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 Imax 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)	Imax (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

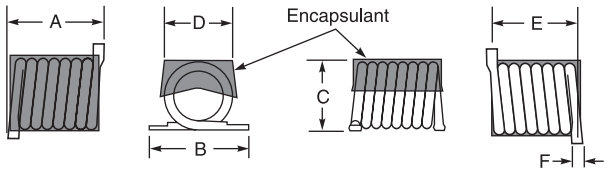
1. When ordering, specify **tolerance** and **testing** codes:

MS394RAT10GSZ

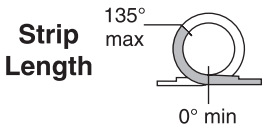
Tolerance: **G** = 2% **J** = 5%
Testing: **Z** = COTS
H = Screening per Coilcraft CP-SA-10001
N = Screening per Coilcraft CP-SA-10003

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.

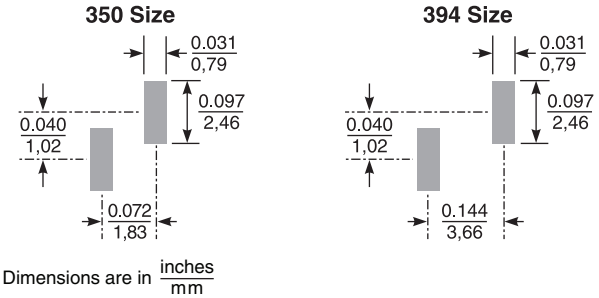
Refer to Doc 362 “Soldering Surface Mount Components” before soldering.



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



Coilcraft CPS
CRITICAL PRODUCTS & SERVICES

© Coilcraft, Inc. 2011

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

Document MS163-1 Revised 09/08/11

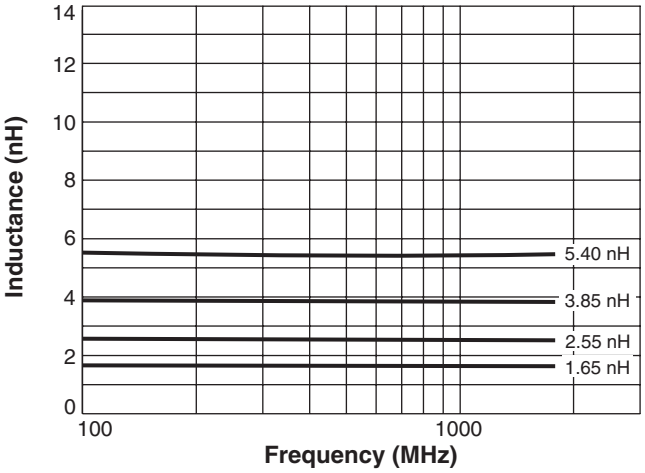
1102 Silver Lake Road
Cary IL 60013
Phone 800-981-0363
Fax 847-639-1508
E-mail cps@coilcraft.com
Web www.coilcraft-cps.com

