Through hole plate production capacity table

Item	Remark	Unit	Mass production	Advance capability
Material type	FR-4/Microwave laminate/ceramics	/	Normal FR4:KB-6160; S1141; IT-140; (H140A) **Mid Tg**: KB-6165F; S1000; IT-158; (H150LF) **High Tg**: S1000-2; IT-180A; **HF FR-4**: S1150G;(H1170)	/
PCB size	Max.	mm	420x540	/
	Min.	mm	10x15	/
# of layer	Max.	L	12	22
Finished board thickness	Max.	mm	3.200 (ENIG); 2.400 (Other finishing);	/
	Min.	mm	0.400	/
Board thickness tolerance	≥ 1.2mm +/-	%	10	/
	< 1.2mm +/-	mm	0.100	/
Dielectric thickness	Thinnest core	mm	0.102	/
	/Thickest core	mm	3.000	/
	Thinnest prepreg	mm	0.051	/
Thickest Cu thickness	Inner layer	oz	3	5
	Outer layer (including plating)	oz	4	6
Min. hole size	Machincal drilling	mm	0.250	0.200
Max. hole size	PTH hole	mm	6.000	8.000
	PTH Slot	mm	Width/length: 5.000/8.000	Width/length: 5.000/9.000
Hole size tolerance	PTH hole	mm	Hole: +/-0.075; Slot: Width: +/0.075; Length: +/0.100;	/
	NPTH hole	mm	Hole: +/-0.05; Slot: Width: +/0.050; Length: +/0.100;	/
Hole location tolerance	/	mm	0.075	/
Max. Aspect Ratio	Machincal drilling	/	7:1	8:1
Min. plating Cu thickness	Through hole/Burried hole	mm	0.025	0.03
	Blind hole	mm	0.010	0.015
Min. line width/spacing	H oz	mm	0.076	/
	1 oz or H oz + plating	mm	0.102	/
	2 oz or 1 oz + plating	mm	0.152	/
	3 oz or 2 oz + plating	mm	0.203	/
	4 oz or 3 oz + plating	mm	0.254	/
Layer to layer registration	/	mm	0.127	/
Hole to Cu pattern distance(hole min. clearance	Min.	mm	0.203	
Pad of PTH hole	Hole size +	mm	0.250	0.200
	Blind hole: hole size +	mm	0.200	0.180
	On top of line	mm	0.010	/

Min. solder mask thickness	Corner of line	mm	0.005	/
	On substrate	mm	0.075mm(glossy)	/
Solder mask registration tolerance	+/-	mm	0.076	0.064
Min. solder mask bridge	Green and blue	mm	0.076	/
	Other color	mm	0.203	0.15(base copper 0.5 OZ)
Silksreen marking	Min. line width	mm	0.125	0.100
	Min. front height	mm	1.000	0.800
Surface finishing	LF HASL	µm	1~100	/
	ENIG	µm	Ni: 3.00~8.00; Au: ≥ 0.03	Au: ≥ 0.05
	OSP	µm	0.15~0.30	
Dimension tolerance	Punch edge +/-	mm	0.127	0.100
	Rout edge +/-	mm	0.127	0.100
	Pad to hole +/-	mm	0.127	/
	Pad to edge +/-	mm	0.150	/
	Pad to Pad +/-	mm	0.100	/
	Hole to edge +/-	mm	0.127	0.100
	Hole to hole +/-	mm	0.100	0.075
V-cut	Angle	°	30, 45, 60	/
	Angle tolerarnce +/-	°	5	/
	Remained thickness	mm	≥1/3 board thickness	/
	Remained thickness tolerance +/-	mm	0.100	/
	Location tolerance +/-	mm	0.100	/
	Offset between upper V-cut and lower V-cut +/-	mm	0.100	/
	V-cut to puch edge +/-	mm	0.127	0.100
	V-cut to rout edge +/-	mm	0.127	0.100
Impedance	+/-	%	10	/
E-test	Min. round pad size	mm	0.250	/
	Min. rectangle pad width	mm	0.150	0.100
	Min. pad pitch	mm	0.400	/
	ETS Voltage(4wire/2wire)	V	250.000	/
Special highlight	Bind via	/	Yes	/
	Burried via	/	Yes	/
	VIPPO/POFV	/	No	Yes
	Solid via plating	/	Yes	/
	Jump V-cut	/	Yes	/
	Peelable solder mask printing	/	Yes	/
	Carbon ink printing	/	Yes	/
	I-Sn (Subcontract)	/	0.5~1.5um	/
	I-Ag(Subcontract)	/	3~15u"	/
Warpage		/	0.75%	

