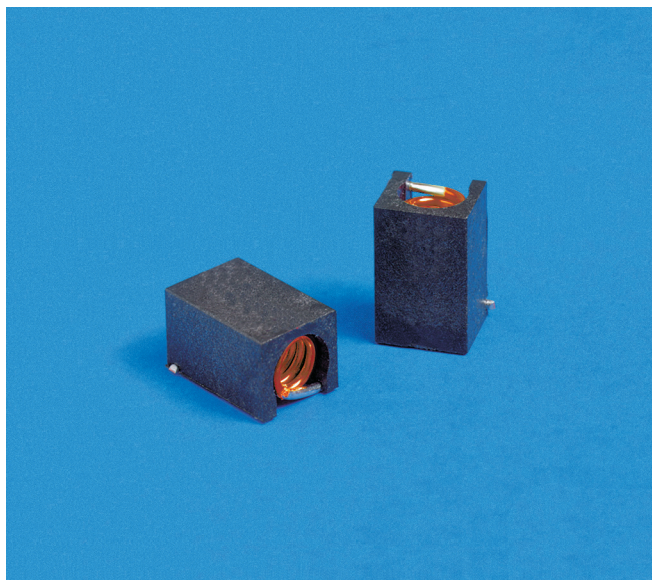


# Outgassing Compliant Air Core Inductors AE536RAT



- High Q over a wide range of frequencies
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Tin-lead (63/37) terminations ensure the best possible board adhesion

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

**Ambient temperature** -55°C to +125°C with I<sub>max</sub> current

**Maximum part temperature** +155°C (ambient + temp rise).

**Storage temperature** Component: -55°C to +155°C.

Tape and reel packaging: -55°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** 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><br>(nH) | Percent tolerance | Q <sup>3</sup><br>min | SRF min <sup>4</sup><br>(GHz) | DCR max <sup>5</sup><br>(mOhm) | I <sub>max</sub><br>(A) |
|--------------------------|-------|---------------------------------|-------------------|-----------------------|-------------------------------|--------------------------------|-------------------------|
| AE536RAT90N_S_           | 9     | 90                              | 5,2               | 95                    | 1.140                         | 15                             | 3.5                     |
| AE536RATR11_S_           | 10    | 111                             | 5,2               | 87                    | 1.020                         | 15                             | 3.5                     |
| AE536RATR13_S_           | 11    | 130                             | 5,2               | 87                    | 0.900                         | 20                             | 3.0                     |
| AE536RATR17_S_           | 12    | 169                             | 5,2               | 95                    | 0.875                         | 25                             | 3.0                     |
| AE536RATR21_S_           | 13    | 206                             | 5,2               | 95                    | 0.800                         | 30                             | 3.0                     |
| AE536RATR22_S_           | 14    | 222                             | 5,2               | 92                    | 0.730                         | 35                             | 3.0                     |
| AE536RATR25_S_           | 15    | 246                             | 5,2               | 95                    | 0.685                         | 35                             | 3.0                     |
| AE536RATR31_S_           | 16    | 307                             | 5,2               | 95                    | 0.660                         | 35                             | 3.0                     |
| AE536RATR38_S_           | 17    | 380                             | 5,2               | 95                    | 0.590                         | 50                             | 2.5                     |
| AE536RATR42_S_           | 18    | 422                             | 5,2               | 95                    | 0.540                         | 60                             | 2.5                     |
| AE536RATR49_S_           | 19    | 491                             | 5,2               | 95                    | 0.535                         | 65                             | 2.0                     |
| AE536RATR54_S_           | 20    | 538                             | 5,2               | 87                    | 0.490                         | 90                             | 2.0                     |

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

AE536RATR54GSZ

**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.

• 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°C.

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

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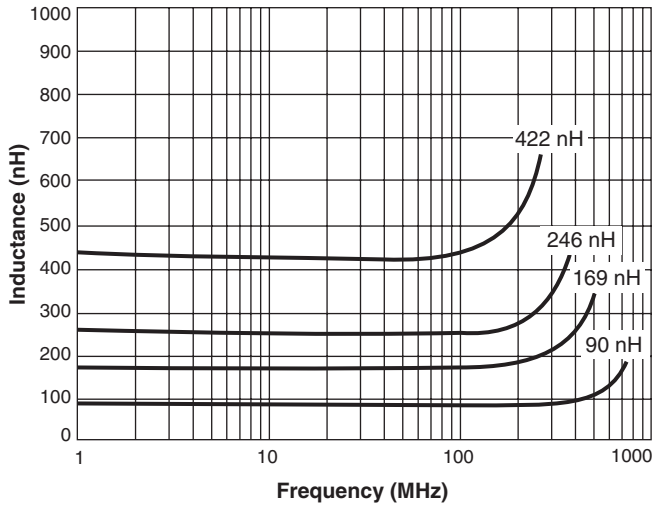
Document AE185-1 Revised 03/15/21

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.

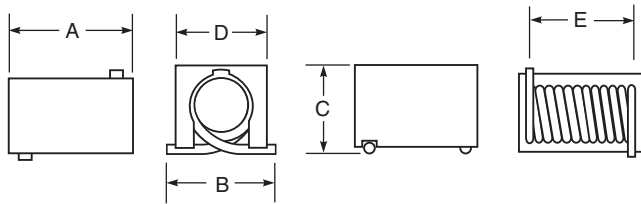
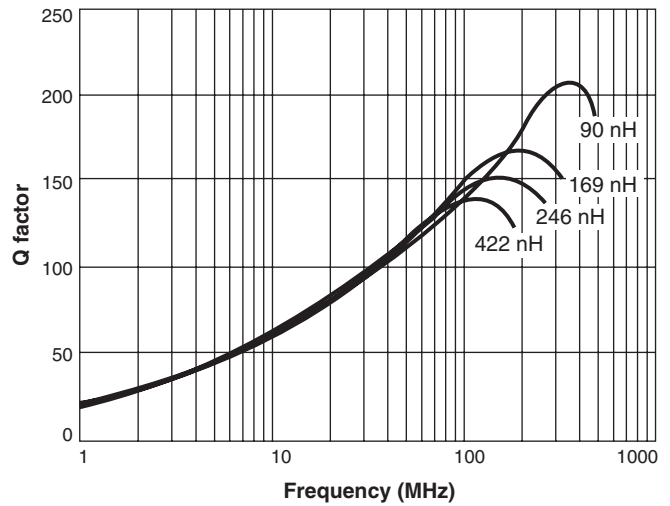
# AE536RAT Series Air Core Inductors

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

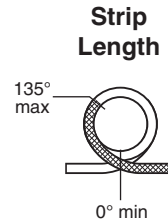
## Typical L vs Frequency



## Typical Q vs Frequency



| A max | B max | C max | D            | E            |        |
|-------|-------|-------|--------------|--------------|--------|
| 0.415 | 0.260 | 0.235 | 0.240 ±0.015 | 0.314 ±0.020 | inches |
| 10,55 | 6,60  | 5,97  | 6,10 ±0,38   | 7,98 ±0,51   | mm     |



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

### Suggested Land Pattern

