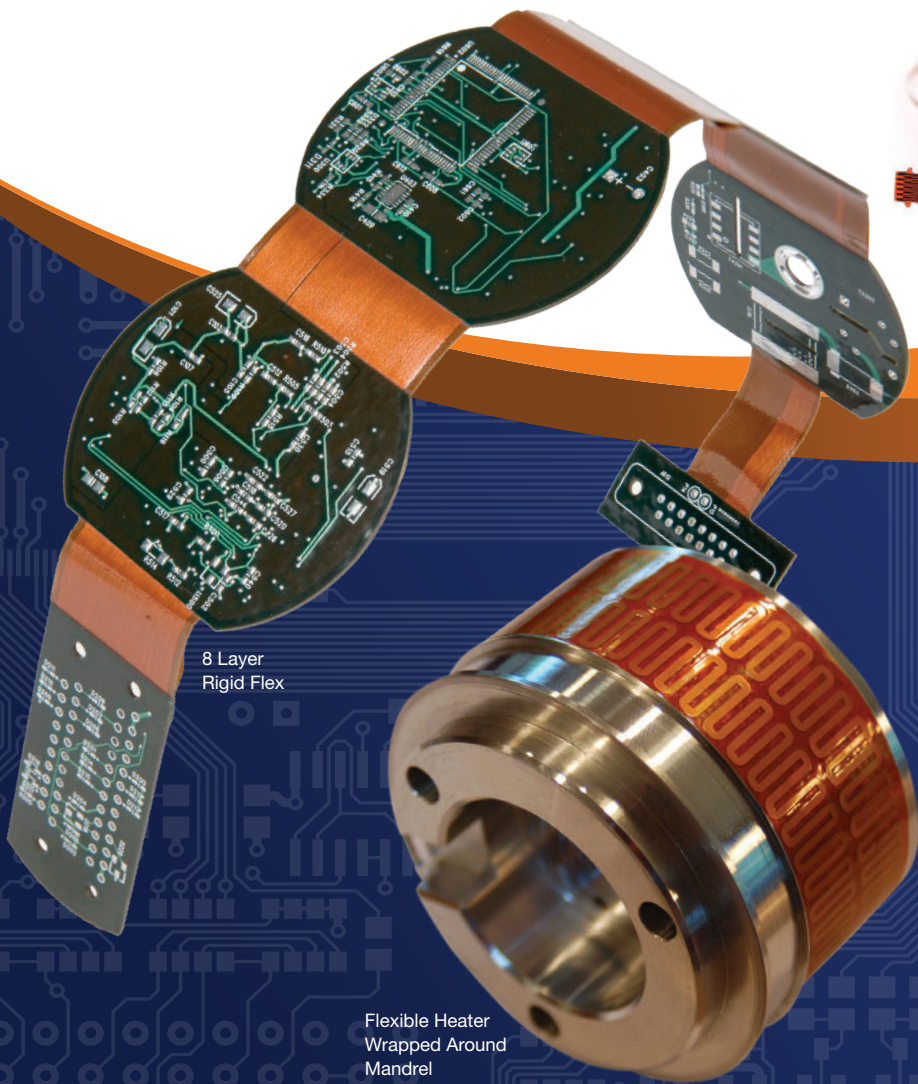




all flex
SOLUTIONS

**ALL YOUR FLEXIBLE
SOLUTIONS
ALL IN ONE PLACE**



8 Layer
Rigid Flex

Flexible Heater
Wrapped Around
Mandrel



CatheterFlex™
Up To Six
Feet Long

- *Flexible circuit solutions*
- *Rigid flex solutions*
- *CatheterFlex™ solutions*
- *Flexible heater solutions*
- *And assembly solutions too!*



LET US HELP YOU **FLEX-IZE YOUR DESIGN**

Flex Circuit Solutions

Products

- Polyimide Flexible Circuits
- Single Sided, Double Sided, Multilayer Flex
- Sculptured Flex
- Maxi Flex® 40 feet +
- HighTemp Flex™
- Copper / Silver Shielding

