



PRESS RELEASE

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TechSearch International Analysis Predicts Growth for Fan-in and FO-WLP

TechSearch International predicts strong market growth for fan-in wafer level packages (WLPs) and fan-out WLP (FO-WLP). Driven by demand for thin, low-profile packages in smartphones, tablets, and wearable devices such as smart watches, fitness bands, and virtual reality headsets, fan-in WLPs are projected to have a >10% growth rate from 2015 to 2020. Starting from shipments of a few hundred million packages in 2015, FO-WLP shows a staggering growth rate of 82% over the five-year period. The use of FO-WLP for RF, audio CODEC, and power management ICs, coupled with Apple's adoption of TSMC's InFO FO-WLP as the bottom package-on-package (PoP) in Apple's iPhone 7, is driving unit volume shipments. Automotive radar, connectivity modules, and other applications promise continued growth for FO-WLPs. Cost-reduction pressures are driving the development of alternatives to reconstituted wafer FO-WLP in the form of large area panel processing and flip chip on coreless or thin core substrates. Chip package interaction (CPI) is analyzed for WLPs and flip chip.

TechSearch International's new study, **Flip Chip and WLP: Market Forecasts and Technology Analysis**, provides detailed analysis of the drivers for fan-in WLP, FO-WLP, and flip chip. The detailed analysis is based on the company's 29-year history of studying markets and critical technology and infrastructure issues.

Driven by small size devices such as filters, low noise amplifiers, power amplifiers, and switches found in smartphones, flip chip growth shows >13% CAGR in unit volume from 2015 to 2020. Documentation of the continued transition to Cu pillar is provided. Flip chip applications, bump types, and pitch trends are based on extensive interviews and research. Flip chip assembly options are discussed. Growth in gold bumping for LCD driver ICs is included. A critical analysis of planned capacity and utilization is provided for each geographic region, showing projections for strong growth in China.

The 115-page report with full references provides forecasts for the flip chip wafer bumping market by application, device type, number of wafers, and die shipments. Merchant and captive capacity is included. Forecasts for fan-in and FO-WLP demand are projected in number of die and wafer shipments. Bumping, wafer level packaging, substrate suppliers, assembly equipment, underfill material, and contract assembly service providers are listed. A set of 78 PowerPoint slides accompanies the report.

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 17,000 contacts in North America, Asia, and Europe. For more information, contact TechSearch at tel: 512-372-8887 or see www.techsearchinc.com.