

Outgassing Compliant Air Core Inductors AE350RAT AE394RAT



- 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 (Sn-Pb) terminations ensure the best possible board adhesion

Terminations Tin-lead (63/37) over copper

Weight AE350RAT: 6 mg – 18 mg; AE394RAT: 14 mg – 30 mg

Ambient temperature –55°C to +125°C with I_{max} current

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

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

AE350RAT: 500 per 7" reel Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.5 mm pocket depth

AE394RAT: 500 per 7" reel Plastic tape: 12 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.6 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)
AE350RAT1N7KSZ	2	1.65	10	100	>5.0	4.0	1.6
AE350RAT2N6JSZ	3	2.55	5	100	>5.0	5.0	1.6
AE350RAT3N9_SZ	4	3.85	5,2	100	>5.0	6.0	1.6
AE350RAT5N4_SZ	5	5.40	5,2	100	>5.0	8.0	1.6
AE394RAT5N6_SZ	6	5.60	5,2	100	>5.0	9.0	1.6
AE394RAT7N2_SZ	7	7.15	5,2	100	>5.0	10	1.6
AE394RAT8N8_SZ	8	8.80	5,2	100	>5.0	12	1.6
AE394RAT9N9_SZ	9	9.85	5,2	100	>5.0	13	1.6
AE394RAT13N_SZ	10	12.55	5,2	100	4.6	14	1.6

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

AE394RAT13GSZ

Tolerance: G = 2% J = 5%

Screening: Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

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

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

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

3. Q measured at 800 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. 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.



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

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

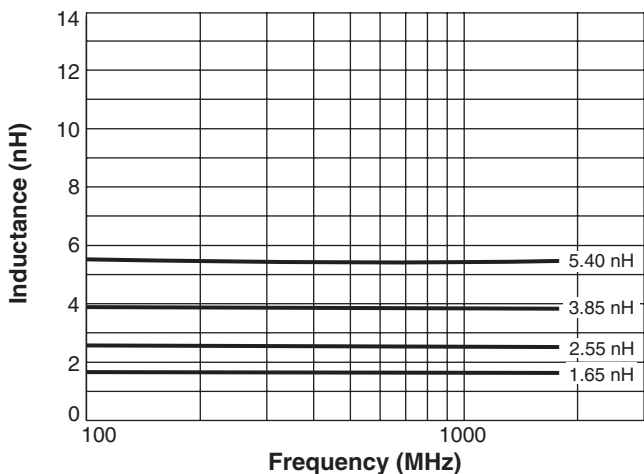
Document AE163-1 Revised 02/22/21

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.

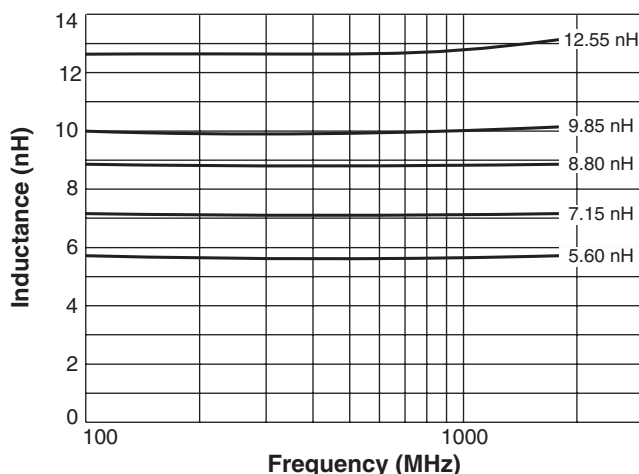
S-Parameter files
ON OUR WEB SITE
SPICE models
ON OUR WEB SITE

AE350RAT/AE394RAT Air Core Inductors

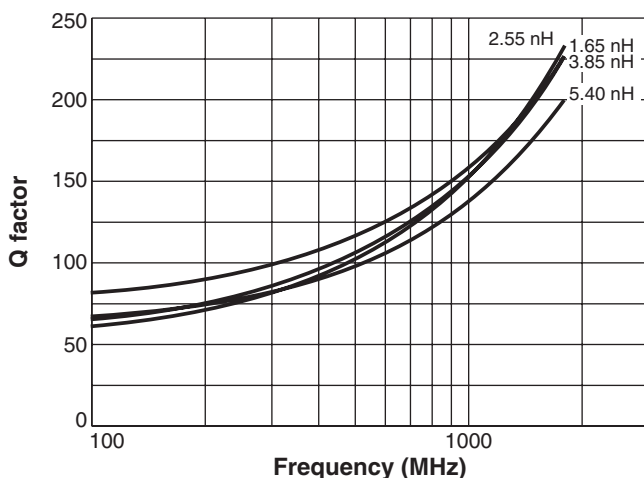
L vs Frequency – AE350RAT Series



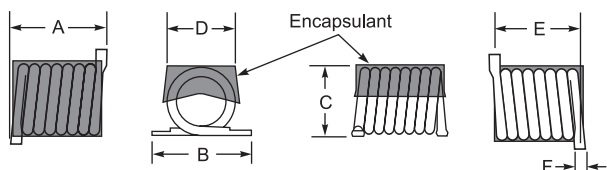
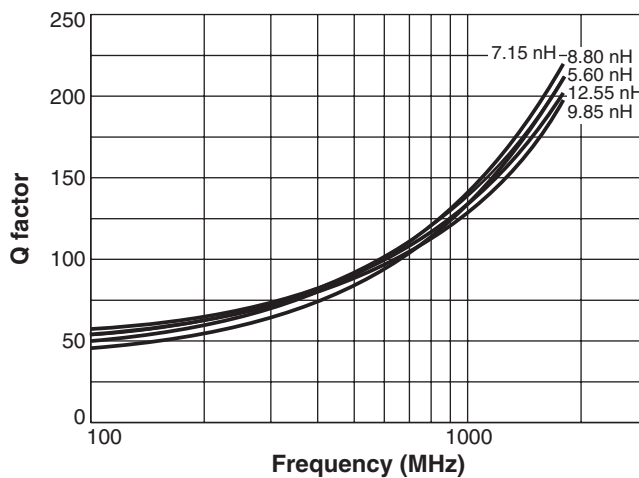
L vs Frequency – AE394RAT Series



Q vs Frequency – AE350RAT Series

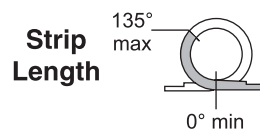


Q vs Frequency – AE394RAT Series

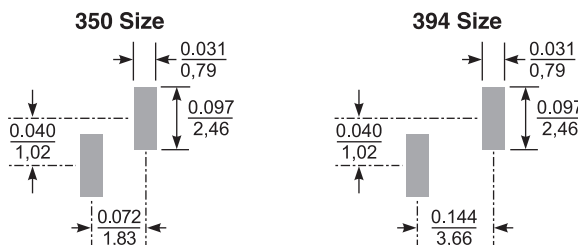


Size	A max	B max	C max	D	E	F max
350	0.095 2,41	0.135 3,43	0.060 1,52	0.055 ±0.010 1,40 ±0,25	0.072 ±0.010 1,83 ±0,25	0.020 0,51
394	0.165 4,19	0.135 3,43	0.062 1,58	0.055 ±0.010 1,40 ±0,25	0.144 ±0.012 3,66 ±0,30	0.020 0,51

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



Suggested Land Patterns



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

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

Document AE163-2 Revised 02/22/21

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.