Features

- Tremendous flexibility in design choices
- Creates smaller, lighter, and more functional electronic packages
- Metal layer can be very thin (<.0001") to very thick (> .010")
- Dielectric thickness can vary from .0005" to .010"

Prototype/Quick Turn

- First article Design Concepts

Production

- Low to high volume production

Surface Finishes

- EPIG, ENEPIG, ENIG
- Electrolytic nickel with hard and soft gold
- Hot, air-leveled solder
- OSP
- Immersion silver
- Immersion tin



11 Layer Rigid Flex Board

Rigid Flex Solutions

Providing the ultimate combination of circuit density with electronic packaging flexibility.

Features

- 20 layers or more
- Dynamic and flex to install applications
- Rigid flex constructions from .012" to .145" overall thickness
- Over 85% manufactured to IPC 6013 Class III
- Adhesiveless flexible laminates from .001" to .019"
- Copper foils from 12 μ to 2 ounce
- Impedance modeling, testing and reporting
- Filled conductive and non-conductive vias
- Standard UL recognized rigid flex constructions
- Unmatched survival in high shock and vibration applications
- Capable of ultra-thin, ultra-light weight packaging



Flexible Circuit with Stiffeners in Component Areas

CatheterFlex™ Solutions

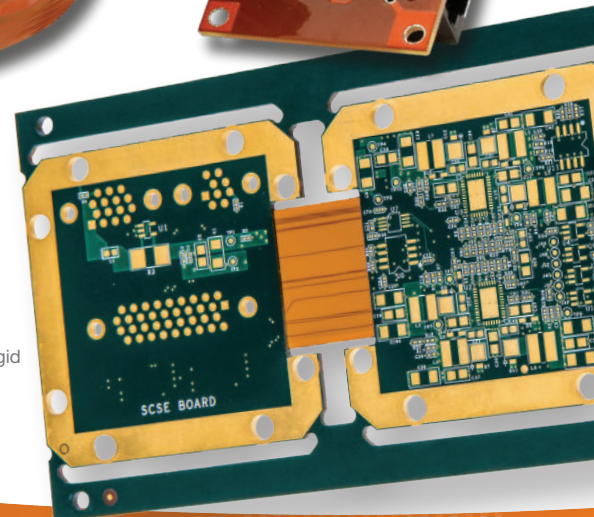
High Density Interconnect (HDI) technology with extended length application.

Applications

- Ablation Catheters
- Mapping / Diagnostic Catheters
- Endoscopes

Features

- Lengths from 24" to 40 feet or more (depending on density)
- Copper trace and space down to 2-3mils (0.05-0.08mm)
- Part widths down to 10mils (0.254mm)
- Single-sided, Double-sided and even Multi-layer
- Shielding for EMI/RFI protection .019"
- Control Impedance designs



20 Layer Rigid Flex Board



CatheterFlex™ with ZIF Connector

Flex Heaters Solutions

Applications

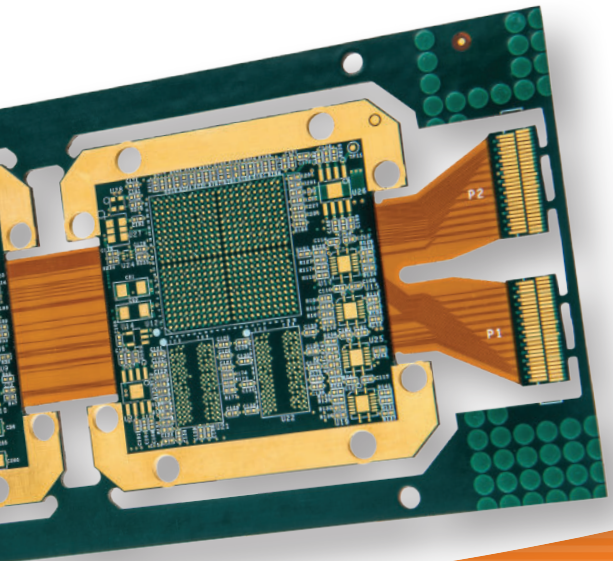
- Temperature sensitive applications
- Extreme temperature conditions
- Freeze protection
- De-icing systems
- Heat transfer
- Heat indicator

