



PCB Manufacture Capabilities

	Item	Unit	Description or parameter
1	Arlon material model		AD350,AR1000,25FR,33N,Di clad527
2	Rogers material model		Ro4350,Ro4350B,Ro4003,Ro4003C,Ro3003,RT5880
3	Rogers PP model		Ro4403(0.10mm),Ro4450B(0.10mm),
4	Taconic material model		RF-35,TLX-8,TLC-32
5	Taconic pp model		TP-32 (0.10mm)
6	High Tg material model		ShengYi Tg=170 (S1141 S1170)
7	Halogen free material (High Tg)		Shengyi: S1165, PP:S0165
8	Halogen free material(nomal Tg)		Shengyi: S1155,PP:S0155
9	Impedance control board	should inquiry firstly	FR-4, Halogen free FR-4, High TG FR-4, RO4000, 25FR series
10	PCB THICKNESS	mm	0.13-7.0(if the boards THK ≤ 0.5mm, the panel size must be ≤ 18in)
11	FR-4 PREPREGS		ShengYi 7628 2116 1080 3313 106
12	Copper foil	um	12、 18、 35、 70
13	Core with different copper foil on both side		18/35,35/70(18/70 or other mold should inquiry Fastprint firstly)
14	Out layer with different copper foil on both side		18/35(35/70、 18/70 or other mold should inquiry Fastprint firstly)
15	Finished copper(18um based copper)	um	≥35(normal is 52um, namely 1.5OZ)
16	Finished copper(35um based copper)	um	≥55
17	Finished copper(70um based copper)	um	≥90
18	solder mask color		Green, Yellow, Black, Blue, Red, White, Matte Green
19	Legend color		White, Black, Yellow
20	Surface finishing		HAL、 HAL lead free, Flash Gold, Immersion gold, immersion sliver, immersion Tin, OSP, Hard Gold.
21	selective surface finishing		ENIG+OSP, ENIG+GOLD Finger, Flash gold+HASL, Flash gold+gold finger, Immersion sliver+gold finger, immersion Tin+gold finger
22	Peelable solder mask	mm	0.2-0.5



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23	countersink size and angle		Angle:82, 90, 120, $\Phi \leq 10\text{mm}$
24	min core thickness	mm	0.05
25	Max drilling	mm	6.3
26	Mix laminating		Rogers/Taconic/Arlon mixing with FR-4
27	Board layer	Layer account	2-40
28	Max board size for 2-layers	inch	23*35(Length above 30inch, need to evaluate)
29	Max board size for 4-layers	inch	22.5*33.5(Length above 30inch, need to evaluate)
30	Max board size (≥ 6 -layers)	inch	22.5*26.5(Length above 22.5inch, need to evaluate)
31	Min board size	mm	10*10
32	Max panel size for RF material(rogers、 arlon、 tyconi cseries)	inch	16*18
33	Tolerance for outline routing	mil	± 4 (Complex routing and slot, need to evaluate)
34	Min Internal angle radius	mm	0.4
35	Tolerance of depth control slot or the blind slot(NPTH)	mm	± 0.10
36	mechanical blind&burried vias with times laminating		Laminating less than 3times
37	Gold THK(Immersion Gold)	um	0.025-0.10
38	Nick THK(Immersion Gold)	um	3/5
39	Sliver THK(Immersion sliver)	um	0.1-0.3
40	Min Tin THK(HAL Lead free)	um	0.4 (large bare copper area for HAL)
41	Tin THK(Immersion Tin)	um	> 0.8
42	Gold THK(hard gold plating)	um	0.15-3
43	Gold THK(gold finger/connecter)	um	0.25-1.3 (Min thickness point)
44	Nick THK(gold finger/connecter)	um	3/5
45	Gold THK(Flash gold)	um	0.025-0.10
46	Nick THK(Flash gold)	um	3/5
47	Min copper THK in the hole	um	Average 25um, Min thickness point above 20um
48	Min THK for isolation layer	mm	0.075(only for half OZ base copper)
49	min pad for BGA	mil	10 (For flash gold pcb can be 7mil)



