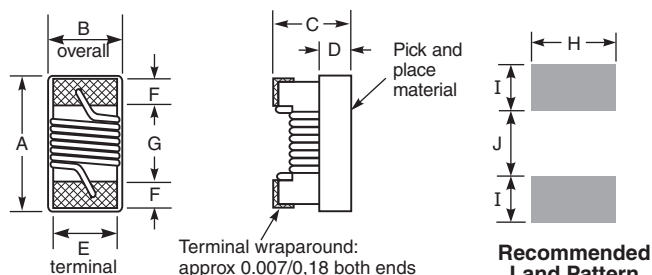




Chip Inductors - 0402HP Series (1005)

- 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



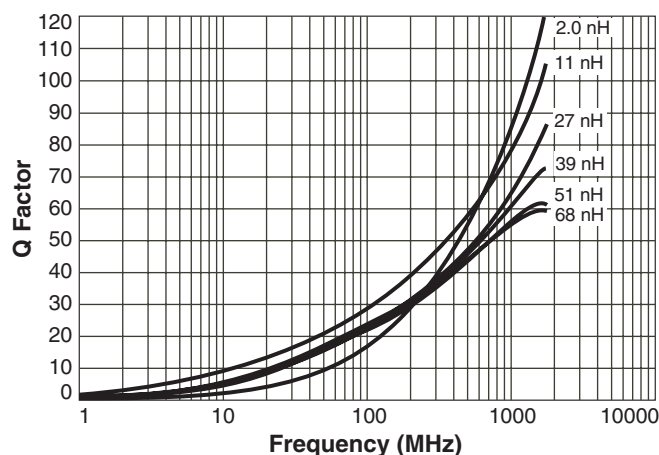
	A max ²	B (min – max)	C max ³	
0402HP	0.043	0.020 – 0.028	0.024	inches
	1,09	0,51 – 0,71	0,61	mm

	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 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

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)

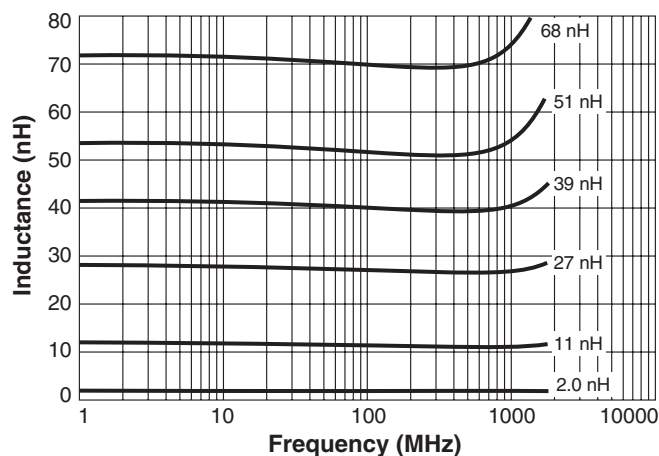
Failures in Time (FIT) / Mean Time Between Failures (MTBF)

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 to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

