

## Axiom Electronics PCBA Design for Manufacturability Guidelines

Section: 10.26	Revision: A	Revision Date: 2/14/13
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DFM Subject: High Density Interconnect Pad Stack Geometries (Blind and Buried Vias)
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### DFM Requirement:

Table 10.26.1 explains the standard and advanced sizes required for blind and buried vias. It also describes buried via sizes when blind vias are placed on top of buried vias. For more detail on stacking blind vias on top of buried vias contact Jim Pierce.

Table 10.26.1 assumes no copper filled micro vias, no epoxy filled buried vias and no epoxy filled through vias, a 0.10mm (.004") trace/space, a micro via aspect ratio of  $\leq 0.65:1$  and a PCB thickness of <2.41mm (0.095").

To stack micro vias on top of buried vias the buried vias shall be epoxy filled and plated over. This limits the trace/space on the plated layers of the buried vias to 0.12mm/0.12mm (.005"/.005") however sometimes 0.10mm/0.10mm (.004"/.004") can be achieved.

If the micro vias are filled so they can be inside a solderable pad, then the pad size must be 0.30mm (.012") or bigger with a 0.12mm (.005") to 0.15mm (.006") micro via diameter. This will also limit the trace and space on the external layers to 0.12mm/0.12mm (.005"/.005") or sometimes 0.10mm/0.10mm (.004"/.004"), depending on the details of the design.

Table 10.26.1 Pad Stack Geometries

<b>Blind Vias</b>	<b>Standard</b>	<b>Advanced</b>
Micro via diameter	0.15mm (.006")	0.10mm (.004")
Surface pad diameter	0.30mm (.012")	0.25mm (.010")
Landing pad diameter	0.30mm (.012")	0.25mm (.010")
<b>Buried Vias</b>	<b>Standard</b>	<b>Advanced</b>
Buried via drill diameter	0.25mm (.010")	0.25mm (.010")
Buried via pad diameter	0.50mm (.020")	0.45mm (.018")

### DFM Impact:

Following these guidelines will ensure the design is manufacturable at the lowest cost and it will ensure the desired level of reliability can be achieved.

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DFM Details:

