



# Chip Inductors - 0402CS Series (1005)

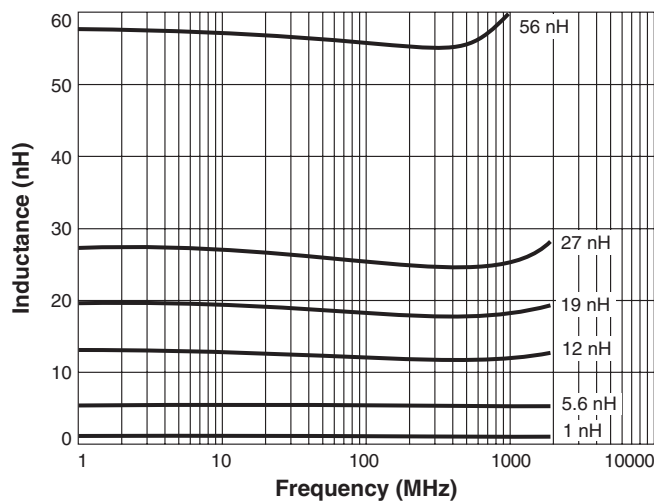
Continuing in our long tradition of innovation and leadership, Coilcraft introduced the industry's first 0402 wirewound inductor.

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

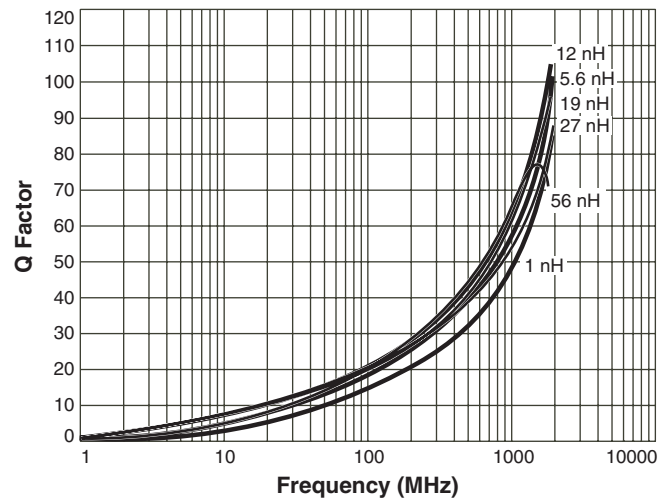
frequency; tight inductance tolerance; and excellent batch-to-batch consistency.

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>.

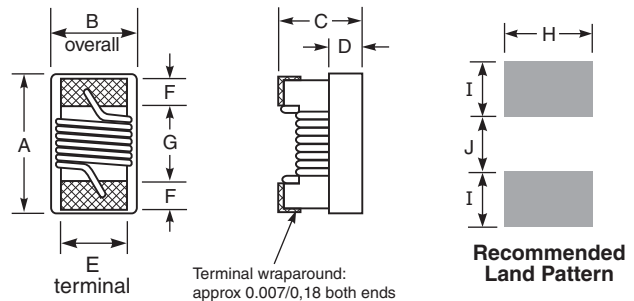
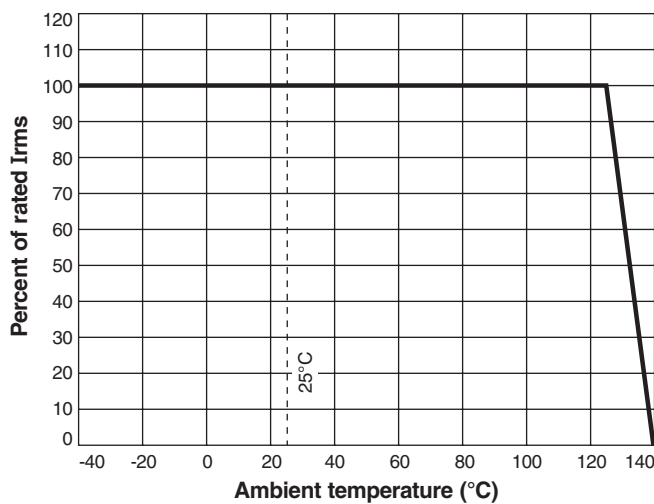
## Typical L vs Frequency