HDI process capability table

Material type and supplier	TgOrdinary Tg material	Material name	Corresponding supplier				High speed material	Material name	Corresponding supplier
	1	IT140	ITEQ Corporation				1	MEG4 R-5725	Panasonic Electronics
	2	S1141	Shengyi Electronics CO.,LTD				2	MEG4S R-5725	Panasonic Electronics
	3	GW4011	Goworld Co.,Ltd.				3	MEG6 R-5775	Panasonic Electronics
	4	NY2140	Shanghai Nanya Copper Clad Laminate					MEG7 R-5785	Panasonic Electronics
	TgMedium Tg materials			TgMedium Tg halogen-free	Material Name	Correspondin		MEG7N R-5785	Panasonic Electronics
	1	IT158	ITEQ Corporation	1	IT150GM	ITEQ			
	2	S1000H	Shengyi Electronics CO.,LTD	2	S1150G	Shengyi			
	3	EM-825	EMC	3	EM-370(5)	EMC			
	4	GW1500	Goworld Co.,Ltd.	4	EM-285	EMC			
	5	NP155-F	NAN YA PLASTICS CORP	5	TU-747	Taiwan Union			
	TgHigh Tg materials			TgMedium Tg halogen-free	Material Name	Correspondin			
	1	IT180	ITEQ Corporation	1	TU-862HF	Taiwan Union			
	2	S1000-2	Shengyi Electronics CO.,LTD	2	IT170FR1	ITEQ			
	3	EM-827	EMC						
	4	GW1700	Goworld Co.,Ltd.						

Ordinary PCB processing capability

total capacity	Max Layers	18 layer()	36layer ()			
	Max. cutting thickness	3.5mm				
	Maximum thickness to diameter ratio	12：1				
Multiple capabilities	process	specific items	Capabilities	Process control capability		
	inlayer	Line preprocessing	maximum size	640*∞mm	Short direction entry	
			minimum size	200*200mm		
			Maximum thickness	3.5mm		
			minimum thickness	0.05mm		
		Inner coating	maximum size	：630*640mm ：630*620mm		
			minimum size	350*200mm		
			Maximum thickness	1.5mm		
			minimum thickness	0.05mm		
		exposure	maximum size	：640*555mm ：620*555mm		
			minimum size	200*200mm		
			Maximum thickness	3.5mm		
			minimum thickness	0.05mm		
			Positioning accuracy	±50um	Ordinary exposure machine	
		etch	maximum size	640*∞mm	Short direction entry	
			minimum size	200*200mm		
			Maximum thickness	3.5mm		
			minimum thickness	0.05mm	Adopt belt plate	
				0.5OZ	1OZ	2OZ
			minimum linewidth	2mil	3mil	5mil
			minimum spacing	2mil	3mil	5mil
				>=3	>=3	>=3
Multiple capabilities	inlayer	PE punching	maximum size	610*762mm		
			minimum size	355*305mm		
		PE punching	Maximum thickness	1.0mm	1.0mmDrill more than 1.0mm	
			minimum thickness	0.05mm		
		inlayer AOI	maximum size	660*812mm		
			minimum size	200*200mm		
			Maximum thickness	3.5mm		
			minimum thickness	0.05mm		
		Umber melanism	maximum size	620*620mm		
			minimum size	200*200mm		
			Maximum thickness	3.5mm		
			minimum thickness	0.05mm		
			Copper reduction tolerance	±0.5μm		
	lamination	Fusin g and pressing	maximum size	620*620mm		
			minimum size	200*200mm		
			Maximum thickness	6mm		
			minimum thickness	/		
			Maximum number of layers	18layer		
			alignment accuracy	≤0.076mm		
			PNumber of P-slices	interlayer≤3		
			Edge width reserved	≥14mm		
		Rivet pressing	maximum size	620*620mm		
			minimum size	200*200mm		
			Maximum thickness	4mm		
			minimum thickness	/		
			Maximum number of layers	8 layer		
				≤0.076mm		

