

JEDEC DESIGN STANDARD

DESIGN REQUIREMENTS FOR OUTLINES OF SOLID STATE AND RELATED PRODUCTS

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Design Guide 4.21

INTERNAL STACKING MODULE, LAND GRID ARRAY PACKAGES WITH EXTERNAL INTERCONNECT TERMINALS

(ISM)

**JEDEC
SOLID STATE TECHNOLOGY ASSOCIATION**

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INTERNAL STACKING MODULE, LAND GRID ARRAY PACKAGES WITH EXTERNAL INTERCONNECT TERMINALS (ISM)

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INTERNAL STACKING MODULE LAND GRID ARRAY PACKAGES WITH EXTERNAL INTERCONNECT TERMINALS (ISM)

4.21 SCOPE

This Design Guide applies to packages with optional external bond finger configurations and various height profiles and pitches. Height Prefixes (W, U, X, etc.) and Fine-pitch (F) prefixes will not be referenced unless the detail in questions pertains only to a specific variation. Refer to JESD30 for formal package designers.

4.21-1 ILLUSTRATIONS

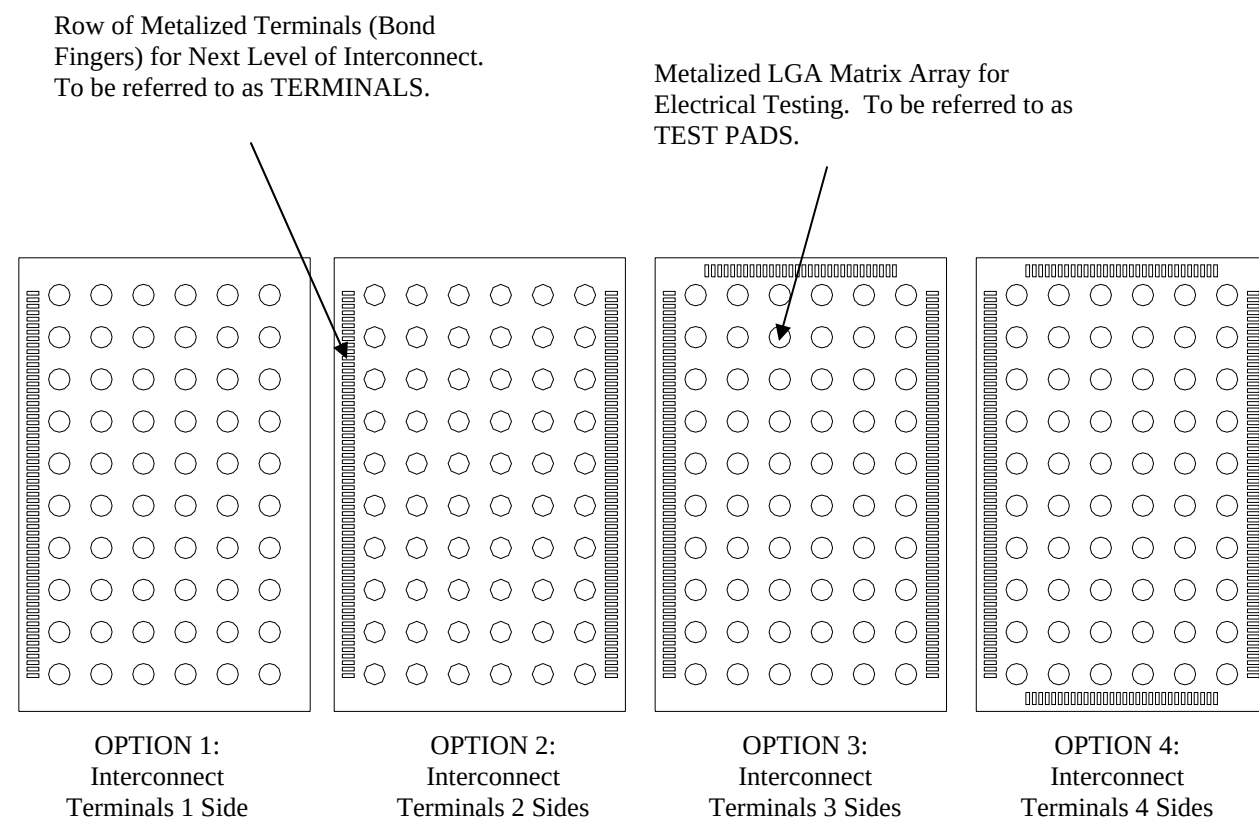


FIGURE 4.21-1 — Internal Stacking Module Land Grid Array Packages with External Interconnect Terminals

4.21-2 PACKAGE DESCRIPTION