Features

- Polyimide & Silicone Rubber
- Custom designed into virtually any size & shape
- Integrated heaters, with flex circuit & sensors
- Direct lamination to heatsinks
- Can be built as thin as .004"
- Component & connector assembly
- Mechanical assembly
- Up to 100 watts per square inch
- Expedite Available

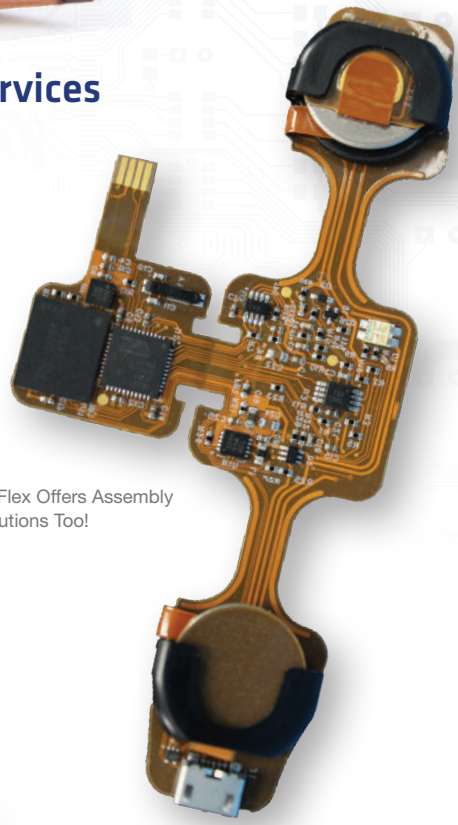
Stock Heaters

All Flex also offers standard non-custom heaters without a tooling or set-up charge. A variety of sizes and shapes are available with add on options.



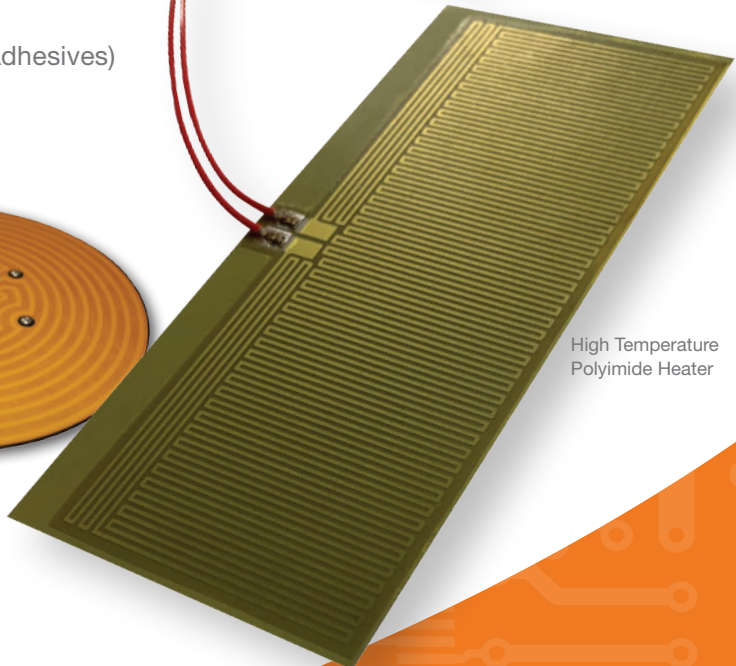
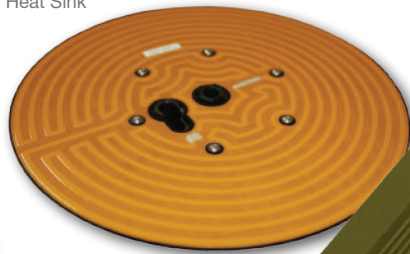
Assembly & Value-Added Services

