



**Wentworth  
Laboratories**

[www.wentworthlabs.com](http://www.wentworthlabs.com)



**ANALYTICAL PROBER**

**S200FA-HV**

**SEMI AUTOMATIC  
PROBE STATION**

The Pegasus™ S200FA-HV Semi Auto Probe Station is ideally suited for testing Power Devices and can be easily integrated with a wide range of tester instruments.

#### **PEGASUS™ S200FA-HV FEATURES**

- ✓ Flexible for a wide range of Power Device test applications; High Voltage, High Current.
- ✓ Precision engineering for reliable and repeatable sub-micron probing.
- ✓ Adaptable for industry standard testers.
- ✓ Temperature probing from  $-65^{\circ}\text{C}$  to  $+400^{\circ}\text{C}$  utilizing Wentworth's GuardMaster™
- ✓ Customizable product enhancing hardware and software options.
- ✓ Chuck isolation safety enclosures and relay switching
- ✓ Operator safety during measurement
- ✓ Robust mechanical design.
- ✓ Cost effective test solutions.

*Leader In ProbeAbility*

# MEETING YOUR POWER PROBING CHALLENGES

## HIGH POWER

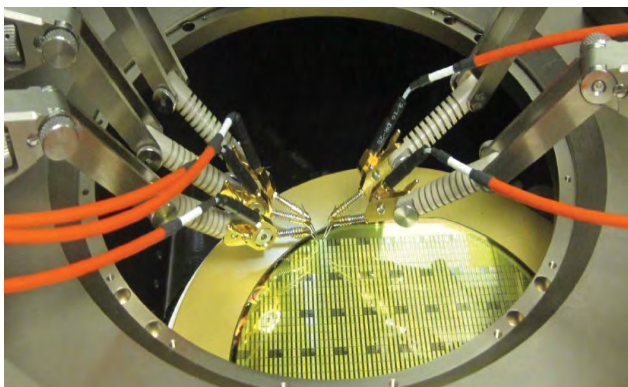
Wentworth's Pegasus™ S200FA-HV prober is ideally suited for testing Power Devices and can be easily integrated with a wide range of tester instruments. The Pegasus™ S200FA-HV platform provides a flexible on-wafer probing solution focused on high-power semiconductor characterization

The Pegasus™ S200FA-HV High Power configuration addresses today's power semiconductor test challenges with Low Contact Resistance Measurements requiring accurate measurements at high voltages. Kelvin Chucks & Backside probing solutions allow Contact Resistance measurements in the milli ohm range.

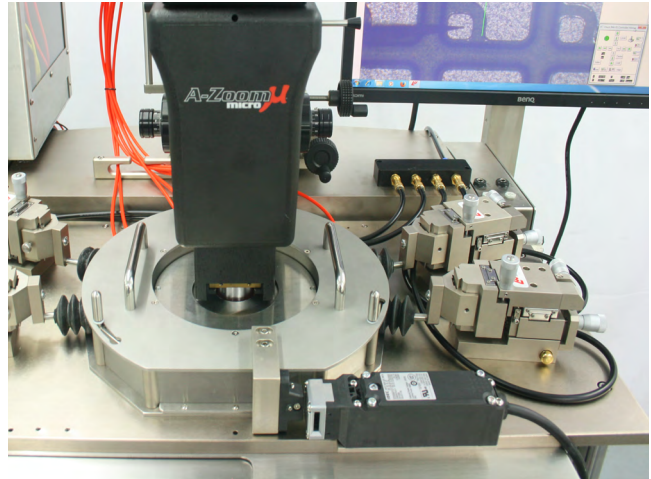
High Current probes & probe cards (up to 100A) handle and distribute excessive current loads. Dedicated HV & HC probes reduce probe and device destruction at high voltages/currents to prevent device heating and arcing at the tip.

## SPECIFICATION

SPECIFICATION	
Features	
Voltage	3KV (Triax), 10KV (Coax)
Current	200 Amps (Pulsed)
Leakage	<1pA (3KV)



