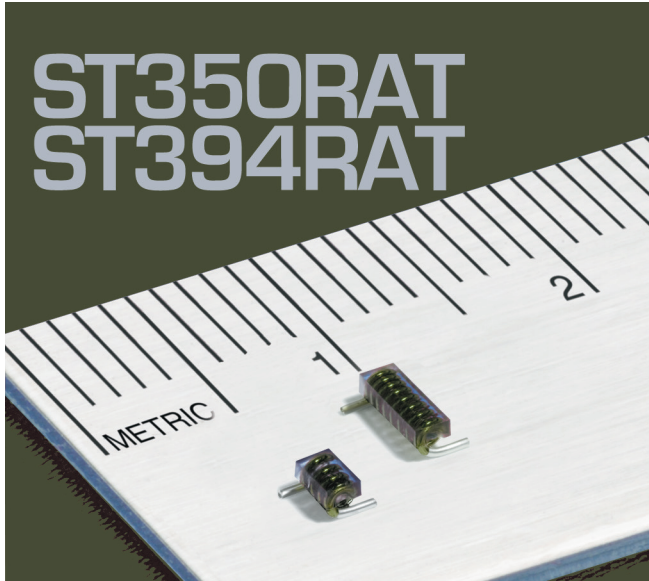


# Air Core Inductors for Critical Applications

ST350RAT  
ST394RAT



- High Q over a wide range of frequencies
- Acrylic jacket provides a flat top for pick and place
- Solder coated leads ensure reliable soldering

**Terminations** Tin-silver over copper. Other terminations available at additional cost.

**Ambient temperature** -40°C to +125°C with I<sub>max</sub> current

**Maximum part temperature** +140°C (ambient + temp rise).

**Storage temperature** Component: -55°C to +140°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

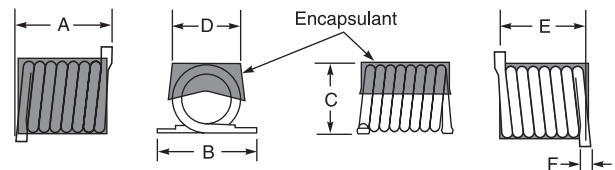
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Packaging**

**ST350RAT:** 500 per 7" reel Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.5 mm pocket depth

**ST394RAT:** 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><br>(nH) | Percent<br>tol | Q <sup>3</sup><br>min | SRF<br>min <sup>4</sup><br>(GHz) | DCR<br>max <sup>5</sup><br>(mOhm) | I <sub>max</sub><br>(A) |
|--------------------------|-------|------------------------|----------------|-----------------------|----------------------------------|-----------------------------------|-------------------------|
| ST350RAT1N7KLZ           | 2     | 1.65                   | 10             | 100                   | 10                               | 4.0                               | 1.6                     |
| ST350RAT2N6JLZ           | 3     | 2.55                   | 5              | 100                   | 8.2                              | 5.0                               | 1.6                     |
| ST350RAT3N9_LZ           | 4     | 3.85                   | 5,2            | 100                   | 7.5                              | 6.0                               | 1.6                     |
| ST350RAT5N4_LZ           | 5     | 5.40                   | 5,2            | 100                   | 7.0                              | 8.0                               | 1.6                     |
| ST394RAT5N6_LZ           | 6     | 5.60                   | 5,2            | 100                   | 6.5                              | 9.0                               | 1.6                     |
| ST394RAT7N2_LZ           | 7     | 7.15                   | 5,2            | 100                   | 6.0                              | 10                                | 1.6                     |
| ST394RAT8N8_LZ           | 8     | 8.80                   | 5,2            | 100                   | 6.0                              | 12                                | 1.6                     |
| ST394RAT9N9_LZ           | 9     | 9.85                   | 5,2            | 100                   | 5.2                              | 13                                | 1.6                     |
| ST394RAT13N_LZ           | 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, termination and testing** codes:

ST394RAT10GLZ

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

**Termination:** L = Tin-silver over copper.

Special order:

T = Tin-silver-copper (95.5/4/0.5) or S = Tin-lead (63/37).

**Testing:** Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

T = Screening per MIL-STD-981

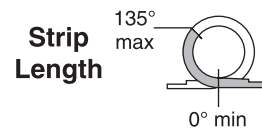
U = Screening per EEE-INST-002

F = Screening per ESCC 3201

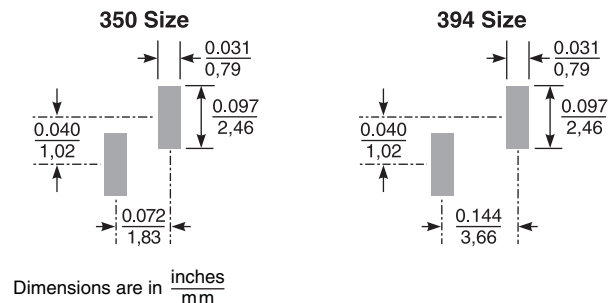
All screening performed to the document's latest revision  
Custom screening also available

