

# Chip Inductors for Critical Applications - ST336RAG

- Exceptional Q values, even at high frequencies
- Tight tolerances – 2% for most
- Wirewound construction for highest possible self resonance – up to 9.5 GHz

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent tolerance <sup>3</sup> | Q typ <sup>4</sup> | SRF typ <sup>5</sup><br>(MHz) | DCR max <sup>6</sup><br>(Ohms) | I <sub>max</sub> <sup>7</sup><br>(A) |
|--------------------------|---------------------------------|--------------------------------|--------------------|-------------------------------|--------------------------------|--------------------------------------|
| ST336RAG2N6JR_           | 2.6 @ 250 MHz                   | 5                              | 100 @ 1500 MHz     | 9500                          | 0.015                          | 0.80                                 |
| ST336RAG6N2JR_           | 6.2 @ 250 MHz                   | 5                              | 104 @ 1000 MHz     | 7200                          | 0.027                          | 0.80                                 |
| ST336RAG6N8JR_           | 6.8 @ 250 MHz                   | 5                              | 90 @ 1000 MHz      | 6000                          | 0.066                          | 0.80                                 |
| ST336RAG11N_R_           | 11 @ 250 MHz                    | 5,2                            | 93 @ 500 MHz       | 4750                          | 0.039                          | 0.80                                 |
| ST336RAG12N_R_           | 12 @ 250 MHz                    | 5,2                            | 91 @ 500 MHz       | 4425                          | 0.039                          | 0.80                                 |
| ST336RAG15N_R_           | 15 @ 250 MHz                    | 5,2                            | 90 @ 500 MHz       | 3100                          | 0.066                          | 0.80                                 |
| ST336RAG13N_R_           | 13 @ 250 MHz                    | 5,2                            | 91 @ 500 MHz       | 4100                          | 0.039                          | 0.80                                 |
| ST336RAG18N_R_           | 18 @ 250 MHz                    | 5,2                            | 95 @ 500 MHz       | 3650                          | 0.050                          | 0.80                                 |
| ST336RAG27N_R_           | 27 @ 250 MHz                    | 5,2                            | 120 @ 500 MHz      | 2830                          | 0.083                          | 0.80                                 |
| ST336RAG33N_R_           | 33 @ 250 MHz                    | 5,2                            | 100 @ 500 MHz      | 2410                          | 0.087                          | 0.80                                 |
| ST336RAG47N_R_           | 47 @ 200 MHz                    | 5,2                            | 105 @ 500 MHz      | 2170                          | 0.093                          | 0.80                                 |
| ST336RAG50N_R_           | 50 @ 200 MHz                    | 5,2                            | 115 @ 500 MHz      | 2010                          | 0.122                          | 0.80                                 |
| ST336RAG56N_R_           | 56 @ 200 MHz                    | 5,2                            | 100 @ 500 MHz      | 1815                          | 0.122                          | 0.80                                 |
| ST336RAG75N_R_           | 75 @ 200 MHz                    | 5,2                            | 114 @ 500 MHz      | 1685                          | 0.168                          | 0.72                                 |
| ST336RAG82N_R_           | 82 @ 150 MHz                    | 5,2                            | 103 @ 500 MHz      | 1525                          | 0.168                          | 0.72                                 |
| ST336RAG101_R_           | 100 @ 150 MHz                   | 5,2                            | 100 @ 500 MHz      | 1400                          | 0.220                          | 0.69                                 |
| ST336RAG121_R_           | 120 @ 150 MHz                   | 5,2                            | 80 @ 250 MHz       | 1265                          | 0.293                          | 0.60                                 |
| ST336RAG151_R_           | 150 @ 100 MHz                   | 5,2                            | 80 @ 250 MHz       | 1150                          | 0.288                          | 0.59                                 |
| ST336RAG181_R_           | 180 @ 100 MHz                   | 5,2                            | 77 @ 250 MHz       | 1025                          | 0.374                          | 0.52                                 |
| ST336RAG201_R_           | 200 @ 100 MHz                   | 5,2                            | 75 @ 250 MHz       | 950                           | 0.400                          | 0.52                                 |
| ST336RAG221_R_           | 220 @ 100 MHz                   | 5,2                            | 75 @ 250 MHz       | 930                           | 0.426                          | 0.50                                 |
| ST336RAG251_R_           | 251 @ 100 MHz                   | 5,2                            | 74 @ 250 MHz       | 873                           | 0.564                          | 0.44                                 |
| ST336RAG271_R_           | 270 @ 100 MHz                   | 5,2                            | 75 @ 100 MHz       | 830                           | 0.754                          | 0.34                                 |
| ST336RAG291_R_           | 291 @ 100 MHz                   | 5,2                            | 54 @ 100 MHz       | 840                           | 0.804                          | 0.34                                 |
| ST336RAG311_R_           | 310 @ 100 MHz                   | 5,2                            | 54 @ 100 MHz       | 820                           | 0.824                          | 0.34                                 |
| ST336RAG331_R_           | 330 @ 100 MHz                   | 5,2                            | 54 @ 100 MHz       | 770                           | 1.004                          | 0.31                                 |
| ST336RAG391_R_           | 390 @ 100 MHz                   | 5,2                            | 52 @ 100 MHz       | 700                           | 1.110                          | 0.28                                 |
| ST336RAG471_R_           | 470 @ 50 MHz                    | 5,2                            | 52 @ 100 MHz       | 640                           | 1.559                          | 0.25                                 |
| ST336RAG561_R_           | 560 @ 25 MHz                    | 5,2                            | 46 @ 100 MHz       | 550                           | 2.067                          | 0.21                                 |
| ST336RAG681_R_           | 680 @ 25 MHz                    | 5,2                            | 46 @ 100 MHz       | 535                           | 2.355                          | 0.18                                 |
| ST336RAG821_R_           | 820 @ 25 MHz                    | 5,2                            | 50 @ 100 MHz       | 485                           | 3.945                          | 0.15                                 |

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

**ST336RAG821JRZ**

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

**Termination:** R = Matte tin over nickel over silver-platinum-glass frit  
Special order: Q = Tin-silver-copper (95.5/4/0.5) over tin or P = non-RoHS tin-lead (63/37) over tin.

