TSV foundry embeds capacitors in interposers

Peter Clarke - February 24, 2010

LONDON — Allvia Inc., which bills itself as the world's first through-silicon via (TSV) foundry, has announced it has integrated embedded capacitors on silicon interposer substrates.

Capactance values higher than 1.5 microfarad per square centimeter have been achieved for the embedded capacitors, Allvia (Sunnyvale, Calif.) said.

Separate thin film capacitor components have been used previously but TSV interposers with embedded capacitors provide the shortest electrical path between devices and power supply decoupling capacitors. TSVs with their very low inductance interconnects thus will enable high electrical performance when integrated with embedded thin film capacitors.

Allvia's silicon TSV interposers enable interconnect pitch matching between a high-density IC chip and an organic or a ceramic substrate

"The capacitance value of 15 nanofarads per millimeter square is not a limit of our process and we think that the integration of capacitors with TSVs and silicon interposers is a technological breakthrough. The capacitance from the die or package can now be transferred to the interposer," commented Sergey Savastiouk, CEO of Allvia, in a statement.

In January, Allvia announced that it had completed the integration of a silicon interposer between a semiconductor die and an organic or ceramic substrate and had completed reliability testing. This 3-D integration of substrates is made possible with Allvia's through-silicon vias. Samples and reliability data are being made available to interested customers.

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