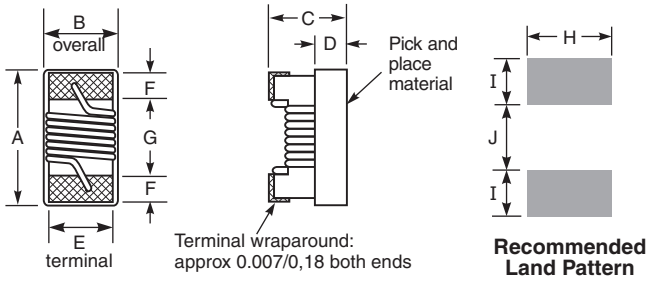
Chip Inductors - 0402HP Series (1005)

- Higher Q and lower DCR than other 0402 inductors
- Very high SRF values – as high as 16 GHz
- Excellent current handling capability – up to 2300 mA
- 54 inductance values from 1.0 to 220 nH



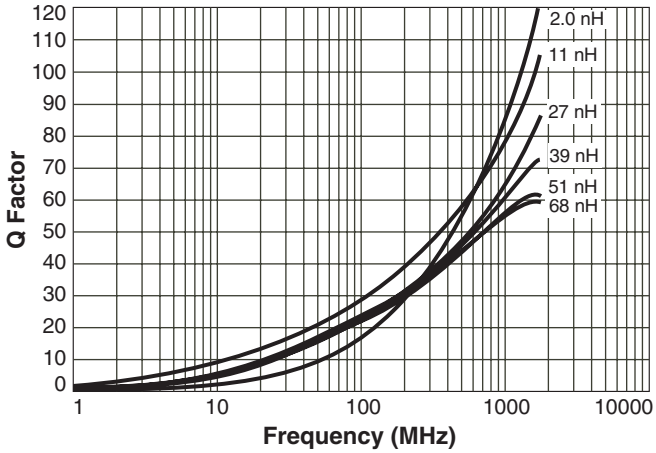
	A max[2]	B (min – max)	C max[3]	
0402HP	0.043	0.020 – 0.028	0.024	inches
	1,09	0,51 – 0,71	0,61	mm

	A max[2]	B	C max[3]	
0402HPH	0.044	0.026 ±0.002	0.026	inches
	1,12	0,66 ±0,051	0,66	mm

D ref	E	F	G	H	I	J	
0.010	0.020	0.008	0.024	0.026	0.014	0.020	inches
0,25	0,51	0,20	0,61	0,66	0,36	0,51	mm

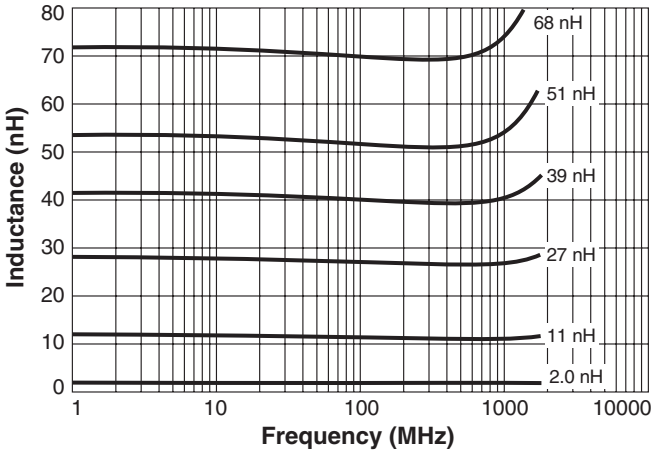
Notes: 1. Unless otherwise indicated, all dimensions are nominal.
2. Length dimension (A) is before optional solder application. Maximum dimension including solder is 0.045 in / 1.143 mm.
3. Height dimension (C) is before optional solder application. For maximum height dimension including solder, add 0.006 in / 0,152 mm.

