

**PRELIMINARY**

# Aerospace Grade 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 ensures 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, +125°C to +155°C with derated current

**Storage temperature** Component: -55°C to +155°C.  
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> (nH)	Percent tolerance	Q <sup>3</sup> typ	Q <sup>3</sup> min	SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhm)	I <sub>max</sub> (A)
AE536RAT90N_SZ	9	90	5,2	114	95	1.140	15	3.5
AE536RATR11_SZ	10	111	5,2	104	87	1.020	15	3.5
AE536RATR13_SZ	11	130	5,2	104	87	0.900	20	3.0
AE536RATR17_SZ	12	169	5,2	114	95	0.875	25	3.0
AE536RATR21_SZ	13	206	5,2	114	95	0.800	30	3.0
AE536RATR22_SZ	14	222	5,2	110	92	0.730	35	3.0
AE536RATR25_SZ	15	246	5,2	114	95	0.685	35	3.0
AE536RATR31_SZ	16	307	5,2	114	95	0.660	35	3.0
AE536RATR38_SZ	17	380	5,2	114	95	0.590	50	2.5
AE536RATR42_SZ	18	422	5,2	114	95	0.540	60	2.5
AE536RATR49_SZ	19	491	5,2	114	95	0.535	65	2.0
AE536RATR54_SZ	20	538	5,2	104	87	0.490	90	2.0

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

AE536RATR54 **G** **SZ**

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

**Testing:** Z = Coilcraft Critical Products Environmental Stress Conditions Testing.

H = Coilcraft Qual + Coilcraft Hi-Rel Burn-in

N = Coilcraft Qual + MIL-STD-981 Class B Group A screening

C = Coilcraft Qual + MIL-STD-981 Class S Group A screening + MIL-STD-981 Class S Group B qualification

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 16193-A test fixture or equivalent.

4. SRF measured on an Agilent/HP 8753D or equivalent with a Coilcraft SMD-D 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.

**Coilcraft** **CPS**  
CRITICAL PRODUCTS & SERVICES

These parts are preproduction products for electrical evaluation only.  
Specification subject to change without notice.

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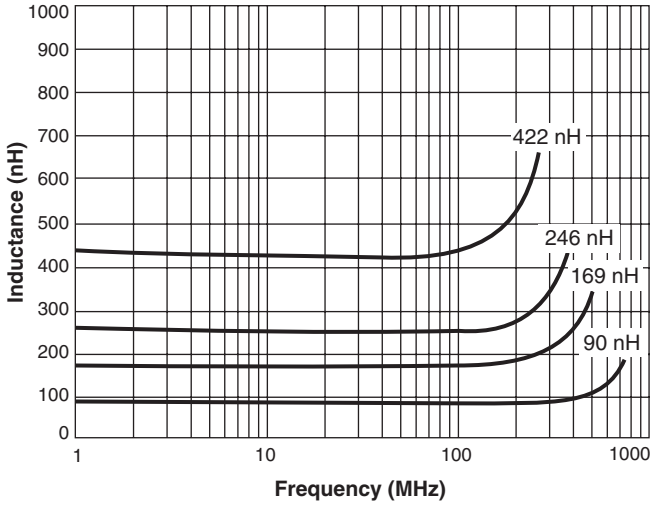
Phone 800-981-0363  
Fax 847-639-1508

E-mail cp@coilcraft.com  
Web www.coilcraft-cps.com

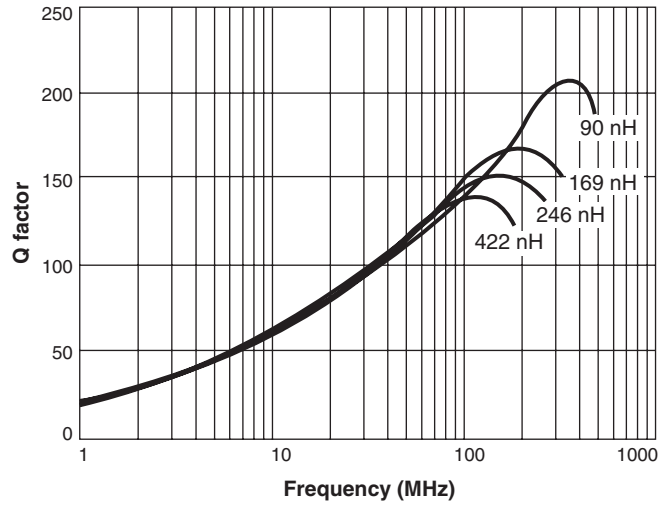
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# AE536RAT Series Air Core Inductors

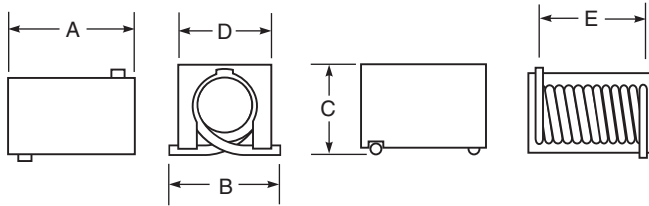
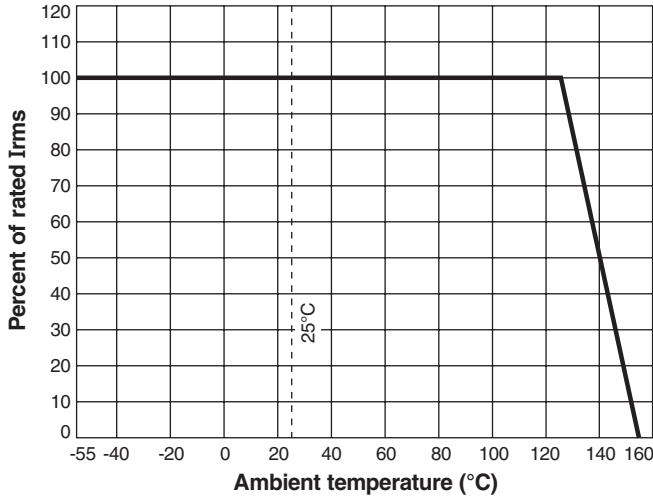
## Typical L vs Frequency



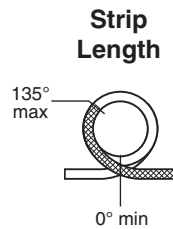
## Typical Q vs Frequency



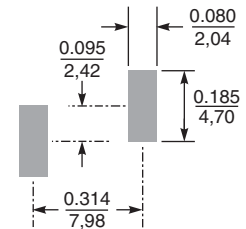
## Typical Current Derating



A max	B max	C max	D	E
0.415	0.260	0.235	0.226 ±0.003	0.314 ±0.020
10,55	6,60	5,97	5,74 ±0,08	7,98 ±0,51



### Suggested Land Pattern



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