



# Chip Inductors - 0805CS Series (2012)

- Exceptional Q values, even at high frequencies
- Tight tolerances – 2% for most; 1% for some values
- Wirewound construction provides the highest SRFs in 0805 size

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent tolerance <sup>3</sup> | Q min <sup>4</sup> | SRF typ <sup>5</sup><br>(MHz) | DCR max <sup>6</sup><br>(Ohms) | Irms <sup>7</sup><br>(mA) | Color code |
|--------------------------|---------------------------------|--------------------------------|--------------------|-------------------------------|--------------------------------|---------------------------|------------|
| 0805CS-020X_L_           | 2.8 @ 250 MHz                   | <b>5</b>                       | 80 @ 1500 MHz      | 12200                         | 0.06                           | 800                       | Gray       |
| 0805CS-3N0X_L_           | 3.0 @ 250 MHz                   | <b>5</b>                       | 65 @ 1500 MHz      | 12200                         | 0.06                           | 800                       | White      |
| 0805CS-030X_L_           | 3.3 @ 250 MHz                   | <b>5</b>                       | 50 @ 1500 MHz      | 12200                         | 0.08                           | 600                       | Black      |
| 0805CS-050X_L_           | 5.6 @ 250 MHz                   | <b>5</b>                       | 65 @ 1000 MHz      | 5900                          | 0.08                           | 600                       | Orange     |
| 0805CS-060X_L_           | 6.8 @ 250 MHz                   | <b>5</b>                       | 50 @ 1000 MHz      | 5600                          | 0.11                           | 600                       | Brown      |
| 0805CS-070X_L_           | 7.5 @ 250 MHz                   | <b>5</b>                       | 50 @ 1000 MHz      | 4800                          | 0.14                           | 600                       | Green      |
| 0805CS-080X_L_           | 8.2 @ 250 MHz                   | <b>5,2</b>                     | 50 @ 1000 MHz      | 4400                          | 0.12                           | 600                       | Red        |
| 0805CS-100X_L_           | 10 @ 250 MHz                    | <b>5,2</b>                     | 60 @ 500 MHz       | 4300                          | 0.10                           | 600                       | Blue       |
| 0805CS-120X_L_           | 12 @ 250 MHz                    | <b>5,2</b>                     | 50 @ 500 MHz       | 4000                          | 0.15                           | 600                       | Orange     |
| 0805CS-150X_L_           | 15 @ 250 MHz                    | <b>5,2</b>                     | 50 @ 500 MHz       | 3200                          | 0.17                           | 600                       | Yellow     |
| 0805CS-180X_L_           | 18 @ 250 MHz                    | <b>5,2</b>                     | 50 @ 500 MHz       | 3100                          | 0.20                           | 600                       | Green      |
| 0805CS-220X_L_           | 22 @ 250 MHz                    | <b>5,2</b>                     | 55 @ 500 MHz       | 2600                          | 0.22                           | 500                       | Blue       |
| 0805CS-240X_L_           | 24 @ 250 MHz                    | <b>5,2</b>                     | 50 @ 500 MHz       | 2400                          | 0.22                           | 500                       | Gray       |
| 0805CS-270X_L_           | 27 @ 250 MHz                    | <b>5,2</b>                     | 55 @ 500 MHz       | 2580                          | 0.25                           | 500                       | Violet     |
| 0805CS-330X_L_           | 33 @ 250 MHz                    | <b>5,2,1</b>                   | 60 @ 500 MHz       | 2150                          | 0.27                           | 500                       | Gray       |
| 0805CS-360X_L_           | 36 @ 250 MHz                    | <b>5,2,1</b>                   | 55 @ 500 MHz       | 1900                          | 0.27                           | 500                       | Orange     |
| 0805CS-390X_L_           | 39 @ 250 MHz                    | <b>5,2,1</b>                   | 60 @ 500 MHz       | 2000                          | 0.29                           | 500                       | White      |
| 0805CS-430X_L_           | 43 @ 200 MHz                    | <b>5,2,1</b>                   | 60 @ 500 MHz       | 1800                          | 0.34                           | 500                       | Yellow     |
| 0805CS-470X_L_           | 47 @ 200 MHz                    | <b>5,2,1</b>                   | 60 @ 500 MHz       | 1700                          | 0.31                           | 500                       | Black      |
| 0805CS-560X_L_           | 56 @ 200 MHz                    | <b>5,2,1</b>                   | 60 @ 500 MHz       | 1600                          | 0.34                           | 500                       | Brown      |
| 0805CS-680X_L_           | 68 @ 200 MHz                    | <b>5,2,1</b>                   | 60 @ 500 MHz       | 1500                          | 0.38                           | 500                       | Red        |
| 0805CS-820X_L_           | 82 @ 150 MHz                    | <b>5,2,1</b>                   | 65 @ 500 MHz       | 1330                          | 0.42                           | 400                       | Orange     |
| 0805CS-910X_L_           | 91 @ 150 MHz                    | <b>5,2,1</b>                   | 65 @ 500 MHz       | 1330                          | 0.48                           | 400                       | Black      |
| 0805CS-101X_L_           | 100 @ 150 MHz                   | <b>5,2,1</b>                   | 65 @ 500 MHz       | 1250                          | 0.46                           | 400                       | Yellow     |
| 0805CS-111X_L_           | 110 @ 150 MHz                   | <b>5,2</b>                     | 50 @ 250 MHz       | 1100                          | 0.48                           | 400                       | Brown      |
| 0805CS-121X_L_           | 120 @ 150 MHz                   | <b>5,2,1</b>                   | 50 @ 250 MHz       | 1100                          | 0.51                           | 400                       | Green      |
| 0805CS-151X_L_           | 150 @ 100 MHz                   | <b>5,2,1</b>                   | 50 @ 250 MHz       | 920                           | 0.56                           | 400                       | Blue       |
| 0805CS-181X_L_           | 180 @ 100 MHz                   | <b>5,2,1</b>                   | 50 @ 250 MHz       | 920                           | 0.64                           | 400                       | Violet     |
| 0805CS-221X_L_           | 220 @ 100 MHz                   | <b>5,2</b>                     | 50 @ 250 MHz       | 820                           | 0.70                           | 400                       | Gray       |
| 0805CS-241X_L_           | 240 @ 100 MHz                   | <b>5,2</b>                     | 44 @ 250 MHz       | 770                           | 1.00                           | 350                       | Red        |
| 0805CS-271X_L_           | 270 @ 100 MHz                   | <b>5,2</b>                     | 48 @ 250 MHz       | 730                           | 1.00                           | 350                       | White      |
| 0805CS-331X_L_           | 330 @ 100 MHz                   | <b>5,2</b>                     | 48 @ 250 MHz       | 650                           | 1.40                           | 310                       | Black      |
| 0805CS-391X_L_           | 390 @ 100 MHz                   | <b>5,2</b>                     | 48 @ 250 MHz       | 600                           | 1.50                           | 290                       | Brown      |
| 0805CS-471X_L_           | 470 @ 50 MHz                    | <b>5,2</b>                     | 33 @ 100 MHz       | 375                           | 1.76                           | 250                       | Violet     |
| 0805CS-561X_L_           | 560 @ 25 MHz                    | <b>5,2</b>                     | 23 @ 50 MHz        | 330                           | 1.90                           | 230                       | Orange     |
| 0805CS-681X_L_           | 680 @ 25 MHz                    | <b>5,2</b>                     | 23 @ 50 MHz        | 310                           | 2.20                           | 190                       | Green      |
| 0805CS-821X_L_           | 820 @ 25 MHz                    | <b>5,2</b>                     | 23 @ 50 MHz        | 310                           | 2.35                           | 180                       | Blue       |

