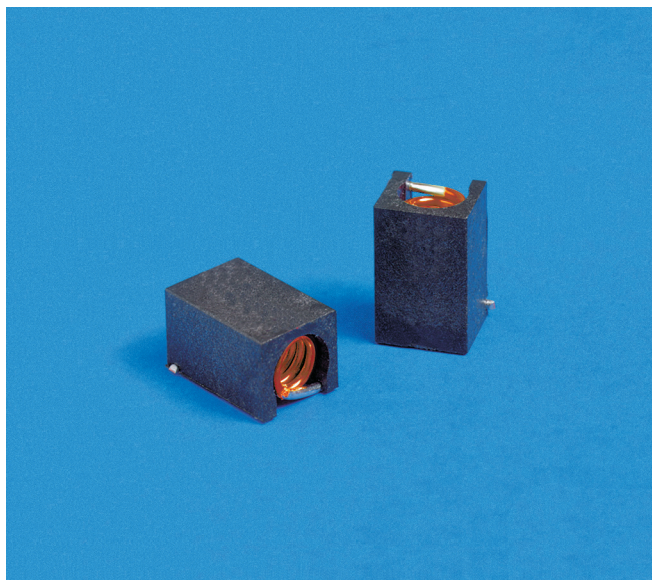


# 200°C Air Core Inductors AT536RAT



- High Q over a wide range of frequencies
- Special materials allow operation in ambient temperatures as low as  $-60^{\circ}\text{C}$  and up to  $200^{\circ}\text{C}$ .
- Passes NASA low outgassing specifications

**Terminations** Tin-lead (63/37) over copper

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

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

**Storage temperature** Component:  $-60^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$ .

Tape and reel packaging:  $-55^{\circ}\text{C}$  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** 800 per 13" reel  
Plastic tape: 24 mm wide, 0.3 mm thick, 12 mm pocket spacing, 6.1 mm pocket depth

Part number <sup>1</sup>	Turns	Inductance <sup>2</sup> (nH)	Percent tolerance	Q <sup>3</sup> min	SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhm)	I <sub>max</sub> (A)
AT536RAT90N_S_	9	90	5,2	95	1.140	15	3.5
AT536RATR11_S_	10	111	5,2	87	1.020	15	3.5
AT536RATR13_S_	11	130	5,2	87	0.900	20	3.0
AT536RATR17_S_	12	169	5,2	95	0.875	25	3.0
AT536RATR21_S_	13	206	5,2	95	0.800	30	3.0
AT536RATR22_S_	14	222	5,2	92	0.730	35	3.0
AT536RATR25_S_	15	246	5,2	95	0.685	35	3.0
AT536RATR31_S_	16	307	5,2	95	0.660	35	3.0
AT536RATR38_S_	17	380	5,2	95	0.590	50	2.5
AT536RATR42_S_	18	422	5,2	95	0.540	60	2.5
AT536RATR49_S_	19	491	5,2	95	0.535	65	2.0
AT536RATR54_S_	20	538	5,2	87	0.490	90	2.0

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

AT536RATR54GSZ

**Tolerance:** G = 2% J = 5%

**Screening:** Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

F = ESCC3201 (F4 operational life performed at  $90^{\circ}\text{C}$ )

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.

• 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 50 MHz on an Agilent/HP 4286A or equivalent with a Coilcraft SMD-A test fixture and correlation.

3. Q measured at 50 MHz on an Agilent/HP 4291A or equivalent with a 16193A test fixture or equivalent.

4. SRF measured on an Agilent/HP 8753ES or equivalent with a Coilcraft CCF1268 test fixture.

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

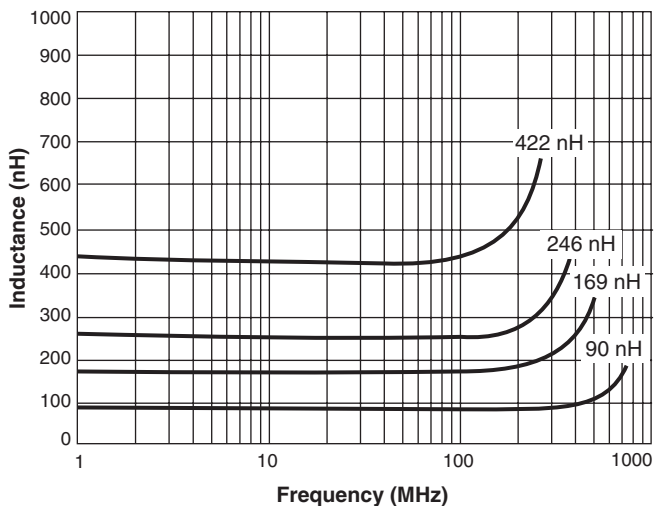
6. Electrical specifications at  $25^{\circ}\text{C}$ .

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

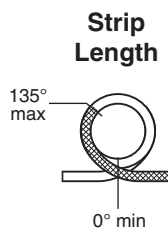
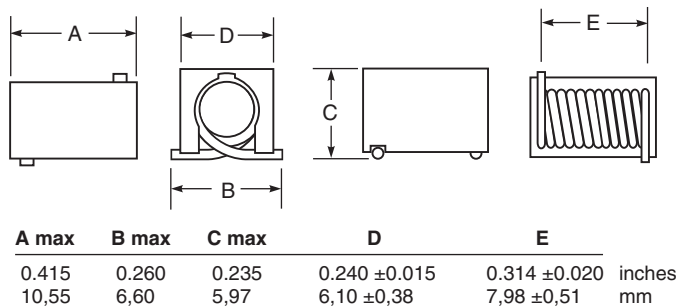
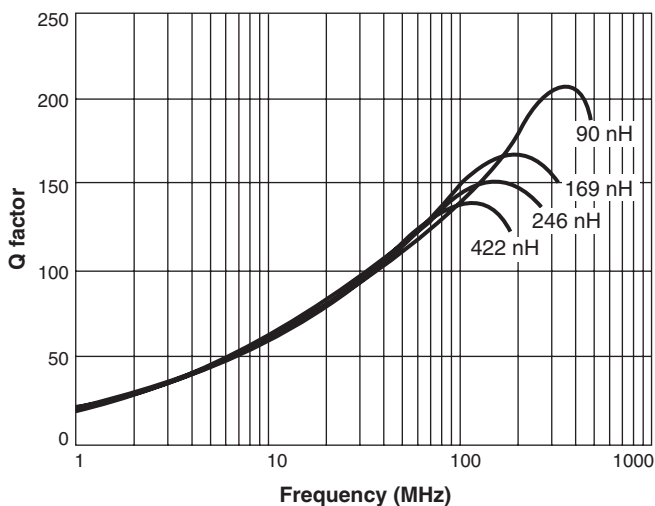
# AT536RAT Series Air Core Inductors

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

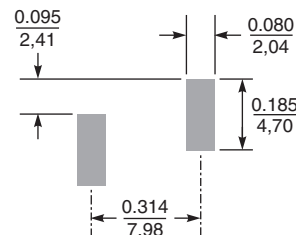
## Typical L vs Frequency



## Typical Q vs Frequency



### Suggested Land Pattern



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