

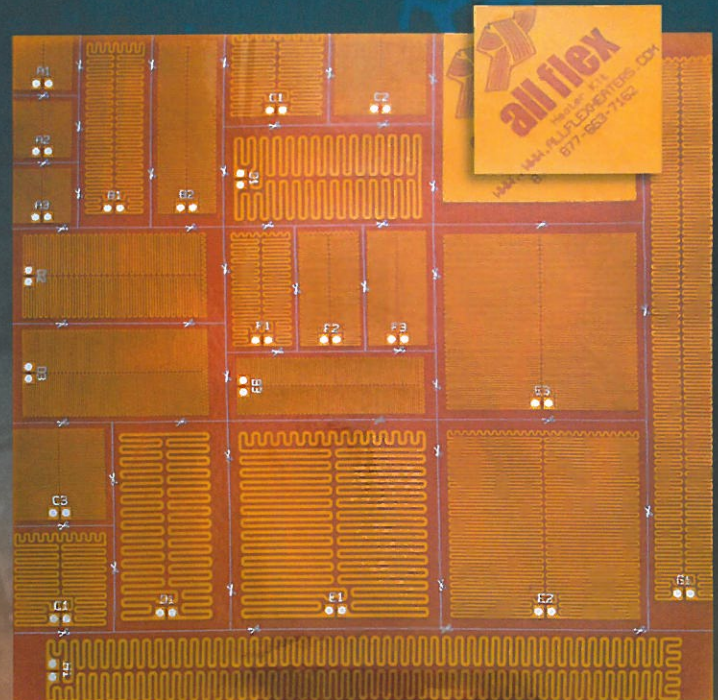
POLYIMIDE HEATER DESIGN KIT

HELPING CREATE CUSTOM HEATING SOLUTIONS

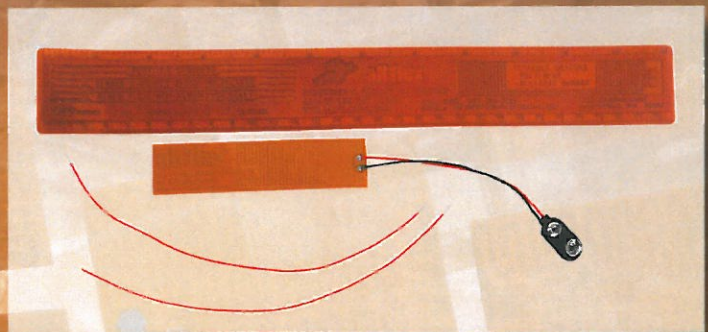
The flexible heater design kit is offered as an engineering tool to help identify a heating solution using commonly specified flexible polyimide materials. Tests are often performed at varying heater voltages until desired temperatures are reached. This information can be used to define a custom heater for an individual application. This kit can also be used by the designer to combine various heater sizes to mimic a specific heat sink during initial product development.

Heater Kit Details

- The heater kit comes in 11" x 11" sheet format
- Seven different sizes
- Numerous heater configurations to be easily cut out from the 22 options available
- Various resistance and wattages combinations can be tested
- Wires for easy soldering assembly included
- One sheet of high temperature pressure sensitive adhesive (PSA)



Multiple heaters are excised from the design kit.



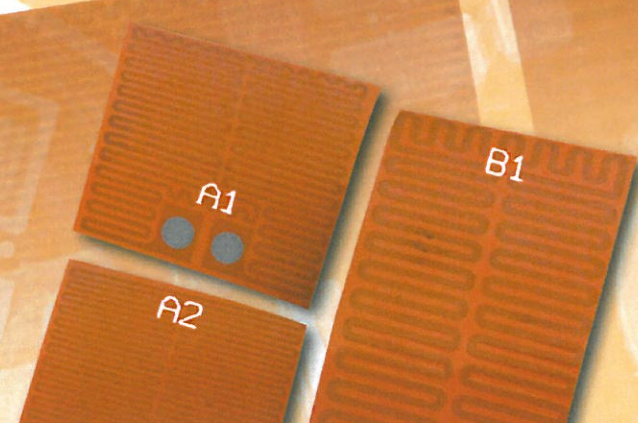
Ruler and wires are included in the design kit.

