

COMPONENT SOLUTIONS FOR ENERGY APPLICATIONS

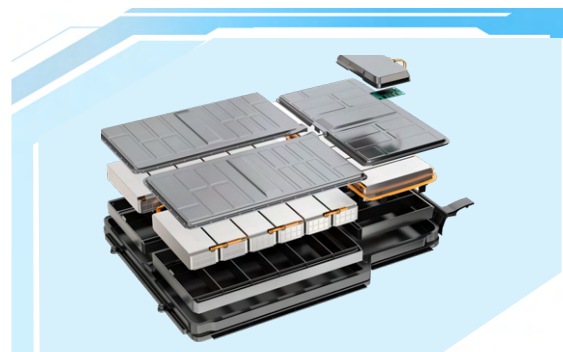
ISO9001:2015, ISO 3485:2016, AS 9100D, ITAR, CEI, FDA

Fralock designs, engineers, and manufactures custom interface, flex circuit, and engineered ceramics solutions using specialty engineered materials for high reliability and severe environment applications in the energy industry.

Over 50 years of experience in new technologies and manufacturing expertise makes us the supplier of choice for our customers.

PRODUCT SOLUTIONS

- Sealing and Gasketing
- Thermal Management
- Vibration/Sound Dampening
- Flex and Rigid-Flex Circuits
- EMI Shielding
- Electrical Insulation
- Gap Filling
- Ceramic Components



APPLICATIONS

RECHARGEABLE BATTERY PACKS

- Thermal Interface Solutions - silicone and graphite-based materials, gap fillers, thermal stops/blocks (Cirlex®)
- Electrical Insulation - polyimide materials, flame retardant polycarbonates
- Flexible and Rigid Flex Circuits - All-Polyimide adhesiveless lamination (ALT) and traditional technology
- Fire Stop Solutions
- Flame Retardant Films and Tapes
- Turnkey Pouch Manufacturing

ELECTRONIC CIRCUITRY IN AC/DC CONVERTERS

- Flex and Rigid Flex Circuits - compact, low profile, durable Kapton®
- High-Power Low Profile Etched Foil Flat Flex Cables



INDUSTRIAL POWER SYSTEMS

- Fire Stop Solutions
- Thermal Interface Solutions - gap fillers, thermal dissipation, thermal stops/blocks
- Flexible and Rigid Flex Circuits - stripline cables

OTHER APPLICATIONS

- Telemetry Units
- High Voltage Insulators
- Power Module Substrates
- Energy Storage
- Heaters

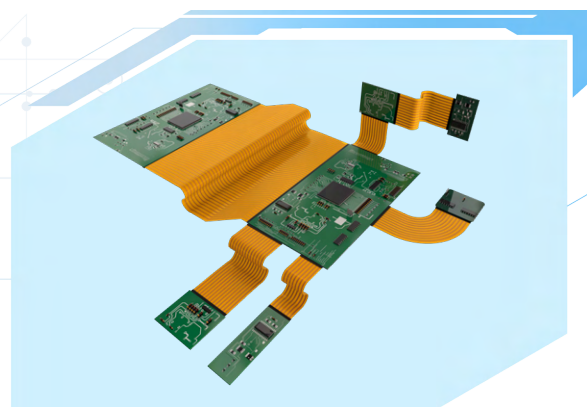
MANUFACTURING CAPABILITIES

Fralock provides rapid prototyping and manufacturing for components and sub-assemblies. Working as an extension of your engineering department, our Concept and Feasibility (C&F) team combines 'seemingly incompatible materials' to engineer solutions that satisfy your unique requirements.

FLEX AND RIGID-FLEX CIRCUITS

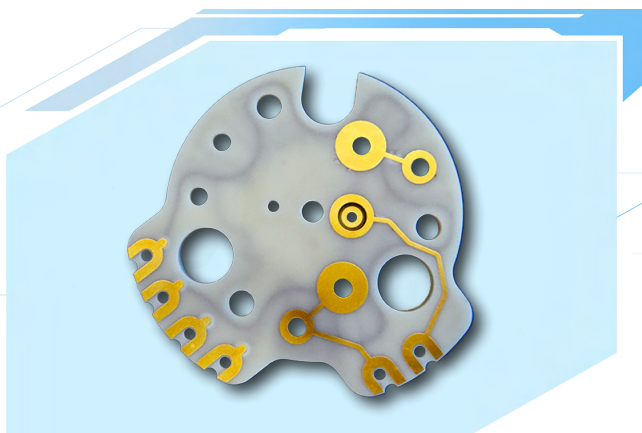
- Trace/ Space 25um (1mil)
- Micro/ Vias Min 50u (2 mil)
- Blind/ Buried Vias (2mil)
- Laser-Precision Drilling / Excising<50um (2mil)
- Unsupported Traces / Cantilever Leads
- Controlled Impedance Routing Capabilities
- Conformal Coating
- Underfill, Potting

