

POWERFUL PRINTED CIRCUIT BOARD MANUFACTURING SOLUTIONS

Leading the PCB Industry in Quality & Innovation for over 25 Years



Advanced Circuits, Inc.
www.4PCB.com



ABOUT ADVANCED CIRCUITS



3 U.S. MANUFACTURING FACILITIES

Founded in 1989

Third Largest PCB Manufacturer in North America

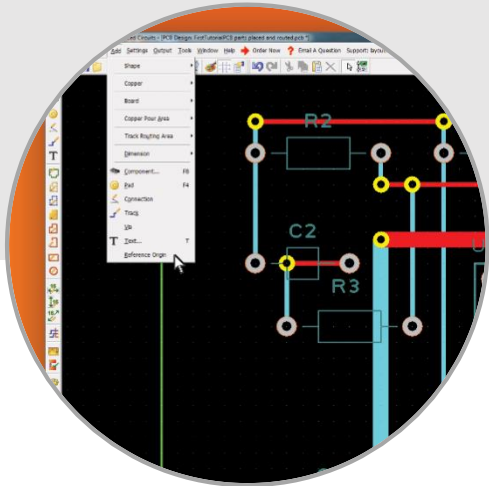
- ✓ 24 HOUR PRODUCTION
- ✓ 24 HOUR SUPPORT
- ✓ 550+ EMPLOYEES
- ✓ OVER 200,000 SQ. FT.
- ✓ PROTOTYPE TO PRODUCTION
- ✓ IN-HOUSE PROTOTYPE ASSEMBLY
- ✓ SAME DAY & WEEKEND TURNS
- ✓ BEST ON-TIME SHIPPING RECORD



CORPORATE HEADQUARTERS
Aurora, Colorado

HELPFUL TOOLS & SERVICES

Innovative tools to make the design, ordering, prototyping, and production process faster and easier.



Free PCB Design Software - PCB Artist®

PCB Artist® is our free professional-grade PCB layout software with a component library of over 500k parts.



Free Preorder Gerber File Check Tool - FreeDFM™

Upload your Gerber files to our FreeDFM™ tool to find possible manufacturability issues before you place your order.



Easy Online Quoting, Ordering, & Tracking

Get instant online quotes, place orders, re-order, and track current jobs in production using the My4PCB customer portal.



Same Day & Weekend Turns for Time-Sensitive Orders

Quick-turn options to meet your time sensitive delivery requirements with the industry's best on-time shipping record.

HANDS-ON SUPPORT

Our customers enjoy personalized hands-on assistance from the industry's largest support team.



24 Hour Live Technical Support

40+ member CAM (computer-aided manufacturing) team accessible 24 hours a day Monday-Friday and Saturdays until 4 pm EST.



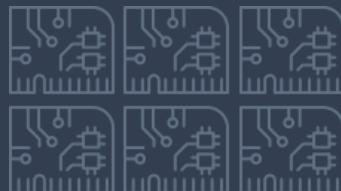
Each Design Receives Detailed Review

Experienced CAM engineers carefully inspect every customers' files prior to fabrication to ensure a worry-free production process.



Immediate Communication

Each order is treated as a time-sensitive order. Immediate communication and full documentation help resolve issues quickly.



Expert Front-End Planning & CAM

- IPC-D-356 to Gerber Netlist Compare by Request
- In-House Array Layout by Request
- Automated Coupon Generation for Mil 31032/55110, IPC 6012, and Controlled impedance



ADVANCED CAPABILITIES

Our technical expertise and high-tech capabilities enable us to meet your requirements. From the simplest boards to the most complex designs.



Lead Time

Same Day - 4 Weeks



Layer Count

0 - 40 Layers



Cu Weight

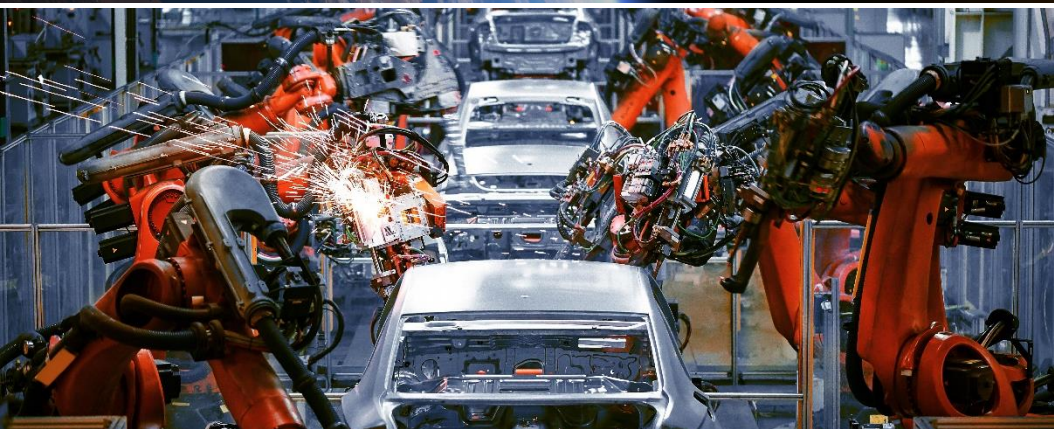
Up to 20 oz.



