

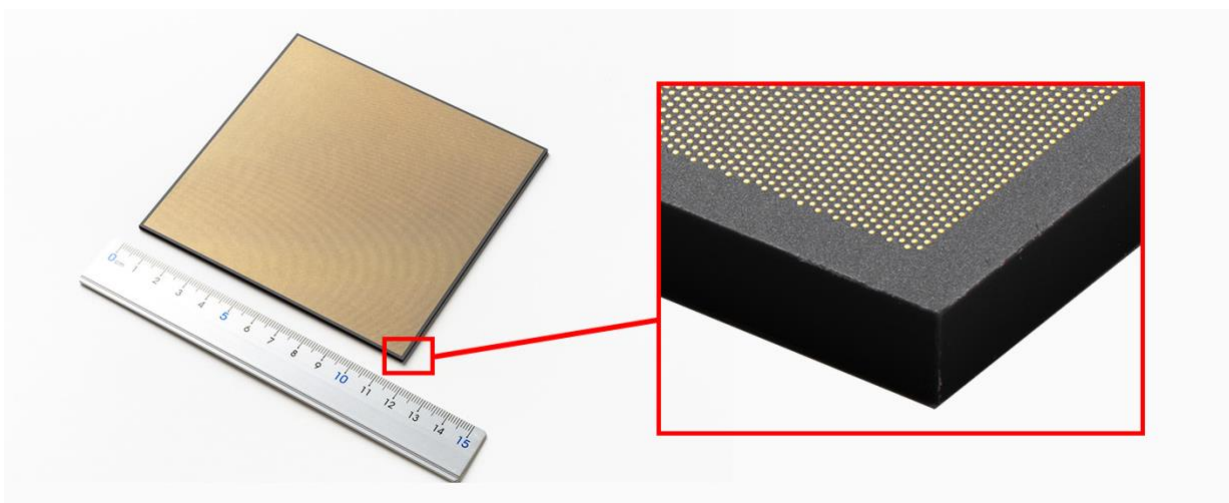
Press Information

Kyocera develops breakthrough multilayer ceramic core substrate for advanced AI semiconductors

To be shown at ECTC 2026, May 26-29 in Orlando, USA, the new substrate technology delivers superior rigidity and circuit miniaturization for next-gen data centers, AI, and ASIC packaging.

Kyoto/London, 29th April 2026. Kyocera Corporation announced that it is commercializing a new multilayer ceramic core substrate for advanced semiconductor packages, such as xPUs¹ and switch ASICs, which are rapidly scaling in complexity as AI data center architectures evolve. The new product will be unveiled at ECTC 2026, an international conference on semiconductor packaging technologies, in Orlando, Florida, USA, May 26-29, 2026.

Built from Kyocera's proprietary fine ceramic materials, the new core substrate is engineered for high-density wiring and exceptional rigidity. According to the company, these characteristics dramatically reduce deformation (warpage) in high-performance semiconductor packages, a key challenge as demand for greater device integration and higher processing speed continues to rise.



Multilayer ceramic core substrate for advanced semiconductor packaging

(via diameter: 75 μm , via pitch: 200 μm)

¹ xPU is a general term for various processing units (PUs) such as CPUs and GPUs that handle AI processing.

Key features

1. Highly rigid multilayer ceramic core substrate resists deformation (warpage), enhancing performance and reliability in large semiconductor packages.
2. Multilayer ceramic structure allows greater circuit miniaturization through high-density, three-dimensional wiring.
3. Supports custom design requirements, and performance simulations in the design phase.

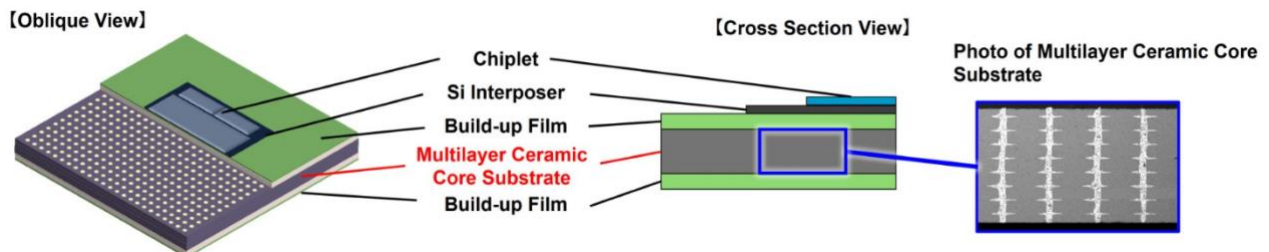
Development background

The growth of generative AI and large language models is fueling a global proliferation of AI data centers and creating demand for higher-performance xPU and ASIC semiconductors that require larger, denser package substrates, especially for 2.5D packaging.² Core substrates made of organic materials create a bottleneck to higher performance, especially at larger dimensions, due to warpage and wiring-miniaturization challenges. Kyocera is addressing these limitations with a new multilayer ceramic core substrate, leveraging its expertise in laminated ceramic materials to offer higher rigidity and finer wiring in advanced semiconductor packaging.

