

Chip Inductors – 0402CS (1005)



Continuing in our long tradition of innovation and leadership, Coilcraft introduced the industry's first 0402 wirewound inductor.

This series shares all of the characteristics of Coilcraft's other ceramic inductors: exceptionally high Q factors, especially at use frequencies; outstanding self-resonant frequency; tight inductance tolerance; and excellent batch-to-batch consistency.

Typical L vs Frequency



Typical Q vs Frequency



Irms Derating



| A | B | C | D | E | F | G | H | I | J |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max | max | max | ref | | | | | | |
| 0.047 | 0.025 | 0.026 | 0.010 | 0.020 | 0.009 | 0.022 | 0.026 | 0.014 | 0.018 |
| 1,19 | 0,64 | 0,66 | 0,25 | 0,51 | 0,23 | 0,56 | 0,66 | 0,36 | 0,46 |

- Core material** Ceramic
- Environmental** RoHS compliant, halogen free optional
- Terminations** RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.
- Weight** 0.8 – 1.0 mg
- Ambient temperature** -40°C to +125°C with Irms current, +125°C to +140°C with derated current
- Storage temperature** Component: -40°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)** +25 to +125 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 or 5000 per 7" reel Paper tape: 8 mm wide, 1.68 mm thick, 2 mm pocket spacing
- PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.



US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
China +86-21-6218 8074 sales@coilcraft.com.cn
Singapore + 65-6484 8412 sales@coilcraft.com.sg

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0402CS Series (1005)

Designer's Kits C328A and B contain 20 each of all 5% values
 Designer's Kits C328A-2 and B-2 contain 20 each of all 2% values

