WHAT'S TRENDING

Flexible Circuit Solutions for the Automotive Market

Are your designs requiring more functionality in a smaller form factor?

SITUATION

One of the challenges facing global automotive manufacturers today is getting more functionality in the same or even a smaller form factor. More data, sensing and communication requires more circuits and signals and higher data rates, resulting in a real estate crunch. Flexible printed circuits (FPCs) and flat flexible cables (FFCs) make electronic interconnection simpler and more reliable. FPCs and FFCs are particularly effective in applications where high signal speed, power distribution, heat, flexibility and/or space savings are an issue.

In these situations, FPCs and FFCs offer innovative solutions for design-enhanced form, fit and function. Improved assembly, weight and space reduction, enhanced ruggedness in bending and flexing applications, and elimination of wires and interconnects to reduce failure points and improve reliability are some of the benefits of these FPC and FFC innovations.

Are you designing the most flexible, mechanically robust, cost-effective products into your solutions?

TREND 1:
Improved Experience Through Customization

- Complex designs often require 3D solutions.
- Bending, curving and/or folding circuitry can mitigate challenges with compact and nonplanar enclosures for electronics and user interfaces.
- Flexible circuitry enables efficient routing within small packaging and tight spacing.
- Reducing weight with light, flexible substrates can contribute to an overall vehicle weight reduction and better fuel efficiency.

TREND 2:
Improved Assembly and Fewer Components in Less Space

- Flexible circuits can be designed for improved fit and assembly.
- Reduced bill of materials (BOM) and fewer components can help lower costs and assembly time.
- Flexible circuitry can handle high data rates and communication protocols in compact designs while addressing cooling and air flow management.

TREND 3:
Shorter Design Cycles

- Partnering with design experts can ensure each part is designed correctly for the application.
- Manufacturers with global engineering and manufacturing footprints can provide design support and maximize supply chain flexibility, including meeting VDA 6.3 requirements.

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WHAT'S TRENDING

Custom Circuitry for Flexibility and Functionality

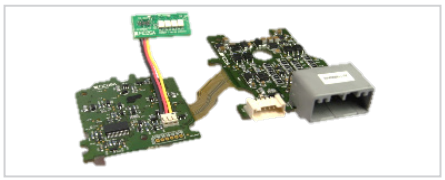
Flexible circuit technology is the answer for your most challenging interconnect applications.

Climate change, fuel efficiency and carbon emissions drive regulatory policies worldwide mandating more ecofriendly, increasingly electrified vehicles. Early adopters valued low emissions and performance characteristics; economics and cost competitiveness will motivate mainstream adoption.

Extended product life expectancy requirements drive the need for more robust designs, higher component reliability and better sourcing to maintain material supply for the life of the product. Custom circuitry gives you the creativity, customizability, functionality and manufacturing partnership needed to meet growing automotive design requirements.

TOTAL INTERCONNECT SOLUTIONS

Molex provides expertise in the design and layout of flex circuitry and offers different manufacturing options to achieve the best combination of speed and cost for initial prototype builds. Our manufacturing knowledge enables us to design the circuit right, the first time, to meet design requirements and deliver a manufacturable solution.



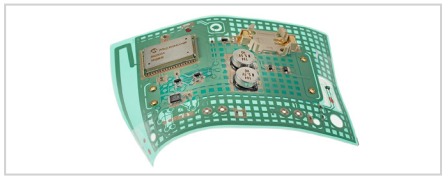
Copper Flex Circuits
Maximum Performance for Demanding Applications

Ideal for applications that require dense circuity, higher currents and minimal high-speed signal loss.

Industry-leading design with least number of layers and highest capability to handle tight bends or high-shock and vibration environments.

Molex offers superior FPC design know-how: the combination of our product knowledge and internally developed electrical and mechanical calculators and design tools.

Copper Flex Product Capabilities and Specifications



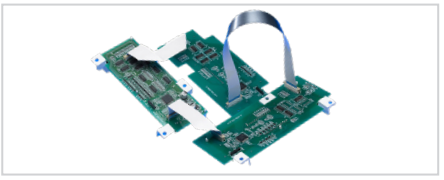
Silver Flex Circuits
Flexible Solutions for Low-Power Applications

Ideal for low-power and low-signal applications where space is at a premium.

Well-suited for in-cabin applications for sensors and controls, including instrument panels, center stack console, smart surfaces and lighting.

Smaller, lighter and cost-effective, Silver flexible circuits are an environmentally friendly choice for applications that demand flexible, lightweight and smaller form factors.

Silver Flex Product Capabilities



Premo-Flex
Standard and Custom 1:1 Flat Flexible Cables

Ideal for board-to-board interconnections in confined spaces.

Connections include: FFC connectors (ZIF/LIF), through-hole and hot-bar soldering.

Available in standard, super-slim and ultra-flexible cable options.

Molex offers a range of standard and customized FFC cables: plating options, type A (same side) and type D (opposite-side) contact layouts, as well as customized folds and splits to improve routing and assembly.

Premo Flex Product Capabilities

Contact us to learn how Molex **Copper Flex**, **Silver Flex** and **Premo Flex** solutions can support your designs.

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