



Chip Inductors - 0402CS Series (1005)

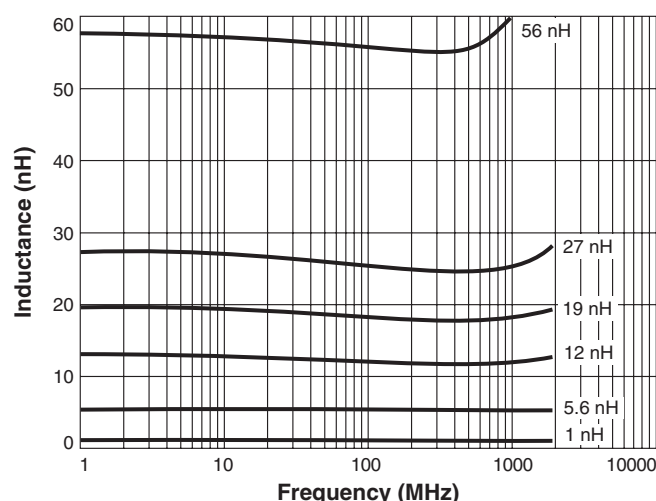
Continuing in our long tradition of innovation and leadership, Coilcraft introduced the industry's first 0402 wire-wound inductor.

This series shares all of the characteristics of Coilcraft's other ceramic inductors: exceptionally high Q factors, especially at use frequencies; outstanding self-resonant

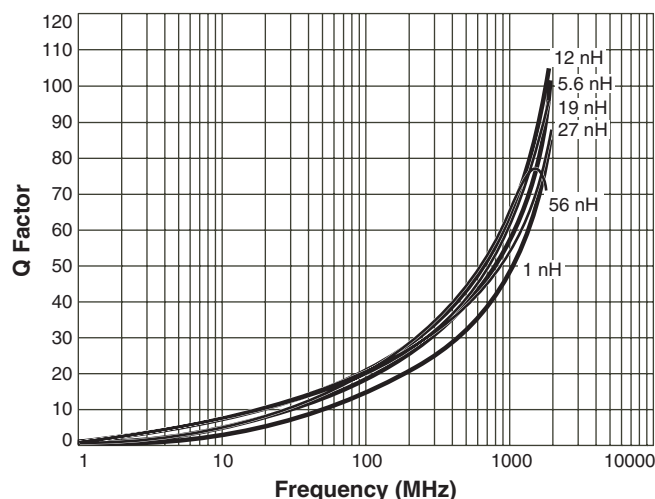
frequency; tight inductance tolerance; and excellent batch-to-batch consistency.

Coilcraft **Designer's Kits C328A** and **C328B** contain samples of 5% inductance tolerance parts. Kits with 2% tolerance are also available. To order, contact Coilcraft or visit <http://order.coilcraft.com>.

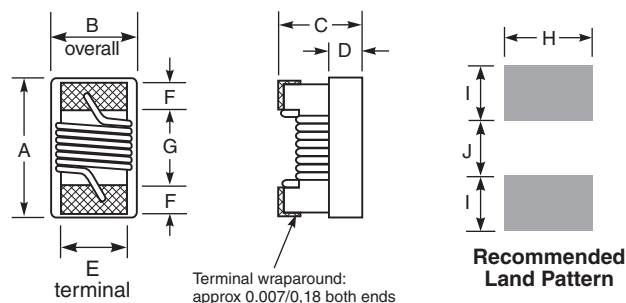
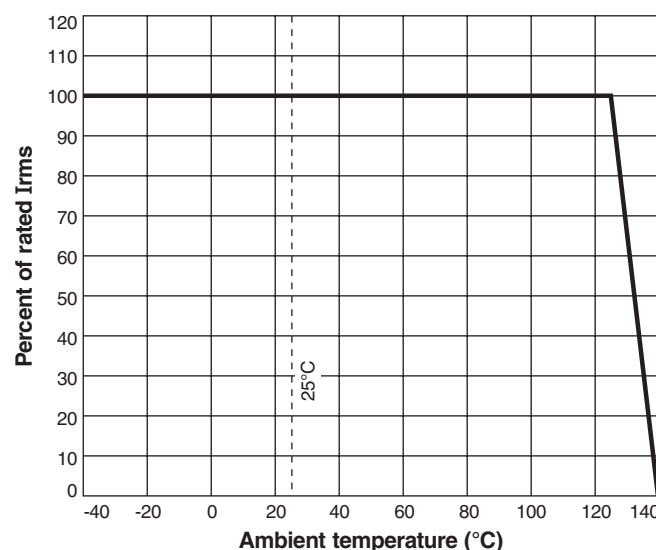
Typical L vs Frequency



Typical Q vs Frequency



Irms Derating



A max	B max	C max	D ref	E	F	G	H	I	J
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

Weight: 0.8 – 1.0 mg

Terminations: Silver-palladium-platinum-glass frit

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

For packaging data see Tape and Reel Specifications section.

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

Coilcraft®

Specifications subject to change without notice.

