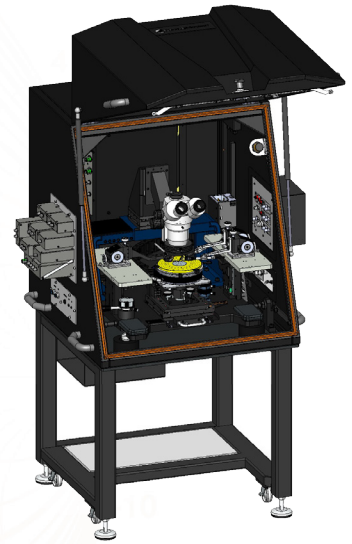


EPS150TESLA

150 mm Manual Probing Solution
for High-Power Applications



DATA SHEET

The EPS150TESLA is a very cost-effective and simple, yet highly precise probing solution for high-voltage, high-current and high-power measurements of power devices on substrates and wafers up to 150 mm.

The ergonomically-designed EPS150TESLA allows precise, yet intuitive single-handed operation. A pull-out stage allows quick and safe loading and unloading of the DUT.

The unique SIGMA™ options allow seamless integration with power device analyzers from leading suppliers, ensuring accurate measurement results, ease-of-use, and fast system configuration and set-up for various devices. The SIGMA option for Agilent B1505A with “Agilent-verified” cabling and connections eliminates risks of misconfiguration and inaccurate measurement results.

High-temperature chucks up to 300°C and up to 10,000 V isolation in combination with low-leakage performance provide an excellent measurement environment for vertical devices. High-voltage (up to 10,000 V) and high-current probe arms (up to 100 A pulsed) use standard tips and/or replaceable HCP probe tips to lower your measurement costs. The chuck design with SIGMA options enables precise measurement of leakage current down to a few picoAmps.

FEATURES / BENEFITS

Operator safety and device protection	Safety category 1 interlocks on a dark box door CeramPlate™ chuck design for highest isolation Unique high-voltage probe arm design with protected guard area
Measurement accuracy	Low-noise test environment with EMI-shield concept extended for high-voltage, high-current and high- power applications SIGMA options for integration of various measurement equipment for best measurement accuracy
Low cost-of-ownership	Probe concept allows expansion for other applications such as RF (S-parameter) measurements Unique high-voltage and high-current probe arms designed for standard probe tips and/or replaceable HCP probe tips

POWER HANDLING (CHUCK)

Maximum voltage	3,000 V (triax), 10,000 V (coax)
Maximum current	100 A (pulsed), 10 A (DC)

MEASUREMENT PERFORMANCE (TRIAXIAL)*

	10 V (typical)			3,000 V (typical)		
	40°C	200°C	300°C	40°C	200°C	300°C
Chuck leakage	100 fA	150 fA	200 fA	10 pA	20 pA	50 pA
Probe leakage	<10 fA			< 1 pA		

MEASUREMENT PERFORMANCE (COAXIAL)*

	10 V (typical)			3,000 V (typical)			10,000 V (typical)		
	40°C	200°C	300°C	40°C	200°C	300°C	40°C	200°C	300°C
Chuck leakage	10 pA	50 pA	100 pA	3 nA	30 nA	50 nA	5 nA	50 nA	100 nA
Probe leakage	1 pA			100 pA			10 nA		

* The TESLA solution with Cascade Microtech's patented MicroChamber® is recommended for better leakage performance and low temperature testing. Non-thermal performance (ex. 40°C specification) in low-humidity environment

CHUCK SYSTEM

Diameter	150 mm
DUT sizes supported	10 mm x 10 mm, 2 inch, 4 inch and 6 inch wafers
Surface	Gold-plated
Flatness	<15 µm at ambient, <40 µm at 200°C
Supported wafer thickness	≥100 µm
Configuration	Triaxial design
Temperature range	Ambient to 300°C

NON-THERMAL CHUCK SYSTEM

Chuck isolation	>100 GΩ
Flatness	≤10 µm at ambient

THERMAL CHUCK SYSTEM

Temperature range	+30°C to 300°C
Resolution	0.1°C
Accuracy	± 1°C and ± 0.5% above 100°C
Flatness	≤ 10 µm at ambient, ≤ 30 µm at 200°C
Transition rate (from 30°C to 300°C)	36 min.