	lamination		P	layer ≤3								
				≥14mm								
		fuse+rivet	maximum size	620*620mm								
			minimum size	200*200mm								
			Maximum thickness	6mm								
			minimum thickness	/								
			Maximum number of layers	18 layer								
				≤0.076mm								
			P	layer ≤3								
				≥14mm								
		Other laminating methods	maximum size	620*620mm								
			minimum size	200*200mm								
			Maximum thickness	8.0mm								
			minimum thickness	/								
Multiple capabilities	lamination	Other laminating methods	Maximum number of layers	36 layer()								
			alignment accuracy	≤0.076mm								
			PNumber of P-slices	layer ≤3								
			Edge width reserved	≥14mm								
			Pressed copper foil	T、H、1、2 OZ	sample: 3 OZ							
			the thinnest PP	1037								
			in common usePP	106、1080、2116、7628								
			PPDisable the single PP type	7628（43%）、1080（63%）、2116（50%）（1 OZ）								
			Inner copper foil≥2 OZ pressing PP usage regulations2 OZPP	2PPAt least 2 medium or high adhesive PP								
			PPMaximum PP usage of adjacent layers	3								
	laser		maximum size	620mm*560mm								
			minimum size	305mm*305mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
			Maximum laser aperture	0.075mm	convention0.1mm							
			Maximum laser aperture	0.2mm								
			the thinnestPP	1037	convention106、1080							
			Maximum laser aspect ratio	0.8:1	convention1:1							
			Positioning accuracy	0.025mm								
			Minimum perforation spacing of different networks	0.25mm	Hole compensated							
			Minimum laser perforating ring	2.8mil	Only ensure that the							
	drill	size	maximum size	680*550mm								
			minimum size	/								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
		cutter	Minimum bit	0.2mm								
			Maximum bit	6.5mm								
			Maximum slot cutter	1.9mm	1.9mmMore than 1.9mm drill out or gongs out							
			Minimum slot cutter	0.4mm								
		hole tolerance										
			Non-plating hole tolerance	±0.05mm	±0.03mm							
			Plating hole tolerance	±0.076mm	±0.05mm							
			Minimum distance from the mechanical hole edge of	0.125mm	()							
			Minimum distance between mechanical hole edges of different networks	4、6:0.2mm 8：0.25mm ≥10：0.3mm	()							
		porous circle	Minimum mechanical hole ring	3.5mil	Only ensure that the							
	desmear	Conventional drilling	maximum size	620mm*620mm								
	desmear	Conventional drilling	minimum size	305mm*305mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
		Plasma decontamination	maximum size	620mm*620mm								
			minimum size	305mm*305mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
	Copper plating	Grinding plate before copper deposition		1								
			maximum size	620mm*620mm								
			minimum size	200mm*200mm								
			Maximum thickness	3.2mm								
		Grinding plate before copper deposition	minimum thickness	0.3mm								
		Vertical copper sinking		Device 1	Device 2	Device 3						
			maximum size	620mm*620mm								
			minimum size	305mm*305mm								
			Maximum thickness	3.5mm								

