NANIUM’s latest WL3D solution reduces space required by 5X

Vila do Conde, Porto, Portugal – January 14th, 2016 – NANIUM S. A., acknowledged for its experience in designing and developing innovative semiconductor packaging solutions, today announced it has developed a 3D Wafer-Level System-in-Package (WLSiP/WL3D) solution that integrates more than 40 different components. The final units measure 8 mm x 8 mm x 1 mm and are Fan-Out Wafer-Level Packages, produced on large diameter reconstituted wafers, a technology with proven volume manufacturability that was developed in-house.

“We were challenged by a customer to develop a package with several active and passive components including a large number of SMD parts - so far assembled on a PCB based module - in a single System-in-Package” explains Elisabete Fernandes, the responsible project manager. “To achieve a small form-factor, we had to attach an active silicon die as a hanging die (WLCSP) at the bottom side of the package inside the Ball Grid Array (BGA). The combination of these technologies enabled highly dense side-by-side (2D) and face-to-face (3D) assembly, ultimately reducing the original space required for this functionality by 5X.”

The resulting package was qualified and, according to the customer, NANIUM’s units not only achieve the same performance as the previously used PCB based module solution, but even exceed them in what concerns electrical performance. This was only possible due to the reliance on Wafer-Level Fan-Out (WLFO), the fastest-growing advanced packaging technology in the industry, capable of enabling Wafer-Level System-in-Package (WLSiP) and heterogeneous 3D integrated package solutions (WL3D).

This type of densely packed system solution is especially applicable to space constrained applications like wearables, health and well-being, sports and fitness, autonomous vehicles like cars and drones, and IoT devices in general.

NANIUM recently published a new datasheet “Embedded Wafer-Level System Integration (WLSiP & WL3D)”, and will be presenting the above solution at the “SEMI European 3D
Summit”, along with other Wafer-Level Packaging technology innovations. The event will be held in Grenoble, France from January 18th to 20th, 2016.

About NANIUM

NANIUM (www.nanium.com) is an outsourced semiconductor packaging, assembly and test provider, and a world-leader in 300mm Wafer-Level Packaging. The company provides Wafer-Level Chip Scale Packaging (WLCSP) and was among the first in the world to offer Wafer-Level Fan-Out (WLFO) in high volume manufacturing. Nowadays, NANIUM stands as a leader in WLFO, a technology that combines minimal form-factor with superior performance, high integration density, and high reliability. To date, NANIUM has shipped over 550 million WLFO packages.

NANIUM delivers world-class services and always customizes them according to the customers’ needs. In this way, its WLFO based embedded integration solutions range from single- to multi-die, system-in-package and package-on-package with passives integration, and serve markets such as mobile communication, medical, security, wearables and automotive radars, to name a few.

Based in Portugal, NANIUM’s facilities include over 20,000 sqm of cleanroom area. The company offers in-house capabilities for the entire development chain, from package design to the flexibility to tailor and test solutions. NANIUM has sales offices in Dresden, Germany, and Boston, USA.

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