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50	Min pad	mil	12(min 0.10mm only for laser drilling)
51	Min soldermask THK	um	10
52	Min width for the legend which soldermask layer	mil	8
53	Min soldermask bridge	mil	4(for Green soldermask),5(for another soldermask color)(if base copper ≤ 1OZ, can be 5mil)(if base copper is 2-4OZ, can be 6mil)
54	Min width of soldermask cover line (single side)	mil	2.5(pcb partial should be 2mil)
55	Min soldermask clearance (single side)	mil	2mil (10% area of flash gold pcb can be 1.5mil, 10% area of another surface treatment should be 1mil)
56	MAX Via damision for soldermask via plugging	mm	0.65
57	Soldermask thickness cover Via	um	5/8
58	Tolerance for the press hole without soldering	mil	±2
59	Max finished copper	OZ	5OZ(175um)
60	min distance for innerlayer between the edge(without exposed copper)	mil	10
61	Min distance for the isolation tape innerlayer	mil	8
62	min innerlayer isolation annulus (single side)	mil	8(8mil for less than 6-layer PCB),10(10mil for above 8-layer PCB),(8mil for pcb partial can shave pad)
63	Min width of inner layer PAD (single side)	mil	5(for base copper 18,35um,pcb partial can be 4.5mil),6(for base copper 70um),8(for bae copper 105um)
64	Impedance tolerance	%	±5Ω(<50Ω),±10%(≥50Ω); ≥50Ω can be ±5% (need to evaluate) ,
65	Min trace for Fastprint Logo on track legend layer	mil	8(12、18um), 10(35um), 12 (70um)
66	HDI board		1+n+1,1+1+n+1+1,2+n+2



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67	RCC material		copper thickness 12mil ,resin thicknessg 65,80,100um(resin thickness after laminating will be 55,70,90um)
68	Min laser drill hole size	mm	0.10(Laser drill hole Depth \leq 55um),0.13(Laser drill hole Depth \leq 100um)
69	Max PCB THK for mechnica drilling tool diameter(0.10mm)	mm	0.60(\leq 6layer)
70	Max PCB THK for mechnica drilling tool diameter(0.15mm)	mm	1.20(\leq 8layer)
71	Max PCB THK for mechnica drilling tool diameter(0.25mm)	mm	5
72	Min drilling diameter for PTFE Material	mm	0.45, Min drilling size 0.4mm, if above 0.4mm, need to evaluate, or add the drilling size, and use another material instead of PTFE
73	PCB THK tolreance (pcb thickness above 1MM)	mm	PCB thickness tolerance \pm 10%
74	PCB THK tolreance (pcb thickness \leq 1MM)	mm	\pm 0.1
75	Special PCB THK tolreance (not include special layer by layer space demand)	mm	PCB thickness \leq 2.0mm, tolreance \pm 0.1; PCB thickness 2.0-3.0,tolreance \pm 0.15; \geq 3.0mm, tolreance \pm 0.2
76	Aspect ratio		20:1 (not include tooling size \leq 0.2mm ,above 12:1, need to evaluate)
77	Min diameter of Connecting Hole	mm	0.45
78	Machining		Routing; V-CUT; Tab connecting; stamp holes
79	Min routing tool diameter	mm	0.6
80	Min gap between hole wall to line (None blind and buried via PCB)	mil	6(\leq 8layer),8(\leq 12layer),9(\leq 20layer),10(\leq 28layer)
81	Min gap between hole wall to line (Blind and buried via PCB)	mil	9(once laminating); 10(twice or three times laminating)
82	Min via pad annulus of out layer	mil	4(12、18um) can be pcb partial 3.5,4.5(35um),6(70um),8(105um)、10 (140um)



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83	Min gap for no copper exposure after routing	mil	8
84	Min NPTH diameter tolerance	mil	±2 (Limited tolerance +0/-0.05 or +0.05/-0)
85	Min PTH slot tolerance	mm	±0.15
86	Min diameter of routing tool diameter	mm	0.6
87	Countsink hole		PTH and NPTH, Max hole angle 130, Max hole diameter less than 6.3mm
88	hole position tolerance	mil	±3
89	Min insulation belt width	mil	3(Base copper 18um),4(Base copper 35um), ≥3mil
90	inner layer oxidation		Brown oxidation
91	Min line gap of inner layer(105um based copper,after line compensating)	mil	5
92	Min line gap of inner layer (140um based copper,after line compensating)	mil	7
93	Min line gap of inner layer (18um based copper,after line compensating)	mil	3
94	Min line gap of inner layer (35um based copper,after line compensating)	mil	3.5
95	Min line gap of inner layer (70um based copper,after line compensating)	mil	4
96	Min line width of inner layer (105um based copper,before line compensating)	mil	5
97	Min line width of inner layer(140um based copper,before line compensating)	mil	7
98	Min line width of inner layer(18um based copper,before line compensating)	mil	3
99	Min line width of inner layer(35um based copper,before line compensating)	mil	3
100	Min line width of inner layer(70um based copper,before line compensating)	mil	4



