

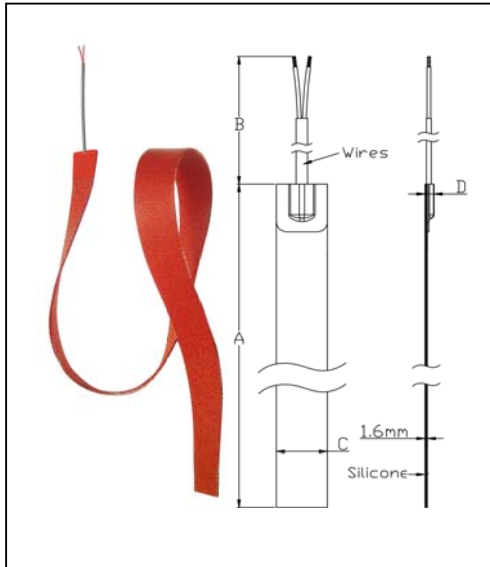


ULTIMHEAT WEB CATALOG

9AS-Band Heater
P1/6



DIMENSIONS



MAIN FEATURES

ULTIMHEAT silicone heating elements are made of laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded wire wound heating element. Fiberglass-reinforced silicone rubber gives heater dimensional stability without sacrificing flexibility. Silicone is used because of its high temperature resistance (permanent temperature up to 200°C (390°F), high thermal conductivity (~7-10 W/cm.K) and good electrical insulation properties (~12KV/mm). A fiberglass grid, which is visible under the surface, reinforces the silicone rubber sheets. The wire wound heating element web covers the entire surface of the heater. This web could be designed such that holes and cut-outs are incorporated on the heater. A fiberglass grid, which is visible under the surface, reinforces the silicone rubber sheets. The wire wound heating element web covers the entire surface of the heater. This web could be designed such that holes and cut-outs are incorporated on the heater. This construction makes silicone rubber heaters an ideal solution to the requirements of many low and medium temperature applications, which do not conform to the shapes, sizes and dimensions of band, strip, cartridge, tubular and coil heaters.

MAIN APPLICATIONS

-Silicone flexible band heaters are designed to provide process temperature maintenance to metallic and plastic piping, valves, pumps, water meters and are usually wrapped around the equipment.

TECHNICAL FEATURES

Length (A on drawing): 250 mm to 700 mm (10" to 30"). On special order: up to 1000mm (40")

Width (C on drawing): 25, 50 and 75 mm (1", 2", 3")

Dimensional tolerances:

- 0 to 150 mm (0 to 6 inches): +/- 1.5 mm (+/- 1/16 inch)
- 150 to 500 mm (6 to 20 inches) : +/- 3.5 mm (+/- 1/8 inch)
- 500 mm to 1000 mm (20 to 35 inches): +/- 5 mm (+/- 3/16 inch)

Tighter tolerances are available on custom designs if needed

Standard heater thickness without adhesive, leads output not included: 1.60 mm +/- 0.15 mm (0.065 inch +/- 0.005") .Add 0.1 mm (0.005") to above dimensions for foil backing.

Maximum total thickness over leads (D on drawing):

- AWG 22 (0.3 mm²) 0.15" (3.8 mm)
- AWG 20 (0.5 mm²) 0.16" (4 mm)

Silicone foil minimum bending radius: 0.125" (3.2 mm)

Standard Weight: 0.24 gr/cm² 240 g/m² (8 oz./ft²)

Ingress protection: IP65

Maximum operating temperature: peak 230 °C (446°F), continuous: 200 °C (390 °F)* Even if silicone heaters can be used at higher temperature, we recommend for a safe and durable use that maximum permanent surface temperature on silicone should not rise more than 160°C and maximum acceptable peak temperature should not rise more than 200°C.

Minimum ambient temperature: -60 °C (-80 °F)*

* These maximum and minimum temperatures apply to silicone heaters only. Restriction will apply for controls

Voltage: 12V to 600V, AC or DC (UL rating is 600 VAC, TUV recognition is max 250 VAC)

Resistance tolerance: -5%/+10% (tighter tolerances are achievable)

Power tolerance: -10% to + 5%

Watt density: The limitation factor is the heating foil maximum acceptable temperature. This temperature is dependent upon three factors:

- Temperature exchange with ambient or surface
- The maximum operating temperature
- Heater temperature control

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ULTIMHEAT WEB CATALOG

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If the element is temperature controlled sufficiently or the heat is taken away by forced air or a heat sink, the Watt density can range up to 0.8w/cm², (5.2 w/inch²). More typical designs are equal or below 0.4w/cm², (2.6 w/inch²)

Standard watt density:

-0.1 w/cm² (0.64 w/inch²). **Warning:** When used on plastic pipes or foam insulated pipes, do not use higher than 0.1w/cm² (0.64 w/ inch²) watt density to avoid melting plastic pipes or pipe foam insulation.

