DCP-HTR

High-Performance DC Parametric Probe

DATA SHEET

The DCP-HTR probe delivers fA-level measurement capability from -65°C to 300°C for advanced characterization and reliability testing. Its unique design offers superior guarding and shielding over-temperature, overcoming the high-temperature performance limitations of standard coaxial needles. For full-triaxial current/voltage over-temperature measurements, using triaxial cables, the DCP-HTR probe should be used with Cascade Microtech's parametric probing systems with MicroChamber® and AttoGuard® technology. When used with MicroChamber, the DCP-HTR allows full utilization of semiconductor parametric test instruments. The optional probe tips with small diameter are ideal for probing pads as small as 30 µm x 30 µm.

FEATURES / BENEFITS

Low-noise electrical performance	Ultra-low, fA-level current and fF-level capacitance measurements from -65°C to + 300°C
Microstrip probe tips	Guarantees fully-guarded measurements to fA and fF levels
Precision, industry-standard SSMC 50 Ω connectors	Individual connectors provide force-sense connection for quasi-Kelvin and CV measurements
Selection of probe tip diameters	Allows probing of different pad materials and sizes
Easily replaceable probe tips	Fast replacement of worn probes without the need for tools

CascadeMicrotech®

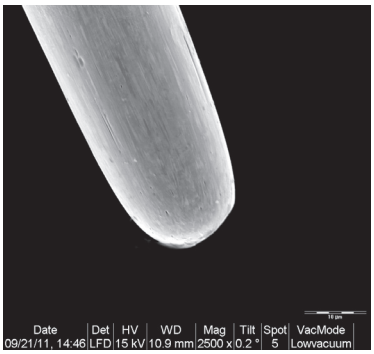
GENERAL SPECIFICATIONS

Breakdown voltage	>500 V
Isolation resistance	>1 x $10E^{13}$ Ω
Frequency response (3 dB)	150 MHz
Mounted temperature range	-65°C to +300°C (above 250°C: 8 hours max operation)
Typical leakage and noise current	±10 fA at -65°C to 200°C, ±20 fA at 200°C to 300°C
Residual capacitance	<100 fF (probe tip in air at room temperature)
Characteristic impedance	50 Ω
Body material	Gold plated
Connector type	SSMC
Minimum pad size	30 µm x 30 µm (10 µm radius tips required)

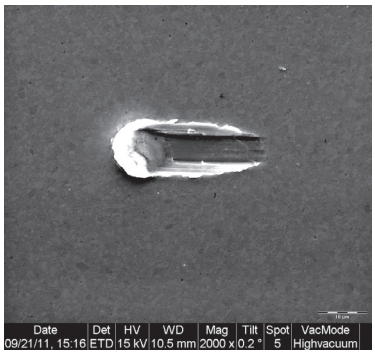
TIP SPECIFICATIONS

Tip material	Tungsten
Contact force	3 gram/25 µm
Scrub	Typically 2.5:1 skate ratio (25 µm overdrive = 10 µm skate)
MicroChamber compatible	Yes
AttoGuard compatible	Yes

PN (10-PK)	TIP SHAPE	TIP Ø (µm)	TIP Ø TOL (µm)	DEPTH	BEAM ANGLE
154-001	radius	19	+/– 3.8	0.358	7°
154-003		10	+/– 2.5		