Category	Process	Sub-process	Parameter									
Multiple capabilities	Copper plating	Vertical copper sinking	minimum thickness	0.05mm								
			Aspect Ratio	12:1								
			Backlight	＞9								
			Copper deposition thickness	0.35-0.65um								
		Horizontal copper sinking		Device 1	Device 2	Device 3 3						
			maximum size	620mm*620mm								
			minimum size	305mm*305mm								
			Maximum thickness	2.4mm								
			minimum thickness	0.05mm								
			Aspect Ratio	12:1								
			Backlight	＞9								
			Copper deposition thickness	0.35-0.75um								
		Full board plating		1	2	3	1#	2#				
			maximum size	620mm*560mm	620mm*560mm	620mm*560mm	620mm*544mm	0mm*610	622mm*546mm			
			minimum size	305mm*305mm	305mm*305mm	305mm*305mm	412mm*300mm	7mm*450	457mm*335mm			
			Maximum thickness	3.5mm	3.5mm	3.5mm	2.4mm	2.4mm	1.6mm			
			minimum thickness	0.25mm	0.25mm	0.25mm	0.05mm（）	0.2mm	0.075mm			
			Mechanical hole thickness to diameter ratio	≤12：1	≤12：1	≤12：1	≤6：1	≤6：1	≤6：1			
			Laser perforation thickness to diameter ratio	≤1:1	≤1:1	≤1:1	≤1:1	≤1:1	≤1:1			
			Mechanical hole copper control	10-50um	10-50um	10-50um	/	/	/			
			Laser perforating copper control	10um-20um	10um-20um	10um-20um	/	/	/			
			DIMPLE	/	/	/	≤15um	≤15um	≤15um			
			Filling bore	3-5mil	3-5mil	3-5mil	3-5mil	3-5mil	3-5mil			
			Uniform difference of plating	13um（20um）	13um（20um）	13um（20um）	6um（20um）	um（20um	7um（20um）			
			The plating clip changes the reserved width	≧9mm	≧9mm	≧9mm						
Multiple capabilities	Copper plating	Graphic plating	maximum size	620mm*620mm								
			minimum size	305mm*305mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
				12:1								
			Uniform difference of plating	13um（20um）								
Multiple capabilities	outer layer	Line preprocessing	maximum size	630*∞mm								
			minimum size	300*300mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.2mm								
		LDIexposure	maximum size	：620*544mm ：609*711mm	：1#/3#/4#/5#：660.4*812mm 2#/6#：609*812mm							
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
				±25um(LDI min)	±50um()							
		Dry film cover hole capacity	Maximum hole	6.15mm								
		Etching	Acid etching									
				Copper max<25um	Copper max<35um	Copper max<50um						
			minimum linewidth	2mil	3mil	4mil						
			minimum spacing	2mil	3mil	4mil						
				>=3	>=3	>=3						
			maximum size	620*∞mm								
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.2mm								
		Impedance Control		Line Width≥3mil	Line Width＜3mil							
			Line width control	±10%	±10um							
			Resistance control	±10%	±10%							
		outer layerAOI	maximum size	660*812mm								
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.05mm								
Multiple capabilities		Pre-treatment	maximum size	630*∞mm								
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.3mm								
		Screen Printing Machine	maximum size	650*550mm								
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.3mm								
		[illegible]	maximum size	544*625mm								
			minimum size	305*254mm								

