

Cascade

TESLA300 with MHU301-T

300 mm On-Wafer Power Semiconductor Probing System – Fully-automatic



Up to 10 kV / 200 A with thin-wafer support

Accurate Rds(on) with constant R_c at all temperatures with Contact Intelligence™ Technology

Anti-arcing solutions for wafer, probes and probe cards

Velox™ probe station control software

- Innovative operating software for advanced prober operation, temperature control, z-profiling and stepping
- Wafer mapping, automated wafer alignment, and auto XYZ and theta correction for sub-micron stepping
- Workflow Guides: step-by-step guidance through different processes, no matter if these are simple procedures or complex measurements

Remote operation from home or anywhere in the world

- Safely and easily place probes down in contact with the test pads (full capability with motorized positioners)
- Safely move the wafer to different test sites
- View and manage live microscope viewing of the probes and the wafer
- View Wafer Map test plans
- Initiate remote test programs to gather and analyze test data

Connection panels

- Coaxial, triaxial, and pin-jack feed-throughs available
- Limit cable strain and motion for measurement stability
- Instrument stays connected to back of panel
- Probe connection made at front of panel
- Simple to re-arrange cabling when needed

MicroChamber®

- EMI-shielding for low-noise measurements
- Environmentally sealed for moisture-free, low-temperature measurements
- Low volume for the fastest purge
- Light-tight to eliminate the need for a dark box

AttoGuard®

- Extends instrument guard to completely surround wafer
- Makes the station invisible to the instrument
- Extremely low capacitance and leakage characteristics
- Fast settling times

PureLine™ technology

- Enhanced EMI-shielding
- Ideal for low-level IV and CV measurements

Compact small footprint

- Integrated vibration isolation for reliable small pad probing
- Integrated system electronics with power loss wafer safety protection

TopHat™

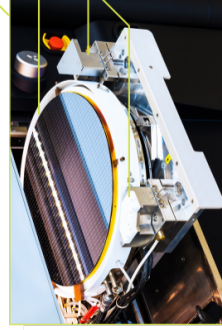
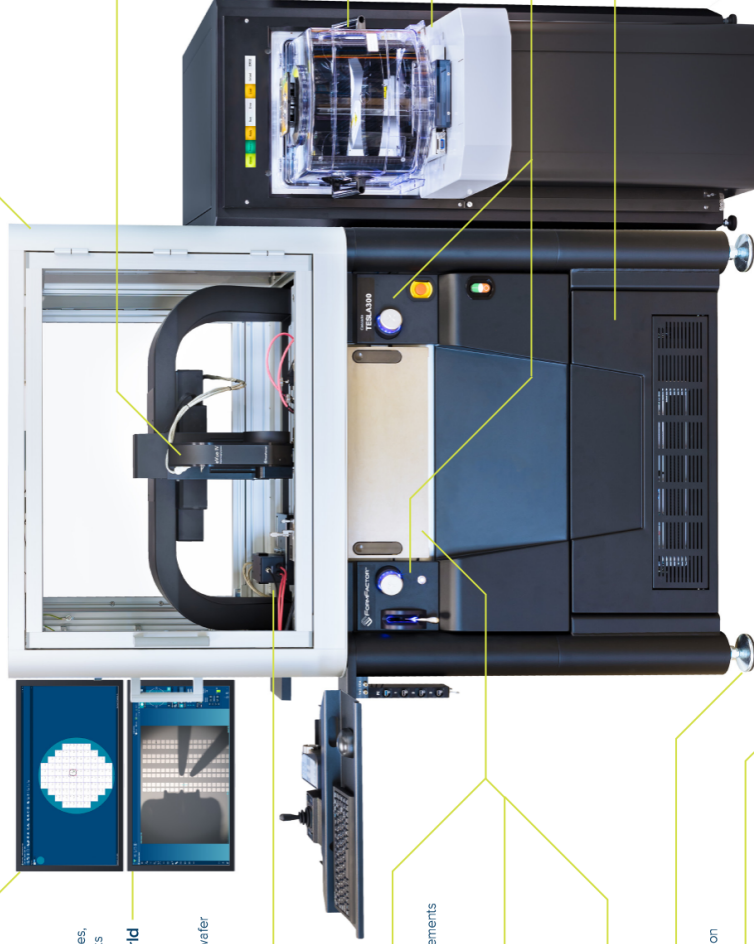
- Dark, shielded and frost-free measurement environment
- Allows full access to positioners and microscope at any temperature
- Allows probe adjustments without exposing wafer and chamber to external environment

Probes

- High voltage (3 kV / 10 kV)
- High current (300 A)
- Low leakage



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TUV-certified probing environment

- Safety-rated interlock system for high-power testing (meets EN 60947-5-1, EN 60204-1)
- Front, side and rear opening doors for ergonomic test setup and operation
- Side panel with cable pass-through for easy equipment configuration
- Full enclosure design (no light curtain) prevents accidentally tripping the safety interlock and stopping test

eVue™ IV Digital Imaging System

- Fast probe set-up with wide field-of-view and single objective in MicroChamber
- Easy navigation with multiple live video views of probes and wafer
- New high-speed focus system for faster and accurate die stepping
- New safety features for probes and usability

Material Handling Unit (MHU301)

- For fast handling of 200/300 mm wafers
- Load/unload wafer to hot/cold chuck (-60° C to +300° C)
- Integrated pre-aligner for flat/notch detection
- Barcode/2D Matrix code/OCR wafer code recognition from both sides (option)
- Quick Access Port option for higher throughput and additional wafer storage

SEMI-compliant load port

- For enhanced capacity of up to 25 wafers for extended autonomous operation
- For FOUP and FOSB 300 mm wafer cassettes
- Open cassette adapter for use of standard 200 mm wafer cassettes (option)

Thin wafer testing

- Safe robot handling for thin/warped/Talko wafers
- Advanced top lift and effector for thin wafer loading with 10kV TESLA chucks

3D Manual Controls

- Virtual Platen Lift and XY knobs at front for intuitive, and precise movement of chuck in X, Y, and Z-direction
- Platen Lift enables extremely rapid and intuitive way in performing many alignment tasks, like setting up the contact height

Contact Intelligence™ Technology

- Integrated HTS (High Thermal Stability) reduces probe drift and thermal soak time
- Optional Vueltrack™ reduces thermal soak time (faster time to data)
- Enables unattended test over multiple temperatures

Rollout stage with quick access to auxiliary sites

- Full wafer access via locking roll-out stage
- Two patented auxiliary chucks

Patented TESLA chuck technologies

- HV FerroGuard® 3kV (trial) / 10kV (copy) and low leakage
- Gold-plated MicroVc™ surface for minimal chuck-to-wafer contact resistance
- Prevents thin wafers from curling and breaking
- Wide range of temperature options from -60°C to 300°C

Auxiliary chucks

- High voltage 10 kV compatible multi-purpose mounts for substrates (cleaning, contact)
- Automated probe cleaning capabilities

Top-lift wafer loading

- Eliminates lifts/pins from chuck for best-in-class power device measurements
- Provides lowest contact resistance from wafer to chuck
- Supports fully automated testing up to 10kV by eliminating arcing point
- Superior performance for vertical device measurements (no lift pin holes under device)

TESLA300-MHU301-T-PH-1121

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