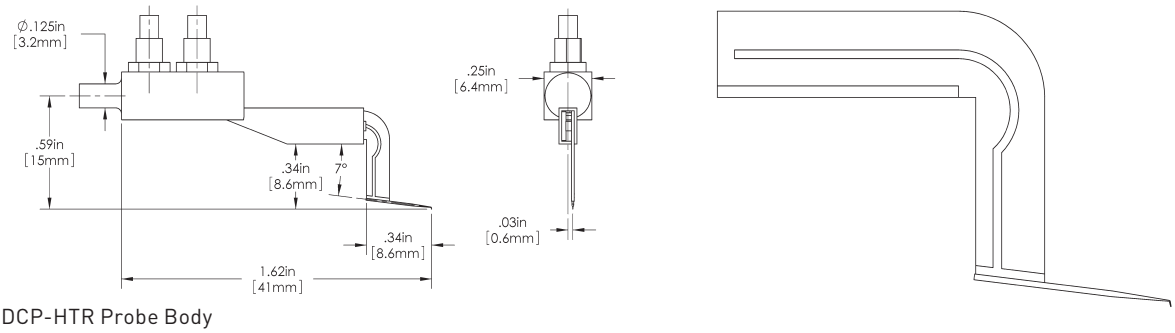


Radius Tip

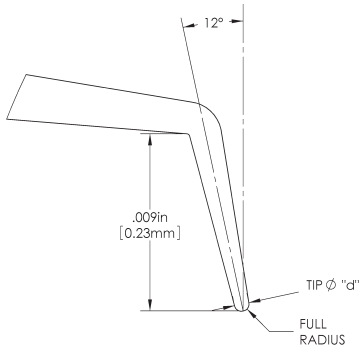


154-001 19 µm

DIMENSIONS

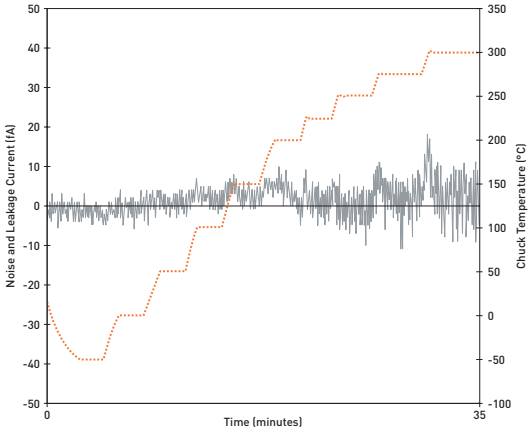


DCP-HTR Probe Body

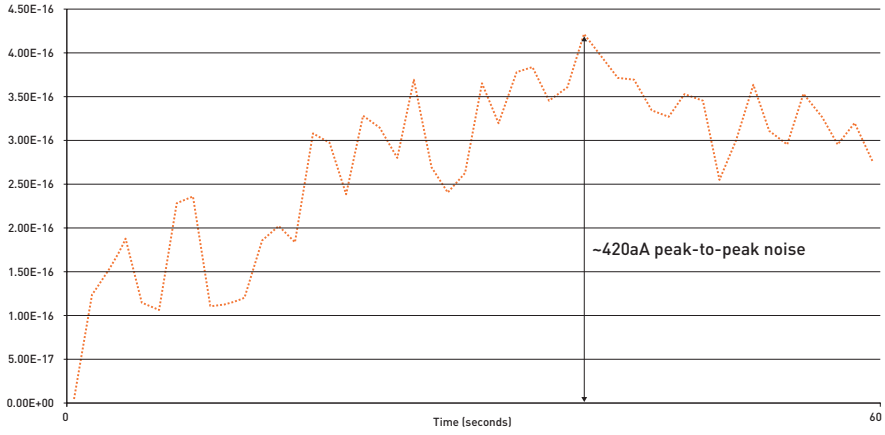


Radius Tip Shape

PERFORMANCE



Typical DCP-HTR probe noise and leakage over temperature when used in conjunction with Cascade Microtech probe station with MicroChamber and AttoGuard technology



Typical DCP-HTR probe noise and leakage at ambient when used in conjunction with Cascade Microtech probe station with MicroChamber and AttoGuard technology

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
DCP-HTR	DCP-HTR DC probe holder
151-286	Thermally-stable probe arms for DCP-HTR (for MS-1 positioners, triax)
151-287	Thermally-stable probe arms for DCP-HTR (for DCM positioners, triax)
151-288	Thermally-stable probe arms for DCP-HTR (for DCM positioners, coax)
154-001	Replaceable probe tips, box of 10, radius tip, 19 µm diameter
154-003	Replaceable probe tips, box of 10, radius tip, 10 µm diameter
138-020	Edge Sense, single blade ceramic needle for DCP-HTR probe body

DCPHTR-DS-0715

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