

**TECHNOLOGICAL SPECIFICATIONS**

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	standard	special	critic	limit
φ minimum hole (drilled)	0,45 mm	0,15 mm	0,1 mm	0,05 mm
φ minimum hole (finished)	0,3 mm	0,1 mm	0,05 mm	
tolerance φ plated holes	+0,1-0,05 mm	± 0,05 mm		
tolerance φ not plated holes	± 0,05 mm	+0,05-0 mm		
minimum plated holes distance	0,3 mm	0,25 mm	0,2 mm	
minimum not plated holes distance	0,25 mm	0,2 mm	0,15 mm	
positioning holes tolerance	± 0,025 mm	± 0,02 mm		
"Z" axis tolerance	± 0,1 mm	± 0,05 mm	± 0,025 mm	
aspect ratio (through holes)	(φ:Z) 1:8	1:10	1:14	1:16
aspect ratio (depth controlled holes)	(φ:Z) 1:1	1:1	Z=φ+0.2 (φmin:0.5mm)	
rigid pcb routing tolerance	± 0,1 mm	± 0,05 mm		
flex pcb routing tolerance	± 0,2 mm	± 0,1 mm		
plated slot tolerance (chemical surf.)	± 0,15 mm	± 0,1 mm		
minimum internal radius	0,5 mm	0,3 mm	0,2 mm	
scoring positioning tolerance	± 0,5 mm	± 0,2 mm		
scoring core tolerance	± 0,1 mm			
pcb tolerance after scoring breaking	± 0,5 mm			
minimum track	0,2 mm	0,1 mm	0,05 mm	0,04 mm
minimum isolation	0,2 mm	0,1 mm	0,05 mm	0,04 mm
pattern tolerance	± 25%	± 20 μ	± 10 μ	± 5 μ
minimum track f(Cu>100μ)	= copper thickness x2	= copper thick. +50 μ	= copper thickness	
minimum isolation f(Cu>100μ)	= copper thickness x2	= copper thick. +100 μ	= copper thick. +80 μ	
layer alignment	± 0,1 mm	± 0,05 mm	± 0,04 mm	
hole-pad alignment	± 0,1 mm	± 0,05 mm	± 0,025 mm	± 0,02 mm
routing-pad alignment	± 0,1 mm	± 0,05 mm		
hole (drilled)-pad anular ring	0,15 mm	0,1 mm	0,05 mm	0,025 mm
hole (drilled)-ground plane isolation (inner later)	0,2 mm	0,12 mm	0,1 mm	0,08 mm
internal hole copper thickness	20 μ	25-30 μ	35-50 μ	
galvanic copper increment tolerance	± 10 μ	± 5 μ		
minimum pcb thickness	0,8 mm	0,2 mm	0,1 mm	0,05 mm
maximum pcb thickness	1,6 mm	3,2 mm	5 mm	6 mm
thickness tolerance pcb rigid	± 10%			
thickness tolerance pcb flex	± 10% (min ±50 μ)			
max pcb dilatation	0,04% (max 0,3mm)			
maximum pcb 2 layer size	500x800 mm	600x900 mm	> 1000 mm	
maximum pcb multilayer size	400x500 mm	500x800 mm	550x850 mm	
maximum pcb electrolytic gold size	426x530 mm			
solder thickness	20 μ			
pad-solder anular ring	0,1 mm	0,07 mm	0,05 mm	
solder alignment (rigid pcb)	± 0,1 mm	± 0,07 mm	± 0,05 mm	
solder alignment (flex pcb)	± 0,2 mm	± 0,15 mm	± 0,1 mm	
minimum solder bridge	0,2 mm	0,1 mm	0,08 mm	
max plugged hole (std screen solder)	0.5 mm			
max plugged hole (plugged solder)	0.7 mm			
minimum legend width	0,2 mm	0,1 mm		
legend alignment	± 0,2 mm	± 0,1 mm		
bow and twist	2%	1%	0,5%	
nikel thickness pcb rigid	4 μ			
nikel thickness pcb flex	2 μ			
chemical gold thickness	0,05 μ			
galvanic gold thickness	0,6 μ			
chemical tin thickness	0,6 μ			
chemical silver thickness	0,3 μ			