

Production
Capability

PRODUCT
CATALOG

FLEX AND RIGID FLEX BOARDS



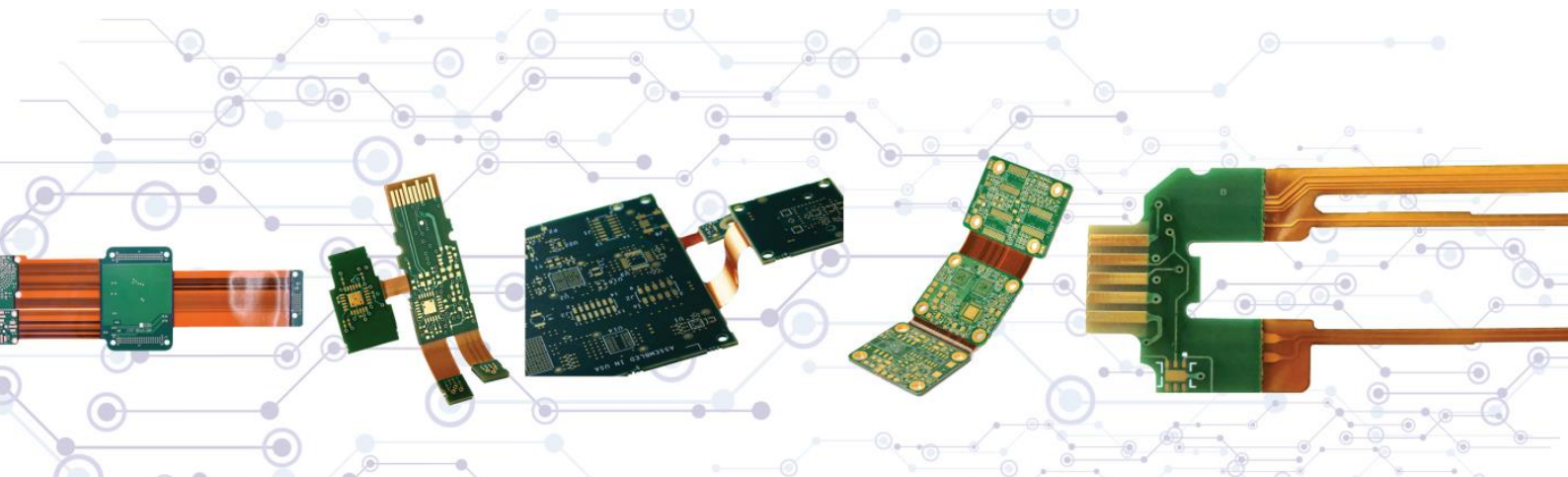
Flex and Rigid-Flex Boards

Technical Capability for Flex and rigid/Flex boards

Number of layers				
Maximum layers Flex	11			
Maximum layers Rigid/Flex	24			
Sequential Lamination	2-6 cycles			
Bending Radius	6-10 times PCB thickness			
Size/Thickness				
Standard panel size	457mm x 610mm – (18" X 24")			
Polyimide core	25 - 100 um (Tg 190°C – 210°C)			
Polyimide coverlay LF Series DuPont	50 - 100 um			
Polyimide coverlay LF Series DuPont	min dam 500 um			
Via/Hole size				
	Min.Hole Size Drilled	Min.Hole Size Plated	Aspect Ratio	
			Normal	Special
PTH	0.1 mm	0.05 mm	1:10	1:25
Buried via /hole	0.1 mm	0.05 mm	1:10	
Blind via	0.1 mm	0.05 mm	1:10	1:25
Laser vias	0.075 mm	0.025 mm		
Depth drilling tolerance	+/- 30 um			
Routing tolerances				
In flex part	+/- 0.075 mm			
In rigid part	+/- 0.2 mm			
Annular ring				
250 um with coverlay				
50 um on a flex solder mask				
Base Copper Thickness				
Min 5 um				
Max 70 um				
Surface Finish				
Nickel/Gold(ENIG)				
Hard Gold(connectors)				
Immersion Tin				
Stiffeners				
Stainless steel				
FR4 material				
Coverlay				
Solder mask				
Liquid Photo Imageable Flex Solder Mask PSR-9000 FXT min. dam 100um				

Materials for production			
Flex Innerlayer	Product Code	Dielectric thickness	Copper thickness
	Pyralux AP 8515 R	25 um	18/18
	Pyralux AP 9111 R	25 um	35/35
	Pyralux AP 8525 R	50 um	18/18
	Pyralux AP 9121 R	50 um	35/35
	Pyralux AP 9222 R	50 um	70/70
	Pyralux AP 8535 R	75 um	18/18
	Pyralux AP 8545 R	75 um	18/18
Pyralux AP 9141 R	100 um	35/35	
No Flow	Arlon 49 N	60 um; 83 um	
Coverlay	Product code	Thickness	
		Adhesive	Kapton
	LF0110	25 um	25 um
	LF0150	25 um	127 um
	LF0220	51 um	51 um
Bond Ply	LF 0111	25 um	25 um

Materials for Rigid part		
Vendor	Product code	Tg°C
ITEQ	ITEQ158	150
	ITEQ180A	170
PANASONIC HTG	R1650V	173
PANASONIC MEGTRON 6	R5670	185
HITACHI	679 F(J)	175
VENTEC	VT 901	250
	VT 47	180
ROGERS	RO4350B	280
	RO4003C	280
	RO4450B	280



