

Kulicke & Soffa and ROHM Semiconductor Develop New CuFirst™ Hybrid Bonding Process

SINGAPORE, Nov. 13, 2024 /PRNewswire/ -- [Kulicke and Soffa Industries, Inc.](#) (NASDAQ: KLIC) ("Kulicke & Soffa", "K&S", "we" or the "Company"), in collaboration with ROHM Co., Ltd (TYO: 6963) ("ROHM"), a producer of a wide-range of semiconductor devices, announces a new path to hybrid bonding leveraging Kulicke & Soffa's leading Fluxless Thermo-Compression (FTC) process.

Kulicke & Soffa's recently released APTURA™ FTC system, combined with technology innovations from ROHM, have successfully enhanced chip-to-wafer hybrid bonding with the innovative copper-first – CuFirst™ – hybrid solution. While existing die-to-wafer hybrid bonding capacity can enable significant I/O density – yield challenges, cost of ownership, and front-end processing requirements are limiting the adoption rate and market potential of existing hybrid solutions.

The CuFirst hybrid solution, utilizing the K&S APTURA FTC platform, addresses these production limitations and challenges. With the emerging CuFirst process, the copper interconnect is bonded first – leveraging the APTURA platform's FTC capability – then the dielectric (SiOx) connection is made once the device returns to room temperature. This CuFirst process is expected to support higher yields, lower infrastructure costs and better cost of ownership compared to conventional die-to-wafer hybrid bonding. In addition to CuFirst hybrid, the APTURA FTC system also supports traditional flux- and fluxless-based thermo-compression bonding (TCB), including the direct bonding of copper-to-copper pillars – down to an 8µm pitch. This system can also accommodate die-to-die, die-to-substrate, or die-to-wafer configurations comprehensively addressing a broad range of material handling and end-application requirements.

"Through ongoing R&D commitments and collaborations, we have become a critical enabler supporting the industry's transition to a chiplet ecosystem. Our TCB business has grown by ten times over the past four years, and industry momentum continues to accelerate," said Bob Chylak, Kulicke and Soffa's Chief Technology Officer.

The Company expects its leadership in FTC to further extend as the need for more complex assembly solutions continue to grow. During fiscal year 2025, K&S anticipates its TCB business will increase by 40-50% sequentially, driven by broadening adoption in leading-edge compute, optical, communications and industrial markets.

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.

Caution Concerning Results, Forward-Looking Statements and Certain Risks Related to our Business

In addition to historical statements, this press release contains statements relating to future events and our future results. These statements are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995. While these forward-looking statements represent our judgments and future expectations concerning our business, including the importance and competitiveness of our thermo-compression bonding products and other advanced packaging technology transitions, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from our expectations. These factors include, but are not limited to our ability to develop, manufacture and gain market acceptance of new and enhanced products, disruptions, breaches or failures in our information technology systems and network infrastructures, the persistent macroeconomic headwinds on our business, actual or potential inflationary pressures, interest rate and risk premium adjustments, falling customer sentiment, or economic recession caused directly or indirectly by geopolitical tensions, our ability to operate our business in accordance with our business plan and the other factors listed or discussed in our Annual Report on Form 10-K for the fiscal year ended September 30, 2023, filed on November 16, 2023, and our other filings with the Securities and Exchange Commission. Kulicke and Soffa Industries, Inc. is under no obligation to (and expressly disclaims any obligation to) update or alter its forward-looking statements whether as a result of new information, future events or otherwise.

Contacts

Kulicke & Soffa

Marilyn Sim
Public Relations
+65-6880 9309
msim@kns.com

Kulicke & Soffa

Joseph Elgindy
Finance
+1-215-784-7500
investor@kns.com

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