

PCB TECHNICAL CAPABILITIES



Category	Description	Technical performance
Data	Gerber data (preferred)	Gerber 274-X, ODB++, Eagle, DXF, HPGL;
Printed circuit boards (pcb)	Technologies	HDI/SBU pcb VIPPO/POFV Radio frequency (RF) pcb Backplane pcb Thermally conductive pcb Power pcb Hybrid pcb Flex pcb Rigidflex pcb
PCB	Types	Single sided Double sided Multilayer
Number of conductive and non-conductive layers	Maximum number of layers	Up to 40 layers (40+ upon request)
Working format	Maximum board size	535mmx610mm
Final pcb thickness	Minimum and Maximum	0,2mm – 6,5mm
Thickness of inner layers	Minimum and Maximum	0,05mm – 3,2mm
Degree of flatness pcb	Twist & Bow	<= 0,75%
Copper thickness	External and internal	1/4oz (9µm) to 11oz (400µm)
Minimum Dielectric Thickness	External and internal	1,4 oz (50µm)
Manufacturing design capability	With via in Pad: Minimum line width Minimum trace to trace Minum trace to pad Without via in Pad: Minimum line width Minimum trace to trace Minum trace to pad Minimum annular ring Plated hole to copper clearance Non plated Hole to Copper Clearance	0,08mm 0,08mm 0,08mm 0,06mm 0,06mm 0,08mm vias 0,1mm and THT 0,125mm 0,15mm 0,15mm
Basic materials – rigid circuits	Material	FR4 FR4 - High Tg FR4 - Halogen Free Non Ansi RF materials ROGERS, TEFLON, ARLON CEM-1 CEM-3 CEM-3 Thermal IMS-Al IMS-Cu
Basic materials – flexible circuits	Polyimide base materials: KREMPEL Panasonic Protective materials: DuPoint	25µm,50µm,75µm (ED,RA Cu) 25µm,50µm,75µm (ED,RA Cu) 25/25, 50/25;
CNC mechanical drilling	Minimum drilling diameter – through hole Minimum drilling diameter – blind holes Maximum drilling diameter – through hole	0,15mm 0,125mm 6,5mm
CNC laser drilling	Minimum laser hole diameter Maximum laser hole diameter	0,07mm 0,15mm
Tolerances of holes	Plated / Non-plated	IPC6012 (latest version)
Pressfit	Tolerance	+/-0.05mm
Blind holes	Aspect Ratio	1:1
Stacked holes	Aspect Ratio	1:1
Blind holes through buried holes	Aspect Ratio	1:1
Metallization of holes	Aspect Ratio	1:12 (1:16)
Copper pattern	Minimum bond width and insulation	0,07mm (0,0027in) 0,05mm (0,00196in)
Etching	Tolerance	+/-20% (+/-10%)
	Colours	Green: semi-matt, glossy; Black: semi-matt, extra matt; White: for LED applications Blue: half matt

Soldermask		Red: half mat Yellow: semi-matt Orange: semi-matt FLEX
	Minimum reflection of the soldermask	White, Black: 100 um Red, Blue: 80 um Other colours: 60 um
Silkprint	Colours	White Yellow Black Red Blue Green
Peelable mask	Colour	Blue
Covered bores	Type	III, (IPC4761)
Filled holes	Type	V, VII (IPC4761)
Graphite	resistance	40 Ohm+/-5%
Surface protection	HAL- Lead free	1-40 um max
	HASL- with Tin lead ENIG OSP Immersion Ag Elyt. Ni/Au Hard	1-40 um Ni.5um.Au.0,05-0,1um - Min.0,3um Au: 0,4um – 2um
Mechanical treatments	Tolerance	Milling: +/-0.1mm (+/-0.07) Scoring: +/-0.1mm Deep milling: +/-0,1mm Chamfering: +/-0.1mm
Special treatments	Technology	Edge plating Jump scoring Edge plating- half holes Pressfit with partially drilled hole (backdrill)
Quality	Electrical test	Yes
	AOI test Impedance control Electrical strength test Thermal test (solder dip) Dimensional control Microsection – analysis Chemistry laboratory	Yes Yes Yes Yes Yes Yes Yes
Standards and certificates	IPC	IPC-A-600 (latest version) Class 2, 3 IPC-6012 (latest version) Class 2, 3
	ISO	IATF16949, ISO9001, ISO14000, ISO27001