-0.2 w/cm² (1.3 w/inch²)

-0.4 w/cm² (2.6 w/inch²)

-0.8 w/cm² (5.2 w/inch²)

Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards

Dielectric Strength: 1500V AC, 2s, 0.5 mA (single insulation models) or the typical approval agency recommendation of 2 x input voltage +1000 volts.

Insulation resistance: More than 10 Mohms

Surface temperatures: Temperature that the silicone rubber heater will attain when suspended in still air at 70 °F (20°C) depends of the watt density. Below 5.2 w/inch², (0.8 w/cm²), the temperature will rise during some minutes and stabilize at a temperature below the critical 500 °F (260°C) which is the highest technically acceptable surface temperature.

Surface temperature after stabilization /watt density													
W/cm ²	0.05	0.10	0.15	0.20	0.30	0.40	0.45	0.50	0.60	0.70	0.8	0.9	1.0
Stabilization Temperature °C	40	70	90	105	135	165	175	190	210	230	250	260	270
W/inch ²	0.32	0.64	0.97	1.3	1.9	2.6	2.9	3.2	3.9	4.8	5.2	5.8	6.5
Stabilization Temperature °F	104	158	194	221	275	329	320	347	410	446	482	500	518

Leads: Standard leads for heaters are FEP insulated, flexible stranded plated copper wire. They are UL Style 1330 rated for 180°C/ 600 volt operation. Lead types and exit locations are adaptable to application requirements. Standard length is 200 mm.

Standard wire gauges:

AWG22 (or 0.3 mm²) is standard for rating up 3.5A

AWG20 (or 0.5 mm²) is standard for rating from 3.6 to 5.5A

Electrical connection output: standard is wire leads horizontal output. On request we can provide vertical leads output, side output with 6.3 x 0.8 tab terminals or flat cable. Wires can be equipped with terminals on request. Built in connectors must be submitted to our engineering department for feasibility

Terminal Options

Horizontal wires terminals, FEP insulation.(standard)	Horizontal Flat cable without plug	Horizontal Flat cable with UL plug	Horizontal Flat cable with Euro plug

Built in sensors and safety devices options

On the heaters surface it can be over-molded disc thermostats, temperature sensors, fixed setting bimetal thermostats, thermal cutouts.

Thermocouple J	Pt 100	Thermal cut out	ambient temperature thermostat.	Surface temperature thermostat (manual or automatic reset)	High limit bimetal thermostat (snap action, large differential)

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9AS-Band Heater
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Main references

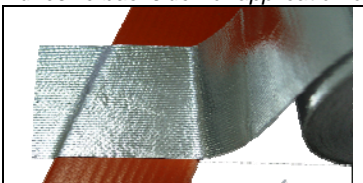
No controls, 200 mm FEP insulated wires, horizontal output, 0.1 to 0.8 w/cm² (0.64 to 5.2 w/inch²)

