

Press Information

Kyocera presents its products at the SMTconnect

Kyocera will exhibit its wide range of organic packaging solutions as well as its ceramic packaging technology at the SMTconnect trade fair taking place from June 11th to 13th, 2024, in Nuremberg.

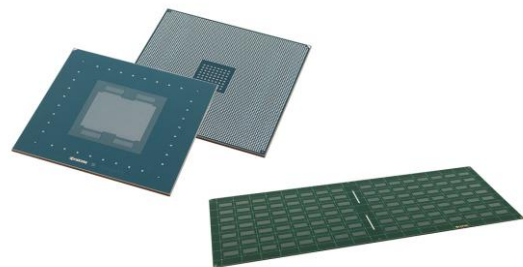
Kyoto/Esslingen, 28th May 2024. Kyocera will participate at the SMTconnect, which takes place from June 11th to 13th in Nuremberg, Germany. This trade fair stands out as a unique exhibition on the topic of electronics manufacturing in Europe. Kyocera will present several of its high performance products and innovations from its Semiconductor Components division (SC), thus underlining its presence in these important key markets.

The focus of the company's trade fair presentation in 2024 will be on organic package substrate solutions based on Kyocera's FCBGA and ETC-FCBGA technologies as well as on its ceramic packaging solutions for SMDs, LEDs, CMOS sensors and many other products.

With these offerings, Kyocera targets the Electronics (including the rapidly growing segment of AI applications), Networking and Automotive markets as well as applications in Mobile IT Devices, Optical Communications, Mobility and Environmental solutions.

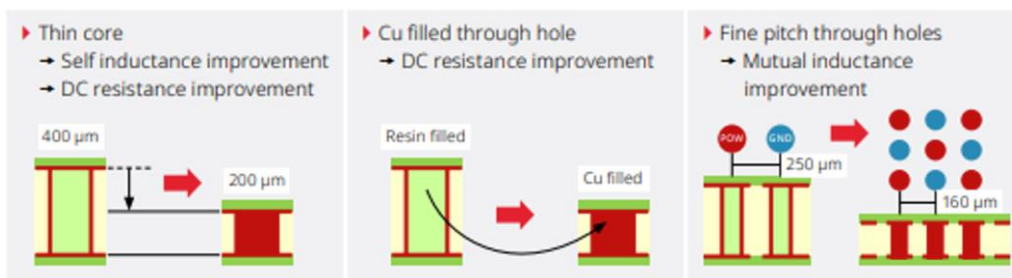
1. Organic Package Substrate Solutions

Kyocera provides package substrates by using organic products that meet increasing customer requirements for a variety of applications.



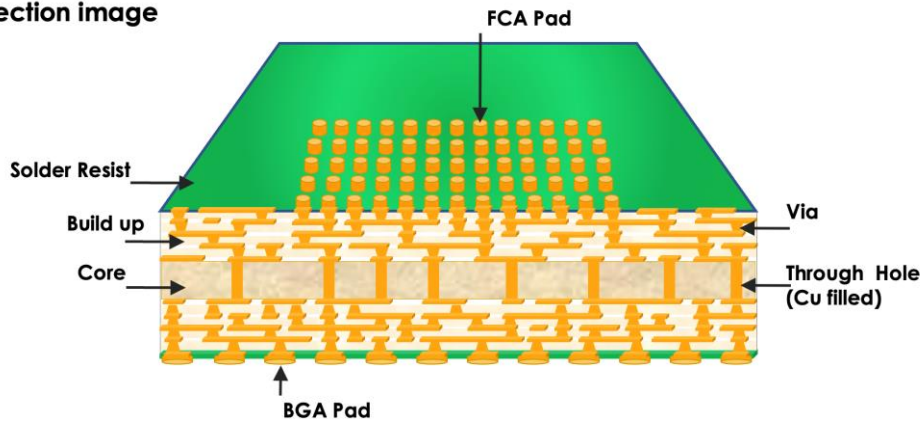
- FCBCA technology:** The company's FCBCA (flip-chip ball grid array) technology provides packaging for processing units such as CPUs for servers, ASICs for networks or SoCs for the automotive market. Kyocera's advanced technology supports large body sizes (up to approx. 120 square millimeters), high layer counts with up to ten layers, fine patterns such as line widths of 9 μm and line spacings of 12 μm (L/S 8/8 scheduled later for 2024) and ideal impedance control characteristics. The applied processes use lead-free and halogen-free materials.
- ETC FCBCA technology:** With its Enhanced thin core (ETC) FCBCA technology, Kyocera provides the prerequisites for even better electrical performances due to a reduced core thickness (down to 200 μm) and copper-filled instead of resin-filled vias which improve DC resistance. The MSAP (Modified Semi Additive Process) technology allows finer patterns on the core layer. Furthermore, thanks to laser cutting and advanced design rules, smaller drill holes with pitch sizes down to 160 μm become possible. This improves the mutual inductance and thus allows a higher integration of chip components. At the same time, a lower layer count (up to 6 layers) helps to reduce production costs and speed up manufacturing times.

