MPCS
MIDWEST PRINTED CIRCUIT SERVICES

Providing interconnection solutions through innovative products.

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
- Getek
- FR408
- Rogers
- Polyimide – BT Epoxy
- Thermagon
- Teflon/Duroid/PTFE
- Flexible and Rigid/Flex

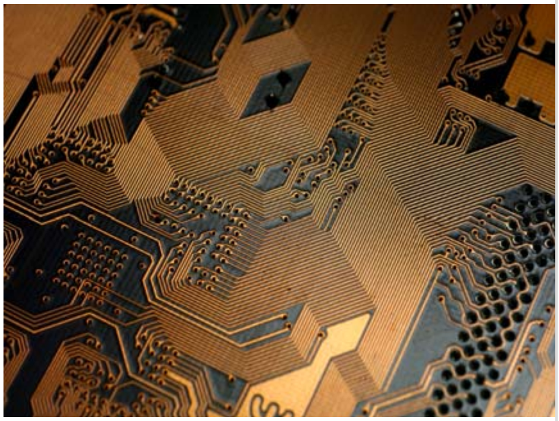
Commitment to Quality

ISO 9001:2008
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)

AS9100D (In process)
NADCAP 7119 (In process)
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



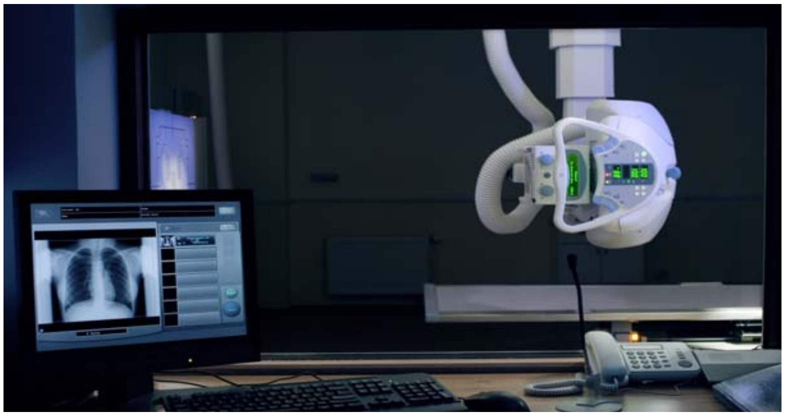
Contacts:

Quoting	Customer Support	Customer Service
MPCS@MidwestPCB.com	*Bob Denbo* *Rdenbo@MidwestPCB.com*	*Carol Main* *Cmain@MidwestPCB.com*

Technology Road Map:

	Current	Future
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

Materials Available: * Stocking programs available	Tg (Degrees C)	DK
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.	



Process Capabilities:

Shop Tolerance:	Standard
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

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

Testing Capabilities:	Standard
Minimum Component Pitch	.006”
Type of Test Equipment	Flying Probe
Type of Test Equipment	Double Sided Tester

Surface Finishes Available:	Standard
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.

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