



Providing interconnection solutions through innovative products.

MIDWEST PRINTED CIRCUIT SERVICES

www.MidwestPCB.com

Company Overview:

- ✓ Established in 1984
- ✓ 47,000 Square Feet
- ✓ Manufacturing Shifts : 2 (3 when demand warrants)
- ✓ Number of Employees: 75
- ✓ CAGE Code: 0YYS4
- ✓ NAICS: 334412 (PCB Mfg.)
- ✓ DUNS: 115377194
- ✓ U.L. FILE Number: E97745
- ✓ Lead-times: 1-3 Day (Quickturn) / 3 Weeks (Standard)
- ✓ Military / Medical / Commercial Applications
- ✓ Rigid, Flexible, and Rigid-Flex Printed Circuit Boards
- ✓ Proud to be American Owned and Operated
- ✓ Every Product is Manufactured in our U.S.A Facilities
- ✓ Combined Management Experience of over 200 years
- ✓ A "Trusted" Source of Supply
- ✓ Dedicated to Total Customer Satisfaction!

Technology

- ✓ Printed Circuit Boards up to 24 Layers (higher layer counts are subject to review of data)
- ✓ Rigid, Flex and Rigid-Flex Printed Circuit Boards
- ✓ Blind/Buried Vias
- ✓ Sequential Lamination and Controlled Depth Drill/Plating Capability
- ✓ Heat Sink and Metal Core Printed Circuit Boards
- ✓ Controlled Impedance +/- 10% (+/- 5% on request)
- ✓ Thin and heavy copper weights
- ✓ Exotic Mixed substrates / Multiple Core Types
- ✓ Extreme Environment

Capabilities

- ✓ Via size to .006
- ✓ Lines/Space to .003"
- ✓ Via in Pad
- ✓ LPI and Dry Film Solder Mask
- ✓ NASA – Meets or Exceeds Out-gassing Requirements
- ✓ Fully Automated CAM
- ✓ Peelable Solder Mask
- ✓ Raised Profile Plating
- ✓ Deep Ni/Au, Immersion Gold (ENiG), Silver, OSP
- ✓ Lead Free Solder

Thermal Management

- ✓ External Heat Sink Boards
- ✓ Internal Metal Core Boards
- ✓ Thermagon Construction (10x thermally conductive substrates & pre-pregs)

Common Materials

- ✓ FR4 – 370HR/185HR, VT-47, ITEQ 180A
- ✓ Flexible and Rigid/Flex
- ✓ Hybrids
- ✓ *Getek
- ✓ *FR408
- ✓ *Rogers
- ✓ *Polyimide – BT Epoxy
- ✓ *Thermagon
- ✓ *Teflon/Duroid/PTFE
- *Not commonly stocked - stocking programs are available



Commitment to Quality

AS9100D

MIL-PRF-31032/1 and 2 GF and GI Materials

MIL-PRF-31032/3 and 4

MIL-PRF-50884

MIL-PRF-55110 GF & GI

IPC 6013 Class 3 (Flex & Rigid Flex)

IPC 6012 Class 3 and 3A (Space and Military Avionics)

ISO 9001:2015

NADCAP 7119 (Under Review)

Approved for Manned Space Flight

IPC Class 3 Standard

UL Listed

ITAR Registered

ROHS Compliant

SERVICES

Quick-Turnaround:

Prototype

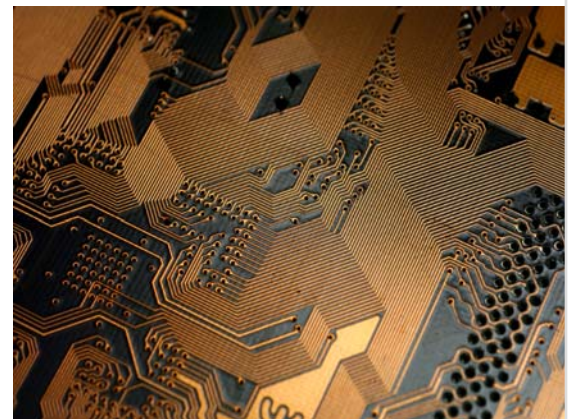
Production

Full Production

Design/Layout

Engineering

Stocking Programs



Contacts:

Quoting

MPCS@MidwestPCB.com

Customer Support

Bob Denbo

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Customer Service

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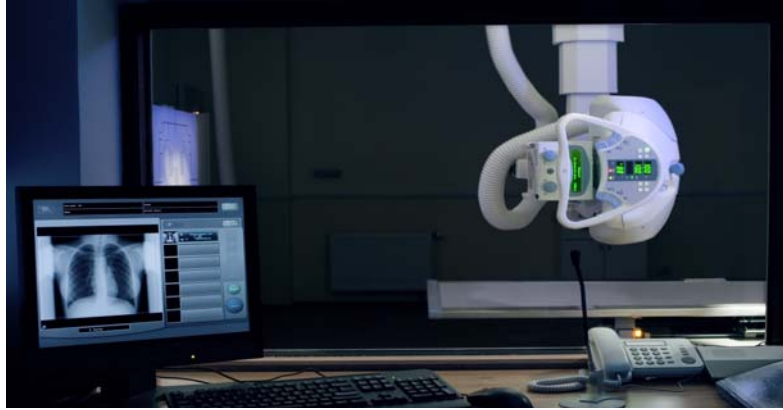
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Technology Road Map:

	<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	250V In House	250V In House
Pitch	0.004"	0.004"
High Pot	Up to 5KV	Up to 5KV



Process Capabilities:

Shop Tolerance:

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

Standard

Drilling:

Minimum Drill Size	.006"
Maximum Drill Hole Size (above 0.257 is routed)	.257"
Maximum Aspect Ratio	14:1

Standard

Testing Capabilities:

Minimum Component Pitch	.006"
Type of Test Equipment	Flying Probe
Type of Test Equipment	Double Sided Tester

Standard

Surface Finishes Available:

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.

Standard

Electrical Characteristics:

Impedance Tolerance	+/- 8%
Note: Minimum Tolerance +/- 5 ohms	

Standard

Materials Available:

* Stocking programs available

	<u>Tg</u> (Degrees C)	<u>DK</u>
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.