Multiple capabilities	solder resist	Exposure machine	Maximum thickness	3.5mm								
			minimum thickness	0.1mm								
		DI machine	maximum size	5#: 648*661 6#: 540*661								
			minimum size	110*50mm								
			Maximum thickness	6.0mm								
			minimum thickness	0.2mm								
		Developing machine	maximum size	630*∞mm								
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.3mm								
Multiple capabilities	solder resist	Post-baking oven	maximum size	620*620mm								
			minimum size	200*200mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.1mm								
		Copper face green oil window opening character		Spray tin plate	Non-spray tin plate							
			minimum width	0.2mm	0.3mm							
		Solder resistance ink thickness		Line angle position	Line and surface position	Substrate position						
				5	10	75						
		processing capability				Solder bridge and window opening			taphole			
			green	model	supplier	Minimum window	Minimum	Minimu	Diameter Of Hole	Lamella minim	Half plug thickness to diameter ratio	Can do electrostatic
			1	PSR-4000 G23K		0.5mil	1.8mil	3mil	0.5mm	0.3mm	5:1	no
			2	KSM-S6188 KG26		0.5mil	1.8mil	3mil	0.5mm	0.3mm	5:1	no
			3	PSR-2000 CE826HF3		0.5mil	1.8mil	3mil	0.5mm	0.3mm	5:1	no
			blue									
			1	KSM-S6189 BL01		0.5mil	1.8mil	3mil	0.5mm	0.3mm	5:1	no
			2	PSR-4000 BL01		0.5mil	1.8mil	3mil	0.5mm	0.3mm	5:1	no
			black									
			1	PSR-4000 EG70M		0.8mil	2.2mil	3.5mil	0.5mm	0.3mm	5:1	no
			2	PSR-4000 EG23		0.8mil	2.2mil	3.5mil	0.5mm	0.3mm	5:1	no
			red									
			1	KSM-S6189 R02		0.8mil	1.8mil	3mil	0.5mm	0.3mm	5:1	no
			2									
			white									
			1	PSR-2000 FR603W5		0.8mil	1.8mil	3.5mil	0.5mm	0.3mm	5:1	no
Multiple capabilities	processing capability	processing capability	2									
	Degree of ion contamination	control ability	Ionic contamination	<=10ugNacl/in2								
	character	capacity of equipment	maximum size	698*800mm								
			minimum size	100*100mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.3mm								
		processing capability	white	model	supplier	Minimum line width	Minimum	block	Minimum spacing			
			1	THCP-62201 M-211W	sun	4mil	20*30mil	15um	4mil			
			2	S-380W	sun	4mil	20*30mil	15um	4mil			
			1	R500-M211 (Y)	Yongshengtai	4mil	20*30mil	15um	4mil			
	Other processes	Blue Glue	thickness	0.2-0.5mm								
			Minimum spacing to pad	0.3mm								
			Screen jack maximum aperture	2.0mm								
			Maximum aperture of aluminum jack	4.0mm								
		Select wet film	minimum spacing	14mil	＜14milPriority assurance areas need to be							
Multiple capabilities	Other processes	carbon oil			pnlPNL board production		setSet board production					
				H/HOZ	1/1OZ	2/2OZ	H/HOZ	1/1OZ	2/2OZ			
			thickness	10um（min）	10um（min）	10um（min）	10um（min）	um（min	10um（min）			
			The covering conductor has the smallest side	10mil	12mil	14mil	6mil	8mil	10mil			
			Minimum space between carbon oil conductors	12mil	14mil	16mil	12mil	14mil	16mil			
		resin plug hole	Jack aperture	0.2-0.5mm								
			Jack aluminum sheet aperture	d+4mil								
	surface treatment	processing capability		Chemical Substances	Silver	Tin()	Leaded HASL	free HAS	OSP	electrum	OSP+Chemical Substances	
			Whether it can be processed by itself	Y	Y	N	N	N	Y	N	Y	
			thickness control	Au：0.025-0.1um Ni：	3-24u″	0.8-1.5um	1-40um	1-40um	0.2-0.4um	.015-0.0508um		
			maximum size	647mm*647mm	610*1500mm	610*1500mm	650mm*544mm	0mm*544	508mm*660mm	3800mm×650mm		
			minimum size	305mm*305mm	100*100mm	100*100mm	400mm*400mm	0mm*400	51mm*64mm	/		
			Maximum thickness	4.0mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm		
			minimum thickness	0.3mm	0.2mm	0.2mm	0.6mm	0.6mm	0.3mm	0.3mm		
			pad	3.8mil	/	/	/	/	/	/		
	outline	capacity of equipment	minimum size	2*2mm								
			Maximum thickness	8mm								
			minimum thickness	0.1mm								
				0.8/1.0/1.2/1.5mm								
		processing capability										

		processing capability	working accuracy	±0.1mm	±0.1mm	±0.1mm	±0.1mm					
Multiple capabilities	V-CUT	capacity of equipment	maximum size	620*610mm								
			minimum size	85*85mm								
			Maximum thickness	4.0mm								
			minimum thickness	0.6mm								
			Normal tool Angle	30/45/60°								
		processing capability	working accuracy	positional accuracy	Up and down alignment	Residual thickness	angle	Minimu				
	V-CUT	processing capability		±0.1mm	±0.1mm	±0.1mm	5°	16mm				
	cleanout	capacity of equipment	maximum size	620*620mm								
			minimum size	85*85mm								
			Maximum thickness	3.5mm								
			minimum thickness	0.6mm								
		cleanout fluid	Cleaning solution	2-4% H2SO4								
	test	Continuity test	/	general test								
			maximum size	420*340mm								
			minimum size	76.2*50mm								
			Maximum thickness	3.5mm								
Multiple capabilities	test	Continuity test	minimum thickness	0.1mm								
			PADMinimum PAD width or diameter can be tested	0.12mm								
			PADpitchCan test the pitch between PADs	0.25mm								
			/	Conventional test	Conventional insulation	Conventional on-	Conventional	TEST	Depth control tests			
			general test	250V	50MΩ	20-40Ω	20mA	40000	no			
			Dedicated tests	250V	50MΩ	20-40Ω	20mA	10000	no			
			flying probe	250V	50MΩ	20-40Ω	100mA	＞40000	no			
		high-voltage insulation test	Threshold current	testing voltage	Can choose the point test							
			nothing	There are requirements	nothing							
		inductance test	Whether there is an inductive pen	Whether special								
			N	N								
	finished product	FQC	Finished plate thickness	thickness of plating≥ 1.0mm: ±10% 0.4mm＜thickness of plating＜1.0mm:±0.1mm								
			Plate bending	±0.5% (best)	±0.75% (convention)							

