

200°C Air Core Inductors

AT439RAT AT470RAT



- Special materials allow operation in ambient temperatures as low as -60°C and up to 200°C .
- Passes NASA low outgassing specifications

Terminations Tin-lead (63/37) over copper

Ambient temperature -60°C to $+150^{\circ}\text{C}$ with I_{max} current

Maximum part temperature $+200^{\circ}\text{C}$ (ambient + temp rise).

Storage temperature Component: -60°C to $+200^{\circ}\text{C}$.
Packaging: -40°C to $+80^{\circ}\text{C}$

Resistance to soldering heat Max three 40 second reflows at $+260^{\circ}\text{C}$, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) $+5$ to $+70$ ppm/ $^{\circ}\text{C}$

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at $<30^{\circ}\text{C}$ / 85% relative humidity)

Enhanced crush-resistant packaging

AT439RAT: 700/7" reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.3 mm pocket depth

AT470RAT: 500/7" reel Plastic tape: 16 mm wide, 0.28 mm thick, 8 mm pocket spacing, 3.4 mm pocket depth

Part number ¹	Turns	L^2 (nH)	Percent tol	Q^3 min	SRF min ⁴ (GHz)	DCR max ⁵ (mOhm)	I_{max} (A)	Weight max (mg)
AT439RAT2N5KSZ	1	2.5	10	145	>5.0	1.1	4	48
AT439RAT5N0_SZ	2	5.0	5,2	140	>5.0	1.8	4	63
AT439RAT8N0_SZ	3	8.0	5,2	140	5.0	2.6	4	78
AT439RAT13N_SZ	4	12.5	5,2	137	3.3	3.4	4	82
AT439RAT19N_SZ	5	18.5	5,2	132	2.5	3.9	4	95
AT470RAT18N_SZ	6	17.5	5,2	100	2.2	4.5	4	128
AT470RAT22N_SZ	7	22.0	5,2	102	2.1	5.2	4	143
AT470RAT28N_SZ	8	28.0	5,2	105	1.8	6.0	4	151
AT470RAT36N_SZ	9	35.5	5,2	112	1.5	6.8	4	169
AT470RAT43N_SZ	10	43.0	5,2	106	1.2	7.9	4	188

1. When ordering, please specify **tolerance** and **screening** codes:

AT470RAT43NGSZ

Tolerance: G = 2% J = 5%

Screening: Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

F = ESCC3201 (F4 operational life performed at 90°C)

1 = EEE-INST-002 (Family 3) Level 1

2 = EEE-INST-002 (Family 3) Level 2

3 = EEE-INST-002 (Family 3) Level 3

4 = MIL-STD-981 (Family 50) Class B

5 = MIL-STD-981 (Family 50) Class S

• Screening performed to the document's latest revision.

• Screening not available for parts with 2% tolerance.

• Testing is performed using 155°C as max component temperature.

• Lot qualification (Group B) available.

• Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.

• Country of origin restrictions available; prefix option G.

2. Inductance measured at 150 MHz on an Agilent/HP 4286A or equivalent with a Coilcraft SMD-A test fixture and correlation.

3. Q measured at 150 MHz on an Agilent/HP 4291A or equivalent with a 16193A test fixture or equivalent.

4. SRF measured on an Agilent/HP 8753ES network analyzer or equivalent with a Coilcraft CCF1268 test fixture. Parts with SRF >5 GHz are verified to >5 GHz in screening

5. DCR measured on a Keithley 580 Micro-Ohmmeter or equivalent.

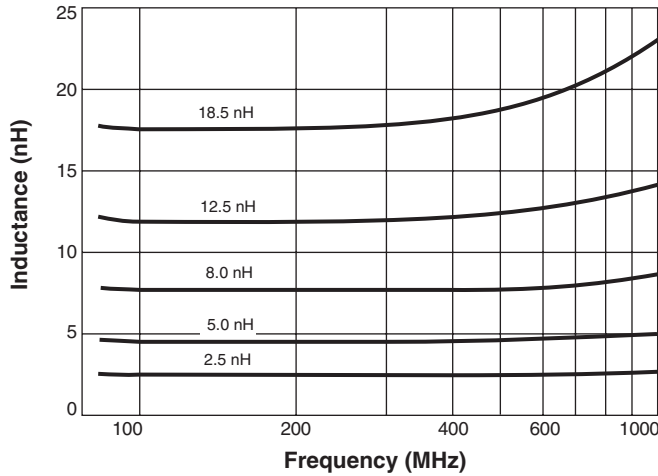
6. Electrical specifications at 25°C .

