



RIGID AND FLEXIBLE TAPE



Moog is a leader in printed circuit board prototype manufacturing. We offer solutions to each customer's specialty requirements.

Flexible circuit boards have been an important factor in the world's technological advancements for many years. Most recently, flex has evolved into an interconnection device that is used in the majority of electronic products available today.

Flex circuits are made from non-conductive materials, such as polyimide, where conductive pathways are etched from copper sheets and then laminated together to form the final product. Although originally designed to replace bulky wiring harnesses, they also provide an alternative to the rigid board when a reduction in weight and thickness are important. Flexible circuit boards offer more compact packaging, which in turn saves space and weight. Smaller and neater assemblies are more aesthetically appealing.

Flexible circuit boards provide mechanical support, as well as electrical connections. The flexibility and durability of the material allows for dynamic flexing without risking the integrity of the traces.

Flex allows engineers the ability to miniaturize circuits and increase functional capability providing better impedance control. Flexible circuits also offer thermal management for high temperature applications by dispersing heat at a faster rate than other dielectric materials.

Flexible circuit boards reduce cost and labor assembly by eliminating connectors and solder joints installation.

Simplifying the overall design with flexible circuits reduces the risk of wiring errors. Flex ranges extensively in complexity and can be used for virtually any product.



DESIGN AND CAPABILITIES

TYPICAL APPLICATIONS

- Consumer appliances
- Computers
- Cell phones
- Televisions
- Satellites
- Radars
- Rotary aircraft
- Navigation systems
- Automotive systems

FEATURES

- Higher circuit density
- Flexibility
- Reduces wiring errors
- Improved impedance control and reliability
- Replaces wire harnesses and allows more compact packaging (saves space and weight)
- Reduces assembly cost
- Can be used for high temperature applications / thermal management
- Improved thermal resistance
- Consistent thickness
- Dynamic flexing
- Stronger signal quality
- More aesthetically appealing
- Increased functional capacity

MARKET SECTORS

- Military
- Commercial
- Aeronautical
- Automotive
- Medical
- Telecom
- Industrial Controls

Moog offers flex and rigid flex product for prototype orders, as well as mid to high volume production quantities. Our capabilities include:

Specifications Referenced (Flex)

- IPC-6013, Class 2 and 3
- MIL-P-50884 certified

Current Technologies

- Single sided flex with single and double barred cover-lay openings
- Double sided flex circuits with or without stiffeners
- Multi-layer flex circuits with or without stiffeners
- Rigid flex circuits

Materials Available

- Dupont® LF series
 - IPC class 2 and 3
 - Modified acrylic adhesive and Kapton® film
 - RA or ED copper
 - No UL flame rating
- Dupont® AP series
 - IPC class 2 and 3
 - Adhesiveless and Kapton® film
 - RA or ED copper
 - UL94 V-0 flame rating

Manufacturing Capabilities

- Flex - up to 3 oz. internal and external weight
- Rigid Flex - up to 3 oz. internal copper weight and 6 oz. external copper weight
- .005 inch / .005 inch trace / space
- .003 inch / .003 inch review
- .006 smallest plated through hole
- Plasma desmear
- Technician level employees throughout the plant
- Polar instruments, impedance calculators and equipment
- Laser ablation, skiving and routing technology through the use of our Excellon Cobra V1000 UV / CO² Laser

Manufacturing Lead Times for Flex Product

- Standard delivery of 20 days or less
- Expediting delivery as quick as 5 to 10 days

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