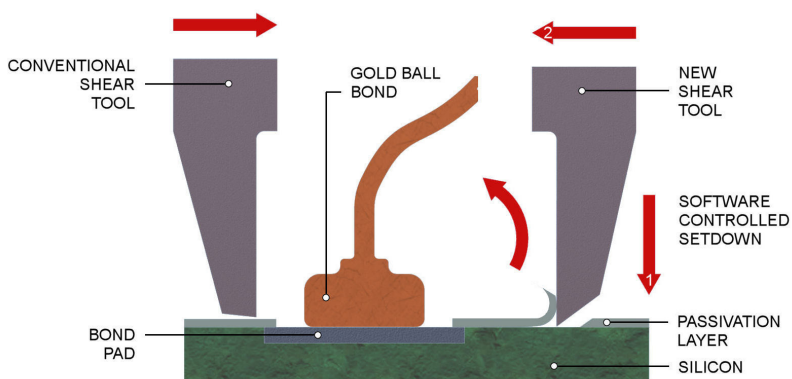


Overcoming Passivation Layer Interference in Ball Shear Testing

Application Note

Nordson DAGE provides a solution to overcome the challenge presented by the passivation layer when performing a ball shear test on first ball bonds. The thickness of the Polyimide passivation layer can be up to 10 microns or more, particularly in ultra fine pitch applications, restricting access of the shear tool to the ball bond and therefore application of the full load which results in bond strength measurements being inconsistent or even impossible.



Ball shear test with passivation layer

Features and Benefits

- **Combination of software and hardware allows the shear tool to apply full load to the bond, providing consistent measurement of bond strength**
- **Sharp shear tool cuts through and removes passivation layer**
- **Software compensation removes forces associated with layer removal guaranteeing an accurate bond strength measurement**
- **Test is quick to set-up and perform**

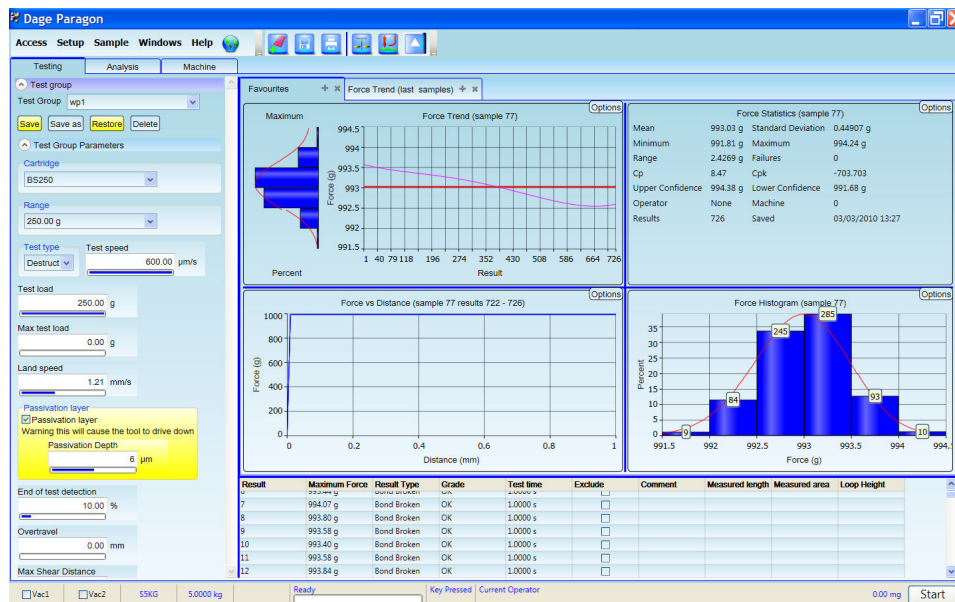
How It Works

Nordson DAGE software, available as an option, allows the operator to drive the shear tool through the passivation layer. Normally the software controls the landing of the shear tool on the surface adjacent to the bond and step back to a predetermined height however this specific software option allows the operator to enter a step down value equivalent to the thickness of the passivation layer.

The sharp tipped shear tool, in combination with the step down, is able to cut down through the passivation layer and then remove it during the shear action. Forces associated with the shear tool removal of the passivation layer are filtered out ensuring the accurate measurement of the bond strength itself.

Test Set-Up

Test set-up is simple. Choose the correct option and enter the step down value, then test as normal.



Sample screen

Further information

- The passivation software is an option embedded within the Nordson DAGE Paragon™ software which can be either purchased or registered for a free 30 day trial. For further information please consult the factory and reference 4000PLUS-PASSIV-SW
- Remember to specify load tool size face width when ordering. For example to order a 30kg load tool use 4000PLUS-PASSIV-LT-30
- These options are only available on the S25g and S250g load cells for the Nordson DAGE 4000Plus bondtester
- Full technical support is available worldwide

For more information,
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