- Component assembly
 - Thru Hole
 - SMT
 - Down to 01005
 - BGAs
- Automated pick and place
 - Double sided assembly
- Mixed form factor assembly
- Folding, forming
- Stiffeners
- Electrical testing
 - Open/shorts
 - Functional testing
- Post Assembly AOI
- Heat sinks
- Bar Coding
- Silver epoxy screening
- Wire processing/assembly
- Potting and conformal coating
- PSAs (Pressure Sensitive Adhesives)



All Flex Offers Assembly Solutions Too!

Flexible Heater on Heat Sink



High Temperature Polyimide Heater

Quotes Provided In 24 Hours

- E-mail: rfq@allflexinc.com
- www.allflexinc.com
- Call: 866-766-1334

All About All Flex Solutions

All Flex is a high quality, high reliability, customer-driven manufacturing company providing quick-turn prototype, short run, and production manufacturing of flexible circuitry, rigid flex, flexible heaters, and assembly solutions too. We offer a wide variety of materials and services to meet the requirements of the unique design and application.

FAST FACTS

- Three Minnesota based locations
- Significant capital investment in fabrication facilities
- Continuous capital equipment investment for production expansion and quality improvement, and improved capabilities
- Average 100 new customers annually
- Support approximately 400 customers / year
- Engineering start-ups average >40 new part numbers per month
- Technical support staff includes individuals with 20+ years in the circuit board industry
- 160,000+ sq ft of manufacturing floor space
- Capable of supporting serial production volumes in addition to quick turn prototype quantities
- Military & Medical markets represent >75% of revenue for high reliability “never fail” applications (move over)
- Three SMT assembly lines

PRODUCT OFFERING

- Unsupported copper tabs
- Thick copper/power distribution circuits up to 20 mils
- Alternative metal alloys
- Polyimide dielectric films
- Adhesive and adhesiveless materials
- Full offering of RoHS surface coatings
- High speed, fine pitch through-hole and SMT component assembly down to 0105
- Microscope soldering/assembly
- Digitally controlled nomenclature printing and product serialization

SERVICE OFFERING

- Fast quoting in 24 hours
- Full circuit design from schematic
- Reverse engineering of existing products into flexible circuitry designs
- Improved design refinement (“flexizing”) to optimize features for flexible circuit performance and reliability
- Heater design to defined thermal output
- AOI (automated optical inspection)
- Flying probe, bed of nails and piece part electrical testing
- Consultation/design assistance

MARKETS SERVED

Medical

- Hearing aids
- Blood analyzers
- Ultrasound equipment
- Dental instruments
- Monitors
- EP Catheters

Industrial

- Sensors
- Measurement devices
- Heater controls
- Robotics
- Power supplies

Instrumentation

- Data recorders
- Light and wave length analyzers
- Electronic testers
- Portable analyzers

Military/Aerospace

- Secure radios
- Night vision
- Instrumentation
- Armament
- Unmanned systems
- Flight control hardware
- Satellite systems

Telecommunications

- Hand-Held GPS receivers
- Modems
- Coaxial replacement
- Battery chargers
- Antennas
- Law enforcement radios

AS9100 Certified

ISO 9001 Certified

ITAR Registered

MIL-PRF-31032/3 Qualified

MIL-PRF-31032/4 Qualified

RoHS Compliant

UL Recognized

IPC Member

JCP Certified



Flex Circuit Center of Excellence
1705 Cannon Lane
Northfield, MN 55057

Rigid Flex Center of Excellence
1200 W 96th St
Bloomington, MN 55431

**Flex Heater & Assembly
Center of Excellence**
9401 James Avs S Suite #120
Bloomington, MN 55431
(507) 663-7162
www.allflexinc.com