

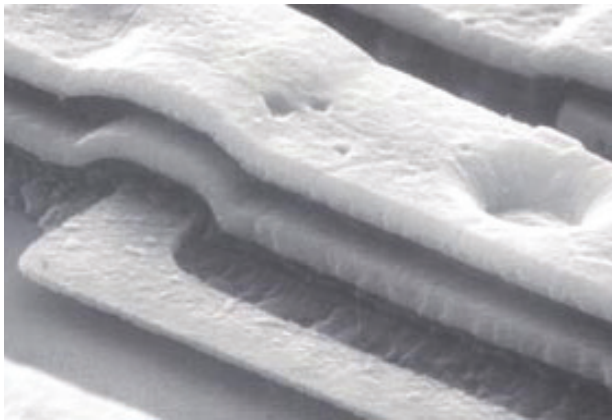
Qualification testing

Hybride modules, MEMS sensors, components and assembly processes

When and what to qualify?

Low failure rate is a key issue in many safety critical electronic applications as well as environments with complicated access during field service conditions, like space environments and deep subsea application.

Qualification testing enables you to know and to document the degree of robustness and reliability of your product, prior to gaining expensive field experience.



Example of scanning electron microscopy wafer qualification of a space component.

Qualification testing may be performed on many levels from prequalification of a new technology or final product qualification and ongoing regular maintenance testing.

DELTA provides the full range of services within qualification testing as part of a development process and as third party testing and documentation of product deliveries.

Setting up the right qualification test programme

The requirement to the qualification test programme differs with product environment/industry. In some situations the qualification test programme will be fully defined by your customer/application. In other situations it is necessary to develop a product and application specific programme. DELTA can offer you assistance in the development of the right qualification test programme covering your product and application specific requirements.

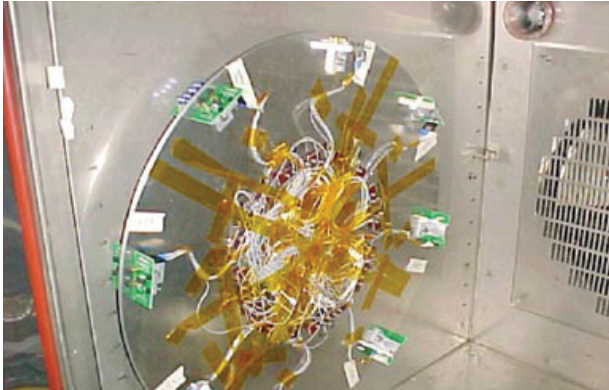
Initial DPA

An initial Destructive Physical Analysis (DPA) maybe combined with a HALT test, can be added to evaluate the product and pinpoint possible weak-points before the full qualification test is initiated. This may save important time and costs.

Typical kind of tests

Examples of tests that could be part of a qualification programme are:

- Electrical tests, e.g. ESD and latch-up
- EMC tests
- Mechanical tests
- Environmental tests
- Combined mechanical and environmental tests
- Preconditioning (e.g. JESD22-A113)
- Workmanship evaluation, covering e.g. External visual inspection | Physical dimensions | X-ray | Inspection | Seal testing (for hermetic components) | Solderability test | Resistance to soldering heat | Marking permanency | Lead integrity



Does your component work at -50°C and at 100 °C? A test set-up of a centrifuge in a climate chamber gives the answer.



Qualification of the soldering process for specific components. Cross-sectioning and optical microscopy of component body and solder-joint are performed.

We have customers e.g. within

- Space and military industry
- Automotive industry
- Medical industry
- Offshore industry
- Telecom industry

Specifications

- Test and analyses are performed according to:
- MIL-STD
- ESA-SCC
- JEDEC
- IEC
- PC
- CECC

High degree of flexibility

We are flexible and can provide customer designed tests.

For further information please contact

Helle Rønsberg - hr@delta.dk

Kim Zachariassen - kz@delta.dk

DELTA

Venlighedsvej 4
2970 Hørsholm
Denmark
Tel. +45 72 19 40 00
asic@delta.dk
madebydelta.com