Trace/Space

Down to .0025"

- | | | |
|------------------------|----------------------|---------------------------|
| ✓ VIA-IN-PAD | ✓ OVERSIZED BOARDS | ✓ CAVITY BOARDS |
| ✓ BLIND & BURIED VIAS | ✓ STACKED MICROVIAS | ✓ BURIED CHIP RESISTORS |
| ✓ LASER DIRECT IMAGING | ✓ DOWN TO .3MM PITCH | ✓ LASER-DRILLED MICROVIAS |



Additional Services & Capabilities

- | | |
|---|--|
| ✓ Customizable Serialization | ✓ Castellated Vias |
| ✓ Dry Film Soldermask | ✓ Edge Plating |
| ✓ Control-Depth Drilling (stub removal) | ✓ Plated Slots/Countersinks/Counterbores |
| ✓ Cover Coat Lamination | ✓ Laser Routing for Teflon/Duroid Products |
| ✓ Plasma Etchback (Cert. Mil-PRF-55110) | ✓ PEM® Nut Installation |

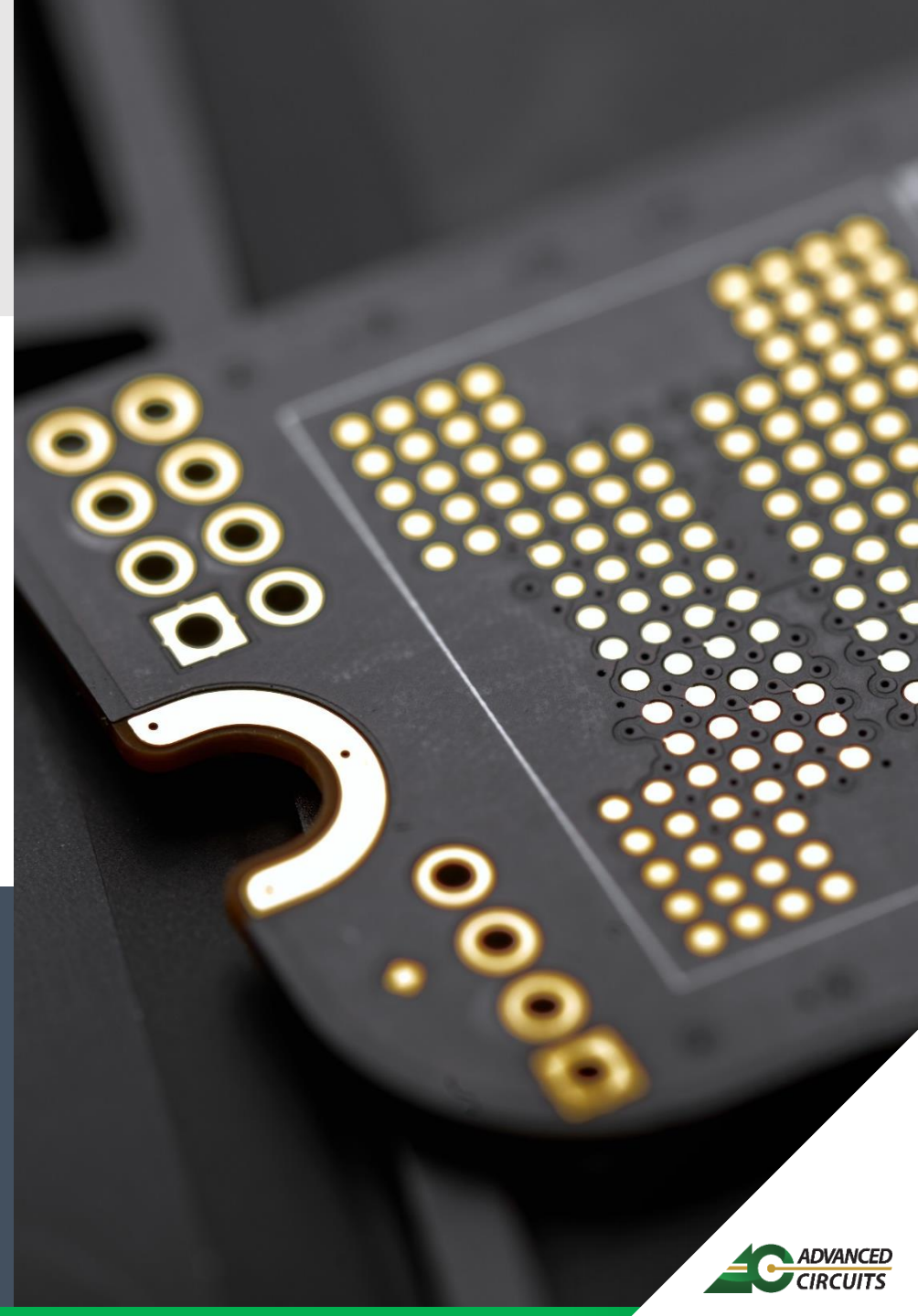
LAMINATES & FINISH OPTIONS

Surface Finishes

- ❑ LEADED & LEAD-FREE (HASL)
- ❑ ELECTROLESS NICKEL IMMERSION GOLD (ENIG)
- ❑ ELECTROLYTIC NICKEL & HARD GOLD PLATING
- ❑ ELECTROLESS NICKEL ELECTROLESS PALLADIUM IMMERSION GOLD (ENEPIG)
- ❑ IMMERSION SILVER & IMMERSION TIN
- ❑ TIN NICKEL & FUSED TIN LEAD
- ❑ ELECTROLESS NICKEL
- ❑ BONDABLE GOLD

