Molex silver flexible circuits are ideal for low-power and low-signal applications where space is a premium. By choosing silver, you can design a product that bends or flexes while reducing costs — making silver particularly desirable.

**The Molex Approach**

At Molex, we take a multidimensional approach to develop complete, integrated solutions that turn your ideas into reality. With the industry’s broadest line of printed electronics and the expertise to work through your mechanical rigors, we can advise you on the best fit for your needs, balancing cost, performance, durability, weight and other requirements.

Learn whether a Molex silver flexible circuit is right for your end application, and start designing your solution today at www.molex.com/printedelectronics.

**CONSUMER**

Consumer and smart home appliances, wearables, VR/AR, handheld devices — where size, flexibility and cost matter. Flexible circuits can wrap around a wrist or a torso, powering many fitness wearables.

**MEDICAL**

Diagnostic and therapeutic medical devices that enable telehealth and remote monitoring — disposable, single-use devices such as blood glucose monitoring, electrodes and drug delivery.

**DATA LOGGING AND SMART TAGS**

Sensor products, RFID, data logging and other Internet of Things applications to remotely monitor environmental conditions.

**AUTOMOTIVE**

Sensors and controls for instrument panels and the center stack with smaller, lighter, less expensive silver flexible circuits — well suited throughout the dashboard user interface and smart surfaces.

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Molex SILVER FLEXIBLE CIRCUIT SOLUTIONS

Flexible Solutions that Deliver

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**Silver Flexible Circuits**

For low-power applications

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SILVER FLEXIBLE CIRCUITS
FOR LOW-POWER APPLICATIONS

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Molex Inc.
Every year, consumers demand smaller, lighter, less expensive electronics — and you’re pressured to find new ways to meet demand without compromising on quality or performance. Stronger environmental regulations mean you’re simultaneously trying to reduce waste, protect natural resources and use more sustainable processes and materials.

A new alternative to traditional printed circuit boards helps you meet these challenges. Molex silver flexible circuits use finely spaced, narrow silver traces to attach complex components onto a proven polyester substrate — delivering a flexible option ideal for your low-power and signal applications.

Silver flexible circuits solutions are a cost-effective choice for many applications that demand flexible interconnect technology in smaller form factors.
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A HISTORY OF SILVER PRINTING
Molex has been printing silver circuitry for more than 30 years, and bonding components to polyester substrates for more than 20 years. Through this experience, we’ve become a trusted leader in silver printing, bonding over 1 billion LEDs to silver circuits on polyester.

A TRUSTED PARTNER
Molex can integrate flexible interconnects, sensor systems and flex circuit assemblies to develop a competitive solution that leverages advanced materials and innovative form factors. Our engineers can help you maximize all three dimensions of your space with greater density and functionality. As a manufacturer of both flexible copper circuits and silver printed circuits, Molex will provide you with the right solution for your needs.

DEMONSTRATED CAPABILITIES

Printing methods
- Screen printing
- Flex graphics
- Roll-to-roll
- Sheet-fed

Inks
- Metal flake
- Silver/silver chloride
- Carbon
- Nano silver
- PEDOT
- Silver nano-wire
- Dielectric
- Radio translucent
- Dielectric ink
- PTC

Substrates
- PET
- PI
- LDPE
- Paper
- Fabrics
- Non-woven fabrics

Layers
- Single- and double-sided printing
- Up to 4 conductive layers

Trace and space
- 0.005" x 0.005"

FFC tails
- As small as 0.50mm pitch

Attach method
- Solder

SMD passives
- 0402, 0603, 0805, 1206

Integrated circuits
- QFN, QFP, D-PAK (0.50mm pitch)

Value-add
- Mechanical assembly
- Hydrogel integration
- Adhesives
- Lamination
- Forming packaging

NEW METHODS SHRINK TRACES — AND SPACES

Molex silver ink technology and proprietary techniques enable fine line printing, with traces as narrow as 0.127mm (0.005”). These thin traces allow better routability and more densely packed circuitry.

PROPRIETARY TECHNIQUES TO SOLIDER ASSEMBLY COMPONENTS

Molex engineers developed a better method to solder components to a proven polyester substrate, allowing electronics to flex and bend to fit into tight spaces. We have streamlined our process to boost reliability, even in the most challenging conditions.

1. Calculate and thoroughly optimize the necessary bend radius to minimize points of flex stress.
2. Bond fine-pitch active devices (0.50mm), such as integrated circuits, to polyester using traditional SMT processes. Encapsulate components to protect solder joints from mechanical failure and vibration.

Silver flexible circuits solutions are a cost-effective choice for many applications that demand flexible interconnect technology in smaller form factors.
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**MODERN ELECTRONICS**

**NEED SILVER FLEXIBLE CIRCUIT SOLUTIONS**

- Lightweight
- Flexible
- Thin
- Cost effective
- Environmentally friendly

**MOLEX DELIVERS:**

- Design engineering support
- Proven Molex reliability
- In-house value-add capabilities

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**DEMONSTRATED CAPABILITIES**

**PRINTING**

- Printing methods: Screen printing, flex, sheet based or roll-to-roll
- Inks: Silver flake, chromate/chloride, carbon, nano-silver, PEDOT, silver nano-wire, electric, radio translucent or opaque ink, PTC and more
- Substrates: PET, PI, LURP, paper, fabrics, non-woven fabrics
- Layers: Single- and double-sided printing, up to 14 conductive layers
- Trace and space: 0.085” x 0.050”
- FFC tails: As small as 0.50mm pitch

**ASSEMBLY**

- Attach method: Surface mount
- SMD passives: 0402, 0603, 0805, 1206
- Integrated circuits: QFN, QFP, D-Pak (0.50mm pitch)
- Value-add: Mechanical assembly, hydrogel integration, adhesives, lamination, stretching, forming packaging

**PROPRIETARY TECHNIQUES TO SOLDER ALTERNATIVE COMPONENTS**

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