0,1 w/cm², 0,64 w/inch², no controls, 2 wires 200 mm FEP insulated

Drawings Available at: <http://www.ultimheat.com/blueink/Band.html>

References	Width mm	Width inches	Length mm	Length inches	Power Watts	voltage	amps	wire size
9AS025B58006H200	25	1,0	250	9,8	6,25	220/230	0,03	AWG22
9AS025C08008H200	25	1,0	300	11,8	7,5	220/230	0,03	AWG22
9AS025D08010H200	25	1,0	400	15,7	10	220/230	0,04	AWG22
9AS025E08013H200	25	1,0	500	19,7	12,5	220/230	0,05	AWG22
9AS025F08015H200	25	1,0	600	23,6	15	220/230	0,07	AWG22
9AS025G08018H200	25	1,0	700	27,6	17,5	220/230	0,08	AWG22
9AS050B58013H200	50	2,0	250	9,8	12,5	220/230	0,05	AWG22
9AS050C08015H200	50	2,0	300	11,8	15	220/230	0,07	AWG22
9AS050D08020H200	50	2,0	400	15,7	20	220/230	0,09	AWG22
9AS050E08025H200	50	2,0	500	19,7	25	220/230	0,11	AWG22
9AS050F08030H200	50	2,0	600	23,6	30	220/230	0,13	AWG22
9AS050G08035H200	50	2,0	700	27,6	35	220/230	0,2	AWG22
9AS075D08030H200	75	3,0	400	15,7	30	220/230	0,1	AWG22
9AS075E08038H200	75	3,0	500	19,7	37,5	220/230	0,2	AWG22
9AS075F08045H200	75	3,0	600	23,6	45	220/230	0,2	AWG22
9AS075G08053H200	75	3,0	700	27,6	52,5	220/230	0,2	AWG22
9AS025B55006H200	25	1,0	250	9,8	6,25	110/115	0,1	AWG22
9AS025C05008H200	25	1,0	300	11,8	7,5	110/115	0,1	AWG22
9AS025D05010H200	25	1,0	400	15,7	10	110/115	0,1	AWG22
9AS025E05013H200	25	1,0	500	19,7	12,5	110/115	0,1	AWG22
9AS025F05015H200	25	1,0	600	23,6	15	110/115	0,1	AWG22
9AS025G05018H200	25	1,0	700	27,6	17,5	110/115	0,2	AWG22
9AS050B55013H200	50	2,0	250	9,8	12,5	110/115	0,1	AWG22
9AS050C05015H200	50	2,0	300	11,8	15	110/115	0,1	AWG22
9AS050D05020H200	50	2,0	400	15,7	20	110/115	0,2	AWG22
9AS050E05025H200	50	2,0	500	19,7	25	110/115	0,2	AWG22
9AS050F05030H200	50	2,0	600	23,6	30	110/115	0,3	AWG22
9AS050G05035H200	50	2,0	700	27,6	35	110/115	0,3	AWG22
9AS075D05030H200	75	3,0	400	15,7	30	110/115	0,3	AWG22
9AS075E05150H200	75	3,0	500	19,7	37,5	110/115	0,3	AWG22
9AS075F05045H200	75	3,0	600	23,6	45	110/115	0,4	AWG22
9AS075G05053H200	75	3,0	700	27,6	52,5	110/115	0,5	AWG22

Adhesive backside: for application on various surfaces such as glass, steel, plastic replace the last character (0) by A



Reinforced high temperature aluminum adhesive tape
Reference: 96ALTA0550

Information given for guidance only - Pour information uniqueness

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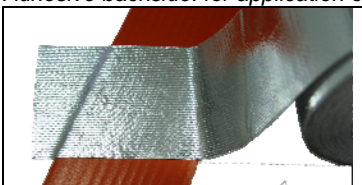
9AS-Band Heater
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0,2 w/cm², 1,3w/inch², no controls, 2 wires 200 mm FEP insulated
Drawings Available at: <http://www.ultimheat.com/blueink/Band.html>

References	Width mm	Width inches	Length mm	Length inches	Power Watts	voltage	amps	wire size
9AS025B58013H200	25	1,0	250	9,8	12,5	220/230	0,1	AWG22
9AS025C08015H200	25	1,0	300	11,8	15	220/230	0,1	AWG22
9AS025D08020H200	25	1,0	400	15,7	20	220/230	0,1	AWG22
9AS025E08025H200	25	1,0	500	19,7	25	220/230	0,1	AWG22
9AS025F08030H200	25	1,0	600	23,6	30	220/230	0,1	AWG22
9AS025G08035H200	25	1,0	700	27,6	35	220/230	0,2	AWG22
9AS050B58025H200	50	2,0	250	9,8	25	220/230	0,1	AWG22
9AS050C08030H200	50	2,0	300	11,8	30	220/230	0,1	AWG22
9AS050D08040H200	50	2,0	400	15,7	40	220/230	0,2	AWG22
9AS050E08050H200	50	2,0	500	19,7	50	220/230	0,2	AWG22
9AS050F08060H200	50	2,0	600	23,6	60	220/230	0,3	AWG22
9AS050G08070H200	50	2,0	700	27,6	70	220/230	0,3	AWG22
9AS075D08060H200	75	3,0	400	15,7	60	220/230	0,3	AWG22
9AS075E08075H200	75	3,0	500	19,7	75	220/230	0,3	AWG22
9AS075F08090H200	75	3,0	600	23,6	90	220/230	0,4	AWG22
9AS075G08420H200	75	3,0	700	27,6	105	220/230	0,5	AWG22
9AS025B55013H200	25	1,0	250	9,8	12,5	110/115	0,1	AWG22
9AS025C05015H200	25	1,0	300	11,8	15	110/115	0,1	AWG22
9AS025D05020H200	25	1,0	400	15,7	20	110/115	0,2	AWG22
9AS025E05025H200	25	1,0	500	19,7	25	110/115	0,2	AWG22
9AS025F05030H200	25	1,0	600	23,6	30	110/115	0,3	AWG22
9AS025G05035H200	25	1,0	700	27,6	35	110/115	0,3	AWG22
9AS050B55025H200	50	2,0	250	9,8	25	110/115	0,2	AWG22
9AS050C05030H200	50	2,0	300	11,8	30	110/115	0,3	AWG22
9AS050D05040H200	50	2,0	400	15,7	40	110/115	0,4	AWG22
9AS050E05050H200	50	2,0	500	19,7	50	110/115	0,5	AWG22
9AS050F05060H200	50	2,0	600	23,6	60	110/115	0,5	AWG22
9AS050G05070H200	50	2,0	700	27,6	70	110/115	0,6	AWG22
9AS075D05060H200	75	3,0	400	15,7	60	110/115	0,5	AWG22
9AS075E05075H200	75	3,0	500	19,7	75	110/115	0,7	AWG22
9AS075F05090H200	75	3,0	600	23,6	90	110/115	0,8	AWG22
9AS075G05105H200	75	3,0	700	27,6	105	110/115	1,0	AWG22

