

All Dimensions are in Inches			
	Current	2010	2011-
PRODUCTS			
Rigid MIL-PRF-55110 / 31032	Y	Y	Y
Rigid IPC-6012	Y	Y	Y
Maximum Layer Count	40	AABUS*	AABUS*
Large Panel / Back Plane	15.7 x 20	16 x 22	20 x 30
RoHS Compliant*	Y	Y	Y
Flex-Rigid /Flex IPC-6013 Types 1-5, IPC/JPCA 6202	N	TBA	TBA
High Freq IPC-6018 Types 1 & 2	N	TBA	TBA
High Freq IPC-6018 Types 3-7	N	TBA	TBA
MCM-LIPC-6015	N	TBA	TBA
Embedded Components IPC-6017	N	TBA	TBA
HDI/Micro via IPC-6016	N	TBA	TBA
BASE MATERIALS (Laminates)			
IPC-4101 /10 & 12 CEM-1 & 3	Y	Y	Y
IPC-4101 /21, 22, 23, 24, 26, 28, 97, 98, 99, 101, 121, 124, 126, & 129 Including FR-4 High Tg, Low DK & RoHS High Td for Lead-Free Soldering	Y	Y	Y
IPC-4101 /30 BT/GM	Y	Y	Y
IPC-4101 /40 GI (Polyimide)	Y	Y	Y
Berquist Al Clad	Y	Y	Y
Thermagon	Y	Y	Y
Mixed Resins / Dielectrics	Y	Y	Y
Flex IPC-4202	N	TBA	TBA
Adhesive IPC-4203	N	TBA	TBA
Metal Clad IPC-4204	N	TBA	TBA
PTF (Polymer Thick Film)	N	TBA	TBA
Hi Speed / Freq. IPC-4103	N	TBA	TBA
HDI IPC-4104	N	TBA	TBA
Board / Core Thickness (min./max.)	.003" / .250"	.003" / .250"	.003" / .250"
Minimum Dielectric Thickness (signal/plane/buried via)	0.002	0.002	0.002
Micro via Materials	N	TBA	TBA
Buried Embedded Capacitors	N	TBA	TBA
Buried / Embedded Resistors	N	TBA	TBA

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Updated 9/25/09

Min. Base Copper Weights	1/2 oz	1/2 oz	1/4 oz
FR-4 130 Tg / FR-4 170 Tg	Y	Y	Y
IPC-4101/25 Getek / Megtron	Y	Y	Y
PTFE / Teflon (Rogers, Taconic, Arlon, Gore)	1 & 2 Sided Only	4-8 Layer Multilayer	10-16 Layer Multilayer
Rogers 4000 Series High Performance	N	Y	Y
Rogers 4000 Adhesive System	N	Y	Y
Nelco 4000-13	Y	Y	Y
FINISHES / PLATING			
Surface Finishes: (In House & Outsource)			
HASL - Vertical & Horizontal	Y	Y	Y
HAL-(Lead Free) Hot Air Leveling*	Y	Y	Y
ENIG Ref. IPC-4552 (Electroless Nickel-Immersion Gold)*	Y	Y	Y
OSP Ref. IPC-4555 (Organic Solderability Preservative)*	Y	Y	Y
IS Ref. IPC-4553 (Immersion Silver)*	Y	Y	Y
IT Ref. IPC-4554 (Immersion Tin/White Tin)*	Discontinued	TBA	TBA
I/R Reflow / Fuse	Discontinued	N	N
Hot Oil Reflow	Y	Y	Y
Electroplated Ni/Au (Tabs & Deep)	Y	Y	Y
Wire Bondable (Soft Gold / Deep Gold)	Y	Y	Y
SiPad	Y	Y	Y
SOLDERMASK, LEGEND & VIA FILLERS			
Dry Film Soldermask	N	TBA	TBA
SMT Minimum Dam Width	.003"	.003"	.003"
LPI Solder mask Registration	+/- .0025"	+/- .002"	+/- .0015"
Via Cover / Tent / Plug / Fill	Non Conductive	Conductive / Thermal	Silver
Laser Direct Primary and Soldermask Imaging	N	N	Y
Inkjet Silkscreen / Nomenclature Printing	N	Y	Y
ATTRIBUTE CAPABILITIES & TOLERANCES (PTH'S & PADS)			
Minimum Finished PTH Dia.	≤.005"	TBA	TBA
Min. Drilled Hole Size	.008"	.006"	TBA
PTH Diameter Tolerance	+/- .003"	+/- .003"	+/- .002"

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Maximum Aspect Ratio - (Drilled Finished Hole Size)	10:1	11:1	TBA
Other Fabrication Tolerances	Design Level "C"	Design Level "C"	Design Level "C"
Pad Over Finished Hole (Tangency / No Break Out)	.012"	.010"	.008"
Min. Inner Layer Via Land Size	.018"	.015"	.010"
Sequentially Laminated Buried Via	Y	Y	Y
Sequentially Laminated Blind Via	Y	Y	Y
Via in Pad	N	TBA	TBA
Bow & Twist	Max 1.5% T/H .50% SMT	Max 1.5% T/H .50% SMT	Max 1.5% T/H .50% SMT
LASER DRILLING			
Laser Drilled Micro Via	N	TBA	TBA
Micro Via Stack up	N	TBA	TBA
Blind or Buried Microvias	N	TBA	TBA
Pad Over Micro Via Size	N	TBA	TBA
Maximum Layers of Micro Via Per Side	N	TBA	TBA
Max. Aspect Ratio on min. Micro Via (Drill depth : drill diameter)	N	TBA	TBA
Max. Aspect Ratio on Minimum Micro Via (Sequential Lamination)	N	TBA	TBA
CONDUCTORS & ISOLATORS			
Min. Component Pitch Inner Layer Aperture (Relief / Antipad)	.015" .026"	.012" .024"	.008" .020"
Minimum Trace and Space Width (1/2 oz cu) Outer and Inner Layers)	.004" / .004" +/- .00075"	.004" / .004" +/- .00075"	.003" / .003" +/- .0005"
Inner Layer Feature Size Control	+-.0003"	+-.00025"	+-.00025"
Outer Layer Feature Size Control	+-.0005"	+-.0004"	+-.0004"
Impedance Control (Single-Ended & Differential)	+/- 10 %	+/- 7 %	+/- 5 %
Copper Weight	14 oz.	14 oz.	14 oz.

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