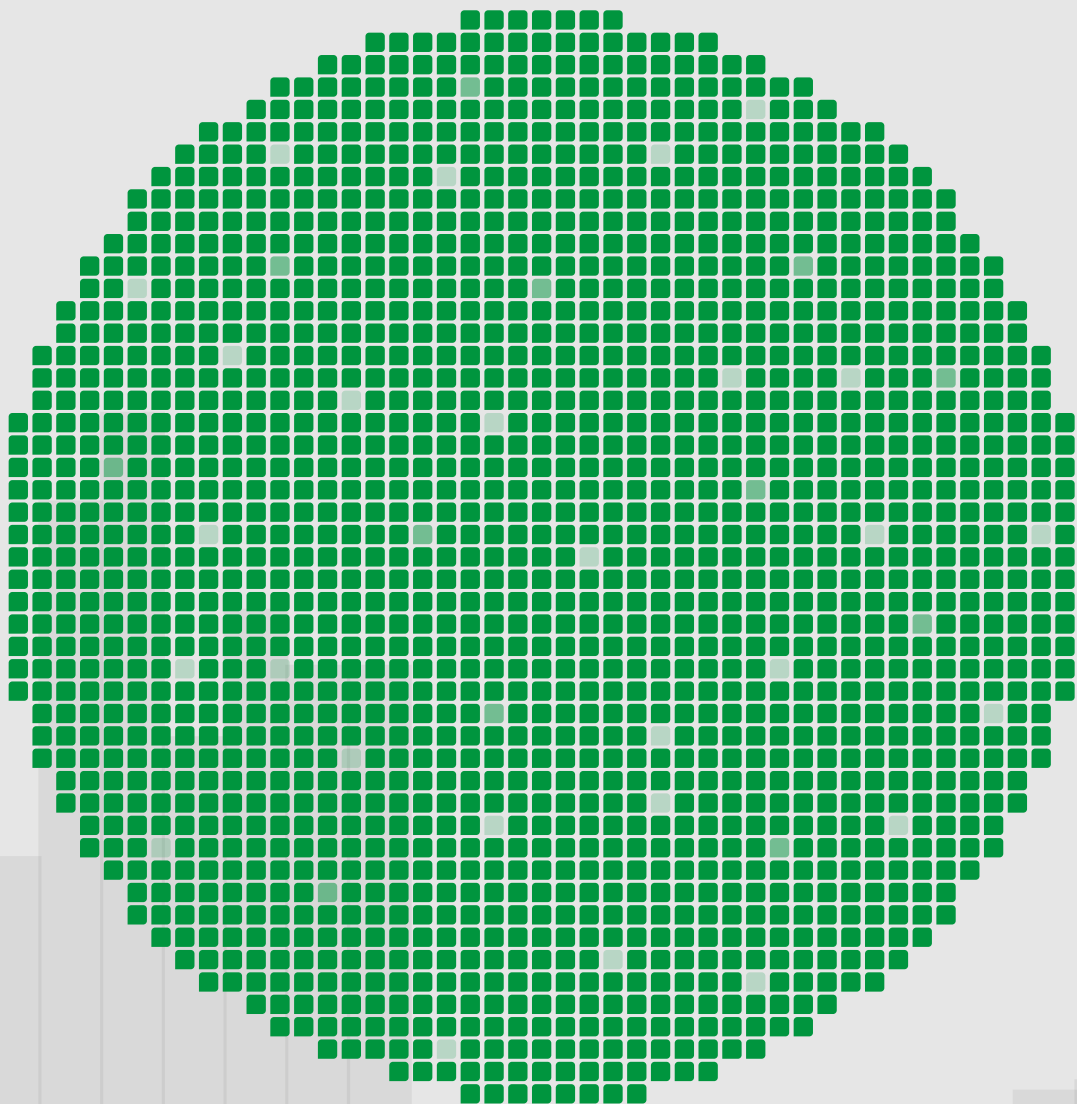


SEMICONDUCTOR SERVICES

portfolio



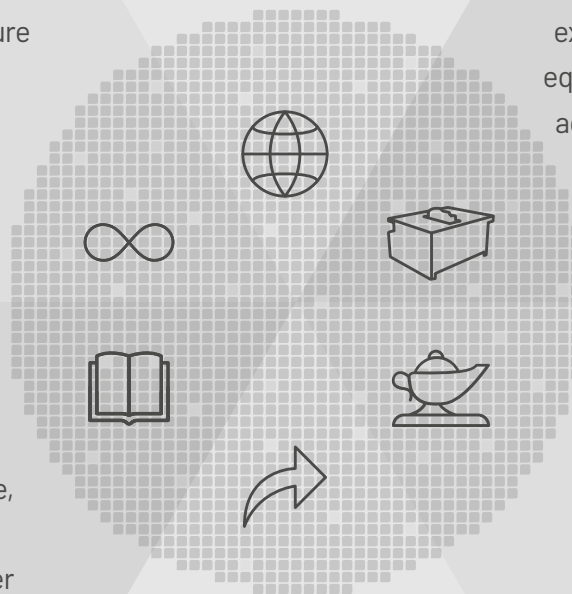
WHY MICROTEST

Global test floors enhance risk mitigation and supply chain efficiency, ensuring closer proximity to customers for optimized operations.

24/7 operations on all test floors, with continuous shifts running 365 days a year to ensure uninterrupted service.

Fully equipped test floors in clean room environment and expertise in a full range of ATE equipment, offering reliable and advanced testing capabilities.

Over 25 years of excellence in the Automotive, Medical, Aerospace, Industrial, Security, Science, and Consumer markets, fully compliant with industry standards.



