



Midwest Printed Circuit Services, Inc.

Providing Interconnection Solutions Through Innovative Products

Process Capabilities:

<u>Shop Tolerance:</u>	<u>Standard</u>
Minimum Inner/Outer Line Width	.003"
Minimum Inner/Outer Space, Trace/Trace	.003"
Minimum Inner/Outer Space, Trace/Pad	.003"
Minimum Space, PCB Edge to Conductor	.008"
Layer-to-Layer Registration	+/- .003"
Maximum Finished PCB Thickness	.250"
Minimum Board Thickness Tolerance	+/- 5%
Dimensions – Hole Location	+/- .003"
Dimensions – Fab O. D.	+/- .004"
Fabrication Radius	+/- 5 deg.
Warpage (inch per inch) (flatness of finished board)	.005"
Minimum Component Pitch	.008"
Minimum Dielectric Thickness	.003"
Maximum Number of Layers	24

<u>Drilling:</u>	<u>Standard</u>
Minimum Drill Size	.006"
Maximum Drill Hole Size (above 0.257 is routed)	.257"
Maximum Aspect Ratio	14:1

<u>Testing Capabilities:</u>	<u>Standard</u>
Minimum Component Pitch	.006"
Type of Test Equipment	Flying Probe
Type of Test Equipment	Double Sided Tester

<u>Surface Finishes Available:</u>	<u>Standard</u>
HASL Minimum Thickness (lead and lead free)	.0003
Immersion Gold Minimum Thickness	2 u in.
Immersion Gold Co-plan	+/- 1 u in.
Entek Organic Coating	Co-Planarity = To Cu. Plate
Electroless Nickel (ENIG and ENIPEG)	150 u in - .250 u in.

<u>Electrical Characteristics:</u>	<u>Standard</u>
Impedance Tolerance	+/- 8%
Note: Minimum Tolerance +/- 5 ohms	

<u>Materials Available:</u>	<u>Tg</u>	<u>DK</u>
* Stocking programs available	(Degrees C)	
FR4-04; Standard Multifunctional	150	4.3
FR4-06; High Performance Epoxy Laminate	170	3.93
FR4-08; High Speed, High TG	180	3.67
GETEK	180	3.6
Polyimide	230-260	4.0 – 4.6
BT Epoxy	185	3.6 – 4.1
Thermagon	105	4.1 – 4.3
IT180A	180	4.3
VT47	180	4.57
370HR	180	4.04
185HR	180	4.01

Teflon/Duroid/PTFE
Flexible and Rigid/Flex
Al Clad (LED)

Call for latest specs.

Technology Road Map:

	<u>Current</u>	<u>Future</u>
Minimum Drill Size		
Blind/Buried Via	0.006"	0.006"
Through Via	0.010"	0.008"
Line Width / Space (Half Oz Copper)		
Inner Layers	0.003"/0.003"	0.002"/0.002"
Outer Layers	0.004"/0.004"	0.003"/0.003"
Laser Vias – Stacked	2 each	4 each
Laser Vias – Filled	Yes	Yes
Aspect Ratio	0.5:1	0.75:1
Metal Core Filling	100% In House	100% In House
Metal Core Machining	100% In House	100% In House
Impedance Control		
Standard	10%	10%
Advanced	8%	7.5%
Testing Capability		
Pitch	250V In House 0.004"	250V In House 0.004"
High Pot	Up to 5KV	Up to 5KV

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