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**



CRITICAL PRODUCTS & SERVICES

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Document ST163-1 Revised 05/16/17

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**

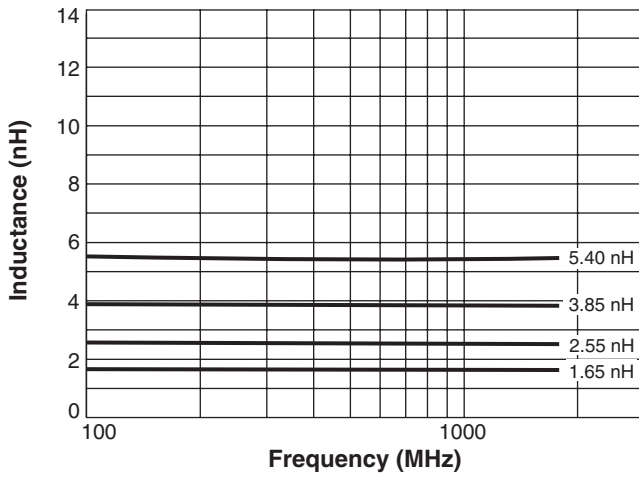
ON OUR WEB SITE

**SPICE models**

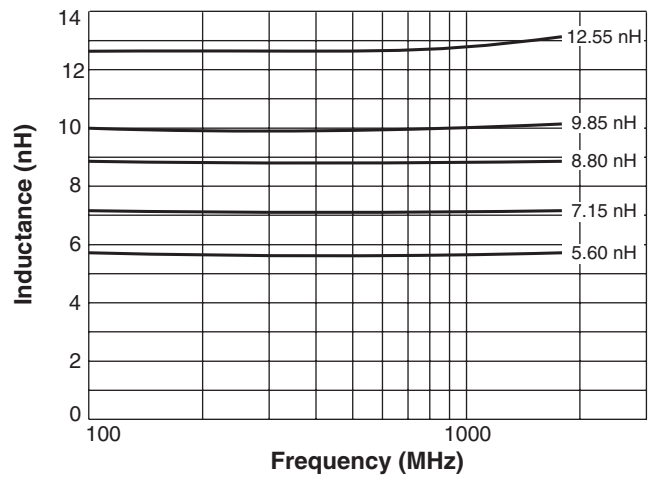
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# ST350RAT/ST394RAT Air Core Inductors

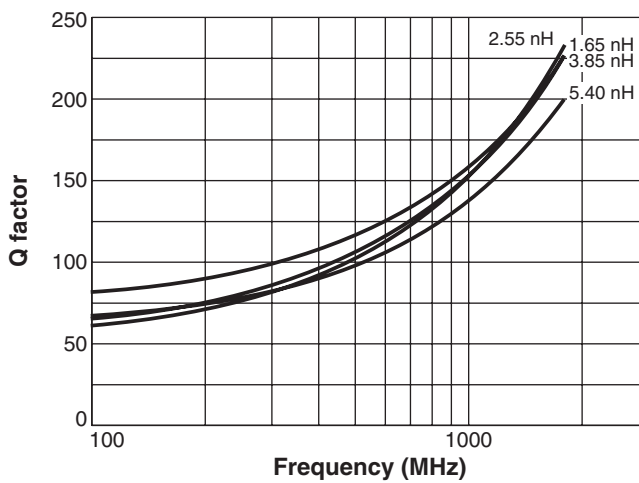
**L vs Frequency – ST350RAT Series**



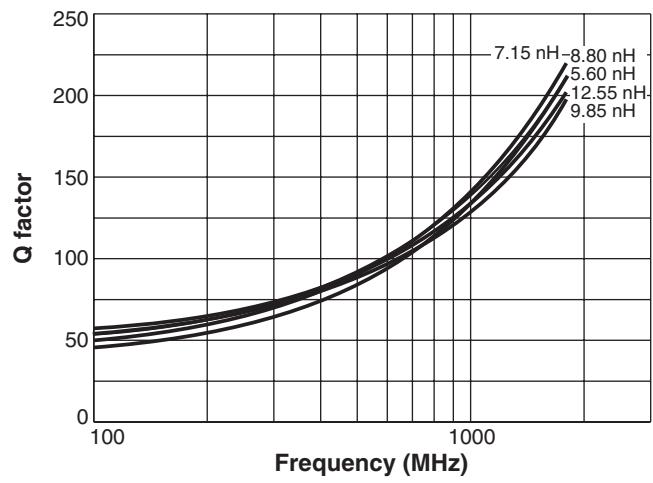
**L vs Frequency – ST394RAT Series**



**Q vs Frequency – ST350RAT Series**



**Q vs Frequency – ST394RAT Series**



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