



# 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
- 52 inductance values from 1.0 to 220 nH



**Core material** Ceramic  
**Environmental** RoHS compliant, halogen free optional  
**Terminations** RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.  
**Weight** 0.7 – 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, 0.66 mm thick, 2 mm pocket spacing  
**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf

	A max	B (min – max)	C max					
0402HP	0.043	0.020 – 0.028	0.024	inches				
	1,09	0,51 – 0,71	0,61	mm				
	A max	B	C max					
0402HPH	0.044	0.026 ±0.002	0.026	inches				
	1,12	0,66 ±0,051	0,66	mm				
	D	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

**Note:** Height dimension (C) is before optional solder application. For maximum height dimension including solder, add 0.006 in / 0,152 mm.

## Current Derating



## Typical Q vs Frequency



## Typical L vs Frequency



**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

Document 526-1 Revised 08/08/13  
 © Coilcraft Inc. 2013  
 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.



# 0402HP Series (1005)

Designer's Kits C403A and B contain 20 each of 5% values  
Designer's Kits C403A-2 and B-2 contain 20 each of 2% values

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	Test freq (MHz)	900 MHz		1.7 GHz		SRF typ <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>			
0402HP-1N0XJL_	1.0	<b>5</b>	250	0.97	46	0.99	72	16.0	0.030	2300
0402HP-2N0XJL_	2.0	<b>5</b>	250	1.96	58	1.98	85	15.2	0.038	2100
0402HP-2N2XJL_	2.2	<b>5</b>	250	2.17	60	2.17	86	15.1	0.038	2100
0402HP-2N4X_L_	2.4	<b>5,3,2</b>	250	2.37	60	2.38	83	14.0	0.042	2000
0402HP-2N7X_L_	2.7	<b>5,3,2</b>	250	2.66	62	2.68	85	13.0	0.085	1500
0402HP-3N3X_L_	3.3	<b>5,3,2</b>	250	3.26	66	3.28	95	12.8	0.045	1700
0402HP-3N6X_L_	3.6	<b>5,3,2</b>	250	3.56	65	3.58	94	11.7	0.045	1700
0402HP-3N9X_L_	3.9	<b>5,3,2</b>	250	3.87	64	3.91	98	9.50	0.045	1700
0402HP-4N3X_L_	4.3	<b>5,3,2</b>	250	4.26	63	4.33	90	7.15	0.050	1600
0402HP-4N7X_L_	4.7	<b>5,3,2</b>	250	4.67	58	4.74	83	6.85	0.075	1500
0402HP-5N1X_L_	5.1	<b>5,3,2</b>	250	5.07	54	5.16	76	6.80	0.125	1200
0402HP-5N6X_L_	5.6	<b>5,3,2</b>	250	5.56	73	5.66	105	6.50	0.055	1600
0402HP-6N2X_L_	6.2	<b>5,3,2</b>	250	6.18	73	6.25	100	5.80	0.055	1600
0402HP-6N8X_L_	6.8	<b>5,3,2</b>	250	6.78	68	6.97	94	5.80	0.070	1500
0402HP-7N5X_L_	7.5	<b>5,3,2</b>	250	7.49	60	7.77	82	5.40	0.100	1400
0402HP-8N2X_L_	8.2	<b>5,3,2</b>	250	8.10	68	8.40	95	5.40	0.065	1500
0402HP-8N7X_L_	8.7	<b>5,3,2</b>	250	8.73	66	9.04	95	5.00	0.070	1500
0402HP-9N0X_L_	9.0	<b>5,3,2</b>	250	8.99	67	9.21	92	5.00	0.080	1400
0402HP-9N5X_L_	9.5	<b>5,3,2</b>	250	9.52	64	9.97	90	4.70	0.090	1400