| Part number ¹ | Inductance ² (nH) | Percent tolerance ³ | 900 MHz | | 1.7 GHz | | SRF min ⁵ (GHz) | DCR max ⁶ (Ohms) | Irms ⁷ (mA) |
|--------------------------|---------------------------------|-----------------------------------|---------|--------------------|---------|--------------------|-------------------------------|--------------------------------|---------------------------|
| | | | L typ | Q typ ⁴ | L typ | Q typ ⁴ | | | |
| 0402CS-1N0XJL_ | 1.0 | 5 | 1.02 | 77 | 1.02 | 69 | 12.70 | 0.045 | 1360 |
| 0402CS-1N2XJL_ | 1.2 | 5 | 1.17 | 28 | 1.17 | 38 | 12.90 | 0.090 | 740 |
| 0402CS-1N8XJL_ | 1.8 | 5,3,2 | 1.78 | 54 | 1.78 | 75 | 12.00 | 0.070 | 1040 |
| 0402CS-1N9XJL_ | 1.9 | 5,3,2 | 1.72 | 68 | 1.74 | 82 | 11.30 | 0.070 | 1040 |
| 0402CS-2N0X_L_ | 2.0 | 5,3,2 | 1.93 | 54 | 1.93 | 75 | 11.10 | 0.070 | 1040 |
| 0402CS-2N2X_L_ | 2.2 | 5,3,2 | 2.19 | 59 | 2.23 | 100 | 10.80 | 0.070 | 960 |
| 0402CS-2N4X_L_ | 2.4 | 5,3,2 | 2.24 | 51 | 2.27 | 68 | 10.50 | 0.068 | 790 |
| 0402CS-2N7X_L_ | 2.7 | 5,3,2 | 2.58 | 42 | 2.60 | 61 | 10.40 | 0.120 | 640 |
| 0402CS-3N3X_L_ | 3.3 | 5,3,2 | 3.10 | 65 | 3.12 | 87 | 7.00 | 0.066 | 840 |
| 0402CS-3N6X_L_ | 3.6 | 5,3,2 | 3.56 | 45 | 3.62 | 71 | 6.80 | 0.066 | 840 |
| 0402CS-3N9X_L_ | 3.9 | 5,3,2 | 3.89 | 50 | 4.00 | 75 | 6.00 | 0.066 | 840 |
| 0402CS-4N3X_L_ | 4.3 | 5,3,2 | 4.19 | 47 | 4.30 | 71 | 6.00 | 0.091 | 700 |
| 0402CS-4N7X_L_ | 4.7 | 5,3,2 | 4.55 | 48 | 4.68 | 68 | 4.77 | 0.130 | 640 |
| 0402CS-5N1X_L_ | 5.1 | 5,3,2 | 5.15 | 56 | 5.25 | 82 | 4.80 | 0.083 | 800 |
| 0402CS-5N6X_L_ | 5.6 | 5,3,2 | 5.16 | 54 | 5.28 | 81 | 4.80 | 0.083 | 760 |
| 0402CS-6N2X_L_ | 6.2 | 5,3,2 | 6.16 | 52 | 6.37 | 76 | 4.80 | 0.083 | 760 |
| 0402CS-6N8X_L_ | 6.8 | 5,3,2 | 6.56 | 63 | 6.93 | 78 | 4.80 | 0.083 | 680 |
| 0402CS-7N5X_L_ | 7.5 | 5,3,2 | 7.91 | 60 | 8.22 | 88 | 4.80 | 0.10 | 680 |
| 0402CS-8N2X_L_ | 8.2 | 5,3,2 | 8.50 | 57 | 8.85 | 84 | 4.40 | 0.10 | 680 |
| 0402CS-8N7X_L_ | 8.7 | 5,3,2 | 8.78 | 54 | 9.21 | 73 | 4.10 | 0.20 | 480 |
| 0402CS-9N0X_L_ | 9.0 | 5,3,2 | 9.07 | 62 | 9.53 | 78 | 4.16 | 0.10 | 680 |
| 0402CS-9N5X_L_ | 9.5 | 5,3,2 | 9.42 | 54 | 9.98 | 69 | 4.00 | 0.20 | 480 |
| 0402CS-10NX_L_ | 10 | 5,3,2 | 9.8 | 50 | 10.10 | 67 | 3.90 | 0.20 | 480 |
| 0402CS-11NX_L_ | 11 | 5,3,2 | 10.7 | 52 | 11.20 | 78 | 3.68 | 0.12 | 640 |
| 0402CS-12NX_L_ | 12 | 5,3,2 | 11.9 | 53 | 12.70 | 71 | 3.60 | 0.12 | 640 |
| 0402CS-13NX_L_ | 13 | 5,3,2 | 13.4 | 51 | 14.63 | 57 | 3.45 | 0.21 | 440 |
| 0402CS-15NX_L_ | 15 | 5,3,2 | 14.6 | 55 | 15.50 | 77 | 3.28 | 0.17 | 560 |
| 0402CS-16NX_L_ | 16 | 5,3,2 | 16.6 | 46 | 18.86 | 47 | 3.10 | 0.22 | 560 |
| 0402CS-18NX_L_ | 18 | 5,3,2 | 18.3 | 57 | 20.28 | 62 | 3.10 | 0.23 | 420 |
| 0402CS-19NX_L_ | 19 | 5,3,2 | 19.1 | 50 | 21.10 | 67 | 3.04 | 0.20 | 480 |
| 0402CS-20NX_L_ | 20 | 5,3,2 | 20.7 | 52 | 23.66 | 53 | 3.00 | 0.25 | 420 |
| 0402CS-22NX_L_ | 22 | 5,3,2 | 23.2 | 53 | 26.75 | 53 | 2.80 | 0.30 | 400 |
| 0402CS-23NX_L_ | 23 | 5,3,2 | 23.8 | 49 | 26.90 | 64 | 2.72 | 0.30 | 400 |
| 0402CS-24NX_L_ | 24 | 5,3,2 | 25.1 | 51 | 29.50 | 50 | 2.70 | 0.30 | 400 |
| 0402CS-27NX_L_ | 27 | 5,3,2 | 28.7 | 49 | 33.50 | 63 | 2.48 | 0.30 | 400 |
| 0402CS-30NX_L_ | 30 | 5,3,2 | 31.1 | 46 | 38.50 | 39 | 2.35 | 0.30 | 400 |
| 0402CS-33NX_L_ | 33 | 5,3,2 | 34.9 | 31 | 41.74 | 32 | 2.35 | 0.30 | 400 |
| 0402CS-36NX_L_ | 36 | 5,3,2 | 39.5 | 44 | 48.40 | 53 | 2.32 | 0.44 | 320 |
| 0402CS-39NX_L_ | 39 | 5,3,2 | 41.7 | 47 | 50.23 | 45 | 2.10 | 0.55 | 200 |
| 0402CS-40NX_L_ | 40 | 5,3,2 | 39.0 | 44 | 47.40 | 33 | 2.24 | 0.44 | 320 |
| 0402CS-43NX_L_ | 43 | 5,3,2 | 45.8 | 46 | 61.55 | 34 | 2.03 | 0.81 | 100 |
| 0402CS-47NX_L_ | 47 | 5,3,2 | 50.0 | 38 | – | – | 2.10 | 0.83 | 150 |
| 0402CS-51NX_L_ | 51 | 5,3,2 | 56.6 | 40 | – | – | 1.75 | 0.82 | 100 |
| 0402CS-56NX_L_ | 56 | 5,3,2 | 62.8 | 42 | – | – | 1.76 | 0.97 | 100 |
| 0402CS-68NX_L_ | 68 | 5,3,2 | 78.2 | 36 | – | – | 1.62 | 1.12 | 100 |
| 0402CS-82NX_L_ | 82 | 5,3,2 | – | – | – | – | 1.26 | 1.55 | 50 |
| 0402CS-R10X_L_ | 100 | 5,3,2 | – | – | – | – | 1.16 | 2.00 | 30 |
| 0402CS-R12X_L_ | 120 | 5,3,2 | – | – | – | – | 1.90 | 2.20 | 50 |

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

0402CS-68NXJLW

- Tolerance:** G = 2% H = 3% J = 5%
 (Table shows stock tolerances in bold.)
- Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.
 E = Halogen free component. RoHS compliant silver-palladium-platinum-glass frit terminations.
 Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
- Packaging:** W = 7" machine-ready reel. EIA-481 punched paper tape (2000 parts per full reel).
 Q = 7" machine-ready reel. EIA-481 punched paper tape (5000 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 at 250 MHz using a Coilcraft SMD-F test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286 impedance analyzer.
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. For SRF >6 GHz, measured using an Agilent/HP 8722ES network analyzer and a Coilcraft SMD-D test fixture. For SRF ≤6 GHz, measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
6. DCR measured on a micro-ohmmeter.
7. Current that causes a 15°C temperature rise from 25°C ambient.
8. Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

S-Parameter files
 ON OUR WEB SITE

SPICE models
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www.coilcraft.com

US +1-847-639-6400 sales@coilcraft.com
 UK +44-1236-730595 sales@coilcraft-europe.com
 Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
 China +86-21-6218 8074 sales@coilcraft.com.cn
 Singapore +65-6484 8412 sales@coilcraft.com.sg

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.