

Manufacturing Capabilities

Facility / Technology	Standard (S)	Chippewa				
	Advanced (A)	Falls	Los Angeles	Logan	Redmond	Santa Ana
Layer count common	S	20 - 34	16 - 20	16 - 20	12 - 18	12 - 18
Layer count max	A	44+	44+	44+	36+	36+
Line width - internal ½ oz	S	3.0	3.0	3.5	3.0	3.0
Line width - internal ½ oz	A	2.75	2.75	3.0	2.75	2.75
Space - internal ½ oz	S	3.25	3.25	3.5	3.25	3.25
Space - internal ½ oz	A	3.0	3.0	3.25	3.0	3.0
Line width - external ½ oz	S	3.75	3.75	4.0	3.75	3.75
Line width - external ½ oz	A	3.5	3.5	3.75	3.5	3.5
Space - external ½ oz	S	4.0	4.0	4.25	4.0	4.0
Space - external ½ oz	A	3.5	3.5	3.75	3.5	3.5
Minimum drill mechanical	S	10.0	10.0	10.0	10.0	10.0
Minimum drill mechanical	A	8.0	8.0	8.0	8.0	6.0
Drill to metal	S	10.0	10.0	10.0	10.0	10.0
Drill to metal	A	8.0	8.0	8.0	8.0	8.0
Aspect ratio	S	12:1	12:1	10:1	10:1	12:1
Aspect ratio	A	14:1	14:1	14:1	12:1	14:1
BBV mechanical drill	S	8.0	8.0	8.0	8.0	8.0
BBV mechanical drill	A	6.0	6.0	6.0	6.0	6.0
Back drilling depth tolerance	S	+/- 8	+/- 8	+/- 8	+/- 8	+/- 8
Back drilling depth tolerance	A	+/- 6	+/- 6	+/- 6	+/- 6	+/- 6
Minimum drill laser via	S	5.0	5.0	n/a	5.0	5.0
Minimum drill laser via	A	4.0	4.0	n/a	4.0	4.0
HDI - 1 layer build up	S	yes	yes	n/a	yes	yes
HDI - 2 layer build up	A	yes	yes	n/a	no	yes
HDI - 3+ layer build up	A	no	yes	n/a	no	yes
Microvia capture pad / hole	S	12 / 5	12 / 5	n/a	12 / 5	12 / 5
Microvia capture pad / hole	A	10 / 4	10 / 4	n/a	n/a	10 / 4
Microvia aspect ratio	S	.5:1	.5:1	n/a	.5:1	.5:1
Microvia aspect ratio	A	1:1	1:1	n/a	1:1	1:1
Maximum thickness	S	200	250	330	200	200
Maximum thickness	A	325	350	400	300	250
Minimum core thickness	S	2.0	2.0	3.0	3.0	2.0
Minimum core thickness (BC)	A	1.0	2.0	n/a	2.0	1.0
Minimum prepreg fill	S	2.5	2.5	2.5	2.5	2.5
Minimum prepreg fill	A	2.0	2.0	2.0	2.0	2.0
Finished copper - External	S	1 oz	1 oz	5 oz	1 oz	1 oz
Finished copper - External	A	3 oz	3 oz	10 oz	4 oz	3 oz
Max copper foil - Internal	S	4 oz	3 oz	6 oz	5 oz	3 oz
Min copper foil - Internal	S	¼	¼	¼	¼	¼
Impedance: 28 - 150 ohms	S	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%
Impedance: 50 - 150 ohms	A	+/- 7%	+/- 7%	+/- 7%	+/- 7%	+/- 7%
Panel size (Standard)	S	16 x 18	18 x 24	18 x 24	18 x 24	16 x 18
Panel size (Standard)	S	18 x 24	21 x 24	21 x 24	21 x 24	18 x 24
Panel size (Standard)	S	21 x 24	20 x 26	21 x 27	21 x 27	21 x 24
Panel size (Advanced)	A	18 x 27	24 x 24	24 x 27	24 x 30	24 x 28
Panel size (Advanced)	A		24 x 28	24 x 31		
Panel size (Advanced)	A			24 x 36		
Panel size (Advanced)	A			28 x 31		
Panel size (Advanced)	A			28 x 36		