SWT 2001

FEINMETALL GMBH
Prüftechnik für Elektronik

“ Always Trouble with Planarity and Alignment?

Solved with Vertical Probe cards ”

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Content

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- What`s ViProbe
- Buckling Beam Technology
- Contact Force
- Scrub Mark
- Influence to Resistance

ViProbe ®

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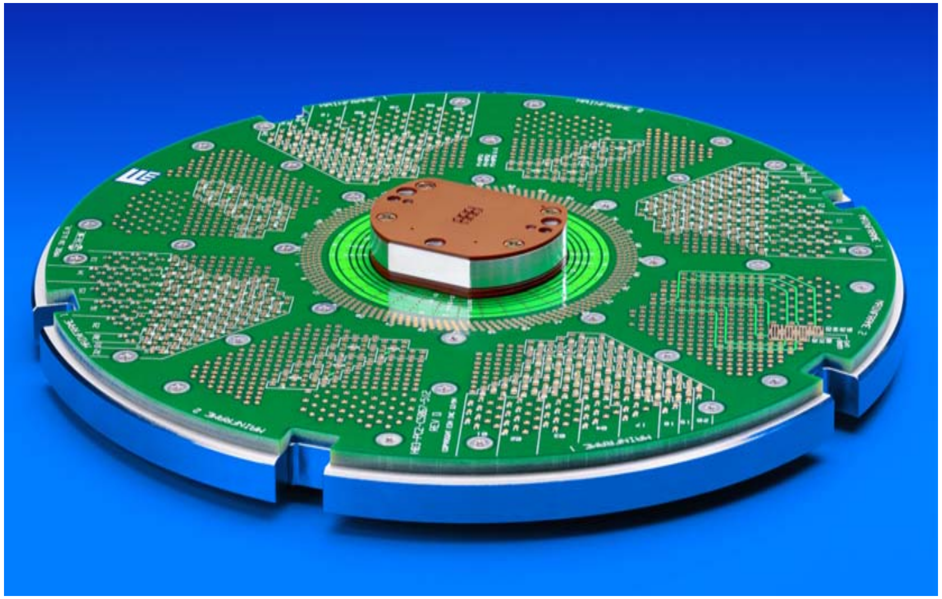
Vertical Probing …
… with Buckling Beam Technology for Wafer testing.



Product Line for:

- Full Array Probing
  Flip Chip Technology
- Parallel Probing -
  Processor, Logic e.g.
- Multi Die Probing
  Memory Technology

Advantages

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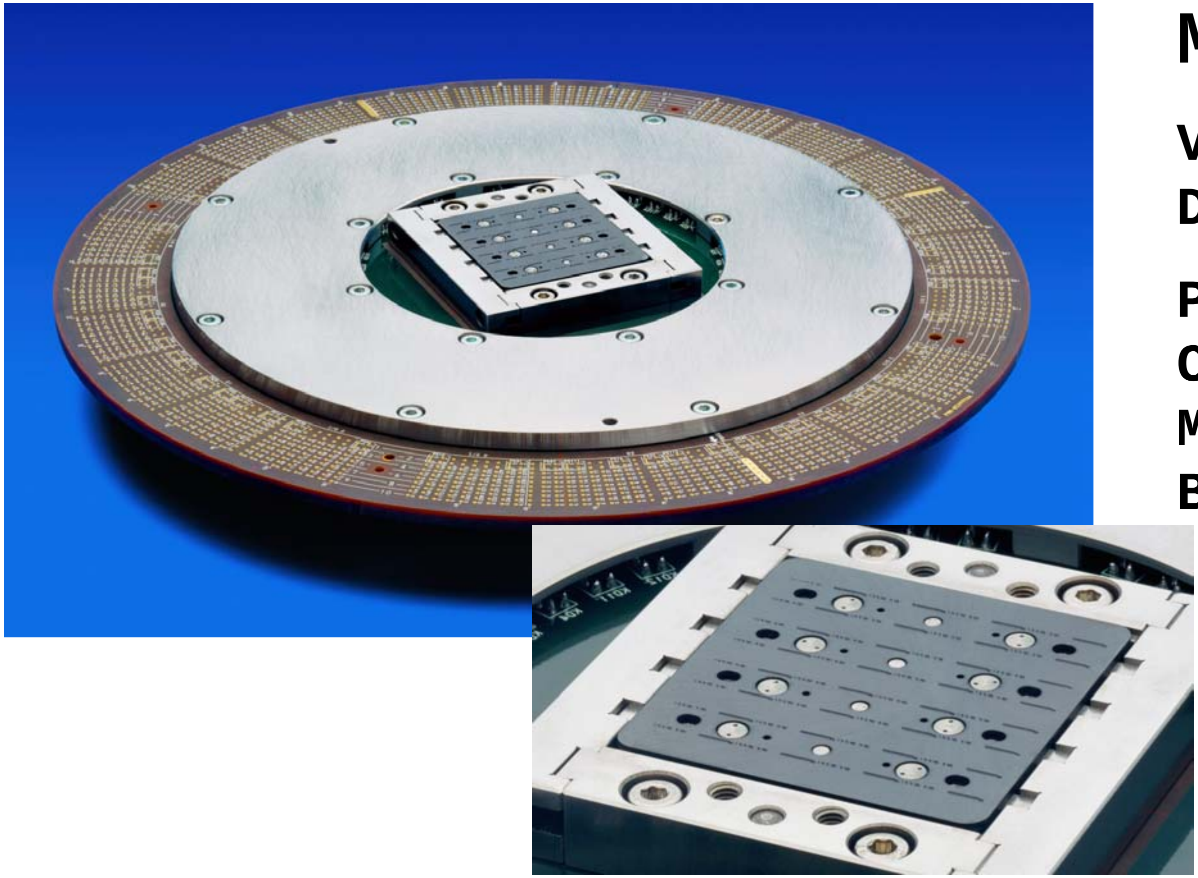
- Full array probing
- Constant contact force
- Tolerates changing planarity conditions
- Precise alignment over the full lifetime
- Minimum impact on the bondpad
- Cleaning free applications possible
- Constantly low contact resistance

