

Package on Package (PoP)

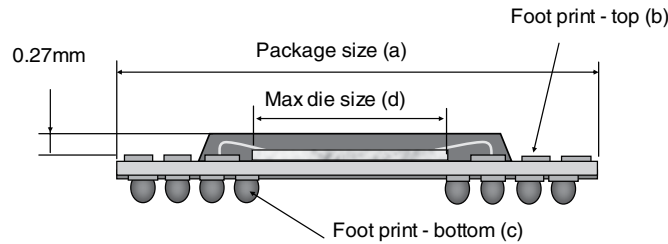
12x12mm Stacked Daisy Chain



Package on Package (PoP)

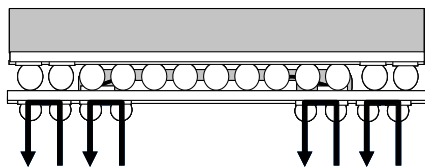
12x12mm, 0.65mm to pitch Stacked Daisy Chain

12mm 305 PSvfBGA Bottom Package Design Dimensions

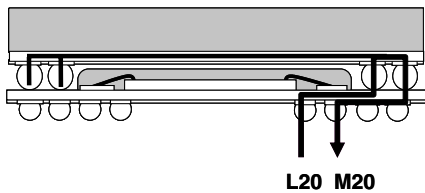


Body (a)	Foot Print-top (b)	Foot Print-bottom (c)	Die (d)	Bond Fingers Available
12 x 12mm	0.65 pitch, 128 ball 18 matrix, 2 row	0.5 pitch, 292 I/Os 23 matrix, 4 row + 12 NC + A1 ball 305 BGA	7.0 mm	332

PoP Daisy Chain 3 Net Design

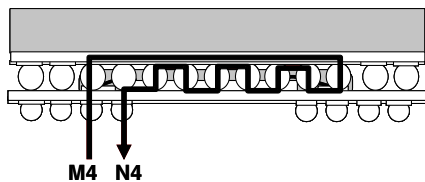


Daisy chain netlist of PSvfBGA, Bottom package balls.



Daisy chain netlist of top side (Top PoP to PSvfBGA 12 corner balls reserved for NC or additional supplies as memory combinations may require).

L20 M20



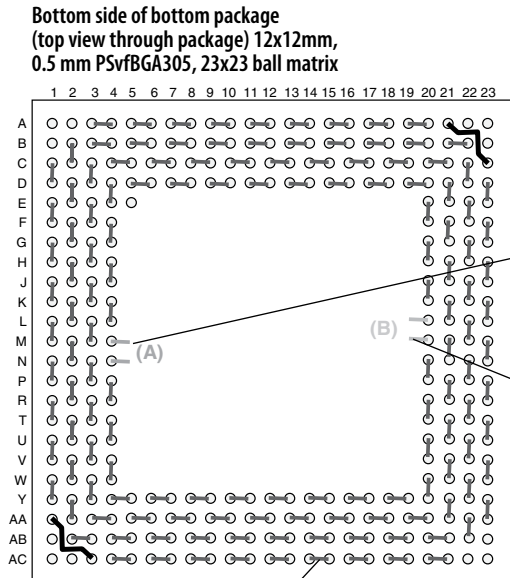
Daisy chain netlist of top side (Top PoP to PSvfBGA 116 pin memory interface).

Bottom package called: Package Stackable very thin fine pitch BGA (PSvfBGA).

M4 N4

* Color diagram of DC Net design available on our website.

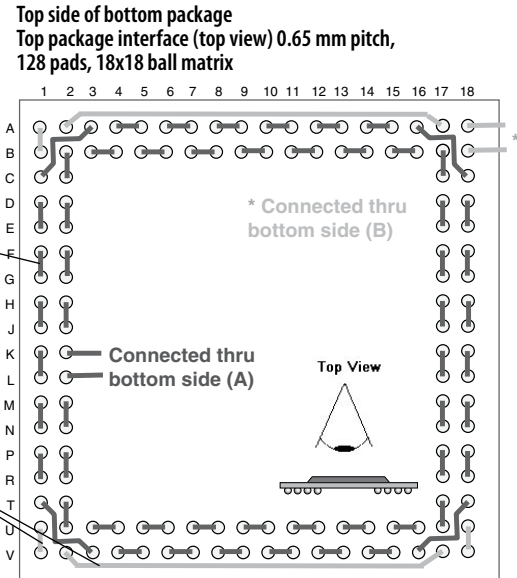
PSvfBGA 305 (Bottom Package) Daisy Chain Nets



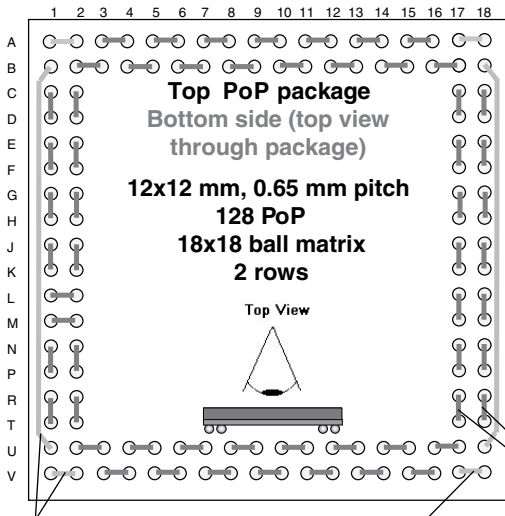
Daisy chain pattern of PSvfBGA -Bottom BGAs

