

KELVIN APPLICATION SOLUTIONS

Kelvin Solutions from Signal Integrity

Signal Integrity Inc. designs and manufactures spring probes and sockets that can address Kelvin contact test applications at 0.3mm, 0.4mm and 0.5mm pitch.

The pin models in our catalog designed with probe tips or plunger tips that can contact a single device pad with two probes are:

0.3mm pitch	AA917 series - 4 Kelvin models
0.4mm pitch	A1512 series - 9 Kelvin models
0.4mm pitch	A1562 series - 9 Kelvin models
0.5mm pitch	B2501 series - 5 Kelvin models
0.5mm pitch	B2535 series - 3 Kelvin models

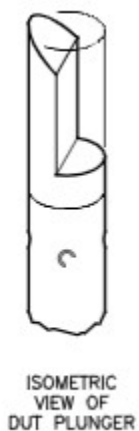
This broad selection of pins gives Signal Integrity the ability to make a socket or supply your socket with a Kelvin contact solution to address almost any package type.

Kelvin Probe Tip Styles

Signal Integrity offers two types of Kelvin probe contact tips:

Angled half circle (Horse's Hoof)

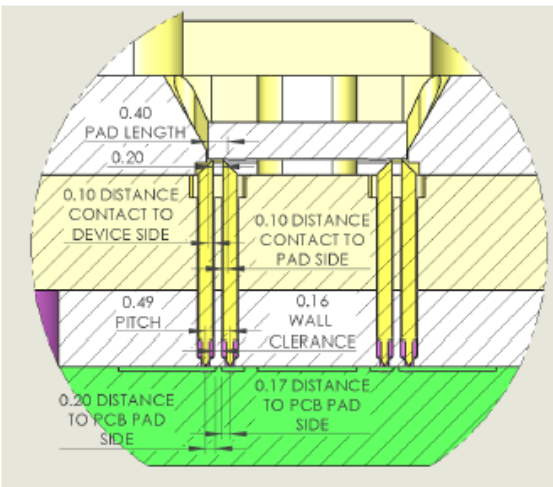
Flat Angle (Shark Fin)



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SII provides two tips giving the designer the option of a larger contact area of the half circle (Horse's Hoof) or very precise tight pitch contact of the sharp tip on the shark fin.

Example of 0.5mm pitch Kelvin Contact design using Half Circle Pins - B2501



This contact design for 0.5mm pitch is used for a device with LGA pads with different orientations on the package and maintaining a contact separation of 0.2mm. SII provides suggested design application notes for the Kelvin pin library. This is an application drawing for the B2501 0.5mm pitch simulation.

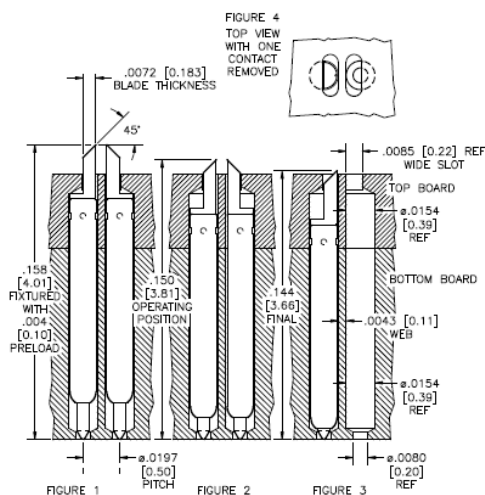
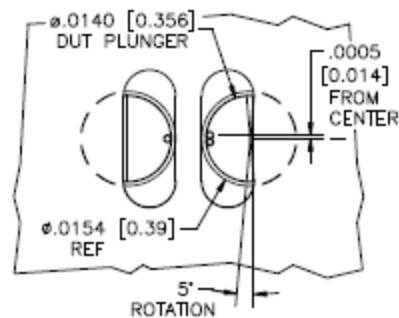