ViProbe ® Application

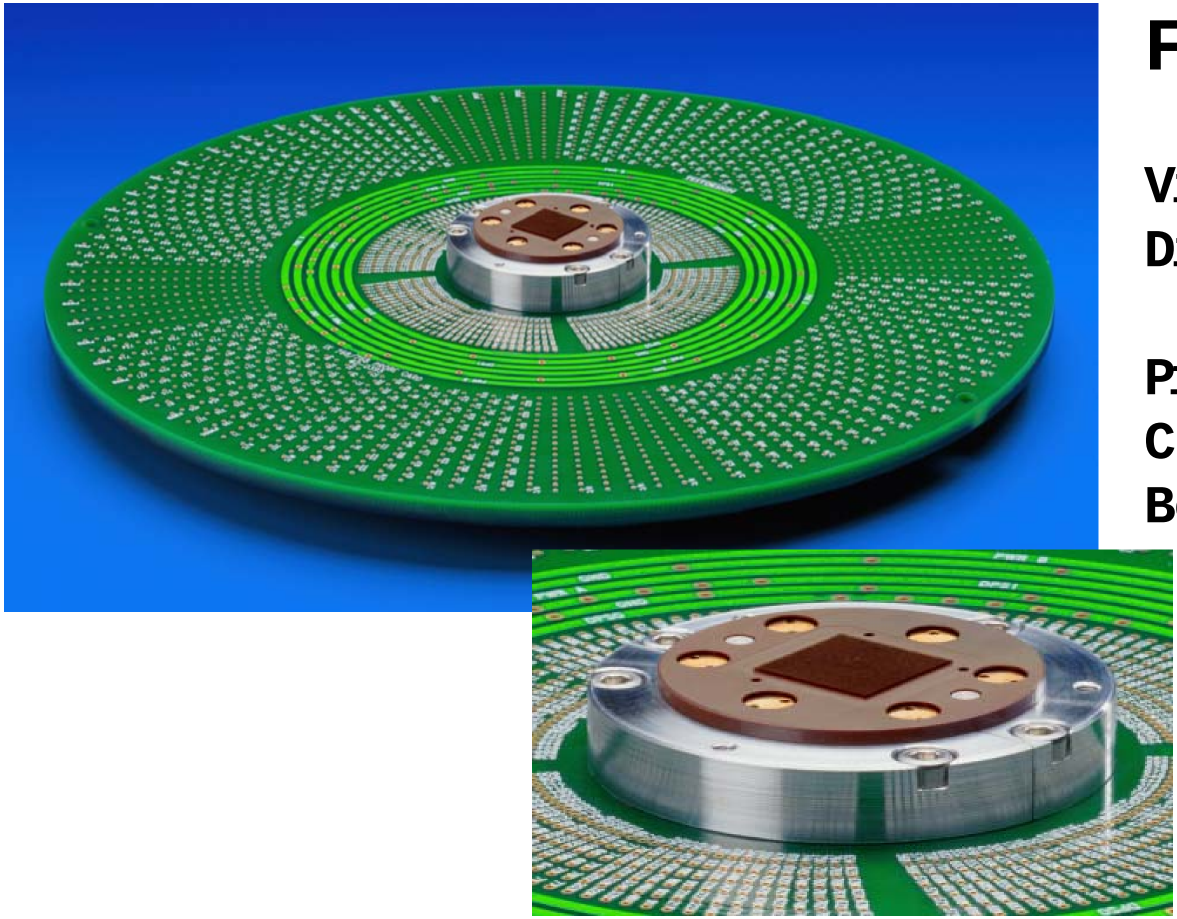


Memory

ViProbe 50 x 50 HT
Direct Attached

Pitch: 130 µm
Contacts: 1472
Multable 4x8 (32)
Beam Tip: pointed

ViProbe® Application



Flip Chip

ViProbe 17x17 Rt
Direct Attached

Pitch: 225 µm
Contacts: 3 200
Beam Tip: flat

Specification

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Application	Probe Type	Min Pitch µm	Temp °C	Aktive Area mm
Flip Chip/ Area Array	Flat	200 160	30/150	17X17
Aluminum Pads	Pointed	105 95	30/150	17X17 32X32
Multi-DUT (Memory)	Pointed	105 95	30/150	40X60

Buckling Beam Principle

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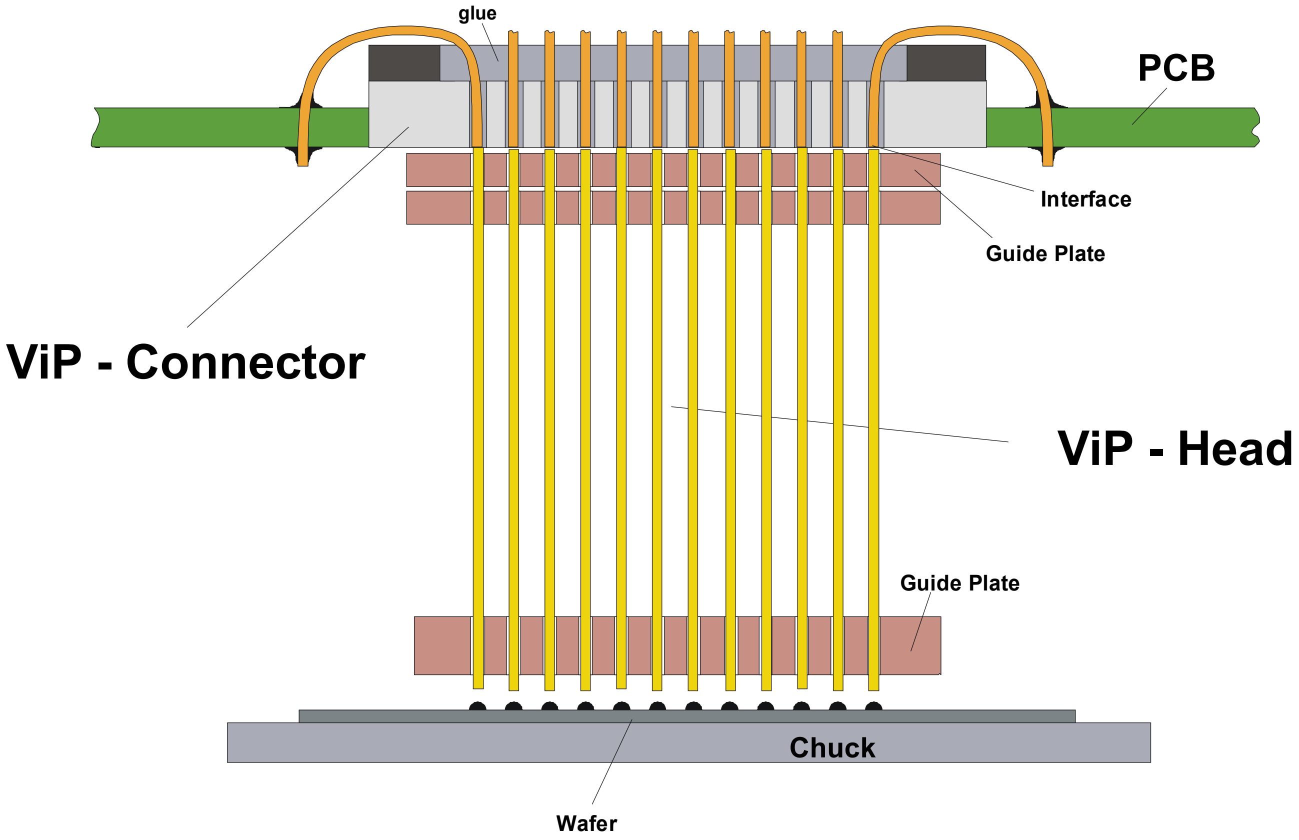
Standard - wired Connector