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 0.7 – 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 0402HP 2000 or 5000 or 10000 per 7″ reel.
Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing
0402HPH 2000 or 5000 per 7″ reel or 10000 per 13″ reel.
Paper tape: 8 mm wide, 0.75 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.

Typical L vs Frequency



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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.

Coilcraft
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0402HP Series (1005)

Designer's Kit C403 contains 20 each of 5% values
Designer's Kit C403-2 contains 20 each of 2% values

Part number[1]	Inductance[2] (nH)	Percent tolerance[3]	Test freq (MHz)	900 MHz L typ	900 MHz Q typ[4]	1.7 GHz L typ	1.7 GHz Q typ[4]	SRF typ[5] (GHz)	DCR max[6] (Ohms)	Irms[7] (mA)
0402HP-1N0XJR_	1.0	**5**	250	0.97	46	0.99	72	16.0	0.030	2300
0402HP-2N0XJR_	2.0	**5**	250	1.96	58	1.98	85	15.2	0.038	2100
0402HP-2N2XJR_	2.2	**5**	250	2.17	60	2.17	86	15.1	0.038	2100
0402HP-2N4X_R_	2.4	**5**,3,**2**	250	2.37	60	2.38	83	14.0	0.042	2000
0402HP-2N7X_R_	2.7	**5**,3,**2**	250	2.66	62	2.68	85	13.0	0.085	1500
0402HP-3N3X_R_	3.3	**5**,3,**2**	250	3.26	66	3.28	95	12.8	0.045	1700
0402HP-3N6X_R_	3.6	**5**,3,**2**	250	3.56	65	3.58	94	11.7	0.045	1700
0402HP-3N9X_R_	3.9	**5**,3,**2**	250	3.87	64	3.91	98	9.50	0.045	1700
0402HP-4N3X_R_	4.3	**5**,3,**2**	250	4.26	63	4.33	90	7.15	0.050	1600
0402HP-4N7X_R_	4.7	**5**,3,**2**	250	4.67	58	4.74	83	6.85	0.075	1500
0402HP-5N1X_R_	5.1	**5**,3,**2**	250	5.07	54	5.16	76	6.80	0.125	1200
0402HP-5N6X_R_	5.6	**5**,3,**2**	250	5.56	73	5.66	105	6.50	0.055	1600
0402HP-6N2X_R_	6.2	**5**,3,**2**	250	6.18	73	6.25	100	5.80	0.055	1600
0402HP-6N8X_R_	6.8	**5**,3,**2**	250	6.78	68	6.97	94	5.80	0.070	1500
0402HP-7N5X_R_	7.5	**5**,3,**2**	250	7.49	60	7.77	82	5.40	0.100	1400
0402HP-8N2X_R_	8.2	**5**,3,**2**	250	8.10	68	8.40	95	5.40	0.065	1500
0402HP-8N7X_R_	8.7	**5**,3,**2**	250	8.73	66	9.04	95	5.00	0.070	1500
0402HP-9N0X_R_	9.0	**5**,3,**2**	250	8.99	67	9.21	92	5.00	0.080	1400
0402HP-9N5X_R_	9.5	**5**,3,**2**	250	9.52	64	9.97	90	4.70	0.090	1400
0402HP-10NX_R_	10	**5**,3,**2**	250	9.98	62	10.4	90	4.70	0.110	1300
0402HP-11NX_R_	11	**5**,3,**2**	250	11.0	68	11.6	98	4.70	0.065	1400
0402HP-12NX_R_	12	**5**,3,**2**	250	12.0	66	12.6	100	4.40	0.100	1200
0402HP-13NX_R_	13	**5**,3,**2**	250	13.1	62	13.9	82	4.20	0.155	870
0402HP-15NX_R_	15	**5**,3,**2**	250	15.1	62	16.0	85	3.90	0.115	1100
0402HP-16NX_R_	16	**5**,3,**2**	250	16.2	57	17.3	77	3.70	0.150	850
0402HP-17NX_R_	17	**5**,3,**2**	250	17.2	51	18.7	64	3.70	0.230	650