Special process capacity table

Special process classification	Have the ability	Ability statistics										
POFVResin jack and POFV	Y	Jack capacity		Maximum plate thickness	Minimum plate thickness	Maximum hole	ratio of thickness to radial dimension	Distance between jack and non-jack	Whether to send out jack holes	Maximum resin depression		
			Semi-automatic jack	1.8mm	0.3mm	0.55mm()	5:1	≥0.35mm		70%		
			Vacuum wire mesh jack	12mm	0.1mm	1.0mm	30:1	≥0.5mm	POFAPOFA part number needs to be sent out	≤25μm	aperture＜0.8mm，sunken≤25μm;	
			Vacuum aluminum sheet jack	12mm	0.1mm	/	30:1	≥0.2mm	POFAPOFA part number needs to be sent out	≤25μm	aperture≥0.8mm，sunken≤75μm.	
		/Flatten/brush the board		Maximum plate thickness	Minimum plate thickness	critical control point	Whether to send it out					
			Brush and grind	3.5	0.4	Grinding current	no	<0.4mmoutsource				
		throwing power		Max. cutting thickness	The lowest depth	critical control point	Maximum bulge	Maximum				
			electroplate	3.5mm	0.4mm	Copper coating thickness	\	25um				
		Basic processing flow										
HDI	Y	basic ability		1Simple first order	22nd order non-overlapping pore	33 order non-	1First order buried hole	22 cascade	33 cascade microblind holes	HDI		
			Maintain Capacity Category	Y	Y	Y	Y	Y	Y	Y		
				IPC2Hole copper according to IPC2	IPC3The hole copper is IPC3 grade	Hole copper press						
			Face copper copper thick capacity									
				Micropore thickness to diameter ratio	PThe micropores correspond to the P-slice	Laser copper	Depth of filling hole					
			other	≦1:1	1037/106/1080	LDD	≦25um()					
		basic procedure	1HDI									
Goldfinger	Y	basic ability		()Normal golden finger (external)	()Segmented goldfinger	()Graded Gold Finger						
			Finger processing type	Y	Y	Y						
			maximum size	620mm*544mm	620mm*544mm	620mm*544mm						
			min size	200mm*200mm	200mm*200mm	200mm*200mm						
			Max thickness	3.5mm	3.5mm	3.5mm						
			minimum thickness	1.0mm	1.0mm	1.0mm						
				NickelThickness	aluminum alloy thick plate	Plating control ability						
			Electroplating nickel gold	40 u″ -300u″	1u″ -100u″	PADDistance between gold-plated area and PAD position：minimum spacingC						
	N	Hypotenuse capacity	Whether to send it out	yes								
				inner bevel	The lowest depth	Causeway Angle						
			Bevelled mode									
				Max thickness	Min thickness	maximum size	min size	angle	Depth tolerance	Bevel length	Residual thickness tolerance	Skip spacing
			inner bevel									
			outer macroinstruction									
Goldfinger	N	Hypotenuse	Causeway Angle									
（≥3oz.）		working ability		minimum linewidth	minimum spacing	minimum annular ring	PPNumber of PP between	PPInterlayer PP				
			3OZ	/	/	/	/	/				
			4OZ	/	/	/	/	/				
			5OZ	/	/	/	/	/				
			6OZ	/	/	/	/	/				