

Packaging Trends in the Wireless Industry

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Abstract

The primary drivers for packaging technology development in the wireless industry are performance, size, time-to-market, and cost. Electrical performance improvements are being achieved through 1) higher Q inductors and capacitors, 2) tighter specifications on filters and duplexers, and 3) integration of EMI shielding. Size reduction is being achieved through 1) smaller passive components, 2) tighter spacing between components, 3) thinner substrates, and 4) thinner mold caps. All of these size advancements push the assembly process to more aggressive design rules and advanced materials. Embedding components and cavity structures are also being evaluated for potential size reduction capability. Time-to-market reductions are being achieved through 1) quick turn material delivery, assembly, and test, 2) improved component models, and 3) more use of finite element analysis to design packages and solve quality issues. Overriding all this development activity is a constant drive for cost reduction. Conversion from gold wire to copper wire is well advanced. Simplified process flows and improved equipment throughput are requirements that get more challenging with each new generation of product. This presentation will highlight the challenges and potential solutions in implementing performance, size, time-to-market, and cost reduction improvements.