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Reinforced high temperature aluminum adhesive tape
Reference: 96ALTA0550

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9AS-Band Heater
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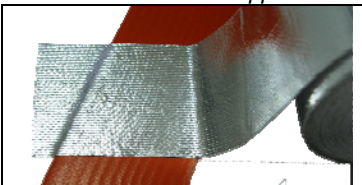


0,4w/cm², 2,6w/inch², no controls, 2 wires 200 mm FEP insulated

Drawings Available at: <http://www.ultimheat.com/blueink/Band.html>

References	Width mm	Width inches	Length mm	Length inches	Power Watts	voltage	amps	wire size
9AS025B58025H200	25	1,0	250	9,8	25	220/230	0,1	AWG22
9AS025C08030H200	25	1,0	300	11,8	30	220/230	0,1	AWG22
9AS025D08040H200	25	1,0	400	15,7	40	220/230	0,2	AWG22
9AS025E08050H200	25	1,0	500	19,7	50	220/230	0,2	AWG22
9AS025F08060H200	25	1,0	600	23,6	60	220/230	0,3	AWG22
9AS025G08070H200	25	1,0	700	27,6	70	220/230	0,3	AWG22
9AS050B58050H200	50	2,0	250	9,8	50	220/230	0,2	AWG22
9AS050C08060H200	50	2,0	300	11,8	60	220/230	0,3	AWG22
9AS050D08080H200	50	2,0	400	15,7	80	220/230	0,3	AWG22
9AS050E08100H200	50	2,0	500	19,7	100	220/230	0,4	AWG22
9AS050F08120H200	50	2,0	600	23,6	120	220/230	0,5	AWG22
9AS050G08140H200	50	2,0	700	27,6	140	220/230	0,6	AWG22
9AS075D08120H200	75	3,0	400	15,7	120	220/230	0,5	AWG22
9AS075E08150H200	75	3,0	500	19,7	150	220/230	0,7	AWG22
9AS075F08180H200	75	3,0	600	23,6	180	220/230	0,8	AWG22
9AS075G08210H200	75	3,0	700	27,6	210	220/230	0,9	AWG22
9AS025B55025H200	25	1,0	250	9,8	25	110/115	0,2	AWG22
9AS025C05030H200	25	1,0	300	11,8	30	110/115	0,3	AWG22
9AS025D05040H200	25	1,0	400	15,7	40	110/115	0,4	AWG22
9AS025E05050H200	25	1,0	500	19,7	50	110/115	0,5	AWG22
9AS025F05060H200	25	1,0	600	23,6	60	110/115	0,5	AWG22
9AS025G05070H200	25	1,0	700	27,6	70	110/115	0,6	AWG22
9AS050B55050H200	50	2,0	250	9,8	50	110/115	0,5	AWG22
9AS050C05060H200	50	2,0	300	11,8	60	110/115	0,5	AWG22
9AS050D05080H200	50	2,0	400	15,7	80	110/115	0,7	AWG22
9AS050E05100H200	50	2,0	500	19,7	100	110/115	0,9	AWG22
9AS050F05120H200	50	2,0	600	23,6	120	110/115	1,1	AWG22
9AS050G05150H200	50	2,0	700	27,6	140	110/115	1,3	AWG22
9AS075D05120H200	75	3,0	400	15,7	120	110/115	1,1	AWG22
9AS075E05150H200	75	3,0	500	19,7	150	110/115	1,4	AWG22
9AS075F05180H200	75	3,0	600	23,6	180	110/115	1,6	AWG22
9AS075G05210H200	75	3,0	700	27,6	210	110/115	1,9	AWG22

