

Vert!™ Product Overview

Vert!™ - Solder Bump Vertical Probe Card Solution

Vert!™ Product Overview provides a brief description and general probe card specifications.

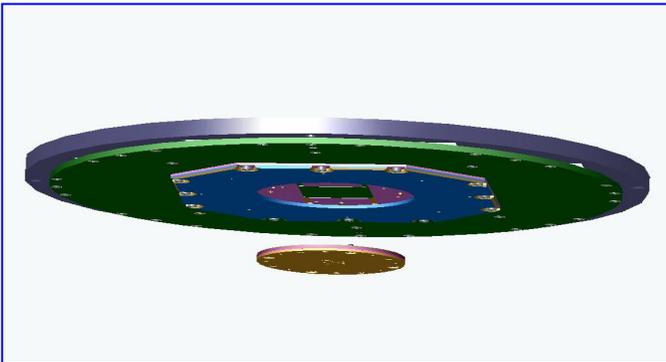
Vertical Probe Cards

As the flip chip market permeates into IC testing, technologies to probe these new devices must also evolve.

Vert!™ is a non-wired vertical probe card that is designed and fabricated with the customer in mind. The Vert!™ technology allows ProbeLogic the ability to provide a single solution with all the advantages semiconductor companies see in multiple vendors now.

Overview

ProbeLogic has developed a unique approach to probing area array solder bump devices. Superior probe contacts and a “no-float” approach provide exact contact force delivery and electrical characteristics between the bump and the probe card.



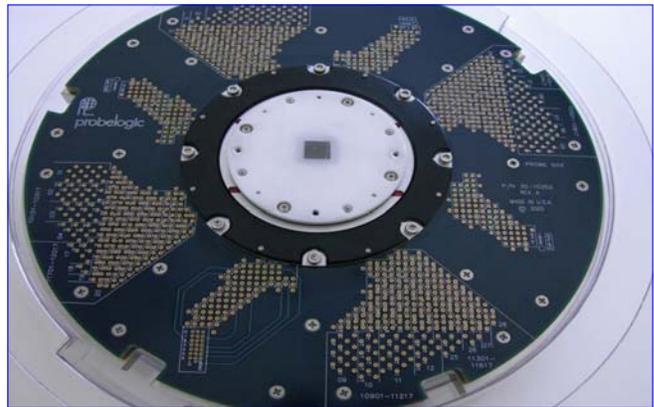
Engineering a design that is based on two components, the space transformer and probe head, Vert!™ is fast becoming the choice in vertical probe cards. ProbeLogic engineers designed these two components to be modular and swappable for any given device (refer to the ProbeLogic apps note on probe head installation and removal).

The custom designed hardware and probe head are engineered so that there is no need for exercising, fine alignment or planarity adjustments, as seen with other vertical technologies.

Space Transformer

Utilizing the customers substrate/package for the Space Transformer, the substrate is re-flowed onto the tester PCB, resulting in a 50 ohm electrical path from tester to probe, thereby eliminating cross-talk, capacitance, and inductance issues typical of Wired Space Technology.

Vert!™ Probe Head and Space Transformer Assembly



The tester side utilizes a proprietary handle assembly and cover for quick removal and probe card changeover from the test set up.



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Vert!™ Product Overview

Manufacture and Assembly

Our first-rate probe contacts and strict manufacturing guidelines prevent shorts between probes, speeds up the assembly process, and reduces customer “down time.”

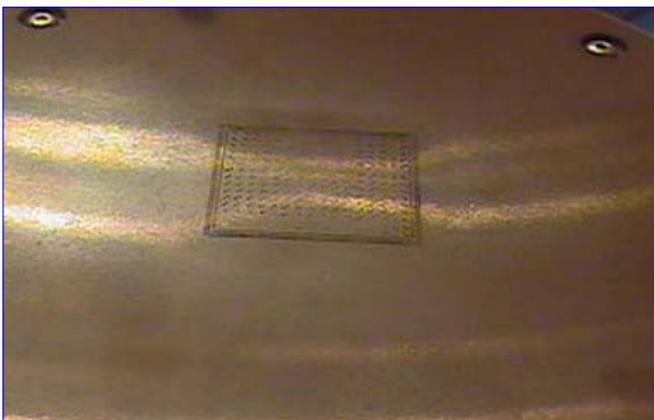
As a result of excellence in design, Vert!™ is a robust solution that provides solid electrical connections. Our unique assembly process maintains a tight planarity specification of +/- 1.5 mils and allows for modular probe heads. ProbeLogic can also meet a tighter planarity specification of +/- .5 mils. Either design produces an accurate gram force across the array, reducing the need for excessive overdrive as seen with other vertical technologies.

Vert!™ Probe Contact View



In addition to maintaining a tight planarity window and a remarkably consistent gram force, our unique assembly process allows ProbeLogic to adhere to a tight alignment specification of +/- 0.5 mils, while not sacrificing electrical performance.

Vert!™ Probe Head View



Vert!™ STANDARD SPECIFICATIONS**

Minimum Pitch Specifications:

| Wire Diameter (mils) | Linear Pitch | Grid/Array Pitch |
|----------------------|--------------|------------------|
| 4 | 170 um | 180 um |
| 3 | 135 um | 150 um |

Alignment +/- 12.5 um
Planarity Options +/- 38u or +/- 12.5u*

BCF (Contact Force 4 mil probe) 3.5 g/mil of OD

BCF (Contact Force 3 mil probe) 2.0 g/mil of OD

Maximum Current:

| Wire Diameter (mils) | Probe Material | Current (A) |
|----------------------|----------------|-------------|
| 4 | P7 | .6 |
| 4 | BeCu | 2.0 |
| 3 | P7 | .4 |
| 3 | BeCu | 1.4 |

Maximum Voltage 200 Volts

Frequency 1-3 GHz**

*Planarity specifications are based on different assembly processes and create different end products. Please contact your technical sales representative to discuss the difference between matched sets and modular probe cards.

**Frequency is measured as bandwidth through the probe head. To gain a total understanding of the frequency that can be achieved the PCB design, the customer supplied MLL, and the entire test set up need to be taken into consideration to achieve higher test rates at the wafer level.

Note: These specifications are subject to change as the product develops. These are measurements taken and are minimums, but should not be taken as absolute since custom designs and specifications can be accommodated on a per device basis.

Other helpful ProbeLogic documents:

- *MLL Space Transformer Guidelines*
- *Head Installation and Removal*
- *Vert!™ RFQ/Order Form*
- *Vert!™ Ordering Guideline*

To see how ProbeLogic and Vert!™ can benefit your company please contact your sales representative at:

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