Typical L vs Frequency





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		1.7 GHz		SRF typ ⁵ (GHz)	DCR max ⁶ (Ohms)	Irms ⁷ (mA)
				L typ	Q typ ⁴	L typ	Q typ ⁴			
0402HP-1N0XJE	1.0	5	250	0.97	46	0.99	72	16.0	0.030	2300
0402HP-2N0XJE	2.0	5	250	1.96	58	1.98	85	15.2	0.038	2100
0402HP-2N2XJE	2.2	5	250	2.17	60	2.17	86	15.1	0.038	2100
0402HP-2N4X E	2.4	5,3,2	250	2.37	60	2.38	83	14.0	0.042	2000
0402HP-2N7X E	2.7	5,3,2	250	2.66	62	2.68	85	13.0	0.085	1500
0402HP-3N3X E	3.3	5,3,2	250	3.26	66	3.28	95	12.8	0.045	1700
0402HP-3N6X E	3.6	5,3,2	250	3.56	65	3.58	94	11.7	0.045	1700
0402HP-3N9X E	3.9	5,3,2	250	3.87	64	3.91	98	9.50	0.045	1700
0402HP-4N3X E	4.3	5,3,2	250	4.26	63	4.33	90	7.15	0.050	1600
0402HP-4N7X E	4.7	5,3,2	250	4.67	58	4.74	83	6.85	0.075	1500
0402HP-5N1X E	5.1	5,3,2	250	5.07	54	5.16	76	6.80	0.125	1200
0402HP-5N6X E	5.6	5,3,2	250	5.56	73	5.66	105	6.50	0.055	1600
0402HP-6N2X E	6.2	5,3,2	250	6.18	73	6.25	100	5.80	0.055	1600
0402HP-6N8X E	6.8	5,3,2	250	6.78	68	6.97	94	5.80	0.070	1500
0402HP-7N5X E	7.5	5,3,2	250	7.49	60	7.77	82	5.40	0.100	1400
0402HP-8N2X E	8.2	5,3,2	250	8.10	68	8.40	95	5.40	0.065	1500
0402HP-8N7X E	8.7	5,3,2	250	8.73	66	9.04	95	5.00	0.070	1500
0402HP-9N0X E	9.0	5,3,2	250	8.99	67	9.21	92	5.00	0.080	1400
0402HP-9N5X E	9.5	5,3,2	250	9.52	64	9.97	90	4.70	0.090	1400
0402HP-10NX E	10	5,3,2	250	9.98	62	10.4	90	4.70	0.110	1300
0402HP-11NX E	11	5,3,2	250	11.0	68	11.6	98	4.70	0.065	1400
0402HP-12NX E	12	5,3,2	250	12.0	66	12.6	100	4.40	0.100	1200
0402HP-13NX E	13	5,3,2	250	13.1	62	13.9	82	4.20	0.155	870
0402HP-15NX E	15	5,3,2	250	15.1	62	16.0	85	3.90	0.115	1100
0402HP-16NX E	16	5,3,2	250	16.2	57	17.3	77	3.70	0.150	850
0402HP-17NX E	17	5,3,2	250	17.2	51	18.7	64	3.70	0.230	650
0402HP-18NX E	18	5,3,2	250	18.2	58	19.5	74	3.55	0.120	900
0402HP-19NX E	19	5,3,2	250	19.2	61	20.7	88	3.50	0.145	850
0402HP-20NX E	20	5,3,2	250	20.3	58	22.0	76	3.50	0.185	780
0402HP-21NX E	21	5,3,2	250	21.3	48	23.2	62	1.70	0.460	450
0402HP-22NX E	22	5,3,2	250	22.3	60	24.4	74	3.30	0.160	800
0402HP-23NX E	23	5,3,2	250	23.3	60	25.5	77	3.30	0.160	800
0402HP-24NX E	24	5,3,2	250	24.5	55	27.1	71	3.15	0.210	700
0402HP-25NX E	25	5,3,2	250	25.5	57	28.3	73	3.15	0.260	700
0402HP-26NX E	26	5,3,2	250	26.6	56	29.3	74	3.15	0.290	700
0402HP-27NX E	27	5,3,2	250	27.3	62	29.5	86	3.20	0.350	450
0402HP-30NX E	30	5,3,2	250	30.8	61	35.0	87	2.90	0.350	450
0402HP-33NX E	33	5,3,2	250	34.0	61	38.3	80	2.80	0.330	490
0402HP-36NX E	36	5,3,2	250	37.1	59	42.2	76	2.80	0.390	480
0402HP-37NX E	37	5,3,2	250	38.2	57	44.0	72	2.70	0.480	470
0402HP-39NX E	39	5,3,2	250	40.5	56	47.0	84	2.60	0.430	450
0402HP-40NX E	40	5,3,2	250	41.3	56	47.4	75	2.60	0.430	450
0402HP-43NX E	43	5,3,2	250	45.0	52	54.1	68	2.50	0.520	450
0402HP-47NX E	47	5,3,2	250	49.0	48	58.9	62	2.40	0.580	420
0402HP-51NX E	51	5,3,2	250	49.1	52	58.8	59	2.30	0.700	360
0402HPH-56NX E	56	5,3,2	250	58.8	56	72.2	64	2.07	0.900	330
0402HPH-68NX E	68	5,3,2	250	72.2	56	91.4	64	1.84	1.00	320
0402HPH-82NX E	82	5,3,2	250	89.7	52	—	—	1.75	1.10	315
0402HPH-R10X E	100	5,3,2	250	—	—	—	—	1.58	1.20	310
0402HPH-R12X E	120	5,3,2	250	—	—	—	—	1.25	1.20	310
0402HPH-R15X E	150	5,3,2	100	—	—	—	—	1.14	2.0	240
0402HPH-R16X E	160	5,3,2	100	—	—	—	—	1.65	2.0	240
0402HPH-R18X E	180	5,3,2	100	—	—	—	—	1.08	2.1	240
0402HPH-R22X E	220	5,3,2	100	—	—	—	—	0.96	3.1	160

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

- 0402HP-82NXJEW**
- Tolerance:** G = 2% H = 3% J = 5%
(Table shows stock tolerances in bold.)
- Termination:** E = Halogen free component. RoHS compliant silver-palladium-platinum-glass frit terminations.
L = RoHS compliant, not halogen-free. Silver-palladium-platinum-glass frit terminations.
R = RoHS compliant matte tin over nickel over silver-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). 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).
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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Document 526-2 Revised 03/12/20

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