

Flexible Heaters

HT Foil

This high temperature etched foil heater from Watlow is designed for demanding applications requiring operating temperatures up to 1100°F (595°C). The heater, only 0.030 inch (0.76 mm) thick, is insulated with a mica sheet. The heater is fairly rigid and must be securely and uniformly clamped from both sides for support and good heat transfer during operation.

Performance Capabilities

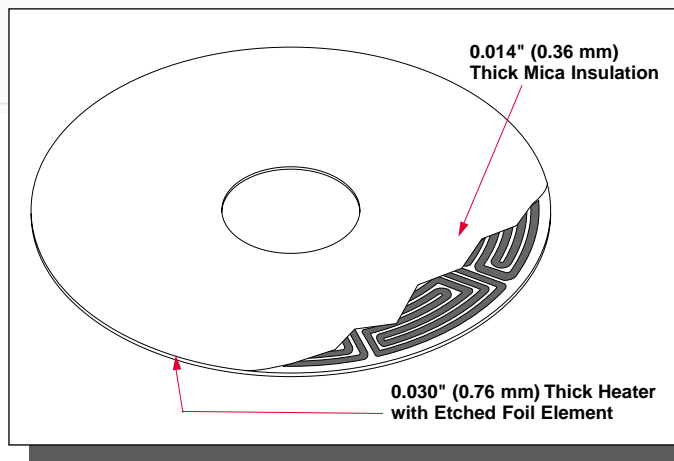
- Operating temperatures to 1100°F (595°C)
- Watt densities to 110 W/in² (17 W/cm²) when operating at 500°F (260°C). Watt density should decrease as temperature increases.

Features and Benefits

- **High temperatures and watt densities** for more demanding applications.
- **Fast heat-up** due to thin construction and low mass design.
- **Easy to design** in circular or complex two-dimensional shapes.
- **More uniform part temperatures** are possible with etched foil zoned heating.

Applications

- Semiconductor industry: wafer processing equipment
- High temperature platens for laminating presses



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Applications and Technical Data

Installation and Mounting

The HT Foil heater is designed to be permanently clamped. If the lead connection points are within the clamped area, a relief in one of the clamped surfaces is required to allow adequate clamping of the active heater area.

For further details on mounting methods, see **Watlow technical letter #6**, flexible heaters.

General Specifications

Although Watlow doesn't stock HT Foil heaters, there are several specifications common to most of the custom designs. They include:

- **Thickness over heated area:**
0.030 inch (0.76 mm)
- **Thickness over lead connection area:**
0.200 inch (5 mm)
- **Dielectric strength—volts ac, minimum:**
1000V~(ac)
- **Maximum operating temperature:**
1100°F (593°C)
- **Maximum allowable watt density at various temperatures:**

1000°F (540°C)	20 W/in ² (3.1 W/cm ²)
900°F (480°C)	40 W/in ² (6.2 W/cm ²)
800°F (425°C)	60 W/in ² (9.3 W/cm ²)
700°F (370°C)	75 W/in ² (11.6 W/cm ²)
600°F (315°C)	90 W/in ² (14 W/cm ²)
500°F (260°C)	110 W/in ² (17 W/cm ²)
- **Lead wire—Type MGT 600 volt with Nickel clad Cu conductor:**
840°F (450°C)

Options

The following options are possible with HT Foil heaters from Watlow:

- Holes, cutouts, and notches
- Zoned wattage



Detailed information on holes, cutouts and notches can be found on page 166 in the Flexible Shapes and Geometries section.

F.O.B.: Columbia, Missouri

How to Order

All HT Foil heaters from Watlow are **made-to-order**. Please provide the following application information to place an order or request a quote:

- Size (dimensions)
- Voltage
- Wattage/watt density
- Operating temperature
- Options (holes, zoned wattage)
- Quantity

Availability

Consult factory