## Typical Q vs Frequency



## Irms Derating



A	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

**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**



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

Document 198-1 Revised 09/21/07

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>



# 0402CS Series (1005)

**S-Parameter files**

ON OUR WEB SITE OR CD

**SPICE models**

ON OUR WEB SITE OR CD

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	900 MHz		1.7 GHz		SRF min <sup>5</sup> (GHz)	DCR max <sup>6</sup> (Ohms)	Irms <sup>7</sup> (mA)
			L typ	Q typ <sup>4</sup>	L typ	Q typ <sup>4</sup>			
0402CS-1N0X_L_	1.0	<b>5</b>	1.02	77	1.02	69	12.70	0.045	1360
0402CS-1N2X_L_	1.2	<b>5</b>	1.17	28	1.17	38	12.90	0.090	740
0402CS-1N8X_L_	1.8	<b>5</b>	1.78	54	1.78	75	12.00	0.070	1040
0402CS-1N9X_L_	1.9	<b>5</b>	1.72	68	1.74	82	11.30	0.070	1040
0402CS-2N0X_L_	2.0	<b>5</b>	1.93	54	1.93	75	11.10	0.070	1040
0402CS-2N2X_L_	2.2	<b>5</b>	2.19	59	2.23	100	10.80	0.070	960
0402CS-2N4X_L_	2.4	<b>5</b>	2.24	51	2.27	68	10.50	0.068	790
0402CS-2N7X_L_	2.7	<b>5,2</b>	2.58	42	2.60	61	10.40	0.120	640
0402CS-3N3X_L_	3.3	<b>5,2</b>	3.10	65	3.12	87	7.00	0.066	840
0402CS-3N6X_L_	3.6	<b>5,2</b>	3.56	45	3.62	71	6.80	0.066	840
0402CS-3N9X_L_	3.9	<b>5,2</b>	3.89	50	4.00	75	6.00	0.066	840
0402CS-4N3X_L_	4.3	<b>5,2</b>	4.19	47	4.30	71	6.00	0.091	700
0402CS-4N7X_L_	4.7	<b>5,2</b>	4.55	48	4.68	68	4.77	0.130	640
0402CS-5N1X_L_	5.1	<b>5,2</b>	5.15	56	5.25	82	4.80	0.083	800
0402CS-5N6X_L_	5.6	<b>5,2</b>	5.16	54	5.28	81	4.80	0.083	760
0402CS-6N2X_L_	6.2	<b>5,2</b>	6.16	52	6.37	76	4.80	0.083	760
0402CS-6N8X_L_	6.8	<b>5,2</b>	6.56	63	6.93	78	4.80	0.083	680
0402CS-7N5X_L_	7.5	<b>5,2</b>	7.91	60	8.22	88	4.80	0.10	680
0402CS-8N2X_L_	8.2	<b>5,2</b>	8.50	57	8.85	84	4.40	0.10	680
0402CS-8N7X_L_	8.7	<b>5,2</b>	8.78	54	9.21	73	4.10	0.20	480
0402CS-9N0X_L_	9.0	<b>5,2</b>	9.07	62	9.53	78	4.16	0.10	680
0402CS-9N5X_L_	9.5	<b>5,2</b>	9.42	54	9.98	69	4.00	0.20	480
0402CS-10NX_L_	10	<b>5,2</b>	9.8	50	10.10	67	3.90	0.20	480
0402CS-11NX_L_	11	<b>5,2</b>	10.7	52	11.20	78	3.68	0.12	640
0402CS-12NX_L_	12	<b>5,2</b>	11.9	53	12.70	71	3.60	0.12	640
0402CS-13NX_L_	13	<b>5,2</b>	13.4	51	14.63	57	3.45	0.21	440
0402CS-15NX_L_	15	<b>5,2</b>	14.6	55	15.50	77	3.28	0.17	560
0402CS-16NX_L_	16	<b>5,2</b>	16.6	46	18.86	47	3.10	0.22	560
0402CS-18NX_L_	18	<b>5,2</b>	18.3	57	20.28	62	3.10	0.23	420
0402CS-19NX_L_	19	<b>5,2</b>	19.1	50	21.10	67	3.04	0.20	480
0402CS-20NX_L_	20	<b>5,2</b>	20.7	52	23.66	53	3.00	0.25	420
0402CS-22NX_L_	22	<b>5,2</b>	23.2	53	26.75	53	2.80	0.30	400
0402CS-23NX_L_	23	<b>5,2</b>	23.8	49	26.90	64	2.72	0.30	400
0402CS-24NX_L_	24	<b>5,2</b>	25.1	51	29.50	50	2.70	0.30	400
0402CS-27NX_L_	27	<b>5,2</b>	28.7	49	33.50	63	2.48	0.30	400
0402CS-30NX_L_	30	<b>5,2</b>	31.1	46	38.50	39	2.35	0.30	400
0402CS-33NX_L_	33	<b>5,2</b>	34.9	31	41.74	32	2.35	0.30	400
0402CS-36NX_L_	36	<b>5,2</b>	39.5	44	48.40	53	2.32	0.44	320
0402CS-39NX_L_	39	<b>5,2</b>	41.7	47	50.23	45	2.10	0.55	200
0402CS-40NX_L_	40	<b>5,2</b>	39.0	44	47.40	33	2.24	0.44	320
0402CS-43NX_L_	43	<b>5,2</b>	45.8	46	61.55	34	2.03	0.81	100
0402CS-47NX_L_	47	<b>5,2</b>	50.0	38	—	—	2.10	0.83	150
0402CS-51NX_L_	51	<b>5,2</b>	56.6	40	—	—	1.75	0.82	100
0402CS-56NX_L_	56	<b>5,2</b>	62.8	42	—	—	1.76	0.97	100
0402CS-68NX_L_	68	<b>5,2</b>	78.2	36	—	—	1.62	1.12	100
0402CS-82NX_L_	82	<b>5,2</b>	—	—	—	—	1.26	1.55	50
0402CS-R10X_L_	100	<b>5,2</b>	—	—	—	—	1.16	2.00	30
0402CS-R12X_L_	120	<b>5</b>	—	—	—	—	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: -40°C to +140°C  
Packaging: -55°C to +80°C

10. **Resistance to soldering heat:** Three reflows at >217°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.

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

Document 198-2 Revised 09/21/07

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