

DPN® Probes: Type F

Reference: DS-fpen

DPN® Probes: Type F passive probe arrays

Silicon nitride Type F Probe Arrays are multi-probe arrays optimized for DPN applications using the NSCRIPTOR™, DPN 5000, and NLP 2000 systems. To provide greater versatility the probes feature two different cantilever configurations. Side F-1 contains a 26-cantilever array featuring 24-cantilever tips designed for patterning, referred to as “Writer” probes. On the left and right edge of the Writer Probe Array is a “Reader” probe designed for imaging. Side F-2 has a similar configuration, but with a 52-cantilever array featuring 50 Writer probes and 2 Reader probes. Optical microscope images of the cantilever arrays of each side are shown below in Figure 2.

The multiple probes of the F-1 and F-2 sides lower spring constant and higher density probe array makes them ideal for high throughput patterning and ease of array leveling on the substrate of interest.

The Type F probes are designed to be used with NanoInk’s Universal Inkwells (Part # IWL-0009-03) to form a simple and effective method of delivering ink to the probe tips.

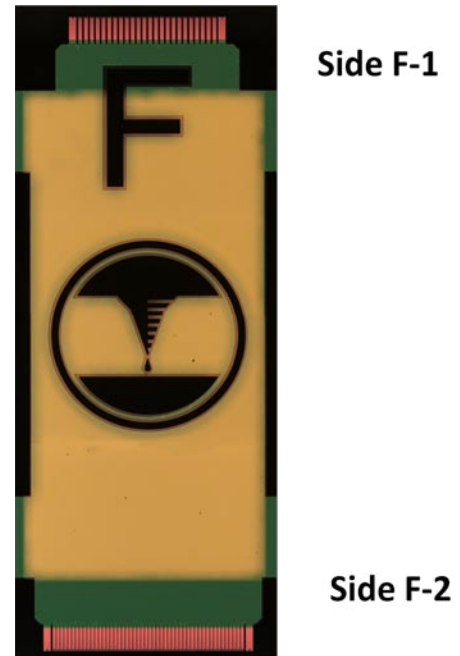


Figure 1: Optical microscope image showing the orientation and cantilever configurations of the Type F Probe Array. Side F-1 is at the top and side F-2 is at the bottom.

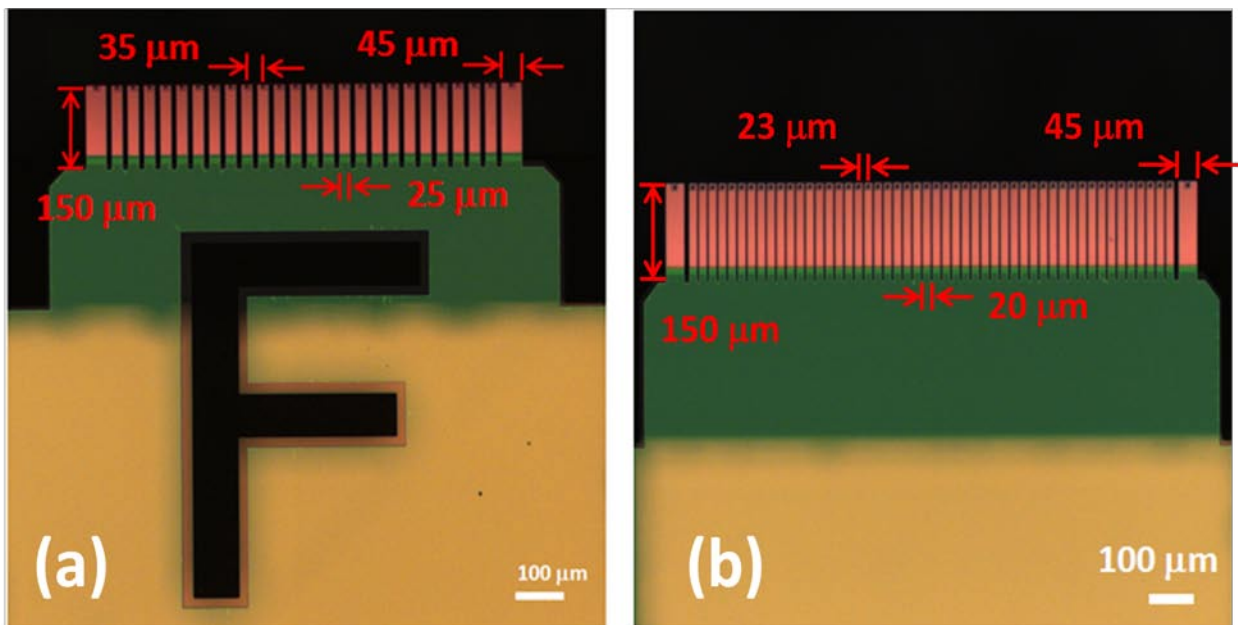


Figure 2: Optical microscope images of Type F Probe Array cantilever configuration and their measurements. (2a) Side F-1 has 26-cantilevers: 24 Writer probes and 2 Reader probes. (2b) Side F-2 has 52-cantilevers: 50 Writer probes and 2 Reader probes.

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Nominal Dimensions of DPN Type F Probes

Probe Type	Reader k (N/m)	Reader Length (μm)	Reader Width (μm)	# Writer Probes	Writer k (N/m)	Pitch (μm)	Writer Length (μm)	Writer Width (μm)
F-1	0.097	150	45	24	0.054	35	150	25
F-2	0.097	150	45	50	< 0.03	23	150	20

Note: Tip radius is ~15 nm

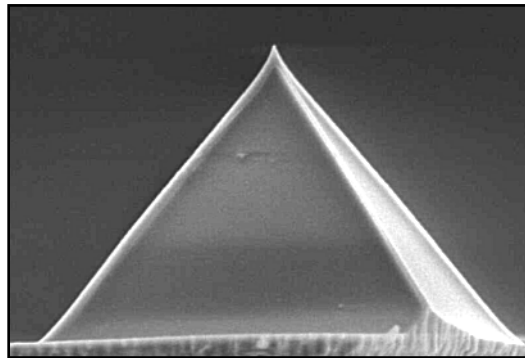


Figure 3: FESEM image of the probe tip showing a radius of ~15 nm.

NanoInk offers additional probe types, including single probes and multi-probe arrays. For more information about our products and pricing, please visit our web site at: www.nanoink.net or contact NanoInk Sales Department at sales@nanoink.net or 1-847-679-NANO.

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