Features

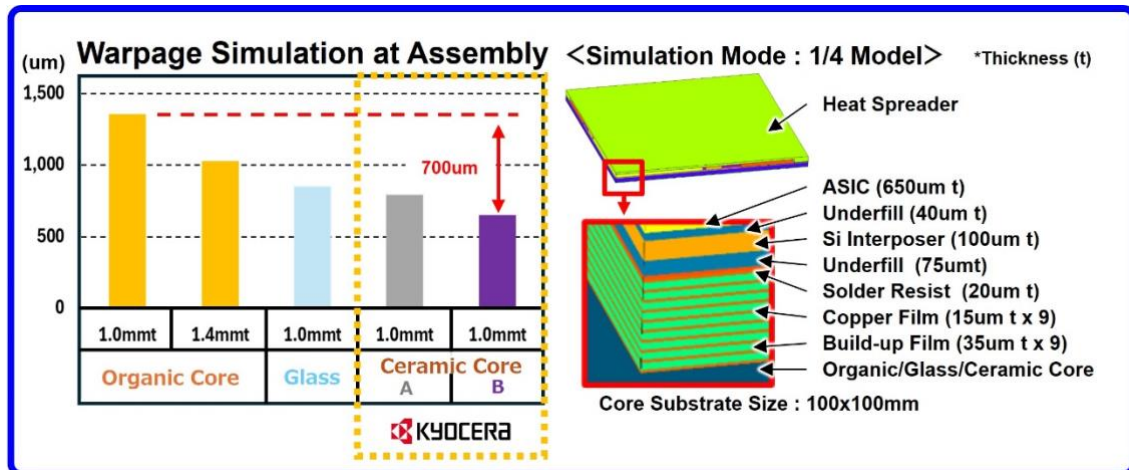
1. Highly rigid multilayer ceramic core substrate minimizes warpage, a key challenge affecting large package substrates

Kyocera's multilayer ceramic core substrate provides greater rigidity and resistance to deformation (bending) than core substrates made of organic materials, minimizing warpage during each mounting phase. As a result, Kyocera's multilayer ceramic technology can enable higher device performance using slimmer substrates³ while facilitating further miniaturization.



² 2.5D packaging refers to a structure in which multiple IC chips are placed side-by-side on a high-density interposer (relay substrate) using fine circuit patterning and vertical interlayer wiring to enhance processing speed.

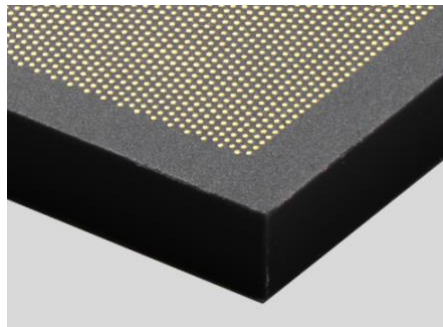
³ Based on Kyocera's simulation results (February 2026).



2.5D integration warpage comparison and simulation model

2. Multilayer ceramic structure enables finer wiring

In multilayer ceramic substrates, conductive paths between layers of ceramic are called vias. Formed while the ceramic is pliable (before firing or sintering), these vias enable finer wiring through superior micro-fabrication as compared to the drilling processes used to create vias in conventional organic core substrates. The smaller via diameters and tighter via pitches made possible in ceramic substrates address the challenges associated with high-density wiring in traditional organic-core substrates.



3. Supports custom design requirements, and performance simulations in the design phase

During the design phase, Kyocera provides thermal, electrical, and substrate-warpage simulations based on device performance objectives and specified mounting processes. This simulation data ensures greater customer development efficiency and the achievement of design objectives in the finished device.

Kyocera remains committed to developing new packaging materials and technologies that meet evolving customer needs in the semiconductor industry.



Overview: Kyocera at ECTC 2026

Show	ECTC 2026
Date	26 th to 29 th May 2026
Location	Orlando, Florida, USA

The press material is available for download via the following link:

<https://spgroup.box.com/s/4bnarb3iiau73dcy8yv11dnv9xdwsa8p>

For more information on Kyocera: uk.kyocera.com

About Kyocera

Kyocera has been successful in Europe for over 50 years. From its European headquarters in Esslingen am Neckar, KYOCERA Europe GmbH operates 29 sites including manufacturing facilities, with products ranging from fine ceramics, automotive, semiconductor and optical components to components for medical products, industrial tools, LCDs, touch solutions, industrial printing components, and consumer goods such as kitchen and office products.

KYOCERA Europe GmbH is a company of the [KYOCERA Corporation](#) headquartered in Kyoto/Japan, a renowned supplier in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, smart energy systems, and communications technology. Kyocera is one of the most experienced technology producers, with more than 65 years of industry expertise. The Kyocera Group comprises 288 subsidiaries (31 March 2025). With around 77,200 employees, Kyocera generated net annual sales of around EUR 12.43 billion in the 2024/2025 fiscal year.

Kyocera is ranked 1,123 on Forbes magazine's 'Global 2000' list for 2025 and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the fourth time Kyocera has received an A ranking on the CDP A List for their performance on climate change. Kyocera has also received a silver rating in the EcoVadis Sustainability Survey and was acknowledged as a 'Top 100 Global Innovator 2026' for the tenth time by Clarivate, being one of the world's leading innovators.

Kyocera also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation – established by Kyocera founder Dr Kazuo Inamori – to individuals worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (equivalent to approximately €539,000 per prize category).

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