RoHS/ REACH COMPLIANT

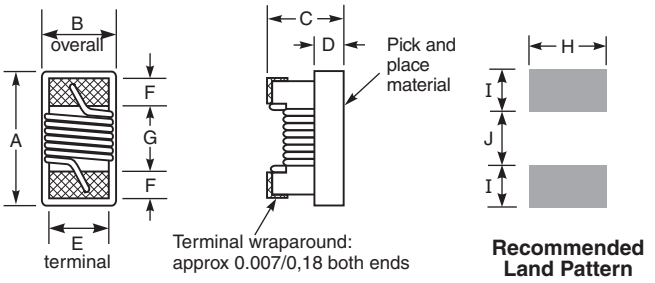
Halogen Free

AEC Q200 +125°C

Chip Inductors – 0402CS (1005)

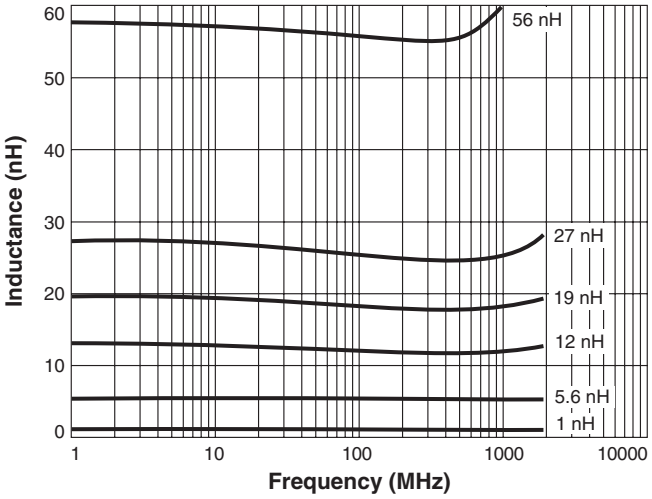
Continuing in our long tradition of innovation and leadership, Coilcraft introduced the industry's first 0402 wirewound inductor.

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.

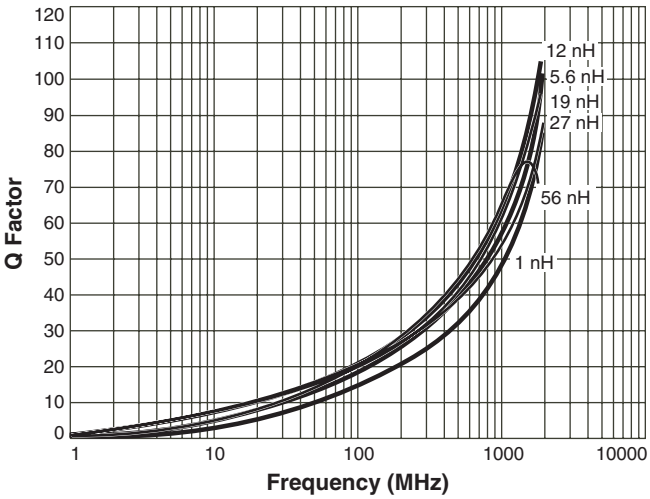


A max	B max	C max	D ref	E	F	G	H	I	J	
0.047	0.025	0.026	0.010	0.020	0.009	0.022	0.026	0.014	0.018	inches
1,19	0,64	0,66	0,25	0,51	0,23	0,56	0,66	0,36	0,46	mm

Typical L vs Frequency



Typical Q vs Frequency



Core material Ceramic

Environmental RoHS compliant, halogen free

Terminations RoHS matte Sn over Ni over Ag-Pt-glass frit. Other terminations available at additional cost.

Weight 0.8 – 1.0 mg

Ambient temperature –40°C to +125°C with Irms current.

Maximum part temperature +140°C (ambient + temp rise).

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)

Packaging 2000 or 5000 or 10000 per 7″ reel
Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

S-Parameter files
ON OUR WEB SITE

SPICE models
ON OUR WEB SITE

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This product may not be used in medical or high risk applications without prior Coilcraft approval.
Specification subject to change without notice.
Please check web site for latest information.

0402CS Series (1005)

Designer's Kit C328 contains 20 each of all 5% values
Designer's Kit C328-2 contains 20 each of all 2% values