Please check our website for latest information. Document 198-1 Revised 04/19/07

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0402CS Series (1005)

S-Parameter files
ON OUR WEB SITE OR CD

SPICE models
ON OUR WEB SITE OR CD

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-1N0X_L	1.0	5	1.02	77	1.02	69	12.70	0.045	1360
0402CS-1N2X_L	1.2	5	1.17	28	1.17	38	12.90	0.090	740
0402CS-1N8X_L	1.8	5	1.78	54	1.78	75	12.00	0.070	1040
0402CS-1N9X_L	1.9	5	1.72	68	1.74	82	11.30	0.070	1040
0402CS-2N0X_L	2.0	5	1.93	54	1.93	75	11.10	0.070	1040
0402CS-2N2X_L	2.2	5	2.19	59	2.23	100	10.80	0.070	960
0402CS-2N4X_L	2.4	5	2.24	51	2.27	68	10.50	0.068	790
0402CS-2N7X_L	2.7	5,2	2.58	42	2.60	61	10.40	0.120	640
0402CS-3N3X_L	3.3	5,2	3.10	65	3.12	87	7.00	0.066	840
0402CS-3N6X_L	3.6	5,2	3.56	45	3.62	71	6.80	0.066	840
0402CS-3N9X_L	3.9	5,2	3.89	50	4.00	75	6.00	0.066	840
0402CS-4N3X_L	4.3	5,2	4.19	47	4.30	71	6.00	0.091	700
0402CS-4N7X_L	4.7	5,2	4.55	48	4.68	68	4.77	0.130	640
0402CS-5N1X_L	5.1	5,2	5.15	56	5.25	82	4.80	0.083	800
0402CS-5N6X_L	5.6	5,2	5.16	54	5.28	81	4.80	0.083	760
0402CS-6N2X_L	6.2	5,2	6.16	52	6.37	76	4.80	0.083	760
0402CS-6N8X_L	6.8	5,2	6.56	63	6.93	78	4.80	0.083	680
0402CS-7N5X_L	7.5	5,2	7.91	60	8.22	88	4.80	0.10	680
0402CS-8N2X_L	8.2	5,2	8.50	57	8.85	84	4.40	0.10	680
0402CS-8N7X_L	8.7	5,2	8.78	54	9.21	73	4.10	0.20	480
0402CS-9N0X_L	9.0	5,2	9.07	62	9.53	78	4.16	0.10	680
0402CS-9N5X_L	9.5	5,2	9.42	54	9.98	69	4.00	0.20	480
0402CS-10NX_L	10.0	5,2	9.8	50	10.10	67	3.90	0.20	480
0402CS-11NX_L	11.0	5,2	10.7	52	11.20	78	3.68	0.12	640
0402CS-12NX_L	12.0	5,2	11.9	53	12.70	71	3.60	0.12	640
0402CS-13NX_L	13.0	5,2	13.4	51	14.63	57	3.45	0.21	440
0402CS-15NX_L	15.0	5,2	14.6	55	15.50	77	3.28	0.17	560
0402CS-16NX_L	16.0	5,2	16.6	46	18.86	47	3.10	0.22	560
0402CS-18NX_L	18.0	5,2	18.3	57	20.28	62	3.10	0.23	420
0402CS-19NX_L	19.0	5,2	19.1	50	21.10	67	3.04	0.20	480
0402CS-20NX_L	20.0	5,2	20.7	52	23.66	53	3.00	0.25	420
0402CS-22NX_L	22.0	5,2	23.2	53	26.75	53	2.80	0.30	400
0402CS-23NX_L	23.0	5,2	23.8	49	26.90	64	2.72	0.30	400
0402CS-24NX_L	24.0	5,2	25.1	51	29.50	50	2.70	0.30	400
0402CS-27NX_L	27.0	5,2	28.7	49	33.50	63	2.48	0.30	400
0402CS-30NX_L	30.0	5,2	31.1	46	38.50	39	2.35	0.30	400
0402CS-33NX_L	33.0	5,2	34.9	31	41.74	32	2.35	0.30	400
0402CS-36NX_L	36.0	5,2	39.5	44	48.40	53	2.32	0.44	320
0402CS-39NX_L	39.0	5,2	41.7	47	50.23	45	2.10	0.55	200
0402CS-40NX_L	40.0	5,2	39.0	44	47.40	33	2.24	0.44	320
0402CS-43NX_L	43.0	5,2	45.8	46	61.55	34	2.03	0.81	100
0402CS-47NX_L	47.0	5,2	50.0	38	—	—	2.10	0.83	150
0402CS-51NX_L	51.0	5,2	56.6	40	—	—	1.75	0.82	100
0402CS-56NX_L	56.0	5,2	62.8	42	—	—	1.76	0.97	100
0402CS-68NX_L	68.0	5,2	78.2	36	—	—	1.62	1.12	100
0402CS-82NX_L	82.0	5,2	—	—	—	—	1.26	1.55	50
0402CS-R10X_L	100.0	5,2	—	—	—	—	1.16	2.00	30
0402CS-R12X_L	120.0	5	—	—	—	—	1.90	1.78	50

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

0402CS-68NX J L W

Tolerance: 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: 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 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. **Ambient temperature range:** -40°C to +125°C with Irms current +125°C to +140°C with derated current

9. **Storage temperature range:** Component: -55°C to +125°C
Packaging: -55°C to +80°C

10. **Resistance to soldering heat:** Three reflows at >175°C for 90 seconds (+260°C ±5°C for 20 – 40 seconds), allowing parts to cool to room temperature between.

11. Electrical specifications at 25°C.

12. Temperature coefficient of inductance: +25 to +125 ppm/°C.

See Qualification Standards section for environmental and test data.
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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