ViProbe ® Contact Force

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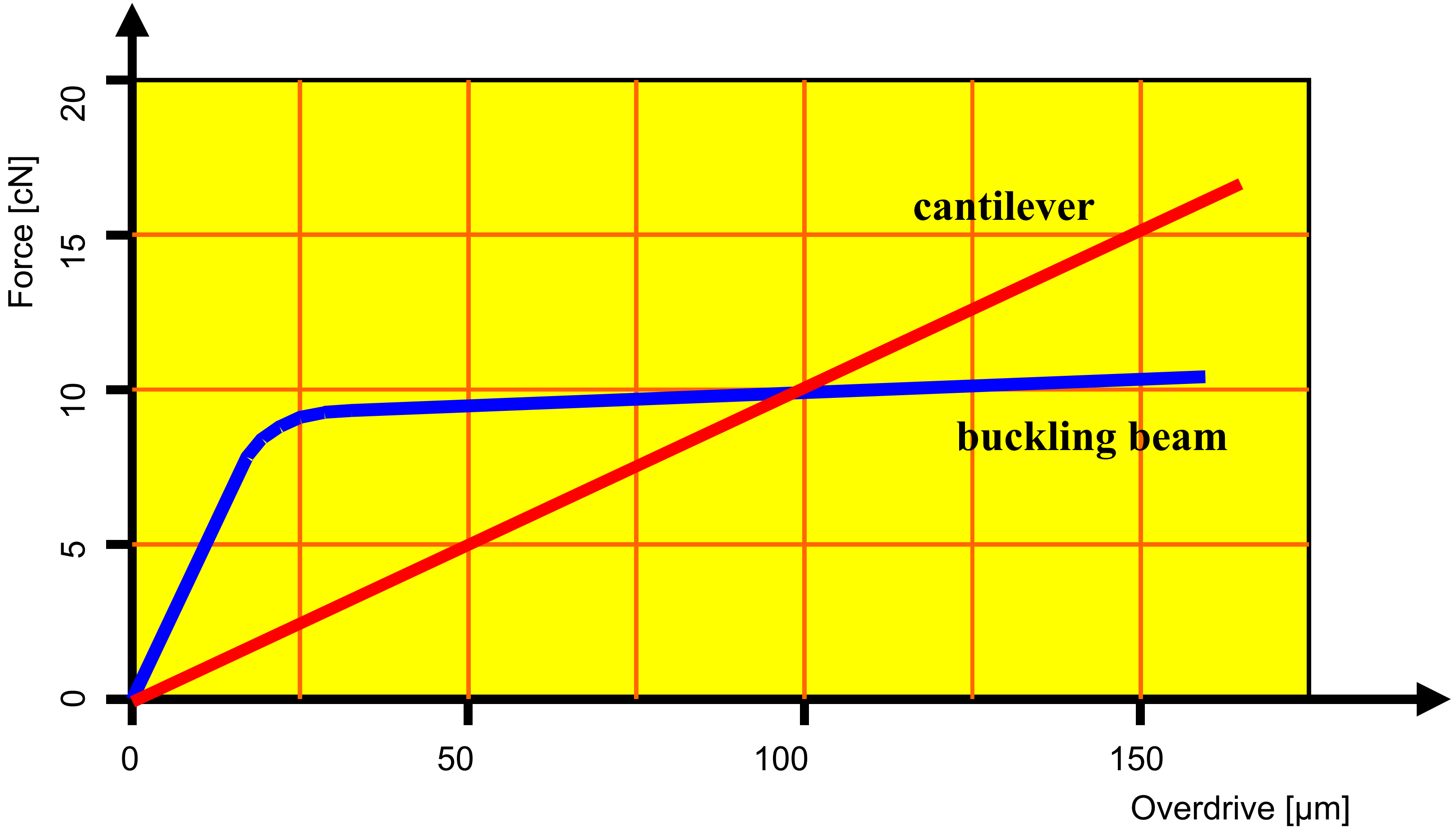
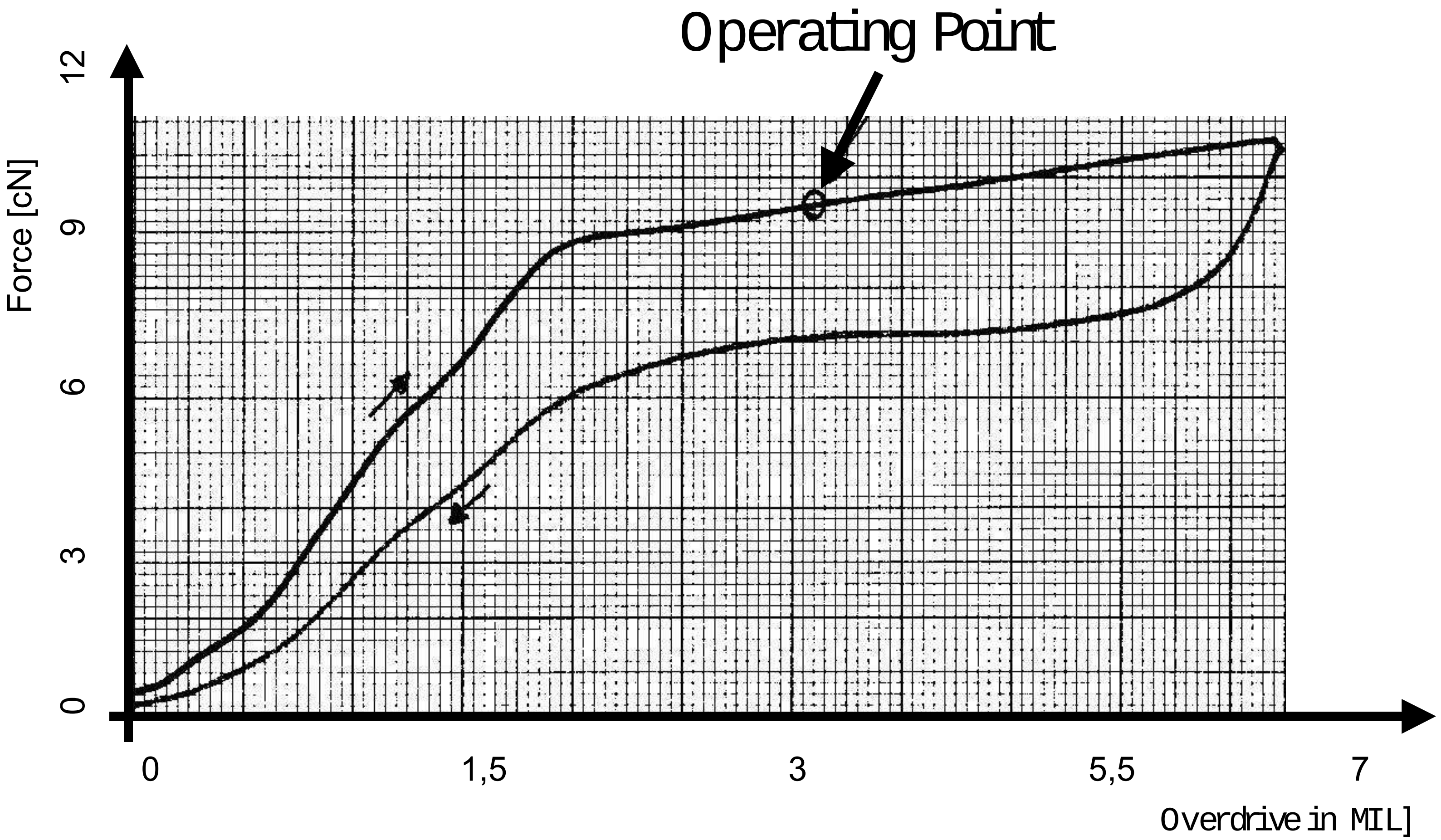


