PRESS RELEASE

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TechSearch International's Market Analysis Shows Return to Growth and Trending Adoption of RDL Packages

Last year saw a 13.9% revenue decline for the top 20 OSATs and unit declines in every category of packages from ball grid arrays (BGAs) to quad flat no-lead (QFN) packages. This year promises to be better, but companies should not expect high growth levels unless they are participating in the AI training and inferencing market. Smartphone and PC shipments will each show growth of around ~2% this year, driving small unit shipment growth in all package categories. An analysis of applications using chip scale packages (CSPs) is provided and OSAT financials are highlighted in TechSearch International's new Advanced Packaging Update.

Silicon interposers still account for most AI package shipments and a forecast for capacity and demand is provided. Samsung and TSMC are rolling out new package options to support large packages with more than eight HBMs. Samsung's roadmap shows panel redistribution layer (RDL) as a future option. The AWS Trainum2, designed by Annapurna Labs, is shipping using CoWoS-R with RDL instead of a silicon interposer. Nvidia will use TSMC's Chip-on-Wafer-on-Substrate® (CoWoS®-L) for its Blackwell AI solution featuring two GPUs plus eight HBMs in a package with an RDL interposer featuring local Si interconnect (or LSI) chips. TechSearch International's latest analysis describes the large server and AI packages for training and inferencing packages. RDL packaging is picking up speed with more announcements each month.

TSMC is offering its System-on-Wafer (TSMC-SoW™) as an alternative to the use of a silicon interposer. The technology can enable >40X reticle option and can be combined with SoC or SoIC. SoW leverages both InFO and CoWoS technologies. InFO-SoW is in production for Tesla's Dojo AI training tile. CoW-SoW with SoIC will be ready for mass production in 2027.

Bridge options are gaining more attention. Intel continues to use its Embedded Multi-Die Interconnect Bridge (EMIB) for high-end servers. IBM is working to scale its Direct Bonded Heterogeneous Integration (DBHi) to scale from 75µm pitch to 30µm pitch. BM's bridge version allows the die to be connected to the bridge before attachment to a laminate substrate. Wisol, an affiliate of Daeduck in S. Korea, has announced it will offer bridges as a third-party supplier.

The report analyzes build-up substrate capacity and demand for the large-body, high-layer-count packages, finding no shortage in the overall substrate supply. AI, server CPUs, and network switch packages continue to drive the growth in body size. Demand will become tight in 2028, but sufficient capacity will be available as larger packages switch to RDL.

The latest Advanced Packaging Update is a 97-page report with full references and an accompanying set of 94 PowerPoint slides.

TechSearch International, Inc., founded in 1987, is a market research leader specializing in technology trends in microelectronics packaging and assembly. Multi- and single-client services encompass technology licensing, strategic planning, and market and technology analysis. TechSearch International professionals have an extensive network of more than 22,000 contacts in North America, Asia, and Europe. For more information, contact TechSearch International at tel: 512-372-8887 or see www.techsearchinc.com. Follow us on LinkedIn.

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