

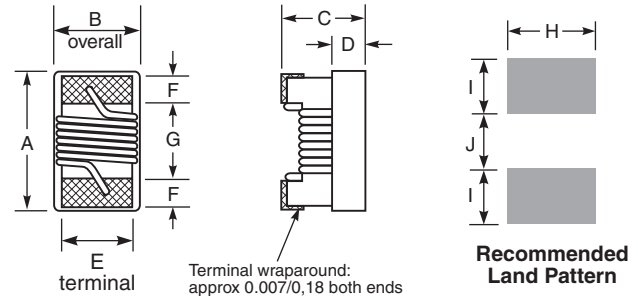


Chip Inductors - 0603CS Series (1608)

Ultra-small size, exceptional Q and high SRFs make these inductors ideal for high frequency applications where size is at a premium. They also have excellent DCR and current carrying characteristics.

These parts can be ordered with terminations that make them compliant with RoHS standards.

Coilcraft **Designer's Kits C124A** and **C124B** contain samples of 5% tolerance parts. Kits with 2% tolerance are also available. To order, contact Coilcraft or visit <http://order.coilcraft.com> to purchase on-line.



| A max | B max | C max | D ref | E | F | G | H | I | J |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.071 | 0.044 | 0.040 | 0.015 | 0.030 | 0.013 | 0.034 | 0.040 | 0.025 | 0.025 |
| 1,80 | 1,12 | 1,02 | 0,38 | 0,76 | 0,33 | 0,86 | 1,02 | 0,64 | 0,64 |

Weight: 3.2 – 3.7 mg

Tape and reel: 2000/7" reel 8 mm tape width

For packaging data see Tape and Reel Specifications section.

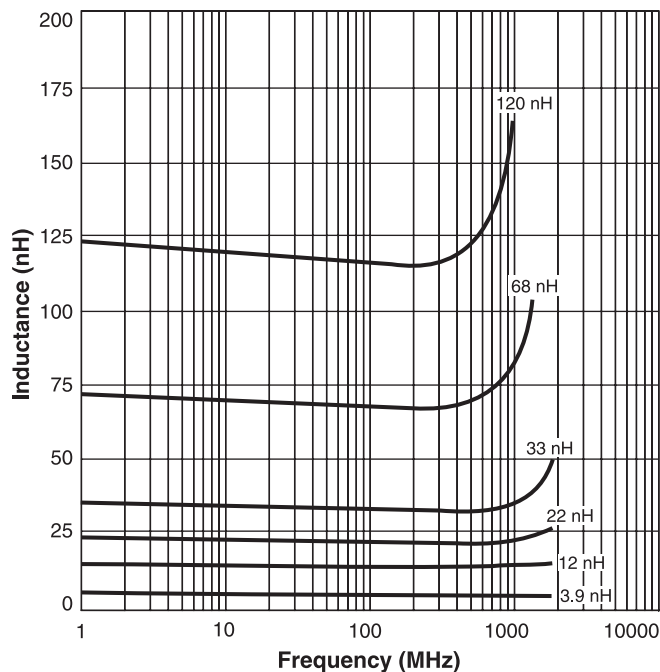
S-Parameter files

ON OUR WEB SITE OR CD

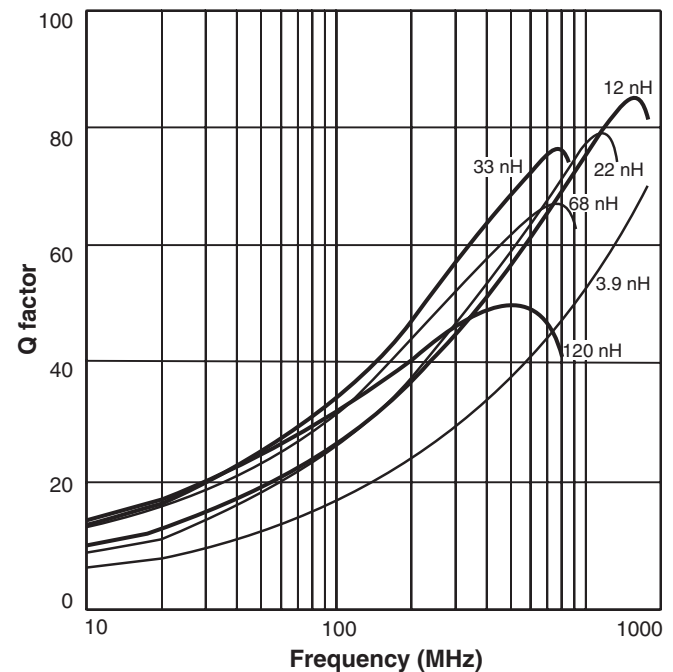
SPICE models

ON OUR WEB SITE OR CD

Typical L vs Frequency



Typical Q vs Frequency



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

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Specifications subject to change without notice. Document 195-1 Revised 10/28/03