ADVANCED MATERIALS READILY AVAILABLE

Advanced Circuits offers a wide range of material options such as enhanced epoxy laminates, ultra-low moisture materials, high-frequency ceramic filled laminates, RoHS compliant, and more.



CERTIFICATIONS & QUALIFICATIONS

Denver Division

ISO 9001:2015

AS 9100D

ITAR REGISTERED

UL REGISTERED

IPC 6012 CLASS 2-3

Phoenix Division

ISO 9001:2015

AS 9100D

MIL-PRF-31032

MIL-PRF-55110

ITAR REGISTERED

UL REGISTERED

IPC 6012 CLASS 2-3A

Minneapolis Division

ISO 9001:2015

AS 9100D & AS9104

MIL-PRF-31032

MIL-PRF-55110

JCP REGISTERED

ITAR REGISTERED

DOD CONTRACTS

UL REGISTERED

IPC 6012 CLASS 2-3A



Independent Third Party Verification of Quality

MICROTEK LABORATORIES | VALLEY LABS | GODDARD SPACE FLIGHT CENTER (GROUP B TESTING)

IN-HOUSE ASSEMBLY

A seamless solution for quick-turn prototype PCB Fabrication + Assembly under one roof with no minimum quantity requirements.



Turnkey Prototypes as Quick as 1 Day

Avoid shipping delays and miscommunication issues between multiple vendors for PCB and PCBA. Rely on the quick-turn industry leader for a smooth process and on-time delivery.

- ✓ **LOWEST SMT COST GUARANTEED***
- ✓ NO SETUP FEES
- ✓ NO STENCIL CHARGES
- ✓ NO MINIMUM QUANTITY REQUIREMENTS
- ✓ ADVANCED SOFTWARE FOR TOOLING ACCURACY
- ✓ LATEST MYDATA ASSEMBLY EQUIPMENT

*SEE WEBSITE FOR DETAILS

PCB ASSEMBLY CAPABILITIES



Component Types

- Passive Components
 - As Small as 0201 Package
- Ball Grid Arrays (BGA)
 - As Small as .4mm Pitch
 - X-Ray Inspected
- Fine Pitch Components
 - As Small as 15 Mil Pitch

Solder Type

- Leaded
- Lead-Free RoHS Compliant

Stencil

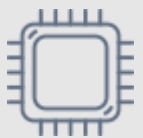
- Laser-Cut Stainless Steel
- Nano-Coating Available

Technology

- Thru-Hole Assembly
- Surface Mount Technology (SMT)

Other Services and Capabilities

- Mechanical Assembly
- Box Build/Electromechanical Assembly
- Subassemblies
- Assembly Engineering Services
- Rework/Repair Services



Easy Component Procurement

- TURNKEY** – We source all components
- CONSIGNED** – You send all components
- COMBO** – You send some components & we source the rest



QUALITY MANAGEMENT SYSTEM

Our Quality Management System goes above and beyond applicable industry standards to ensure optimum reliability and performance.

Dependable Accountability

Immediate Review. Swift Recovery Plan. Rebuilds as Fast as 24 Hours.



98%

FIRST PASS PRODUCTION
YIELD



99%

FIRST PASS ELECTRICAL
TEST YIELD



99%

ON-TIME ORDER
DELIVERY

Robust System for Issue Resolution

- ✓ Customer issues immediately entered into intranet web-based system and distributed to management.
- ✓ Immediate review of order and job documentation.
- ✓ Follow-up call to customer to discuss issue and resolution.
- ✓ Customer Action Report is supplied upon customer request.

Impeccable Quality, Outstanding Service, and Trusted Reliability

There are many reasons why Advanced Circuits works with more OEM engineers than any other printed circuit board manufacturer in North America.

- ✓ U.S. BASED MANUFACTURER
- ✓ BEST ON-TIME SHIPPING RECORD
- ✓ EXPANDED CAPABILITIES
- ✓ 24 HR. LIVE TECH SUPPORT
- ✓ NO MIN. ORDER REQUIREMENTS
- ✓ SAME DAY & WEEKEND EXPEDITES
- ✓ FLIGHT & SPACE APPROVED SUPPLIER
- ✓ FREE PCB DESIGN TOOLS
- ✓ PCB + PCBA UNDER ONE ROOF
- ✓ CONTINUOUS CAPITAL INVESTMENT
- ✓ ON-SITE IPC CERTIFIED TRAINERS
- ✓ HIGH-RELIABILITY FOCUS



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