

# High-Reliability Air Core Inductors MS350RAT MS394RAT



- High Q over a wide range of frequencies
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Tin-lead (Sn-Pb) terminations ensure the best possible board adhesion

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

**Weight** MS350RAT: 6 mg – 18 mg; MS394RAT: 14 mg – 30 mg

**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

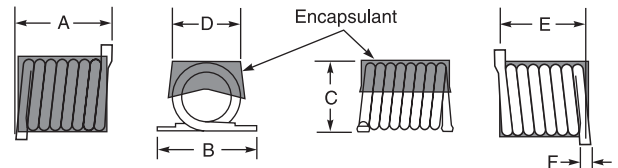
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Enhanced crush-resistant packaging**

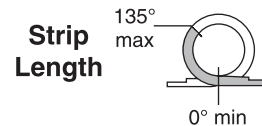
**MS350RAT:** 500 per 7" reel Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.5 mm pocket depth

**MS394RAT:** 500 per 7" reel Plastic tape: 12 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.6 mm pocket depth

Part number <sup>1</sup>	Turns	L <sup>2</sup> (nH)	Percent tol	Q <sup>3</sup> min	SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (mOhm)	I <sub>max</sub> (A)
MS350RAT1N7KSZ	2	1.65	10	100	10.0	4.0	1.6
MS350RAT2N6JSZ	3	2.55	5	100	8.2	5.0	1.6
MS350RAT3N9_SZ	4	3.85	5,2	100	7.5	6.0	1.6
MS350RAT5N4_SZ	5	5.40	5,2	100	7.0	8.0	1.6
MS394RAT5N6_SZ	6	5.60	5,2	100	6.5	9.0	1.6
MS394RAT7N2_SZ	7	7.15	5,2	100	6.0	10	1.6
MS394RAT8N8_SZ	8	8.80	5,2	100	6.0	12	1.6
MS394RAT9N9_SZ	9	9.85	5,2	100	5.2	13	1.6
MS394RAT13N_SZ	10	12.55	5,2	100	4.6	14	1.6



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



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

**MS394RAT10GSZ**

**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 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.

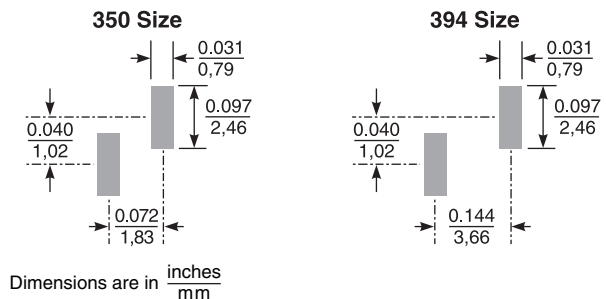
4. SRF measured on an Agilent/HP 8753ES or equivalent with a Coilcraft CCF1268 test fixture. Parts with SRF >5 GHz are verified to >5 GHz in screening.

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.

### Suggested Land Patterns



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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**

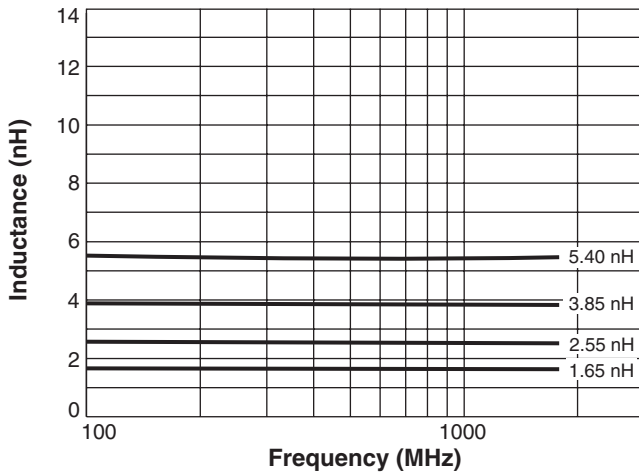
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**SPICE models**

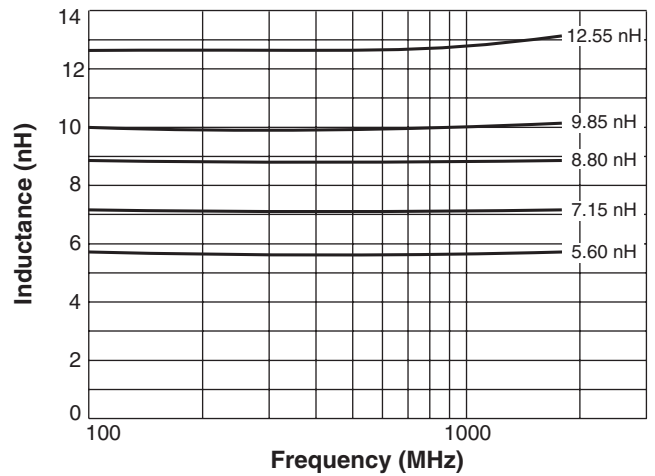
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# MS350RAT/MS394RAT Air Core Inductors

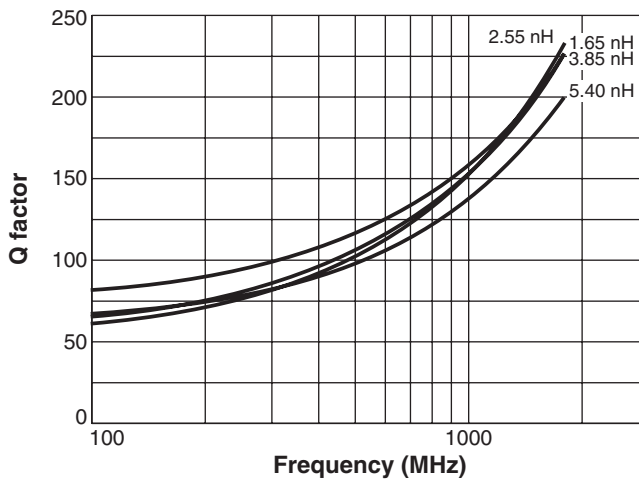
**L vs Frequency – MS350RAT Series**



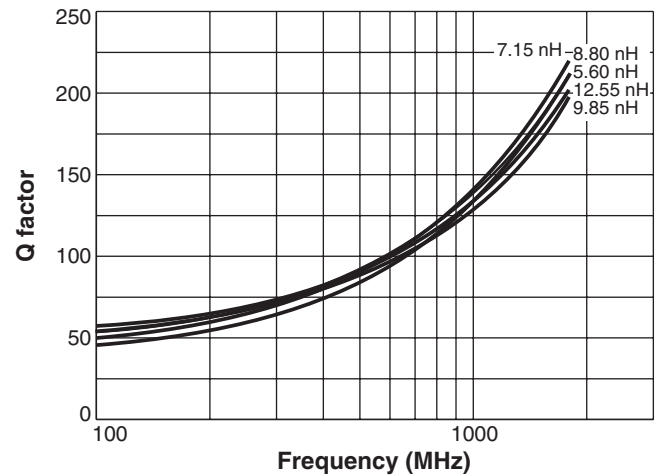
**L vs Frequency – MS394RAT Series**



**Q vs Frequency – MS350RAT Series**



**Q vs Frequency – MS394RAT Series**



CRITICAL PRODUCTS & SERVICES

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