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## **ASE Licenses Kulicke & Soffa's Flip Chip Bumping and Ultra CSP**

Willow Grove, PA (January 19, 2001) Kulicke & Soffa (NASDAQ: KLIC) and its Flip Chip Technologies, LLC (FCT) joint venture announced that Advanced Semiconductor Engineering Inc. (ASE) has signed an additional site license for wafer bumping technology and added a separate license for *Ultra* CSP, a wafer-level packaging technology. ASE signed the initial license for FCT's Flex-on-Cap (FOC) wafer bumping and redistribution (RDL) technologies in May 1999.

ASE, one of the top IC assembly, packaging and test subcontractors worldwide, will use the FOC and RDL technologies at a new wafer bumping facility in Penang, Malaysia. The recently expanded ASE Electronics (Malaysia) Sdn Bhd site is currently primed to manufacture advanced packages, including flip chip BGA. The *Ultra* CSP license is in addition to an aggressive capacity expansion at the ASE wafer bumping facility in Kaohsiung, Taiwan, which is currently in volume production with FOC technology and will also manufacture wafer-level packages based on the *Ultra* CSP technology. The new *Ultra* CSP license provides for all required documentation, training and engineering support to assure fast start-up and qualification of the new technology.

ASE Vice President of Research and Development, J.J. Lee said, "We are seeing unprecedented demand for flip chip and wafer level packages. ASE is adding capacity as quickly as possible to meet our customers' requirements. FCT's technology has demonstrated the ability to quickly ramp high-yield processes to manufacture both types of packages. An added bonus is the minimal capital investment required to add *Ultra* CSP capability which quickly and easily integrates new process technology with our existing equipment set and process flow."

"These new licenses, purchased by one of the world's largest assembly/test subcontractors, is further testimony that the market is embracing our technology," said K&S vice president Don R. May. "We believe that scalability to 300mm and availability of lead-free and low cost solder paste processes are added factors that make FCT the de facto standard in our industry."

Wafer bumping and redistribution are silicon wafer processes required for most flip chip packaging applications. These key enabling technologies (as opposed to package types) are the foundation of any flip chip manufacturing capability. FCT's process has been in volume production at its Phoenix facility since 1996. FCT's *Ultra* CSP is a wafer-level chip size package that does not require an interposer or underfill, making it a low-cost CSP solution.

Based in Phoenix, AZ, FCT is a joint venture of Kulicke & Soffa and Delphi Delco Electronics Systems. FCT's website address is [www.flipchip.com](http://www.flipchip.com). Kulicke & Soffa (NASDAQ: KLIC) is the world's leading supplier of semiconductor interconnect equipment, materials and technology. Chip and wire solutions combine wafer dicing, die bonding and wire bonding equipment with saw blades, die collets, wire and capillaries. Flip chip solutions include wafer bumping technology, die placement equipment and Ultraviaa high density substrates. Chip scale and wafer level packaging solutions include solder sphere attachment systems and *Ultra* CSP technology. Test interconnect solutions include standard and vertical probe cards, ATE interface assemblies and ATE boards for wafer testing, and test sockets and contactors for all types of packages. The company also markets factory management and shop floor control software. Kulicke & Soffa's web site address is [www.kns.com](http://www.kns.com).

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