ELECTRICAL PERFORMANCE



Kyocera's ETC FCBCA technology provides even better electrical performances.

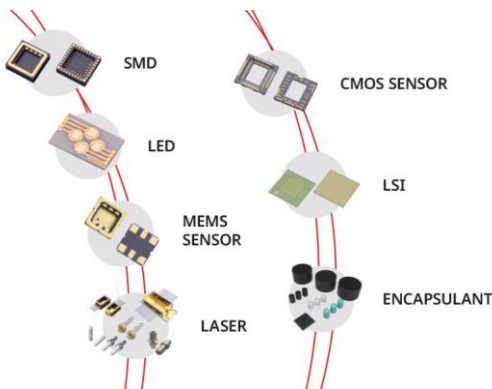
Cross-section image



Kyocera's ETC FCBGA technology provides higher integration thanks to advance design rules and less layer count.

2. Ceramic Packaging Technology

With its Ceramic Packaging Technology, Kyocera provides proven solutions to protect integrated circuits from environmental factors such as moisture, dust, light, electromagnetic fields and waves etc. as well as from mechanical impact. Above that, the multi-layered ceramic packaging of an IC provides the necessary isolation of its input and output signals and it allows for the dissipation of the heat generated by the IC's operation.



The principle of ceramic packaging is applied to a variety of products, including SMDs, LEDs, CMOS sensors, optical communications components, LSIs, laser and LiDAR units and many more. The technological improvements in this field provided by Kyocera contribute to a digitalized society, allowing smaller device sizes in IoT and Wearable devices, higher speeds in networks, larger chips dies for highly

scalable data centers (HSDC) and AI clusters, higher laser outputs for industrial applications or faster data transfers for memory access in demanding applications such as Generative AI. Additional applications of Kyocera's Ceramic Packaging Technology include the encapsulation of small size all-solid-state rechargeable batteries, in-vehicle inertial sensors as well as gas sensors.



Multi-layered ceramic packaging with electrical signal enables hermeticity to protect IC chip from external environment and mechanically.

Overview: Kyocera at the SMTconnect

Show	SMTconnect
Date	June 11th to 13 th , 2024
Location	Nuremberg, Germany
Kyocera's booth	Hall 4, Booth # 4-204

About the SMTconnect trade fair

The SMTconnect stands out as a unique exhibition on the topic of electronics manufacturing in Europe: The event connects people and technologies from the fields of development, manufacturing, service and application of microelectronic assemblies and systems in an inspiring working atmosphere. In line with its motto "Driving Manufacturing forward", the SMTconnect provides an ideal setting for sharing ideas within the electronic manufacturing community, developing tailored solutions for electronic assemblies and systems, laying the groundwork for business deals, and improving skills.



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 26 sites including manufacturing facilities, with products ranging from fine ceramics, electronics, automotive, semiconductor and optical components to industrial tools, LCDs, touch solutions, industrial printing components, solar systems and consumer goods such as kitchen and office products.

KYOCERA Europe GmbH is a company of the KYOCERA Corporation headquartered in Kyoto/Japan, a world leader in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, and communications technology. The technology group is one of the world's most experienced manufacturers of smart energy systems, with more than 45 years of industry expertise. The Kyocera Group comprises 292 subsidiaries (31 March 2024). In England, Kyocera has a subsidiary in Frimley, KYOCERA Fineceramics Ltd. With around 79,200 employees, Kyocera generated net annual sales of around EUR 12.29 billion in the 2023/2024 fiscal year.

Kyocera is ranked 672 on Forbes magazine's 'Global 2000' list for 2023, and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the second year in a row, Kyocera qualified for the Dow Jones Sustainability Index (Asia-Pacific). As well, Kyocera receives a Gold rating on EcoVadis Sustainability Survey for the second consecutive year and was acknowledged as a 'Top 100 Global Innovator 2023', being one of the world's leading innovators, for the eighth time by Clarivate.

The company 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 €596,500 per prize category).

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