**Testing:** Z = Unscreened  
H = Group A screening per Coilcraft CP-SA-10001  
All screening performed to the document's latest revision  
Custom screening also available

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
  - Tolerances in bold are stocked for immediate shipment.
  - Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
  - SRF measured using an Agilent/HP 8720D network analyzer and a Coilcraft SMD-D test fixture.
  - DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF858 test fixture.
  - Current that causes a 15°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Core material** Ceramic

**Terminations** Matte tin over nickel over silver-platinum-glass frit. Other terminations available at additional cost.

**Weight** 9.5 – 12.5 mg

**Ambient temperature** –40°C to +125°C with Irms current

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

**Storage temperature** Component: –55°C to +140°C.  
Tape and reel packaging: –40°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)** +100 to +250 ppm/°C

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

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

One per billion hours / one billion hours, calculated per Telcordia SR-332

**Packaging** 2000/7" reel; 7500/13" reel. Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.65 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).



CRITICAL PRODUCTS & SERVICES

© Coilcraft, Inc. 2024

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

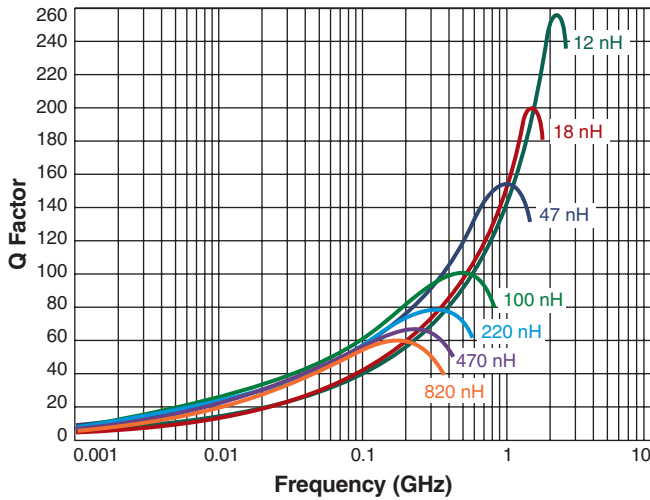
Fax 847-639-1508  
Email [cps@coilcraft.com](mailto:cps@coilcraft.com)  
[www.coilcraft-cps.com](http://www.coilcraft-cps.com)

Document ST1362-1 Revised 04/19/24

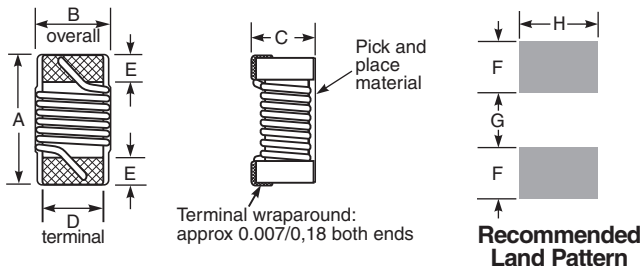
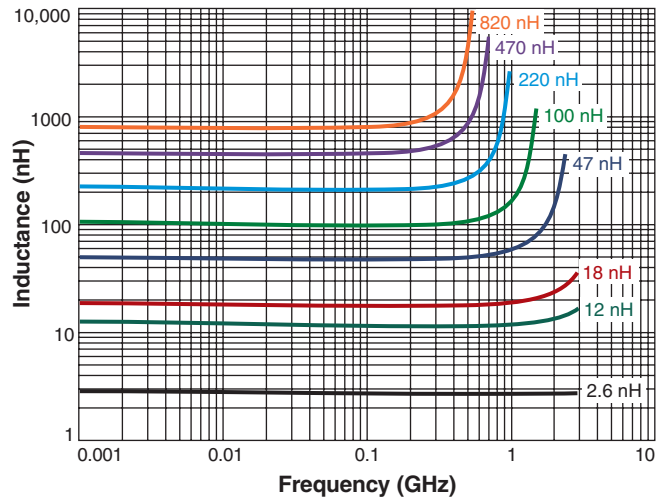
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

# ST336RAG Series (2012)

## Typical Q vs Frequency



## Typical L vs Frequency



| A max | B max | C max | D ref | E     | F     | G     | H     |        |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.087 | 0.068 | 0.061 | 0.061 | 0.012 | 0.040 | 0.044 | 0.078 | inches |
| 2,21  | 1,73  | 1,55  | 1,55  | 0,30  | 1,02  | 1,12  | 1,98  | mm     |

**Note:** Height dimension (C) is before optional solder application. For maximum height dimension including solder, add 0.006 in / 0,152 mm.



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

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

Document ST1362-2 Revised 04/19/24

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.