Capability

June 2016

MMAB Group capability overview represents average values and cover basic properties. Get in touch with us if you are in need of other specific values or requirements.

BASIC INFORMATION	Standard	Special- Advanced
Layer count rigid boards	1-10 layer	12-32 layer
Base material rigid boards	FR-4 low, mid, high Tg Halogen free, Aluminium	RF-material PTFE, thermoset ceramic filled, mixed dielectric polyimide, FR2, CEM3, Glass
Flex & Flex-rigid	2-6 layers	6-14 layers
Mixed dielectric	Yes FR4+thermoset	Yes FR4, thermoset, PTFE
Metal base pcb´s	Single sided IMS 1-3 W/mK	IMS 3-8 W/mk
Antennas & domes	Yes	3000 mm in length*
DIMENSIONS	**Standard**	**Special- Advanced**
Dielectric innerlayer min.	0,1 mm	0,05 mm
Board thickness	0,4-2,4 mm	0,1-7,0 mm
Board thickness tolerance	+/-10%	+/-10%
Board size max	500x600 mm	600x1000 mm (3000 mm ant.*)
COPPER & PATTERN	**Standard**	**Special- Advanced**
Track & gap (≤35 µm cu)	0,1/0,1 – 0,15/0,15 mm	0,05/0,05 – 0,075/0,075 mm
Copper thickness innerlayer	Nom. 18 µm, 35 µm, 70 µm	Nom. 105 µm, 120 µm, 140 µm
Copper thickness outerlayer	Nom. 35 µm, 70 µm, 105 µm	Nom. 120 µm, 140 µm, 210 µm
Min. BGA pitch	0,65 mm	0,4 mm
FINAL FINISH	**Standard**	**Special- Advanced**
Final finish	HASL, OSP, ENIG, Hard gold, Immersion tin, Immersion silver	ENEPIG, Flash gold, Carbon ink Selective ENIG+OSP, Ni-Pa
SOLDERMASK	**Standard**	**Special- Advanced**
Soldermask	Green, black, white	Yellow, red, blue, matte/glossy
Soldermask thickness	8-40 µm	8-40 µm
Soldermask bridge/dam	0,1 mm	0,05 mm
Legend/ silk screen	White, black	Yellow
Hole plugging	Soldermask plugging	Epoxy resin plugging
Masking	Kapton tape, peelable mask	Kapton tape, peelable mask

More information about our products and technical support can be found at www.mmab-pcb.com
MMAB Group, Sweden +46 40 64 24 600, sales@mmab-pcb.se. Hungary +36 30 658 22 60, sales.hungary@mmab-pcb.com

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VIAHOLES	Standard	Special- Advanced
Via through hole finished	0,2-0,3 mm	0,15 mm
Via through hole tolerance	+/-0,1 mm	+/-0,05 mm
Aspect ratio through hole	8:1	12:1
Blind & buried vias	Yes	Staggered, stacked
HDI microvia rigid boards	2 + n + 2	4 + n + 4
Microvia diameter	0,1 – 0,15 mm	0,075-0,05 mm
Cap plated vias – via in pad	No	Plugged overplated IPC type VII
MECHANICAL	**Standard**	**Special- Advanced**
Routing tolerance	+/-0,15 mm	+/-0,1 mm
Routing radius	1,2 mm (2,4 mm router bit)	0,4 mm min (0,8 mm router bit)
V-cut tolerance	+/-0,15 mm	+/-0,1 mm
V-cut angle	30°	20°, 30°, 45°, 60°
Edge plating and slots	Yes	Min. 0,45 mm width
Z-axis routed cavities	Yes	Yes
Countersinked holes	Yes	Yes
Bevelled edges	Yes	Yes
FLEX & FLEX-RIGID	**Standard**	**Special- Advanced**
Flex layer count	1-2 layers	4-10 layers
Flex-rigid layer count	4-6 layers	14 layers
Flex & flex-rigid microvia	No	Yes
Flex thickness minimum	0,1-0,3 mm	0,05 mm
TEST & APPROVALS	**Standard**	**Special- Advanced**
Impedance control	+/-10%	+/-5%
UL-approval	Yes	UL Canada
IPC	Class 2	Class 3
Quality management	ISO9001, 14001, TS16949	ISO9001, 14001, TS16949

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