FIGURE 5 SCALE DOUBLED

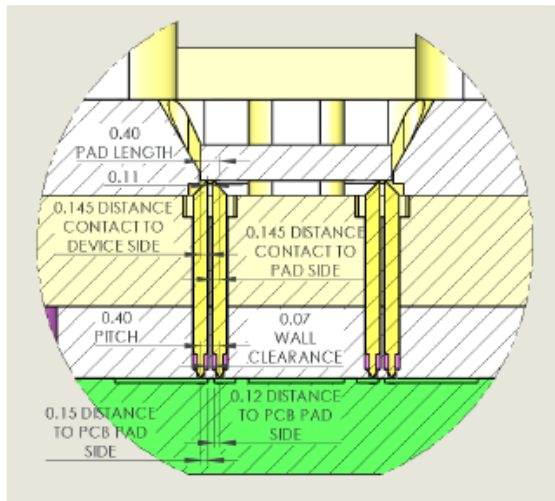


0.4 mm pitch Kelvin Example – A1512

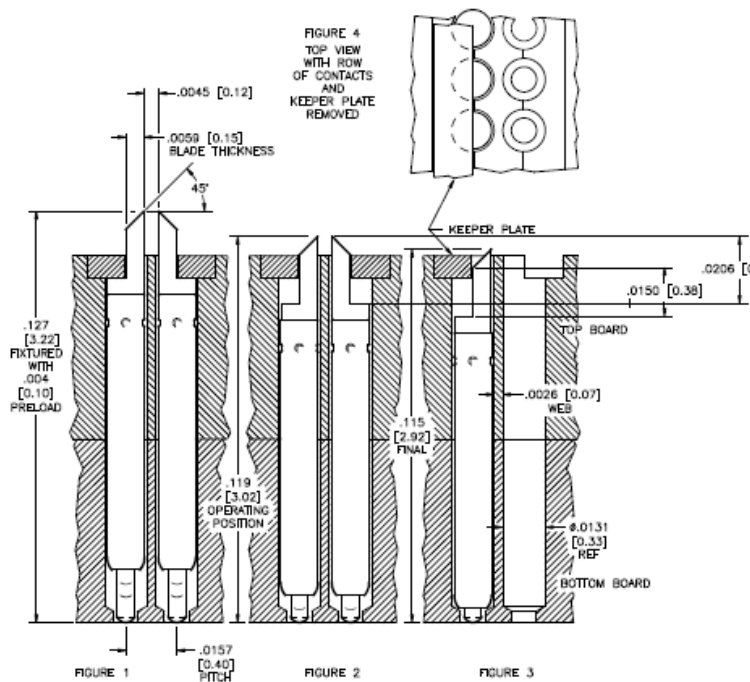


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This is a tight spaced shark fin tip application. A key manufacturing requirement is the ability to drill accurate repeatable Kelvin pairs with a tight 0.07mm web wall between drill holes. The shark fin will have a separation at the device pad of 0.07mm and the orientation will be fixed by the flat contact drill hole.