Part number[1]	Inductance[2] (nH)	Percent tolerance[3]	900 MHz L typ	900 MHz Q typ[4]	1.7 GHz L typ	1.7 GHz Q typ[4]	SRF min[5] (GHz)	DCR max[6] (Ohms)	Irms[7] (mA)
0402CS-1N0XJR_	1.0	**5**	1.02	77	1.02	69	12.70	0.045	1360
0402CS-1N2XJR_	1.2	**5**	1.17	28	1.17	38	12.90	0.090	740
0402CS-1N8X_R_	1.8	**5**,3,**2**	1.78	54	1.78	75	12.00	0.070	1040
0402CS-1N9X_R_	1.9	**5**,3,**2**	1.72	68	1.74	82	11.30	0.070	1040
0402CS-2N0X_R_	2.0	**5**,3,**2**	1.93	54	1.93	75	11.10	0.070	1040
0402CS-2N2X_R_	2.2	**5**,3,**2**	2.19	59	2.23	100	10.80	0.070	960
0402CS-2N4X_R_	2.4	**5**,3,**2**	2.24	51	2.27	68	10.50	0.068	790
0402CS-2N7X_R_	2.7	**5**,3,**2**	2.58	42	2.60	61	10.40	0.120	640
0402CS-3N3X_R_	3.3	**5**,3,**2**	3.10	65	3.12	87	7.00	0.066	840
0402CS-3N6X_R_	3.6	**5**,3,**2**	3.56	45	3.62	71	6.80	0.066	840
0402CS-3N9X_R_	3.9	**5**,3,**2**	3.89	50	4.00	75	6.00	0.066	840
0402CS-4N3X_R_	4.3	**5**,3,**2**	4.19	47	4.30	71	6.00	0.091	700
0402CS-4N7X_R_	4.7	**5**,3,**2**	4.55	48	4.68	68	4.77	0.130	640
0402CS-5N1X_R_	5.1	**5**,3,**2**	5.15	56	5.25	82	4.80	0.083	800
0402CS-5N6X_R_	5.6	**5**,3,**2**	5.16	54	5.28	81	4.80	0.083	760
0402CS-6N2X_R_	6.2	**5**,3,**2**	6.16	52	6.37	76	4.80	0.083	760
0402CS-6N8X_R_	6.8	**5**,3,**2**	6.56	63	6.93	78	4.80	0.083	680
0402CS-7N5X_R_	7.5	**5**,3,**2**	7.91	60	8.22	88	4.80	0.10	680
0402CS-8N2X_R_	8.2	**5**,3,**2**	8.50	57	8.85	84	4.40	0.10	680
0402CS-8N7X_R_	8.7	**5**,3,**2**	8.78	54	9.21	73	4.10	0.20	480
0402CS-9N0X_R_	9.0	**5**,3,**2**	9.07	62	9.53	78	4.16	0.10	680
0402CS-9N5X_R_	9.5	**5**,3,**2**	9.42	54	9.98	69	4.00	0.20	480
0402CS-10NX_R_	10	**5**,3,**2**	9.8	50	10.10	67	3.90	0.20	480
0402CS-11NX_R_	11	**5**,3,**2**	10.7	52	11.20	78	3.68	0.12	640
0402CS-12NX_R_	12	**5**,3,**2**	11.9	53	12.70	71	3.60	0.12	640
0402CS-13NX_R_	13	**5**,3,**2**	13.4	51	14.63	57	3.45	0.21	440
0402CS-15NX_R_	15	**5**,3,**2**	14.6	55	15.50	77	3.28	0.17	560
0402CS-16NX_R_	16	**5**,3,**2**	16.6	46	18.86	47	3.10	0.22	560
0402CS-18NX_R_	18	**5**,3,**2**	18.3	57	20.28	62	3.10	0.23	420
0402CS-19NX_R_	19	**5**,3,**2**	19.1	50	21.10	67	3.04	0.20	480
0402CS-20NX_R_	20	**5**,3,**2**	20.7	52	23.66	53	3.00	0.25	420
0402CS-22NX_R_	22	**5**,3,**2**	23.2	53	26.75	53	2.80	0.30	400
0402CS-23NX_R_	23	**5**,3,**2**	23.8	49	26.90	64	2.72	0.30	400
0402CS-24NX_R_	24	**5**,3,**2**	25.1	51	29.50	50	2.70	0.30	400
0402CS-27NX_R_	27	**5**,3,**2**	28.7	49	33.50	63	2.48	0.30	400
0402CS-30NX_R_	30	**5**,3,**2**	31.1	46	38.50	39	2.35	0.30	400
0402CS-33NX_R_	33	**5**,3,**2**	34.9	31	41.74	32	2.35	0.30	400
0402CS-36NX_R_	36	**5**,3,**2**	39.5	44	48.40	53	2.32	0.44	320
0402CS-39NX_R_	39	**5**,3,**2**	41.7	47	50.23	45	2.10	0.55	200
0402CS-40NX_R_	40	**5**,3,**2**	39.0	44	47.40	33	2.24	0.44	320
0402CS-43NX_R_	43	**5**,3,**2**	45.8	46	61.55	34	2.03	0.81	100
0402CS-47NX_R_	47	**5**,3,**2**	50.0	38	–	–	2.10	0.83	150
0402CS-51NX_R_	51	**5**,3,**2**	56.6	40	–	–	1.75	0.82	100
0402CS-56NX_R_	56	**5**,3,**2**	62.8	42	–	–	1.76	0.97	100
0402CS-68NX_R_	68	**5**,3,**2**	78.2	36	–	–	1.62	1.12	100
0402CS-82NX_R_	82	**5**,3,**2**	–	–	–	–	1.26	1.55	50
0402CS-R10X_R_	100	**5**,3,**2**	–	–	–	–	1.16	2.00	30
0402CS-R12X_R_	120	**5**,3,**2**	–	–	–	–	1.10	2.20	50

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

0402CS-R12XJRW

Tolerance: **G** = 2% **H** = 3% **J** = 5%
(Table shows stock tolerances in bold.)

Termination: **R** = RoHS matte Sn over Ni over Ag-Pt-glass frit.
Special order:
T = RoHS Sn/Ag/Cu (95.5/4.0/0.5)
S = Not RoHS Sn/Pb (63/37).

Packaging: **W** = 7″ machine-ready reel. EIA-481 punched paper tape (2000 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
Q = 7″ machine-ready reel. EIA-481 punched paper tape (5000 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
Y = 7″ machine-ready reel. EIA-481 punched paper tape. Factory order only, not stocked (10000 parts per full reel).
U = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from U to W.

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. This information is for reference only and does not represent absolute maximum ratings.
8. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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