0402HP-18NX_R_	18	**5**,3,**2**	250	18.2	58	19.5	74	3.55	0.120	900
0402HP-19NX_R_	19	**5**,3,**2**	250	19.2	61	20.7	88	3.50	0.145	850
0402HP-20NX_R_	20	**5**,3,**2**	250	20.3	58	22.0	76	3.50	0.185	780
0402HP-21NX_R_	21	**5**,3,**2**	250	21.3	48	23.2	62	1.70	0.460	450
0402HP-22NX_R_	22	**5**,3,**2**	250	22.3	60	24.4	74	3.30	0.160	800
0402HP-23NX_R_	23	**5**,3,**2**	250	23.3	60	25.5	77	3.30	0.160	800
0402HP-24NX_R_	24	**5**,3,**2**	250	24.5	55	27.1	71	3.15	0.210	700
0402HP-25NX_R_	25	**5**,3,**2**	250	25.5	57	28.3	73	3.15	0.260	700
0402HP-26NX_R_	26	**5**,3,**2**	250	26.6	56	29.3	74	3.15	0.290	700
0402HP-27NX_R_	27	**5**,3,**2**	250	27.3	62	29.5	86	3.20	0.350	450
0402HP-30NX_R_	30	**5**,3,**2**	250	30.8	61	35.0	87	2.90	0.350	450
0402HP-33NX_R_	33	**5**,3,**2**	250	34.0	61	38.3	80	2.80	0.330	490
0402HP-36NX_R_	36	**5**,3,**2**	250	37.1	59	42.2	76	2.80	0.390	480
0402HP-37NX_R_	37	**5**,3,**2**	250	38.2	57	44.0	72	2.70	0.480	470
0402HP-39NX_R_	39	**5**,3,**2**	250	40.5	56	47.0	84	2.60	0.430	450
0402HP-40NX_R_	40	**5**,3,**2**	250	41.3	56	47.4	75	2.60	0.430	450
0402HP-43NX_R_	43	**5**,3,**2**	250	45.0	52	54.1	68	2.50	0.520	450
0402HP-47NX_R_	47	**5**,3,**2**	250	49.0	48	58.9	62	2.40	0.580	420
0402HP-51NX_R_	51	**5**,3,**2**	250	49.1	52	58.8	59	2.30	0.700	360
0402HPH-56NX_R_	56	**5**,3,**2**	250	58.8	56	72.2	64	2.07	0.900	330
0402HPH-68NX_R_	68	**5**,3,**2**	250	72.2	56	91.4	64	1.84	1.00	320
0402HPH-82NX_R_	82	**5**,3,**2**	250	89.7	52	–	–	1.75	1.10	315
0402HPH-R10X_R_	100	**5**,3,**2**	250	–	–	–	–	1.58	1.20	310
0402HPH-R12X_R_	120	**5**,3,**2**	250	–	–	–	–	1.25	1.20	310
0402HPH-R15X_R_	150	**5**,3,**2**	100	–	–	–	–	1.14	2.0	240
0402HPH-R16X_R_	160	**5**,3,**2**	100	–	–	–	–	1.65	2.0	240
0402HPH-R18X_R_	180	**5**,3,**2**	100	–	–	–	–	1.08	2.1	240
0402HPH-R22X_R_	220	**5**,3,**2**	100	–	–	–	–	0.96	3.1	160

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

0402HPH-R22XJRW

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 (0402HP); 13″ machine-ready reel (0402HPH). 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 test frequency using a Coilcraft SMD-F fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.
3. Tolerances in bold are stocked for immediate shipment.
4. Q measured using an Agilent/HP 4287A with an Agilent/HP 16197 test fixture.
5. SRF measured using an Agilent/HP 8722ES network analyzer and a Coilcraft SMD-D test fixture.
6. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
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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Specification subject to change without notice.
Please check web site for latest information.