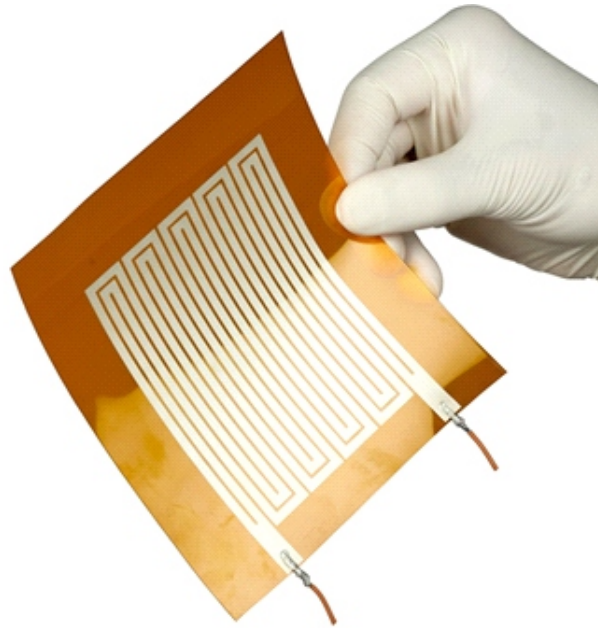




Printed PTC-Heater-Flexible Self-Regulating Heating Elements

Self-regulating printed heaters for automotive, medical, apparel, and food temperature control

PTC (Positive Temperature Coefficient) Heaters Are Thin, Flexible Heating Elements Produced Through Screen Printing On Flexible Substrates Using Specialized Ptc Inks. These Heaters Intelligently Regulate Their Temperature—automatically Reducing Power Consumption As They Warm Up-making Them Safe, Efficient, And Reliable. Printed Ptc Heaters Are Ideal For Compact, Low-voltage Applications Where Lightweight, Uniform, And Self-regulating Heat Is Required. Their Flexible Design Allows Seamless Integration Into Automotive, Medical, Consumer, And Industrial Products.

SPECIFICATIONS :

- Technology: Screen-printed PTC heating film
- Material Type: PTC (Positive Temperature Coefficient) inks on flexible substrate
- Operating Principle: Resistance increases with temperature rise (self-regulating)
- Typical Resistivity: ~100 Ω /sq (adjustable per application)
- Power Output Formula: $P = N \times V^2 / R_0$
- P = heating power
- N = number of parallel squares
- V = applied voltage
- R_0 = initial resistivity (Ω /sq)
- Radiation Type: Primarily infrared (IR) emission
- Form Factor: Flat, flexible, printable pattern designs

Key Features :

- Self-regulating heating based on PTC material properties
- Uniform heat distribution across large or complex surfaces
- Thin, lightweight, and flexible printed construction
- Safe operation: avoids overheating or temperature spikes
- Customizable voltage, shape, and resistance
- Energy-efficient due to automatic power adjustment
- Printable on various flexible substrates (PET, polyimide, etc.)
- Quick heat-up and cool-down response

Advantages :

- Self-regulating temperature without external control electronics
- Energy-saving and safe due to automatic power adjustment
- Uniform and stable heat output
- Compact, thin, and flexible design
- Fast response time with minimal warm-up delay
- Customizable for shape, size, and voltage
- Suitable for a wide range of applications from automotive to medical devices

Application :

- Automotive seat and steering wheel heating
- Battery warming systems
- 1. Medical and therapeutic heaters (surgical recovery aids, patient comfort)
- De-icing and anti-fog systems
- Wearable heating elements and smart apparel

Technical Specifications :

Model Number	PE PTC Heater
Category	Functional Printed Electronics

Industry :

- Defense Sector
- Medical
- Industries