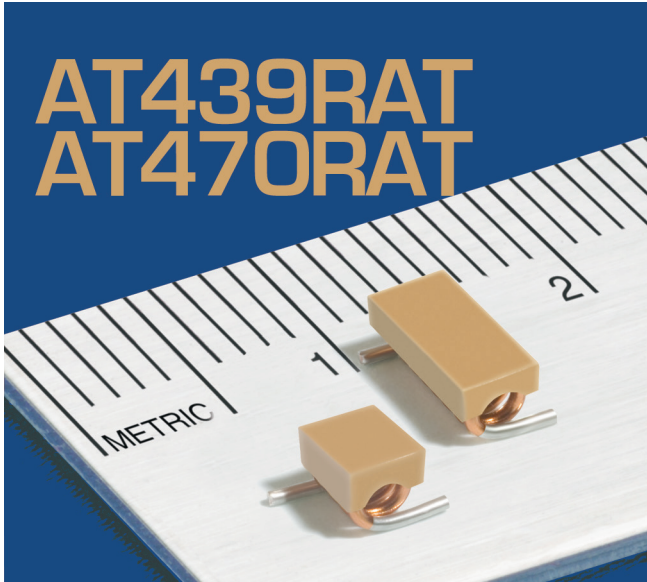


200°C Air Core Inductors AT439RAT AT470RAT



- Special materials allow operation in ambient temperatures as low as -60°C and up to 200°C.
- Passes NASA low outgassing specifications
- Tin-lead (Sn-Pb) terminations ensures the best possible board adhesion

Terminations Tin-lead (63/37) over copper

Ambient temperature -60°C to +150°C with I_{max} current

Maximum part temperature +200°C (ambient + temp rise).

Storage temperature Component: -60°C to +200°C.

Packaging: -40°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +5 to +70 ppm/°C

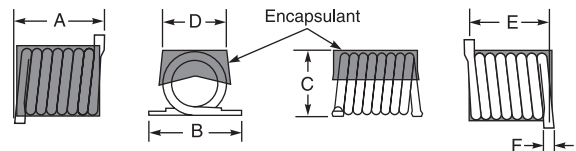
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

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 |



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

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

AT470RAT43NGSZ

Tolerance: G = 2% J = 5%

Testing: Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

T = Screening per MIL-STD-981

U = Screening per EEE-INST-002

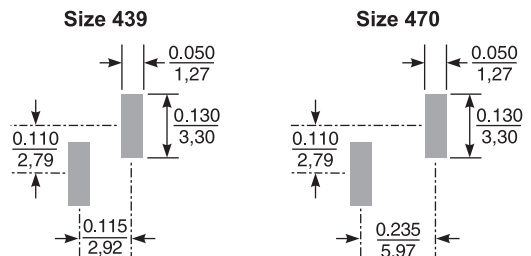
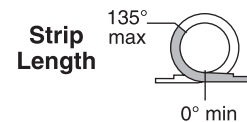
F = Screening per ESCC 3201

All screening performed to the document's latest revision

Custom screening also available

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.



Suggested Land Patterns

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



CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

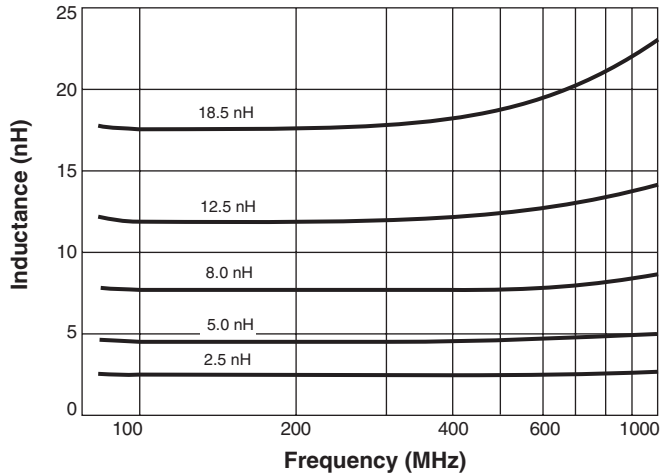
Document AT107-1 Revised 08/30/17

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

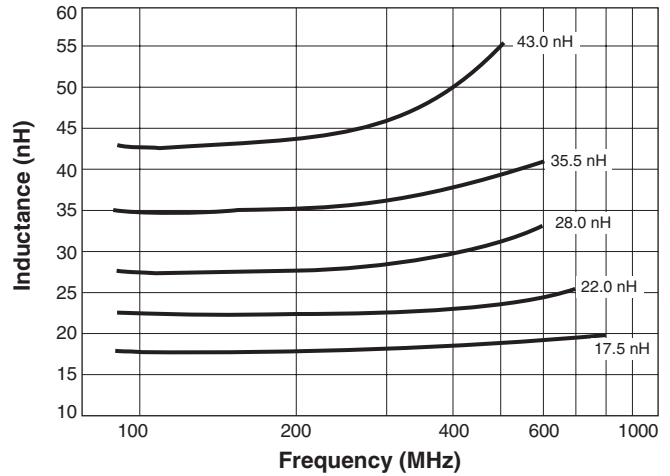
S-Parameter files
ON OUR WEB SITE
SPICE models
ON OUR WEB SITE

AT439RAT/AT470RAT Air Core Inductors

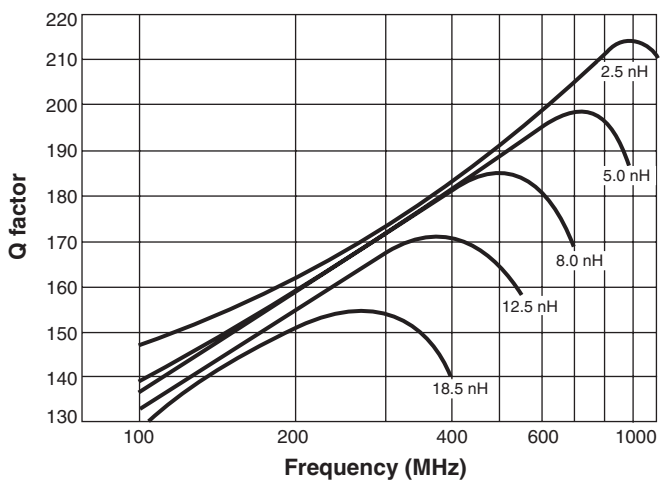
L vs Frequency – AT439RAT



L vs Frequency – AT470RAT



Q vs Frequency – AT439RAT



Q vs Frequency – AT470RAT

