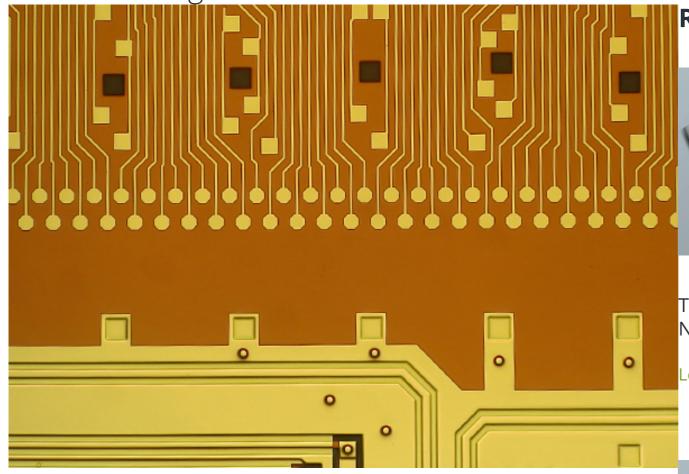
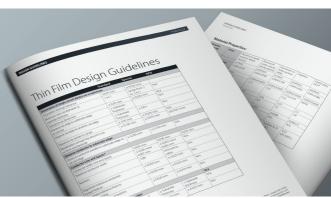
Thin-film Circuit

Manufacturing Services



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Thin Film Design Guidelines for Your Next Project

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Single and multi-level thin-film micro circuit prototyping and production

Our company partners with component designers like you to envision, prototype, and produce innovative thin-film micro circuits and components. Having served a wide variety of demanding medical, RF/microwave, aerospace, defense, telecommunications, commercial printing, and photonics clients over the last 30 years we've honed our micro circuit design and manufacturing skills and offer a wide choice of materials on which we can produce your micro circuit ideas on. We can deliver down to sub-micron levels with industry-leading circuit densities and with impressive yields. Six or more layers are achievable, including conductive layers that are independently stacked, aligned and interconnected.



RESOURCE

Tech Brief Provides A Foundation in Thin Film Micro Circuit



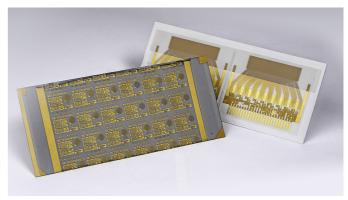
- High density lines and spaces as small as 5 microns
- Vias as small as 25 microns in diameter
- Substrates laser cut and drilled to any geometry
- Plated through holes and vias with "metal backed" ceramics
- Multi-layer circuits with up to six metal layers
- Solder masks (metal or polyimide)

A unique additive manufacturing approach to micro circuit production

While other manufacturers use chemical etching approaches with thin film, medical and RF micro circuit and sensor component professionals agree that this method causes lines to slope, resulting in performance variations and yield issues. By contrast, our additive manufacturing technology ensures the vertical walls of your medical and RF micro circuits and sensor components are the same width at the top as at the bottom, so your circuit-to-circuit and lot-to-lot reliability is maintained. We Additive Advantages of Thin Film achieve these results using a proprietary blend of sputtering, electroplating, photolithography and ion beam etching techniques as applications dictate.

- Quartz/fused silica
- Aluminum nitride
- Alumina

- Nickel cobalt
- Nickel
- Copper



BLOG

Manufacturing: Less Time, Less Metal, Less Money

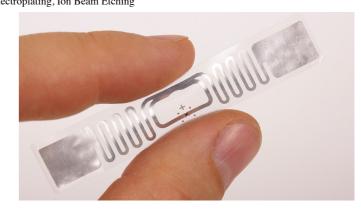
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- Ferrite/garnet
- Titanates
- Glass
- Sapphire
- Silicon
- Polyimide (flex circuits)

Examples:

- Conductors
- Resistors

- Pure gold
- Hard gold
- Palladium
- Platinum
- Rhodium
- Polyimide (flex circuits)



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5 Key Factors for Micro Flex Circuit Success

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