

Kulicke & Soffa Announces Thermo-Compression Adoption & Milestones

*Several New Customer Wins as TCB Gains Commercial Momentum
New Path to Hybrid Bonding Demonstrated through Fluxless TCB
K&S Joins Resonac-led "US-Joint" Consortium*

SINGAPORE, Aug. 7, 2024 /PRNewswire/ -- [Kulicke and Soffa Industries, Inc.](#) (NASDAQ: KLIC) ("Kulicke & Soffa", "K&S", or the "Company") announced the introduction of its latest APTURA™ Thermo-Compression platform in addition to three new milestones relating to industry adoption of its chiplet-enabling Thermo-Compression technology.

Recently, several of Kulicke & Soffa's leading Thermo-Compression offerings have been selected at multiple Assembly & Test customers. In support of the rapid needs for advanced chiplet and stacked-die requirements, these tools will support chip-to-substrate processes targeting applications such as AI, HPC, Mobile and Edge-devices. K&S also continues to pursue additional chip-to-wafer engagements and anticipates making further customer announcements over the coming quarter as its Thermo-Compression momentum, specifically in the area of Fluxless Thermo-Compression bonding (FTC), continues.

Additionally, through industry collaborations with the UCLA Center for Heterogeneous Integration and Performance Scaling (CHIPS), as well as an FTC customer, Kulicke & Soffa's leading APTURA™ platform has demonstrated an alternative path to chip-to-wafer hybrid bonding, enabled by Thermo-Compression. This innovative bumpless-FTC process creates a true chip-to-wafer, hybrid-bond – supporting bonding for both bumpless, Copper-to-Copper interconnects as well as dielectric materials – for advanced logic applications. While direct Copper-to-Copper bonding is a standard feature of the APTURA platform and gathering broad market attention, this innovative new process further extends the market access for Kulicke & Soffa's broadening portfolio of Advanced Packaging solutions.

Finally, on July 8th, Kulicke & Soffa's membership was announced within the "US-Joint" consortium, formed by Resonac Holdings Corporation ("Resonac"), a leading provider of global semiconductor materials. US-Joint is designed to support industry collaboration and market adoption of advanced packaging solutions through research and development and includes participation of ten American and Japanese semiconductor materials and equipment providers. After the initial establishment of two open consortiums in Japan known as "Joint" and "Joint 2", the US-Joint represents the third Resonac-led consortium globally, and the first within the US.

US-Joint includes the construction of an R&D facility based in Silicon Valley, which will allow end-customers to verify the latest requirements for advanced device packaging, and also validate new concepts in development. Cleanrooms and equipment installations for this Union City, California based research center will initiate in calendar year 2024, and are expected to be fully operational in 2025. A link to the US-Joint announcement can be found [here](#).

"Our TCB business has grown by over 10 times over the past four years - faster than many other leading-edge interconnect processes – due to our close customer engagements and industry

collaborations like these," stated John Molnar, VP of Advanced Solutions, "The broadening adoption of both Thermo-Compression technology, as well as emerging advanced chiplet-based assembly architectures – throughout our broadly served-markets – remains in early stages."

In support of the long-term industry needs for 2.5D and 3D packaging approaches, which are extending Moore's law, K&S anticipates to aggressively ramp customer engagements and production capacity for FTC and bumpless FTC over the coming years. In addition to Kulicke & Soffa's progress in Thermo-Compression technology, High-Power-Interconnect (HPI) utilization in Automotive and Industrials markets, Vertical-Fan-Out targeting dynamic memory adoption, and the growing industry need for System-in-Package (SiP) applications, provide additional growth opportunities over the long-term.

About Kulicke & Soffa

Founded in 1951, Kulicke and Soffa Industries, Inc. specializes in developing cutting-edge semiconductor and electronics assembly solutions enabling a smarter and more sustainable future. Our ever-growing range of products and services supports growth and facilitates technology transitions across large-scale markets, such as advanced display, automotive, communications, compute, consumer, data storage, energy storage and industrial.

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