

Silicone Rubber Heaters (Foil)

235°C

See section E for wire-wound rubber heaters

Silicone rubber is a rugged, flexible elastomer material with excellent temperature properties. It is most suited to larger heaters and industrial applications.

- ◆ High temperature capability to 235°C (455°F)
- ◆ UL component recognition available
- ◆ Can be factory vulcanized to metal parts without adhesive
- ◆ Resistant to many chemicals
- ◆ Not suitable for radiation, vacuum, or prolonged exposure to oil
- ◆ Most economical in large sizes



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Typical applications

- ◆ Thermal developing in graphic imaging equipment
- ◆ Prevent condensation in motors or instrument cabinets
- ◆ Heat outdoor electronics
- ◆ Food service equipment
- ◆ Medical respirators
- ◆ Laminators
- ◆ Drums and other vessels
- ◆ Airplane engine heaters

Specifications for catalog models

Temperature range: -45 to 235°C (-50 to 455°F).

With UL component recognition: -45 to 220°C (-50 to 428°F).

Material: Fiberglass reinforced silicone rubber, 0.008" (0.20 mm).

Resistance tolerance: ±10% or ±0.5 Ω, whichever is greater.

Dielectric strength: 1000 VRMS.

Minimum bend radius: 0.125" (3.2 mm).

Leadwire: Red PTFE insulated, stranded.

Current capacity (based on 100°C max. ambient temp.):

AWG 30	AWG 26	AWG 24	AWG 20
3.0 A	5.0 A	7.5 A	13.5 A

Maximum heater thickness:

No adhesive (A): #12 PSA (B):

Over element 0.020" (0.5 mm) 0.025" (0.6 mm)

Over leads

	A	B
AWG 30 (0.057 mm ²)	0.070" (1.8 mm)	0.085" (2.2 mm)
AWG 26 (0.141 mm ²)	0.080" (2.0 mm)	0.095" (2.4 mm)
AWG 24 (0.227 mm ²)	0.090" (2.3 mm)	0.105" (2.7 mm)
AWG 20 (0.563 mm ²)	0.120" (3.0 mm)	0.135" (3.4 mm)

Add 0.005" (0.1 mm) to above dimensions for foil backing.

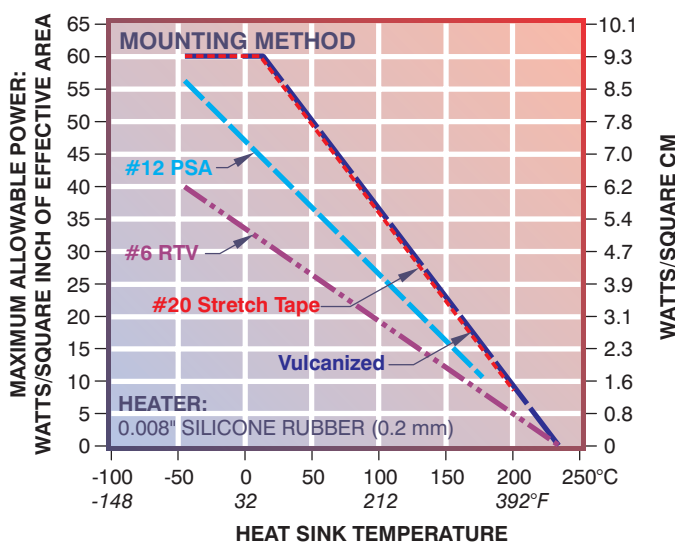
Dimensional tolerance:

6" (150 mm) or less	±0.03" (±0.8 mm)
6.01 to 12" (150 to 300 mm)	±0.06" (±1.5 mm)
Over 12" (300 mm)	±0.12" (±3.0 mm)

Custom options

- ◆ Custom shapes and sizes to 22 × 72" (560 × 1830 mm)
- ◆ Custom resistance to 200 Ω/in² (30 Ω/cm²)
- ◆ Minco can factory vulcanize rubber heaters to metal shapes for best economy and performance
- ◆ Heaters can have integral snaps, straps, or Velcro[®] for removable installation
- ◆ Heaters can include thermostats, temperature sensors and cutouts, wiring harnesses, and connectors
- ◆ TÜV or UL approval is optional
- ◆ See section J for custom design assistance

Maximum watt density, rubber heaters




Example: At 100°C, the maximum power of a vulcanized heater is 36 W/in².

Stock Rubber Heaters (Foil)

These heaters are normally available from stock for immediate shipment. Voltage and wattage values are for reference only. Heaters may be operated at other voltages if they do not exceed the maximum allowable watt density.

See section D for these and other models with additional ordering options:

- ◆ Greater selection of resistances
- ◆ Variable lead length
- ◆ More backing options
- ◆ UL recognition 

Type (configuration)



LEAD LENGTH:
12" (305 mm)
















TAB DIMENSIONS:
AWG 30: 0.40" × 0.25" (10.2 × 6.4 mm)
AWG 24/26: 0.40" × 0.40" (10.2 × 10.2 mm)



How to order stock heaters

HR5167R264L12	Model number
B	Heater backing:
	A = No adhesive -45 to 235°C
	B = #12 PSA -45 to 177°C
HR5167R264L12B ← Sample part number	

Size (inches)		Size (mm)		Type	Resistance in ohms*	Typical power	Effective area (in ²)	Lead AWG	Model number
X	Y	X	Y						
0.50	2.00	12.7	50.8	1 	44.0	18 W at 28 V	0.79	30	HR5160R44.0L12
0.50	4.00	12.7	101.6	1 	78.4	10 W at 28 V	1.67	30	HR5161R78.4L12
1.00	1.00	25.4	25.4	1 	78.4	10 W at 28 V	0.82	30	HR5163R78.4L12
1.00	3.00	25.4	76.2	1 	52.3	15 W at 28 V	2.70	30	HR5165R52.3L12
1.00	5.00	25.4	127.0	1 	529	25 W at 115 V	4.41	30	HR5166R529L12
1.00	10.00	25.4	254.0	1 	264	50 W at 115 V	8.96	30	HR5167R264L12
2.00	3.00	50.8	76.2	1 	441	30 W at 115 V	5.50	30	HR5170R441L12
3.00	3.00	76.2	76.2	1 	294	45 W at 115 V	8.41	30	HR5174R294L12
3.00	5.00	76.2	127.0	1 	176	75 W at 115 V	14.23	30	HR5175R176L12
4.00	4.00	101.6	101.6	1 	42.9	308 W at 115 V	15.20	30	HR5178R42.9L12
4.00	4.00	101.6	101.6	1 	165	80 W at 115 V	15.20	30	HR5178R165L12
4.00	8.00	101.6	203.2	1 	82.7	160 W at 115 V	30.84	24	HR5179R82.7L12
3.00	0.12	76.2	3.1	31 	107	64 W at 115 V	6.61	26	HR5188R107L12

*Resistance tolerance is ±10% or ±0.5 Ω, whichever is greater