

Kapton电加热片

可提供各种形状、规格和功率大小的Kapton挠性电加热板，此电加热板结构很薄（最厚仅0.25mm），可以根据工件的形状任意弯曲，确保与工件接触紧密，保证最大的热能传递。Kapton挠性电加热板是一种半透明或全透明的金属柔性电加热膜，其中上、下表面是一种耐温性好、绝缘性能优的薄膜，例Kapton膜，Teflon膜及硅胶膜，中间为特殊合金箔制成的电阻性电路。它比丝状电热结构提供更均匀的热场，更短的加热时间和更快的响应时间，与丝状电热结构相比，功率负荷低，使用寿命更长。根据用户要求，本产品可以提供安装用的压敏版PSA或环氧胶。

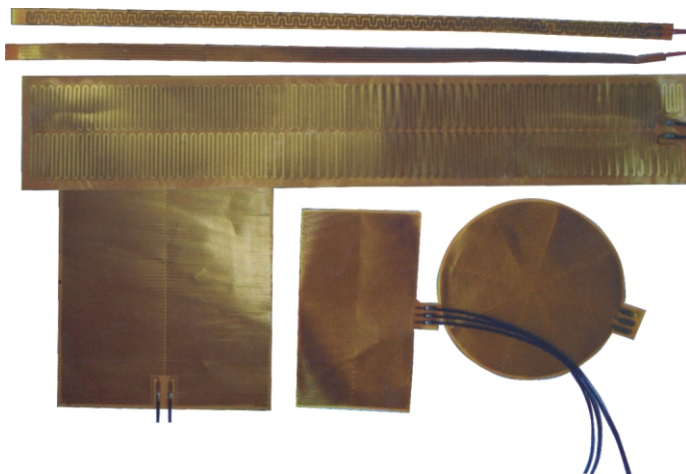
由于本产品重量轻结构强度高，发热均匀，现已被广泛运用到卫星、航天设备和移动仪器的防冻、加热上。

本产品工作电压：1V--100V，根据加热工件的要求，可以制成各种不同的加热回路，例如可以要求其中的某些回路加热，某些回路作为保温伴热，因此设计非常灵活。本挠性电加热板耐油、耐化学腐蚀和耐辐射，可广泛使用在工况条件比较苛刻的场合。

Kapton Flexible Electric Heater

Kapton Insulated Flexible Heaters are offered in a virtually unlimited range of shapes, sizes and wattages. Their thin design(0.005"thick), allows close thermal contact with the heat sink for maximum heating efficiency, and also permits close adaptation the to contours of your part. They can be coiled, twisted, accordion folded, bent around corners, or simply pre-formed to fit the contours of any part. They are lightweight, transparent, tough, and ideal for extremely precise applications in satellites, spacecraft and portable instruments. Their flat etched foil elements cover more area and transfer heat more efficiently than wire wound designs. This allows faster warm-ups and quicker response, and since the elements run cooler, longer life as well. They also operate safely at much higher wattage's than wire wound units. Evenly spaced heating elements do not always provide uniform temperatures across a given area, so the elements can be patterned to provide greater in areas where the configuration of the component tends to prevent uniform heating. Similarly, elements can be spaced or arranged to produce less heat in the areas where that may be desirable.

The Kapton insulation is dimensionally stable, self-extinguishing, and highly resistant to oils, chemicals, fungus, solvents and radiation. It is easy to clean and sterilize in medical uses, and produces minimal outgassing in high vacuum environments. It is ideal for service in harsh environments. The operating voltages may be from one or two volts up to 500V, Several circuits may be arranged in layers or adjacently. Thus the same element may compose one circuit for quick heating and another for temperature maintenance.



◎产品特点

- ◇所占空间极小；重量极轻；厚度极薄。
- ◇极其柔软，其最小弯曲半径仅为0.8mm左右。
- ◇形状及大小极其灵活，尤其适合于制作面积极小的柔性电热膜元件。
- ◇采用面状发热方式，容许表面功率负荷极大，最大可达到 $7.8\text{W}/\text{cm}^2$ 。因此，本产品具有加热均匀性能好，加热速率快的特点。
- ◇在不同面积部位可满足不同的加热功率要求和加热温度要求，可按要求设计，实现在加热面上的温度分布。
- ◇热惯量小，温度控制精度高，升温速度快。
- ◇作为保护层的绝缘薄膜具有极低的饱和蒸汽压，放气性极低，同时具有优异的抗化学腐蚀性能，抗菌性能以及抗辐射性能。因此，本挠性电加热板的系列产品适用于真空环境、与石油及大多数化学品（如，酸性、化学溶剂、一般的碱液）接触的环境。电热元件 HEATING COMPONENTS。
- ◇可以方便地与温度控制器或传感器集成为一体。
- ◇带PSA不干胶的产品更便于快捷的安装（适用 $1\text{w}/\text{cm}^2$ 和 $2\text{w}/\text{cm}^2$ ），本电加热板也可以由用户用机械压接或环氧胶粘接的方式安装。
- ◇本系列产品安全、可靠，使用寿命长。

◎典型应用领域

- ◇科学分析仪器，如：为导热系数测定仪提供恒温源，医疗仪器和稳定光电子元件工作温度等。
- ◇在深冷环境中，使仪器设备达到安全工作温度。例如：人造卫星，空间飞行器中仪器以及在高纬度地区使用的仪器、仪表的防低温，如卡式阅读器，液晶显示器LCO等仪器。
- ◇真空加热与烘烤领域。
- ◇军工领域，如导弹、舰船、坦克、雷达。
- ◇汽车后视镜除霜片，天线或雷达的除雪、除霜加热元件以及调速电阻片等。
- ◇医疗保健及美容仪器行业。

Product Features

- ◇Light-weight, thin thickness offer faster warm-ups and quicker response.
- ◇Very flexible offer thermal contact with the Part for maximum heating efficiency.
- ◇Offered in a virtually unlimited range of shapes, sizes and wattages.
- ◇Their flat etched foil elements cover more area and transfer heat more efficiently than wire wound designs.
- ◇On request, temperature distribute in the surface of the heater.
- ◇Small thermal lag, precision temperature control and fast response.
- ◇Kapton insulation is dimensionally stable, self-extinguishing, and highly resistant to oils, chemicals, fungus, solvents and radiation.
- ◇Thermostats and other sensors may be integrated into the design for accurate control and temperature tracing.
- ◇PSA is available as an option on heater rated at $1\text{w}/\text{cm}^2$ and $2\text{w}/\text{cm}^2$. The heater can be mechanically clamped or epoxy mounted by the user.
- ◇Very Safety, realizable and long life.

Application

- ◇Analysis instrument for science.
- ◇Semiconductor wafer processing.
- ◇Military, Satellites or other spacecraft where low out gassing properties are required.
- ◇Medical, Instruments, Laboratory research where exact uniform heating, different watt densities and thorough cleaning or sterilization is needed.
- ◇Optical and Photographic equipment.
- ◇LCD display and Computer equipment.
- ◇Heating of electronic components.
- ◇Packaging, fusing, and splicing equipment.