

Flexible Heaters



Polyimide Heaters

Polyimide is a thin, lightweight organic polymer film that provides excellent tensile strength, tear and solvent resistance and dimensional stability. The polyimide heater is ideal for applications requiring low outgassing in a vacuum or resistance to radiation, fungus and chemicals.

Performance Capabilities

- For operating environments as low as -319°F (-195°C), heater temperature as high as 392°F (200°C)
- Watt densities up to 50 W/in² (7.75 W/cm²)^①
- UR[®] and C-UR[®] recognitions

Features and Benefits

Excellent physical and electrical properties

- Results in thermal stability over a wide temperature range

Transparent polyimide material

- Allows inspection of internal details

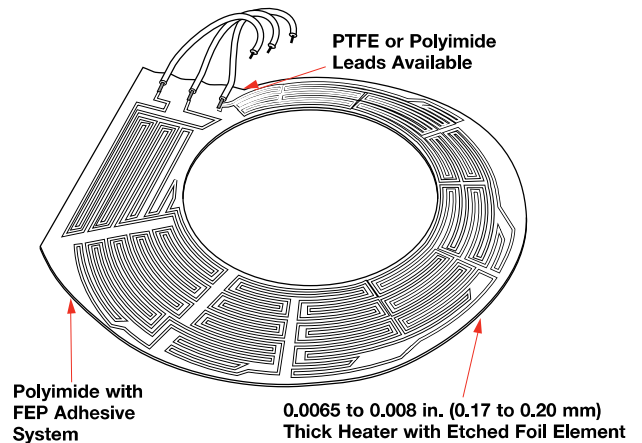
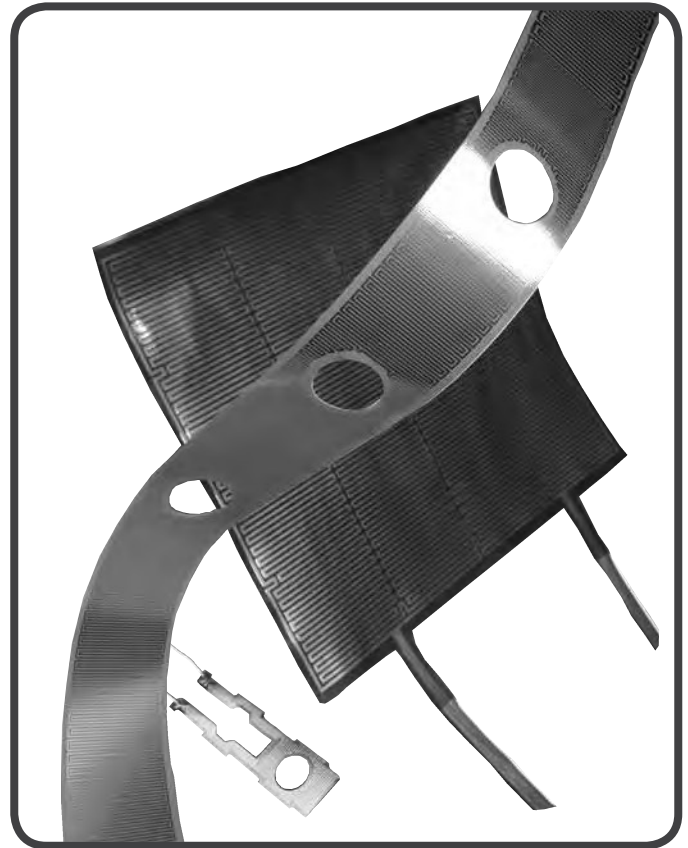
Resistance to radiation and fungus

- Allows it to be used in a wide range of applications

Typical Applications

- Medical applications that require a clean, sterile environment
- Laboratory research
- Semiconductor processing equipment
- Optical equipment
- LCD displays
- Computer equipment
- Photographic equipment
- Aerospace/defense, where low outgassing properties are required

① Watt density limits are application dependent (operating temperatures, bonding method and heat sink).





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Technical Data

Specifications

Thickness

- 0.007 in. (0.2 mm)

Flexibility (min. radius)

- 1/32 in. (0.8 mm)

Weight

- 1.5 oz/ft² (0.05 g/cm²)

Operating temperature

- Max.: 392°F (200°C)
- Min.: -319°F (-195°C)

Watt density rating on stock units

- 5 W/in² (0.8 W/cm²)

Dielectric strength

- Min. VAC: 1000

Flammability rating

- Self-extinguishing

Heater size limitations

- 18 x 26 in. (457 mm x 660 mm)

Weight loss (outgassing)

- 0.51%

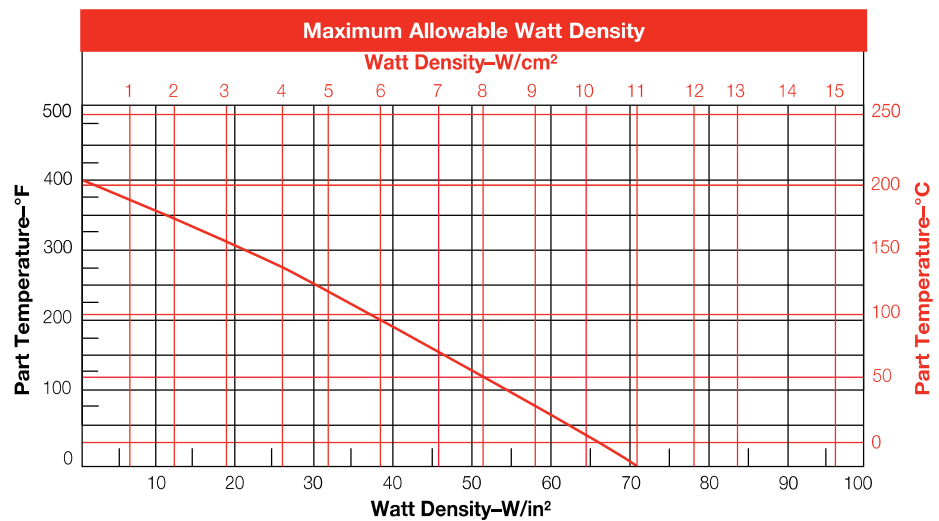
Lead length

- 12 in. (305 mm) PTFE E

Maximum Allowable Watt Density Versus Temperature

To achieve optimum performance with your Watlow polyimide heater, use a proper watt density on the surface of the heater.

The graph recommends watt densities for temperatures using a temperature controller. It does not indicate the watt density needed to achieve a given part temperature.



Note: The maximum watt density (W/in²) in open air is 5 W/in². The chart above assumes bonding the polyimide heater to a part.