Multidisciplinary engineering team across electronics, testing, mechanics, automation, and software, available promptly during production.

Flexible production solutions for companies of all sizes, from start-ups needing guidance to large-scale operations requiring mass production. Microtest Group offers complete supply chain management, ensuring full traceability, reliable timelines, and minimized risks while optimizing logistics across external suppliers.

MICROTEST: YOUR GREEN ASIC SERVICES PROVIDER

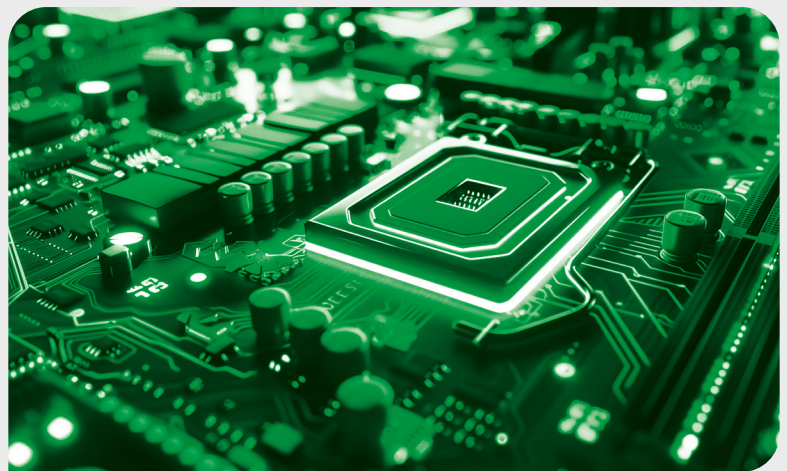


1. ASIC design

Microtest Group supports customers with:

- Outsourced Design Service
- IP Blocks Design/IP Blocks Portfolio
- Full ASIC (Application Specific Integrated Circuit) Design / ASSP (Application Specific Standard Parts) Design

