

Abbreviated Printed Circuit Board Capability

For full capability information please consult Merlin Manufacturing Capabilities document QA-03-45 Latest Edition

For full capability information, please consult Flexim Manufacturing Capabilities document QA-05-15 Latest Edition			
Parameter			
	IMPERIAL		METRIC
Panel Sizes	24 " x 18 "		610mm x 457mm (preferred)
	18 " x 16 "		457mm x 406mm (preferred)
Active Board Area	22.5 " x 16.5 "		570mm x 417mm (preferred)
	16.5 " x 14.5 "		417mm x 366mm (preferred)
Number of Layers	32 Layers maximum		
	Standard	Advanced	Development
Parameter	Metric	Metric	Metric
General			
Minimum Board Thickness	300um	300um	300um
Maximum Board Thickness	5.00mm	5.00mm	5.00mm
Material Tolerance +/-	10%	10%	5%
Minimum Core Thickness	100um	50um	45um
Inner Layers			
Min Line (0.5oz start Copper)	75um	65um	50um
Min Space (0.5oz start Copper)	75um	75um	50um
Outer Layers			
Min Line (12µm start Copper)	75um	65um	50um
Min Space (12µm start Cu)	75um	75um	75um
Holes			
Minimum Hole Size (drilled)	200um	#150um	100um
Min Annular Ring Radial Inner*	125um	100um	75um
Min Ann - Ring Radial Outer*	100um	75um	75um
NPTH Hole Size Tolerance +/-	25um	25µm	25um
PTH Hole Size Tolerance +/-	50um	50µm	100um
Positional Tolerance ≥ 1.00 +/-	75um	75um	75um
Positional Tolerance ≤ 0.95 +/-	100um	100um	100um
Maximum Aspect Ratio	8.5 : 1 (1.60mm thick laminate)		
Side to Side Alignment			
Laser Direct Imaging	25um	20um	20um
Core to Core Alignment			
Laser Direct Imaging	65um	65um	65um
HDI (High Density Interconnect)			
Number of Layers (maximum)	24	28	32
Minimum Microvia Hole Drilled	120um	100um	90um
Minimum Land to Drilled Hole	125um	100um	75um

*Depends on IPC Class requirement Class 3 may require more land – See technical or QA.

****PLEASE NOTE: Any parameter that falls within development metric, will require the part to be taken on under a Technical project. This may incur additional cost with no guaranteed yield**

Based 1.00mm Panel thickness

Parameter	Standard Metric	Advanced Metric	Development Metric
Solder Resist (Photoimageable)			
Min Dam (Green resist only)	76um	76um	76um
Min Dam (Red & Blue resist)	76um	76um	76um
Min Dam (Black resist)	100um	100um	100um
Minimum designed clearance	50um	50um	25um
Notation Inkjet (White only)			
Minimum Gap to features	100um	100um	100um
Minimum Line Width	100um	100um	100um
Notation P/I (various colours)			
Minimum Gap to features	100um	90um	75um
Minimum Line Width	125um	125um	125um
Peelable Resist			
Maximum Tentable Hole Size	1.80mm	1.80mm	1.80mm
Via Hole Plugging type IV-a			
Maximum Hole Diameter(finished)	0.450mm	0.450mm	0.450mm
Via Hole Filling type VII			
Maximum Board Thickness	5.00mm	5.00mm	5.00mm
Minimum Board Thickness	0.300mm	0.300mm	0.300mm
Maximum Hole Diameter(finished)	0.80mm	1.00mm	1.60mm
Minimum Hole Diameter(finished)	0.200mm	0.300mm	0.450mm
Microviva Hole Diameter Min(drilled)	0.120mm	0.120mm	0.120mm
Copper filled Vias			
% Via filled with copper* see full capability manual	To meet the requirements of IPC 6012E	To meet the requirements of IPC 6012E	To meet the requirements of IPC 6012E

Parameter	Standard Metric	Advanced Metric	Development Metric
Routing			
Minimum Cutter Diameter	0.80mm	0.80mm	0.50mm
Profile Tolerance +/-	0.125mm	0.100mm	0.100mm
Edge to Hole Tolerance +/-	0.125mm	0.100mm	0.075mm
Copper to Edge	0.200mm	0.200mm	0.150mm
Copper Feature (fiducial) to Edge	0.200mm	0.150mm	0.150mm
"Z" Axis Routing Tolerance +/-	0.050mm	0.050mm	0.050mm
V Scoring			
Minimum Board Thickness	0.80mm	0.80mm	0.80mm
Maximum Board Thickness	2.40mm	2.40mm	2.40mm
Electrical Test (Flying Probe)			
Min Board Thickness	0.300mm	0.250mm	0.250mm
Maximum Board Size	610x457	610x457	610x457
Maximum Test Voltage	1000 V	1000 V	1000 V
Minimum Value Ohms	1 Ohms	1 Ohms	1 Ohms
Maximum Value Ohms	500M Ohm	1000M Ohm	1000M Ohm
Impedance			
Tolerance	10%	5%	2%
Flatness			
Percentage Bow and Twist	0.5%	0.5%	0.5%

Any boards using development tolerances must have prior agreement of the Technical department.