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0603CS Series (1608)

| Part number ¹ | Inductance ² (nH) | Percent tolerance ³ | Q min ⁴ | 900 MHz | | 1.7 GHz | | SRF min ⁵ (MHz) | DCR max ⁶ (Ohms) | Irms ⁷ (mA) | Color code |
|--------------------------|---------------------------------|-----------------------------------|-----------------------|---------|-------|---------|-------|----------------------------------|-----------------------------------|---------------------------|---------------|
| | | | | L typ | Q typ | L typ | Q typ | | | | |
| 0603CS-1N6X_B_ | 1.6 @ 250 MHz | 10, 5 | 24 | 1.67 | 49 | 1.65 | 63 | 12500 | 0.030 | 700 | Red |
| 0603CS-1N8X_B_ | 1.8 @ 250 MHz | 10, 5 | 16 | 1.63 | 35 | 1.66 | 50 | 12500 | 0.045 | 700 | Black |
| 0603CS-3N3X_B_ | 3.3 @ 250 MHz | 10, 5,2 | 35 | 3.31 | 75 | 3.38 | 88 | 5900 | 0.045 | 700 | Blue |
| 0603CS-3N6X_B_ | 3.6 @ 250 MHz | 10, 5,2 | 22 | 3.72 | 53 | 3.71 | 65 | 5900 | 0.063 | 700 | Red |
| 0603CS-3N9X_B_ | 3.9 @ 250 MHz | 10, 5,2 | 22 | 3.95 | 49 | 3.96 | 67 | 6900 | 0.080 | 700 | Brown |
| 0603CS-4N3X_B_ | 4.3 @ 250 MHz | 10, 5,2 | 22 | 4.32 | 50 | 4.33 | 70 | 5900 | 0.063 | 700 | Orange |
| 0603CS-4N7X_B_ | 4.7 @ 250 MHz | 10, 5,2 | 20 | 4.72 | 47 | 4.75 | 57 | 5800 | 0.116 | 700 | Violet |
| 0603CS-5N1X_B_ | 5.1 @ 250 MHz | 10, 5,2 | 20 | 4.93 | 47 | 4.95 | 56 | 5700 | 0.140 | 700 | Green |
| 0603CS-5N6X_B_ | 5.6 @ 250 MHz | 10, 5,2 | 26 | 5.77 | 63 | 6.05 | 80 | 4760 | 0.075 | 700 | Black |
| 0603CS-6N8X_B_ | 6.8 @ 250 MHz | 10, 5,2 | 27 | 6.75 | 60 | 7.10 | 81 | 5800 | 0.110 | 700 | Red |
| 0603CS-7N5X_B_ | 7.5 @ 250 MHz | 10, 5,2 | 28 | 7.70 | 60 | 7.82 | 65 | 4800 | 0.106 | 700 | Brown |
| 0603CS-8N2X_B_ | 8.2 @ 250 MHz | 10, 5,2 | 30 | 8.25 | 82 | 8.37 | 87 | 4200 | 0.115 | 700 | Orange |
| 0603CS-8N7X_B_ | 8.7 @ 250 MHz | 5,2 | 28 | 8.86 | 62 | 9.32 | 58 | 4600 | 0.109 | 700 | Yellow |
| 0603CS-9N5X_B_ | 9.5 @ 250 MHz | 5,2 | 28 | 9.7 | 59 | 9.92 | 61 | 5400 | 0.135 | 700 | Blue |
| 0603CS-10NX_B_ | 10 @ 250 MHz | 5,2 | 31 | 10.0 | 66 | 10.6 | 83 | 4800 | 0.130 | 700 | Orange |
| 0603CS-11NX_B_ | 11 @ 250 MHz | 5,2 | 30 | 11.0 | 53 | 11.5 | 56 | 4000 | 0.086 | 700 | Gray |
| 0603CS-12NX_B_ | 12 @ 250 MHz | 5,2 | 35 | 12.3 | 72 | 13.5 | 83 | 4000 | 0.130 | 700 | Yellow |
| 0603CS-15NX_B_ | 15 @ 250 MHz | 5,2 | 35 | 15.4 | 64 | 16.8 | 89 | 4000 | 0.170 | 700 | Green |
| 0603CS-16NX_B_ | 16 @ 250 MHz | 5,2 | 34 | 6.2 | 55 | 17.3 | 52 | 3300 | 0.104 | 700 | White |
| 0603CS-18NX_B_ | 18 @ 250 MHz | 5,2 | 35 | 18.7 | 70 | 21.4 | 69 | 3100 | 0.170 | 700 | Blue |
| 0603CS-22NX_B_ | 22 @ 250 MHz | 5,2 | 38 | 22.8 | 73 | 26.1 | 71 | 3000 | 0.190 | 700 | Violet |
| 0603CS-23NX_B_ | 23 @ 250 MHz | 5,2 | 38 | 24.1 | 71 | 28.0 | 67 | 2850 | 0.190 | 700 | Orange |
| 0603CS-24NX_B_ | 24 @ 250 MHz | 5,2 | 36 | 24.5 | 45 | 28.7 | 39 | 2650 | 0.135 | 700 | Black |
| 0603CS-27NX_B_ | 27 @ 250 MHz | 5,2 | 40 | 29.2 | 74 | 34.6 | 65 | 2800 | 0.220 | 600 | Gray |
| 0603CS-30NX_B_ | 30 @ 250 MHz | 5,2 | 37 | 31.4 | 47 | 39.9 | 28 | 2250 | 0.144 | 600 | Brown |
