

Shenzhen hopetime industry Co.,Limited

VS GLOBAL WELL TECH LIMITED

PCBA:www.gwt-pcba.com; PCB:www.hopetimepcb.com

Conventional PCB			
No.	Conventional PCB	Unit	Specific
1	Layer	Layer	1-32
2	Material	Brand	SY,ITEQ,KB,NOUYA,ROGERS ECT
3	Surface treatment		HASL LF,ENIG(Immersion gold),OSP,Immersion Tin, Immersion Silver,Plated gold,Plated Tin
4	Selective surface finishing		ENIG+OSP,ENIG+G/F,Flash Gold+G/F, Immersion Silver+G/F,Immersion Tin+G/F
5	Soldermask color		Green,yellow,black,matte balck,blue,red,white,matte green
6	Silkscreen color		White,yellow,black
7	Maxium board size with 2L	mm	2000mm*500mm
8	Maxium board size with 4L,6L	mm	570mm*850mm or 1150mm*430mm (larger than 570mm need to double check)
9	Maxium board size with more than 8L	mm	570mm*670mm or 980mm*430mm (larger than 570mm need to double check)
10	Minimum board size	mm	0.5mm*1.0mm(thickness</=0.5mm), 1.0mm*2.0mm(thickness>/=0.5mm)
11	Minimum outline tolerance	mm	+/-0.05(Laser Routing);+/-0.1mm(Mechanical Routing)
12	Board thickness	mm	0.13-8mm
13	Double side board thickness	mm	0.13-3.6mm
14	4 Layer board thickness	mm	0.3-7mm
15	6 Layer board thickness	mm	0.6-8mm(6L),0.8-8MM(8L),1.0-8MM(10L),1.0-8MM(12L)
16	The tolerance of board thickness	mm	+/-0.1mm(thickness</=1.0mm),+/-10%mm(thickness>1.0mm)
17	Minimum drilling hole size	mm	0.075-0.1mm(Laser),0.15mm(Mechanical)
18	Single max drilling	mm	6.5mm(Drill bit)
19	Maxium Drilling	mm	50mm
20	Minimum PTH tolerance	mm	+/-0.05mm,+/-0.075mm,
21	Minimum NPTH tolerance	mm	+/-0.05mm(Limiation +0,-0.05mm or +0.05mm,-0mm)
22	Minimum Hole tolerance	mm	+/- 0.075mm
23	Maxium Drilling tolerance	mm	+/-0.1mm
24	Slot Hole	mm	0.5-6mm
25	Minimum slot hole length	mm	1.0mm
26	Slot hole aspect ratio	mm	1:2
27	Minimum slot hole tolerance	mm	Slot width,+/-0.15mm
28	Minimum slot hole tolerance	mm	Slot width direction +/-0.1,Slot length direction +/-0.15

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29	Countersink hole angle & size		Big hole 82,90,120 degree,dia < /=10mm
30	Countersink hole angle & size		PTH & NPTH,Big hole angle 130 degree, The dia of the large hole is not greater than 6.3mm
31	Minimum pattern width / spacing		0.075mm/0.075mm
32	Pattern width tolerance		+/-20um
33	Minimum pad		0.15
34	FR-4 pp		106,1080,3313,2116,7628
35	Mult press blind buried hole production		Press on the same side < /= 5
36	Max bore diameter of pad hole plug hole		0.4 multi press blind & buried hole board
37	Minimum thickness of inner		0.05(none blind buried hole),0.13(blind buried hole)
38	Minimum inner		3(18um base copper),4(35um base copper),> /=3mil
39	Inner layer treatment		Brown Oxygen
40	Minimum inner pattern spacing (105um base copper,after compensation)		5
41	Minimum inner layer pattern spacing (140um base copper,after compensation)		7
42	Minimum inner layer pattern spacing (18um base copper,after compensation)		3
43	Minimum inner layer pattern spacing (35um base copper,after compensation)		3.5
44	Minimum inner layer pattern spacing (70um base copper,after compensation)		4
45	Minimum inner layer pattern width (105um base copper,before compensation)		5
46	Minimum inner layer pattern width (140um base copper,before compensation)	mil	7
47	Minimum inner layer pattern width (18um base copper,before compensation)	mil	3
48	Minimum inner layer pattern width (35um base copper,before compensation)	mil	3
49	Minimum inner layer pattern width (70um base copper,before compensation)	mil	4
50	Minimum outer layer pattern spacing (105um base copper,after compensation)	mil	6
51	Minimum outer layer pattern spacing (12,18um base copper,after compensation)	mil	3.0(18um),2.5(12um)
52	Minimum outer layer pattern spacing (140um base copper,after compensation)	mil	7