0402HP-10NX_L_	10	<b>5,3,2</b>	250	9.98	62	10.4	90	4.70	0.110	1300
0402HP-11NX_L_	11	<b>5,3,2</b>	250	11.0	68	11.6	98	4.70	0.065	1400
0402HP-12NX_L_	12	<b>5,3,2</b>	250	12.0	66	12.6	100	4.40	0.100	1200
0402HP-13NX_L_	13	<b>5,3,2</b>	250	13.1	62	13.9	82	4.20	0.155	870
0402HP-15NX_L_	15	<b>5,3,2</b>	250	15.1	62	16.0	85	3.90	0.115	1100
0402HP-16NX_L_	16	<b>5,3,2</b>	250	16.2	57	17.3	77	3.70	0.150	850
0402HP-18NX_L_	18	<b>5,3,2</b>	250	18.2	58	19.5	74	3.55	0.120	900
0402HP-19NX_L_	19	<b>5,3,2</b>	250	19.2	61	20.7	88	3.50	0.145	850
0402HP-20NX_L_	20	<b>5,3,2</b>	250	20.3	58	22.0	76	3.50	0.185	780
0402HP-21NX_L_	21	<b>5,3,2</b>	250	21.3	48	23.2	62	1.70	0.460	450
0402HP-22NX_L_	22	<b>5,3,2</b>	250	22.3	60	24.4	74	3.30	0.160	800
0402HP-23NX_L_	23	<b>5,3,2</b>	250	23.3	60	25.5	77	3.30	0.160	800
0402HP-24NX_L_	24	<b>5,3,2</b>	250	24.5	55	27.1	71	3.15	0.210	700
0402HP-25NX_L_	25	<b>5,3,2</b>	250	25.5	57	28.3	73	3.15	0.260	700
0402HP-26NX_L_	26	<b>5,3,2</b>	250	26.6	56	29.3	74	3.15	0.290	700
0402HP-27NX_L_	27	<b>5,3,2</b>	250	27.3	62	29.5	86	3.20	0.350	450
0402HP-30NX_L_	30	<b>5,3,2</b>	250	30.8	61	35.0	87	2.90	0.350	450
0402HP-33NX_L_	33	<b>5,3,2</b>	250	34.0	61	38.3	80	2.80	0.330	490
0402HP-36NX_L_	36	<b>5,3,2</b>	250	37.1	59	42.2	76	2.80	0.390	480
0402HP-37NX_L_	37	<b>5,3,2</b>	250	38.2	57	44.0	72	2.70	0.480	470
0402HP-39NX_L_	39	<b>5,3,2</b>	250	40.5	56	47.0	84	2.60	0.430	450
0402HP-40NX_L_	40	<b>5,3,2</b>	250	41.3	56	47.4	75	2.60	0.430	450
0402HP-43NX_L_	43	<b>5,3,2</b>	250	45.0	52	54.1	68	2.50	0.520	450
0402HP-47NX_L_	47	<b>5,3,2</b>	250	49.0	48	58.9	62	2.40	0.580	420
0402HP-51NX_L_	51	<b>5,3,2</b>	250	49.1	52	58.8	59	2.30	0.700	360
0402HPH-56NX_L_	56	<b>5,3,2</b>	250	58.8	56	72.2	64	2.07	0.900	330
0402HPH-68NX_L_	68	<b>5,3,2</b>	250	72.2	56	91.4	64	1.84	1.00	320
0402HPH-82NX_L_	82	<b>5,3,2</b>	250	89.7	52	—	—	1.75	1.10	315
0402HPH-R10X_L_	100	<b>5,3,2</b>	250	—	—	—	—	1.58	1.20	310
0402HPH-R12X_L_	120	<b>5,3,2</b>	250	—	—	—	—	1.25	1.20	310
0402HPH-R15X_L_	150	<b>5,3,2</b>	100	—	—	—	—	1.14	2.0	240
0402HPH-R18X_L_	180	<b>5,3,2</b>	100	—	—	—	—	1.08	2.1	240
0402HPH-R22X_L_	220	<b>5,3,2</b>	100	—	—	—	—	0.96	3.1	160

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

0402HP-82NXJLW

**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 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.

8. Electrical specifications at 25°C.  
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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

Document 526-2 Revised 08/08/13

© Coilcraft Inc. 2013

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.

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9