MECHANICAL PERFORMANCE

Chuck Stage

Travel	155 mm x 155 mm (6 inch x 6 inch)
Resolution	5 μm
Planarity over 150 mm (6 inch)	< 10 μm
Load stroke, Y axis	90 mm
Z height adjustment range	10 mm
Z contact / separation / load stroke	0-3 mm adjustable
Theta travel (fine)	$\pm 8^\circ$
Theta resolution	7.5×10^{-3} gradient

Platen

Platen space (typical)	Universal platen: space for up to eight RPP210
Z-Height adjustment range	Maximum 20 mm (depending on configuration)
Minimum platen-to-chuck height	16 mm (universal platen)
Separation lift	200 μm
Separation repeatability	< 1 μm
Vertical rigidity / force	5 μm / 10 N (0.2 mils / 2.2 lb.)
Accessory mounting	Magnetic

Manual Microscope Stage (On Bridge)

Travel range	50 mm x 50 mm (2 inch x 2 inch)
Resolution	$\leq 5 \mu\text{m}$ (0.2 mils)
Microscopes	For stereo microscopes with large working distance

MICROSCOPE

Type	Trinocular stereo zoom
Zoom range	1 : 6.7
Magnification	15-100x
Camera port	For cameras with C-mount
Illumination	Long life-time LED ring light

PHYSICAL DIMENSIONS

Station	880 mm (W) x 840 mm (D) x 1470 mm (H) (34.6 inch x 33.1 inch x 57.8 inch)
Station weight	~ 150 kg (~ 330 lb.)

SAFETY

Interlock	Hardware (safety category 1)
Interlock connector	BNC-Twinax (specific interlock cables available for various measurement instruments, e.g. Agilent B1505A or Curve Tracers 3100/3200)

FACILITY REQUIREMENTS

Power	100-240 VAC, 47-63 Hz V, 500 VA (without thermal chuck)
Vacuum	-0.8 bar
Compressed air	4 bar

ORDERING INFORMATION

Part Number	Description
EPS150TESLA	150 mm manual probing solution* for high-power applications (chuck option required)
OPT-EPS-150T-NT	Non-thermal chuck for EPS150TESLA (to be ordered with a thermal chuck)
OPT-EPS-150T-300C	Thermal chuck for EPS150TESLA (ambient to 300°C)
EPS-ACC-150T-AG	SIGMA for Agilent B1505A, complete application integration including positioners, probes, tips, cables, adapters and interface
EPS-ACC-150T-AG-LT	SIGMA for Agilent B1505A light, application integration including cables, adapters and interface
EPS-ACC-150T-AG-MS	SIGMA for Agilent B1505A light, application integration including cables, adapters and interface
EPS-ACC-150T-IW	SIGMA for Curve Tracer CT-3100/3200, complete application integration including positioners, probes, tips, cables, adapters and interface
EPS-ACC-150T-IW-LT	SIGMA for Curve Tracer CT-3100/3200 light, application integration including cables, adapters and interface
EPS-ACC-150T-PCA	Probe card holder option for EPS150TESLA for non-arcing 4.5-inch probe cards
EPS-ACC-TV	Analog TV option for EPS packages containing C-mount PAL TV camera, cables, power supply and 19-inch TV monitor

* The EPS150TESLA manual probing solution includes: MPS150 probe station with a 150 mm chuck stage, a platen (20 mm height adjustment), fine chuck rotation, manual scope transport on bridge, camera-ready stereo zoom microscope with 15x - 100x magnification and LED illumination, vibration-isolation solution, EMI-shielded safety enclosure, mounted on a table, tweezers, and all tools for setup and operation. Requires thermal or non-thermal chuck option.

REGULATORY COMPLIANCE

Certification	CE
Power supply certification	CE, UL, PSE

WARRANTY

Warranty*	Fifteen months from date of delivery or twelve months from date of installation
Service Contracts	Single and multi-year programs available to suit your needs

*See Cascade Microtech's Terms and Condition of Sales for more details.

© Copyright 2012 Cascade Microtech and MicroChamber are registered trademarks, CeramPlate and SIGMA are trademarks of Cascade Microtech, Inc. All other trademarks are the property of their respective owners.

Data subject to change without notice

EPS150TESLA-DS-0712

Cascade Microtech, Inc.
Corporate Headquarters
toll free: +1-800-550-3279
phone: +1-503-601-1000
email: cmi_sales@cmicro.com

Germany
phone: +49-89-9090195-0
email: cmg_sales@cmicro.com

Japan
phone: +81-3-5615-5150
email: cmj_sales@cmicro.com

China
phone: +86-21-3330-3188
email: cmc_sales@cmicro.com

Singapore
phone: +65-6873-7482
email: cms_sales@cmicro.com

Taiwan
phone: +886-3-5722810
email: cmt_sales@cmicro.com

