Section: 10.13	Revision: A	Revision Date: 2/14/13

DFM Subject: Drilled Via Pad Stack and Hole Size Recommendations

DFM Requirement:

- Drilled via pad stack recommendations – see Table 10.13a
- Drilled hole size recommendations – see Table 10.13b
- The minimum via pad size shall be 0.0195", utilizing a 0.010" drilled hole

Table 10.13a – Drilled Via Pad Stack Recommendations

	V31RD18	V25RD13	V20RD10	V19-5RD10	V19-5/19RD10
PRI MASK	0.025”	0.019”	0.015”	0.015”	0.015”
PRI LAND	0.031”	0.025”	0.020”	0.0195”	0.0195”
INNER LAND	0.031”	0.025”	0.020”	0.0195”	0.019”
PLANE(1)	0.044”	0.038”	0.034”	0.026”	0.026”
SEC LAND	0.031”	0.025”	0.020”	0.0195”	0.0195”
SEC MASK	0.025”	0.019”	0.015”	0.015”	0.015”
DRILL(1)	0.018”	0.013”	0.010”	0.010”	0.010”
VIA PLUG	0.031”	0.025”	0.020”	0.0195”	0.0195”

Note 1: Anti pads shown – thermals are direct connections

DFM Impact:

Following Table 10.13a ensures IPC requirements for annular ring are achieved. Following Table 10.13b ensures minimum plating thickness is achieved, which reduces the risk of barrel cracking due to insufficient plating.

Table 10.13b – Drilled Hole Size Recommendations

PCB Thickness	Pad Size	Actual Drill Size	Annular Ring	Aspect Ratio	FHS	FHS TOL
0.062	0.018	0.0080	0.0050	7.8	0.0080	.003 / -.008
0.062	0.020	0.0100	0.0050	6.2	0.0100	.003 / -.010
0.062	0.025	0.0135	0.0058	4.6	0.0135	.003 / -.010
0.079	0.018	0.0080	0.0050	9.9	0.0080	.003 / -.008
0.079	0.020	0.0100	0.0050	7.9	0.0100	.003 / -.010
0.079	0.025	0.0135	0.0058	5.9	0.0135	.003 / -.010
0.093	0.020	0.0100	0.0050	9.3	0.0100	.003 / -.010
0.093	0.025	0.0135	0.0058	6.9	0.0135	.003 / -.010
0.093	0.030	0.0180	0.0060	5.2	0.0180	.003 / -.018
0.125	0.025	0.0135	0.0058	9.3	0.0135	.003 / -.010
0.125	0.030	0.0180	0.0060	6.9	0.0180	.003 / -.010
0.125	0.035	0.0230	0.0060	5.4	0.0230	.003 / -.010
0.187	0.030	0.0180	0.0060	10.4	0.0180	.003 / -.010
0.187	0.035	0.0230	0.0060	8.1	0.0230	.003 / -.010
0.187	0.040	0.0280	0.0060	6.7	0.0280	.003 / -.010

Highest Capability

Lowest Cost, Highest Reliability

Maximum acceptable aspect ratio is 8:1

FHS = finished hole size

FSH TOL = finished hole size tolerance