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

**0805CS-821X G L C**

- Tolerance:** F = 1% G = 2% J = 5%  
(Table shows stock tolerances in bold.)
- Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
- Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel).  
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.  
D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (7500 parts per full reel).

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
3. Tolerances in bold are stocked for immediate shipment.
4. Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
5. SRF measured using an Agilent/HP 8720D network analyzer and a Coilcraft SMD-D test fixture.
6. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF858 test fixture.
7. Current that causes a 15°C temperature rise from 25°C ambient.
8. Electrical specifications at 25°C.  
See Qualification Standards section for environmental and test data.  
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Coilcraft**<sup>®</sup>

Specifications subject to change without notice.  
Please check our website for latest information.

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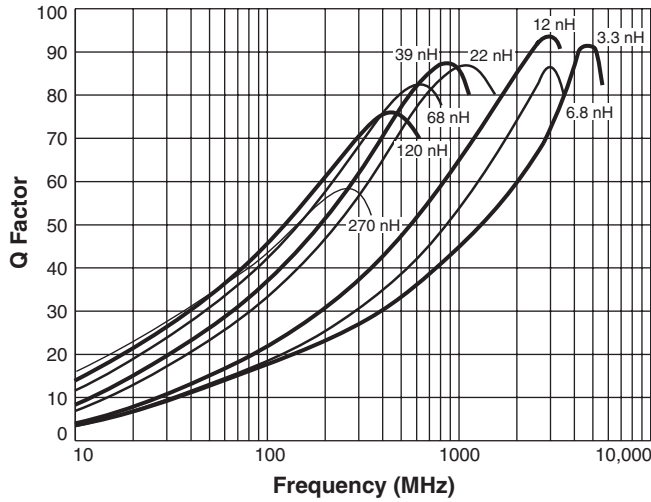
1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>

