

Multilayer PCB

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A CONNECTED
FUTURE

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CAPABILITIES - PCB Manufacturing

- Premium and Specialised manufacturers in Single Sided, Double Sided, Multilayer, RF/Microwave, Flexible, IMS/ MC, Aluminum Flex and speciality PCBs.
- We confirm our manufacturing capability based upon final PCB designs & requirements.
- Acceptance of PCBs designs is subject to MRC and Feasibility checks.
- All our PCBs comply with IPC standards unless specified otherwise.
- We envision manufacturing the PCBs with **FUTURISTIC** parameters mentioned in the table that are currently indicative only.
- The PCBs with **STRATEGIC** capabilities mentioned in the table below are manufactured upon special requests.

Product Features	Variant	Standard	Strategic	Futuristic
Max. Layer Count		up to 12	Up to 18	20 & above
Min. Board Thickness (Finished)	ML	0.8 mm	0.4 mm*	0.2 mm*
Max. Board Thickness (Finished)	ML	2.4 mm	3.2 mm*	>3.2 mm*
Min. Core Thickness	ML	0.1 mm	0.1 mm	0.05 mm
Min. Dielectric	ML	0.12 mm	0.08 mm	<0.06 mm
Min. Starting Copper Foil Thickness		17.5 micron	12 micron*	9 microns*
Max. Finished Copper Thickness (O/L)		70 microns + plating	140 microns + plating*	>140 microns + plating*
Max. Finished Copper Thickness (I/L)		70 microns	140 microns*	>140 microns*
Min. Deliverable PCB Size		As per design	As per design	As per design
Max. Deliverable PCB Size		400 x 300 mm	As per design*	As per design*
Smallest Mech Drill Diameter		0.35 mm	0.25 mm	0.15 mm
Controlled Depth Drilling		Yes		
PTH & NPTH Slots		Yes		
Min. Finished Hole Size		0.30 mm	0.20 mm	0.10 mm
Max. Thru Hole Aspect Ratio		6:1	10:1	14:1*
Max. Blind Via Aspect Ratio		0.5:1	0.5:1	0.75:1*
Blind Via Finished Hole Size		0.30 mm	0.20 mm	0.10 mm*
Buried Via Finished Hole Size		0.30 mm	0.20 mm	0.10 mm*
Min. Line Width (trace) and Spacing	18 microns copper	4/4 mils	3/3 mils*	2/2 mils*
Min. Line Width (trace) and Spacing	35 microns copper	6/6 mils	4/4 mils*	3/3 mils*
Min. Line Width (trace) and Spacing	70 microns copper	10/10 mils	8/8 mils	8/8 mils
Min. Line Width (trace) and Spacing	105 microns copper	15/15 mils	12/12 mils	12/12 mils
Min. Line Width (trace) and Spacing	140 microns copper	>20/20 mils	16/16 mils	16/16 mils

T&C Apply:

Products with asterisk(*) are only available on special request

Product Features	Variant	Standard	Strategic	Futuristic
Process Pad Diameter for min. Annular ring of 0.05mm	18 microns copper	Drill dia + 0.2 mm	Drill dia + 0.2 mm	Drill dia + 0.2 mm
	35 microns copper	Drill dia + 0.3 mm	Drill dia + 0.3 mm	Drill dia + 0.3 mm
	70 microns copper	Drill dia + 0.5 mm	Drill dia + 0.5 mm	Drill dia + 0.5 mm
	105 microns copper	Drill dia + 0.8 mm	Drill dia + 0.8 mm	Drill dia + 0.8 mm
	140 microns copper	Drill dia + 1.2 mm	Drill dia + 1.2 mm	Drill dia + 1.2 mm
Controlled Impedance Tolerance	Plus or minus	10%	5%	5%
Solder Mask Registration		4 mils	3 mils*	2 mils*
Solder Mask Min Dam Size		6 mils	4 mils*	3 mils*
Min. Diameter Rout Cutter Available		1.6 mm	1.0 mm	0.8 mm
Routed Part Size Tolerance (Depends on PCB size)		0.2 mm	0.15 mm	0.1 mm
Bow & Twist Tolerance	Plus or minus	0.75%	0.50%	0.50%
Thickness Tolerance	Plus or minus	10%	10%	10%
Sequential Lam		2 or less Lam cycles	3 Lam cycles	> 3 Lam cycles
Buried Vias (group of buried vias)		2 or less	3	> 3
Blind Vias		Yes		
Conductive Filled Vias		No	Yes	Yes - Cu plate shut
Non Conductive Filled Vias (0.3 to 0.6 mm dia holes on 1.6 mm board)		Yes		
Surface Finishes				
HASL		Yes	No	
Lead Free HASL		Yes	No	
OSP (Entek)		Yes		