S-Parameter files
ON OUR WEB SITE

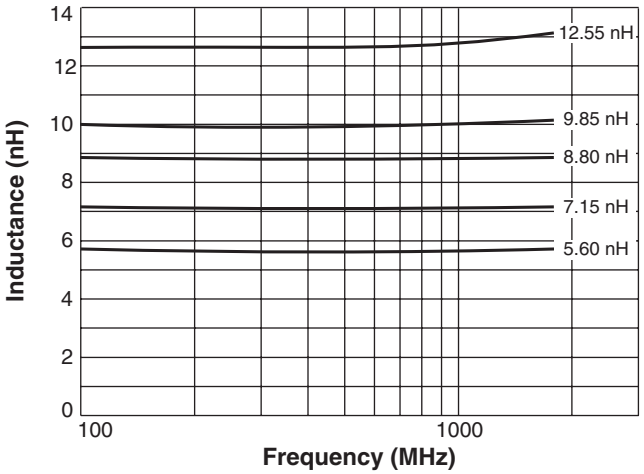
SPICE models
ON OUR WEB SITE

MS350RAT/MS394RAT Air Core Inductors

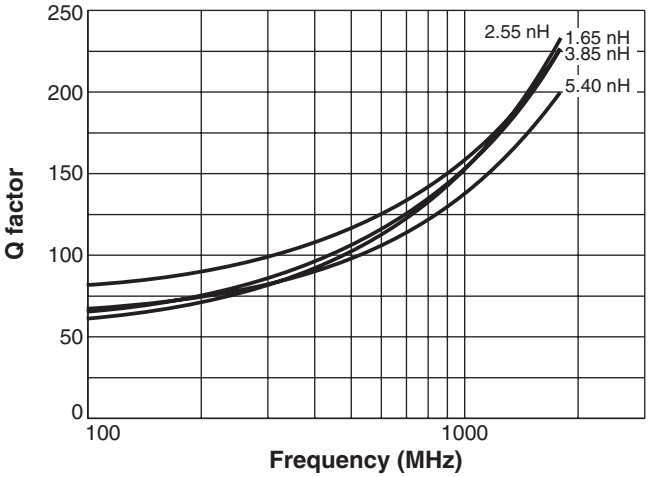
L vs Frequency – MS350RAT Series



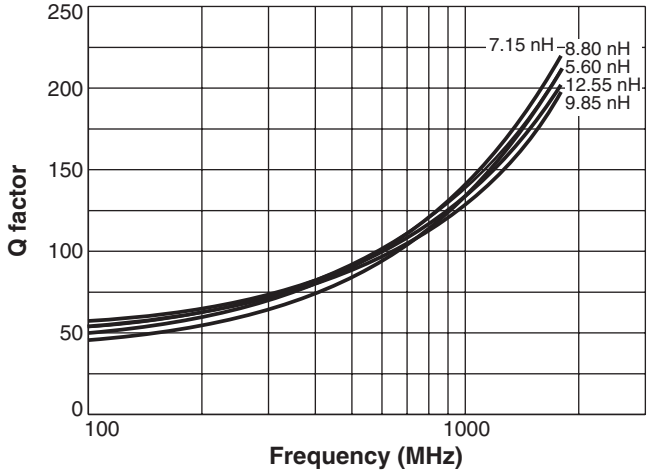
L vs Frequency – MS394RAT Series



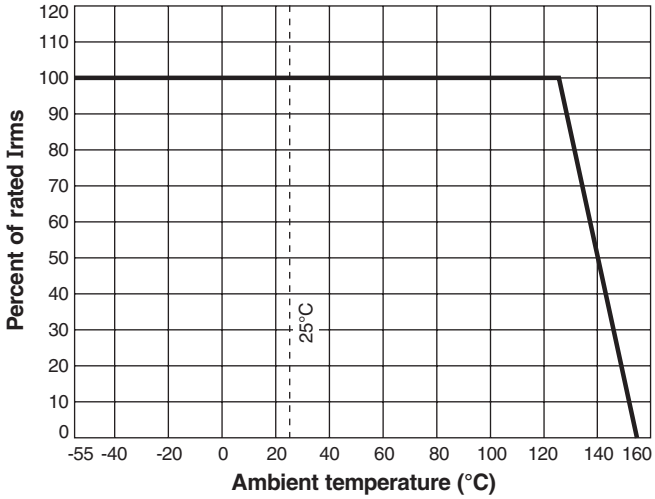
Q vs Frequency – MS350RAT Series



Q vs Frequency – MS394RAT Series



Typical Current Derating



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

Document MS163-2 Revised 09/08/11

1102 Silver Lake Road
Cary IL 60013
Phone 800-981-0363
Fax 847-639-1508
E-mail cps@coilcraft.com
Web www.coilcraft-cps.com

© Coilcraft, Inc. 2011