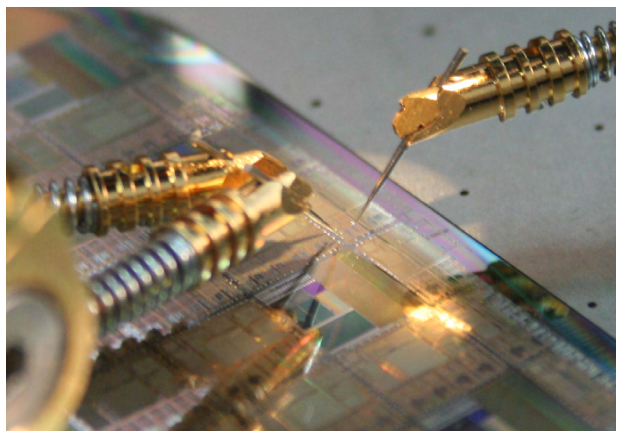
High Power Probing Set Up



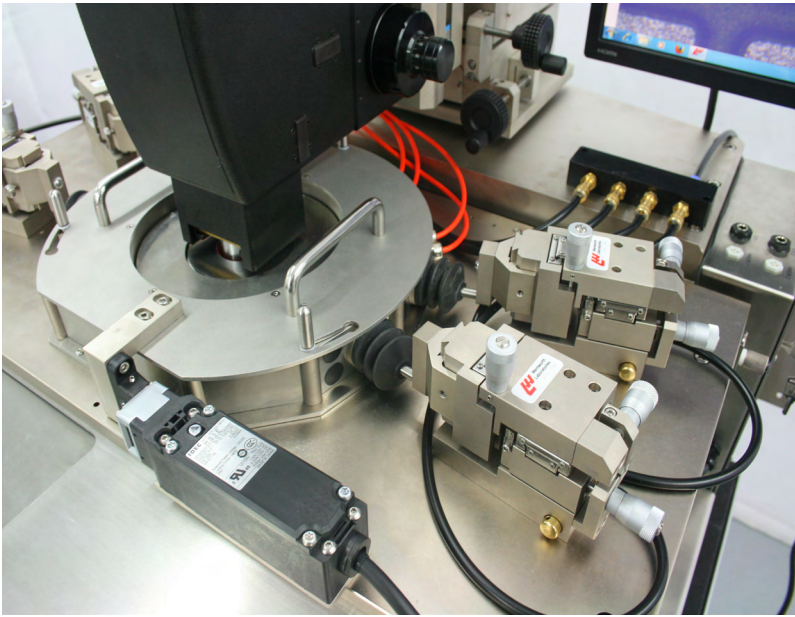
## ADDRESSES TODAY'S POWER SEMICONDUCTOR TEST CHALLENGES WITH LOW CONTACT RESISTANCE MEASUREMENTS REQUIRING ACCURATE MEASUREMENTS AT HIGH VOLTAGES

### Probing Challenges for Power Devices

- ✓ High Current Probing for DC and Pulsed.
- ✓ Kelvin Sense Measurement (Source & Chuck).
- ✓ Low CRes Back Side Contact (Drain/Source)
- ✓ Handling Thin Wafers
- ✓ Low Leakage/High Voltage
- ✓ Safety (High Current/High Voltage Measurements)



High Voltage/High Current Front End



*Pegasus S200FA-HV Guard Master, Microaccess & Interlocks*

### GUARD MASTER & MICROACCESS

GuardMaster™ surrounds the chuck and wafer stage shielding it and the probes from both EMI & Light.

The Micro Access Top Hat completes the EMI/Dark shielding allowing the probes and optics to be inserted into the probing environment while maintaining controlled probing conditions.

Features include:

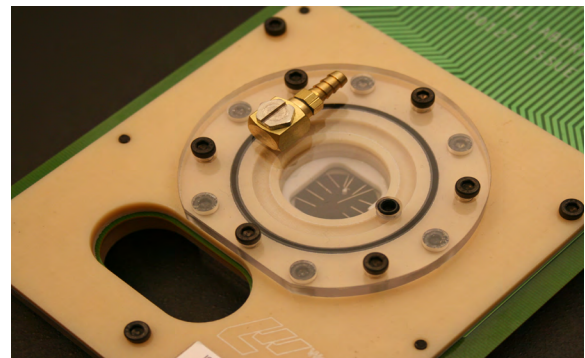
- ✓ Maintains environmental conditions while probing.
- ✓ Provides access for microscope objectives maintaining X,Y & Z manoeuvrability.
- ✓ Allows full control/access to probe manipulators.
- ✓ Can be used with up to (8) manipulators and/or probe cards.

### HIGH VOLTAGE ACCESSORIES

Wentworth's Pegasus™ S200FA-HV analytical prober can be configured with either High Voltage/High Current probe holders or use dedicated High Voltage/High Current probe card solutions.

Wentworth's dedicated High Voltage/High Current probe cards use a special surface mount atmospheric chamber to protect against 'arcing' or 'flash over'

Combined with high temperature probe card materials testing can be performed over a wide temperature range without the need to change the set up.



*Custom High Voltage/High Current Probe Card*

### HV PROBE NOISE VS TEMPERATURE

Temperature	Noise
+25°C	100fA
+200°C	100fA

### HV PROBE LEAKAGE VS TEMPERATURE

Temperature	Leakage
+25°C	<200pA
+200°C	<200pA

### HIGH VOLTAGE/THERMAL KELVIN WAFER CHUCKS

Specifications	
Temperature Stability	±0,1°C
Temperature Accuracy	±0,5°C
Isolation	>0.5 TOHM @ +25°C
Capacitance	1600pF (Standard) 200pF (Triax)
Max Voltage	10KV @ Chuck Top
Leakage	<1pA (3KV)



*High Voltage Thermal Chuck*

## MICROSCOPE MOUNTS

Type	Travel X/Y	Resolution	Drive	Recommended Microscope	Application
Manual Stereozoom (MMM)	50x50mm	0.9 µm	High Precision Lead Screws	Binocular or Trinocular Stereozoom Microscope	General Probing, pad sizes down to 50µm x 50µm
Manual High Powered (MMM)	50x50mm	0.9 µm	High Precision Lead Screws	Compound High Mag Objective Microscope	Small geometry pad or line probing down to 1-2µm
Programmable (PMM)	50x50mm	0.1 µm	Stepper motors	Compound High Mag Objective Microscope	Small geometry pad or line probing down to 1-2µm

## MANIPULATORS

TYPE	TPI / RESOLUTION / TRAVEL
PVX400 (Vacuum or Magnetic)	50 TPI / 1.2 µm/° / X = 5 mm, y= 5 mm, z = 5 mm
PVX500-100 (Vacuum or Magnetic)	100 TPI / 0.7 µm/° / X = 5 mm, y= 5 mm, z = 5 mm
PVX500-200 (Vacuum or Magnetic)	200 TPI / 0.4 µm/° / X = 5 mm, y= 5 mm, z = 5 mm

## MICROSCOPES

MICROSCOPE TYPE	MODELS AVAILABLE
Stereo view	GT Vision, Leica
High magnification	Mitutoyo FS-70 Series, A-Zoom
Without eyepieces	A-Zoom, Mono-Zoom

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