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Product Features	Variant	Standard	Strategic	Futuristic
Lacquer (for Single Side PCBs only)			Yes	
ENIG (Electroless Nickel / Immersion Gold)			Yes	
Immersion Silver		No		Yes
Immersion Tin			Yes	
Electrolytic Tin			Yes	
Electrolytic Nickel			Yes	
Electrolytic Hard Gold			Yes	
Edge Fingers - Gold Plated			Yes	
Carbon Printed Contacts			Yes	
Peelable mask			Yes	
Selective Gold			Yes	
Solder Masks				
Semi - Gloss Green			Yes	
Gloss Green			Yes	
Matte - Green			Yes	
Black			Yes	
Red			Yes	
Clear			Yes	
Blue			Yes	
White			Yes	
Legend				
Black			Yes	
Green			Yes	
White			Yes	
Yellow		No		Yes
Fab				
Routed Array			Yes	
Profile Punching			Yes	
V Score, Edge to Copper		0.5 mm	0.4 mm	0.4 mm
V Score Angles		60°	30°,45° *	30°,45° *
Countersink			Yes	
Counterbore			Yes	
Edge Bevelling			Yes	
Surface Milling (Controlled Depth)		No		Yes
Edge Plating			Yes	

T&C Apply:

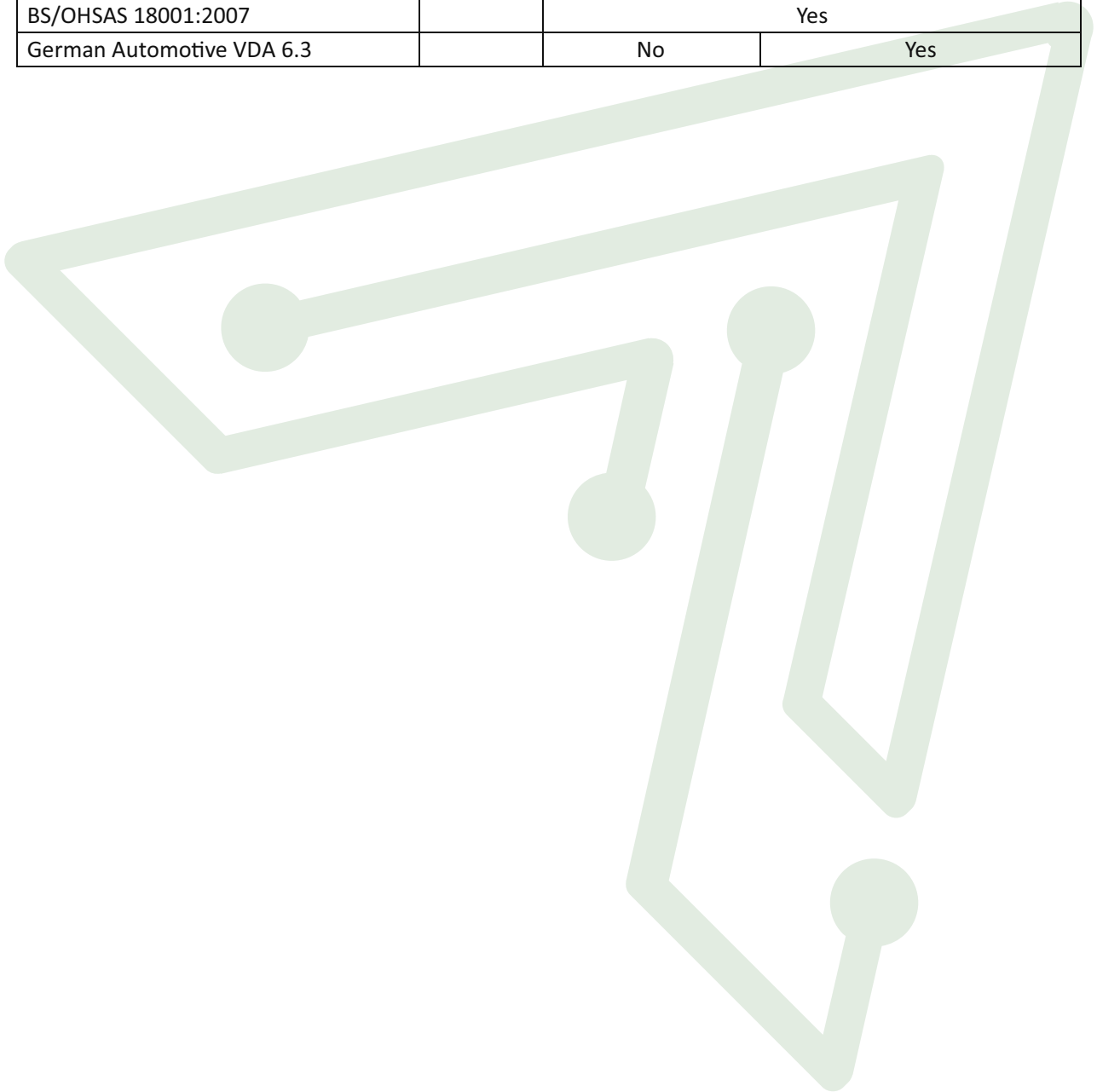
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Product Features	Variant	Standard	Strategic	Futuristic
Electrical Test				
10 Volt			Yes	
40 Volt			Yes	
250 Volt			Yes	
Max. Test Area	FPT	610 x 510mm	--	
	Bed of nails	16" x 12.8"	--	
Min. pitch of test pads	FPT	0.25 mm	0.15 mm	--
	Bed of nails	0.5 mm	--	
