



Board Construction	Standard	Advanced
Number of Layers	0-38	40+
Finished Board Thickness	.018 to .165	(< .018) and (.166 to .250)
Finished Board Thickness Tolerance	+/- 10%	+/- 5%
Cavity Boards (requires engineering review)		non-plated and plated
Plated-Edges	Yes	Selective
Castellated Holes (Half Holes)	non-plated	plated
Sequential Laminations	1 to 2	3+
OL Cu Foil	1/2 oz	1/8 oz
Build up Technology	Staggered uVias	Buried/Blind / Stacked uVias
Controlled Impedance	+/- 10%	< ±10%

Mechanical Drilling	Standard	Advanced
Min Drill Size	0.008	0.0059
Hole Location Tolerance	> .006 DTP	.003-.006 DTP
Hole Tolerance:		
Plated	+-.003	+-.0025 (+-.002 ENIG)
Press-Fit (after Cu plate)	+-.0025	+-.002
Non-Plated	+-.002	+-.001
vias	+.003 / -(hole size)	
Controlled-Depth Back Drilling	+/- .005	+/- .002
Hole to Etched Feature (drill to pad)	.004 DTP	.002-.004 DTP

Laser Drilling	Standard	Advanced
Min hole size	0.006	0.004
Microvia pad sizes	.011/.012	.010/.011
Blind-to-1 Layer Down	Yes	
Blind-to-2 Layer Down		Yes
Aspect Ratio	.5:1	>=.6:1
Build Up Technology (IPC-2226 5.2)	1C1	2C2

Hole Fill	Standard	Advanced
Non-Conductive	Yes	
Conductive	Yes	
Resin Fill	Yes	
Plated Shut uVia		Yes

Cu Plating	Standard	Advanced
Thru-Holes	Class 2&3	Class 3/A
Blind vias	Class 2&3	Class 3/A
Buried vias	Class 2&3	Class 3/A
Microvias	Class 2&3	Class 3/A
Plasma Etchback	Yes	

SolderMask	Standard	Advanced
Registration	± 0.002"	± 0.0015"
Dams and Webs (green)	0.003	0.0025
Dams and Webs (colors)	0.0035	0.003
min Clearance/Coverage on AW	.003 / .004	.002 / .003



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Nomenclature	Standard	Advanced
White (Ink Jet)	0.008	0.006
Available Colors Yellow, Black, and Red	0.008	0.008
Etched (based on Cu weight)	see line width	see line width

Fabrication	Standard	Advanced*
Hole to Routed Edge	± .005	< ± .005
Hole to Adjacent Etched Feature	± .0085	< ± .0085
Min Routed Radius	0.016	.008 for thin panels
Milled Edges/Controlled-Depth Milling	± .005	± .002
Bevel	Yes	
Countersink	Yes	
Counterbore	Yes	

* = Vision system alignment

Electrical Test	Standard	Advanced
Characteristic Impedance	36-100	
(Single Ended)	±10%	< ±10%
Differential Impedance	Edge Coupled	
	Broad-Side Coupled	
	50-140 Ω	
Continuity Resistance	10 Ω	<10Ω Ω
Isolation	10 M	
Voltage	10 to 1000V	
Test Point Density	300 / in ² (Grid)	
	580 / in ² (Split Net Grid)	
	1400+ / in ² Flying Probe	
HiPot	500V	1000V

Quality Systems	Standard	Advanced
IPC-6012	Class 2, 3 & 3A	
MIL-PRF-55110	Certified	Certified
NADCAP	Certified	Certified
NHB 5300 (N.A.S.A)	Certified	Certified
ISO 9001:2000	Certified	Certified
AS9100	Certified	Certified
U.L. Listing	UL-94 V0	
Statistical Process Control:		
Implementation	Computer Based	Computer Based
Chemical Process Control	Yes	Yes
Laboratory Process Control	Yes	Yes
Cleanliness Controls	Yes	Yes