Contact Force Data



ViProbe® Contact Force Range

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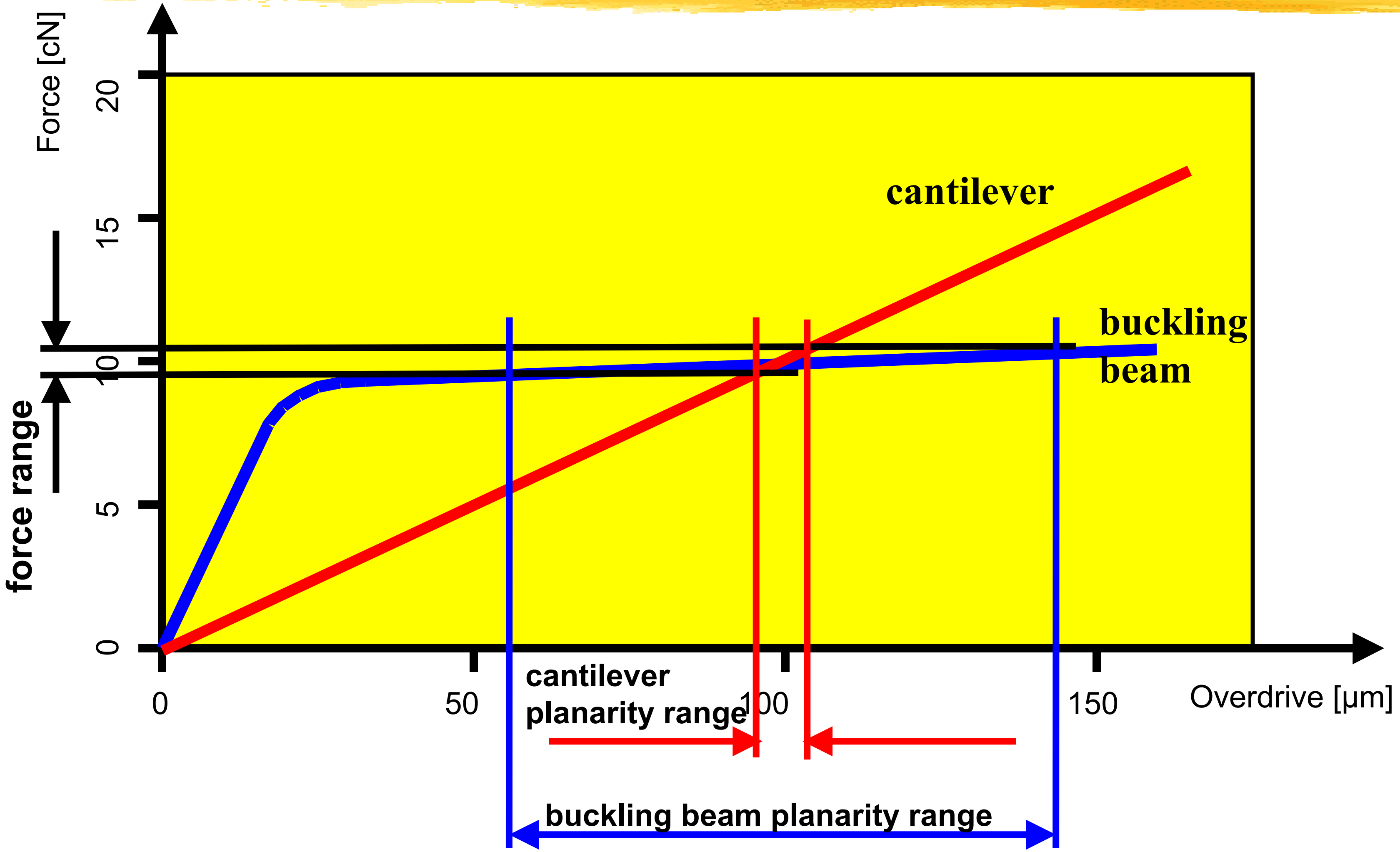
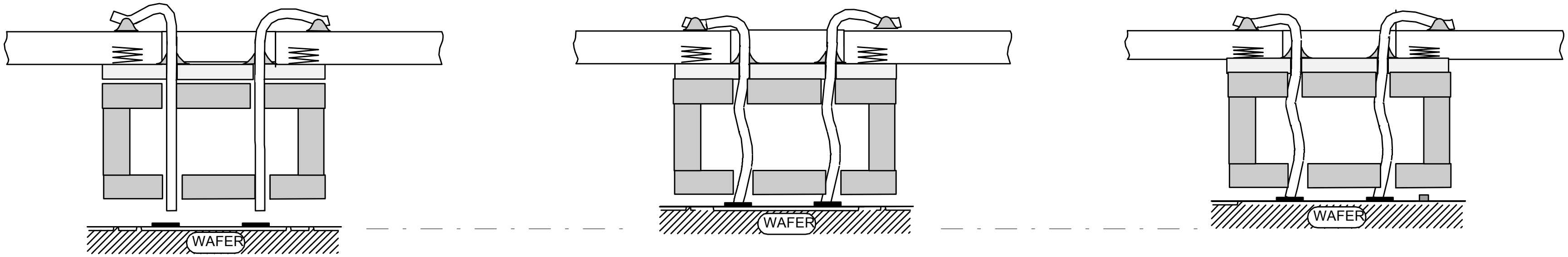


Overdrive

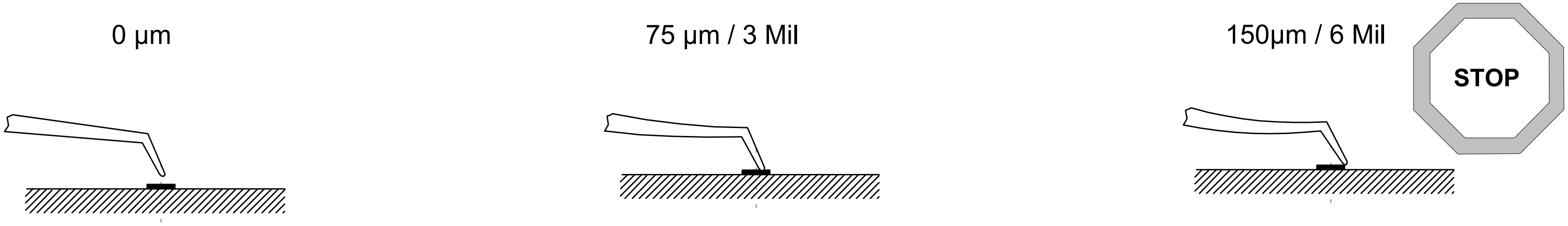
ViProbe


OT 0 MIL

75 µm / 3 Mil

150 µm / 6 Mil

Needle Probe Card


0 µm

75 µm / 3 Mil

150µm / 6 Mil

Typical Scrub Mark

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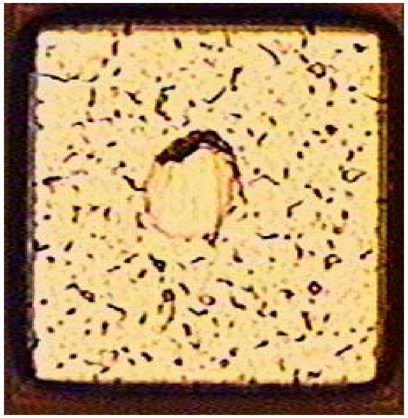

- Small impact compared to cantilever
- Independent of overdrive variations
- Scrub mark stays on the pad, even with large overdrive

