HFTAP Series

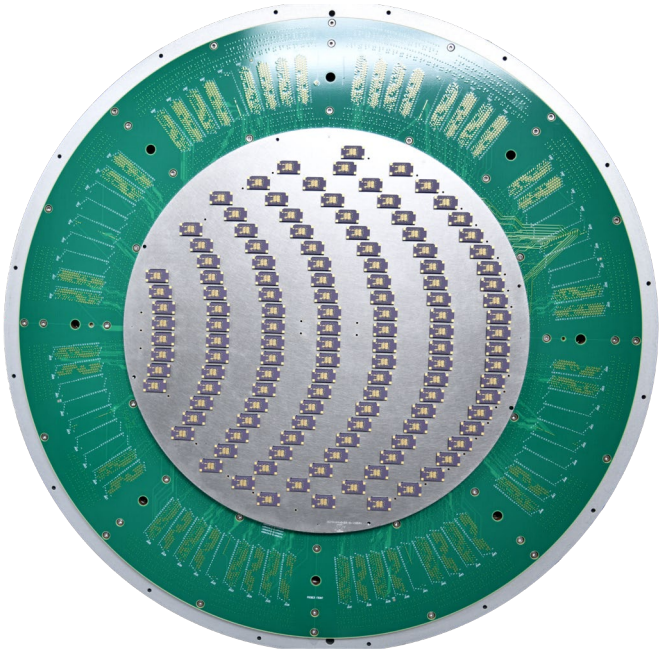
High Frequency Test at Probe

Overview

The industry-leading performance of the HFTAP K32 product joins FormFactor's series of High Frequency Test probe cards, including the K10 and K16 and K22 used for testing 1.0 GHz, 1.6 GHz, and 2.2 GHz. Advanced PCB technology, exclusively available from FormFactor, allows the fastest communication between the Device Under Test (DUT) and Automated Test Equipment (ATE). By utilizing FormFactor's Matrix architecture, HFTAP K32 probe cards can test speeds that no other full wafer contactor can achieve.

The extended capability of FormFactor's HFTAP K32 probe card architecture enables DRAM customers on wafer-level speed testing up to 3.2 GHz/ 6.4 Gbps for next generation known-good-die (KGD) memory. The recent industry-wide adoption of heterogeneous integrated systems enabled by 2.5D and 3D advanced packaging technology is driving the demand for KGD. The benefit of KGD testing ensures the final stacked and assembled package does not get scrapped due to one bad chip.

This advanced MEMS probe card architecture is used to verify electrical performance and yield, not only for the individual chips, but also devices used in the HBM stack, including the fine-pitch interposer to ensure the performance of the complete package. The HFTAP K32 probe card solution empowers customers to gain more intelligence at any stage of the heterogeneous integration process for advanced packages, where the traditional way to optimize yield on a monolithic silicon die is no longer adequate. HFTAP probe card solutions are available at lower speeds based on device requirements.



FormFactor HFTAP K32 Probe Card

Features / Benefits

High-speed known-good-die (KGD)	• K32 (up to 3.2 GHz/6.4 Gbps) high-speed test capable at wafer level • Supports advanced packaging requirements for at speed testing • Enables testing of latest generation memory products, including LPDDR4X, DDR5, LPDDR5, HBM3, GDDR5 and GDDR6
Stable test temperature performance	• Operates at a wide temperature range • Utilizes production proven SmartMatrix™ platform with 440 mm/ 520 mm PCB size
T11.x spring reliability	• Scalable 3D MEMS MicroSpring™ technology enables flexible pad layout with superior contact performance and delivers long probe card lifetime • Excellent current-carrying capacity • Fine pitch capability down to 50 µm • Able to probe on very small pads
Ease of use and serviceability	• Real-time planarity adjustment and optimization capability with probe card on the test cell • Regional single spring repair and probe head replacement capability reduces time loss for service events and improves equipment efficiency

Mechanical Parameters

Probe Head Size	300 mm full wafer contactor
Optical Planarity	≤ 25 µm @ 25°C
Operating Temperature Range	- 40°C to 125°C

Electrical Parameters

Maximum Frequency	3.2 GHz (6.4 Gbps)
Current Carrying Capability/Probe	≤ 1200 mA, ISMI using T11.2 spring

Layout

Minimum Pad Pitch	50 µm
Min Pad Size	40x50 µm (including 5 µm keep-out per side)
Pad Material	Al, Cu, NiPd

HFTAP-SERIES-DS-0222

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