Internal Stacking Module (ISM) Land Grid Array Packages (LGA) with External Interconnect Terminals are plastic semiconductor packages with metalized package terminals or lands arranged in an array on the bottom surface of the package. These terminals are either flush with the bottom surface of the package or defined by solder mask.

In addition to the land pad terminals arrayed on the bottom surface of the package, metalized fine pitch interconnect terminals (bond fingers) are located along the edges of the bottom surface of the package. These interconnect terminals can be on one side to all four sides of the package.

The package can have a square or rectangular body as well as symmetric or asymmetric terminal patterns.

The ISM LGA package is stacked within another BGA type package and then interconnect to base substrate is made by means of wire bonds attached to the external bond fingers of the ISM package per Figure 4.21-2. Therefore, the ISM LGA is embedded inside another package and the land pads are for testing purpose only (they have no 2nd level or board level reliability impact). These land grid array pads can be eliminated altogether if testing of the bond finger terminals directly is implemented.

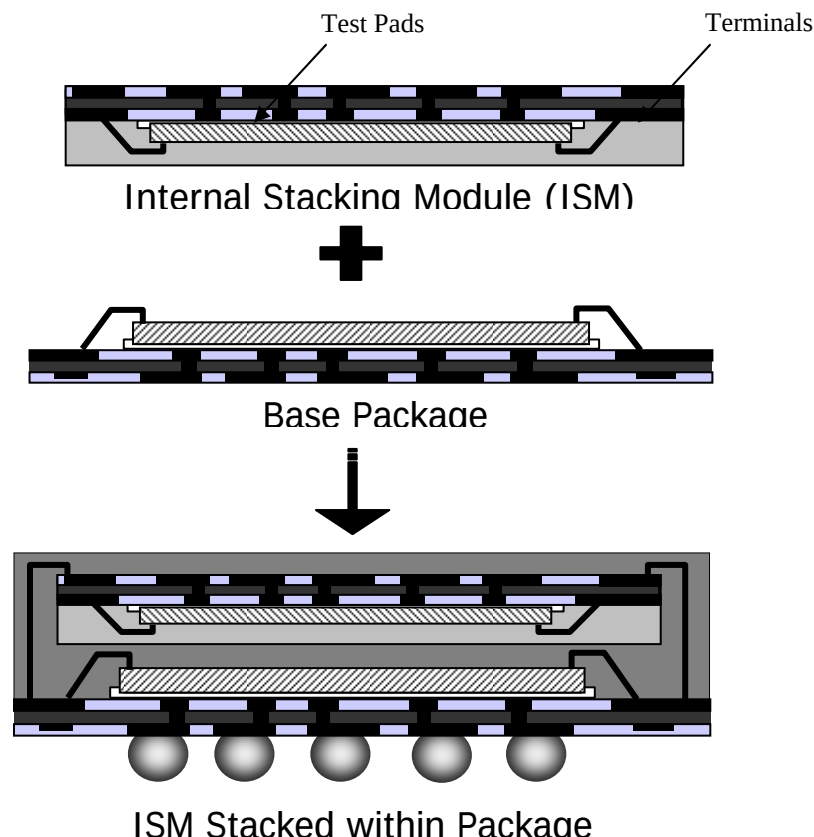


FIGURE 4.21-2 — ISM LGA Package Stacked within another Package