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Reinforced high temperature aluminum adhesive tape
Reference: 96ALTA0550

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9AS-Band Heater
P6/6



0,8w/cm², 5,2w/inch², no controls, 2 wires 200 mm FEP insulated
Drawings Available at: <http://www.ultimheat.com/blueink/Band.html>

References	Width mm	Width inches	Length mm	Length inches	Power Watts	voltage	amps	wire size
9AS025B58050H200	25	1,0	250	9,8	50	220/230	0,2	AWG22
9AS025C08060H200	25	1,0	300	11,8	60	220/230	0,3	AWG22
9AS025D08080H200	25	1,0	400	15,7	80	220/230	0,3	AWG22
9AS025E08100H200	25	1,0	500	19,7	100	220/230	0,4	AWG22
9AS025F08120H200	25	1,0	600	23,6	120	220/230	0,5	AWG22
9AS025G08140H200	25	1,0	700	27,6	140	220/230	0,6	AWG22
9AS050B58100H200	50	2,0	250	9,8	100	220/230	0,4	AWG22
9AS050C08120H200	50	2,0	300	11,8	120	220/230	0,5	AWG22
9AS050D08160H200	50	2,0	400	15,7	160	220/230	0,7	AWG22
9AS050E08200H200	50	2,0	500	19,7	200	220/230	0,9	AWG22
9AS050F08120H200	50	2,0	600	23,6	240	220/230	1,0	AWG22
9AS050G08280H200	50	2,0	700	27,6	280	220/230	1,2	AWG22
9AS075D08240H200	75	3,0	400	15,7	240	220/230	1,0	AWG22
9AS075E08300H200	75	3,0	500	19,7	300	220/230	1,3	AWG22
9AS075F08360H200	75	3,0	600	23,6	360	220/230	1,6	AWG22
9AS075G08420H200	75	3,0	700	27,6	420	220/230	1,8	AWG22
9AS025B55050H200	25	1,0	250	9,8	50	110/115	0,5	AWG22
9AS025C05060H200	25	1,0	300	11,8	60	110/115	0,5	AWG22
9AS025D05080H200	25	1,0	400	15,7	80	110/115	0,7	AWG22
9AS025E05100H200	25	1,0	500	19,7	100	110/115	0,9	AWG22
9AS025F05120H200	25	1,0	600	23,6	120	110/115	1,1	AWG22
9AS025G05140H200	25	1,0	700	27,6	140	110/115	1,3	AWG22
9AS050B55100H200	50	2,0	250	9,8	100	110/115	0,9	AWG22
9AS050C05120H200	50	2,0	300	11,8	120	110/115	1,1	AWG22
9AS050D05160H200	50	2,0	400	15,7	160	110/115	1,5	AWG22
9AS050E05200H200	50	2,0	500	19,7	200	110/115	1,8	AWG22
9AS050F05240H200	50	2,0	600	23,6	240	110/115	2,2	AWG22
9AS050G05280H200	50	2,0	700	27,6	280	110/115	2,5	AWG22
9AS075D05240H200	75	3,0	400	15,7	240	110/115	2,2	AWG22
9AS075E05300H200	75	3,0	500	19,7	300	110/115	2,7	AWG22
9AS075F05360H200	75	3,0	600	23,6	360	110/115	3,3	AWG22
9AS075G05420H200	75	3,0	700	27,6	420	110/115	3,8	AWG20

Adhesive backside: for application on various surfaces such as glass, steel, plastic replace the last character (0) by A

Warning:

- Silicone rubber heaters are not suitable for: radiation, vacuum, or prolonged exposure to oil
- When these bands are used on thermally insulated pipes, they must be installed under the insulation and always in contact with the pipe surface. We recommend fixing them on the equipment with armed adhesive tape (permanent installation) or cable ties (temporary installation).

Design Services:

Our experienced designers can assist in your design efforts to build a surface heater specifically for your application. In addition, we can look to optimize your current element designs and recommend proper watt densities, controls and element construction. We will conduct a thorough design review and present a proposal and quotation, followed by sample elements upon approval. We also provide testing services and gather agency approvals to verify and ensure that the element construction and design will be optimal for your application.

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