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HBM sector to apply W2W tech, according to EVG – August 3, 2023

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- Roh Tae Min
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But application to take time from defects

Image: TheElec

Research into applying wafer-to-wafer (W2W) technology in the DRAM sector was very active, according to EV Group.

This was because the application of W2W hybrid bonding solution could improve the productivity of products such as high bandwidth memory, EV Group Korea General Manager Justin Yun said during a conference in Seoul hosted by TheElec.

Austria-based EV Group is a back-end chip company that offers equipment such as wafer bonders, coaters, and lithography machines.

However, it will take some time to commercially apply W2W technology due to defect issues.

But once the yield problem is resolved, the technology will be applied to HBM production, Yun said.

In 3D chip products, besides W2W, die-to-wafer and die-to-die bonding technologies are also used.

The latter two methods have fewer yield issues as good dies are easier to spot. However, in throughput, they are behind W2W.

In terms of W2W, a wafer with a 60% yield will result in a 36% yield after the process is done. As more wafers are stacked, the yield plummets even more.

CMOS image sensors and MEMS were the first to adopt W2W as these chips use legacy nodes and the yield problem is easier to resolve.

According to Yun, there will be a time when W2W is more price competitive compared to other bonding methods.

This time period will lead to more application of W2W, he said, while if the yield problem is resolved, using W2W can support 12 to 16 stacks.

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