

OVERVIEW OF MODULE BONDING AND TESTING IN LIVERPOOL

Aims

The purpose of this document is to give an overview of the procedures used in Liverpool from the reception of the assembled module from Manchester through to the point when the module has been completely characterised and is ready for mounting on a disc. The schedule of activities is described with reference, where necessary, to more detailed descriptions for individual steps.

All operations are performed within the Liverpool Semiconductor Centre. Visual inspection, bonding and metrology are performed under Class 100 conditions while all other operations are done in Class 10000 areas.

1. Reception of modules from Manchester

Responsible **P R Turner**

Equipment

Bar Code Reader

Environmental Storage Unit: Drystor P Series DEL-125

Procedure

Check travel documents against the modules.

Input into the database the acceptance of the modules.

Mark storage position of module onto the travel document

Place modules in correct storage locations

File the travel documents.

2. Visual Inspection and Bonding

Responsibles **M Wormald, D Muskett, M Whitley**

The equipment used and the procedure to be followed are outlined in the separate document “ “

3. Initial IV test.

Responsibles **M Wormald, D Muskett, M Whitley**

Equipment

Source Measurement Unit

Valencia test box

Procedure

Perform IV ramp up as per section 5.1 of ATL-IS-QA-0004 measuring current at 150V and 350V and comparing to sum of IV values for the detectors.

On passing this test the module is placed in temporary storage to await thermal cycling. If the test is failed the module is placed on one side for further investigation at a later date.

4. Thermal cycling

Responsibles T Jones, D Muskett, P Turner

The equipment used and the procedure to be followed are outlined in the separate document “ “as per section 5.2 of ATL-IS-QA-0004.

Following this procedure the module is placed in temporary storage to await metrology measurements.

5. Metrology

Responsibles T Jones, P Turner

The equipment used and the procedure to be followed are outlined in the separate document “ “as per section 5.3 of ATL-IS-QA-0004

On passing this test the module is placed in temporary storage to await electrical characterisation.

6. Electrical Characterisation

Responsibles A Greenall, A Smith

The equipment used and the procedure to be followed are outlined in the separate document “ “as per sections 5.14, 5.5, 5.6, 5.7 and 5.8 of ATL-IS-QA-0004

7. Storage

- Finally the module will be stored in the Environmental Storage Unit: Drystor P Series DEL-125 environmental chamber and its position in the unit will be recorded on the Travel Document. The module is now ready for mounting on a disc.

Overall sequencing of the steps

- We expect to receive 5 modules per week from Manchester
- The expected bonding rate is 1 per day including the initial IV test
- Thermal cycling takes ~ 40 hours
- Metrology per module is ~30 minutes
- Electrical characterisation takes ~ 2 days
- Operating in units of 5 modules per week when in full production is possible where 5 are bonded in week 1 and then thermally cycled, measured and electrically tested I week 2.