Polyimide Material Offers Strength, Tear Resistance and Stability

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

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

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).

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 of radiation and fungus
  - Allows it to be used in a wide range of applications
Specifications

Thickness
• 0.007 in. (0.2 mm)

Flexibility (min. radius)
• ½ 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 (0.8W/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.