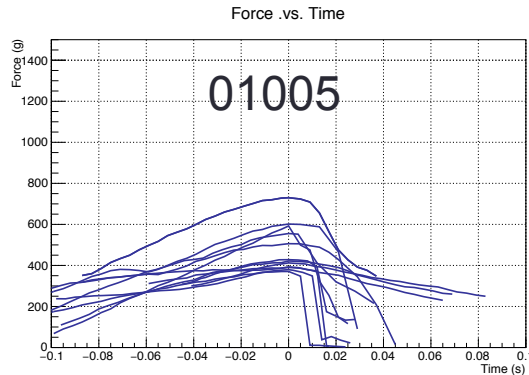
Made shear tests. The SMDs are very well attached to the pads.

01005 and 0201 need about the same force (~500 g)

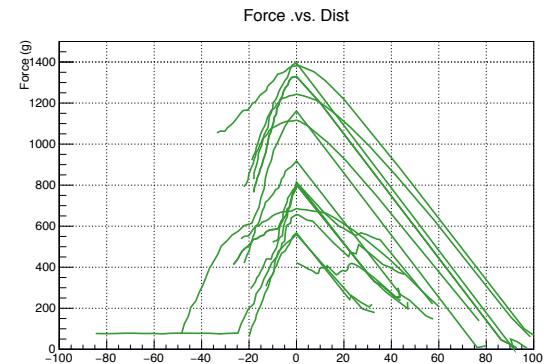
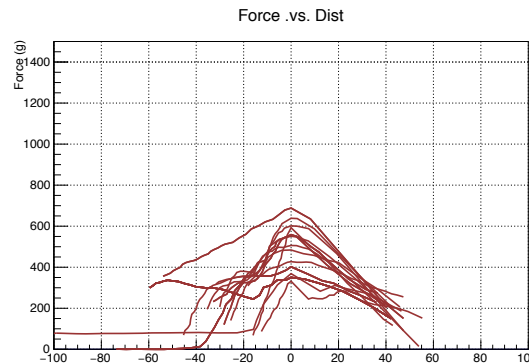
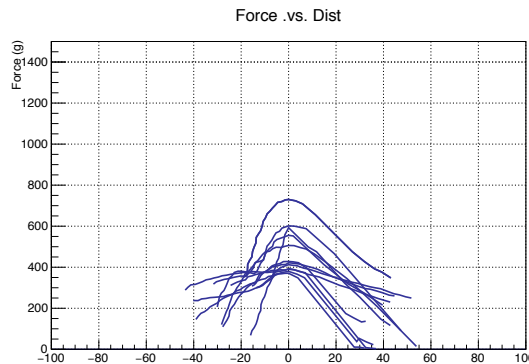
0402 needs twice as much (2 balls?)

Large spread... Two groups (some times the copper is also “detached”. TBC)

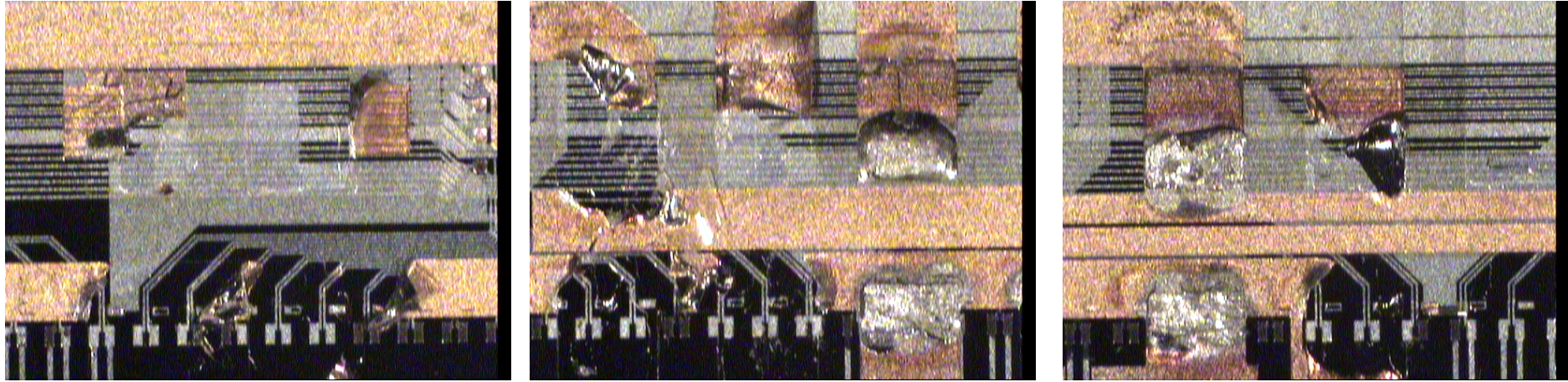
Force .vs. Time



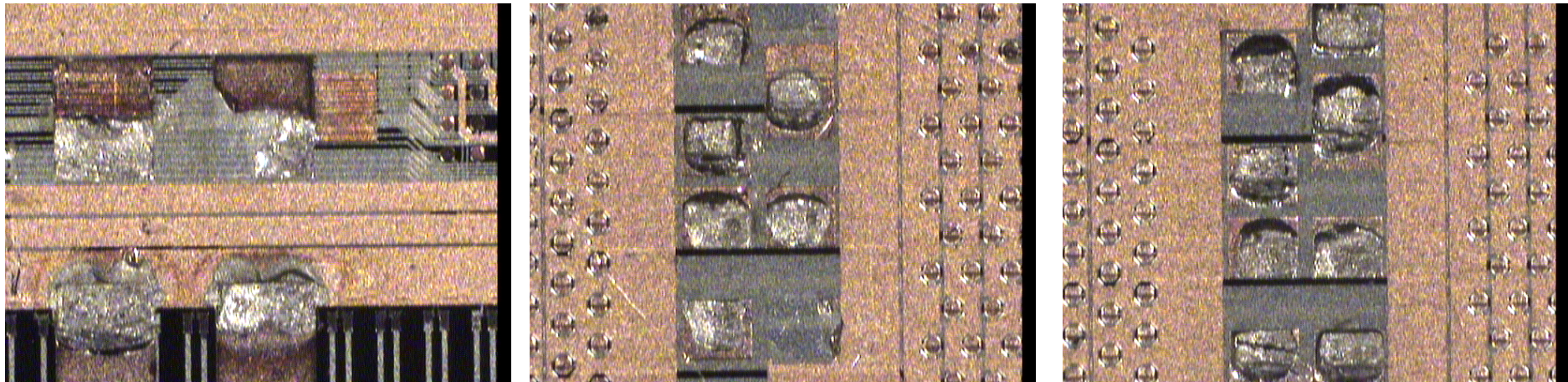
Force .vs. Distance



# Shear test



Sometimes the balls are just broken in 2 halves. Sometimes the copper follows the ball. The forces seem to be good enough.



# Time line...

- ✓ The process with PacTech seems to work.
- ✓ The machine will be at NTC on the last week of May 2015.
- ✓ We need to
  1. Install the machine at NTC
  2. Restore the process at NTC
  3. Optimize the amount of solder
  4. Practice, practice
  5. Start with real fire, hopefully in time for the pilot run.