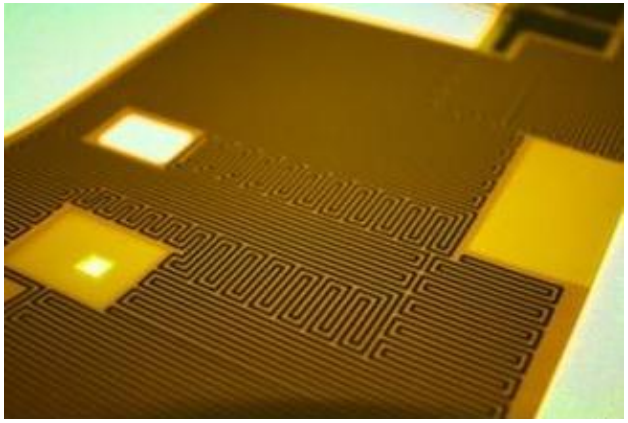
MATERIALS SELECTION GUIDE FOR FLEXIBLE HEATERS



Flexible heaters are manufactured by inserting between layers of dielectric insulating material a resistive circuit that can be implemented using different technologies such as metal sheet, ink printing or resistive wires incorporated. When this type of heater operates below the maximum work temperature allowed, its life can be considered virtually infinite; in fact none of its components undergoes significant deterioration during the normal life cycle of the product. For this purpose, the following are determining factors:
軟式電熱片透過不同的技術如金屬蝕刻、油墨印刷或繞線技術將電阻電路封裝進至少雙層絕緣薄膜材料中，在正常工作環境且下不超過最高工作溫度條件下，它的壽命一般認定為無限的半永久狀態，為防止相關零組件在產品的正常工作狀態下產生損壞，需注意以下參考因素：

- Plan and define the appropriate specific power according to each application
  依據個別應用環境定義適當的發熱功率
- Select suitable adhesion between heater and surface to be heated
  選擇適當的壓合膠系將發熱元件封裝於絕緣薄膜材料之間

Insulation	Description	Temp. Range	Environment	Applications
Polyimide	1. Clear amber film 2. Black film	-60 ~ 150 deg C	1. General purpose 2. Resistant to most chemicals 3. Low out-gassing	1. Medical & lab device 2. Outdoor electronic device
Silicone Rubber	Fiberglass reinforced elastomeric	-60 ~ 230 deg C	1. Critical condition 2. Resistant to many chemicals 3. Durable 4. Vulcanized to metal parts	1. Industrial high temp. machine 2. Aerospace 3. Semiconductor
Polyester	1. Transparent film 2. White film	-50 ~ 90 deg C	1. General purpose with medium temp. 2. Low power consumption	1. Commercial low cost 2. Mirror defogging