Build-up's
Symmetrical construction

▪ <10 ML

top		
FR4		
I2		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
I3		18/35um
polyimide/flex		
I4		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
	AIR GAP	
	COVERLAY LF0110	
I5		18/35um
polyimide/flex		
I6		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
I7		18/35um
FR4		
bottom		

Polyimide/flex + FR4 Hitg170	flex part
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Design Guidelines
Flex innerlayer with Air gap;
Flex innerlayer without Air gap with Bond ply instead of No Flow;
Min. thickness of 4 ML 0.7mm;
Distance between hole and border between flex and rigid part: min 0.8 mm;
Min. flex part 2 mm;
Min Space between flex and rigid 2 mm ;
Distance between Cu and border of rigid flex on Rigid layer : 0.3 mm
Coverlay under rigid part: 0.8-1.0mm
PTH to Copper ≥200µm;
Blind/Buried in rigid part;
Holes in flex part;
Plugging in rigid part according IPC-4761

▪ ≥ 10 ML

top		
FR4		
I2		
FR4		
I3		
FR4		
I4		
FR4		
I5		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
I6		18/35um
polyimide/flex		
I7		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
	AIR GAP	
	COVERLAY LF0110	
I8		18/35um
polyimide/flex		
I9		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
	AIR GAP	
	COVERLAY LF0110	
I10		18/35um
polyimide/flex		
I11		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
	AIR GAP	
	COVERLAY LF0110	
I12		18/35um
polyimide/flex		
I13		18/35um
NO FLOW 49N	COVERLAY LF0110	2 x NO FLOW / 3 x NO FLOW
I14		18/35um
FR4		
I15		
FR4		
I16		
FR4		
I17		
FR4		
bottom		

Polyimide/flex + FR4 Hitg170 flex

Design Guidelines
Flex innerlayer with Air gap;
Flex innerlayer without Air gap with Bond ply instead of No Flow;
Distance between hole and border between flex and rigid part: min 0.8 mm;
Min. flex part: 2 mm;
Min Space between flex and rigid: 2 mm ;
Distance between Cu and border of rigid flex on Rigid layer : 0.3 mm
Coverlay under rigid part: 0.8-1.0mm
PTH to Copper $\geq 350\mu\text{m}$;
Blind/Buried in rigid part;
Holes in flex part;
Plugging in rigid part according IPC-4761

▪ Non-symmetrical constructions

smt	COVERLAY LF0110	
top		
polyimide/flex		
I2		18/35um
NO FLOW 49N	COVERLAY LF0110	2x NO FLOW
I3		18/35um
FR4		
I4		
FR4		
I5		
FR4		
bottom		
smb		
Polyimide/flex + FR4 Hitg170		flex

Design Guidelines

Distance between hole and border between flex and rigid part: min 0.8 mm;
PTH to Copper $\geq 220 \mu\text{m}$ if there is design on L2;
PTH to Copper $\geq 200 \mu\text{m}$ if there is no design on L2;
Blind/ Buried in rigid part
Coverlay / Flex solder mask on flex part
Min. flex part: 2 mm;
Min Space between flex and rigid: 2 mm ;
Distance between Cu and border of rigid flex on Rigid layer : 0.3 mm
Coverlay under rigid part: 0.8-1.0mm
Min. annular ring in coverlay 250 μm
Min. dam in coverlay 500 μm
Min. annular ring in flex solder mask 50 μm
Min. dam in flex solder mask 100 μm
Plugging in rigid part according IPC-4761

- Rigid-Flex with Stiffener

	FR4
COVERLAY LF0110	NO FLOW 49N
top	
polyimide/flex	
bottom	
COVERLAY LF0110	

Polyimide/flex + FR4 Hitg170	flex part	stiffener part
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Design Guidelines
Coverlay / Flex solder mask on flex part
Holes in flex part and stiffener part
Ziff connector with thickness 0.3 +/- 0.03mm
Stiffener can be FR4/coverlay
Min. annular ring in coverlay 250 μm
Min. dam in coverlay 500 μm
Min. annular ring in flex solder mask 50 μm
Min. dam in flex solder mask 100 μm
No plugging

- Flex boards

COVERLAY LF0110
top
polyimide/flex
bottom
COVERLAY LF0110

Design Guidelines
Coverlay / Flex solder mask
Min. annular ring in coverlay 250 μm
Min. dam in coverlay 500 μm
Min. annular ring in flex solder mask 50 μm
Min. dam in flex solder mask 100 μm
≥4ML we will use Bond ply

FLEX AND RIGID FLEX

 BOARDS



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WHO WE ARE

Hi-Tech Corp. is a leading European manufacturer of electronic Printed Circuit Boards specialized in quick-turn manufacturing of prototypes and small to mid volume series of rigid, flex, and rigid-flex multilayer boards.

EXPRESS PROTOTYPING

To be able to respond quickly, and meet customer needs for on-time delivery, Hitech's state of the art facilities are operational 24/7.

CONTACT US

Feel free to get in touch with us at any time - our friendly and responsive staff is ready to help you with whatever your needs may be.

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