

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

Ambient temperature -55°C to +125°C with I_{max} current, +125°C to +155°C with derated current

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 ¹	Turns	L ² (nH)	Percent tol	Q ³ min	SRF min ⁴ (GHz)	DCR max ⁵ (mOhm)	I _{max} (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

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

MS394RAT10GSZ

Tolerance: G = 2% J = 5%

Testing: Z = COTS

H = Screening per Coilcraft CP-SA-10001

N = Screening per Coilcraft CP-SA-10003

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

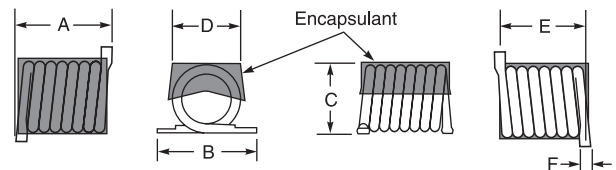
3. Q measured at 800 MHz on an Agilent/HP 4291A or equivalent with a 16193A test fixture or equivalent.

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.

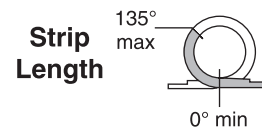
5. DCR measured on a Keithley 580 Micro-Ohmmeter or equivalent.

6. Electrical specifications at 25°C.

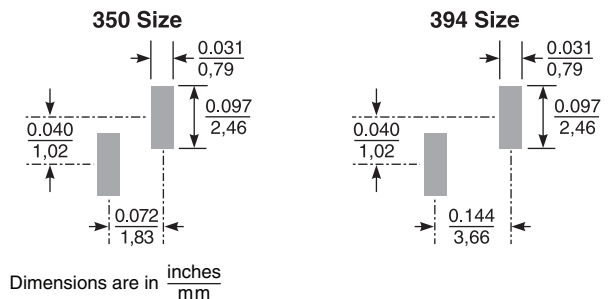
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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



Suggested Land Patterns



S-Parameter files

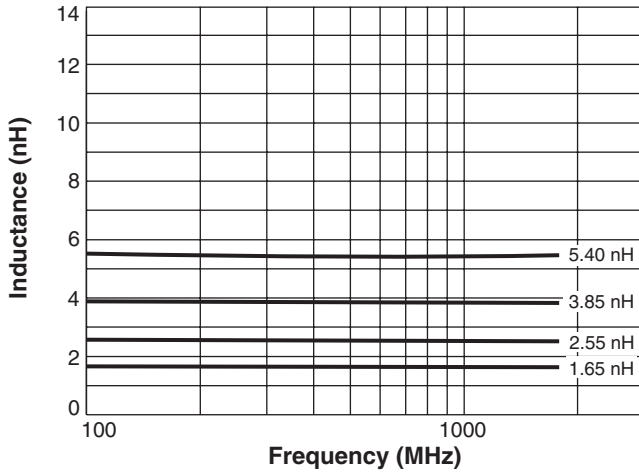
ON OUR WEB SITE

SPICE models

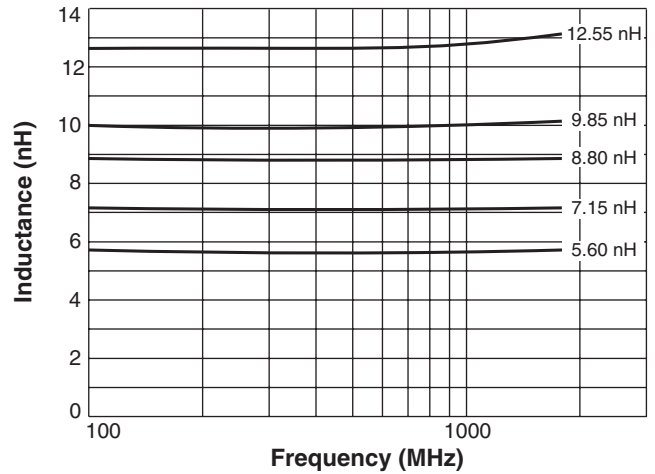
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MS350RAT/MS394RAT Air Core Inductors

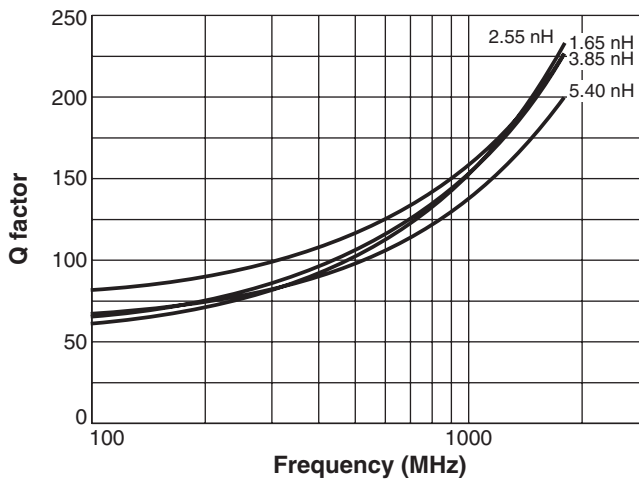
L vs Frequency – MS350RAT Series



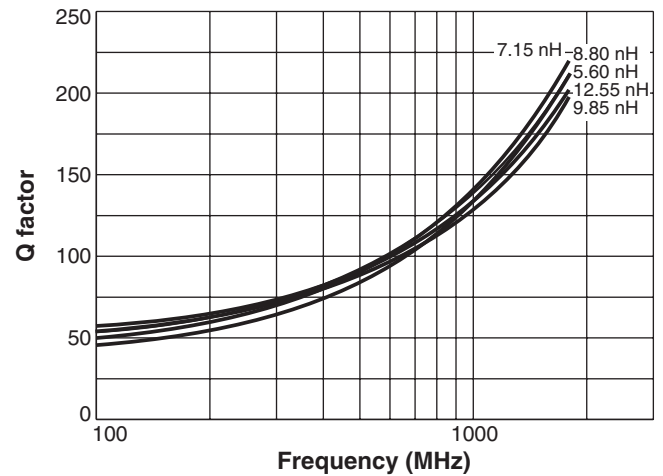
L vs Frequency – MS394RAT Series



Q vs Frequency – MS350RAT Series



Q vs Frequency – MS394RAT Series



Typical Current Derating

