

Stocked Materials:

RIGID STANDARD

FR4 High Tg 170c
Black FR4
Polyclad 370HR (Lead Free)

High Stock
Limited Stock
High Stock

HIGH RELIABILITY

Polyimide (Arlon 85N, Isola P96)
BT (G200)

High Stock
Limited Stock

HIGH FREQUENCY:

Park Nelco 4000-13, 4000-13si
Getek
Gore Speed Board

High Stock
High Stock
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Rogers 3003, 3006, 3010, 3035, 3203, 3206, 3210
Rogers 4003, 4350
Rogers 5880, 5870
Rogers 6002, 6006, 6010, 6202
Rogers TMM3, TMM4, TMM6, TMM10, TMM10i
Rogers Ultralam 3000 Liquid Crystalline Polymer (LCP)

Medium Stock
High Stock
Medium Stock
Medium Stock
Limited Stock
Limited Stock

Arlon CLTE, DiClad, CuClad, AD Series

Limited Stock

Taconic TLY, TLX, RF35, RF60, CER-10

Limited Stock

SPECIAL APPLICATIONS:

Buired Resistors (Ohemga Ply)
Buried Capacitors (3M Cply)
Thermally Conductive Prepreg (Arlon 99ML)

Limited Stock
Limited Stock
Limited Stock

(link Rogers, Arlon, and Taconic to Product Selector Guides)

FLEXIBLE AND RIDGID FLEX MATERIALS:

Dupont Copper Clad:
Pyrалux AP, AC, AX, FR, LF

High Stock

Dupont Bond Ply & Cover Lay:
Pyrалux FR, LF, LG, PC

High Stock

Surface Finishes

Tin-Lead Reflow
Hot Air Solder Level (HASL)
Organic Surface Protectant (OSP)
Wire Bondable Soft Gold (over Nickel)
Hard Gold (over Nickel)
Electroless Nickel Immersion Gold (ENIG)
Immersion Tin
Immersion Silver
Rhodium
Electroless Nickel Palladium Gold
Selective Solder Strip
Bare Copper
Lead Free Hot Air Solder Level
Mixed Finishes

Lead Times:

2 layer (no Soldermask or legend)	8 hours – 6 weeks
2 layer w/ Soldermask and Legend	24 hours – 6 weeks
4 - 12 layer	48 hours – 6 weeks
14 - 20 layer	3 day – 6 weeks
22+	5 day – 6 weeks

Build-up Technologies:

1 + n + 1	3 days – 6 weeks
2 + n + 2	5 days – 6 weeks

Fab 2-10 layers: 1 day -4 weeks
12-18 2days -4 weeks
20-32 3 days – 4 weeks
Blind vias add 1-5 days
Buried vias add 1-5 days
Embedded Resistor / Capacitors: add 1-3 days
Via Fill add 1-3 days
OSP, Silver, Tin, 1-3 days
Dry Film 1-3 days

Internal Layer Imaging:

	Standard	Premium	Advanced*
Min Dielectric	.004	.003	.002
Line W/S (1/4 oz)	.004	.003	.002
Line W/S (1/2 oz)	.005	.004	.0025
Line W/S (1 oz)	.006	.005	.003
Line W/S (2 oz)	.008	.006	.005
Line W/S (3+ oz)	Engineering	Engineering	Engineering
Line Tolerance	+/- .002	+/- .001	+/- .0005

External Layer Imaging:

	Standard	Premium	Advanced*
Max Thickness	.125	.250	.350
Thickness Tolerance	+/- 10%	+/- 7%	+/- 5%
Line W/S (1/4 oz)	.004	.003	.002
Line W/S (1/2 oz)	.005	.004	.0025
Line W/S (1 oz)	.006	.005	.003
Line W/S (2 oz)	.008	.006	.005
Line Tolerance	+/- .002	+/- .001	+/- .0005

