

Cirlex® Technical Information

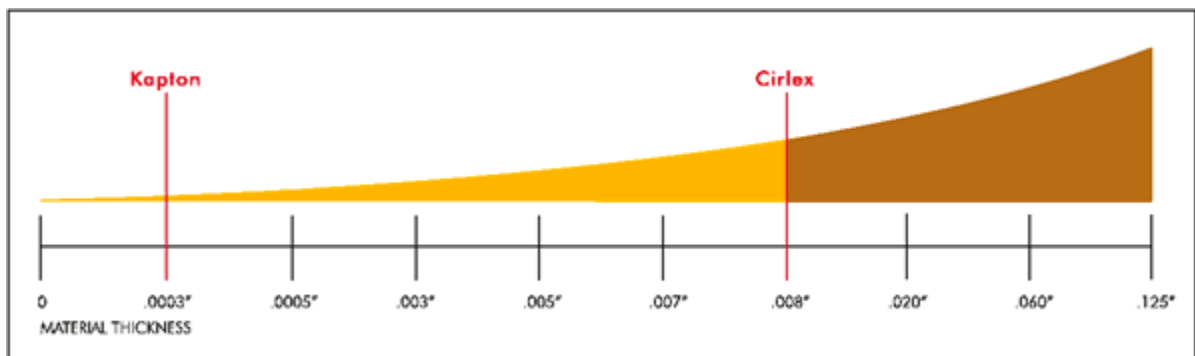
Cirlex® has been proven to successfully perform in the most demanding physical environments. If your application requires a material with the best possible performance – you can count on Cirlex®.

Size: 13.5" x 23.5"
(343mm x 596mm) or
23.5" x 23.5"
(596mm x 596mm)
Custom sizes available upon request.

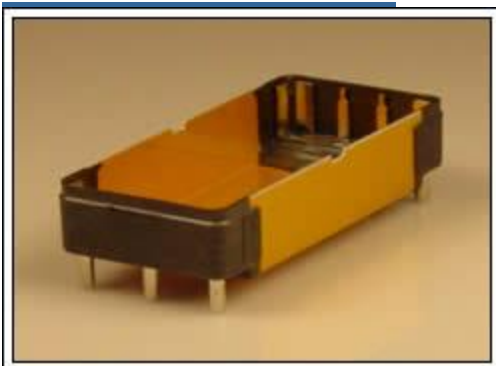
Thermal: Temperature range from
-452°F to 664°F
(269°C to 351°C)
Flammability Rating, UL® 94VO

Electrical: 2790 volts/mil
@ .009" (.23mm)

Chemical: Impervious to most organic chemicals,
solvents, fuels and lubricants.



Cirlex® Applications

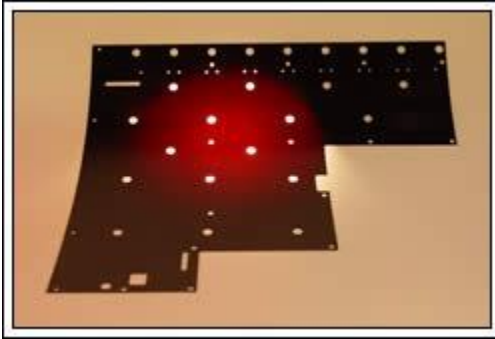


Application: DC to DC Filter

Dielectric shielding of DC to DC filters for both active and passive filtering to achieve greater than 40 dB of noise attenuation from 60 Hz to 1 Mhz.

Cirlex® laminated to aluminum on two sides was used in this application to provide a three-fold solution for the customer:

1. The customer was able to replace a heavier 15mil aluminum material with the custom laminate that not only reduced the units overall weight considerably but also eliminated the need for a secondary coating process.
2. The product's overall performance increased greatly.
3. The cost of the product was reduced.



Portable X-ray Unit

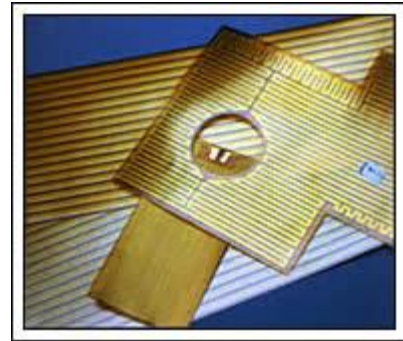
Application: Dielectric shielding for Remote, Compact Radiographic and Fluoroscopic System designed for use in space constrained offices and field diagnostics that is capable of meeting a wide variety of digital record and fluoroscopy exam needs.

Cirlex® is used as a main dielectric shielding component in the new units to allow for highly dense and powerful components to be in close vicinity. The excellent thermal, dielectric and dimensional properties of Cirlex® make this possible.

Flexible All-Polyimide Heater

Application: All-Polyimide heaters are being sought for their high performance in demanding applications. Their main qualities are:

- All-Polyimide Construction
- Low Weight and High Performance; Very Thin & Very Efficient
- Excellent Durability
- Very Cost Competitive
- Extremely High Constant Operating Temperature



Flexible Board to Board Connector

- Rigid-flex design
- 100% all polyimide construction; absolutely no adhesives
- Can have multiple layers of polyimide and metallization
- Can operate at temperatures from -269 C to +250 C
- All materials have same dielectric constant / impedance matched



Flex-to-Board Connectors, BGA & LGA Sockets

- Cirlex® is widely used in high performance Flex-to-Board Connectors. This material is used when high reliability and performance in molding operations is required to manufacture high density connector assemblies.
- BGA and LGA sockets also require very stable material that can withstand high temperature molding and assembly operations. Cirlex® is the only material found to do this and be cost effective.

Solder Pad Stencils

- Stencils can be pure polyimide or a laminate of polyimide and metal foil. i.e polyimide + Stainless Steel
- Polyimide and polyimide laminate stencils are more durable and resist bending and tearing better than mesh stencils

Flex Circuit Stiffeners

- Used in many applications where the durability and strength of polyimide are required
- Can be used with many adhesive types including PSA's and Thermosets

Electrical Insulators

- Used in applications where extreme conditions, such as temperature and corrosive atmosphere, are present.
- Can be scored and folded in slight most cases to fit into non-flat applications
- Has all the electrical properties expected in a polyimide material

Fiber Optic Laser Guides

Gaskets and Seals

- Cirlex® is easily machined to make complex designs that can be used in many gasket and seal applications.
- Cirlex® presently used in mechanical seal applications where durability in extreme conditions is required.
Wear Pads

Stand-offs and Spacers

- Cirlex® is currently used as a high temperature spacer in military engine systems. Both thermal and mechanical strength is required in this application.

Fine Line and Rigid Flex Circuits

- Cirlex® can be used in conjunction with other all polyimide materials to make variable thickness, rigid-flex assemblies. Current applications in micro-electronics and high frequency communications.

High Temperature, Flexible and Rigid-Flex Heaters

- Can be used to make very reliable flexible heaters. All polyimide systems are by construction UL®-94V0 capable.

Extreme Environment Antennas

High Amperage Power Bus

Electromagnetic Wafer Chucks

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