Scrub Mark Dimensions

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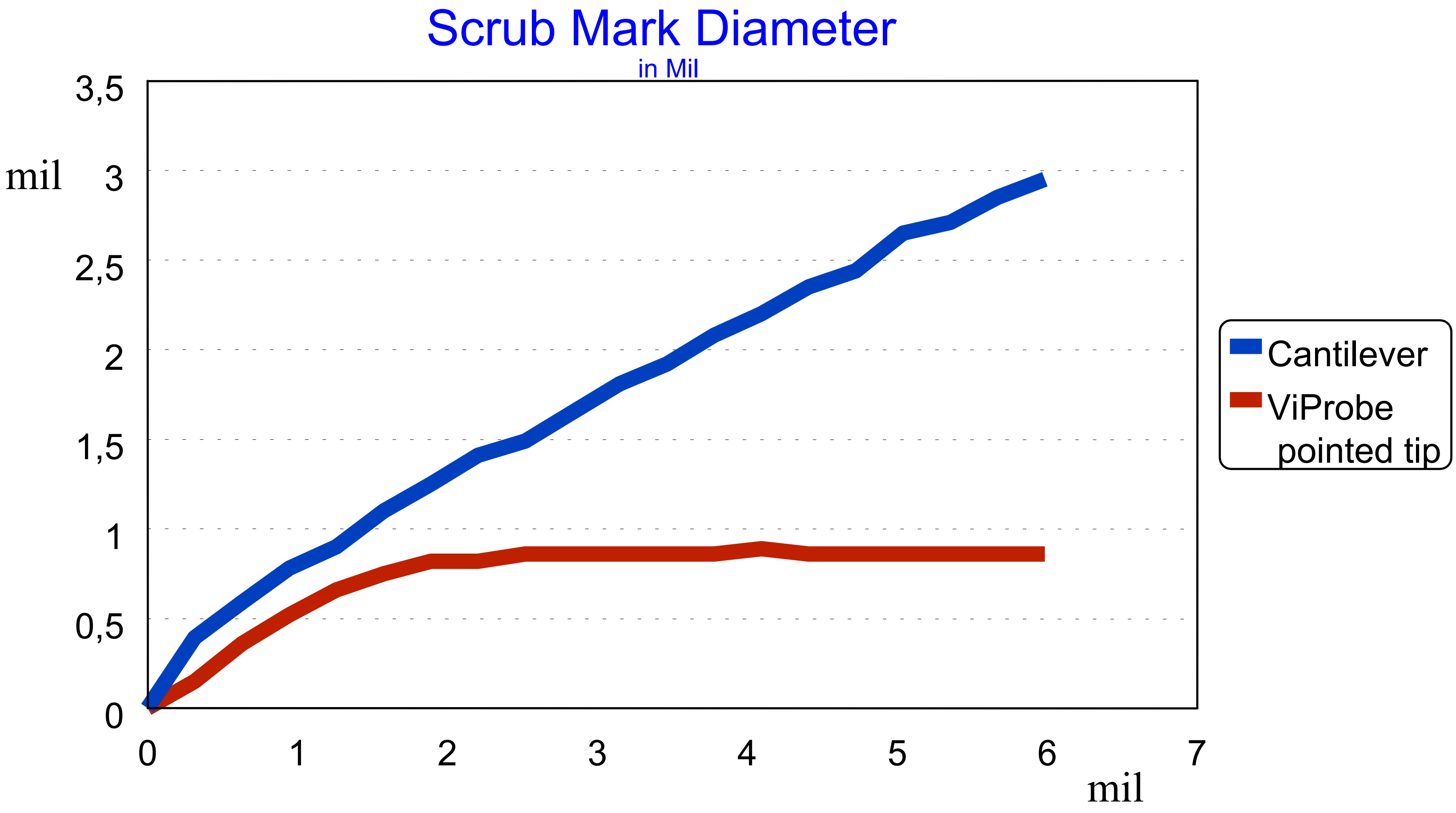
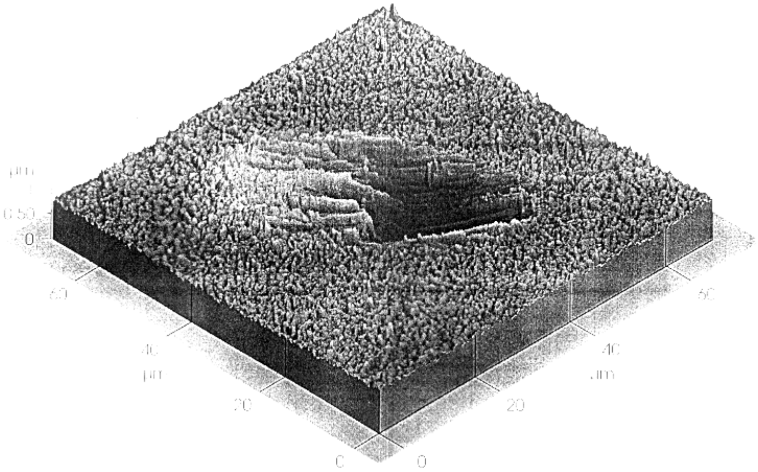