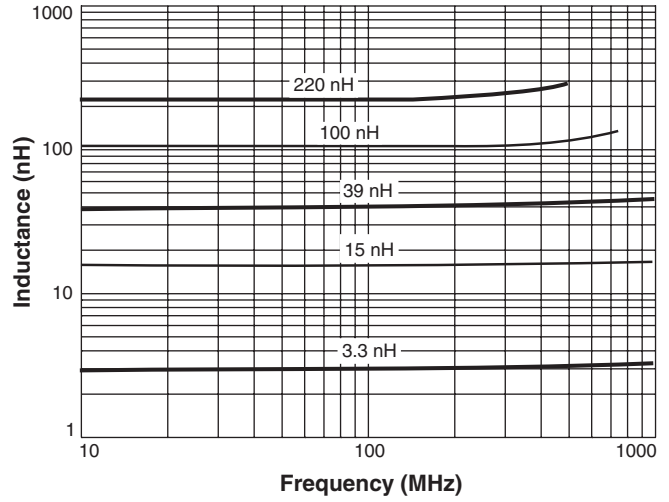


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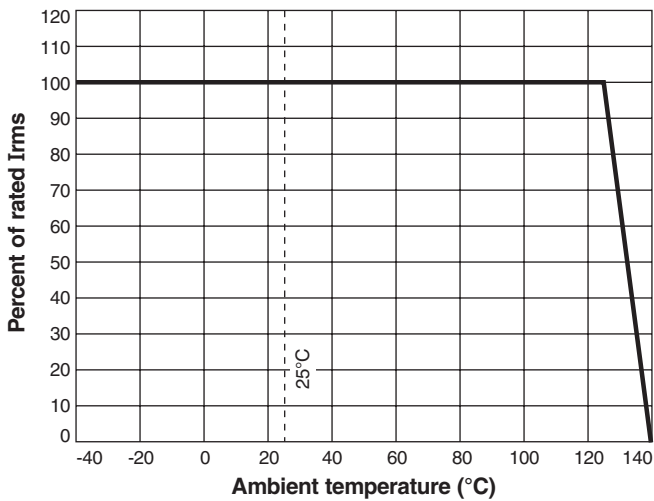
## Typical Q vs Frequency



## Typical L vs Frequency



## Irms Derating



**Designer's Kit C303** contains 10 of each 5% part  
**Designer's Kit C303-2** contains 10 of each 2% part

**Core material** Ceramic

**Terminations** RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.

**Weight** 10.2 – 11.6 mg

**Ambient temperature** -40°C to +125°C with I<sub>rms</sub> current, +125°C to +140°C with derated current

**Storage temperature** Component: -40°C to +140°C.  
 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

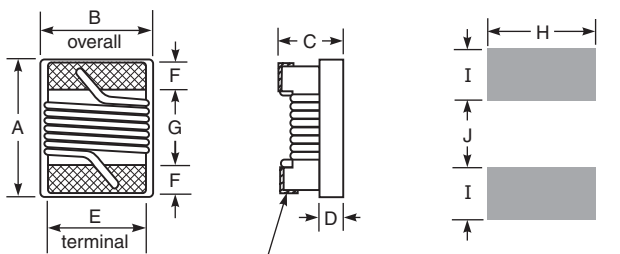
**Temperature Coefficient of Inductance (TCL)** +100 to +250 ppm/°C

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

**Mean Time Between Failures (MTBF)** 1 billion hours

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

**PCB washing** Only pure water or alcohol recommended



Terminal wraparound:  
 approx 0.015/0,38 both ends

**Recommended Land Pattern**

| A     | B     | C     | D     | E     | F     | G     | H     | I     | J     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max   | max   | max   | ref   |       |       |       |       |       |       |
| 0.090 | 0.068 | 0.060 | 0.020 | 0.050 | 0.020 | 0.040 | 0.070 | 0.040 | 0.030 |
| 2,29  | 1,73  | 1,52  | 0,51  | 1,27  | 0,51  | 1,02  | 1,78  | 1,02  | 0,76  |

**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
 MEASUREMENTS  
 SEE INDEX **TEST FIXTURES**



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 Please check our website for latest information.

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1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail info@coilcraft.com Web http://www.coilcraft.com