- Flex Circuit Precision Assembly & Turnkey Manufacturing
- Ceramic Fabrication
- UV And CO₂ Laser Cutting
- Tape and Film Fabrication
- Multi-Layer Laminations



CERAMIC CAPABILITIES

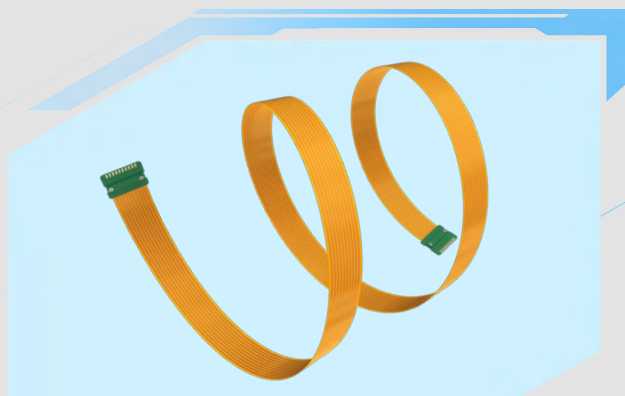
- Plating, Lapping, Dicing and Brazing services
- Heater Cooler Assemblies
- Laser Welding for High Temperature Lead Attach
- Isostatic Pressing
- Pre-fired CNC Machining Tolerances +/- 1%
- Post Fired Dicing to +/- .001"
- Post Fired Lapping/Polishing to Sub-Micron Flatness for Parts up to 50mm Square
- Electroless Ni and Au Plating
- Metallizing and Brazing of Aluminum Nitride heaters
- Thin Film Coatings for ESD Control or Fine Surface Lines and Spaces to 12um (.0005")
- Multi-Zone Control Systems with Internal Tungsten Trace Design and Incorporated RTD, Thermocouple or Platinum RTD Feedback Capability





ALT TECHNOLOGIES

Fralock's unique adhesiveless all-polyimide Adhesiveless Lamination Technology (ALT)[™] uses no adhesives, creating an ultra-strength bond, ensuring that delamination does not occur. This process provides unsurpassed reliability with fully encapsulated traces, resulting in a robust, highly flexible, multilayer solution.



SPECIALTY MATERIALS

Fralock provides custom solutions for high-reliability applications using a variety of materials for a full range of applications in Energy industries.

■ Engineered Technical Ceramics

- Aluminum Nitride
- Alumina
- Quartz
- Sapphire
- Low temperature Co-fired Ceramics (LTCC)
- High Temperature Co-fired Ceramics (HTCC)



■ Polyimides

- DuPont[™] Kapton[®]
- DuPont[™] Cirlex[®] "Thick" Kapton[®]

■ Conductive Foils

■ Pressure-Sensitive Adhesives

■ Fluoropolymers

■ Polymers

■ Foams

■ Composite Meshes

■ Conductive Elastomers

■ Compression Elastomers





LEADING THE WAY IN ADVANCED MATERIALS SOLUTIONS®

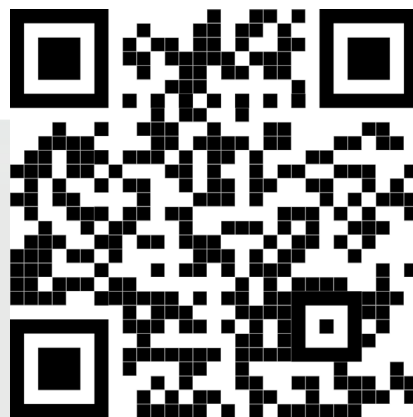
Put our team to work developing solutions that ensure performance uniformity for your specific application.



After an extensive search for a reliable supplier we found Fralock. They were the only supplier that was capable of holding our required tolerances and they provided a quick turn prototype. Our engineering department immediately involved our Supply Chain Team, and we've now found the supplier that brings both Quality and Capability.



– Design Engineer, Rechargeable Battery Manufacturer



Get in touch with us to discuss your project
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