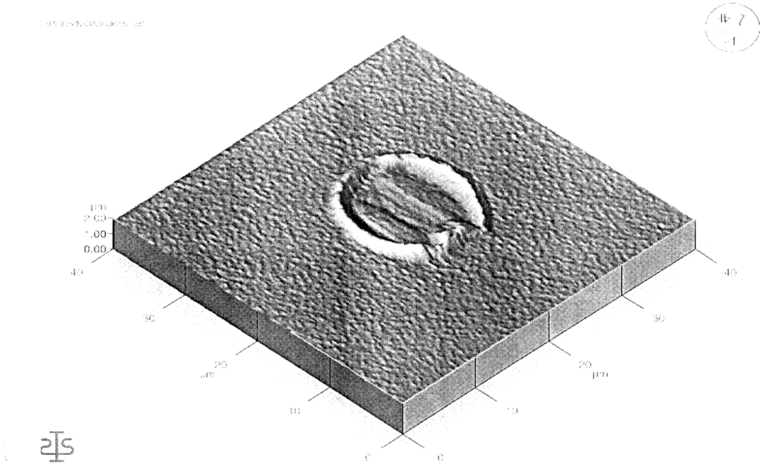
Scrub Mark Dimensions

Scrub Mark

Needle Probecard



ViProbe



Scrub Mark Dimensions

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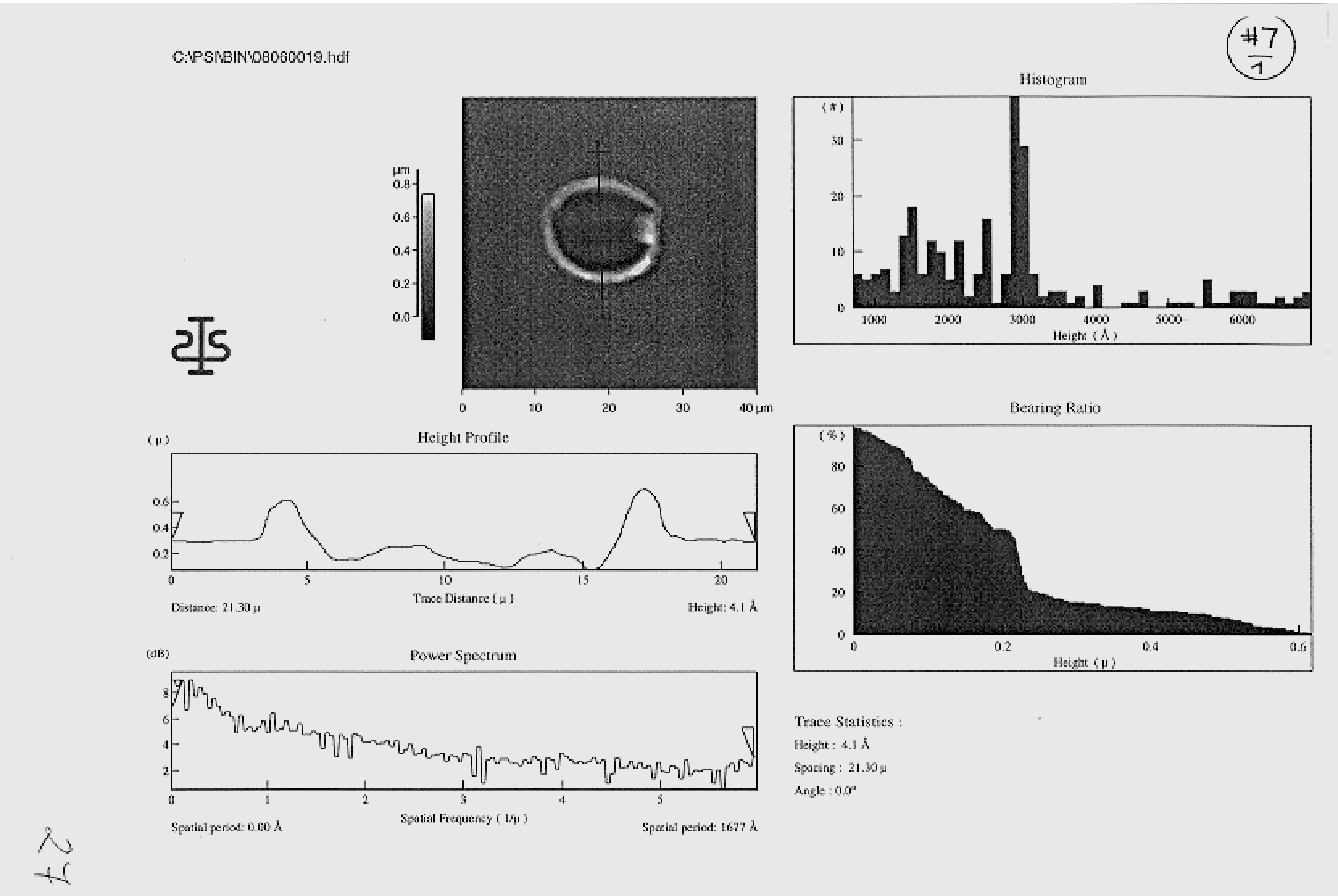


C:\PSI\BIN\08060019.hdf

#7
1

Distance: 21.30 µ

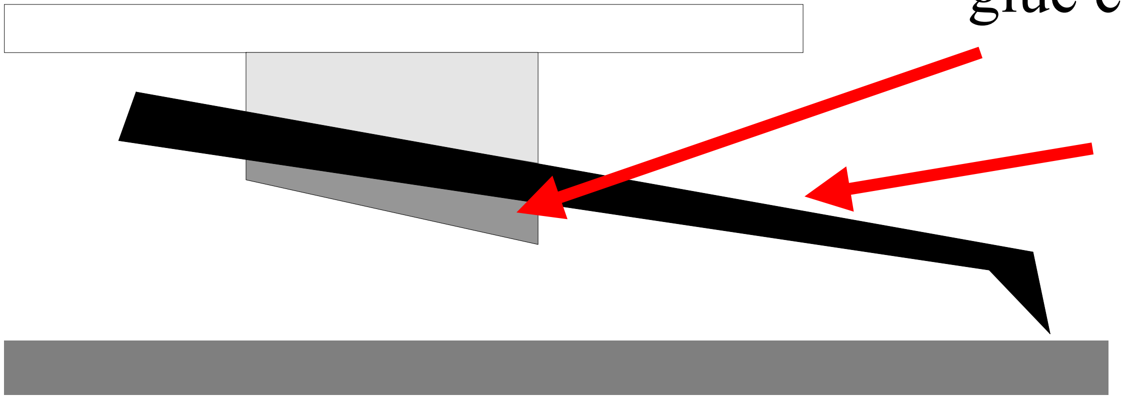
Height: 4.1 Å

Spatial period: 0.00 Å

Spatial period: 1677 Å

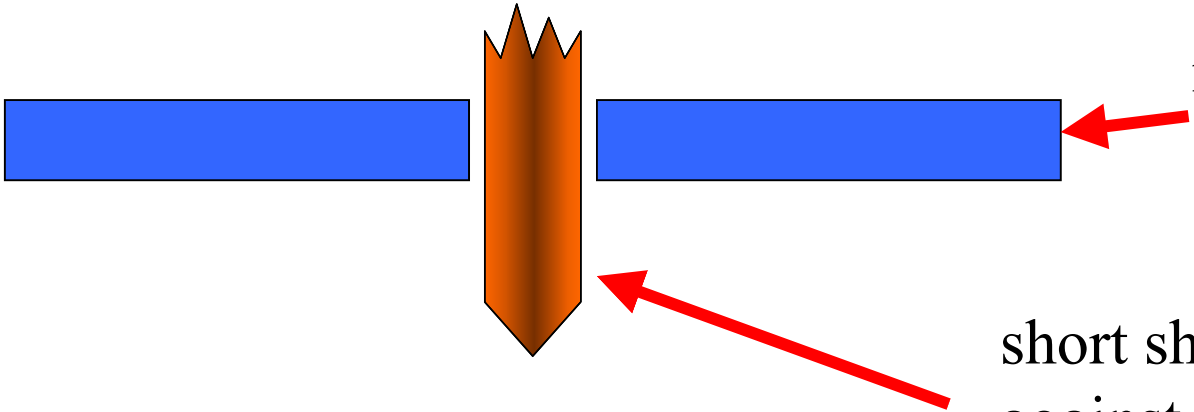
Trace Statistics :
Height : 4.1 Å
Spacing : 21.30 µ
Angle : 0.0°