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53	Minimum outer layer pattern spacing (35um base copper,after compensation)	mil	3.5
54	Minimum outer layer pattern spacing (70um base copper,after compensation)	mil	5
55	Minimum outer layer pattern width (105um base copper,before compensation)	mil	8
56	Minimum outer layer pattern spacing (12,18um base copper,before compensation)	mil	3.5(18um),3(12um)
57	Minimum outer layer pattern width (140um base copper,before compensation)	mil	9
58	Minimum outer layer pattern width (35um base copper,before compensation)	mil	4.5
59	Minimum outer layer pattern width (70um base copper,before compensation)	mil	6
60	Min spacing from pattern to pad,pad to pad for outer layer (after compensation)	mil	3(12,18um),3.5(35um),5(70um),6(105,140um)
61	Min outer pattern and spacing with blind/buried holes plated many times(>/=2 times)	mil	3.5/3.5(before compensation)
62	Min distance from inner layer edge without copper leakage	mil	10
63	Min inner layer isolation width	mil	8
64	Min inner layer isolation ring	mil	8(</=6 layer),10(>/=8 layer)
65	Min single side width of inner pad (none blind buried hole)	mil	4.5(18um,35um can be partial 4),6(70um),8(105um)
66	Min single side width of inner pad (laser hole)	mil	3
67	Impedance tolerance	%	+/-5Ω (<50Ω), +/-10%(>/=50Ω); >/=50Ω +/-5% need to be re-check
68	Min BGA pad diameter	mil	7mil
69	Min pad diameter	mil	12(0.10mm mechanical or laser drilling)
70	Min hole copper thickness (none Blind buried hole)	um	average 25,min single point >/= 20
71	Min hole copper thickness (Blind buried hole)	um	average 20,min single point >/= 18
72	PP thickness(min)	um	0.075(only H OZ base copper)
73	ENIG:Gold thickness	um	0.025-0.10
74	ENIG:Nickle thickness	um	3-5
75	Immersion silver/silver thickness	um	0.1-0.3
76	Min HASL LF /Pure tin thickness	um	0.4

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No.	Conventional PCB	Unit	Specific
77	Gold Finger:gold thickness	um	0.25-1.3(The required value is the thinnest point)
78	Gold finger:nickle thickness	um	3-5
79	Flash gold:gold thickness	um	0.025-0.1
80	Golden finger chamfer angle tolerance		+/-5°
81	Golden finger chamfering margin tolerance	mil	+/-5
82	Min gold finger length	inch	2
83	Min distance between gold fingers	mil	6
84	Gold finger next to the TAB does not hurt the min distance	mm	7(Means automatic chamfering)
85	Long and short gold finger		Can be combined with various surface treatments
86	Surface treatment for long and short gold finger		Immersion gold,Flash gold
87	Immersion tin:Tin thickness	um	0.8-1.5
88	Electroplate hard gold thick	um	0.15-1.3
89	Flash gold:nickle thickness	um	3-5
90	Max board thickness of mechanical drilling 0.10mm	mm	0.6
91	Max board thickness of mechanical drilling 0.15mm	mm	1.2
92	Max board thickness of router bit 0.25mm	mm	5
93	Bow and twist capability limit	%	0.1(need to double check when it request </=0.3)
94	Max dry film sealing slot		5mm*3mm,More than one side of sesaling hole 15mil
95	Min unilateral width of dry film sealing hole	mil	10
96	Max diameter of dry film sealing hole	mm	4.5
97	Min width of solder mask opening	mil	8
98	Min solder mask thickness	um	10
99	Min S/M bridge width	mil	3(green),5(other color)(base copper </=1OZ) (Base copper 2-4OZ,All in accordance with the 6mil)
100	Min unilateral width of soldermask	mil	2.5(Allow local 2mil)
101	Min solder mask opening(single side)	mil	2(Flash gold local 1.5,other allow local 1)
102	Max diameter of ink plug hole(both side)	mm	0.65
103	Thickness of soldermask ink through hole cover	um	5/8
104	V-CUT Angle specifications		20°,30°,45°,60°

