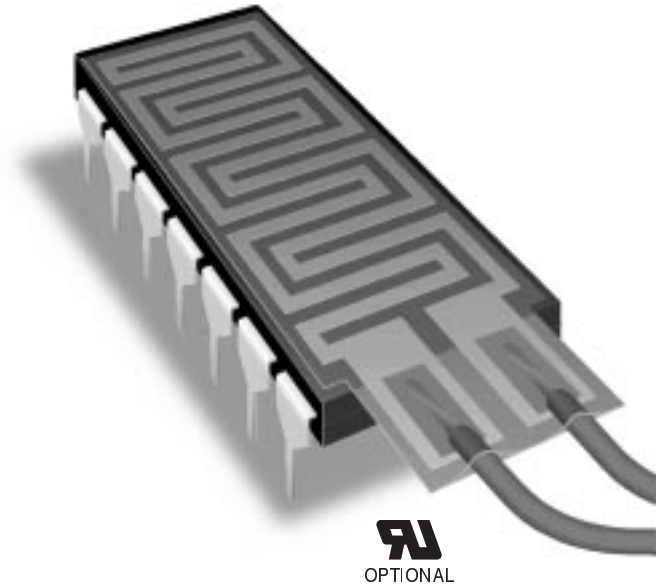


## Miniature Heating Elements For Electronic Components

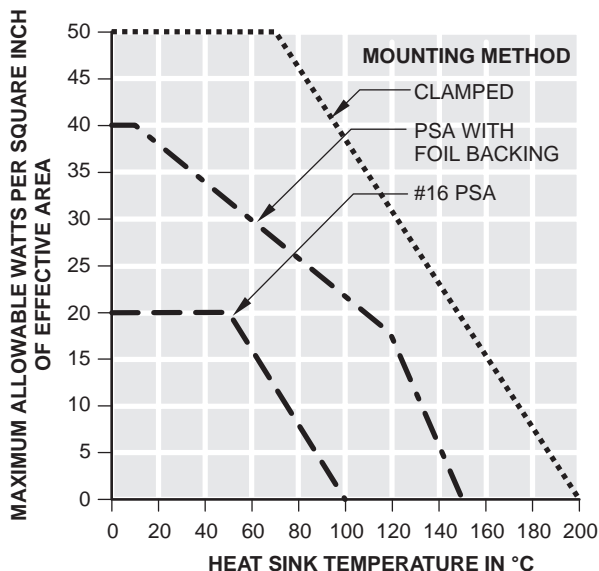
- ◆ Precision heating elements for integrated circuits, crystal oscillators, lasers, and other components
- ◆ Ideal for
  - Thermal stress testing
  - Heat source simulation for thermal prototyping
  - Stabilization in cold environments
- ◆ Sizes start at 0.25" x 0.25" (6.4 x 6.4 mm)
- ◆ -200 to 200°C operating range
- ◆ Etched-foil element provides high watt density
- ◆ Optional UL component recognition

Thermofoil™ heaters are the simple and convenient way to heat, test, or simulate electronic devices. Thin and flexible, they mount on surfaces with self-stick adhesive or clamp beneath IC bodies. Polyimide construction withstands high temperatures and is NASA approved for vacuum operation. Choose from a variety of sizes and resistance ratings to fit your application.



### Specifications

**Temperature range:** -200 to 200°C (-328 to 392°F). Upper limit with 0.003" (0.08 mm) foil backing is 150°C (302°F).  
**Material:** Polyimide/FEP, 0.002"/0.001" (0.05/0.03 mm).  
**Resistance tolerance:** ±10%.  
**Dielectric strength:** 1000 VRMS.  
**Minimum bend radius:** 0.030" (0.8 mm).  
**Leadwire:** Red TFE insulated, stranded, per MIL-W-16878 and UL Style 1716. 5.0 A max. at 100°C ambient temperature.  
**Maximum allowable watt density:**



*This chart assumes that the heating element (except for leadwire tab) is in intimate contact with the heat sink.*

### Custom options

- ◆ Other sizes, shapes, electrical characteristics
- ◆ Solder pads or flex-circuitry instead of leadwires for lower cost
- ◆ High temperature mica and ceramic heaters
- ◆ Integral temperature sensors

*Request Bulletin HS-201 for hundreds of standard Thermofoil heater models.*

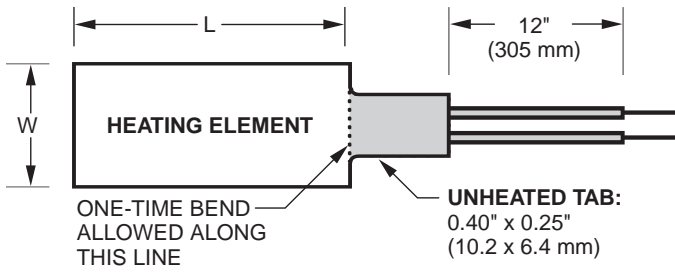
### Heaterstat™ sensorless temperature controller

Minco model CT198 DC controller works with heaters having special temperature-sensitive elements (see resistance options on the next page, last 2 columns). As the CT198 powers the heater, it reads element temperature and controls accordingly. You get accurate, inexpensive electronic control without the added cost and bulk of a separate temperature sensor.

