

Product Capability



world class craftsmanship

BOARD CONSTRUCTION	Standard Capability	Special Capability
Panel size	12" x 18"	
	18" x 24"	24" x 27"
	24" x 24"	
Maximum board size	22" x 22"	22" x 25"
Maximum number of layers	Up to 40	40 +
Maximum finished PCB thickness	0.400"	
Board thickness tolerance (Applicable on panels with a thickness less than 0.062")	±10% or ±0.006"	±5%
Warpage (With balanced construction)	0.7%	0.5%
Minimum dielectric thickness	0.004"	
Minimum core thickness (rigid)	0.0027"	
Minimum core thick. Flex	0.0005"	
Layer to layer registration	± 0.004"	
Dimensions – hole location	± 0.003"	
Minimum router size	0.031"	0.020"
Dimensional tolerance for routing	± 0.005"	± 0.0025"
Minimum space, PCB edge to conductor	0.005"	
Angle of beveling	±2 degrees	
Dimensional tolerance for beveling	±0.005"	
Scoring web thickness tolerance	± 0.003"	
Jump scoring	yes	

BOARD CONSTRUCTION	Standard Capability	Special Capability
Inner layer:		
Minimum line width	0.004"	0.003"
Minimum space trace/pad	0.004"	0.002"
Minimum space trace/trace	0.004"	0.003"
Tolerance-line width & spacing	± 0.00025"	
Outer layer:		
Minimum line width	0.004"	0.003"
Minimum space trace/pad	0.004"	0.003"
Minimum space trace/trace	0.004"	0.003"
Tolerance-line width & spacing	± 0.0005"	± 0.00025"
Minimum SMT size	0.005"	0.004"

- For 1/2 oz Outer layers add 0.001" to all linewidths on artworks
- For 1 oz Outer layers add 0.0015" to all linewidths on artworks

PAD TO HOLE SIZE	Standard Capability	Special Capability
Minimum plated hole size (finished)	0.004"	
Tolerance – plated hole size	±0.002"	±0.001"
Min. mech. drilled hole size	0.004"	
Min. mech. drilled hole size (on 0.062" thick board)	0.008"	0.006"
Minimum outer layer pad (1 mil annular ring)	FHS + 0.016"	
Minimum inner layer pad (1 mil annular ring)	FHS + 0.016"	
Plane relief diameter	FHS + 0.022"	
Min. inner plated hole to metal	0.008"	0.007"
Min. outer non-plated hole to metal	0.007"	0.005"
Min. inner non-plated hole to metal	0.008"	0.007"
Aspect ratio	25:1	Up to 32:1
PHOTO IMAGEABLE SOLDERMASK CRITERIA	Standard Capability	Special Capability
Pad clearance (min/side)	0.002"	
Minimum s/m web	0.004"	
SMT Minimum pad spacing for damming	0.009"	0.008"
Line to SMT minimum space	0.004"	
Via plugging capability	96% +	99% plug
Colors	Black, green, blue, red	
LEGEND CRITERIA	Standard Capability	Special Capability
Back print, minimum line width size	0.006"	0.005"
Back print, minimum text size (height)	0.045"	0.030"
ELECTRICAL CHARACTERISTIC	Standard Capability	Special Capability
Impedance tolerance (ohms)	±10%	±5% based on construction build up
ELECTRICAL TESTING PARAMETERS	Standard Capability	Special Capability
Continuity threshold	>2 Ohms	1-2 Ohms
Insulation threshold	19.0 Mohms at 100V	Up to 65.0 Mohms at 250V
Insulation Test voltage	250 volts	
Feature density	0.006 pitch	

SPECIAL CAPABILITIES
Multi layer rigid flex circuits
Buried via
Sequentially laminated blind via
Conductive step cavities
Mixed laminate constructions
Controlled depth drilling
Back drilling
SURFACE FINISH AVAILABLE
Bare copper
HASL
Electroplated Nickel-Gold (Hard Gold)
Electroless Nickel-Immersion Gold (ENIG)
Immersion silver

LAMINATES	IPC specification sheet	Tg	Dielectric constant	RoHS compliant	Lead-free assembly compatible	Maximum available panel size	Core thicknesses in stock
1.1 Epoxy base (standard)							
Isola FR406	IPC-4101 /24, /26, /28	170 °C	4.10-4.50	Yes	No	24 x 27	All Standard
Isola IS410	IPC-4101 /24, /26, /28	180 °C	3.90-4.60	Yes	Yes	18 x 24	Standard thicknesses from 0.004" to 0.059"
Electroply GFB-125_black	IPC-4101 /21	140 °C	4.10-4.50	Yes	No	18 x 24	Standard thicknesses from 0.005" to 0.059"
1.2 Epoxy base (high speed, low loss)							
Nelco 4000-13 & 4000-13SI	IPC-4101 /29	210 °C	3.60-3.90	Yes	Yes	18 x 24	Standard thicknesses from 0.0027" to 0.093"
Nelco 4000-13	IPC-4101 /29	210 °C	3.60-3.90	Yes	Yes	24 X 27(**)	See note below
1.3 Polyimide							
Arlon 33N	IPC-4101 /40, /41	>250 °C	4.00	Yes	Yes	18 x 24	All Standard
1.4 Rogers ceramic filled PTFE							
Rogers 4003	IPC-4103	>280 °C	3.38	Yes	Yes	18 x 24	0.008", 0.012", 0.020", 0.032"
Rogers 4350	IPC-4103	>280 °C	3.48	Yes	Yes	24 X 27(**)	0.0066", 0.010", .0133", 0.020", 0.030", 0.060"
1.5 Rogers RT/Duroid							
Rogers 3003	IPC-4103	N/A	3.00	Yes	Yes	12 x 18 (*)	0.005", 0.010", 0.020", 0.030", 0.060"
Rogers 3010	IPC-4103	N/A	10.20	Yes	Yes	12 x 18 (*)	0.010", 0.025, 0.030"
Rogers 3203	IPC-4103	N/A	3.02	Yes	Yes	12 x 18 (*)	0.005", 0.010", 0.020", 0.030", 0.060"
Rogers 5870	IPC-4103	N/A	2.33	Yes	Yes	12 x 18 (*)	0.020"
Rogers 5880	IPC-4103	N/A	2.20	Yes	Yes	12 x 18 (*)	0.005", 0.010", 0.012", 0.020", 0.025", 0.031", 0.045", 0.062"
Rogers 6002	IPC-4103	N/A	2.94	Yes	Yes	12 x 18 (*)	0.005", 0.010", 0.015", 0.020", 0.030", 0.040"
Rogers 6010	IPC-4103	N/A	10.20	Yes	Yes	12 x 18 (*)	0.025"
1.6 Other high-speed materials							
Rogers TMM3	IPC-4103	N/A	3.27	Yes	Yes	12 x 18	0.015", 0.030"
Taconic TLX-8	IPC-4103	N/A	2.55	Yes	Yes	18 x 24	0.015", 0.031", 0.062"
1.7 Flexible material							
Dupont Pyralux LF series	IPC-4203 /1, /18	N/A	3.60	Yes	Yes	18 x 24	0.5 mil and 1.0 mil kapton
1.8 Thermally conductive material							
Thermagon T-preg series	None	105 °C	4.10-4.30	Yes	Yes	18x24	0.006", 0.008"

(*) 18x24 is available on a limited amount of core thicknesses

(**) 24 X 27 is available on a limited amount of core thicknesses

Whether your next requirement is a quotation or just simply more information
feel free to contact us at:

info@cmrsummit.com

It will be our pleasure to be of service to you

Thank you