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101	Min line gap of out layer(105um based copper,after line compensating)	mil	6
102	Min line gap of out layer(12、 18um based copper,after line compensating)	mil	3.0(for 18um copper), 2.5(for 12um copper)
103	Min line gap of out layer(140um based copper,after line compensating)	mil	7
104	Min line gap of out layer(35um based copper,after line compensating)	mil	3.5
105	Min line gap of out layer(70um based copper,after line compensating)	mil	5
106	Min line width of out layer(105um based copper,before line compensating)	mil	8
107	Min line width of out layer(12、 18um based copper, before line compensating)	mil	4(for 18um copper), 3 (for 12um copper)
108	Min line width of out layer(140um based copper,before line compensating)	mil	9
109	Min line width of out layer(35um based copper,before line compensating)	mil	4.5
110	Min line width of out layer(70um based copper,before line compensating)	mil	6
111	Min gap between line to pad of out layer, Min gap between pad to pad of out layer(after line or pad compensating)	mil	3(for 12、 18um copper), 3.5(for 35um copper),5(for 70um copper),6(for 105、 140um copper)
112	Min warpage	%	0.1(≤ 0.3 need to evaluate)
113	Max size of dry film covering slot		5mm*3.0mm; Min dry film clearance(single side) above 15mil
114	Max width of dry film covering hole (single side)	mil	10
115	Max hole diameter of dry film coveing	mm	4.5
116	Angle tolerance of Gold finger chamfer		$\pm 5^\circ$



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117	Rest thickness tolerance of Gold finger chamfer	mil	±5
118	Max Length of Gold finger	inch	2
119	Min gap between Gold finger	mil	6
121	different length Gold finger surface treatment		flash gold / immersion gold plating ; electrical hard gold plating
122	V-CUT angle model		20°, 30°, 45°,60°
123	V-CUT no copper exposure, distance between V-cut line to Circuit(1.0<PCB THK≤1.6mm)	mm	0.36(20°),0.4(30°),0.5(45°),0.6(60°)
124	V-CUT no copper exposure, distance between V-cut line to Circuit(1.6<PCB THK≤2.4mm)	mm	0.42(20°),0.51(30°),0.64(45°),0.8(60°)
125	V-CUT no copper exposure, distance between V-cut line to Circuit(2.5<PCB THK≤3.0mm)	mm	0.47(20°),0.59(30°),0.77(45°),0.97(60°)
126	V-CUT no copper exposure, distance between V-cut line to Circuit(PCB THK≤1.0mm)	mm	0.3(20°),0.33(30°),0.37(45°),0.42(60°)
127	V-CUT symmetrical tolerance	mil	±4
128	V-CUT angle tolerance	o	±5°
129	V-CUT rest thickness tolerance	mil	±4
130	Max diameter peelable soldermask cover	mm	2
133	Distance between Peelable soldermask and pad	mil	12
137	Min gap of copper net for ground	mil	5 (for 12、 18、 35 um copper) , 8 (for 70 um copper)
138	Min width of copper net for ground	mil	5 (for 12、 18、 35 um copper) , 10 (for 70 um copper)
139	(for 12、 18um based copper) Min Legend width and gap		legend width: 4mil; legend high: 25mil
140	(for 35um based copper) Min Legend width and gap		legend width: 5mil; legend high: 30mil
141	(for 70um based copper) Min Legend width and gap		legend width: 6mil; legend high: 45mil



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142	Min gap between Legend and Pad	mil	6
143	Min connect resistance	Ω	10
144	Min gap of Test point to pcb edge	mm	0.5
145	Normal Max Test Current	mA	200
146	Normal Max Test voltage	V	250
147	Min Gap of test Pad to Pad	mil	3.9
148	Min size of Test Pad	mil	3.9
149	Max insulative resistance	M Ω	100
152	Ionic clearness test	ug/cm ²	≤ 1
153	Circuit peelable strength	Newton/cm	7.8
154	Hardness of soldermask	H	6
155	Burning resisting		94V-0