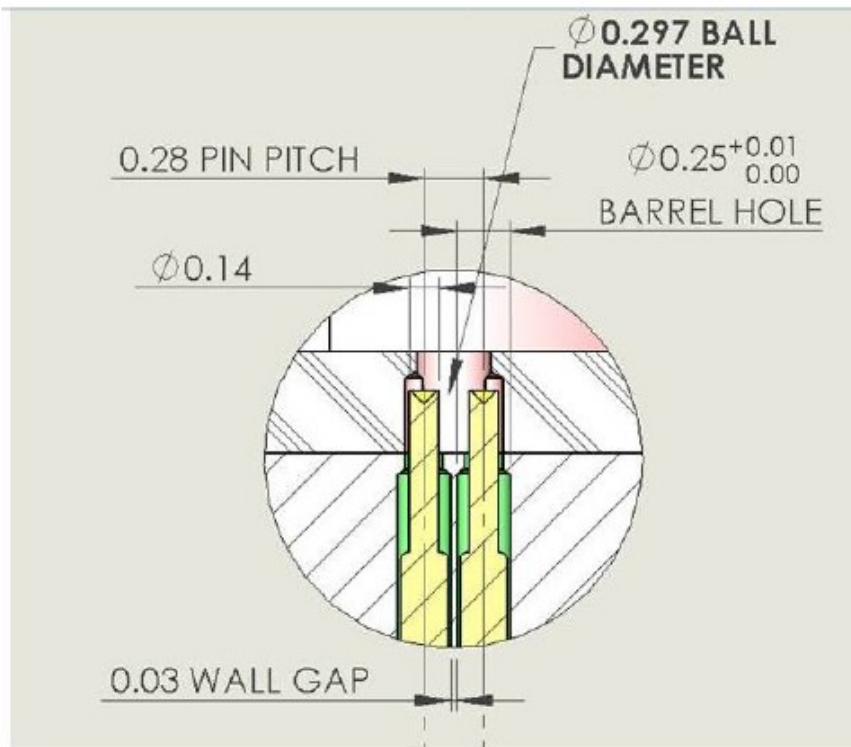


Side View Design Application Note - A1512 probe.



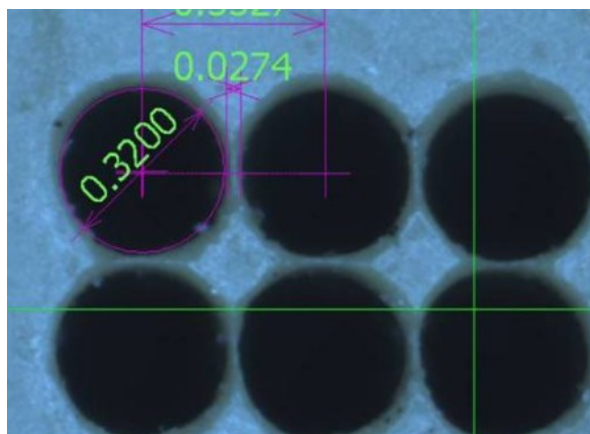
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0.3mm Pitch Kelvin Solution- AA917



For 0.3mm pitch Kelvin solutions we maintain a 0.03mm wall drill and for an example pin we would use the AA917 with a cup tip. These types of solutions are often used for BGA Kelvin tests that need a floating plate as well.

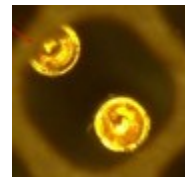
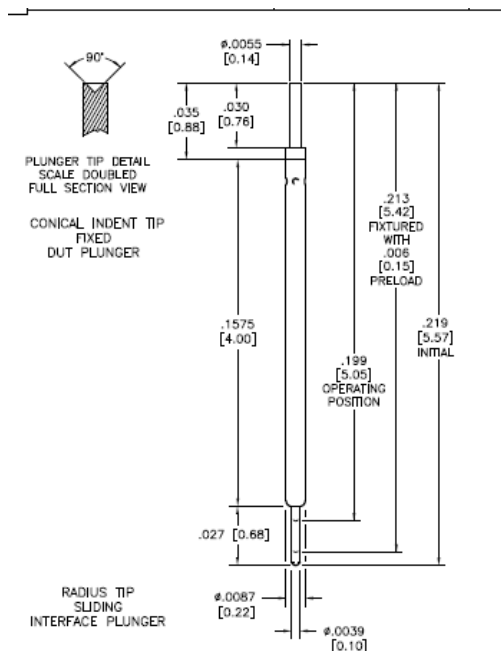
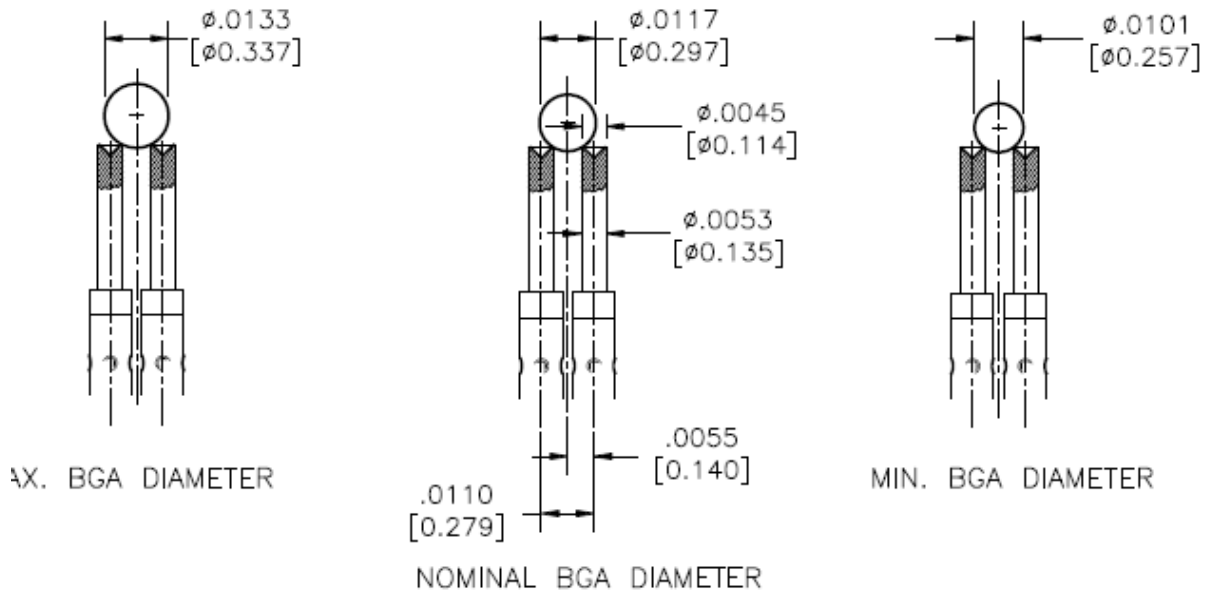
Example of SII Socket Drill Capability for 0.3mm Kelvin pitch BGA Package