 **During the ASIC design stage, Microtest can support on the Design for Testability.**



2. Silicon manufacturing (foundry)

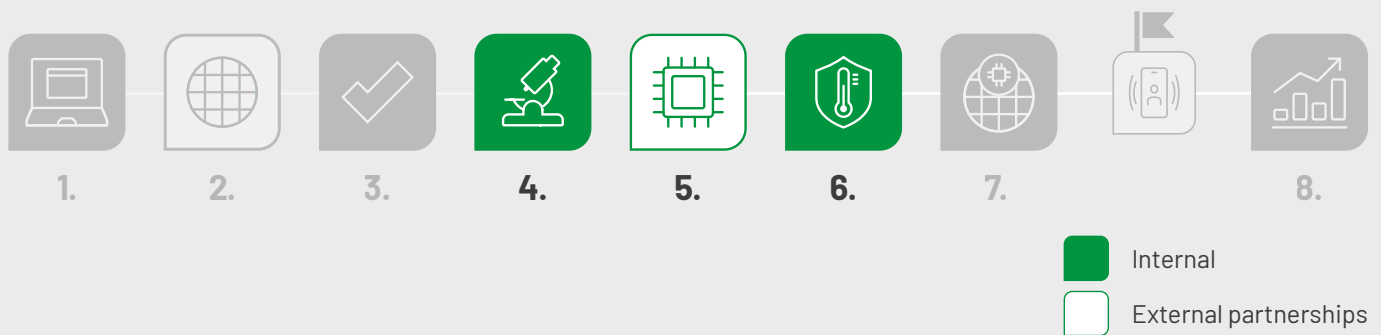
In this stage Microtest may act as main and sole point of contact through his reliable network.

3. Test solution development & manufacturing

Microtest designs and develops tailored test solutions (Hardware & Software) for the DUT, through the following key activities:

- In-house design and production of load boards (or socket boards) and sockets;
- In-house design and production of probe cards;
- Development of the test program, which sequentially performs various measurements in the test, such as continuity testing, power consumption, absolute rating, scan test, functional tests, etc.;
- Debugging, validation, and release of the final test program, ready for operational use.

MICROTEST: YOUR GREEN ASIC SERVICES PROVIDER



4. Characterization tests on wafer (WS) on package (FT)

During the Characterization Tests on Wafer (WS) and on Package (FT) phases, electrical functional measurements and analyses are performed. These tests determine whether the device has been correctly designed, if process parameters affect its operation, and how the device's performance changes under varying environmental conditions.

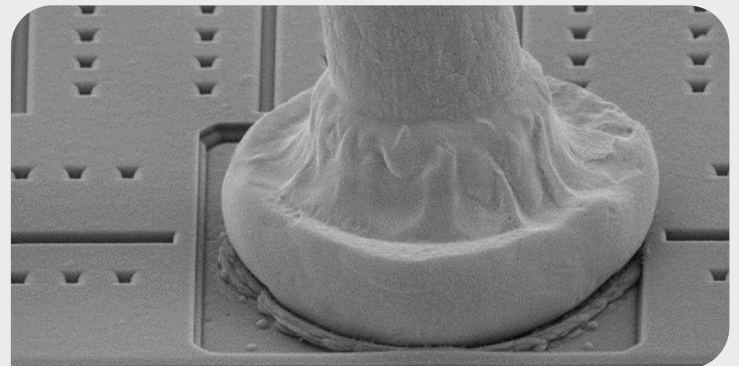
Among the characterization tests performed by Microtest:

- CORNER LOT (Process, voltage and temperature, PVT)
- Radiation Test (for rad hard applications)



5. Packaging design & assembly

In this phase, the package is created, and the dice are assembled into the packages.



6. Qualification & reliability testing

Qualification and reliability testing are essential activities to demonstrate that a device is compatible with a specific application area with special requirements, particularly for devices used in safety-critical environments.