*Request Bulletin CT198 for complete specifications.*



## Dimensions



### Maximum heater thickness:

Over element 0.012" (0.3 mm)  
 Over tab 0.060" (1.5 mm)  
 Add 0.005" (0.1 mm) to above dimensions for foil backing.

**Dimensional tolerance:** ±0.03" (±0.8 mm)

## How to order

HK5575	<b>Model number from table below</b>	
R20.9	<b>Heater resistance in ohms from table below</b>	
L12	<b>Lead length: 12" (305 mm)</b>	
B	<b>Heater backing options</b>	<b>Temp. range</b>
	A = No adhesive	-200 to 200°C
	B = #16 pressure sensitive adhesive (PSA)	-32 to 100°C
	C = #17 acrylic film	-200 to 150°C
	D = Aluminum foil backing	-200 to 150°C
	E = Foil/#10 PSA	-32 to 150°C
	F = Foil/#12 PSA	-73 to 177°C
U	<b>U = Marked for UL component recognition</b>	
	Omit for no UL marking (lower cost)	
	Limits leadwire to 150 V, 150°C	
	105°C max. with "C" backing option	
HK5575R20.9L12BU ← Sample part number		

Size (inches)		Size (mm)		Resistance values in ohms ±10%							Effective area (in <sup>2</sup> )	Lead AWG	Model number
W	L	W	L	Temperature sensitive elements →					At 20°C				
0.25	0.25	6.4	6.4	10.0	5.3						0.04	30	HK5565
0.25	0.50	6.4	12.7	15.0	7.9	4.3					0.08	30	HK5566
0.25	0.75	6.4	19.1	20.0	10.5	5.7					0.13	30	HK5567
0.25	1.00	6.4	25.4	25.0	13.1	7.1			4.2		0.18	30	HK5568
0.25	1.25	6.4	31.8	30.0	15.8	8.5			5.1		0.23	30	HK5569
0.25	1.50	6.4	38.1	35.0	18.4	10.0	4.7		5.9		0.27	30	HK5570
0.25	1.75	6.4	44.5	40.0	21.0	11.4	5.3		6.8		0.32	30	HK5571
0.50	0.50	12.7	12.7	26.5	13.9	7.5			4.5		0.19	30	HK5572
0.50	0.75	12.7	19.1	30.0	15.7	8.5			5.1		0.30	30	HK5573
0.50	1.00	12.7	25.4	35.0	18.3	10.0	4.6		5.9		0.41	30	HK5574
0.50	1.25	12.7	31.8	40.0	20.9	11.4	5.3		6.8		0.52	30	HK5575
0.50	1.50	12.7	38.1	45.0	23.5	12.8	5.9	4.4	7.6		0.63	30	HK5576
0.50	1.75	12.7	44.5	50.0	26.1	14.2	6.6	4.9	8.5		0.74	30	HK5577
0.75	0.75	19.1	19.1	35.0	18.3	9.9	4.6		5.9		0.48	30	HK5578
0.75	1.00	19.1	25.4	40.0	20.9	11.4	5.2		6.8		0.65	30	HK5579
0.75	1.25	19.1	31.8	45.0	23.4	12.8	5.9	4.4	7.6		0.82	30	HK5580
0.75	1.50	19.1	38.1	50.0	26.0	14.2	6.5	4.8	8.5		0.99	30	HK5581
0.75	1.75	19.1	44.5	55.0	28.6	15.6	7.2	5.3	9.3		1.17	30	HK5582
1.00	1.00	25.4	25.4	70.0	36.6	19.9	9.2	6.8	5.2	11.9	0.88	30	HK5583
1.00	1.25	25.4	31.8	65.0	33.9	18.5	8.5	6.3	4.7	11.0	1.12	30	HK5584
1.00	1.50	25.4	38.1	75.0	39.1	21.3	9.8	7.3	5.4	12.7	1.35	30	HK5585
1.00	1.75	25.4	44.5	100	52.2	28.4	13.1	9.7	7.3	17.0	1.59	30	HK5586
1.25	1.25	31.8	31.8	100	52.2	28.4	13.1	9.7	7.3	17.0	1.42	30	HK5587
1.25	1.50	31.8	38.1	125	65.3	35.5	16.4	12.2	9.2	21.2	4.8	30	HK5588
1.25	1.75	31.8	44.5	150	78.4	42.6	19.7	14.6	11.0	25.4	5.8	30	HK5589
1.50	1.50	38.1	38.1	150	78.3	42.6	19.7	14.6	11.0	25.4	5.8	30	HK5590
1.50	1.75	38.1	44.5	175	91.4	49.7	23.0	17.1	12.9	29.7	6.8	30	HK5591
1.75	1.75	44.5	44.5	200	104	56.8	26.3	19.5	14.7	33.9	7.7	30	HK5592



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