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AA917 Pin Diagram for 0.3mm Kelvin Socket

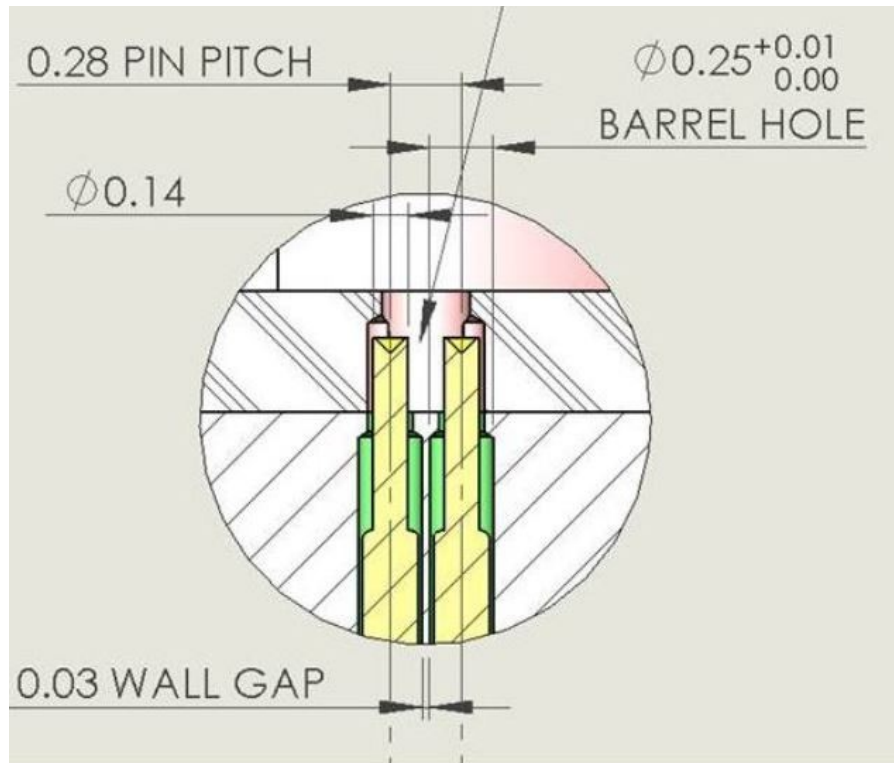
CONICAL INDENT TIP
FIXED DUT PLUNGER



0.3mm pitch Kelvin with
floating nest for BGA
contact.



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0.3mm Socket Design Contact Dimensions