Min. test pad size	FPT	0.2 x 0.2 mm	0.1 x 0.1 mm	--
	Bed of nails	0.3 x 0.3 mm	--	
Test conditions	FPT	10 Ohms, 10 Meg Ohms	5 Ohms, 12.7 Meg Ohms	--
	Bed of nails	20 Ohms, 10 Meg Ohms	--	
Laminate Materials ML Boards				
FR4 (Tg 130, Tg 170)		Yes	Yes	Yes
FR402		Yes	Yes	Yes
RF materials		Yes	Yes	Yes
PCL HR180		Yes	Yes	Yes
PCL HR370		Yes	Yes	Yes
Reports				
Quality Conformance Inspection report			Yes	
Microsection			Yes	
Solderability			Yes	
XRF (X-ray Fluorescence)			Yes	
Ionic Contamination			Yes	
Time Domain Reflectometry test (TDR) for Controlled Impedance Boards			Yes	
FAI (First Article Inspection)			Yes	
PPAP Documents (on specific request)			Yes	
Certificate of Compliance (C of C)			Yes	
UL				
94VO (for a large selected families of products)			Yes	

T&C Apply:

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Product Features	Variant	Standard	Strategic	Futuristic
System Approvals				
ISO 9001:2015			Yes	
IATF 16949:2016			Yes	
ISO 14001:2015			Yes	
BS/OHSAS 18001:2007			Yes	
German Automotive VDA 6.3		No		Yes



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www.ascentcircuits.com

Ascent Circuits Pvt. Ltd.
Plot No. 111. SIPCOT Phase - 1,
Hosur, Tamil Nadu,
India - 635126

Email : rfq@ascentcircuits.com
info@ascentcircuits.com

Phone no: +91-4344-271122 to 29