Inner Layer

Description	Prototype	Production
Min. Trace/Space	3mils/3mils	3.5mils/4mils
Min. Copper Thickness	1/3oz	1/3 oz
Max. Copper Thickness	10oz	4oz
Min. Core Thickness	2.5mils	3mils
Line/ pad to drill hole	6mils	8mils
Line/ pad to board edge	8mils	10mils
Line Tolerance	+/-10%	+/-20%

Board Dimensions

Description	Prototype	Production
Max. Finish Board Size	23” x 35”	20” x 30”
Min. Finish Board Size	0.4" x 0.4"	2" x 4"
Max. Board Thickness	275mils (+/-10%)	197mils (+/-10%)
Min. Board Thickness	15.7mils (+/-10%)	15.7mils (+/-10%)

Lamination

Description	Prototype	Production
Layer Count	40L	20L
Layer to Layer Registration	+/-5mils	+/-6mils

Drilling

Description	Prototype	Production
Min. Drill Size	4mils	6mils
Min. Hole to Hole Pitch	14mils (0.35mm)	18mils(0.45mm)
True position Tolerance	+/-3mils	+/-4mils
Slot Diameter Tolerance	+/-3mils	+/-4mils
Min gap from PTH to track inner layers	4mils	5mils
Min. PTH edge to PTH edge space	8mils	10mils

Plating

Description	Prototype	Production
Max. Aspect Ratio	20:1	10:1
Plated hole size tolerance	+/-2mils	+/-3mils
NPTH hole tolerance	+/-2mils	+/-2mils
Min. Via in pad Fill hole size	5mils	6mils
Via in pad Fill Material	Epoxy resin/Copper paste	Epoxy resin/Copper paste

Outer Layer

Description	Prototype	Production
Min. Trace/Space	3mils/3mils	3.5mils/4mils
Min. pad over drill size	5mils	6mils
Max. Copper thickness	11oz	5oz
Line/ pad to board edge	8mils	10mils
Line Tolerance	+/-10%	+/-20%

Metal Finish

Description	Prototype	Production
HASL	1.27-25.4um	1.27-25.4um
OSP	0.2-0.6um	0.2-0.6um
Selective ENIG+OSP	Yes	Yes
ENIG(Nickel/Gold)	3-8um/0.05-0.1um	3-8um/0.05-0.1um
Immersion Silver	0.2-0.4um	0.2-0.4um
Hard Gold for Tab	0.1-4um	0.1-4um
Immersion Tin	>1um	>1um
ENEPIG (Ni/Pd/Au)	3-8um/0.05-0.15um/0.05-0.1um	3-8um/0.05-0.15um/0.05-0.1um
Soft Gold (Nickel/ Gold)	0.1-4um	0.1-4um

Solder Mask

Description	Prototype	Production
S/M Thickness	2mils	2mils
Solder dam width	4mils	4mils
S/M registration tolerance	+/-2mils	+/-2mils
S/M over line	3.5mils	4mils

Legend

Description	Prototype	Production
Min. Space to SMD pad	6mils	6mils
Min. Stroke Width	6mils	6mils
Min. Space to Copper pad	6mils	6mils
Standard Color	White or Yellow	White or Yellow

Electrical Testing

Description	Prototype	Production
Max. Test Points	30000 Points	30000 Points
Smallest SMT Pitch	15mils	18mils
Smallest BGA Pitch	8mils	10mils

NC Rout

Description	Prototype	Production
Min. Rout to copper space	6mils	8mils
Rout tolerance	+/-4mils	+/-4mils

Scoring (V-cut)

Description	Prototype	Production
Conductor to center line	15mils	15mils
X&Y Position Tolerance	+/-4mils	+/-4mils
Score Anger	20°/30°/45°	20°/30°/45°

Beveling

Description	Prototype	Production
Bevel anger	20°/30°/45°/60°	20°/30°/45°/60°
Bevel Dimensional Tolerance	+/-5%	+/-5%

Impedance control

Description	Prototype	Production
Impedance control (50ohm)	+/-5%	+/-5%
Impedance control (>50ohm)	+/-10%	+/-10%

HDI

Description	Prototype	Production
Structure	3+n+3	3+n+3
BGA Pitch	7mils	10mils
Min. BGA pad/space	7mils/4mils	10mils/4mils
BGA Pad Size Tolerance	+/-1.2mils	+/-1.5mils

Laser via

Description	Prototype	Production
Min / Max	4mils/6mils	4mils/6mils
Min via edge to via edge space	6mils	6mils