**Mechanical Capabilities:
PTH Capabilities**

	Standard	Premium	Advanced*
Min Drill	.010	.008	.006
Min Drill Pad Class 2 (+ drill)	.012	.010	Engineering Review
Min Drill Pad Class 3 (+ drill)	.014	.012	Engineering Review
Min Drill Clearance	.020	.018	.016
Min Trace to Drill	.010	.008	Engineering Review
Min Trace to Drill (laser)	.008	.006	
Max Aspect Ratio (TH drill)	7:1	10:1	15:1
Min Drill laser via	.005	.004	.003
Min Drill laser via Capture pad	.010	.008	.006
Max Aspect Ratio Blind via	.5:1	.75:1	1:1
Stacked Vias	0	1	2+
HDI Type I	Yes		
HDI Type II		Yes	
HDI Type III			Yes
Sequential Laminations (buried and blind vias)	2 laminations	3 laminations	4+ laminations

Non Plated Holes

	Standard	Premium	Advanced*
Smallest NP Hole	.012	.010	.008
Largest NP Hole	.287	No Limit	No Limit
Largest Primary Drill NP Hole	.200	.200	.200
NP Hole tolerance	+/- .003	+/- .002	+/- .002
Minimum NP hole to Board Edge	.020	.015	.010

Back Drilling

	Standard	Premium	Advanced*
Min Back Drilled Hole Diameter	.022	.020	.018
Drilled hole over finished drill size	.012	.010	.008
Drill Depth Tolerance	+/- .008		+/- .005

Profile / Rout Capabilities

	Standard	Premium	Advanced*
Router Bit Diameter	.093 & .125	.062, .031	.020
Routed Profile tolerance	+/- .005	+/- .004	+/- .003
Minimum Rout Radius	> .031	.016	.010
Cavity Rout	Yes	Yes	Yes
Multilevel Cavity Rout (controlled depth milling)	1 levels	2 levels	3+ levels
Castellated holes (plated edge half holes). Minimum radius	.015	.010	.008

Soldermask and Silkscreen

	Standard	Premium	Advanced*
NPTH clearance	.010	.008	.006
SMT clearance	.006	.004	.002
Web between pads	.004	.003	.002
Masked Defined Pad Diameter	.012	.010	.008
Masked Defined Pad overlap	.005	.003	.0025
Soldermask Type	TAIYO Green	Other colors	Other manufacturers
Dry Film Soldermask			
Minimum Width Silkscreen	.007	.005	.003

Flexible Coverlay

	Standard	Premium	Advanced*
Coverlay opening	.005 annular ring	.003 annular ring	1:1
Coverlay Web	.010	.008	.006

Via in Pad / Via Protection

	Standard	Premium	Advanced*
Epoxy/Conductive fill			
Epoxy minimum hole	.012	.010	.008
Epoxy maximum hole	.018	.020	.022
Epoxy fill microvias		Yes	
Min board thickness	.032	.025	.020
Max board thickness	.125	.150	.200
Via fill aspect ratio	8:1	10:	12:1

Testing / Impedance Capabilities

	Standard	Premium	Advanced*
Min Continuity Resistance	10 ohms	10 ohms	2 ohms
Max Test Voltage	50v	250v	500v
Max Isolated Resistance	10M ohms	100M ohms	300M ohms
Test Pitch	.019	.010	.007
HiPot	Yes	Yes	Yes
Impedance Tolerance (inner layer)	+/- 10%	+/- 7.5%	+/- 5%
Impedance Tolerance (outer layer)	+/- 15%	+/- 10%	Engineering Review

Other Technologies

	Standard	Premium	Advanced*
Screen Printed Silver Silver Chloride Electrodes			Yes
Carbon Ink		Yes	
Screen Printed Resistors			Yes
Etched Resistors (Omega Ply)		Yes	
Etched Capcitors (CPly)		Yes	
Heat Sink Bonding		Yes	
Metal Core PCB's		Yes	
Book Binder Flex		Yes	
Constantan		Yes	