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

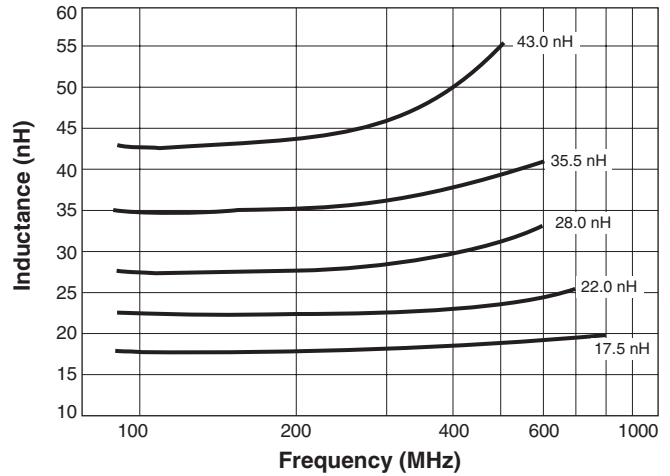
S-Parameter files
ON OUR WEB SITE
SPICE models
ON OUR WEB SITE

AT439RAT/AT470RAT Air Core Inductors

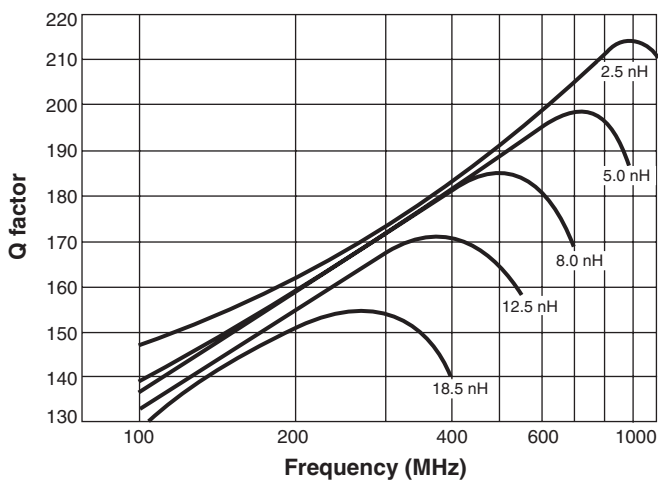
L vs Frequency – AT439RAT



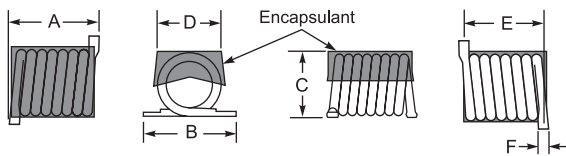
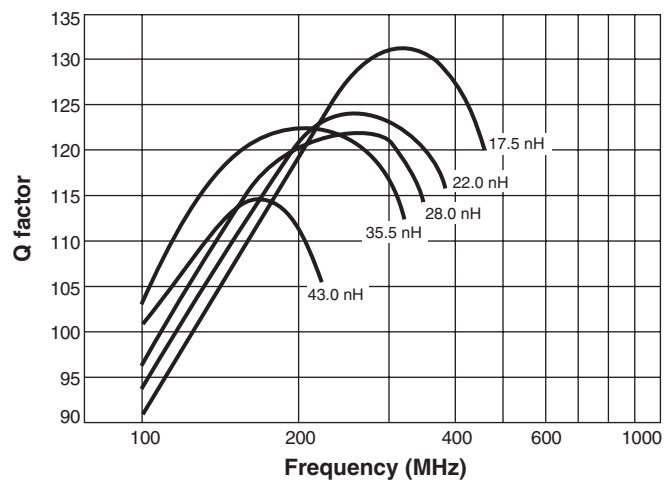
L vs Frequency – AT470RAT



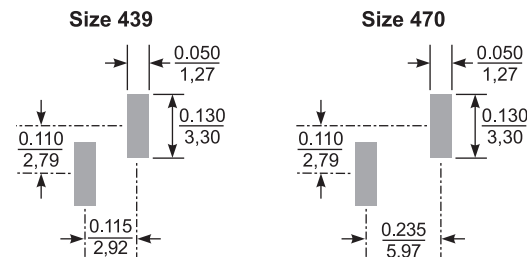
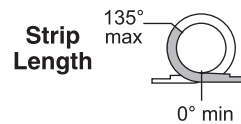
Q vs Frequency – AT439RAT



Q vs Frequency – AT470RAT



Size	A max	B max	C max	D	E	F max
439	0.155 3,94	0.175 4,45	0.124 3,15	0.110 ±0.010 2,79 ±0,25	0.115 ±0.010 2,92 ±0,25	0.029 0,74
470	0.270 6,86	0.175 4,45	0.124 3,15	0.110 ±0.010 2,79 ±0,25	0.230 ±0.015 5,84 ±0,38	0.029 0,74



Dimensions are in $\frac{\text{inches}}{\text{mm}}$

Suggested Land Patterns



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