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105	V-CUT(1.0<H≤1.6MM)	mm	0.36(20°),0.4(30°),0.5(45°),0.6(60°)
106	V-CUT(1.6<H≤2.4MM)	mm	0.42(20°),0.51(30°),0.64(45°),0.8(60°)
107	V-CUT(2.5≤H≤3.0MM)	mm	0.47(20°),0.59(30°),0.77(45°),0.97(60°)
108	V-CUT(H≤1.0MM)	mm	0.3(20°),0.33(30°),0.37(45°),0.42(60°)
109	V-CUT Symmetry tolerance	mil	±4
110	V-CUT Angle tolerance	0	±5°
111	V-CUT Residue thickness	mil	±4
112	Blue glue white mesh plug hole max diameter	mm	2
113	Min single side of blue cover pattern or pad	mil	2
114	Max diameter of blue plastic aluminum plug hole	mm	4.5
115	Min isolation between blue glue and pad	mil	12
116	Min single side carbon cap pattern	mil	2
117	Min isolation between carbon and pad	mil	8
118	Min isolation between carbon and carbon	mil	12
119	Min gridding spacing	mil	5(12,18,35um),8(70um)
120	Min gridding width	mil	5(12,18,35um),10(70um)
121	Min silk width and height (12,18um base copper)	mil	width 4mil,height 23mil
122	Min silk width and height (35um base copper)		width 5mil,height 30mil
123	Min silk width and height (70um base copper)		width 6mil,height 45mil
124	Min isolation of silk and pad	mil	6
125	Min test on resistance	Ω	10
126	Min distance from test point to edge	mm	0.5
127	Max test current	Ma	200
128	Max test voltage	V	250
129	WNH	mil	3.9
130	Min test pad	mil	3.9
131	Min etch logo width	mil	8(12,18um),10(35um),12(70um)
132	Outline tolerance(edge to edge)	mil	±4(Complex outlin and inner grooves with this requirement shall be re-checked)

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133	Min inner angular radius	mm	0.4
134	Depth control slot hole(edge)or blind slot precision(NPTH)	mm	±0.1
135	Special tolerance requirements for board thickness(No interlayer structure requirement)	mm	≤2.0±0.1,2.0-3.0±0.15,≥3.0±0.2
136	Max ratio of plate thickness to hole		20:1(not include≤0.2mm diameter,more than 12:1 shall be re-checked)
137	Min hole diameter	mm	0.45
138	outline method		Routing,V-CUT,Stamp-hole
139	Min router bit diameter of outline	mm	0.6
140	Min distance from hole to trace (Not blind/buried holes)	mil	6(≤8 layers),8(≤14 layers),9(≤28 layers)
141	Min distance from hole to trace (Blind / buried holes)	mil	9(Press one time),10(Press two times or three times)
142	Min distance from hole to trace (Laser drill,1 or 2-step)	mil	6
143	Min single-sided width for via hole pad of outer layer	mil	4(12um,18um),3.5,4.5(35um),6(70um),8(105um),10(140um)
144	Min distance without copper exposure when outline routing	mil	8
145	Maximum insulation resistance (for test)	MΩ	100
146	Hole resistance test board thickness limit	mm	0.38-5.0
147	Hole resistance test aperture limit	mm	min:0.62mm,max:0.25mm
148	ionic soil	ug/cm2	≤1
149	Copper stripping strength	N/CM	7.8
150	Resistance weld hardness	H	6
151	Resistance		94V-0
152	RCC material	UM	Copper foil:12,Resin:65,100um(complete 55,90um)
153	Thickness of blue glue	MM	0.2-0.5
154	Min carbon pattern width	MM	0.5mm
155	Hole resistance test aperture limit		