| 0603CS-33NX_B_ | 33 @ 250 MHz | 5,2 | 40 | 36.0 | 67 | 49.5 | 42 | 2300 | 0.220 | 600 | White |
| 0603CS-36NX_B_ | 36 @ 250 MHz | 5,2 | 37 | 39.4 | 47 | 52.7 | 24 | 2080 | 0.250 | 600 | Red |
| 0603CS-39NX_B_ | 39 @ 250 MHz | 5,2 | 40 | 42.7 | 60 | 60.2 | 40 | 2200 | 0.250 | 600 | Black |
| 0603CS-43NX_B_ | 43 @ 250 MHz | 5,2 | 38 | 47.0 | 44 | 64.9 | 21 | 2000 | 0.280 | 600 | Orange |
| 0603CS-47NX_B_ | 47 @ 200 MHz | 5,2 | 38 | 52.2 | 62 | 77.2 | 35 | 2000 | 0.280 | 600 | Brown |
| 0603CS-51NX_B_ | 51 @ 200 MHz | 5,2 | 35 | 55.5 | 69 | 82.2 | 34 | 1900 | 0.270 | 600 | Blue |
| 0603CS-56NX_B_ | 56 @ 200 MHz | 5,2 | 38 | 62.5 | 56 | 97.0 | 26 | 1900 | 0.310 | 600 | Red |
| 0603CS-68NX_B_ | 68 @ 200 MHz | 5,2 | 37 | 80.5 | 54 | 168 | 21 | 1700 | 0.340 | 600 | Orange |
| 0603CS-72NX_B_ | 72 @ 150 MHz | 5,2 | 34 | 82.0 | 53 | 135 | 20 | 1700 | 0.490 | 400 | Yellow |
| 0603CS-82NX_B_ | 82 @ 150 MHz | 5,2 | 34 | 96.2 | 54 | 177 | 21 | 1700 | 0.540 | 400 | Green |
| 0603CS-R10X_B_ | 100 @ 150 MHz | 5,2 | 34 | 124 | 49 | — | — | 1400 | 0.580 | 400 | Blue |
| 0603CS-R11X_B_ | 110 @ 150 MHz | 5,2 | 32 | 138 | 43 | — | — | 1350 | 0.610 | 300 | Violet |
| 0603CS-R12X_B_ | 120 @ 150 MHz | 5,2 | 32 | 166 | 39 | — | — | 1300 | 0.650 | 300 | Gray |
| 0603CS-R15X_B_ | 150 @ 150 MHz | 5,2 | 28 | 250 | 25 | — | — | 990 | 0.920 | 280 | White |
| 0603CS-R18X_B_ | 180 @ 100 MHz | 5,2 | 25 | 305 | 22 | — | — | 990 | 1.25 | 240 | Black |
| 0603CS-R20X_B_ | 200 @ 100 MHz | 10, 5,2 | 25 | — | — | — | — | 900 | 1.98 | 200 | Green |
| 0603CS-R21X_B_ | 210 @ 100 MHz | 10, 5,2 | 27 | — | — | — | — | 895 | 2.06 | 200 | Gray |
| 0603CS-R22X_B_ | 220 @ 100 MHz | 5,2 | 25 | — | — | — | — | 900 | 2.10 | 200 | Brown |
| 0603CS-R25X_B_ | 250 @ 100 MHz | 10, 5,2 | 25 | — | — | — | — | 822 | 3.55 | 120 | Violet |
| 0603CS-R27X_B_ | 270 @ 100 MHz | 5,2 | 24 | — | — | — | — | 900 | 2.30 | 170 | Red |
| 0603CS-R33X_B_ | 330 @ 100 MHz | 5,2 | 25 | — | — | — | — | 900 | 3.89 | 100 | Blue |
| 0603CS-R39X_B_ | 390 @ 100 MHz | 5,2 | 25 | — | — | — | — | 900 | 4.35 | 100 | Yellow |

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

0603CS-R39X J B W

Tolerance: G = 2% J = 5% K = 10% (Table shows stock tolerances in bold.)

Termination: B = Standard Ag/Pd/Pt L = RoHS compliant Ag/Pd/Pt

Packaging: W = 7" machine-ready reel. EIA-481 punched paper tape (2000 parts per full reel).

U = Less than full reel. In tape, but not machine ready.
To have a leader and trailer added (\$25 charge),
use code letter W instead.

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286 impedance analyzer.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured at the same frequency as inductance 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. Average current for 15°C rise from 25°C ambient.

8. Operating temperature range -40°C to +125°C.

9. Electrical specifications at 25°C.

See Qualification Standards section for environmental and test data.

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Specifications subject to change without notice. Document 195-2 Revised 10/27/04

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