

# **Braided Solder Columns for Next Generation Large Heterogeneous 2.5D Packages**

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Solder balls are approaching end of life for reliability in extremely large 2.5D packages from 60x60mm to 100mm x 100mm in size.

Braided Solder Columns are more reliable than solder balls for large heterogeneous 2.5D packages for mission critical Mil/Aero and commercial applications.

Solder columns replace balls to reduce fracture-strain in solder interconnections by absorbing CTE mismatch between the package and boards.

Factors that cause fracture strain includes multiple die which are competing sources of strain in the package as well as the softness/hardness modulus flexibility of materials and the DNP – distance from the neutral point to the corners of the package.

Under repeated wide swings in operating temperature solder balls can rip off the package.

Braided Solder columns are a drop-in replacement for solder balls.

The presentation provides accelerated deflection test data using a variety of different solder materials comparing the reliability of a new series of Braided Solder Columns to legacy Copper Wrapped columns.

Braided columns provide a pathway to reduce package pitch with an associated reduction in overall package size and payload weight.

Production quantities of braided columns are currently available.

QML column attachment services for class Q, V and Y is available in cooperation with VPT Components.

Keywords: Copper Braided Solder Column