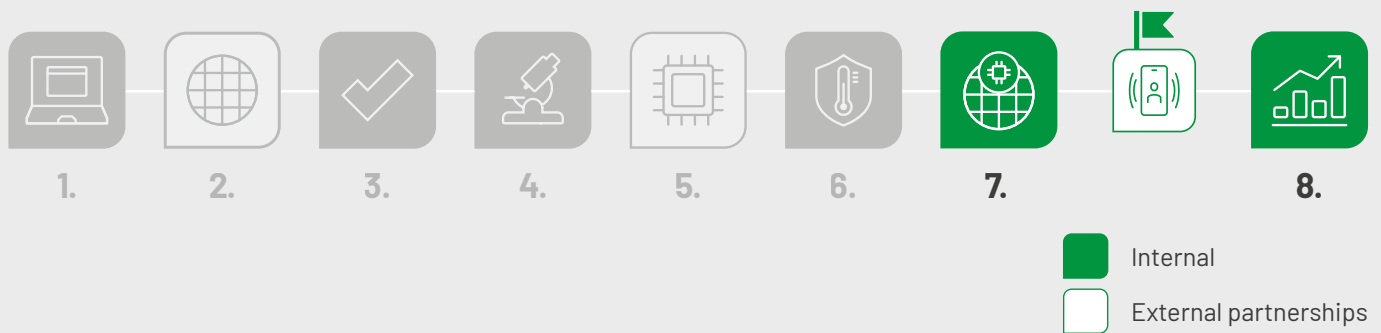
Typical areas regulated by specific standards include:

- industrial
- automotive
- medical
- defense & aerospace

The main types of qualifications are:

- Lifetime/reliability (Burn-In, HTOL, LTOL, ESD, Solderability Test)
- Environmental stress test (temp Cycling and Temp. Shock, HAST, THB, HTRB, HTGB, High Voltage, Humidity, Temp Reverse Bias (HV-H3TRB))
- Mechanical stress test (Vibration, Shock, Constant Acceleration)

MICROTEST: YOUR GREEN ASIC SERVICES PROVIDER



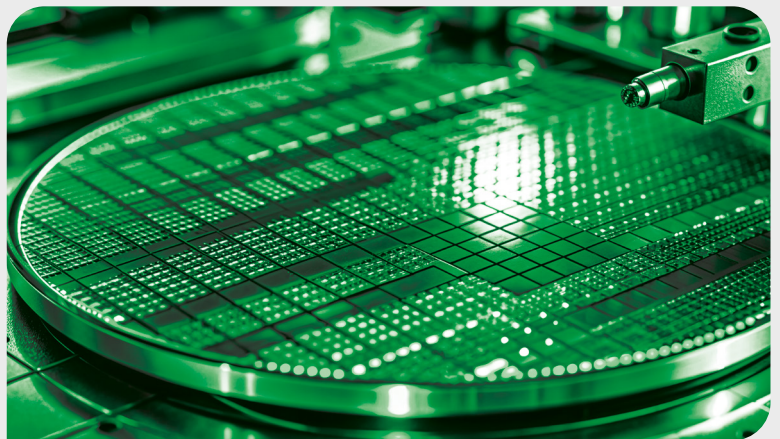
7. Production test on Wafer (WS) / on Package (FT, Final Test)

The key parameters of this process are:

- Parallelism (how many devices are tested simultaneously)
- Test time per individual touch-down
- Production yield



As volumes increase, Microtest provides services to optimize these parameters (yield improvement, parallelization, test-time reduction).



8. Failure & Technology analysis (FTA)

Microtest may support with many capabilities, including:

- Verification of History
- Anamnesis
- Curve Tracing, Electrical Characterization
- Fault Characterization
- X-Ray Microscopy (2D & 3D)
- Scanning Acoustic Microscopy (SAM)
- Decapsulation
- Failure Localization (EMMI, OBIRCH)
- Optical Microscopy
- Scanning Electron Microscopy (SEM)
- Energy Dispersive X-Ray Analysis (EDX)
- Metallographic Cross Sectioning
- Focused Ion Beam (FIB) Cross Section
- Infrared Spectroscopy (FTIR)
- Suggestions for Improvement

The Microtest Group operates in the semiconductor ecosystem, providing best-in-class Test Services, ATE, and ASIC design for the automotive, industrial, power, sensor and healthcare markets.

Leveraging 25 years of advanced performance, high parallelism, and pioneering automation, Microtest is the ideal company to optimize business operations and reduce testing costs.



Test House & Qualification Services



ASIC/ASSP/IP Design



Automatic Test Equipment Design & Manufacturing

