

# Technical Capabilities

Parameter	Standard	Option
<b>Maximum PCB size</b>	<b>265 × 465 mm</b>	
<b>Max. technology size</b>		
IMS core	265 × 430 mm	
Flexible	265 × 428 mm	
Rigid-flex	265 × 378 mm	
Gold fingers (hard gold)	265 × 363 mm	
HF/Hybrid boards	265 × 325 mm	
<b>Minimum PCB size (single piece)</b>	<b>20 × 20 mm</b>	<b>400 mm<sup>2</sup></b>
<b>Maximum number of layers</b>		
Rigid	16	
Rigid-flex inner/outer	6R-2F-6R	on request
Flexible	2 + stiffenner	on request
Hybrid/HF	4/2	on request
IMS core	1	
<b>Materials</b>		
Materials on stock	<b>FR4</b> – Tg135°C (Isola De104 /86-UV-Block), Tg150°C (Isola IS 400), Tg180°C (Isola 370HR); <b>IMS</b> – Thermalclad (1.3 W/mK, die 100µm), Ventec 4B3 (3.0 W/mK, die 50µm), Ventec 4B5 (4.2 W/mK, die 50µm); <b>HF</b> – RO4350B, RO4003, RO3003, I-tera MT-40; <b>other</b> – 92ML	RO3035, RO5880, Rogers, Duroid, teflon etc.
Prepregs	Isola 106, 1080, 1080 FZ99, 2113, 2116, 7628	4450F
<b>Thickness</b>		
Board thickness tolerance	thick. up to 1 mm ± 0,1 mm over 1 mm ± 10%	
Standard thickness for one and two-sided PCB	0.5 mm – 4.6 mm	on request
Core thickness	0.1 mm, 0.15 mm, 0.20 mm, 0.25 mm, 0.30 mm, 0.36 mm, 0.41 mm, 0.51 mm, 0.71 mm, 0.90 mm, 1.00 mm, 1.2 mm, 1.5 mm	
Copper thickness for inner layers (basic)	18 µm – 105 µm	
Copper thickness for outer layers (basic)	9 µm – 105 µm	on request
Thickness of Cu layer in holes	≥ 20 µm Cu IPC class 2	25 µm (IPC class 3)
Thickness when HAL (LF/PbSn)	0.8 - 2.5 mm	
<b>Diameter / Depth</b>		
PTH Aspect Ratio	≤ 1:10 and less	
Blind via Aspect Ratio	≤ 1:1 and less	≤ 1:1,15 and less
<b>Mechanically drilled hole sizes</b>		

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Smallest drilling diameter	0.20 mm	0.15 mm (blind)
Smallest finished PTH	0.10 mm	
Standard tolerance PTH	± 0.08 mm	± 0.05 mm
Standard tolerance NPTH	± 0.05 mm	
Holes offset (without releasing clamp)	≤ 0.05 mm	

Routing		
Smallest routed radius	1.00 mm	0.3 mm
Routing offset	± 0.10 mm	

V-scoring		
Scoring offset	± 0.2 mm	

Layout		
Smallest track /gap	100 µm	75 µm
Annular ring (around drilled hole)	75 µm	on request
Internal layer clearance	≥ 250 µm	≥ 180 µm

Technology		
	Buried/blind vias, Buried/blind microvias, Impedance control, Plugged vias (type VII), Press-fit, via-in-pad, BGA (min. 0.4 mm), IPC class 3, microsection, peelable mask, carbon paste, sequential press	on request

Solder mask and legend		
Soldermask type and supplier	Sun Chemicals, Taiyo	coverlay (Pyralux LF), flexible (Peters), dual, bi-color
Soldermask colors	green, blue, black, red, white (mat/gloss)	
Minimum solder mask bridge	150 µm	100 µm (green)
Minimum solder mask clearance to pad	80 µm	50 µm
Digital imprint color	white, black	silkscreen, yellow
Minimum legend line	130 µm	100 µm

Surface finishes		
HAL lead-free (PCB thickness 0.8 – 2.5 mm)	In-house	
HAL PbSn (PCB thickness 0.8 – 2.5 mm)	In-house	
Immersion Ni/Au	In-house	
Immersion Ag	In-house	
Chemical tin	In-house	
Hard gold (connectors only)	In-house	

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<b>Test</b>		
Electrical test	ATG A7, A5, A3	
AOI	Orbotech Fusion 20, Impex X2	
<b>Artwork format</b>		
	ODB++, Gerber RS-274-X2	GERBER RS-274-X, Eagle
<b>Quality</b>		
Quality certification	ISO 9001:2015, ISO 14001:2015, UL94V-0, UL796	
<b>Production cycle time</b>		
Standard production time prototype	5 WD (orders <0.5 m <sup>2</sup> )	
Standard production time small series	8 WD (orders 0.5 – 1,5 m <sup>2</sup> )	
Express production cycle	1/2/3/4 working days	24 hours (EXW only)
Special (via fill, impedances, seq. press, etc.)	extra 2 WD	