Constant Alignment



glue changes over time

long shaft is sensitive to damage



rigid plate does not change its position

short shaft is stable against damage

Influence to Contact Resistance

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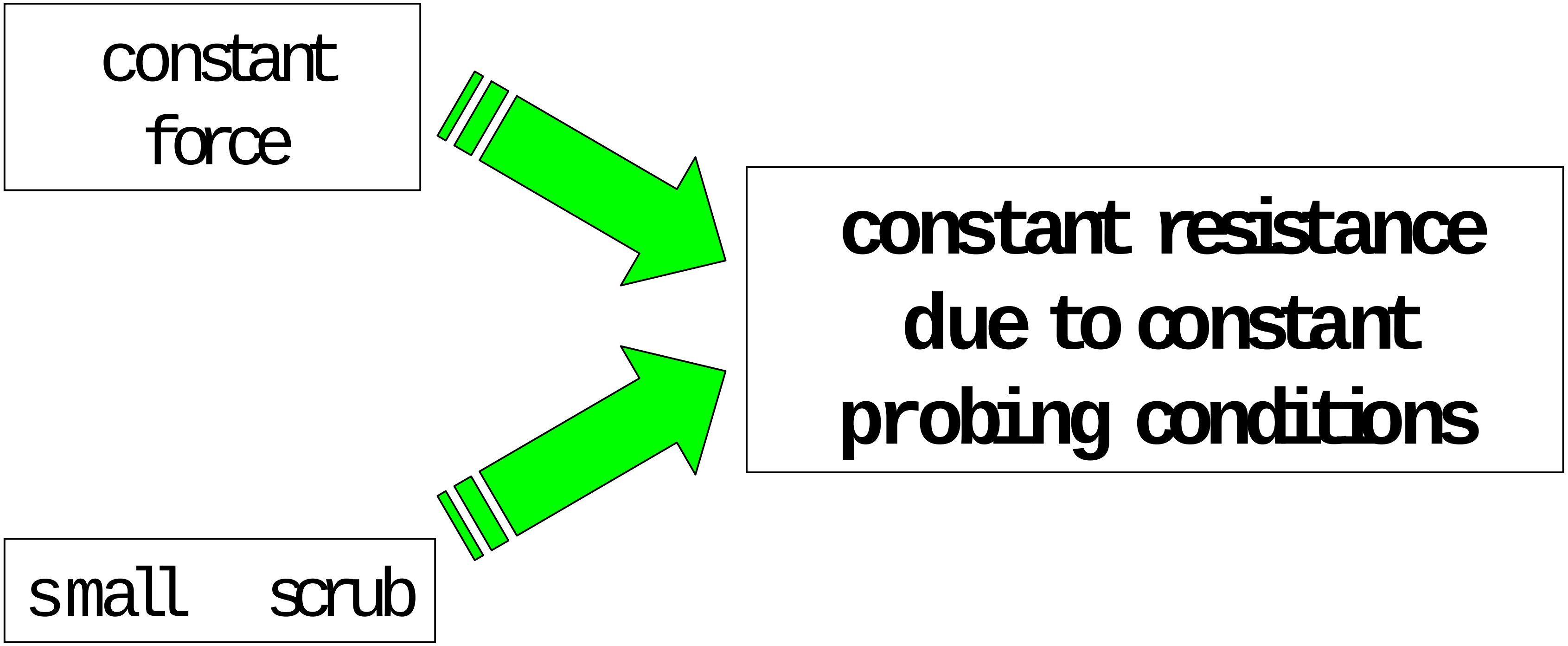

constant force

small scrub

constant resistance due to constant probing conditions

Contact Resistance Data

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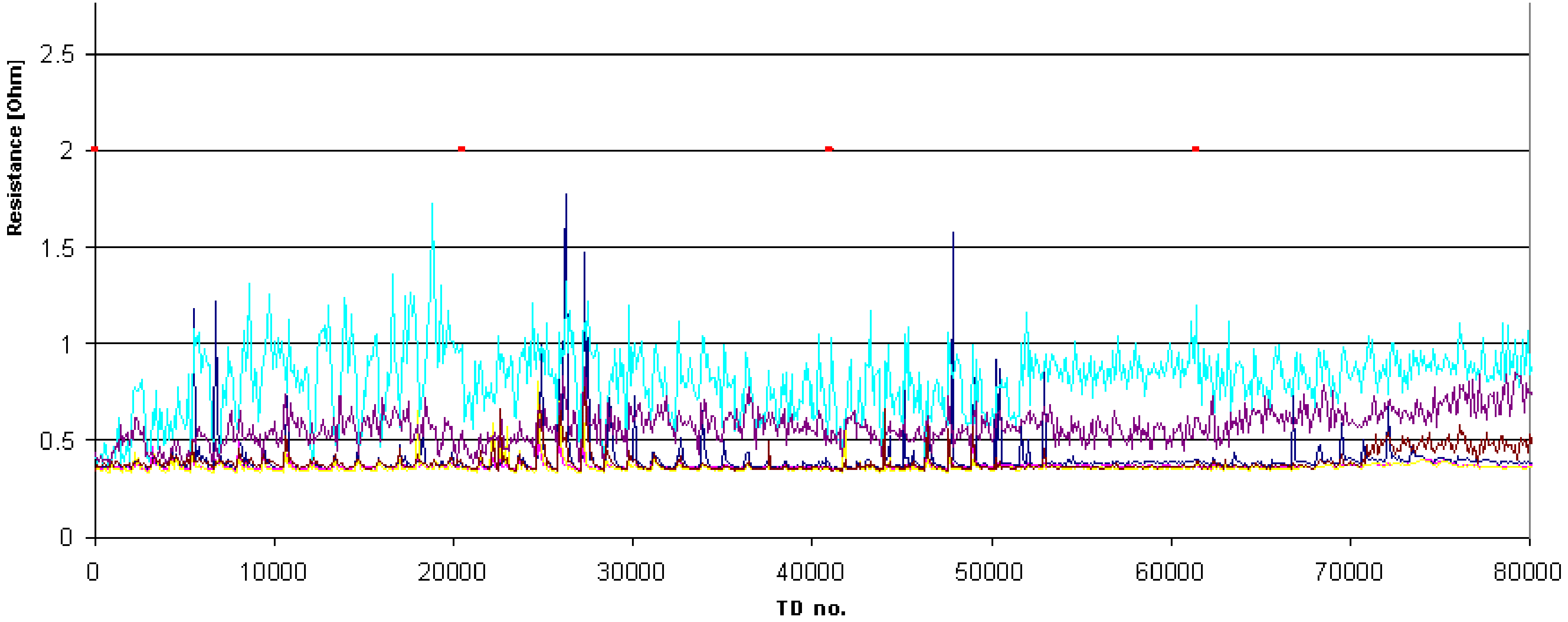
Resistance values from ViProbe on bare aluminum wafer



Thanks for listening

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