Daisy chain pattern of
PSvfBGA—Top
memory pads

Top side 12 corner ball
DC net

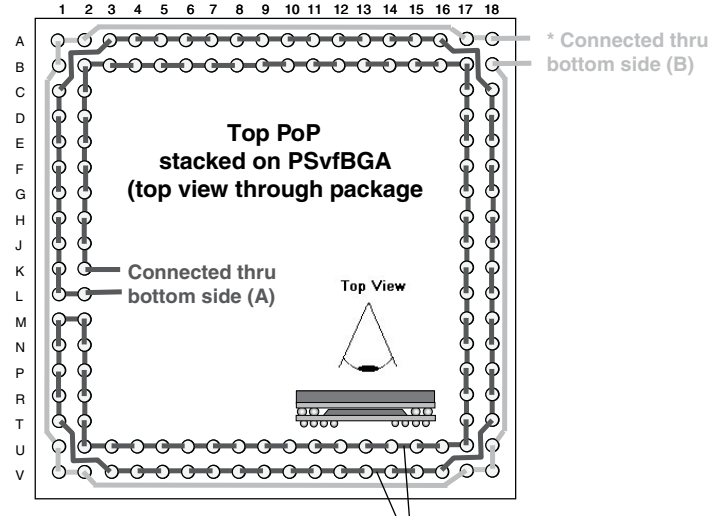


128 PoP (Top Package) Daisy Chain Netlist



Daisy chain pattern for 12 corner balls (typically reserved as NC for applications with no underfill, or option to add additional I/O or memory supplies as required for high density combinations)

PoP + PSvfBGA Daisy Chain Netlist



Daisy chain pattern of Top package for
116I/O memory interface

Daisy chain netlist of
Top PoP and PSvfBGA.

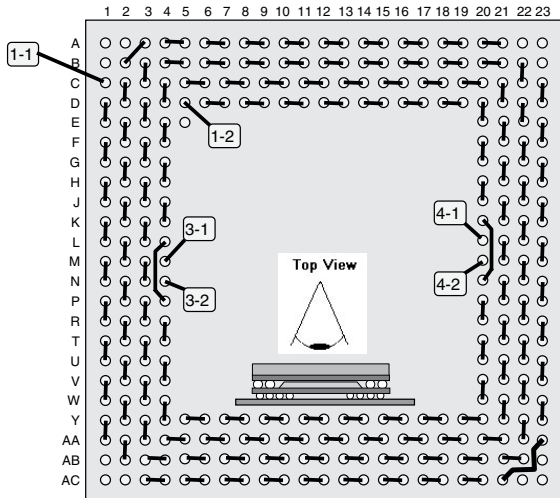
* Color diagram of DC Net design available on our website.

Package on Package (PoP)

12x12mm Stacked Daisy Chain

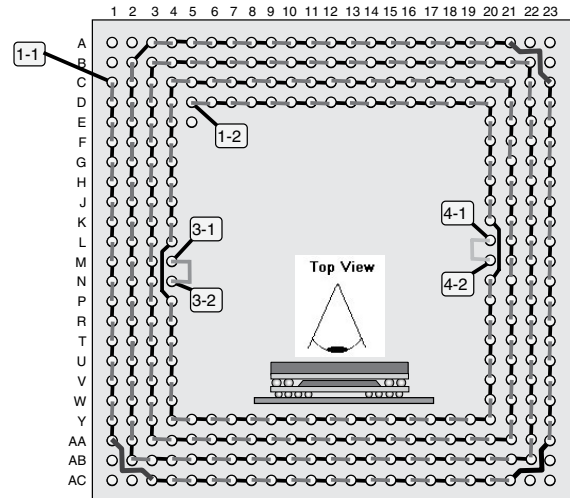


PWB Netlist Pattern for BLR Testing



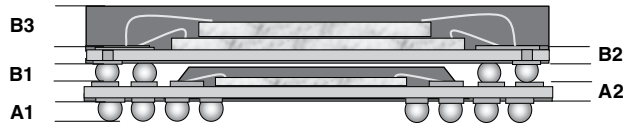
Black line: PWB pattern
In: 1-1, 3-1, 4-1
Common: 1-2, 3-2, 4-2

Stacked view of 3 DC Nets for BLR testing



Black line: PWB pattern
In: 1-1, 3-1, 4-1
Common: 1-2, 3-2, 4-2

PoP Overall Stack Up Example



Symbol	Unit	PoP + PSvFBGA		
		Min	Max	Nom
A1 (Ball, 0.5 pitch)	mm	0.150	0.250	0.200
A2 (4L laminate)	mm	0.260	0.340	0.300
B1 (Ball, 0.65 pitch)	mm	0.270	0.330	0.300
B2 (2L laminate)	mm	0.180	0.240	0.210
B3 (Mold cap)	mm	0.420	0.480	0.450
Overall Pkg Height	mm	1.378	1.542	1.460

B2 and B3 may vary depending on top memory PoP (MCP) design rules.
Overall Stack up to be finalized based on top PoP rules.

* Color diagram of DC Net design available on our website.