Order Your Kit Today
\$200

Call: **877.663.7162** or
Email: **customersupport@allflexinc.com**

www.allflexheaters.com

See reverse side for ordering info & heater matrix table



POLYIMIDE HEATER DESIGN KIT

- Temperatures to 150°C (302F)
- Excellent tensile strength and tear resistance
- Thin polyimide heaters conform to curved heating surfaces and space restricted areas
- Low outgassing
- Small, flexible radius
- Examples shown with 12V, 28V and 40V and wide variety of wattages
- Chemically resistant to many solvents and oils
- Comes with high temp pressure sensitive adhesive (PSA) backing and wires

POLYIMIDE PARAMETERS	
Size Range	1" - 10"
Temperature Range*	-100°C - 150°C (212F-302F)
Resistance Range	Up to 250 ohms per square inch
Total Thickness	.005"
Insulation Resistance	4000-5000 V/mil
Resistance Tolerance	+/- 10%
Voltage Examples	12V, 28V and 40V
Coverlay Thickness	.001"
Leads	12"
Minimum Bend Radius	.25" R
Bond/Peel Strength (to flat plate using PSA)	6 Lb/in

EXAMPLES OF HEATER PERFORMANCE AT 12, 28, & 40 VOLTS

Voltage →	Size			Resistance			Amps			Total Wattage			Watt Density		
	12V	28V	40V	12V	28V	40V	12V	28V	40V	12V	28V	40V	12V	28V	40V
	A1	1x1	1x1	1x1	28	28	28	0.4	1.0	1.4	5.1	28.0	57.1	5.1	28.0*
A2	1x1	1x1	1x1	48	48	48	0.3	0.6	0.8	3.0	16.3	33.3	3.0	16.3*	33.3*
A3	1x1	1x1	1x1	78	78	78	0.2	0.4	0.5	1.8	10.1	20.5	1.8	10.1	20.5*
B1	1x3	1x3	1x3	27	27	27	0.4	1.0	1.5	5.3	29.0	59.3	1.8	9.7	19.8*
B2	1x3	1x3	1x3	76	76	76	0.2	0.4	0.5	1.9	10.3	21.1	0.6	3.4	7.0
B3	1x3	1x3	1x3	115	115	115	0.1	0.2	0.3	1.3	6.8	13.9	0.4	2.3	4.6
C1	1.5x1.5	1.5x1.5	1.5x1.5	18	18	18	0.7	1.6	2.2	8.0	43.6	88.9	3.6	19.4*	39.5*
C2	1.5x1.5	1.5x1.5	1.5x1.5	67	67	67	0.2	0.4	0.6	2.1	11.7	23.9	1.0	5.2	10.6
C3	1.5x1.5	1.5x1.5	1.5x1.5	139	139	139	0.1	0.2	0.3	1.0	5.6	11.5	0.5	2.5	5.1
D1	1.5x3	1.5x3	1.5x3	18	18	18	0.7	1.6	2.2	8.0	43.6	88.9	1.8	9.7	19.8*
D2	1.5x3	1.5x3	1.5x3	95	95	95	0.1	0.3	0.4	1.5	8.3	16.8	0.3	1.8	3.7
D3	1.5x3	1.5x3	1.5x3	195	195	195	0.1	0.1	0.2	0.7	4.0	8.2	0.2	0.9	1.8
E1	3x3	3x3	3x3	37	37	37	0.3	0.8	1.1	3.9	21.2	43.2	0.4	2.4	4.8
E2	3x3	3x3	3x3	120	120	120	0.1	0.2	0.3	1.2	6.5	13.3	0.1	0.7	1.5
E3	3x3	3x3	3x3	246	246	246	0.0	0.1	0.2	0.6	3.2	6.5	0.1	0.4	0.7
F1	1x2	1x2	1x2	18	18	18	0.7	1.6	2.2	8.0	43.6	88.9	4.0	21.8	44.4*
F2	1x2	1x2	1x2	47	47	47	0.3	0.6	0.9	3.1	16.7	34.0	1.5	8.3	17.0*
F3	1x2	1x2	1x2	97	97	97	0.1	0.3	0.4	1.5	8.1	16.5	0.7	4.0	8.2
G1	1x10	1x10	1x10	92	92	92	0.1	0.3	0.4	1.6	8.5	17.4	0.2	0.9	1.7
H1	1x10	1x10	1x10	45	45	45	0.3	0.6	0.9	3.2	17.4	35.6	0.3	1.7	3.6

* Etched foil heaters are typically used in applications with watt densities <15w/sqin. Custom heaters with greater watt densities do operate successfully in many applications but require closely monitoring ramp up temperature. Proper bonding of the heaters to a heat sink requires care to avoid areas without good contact. Air bubbles can create hot regions and premature failure. Note - cleanliness of the heat sink prior to heater attachment is a key precaution.

Note - Heater kits are intended for design and verification purposes only.



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877.663.7162
Established 1991

Order Your Kit Today
\$200

Call: 877.663.7162 or
Email: customersupport@allflexinc.com

Orders typically shipped same day or within 24 hrs. Credit Cards accepted & encouraged if you are not an existing All Flex customer. For more info visit www.allflexheaters.com