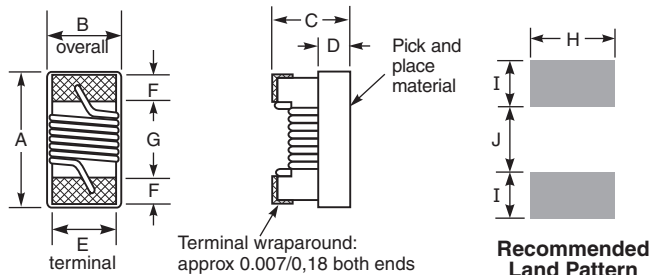




Chip Inductors - 0402HP Series (1005)

- 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



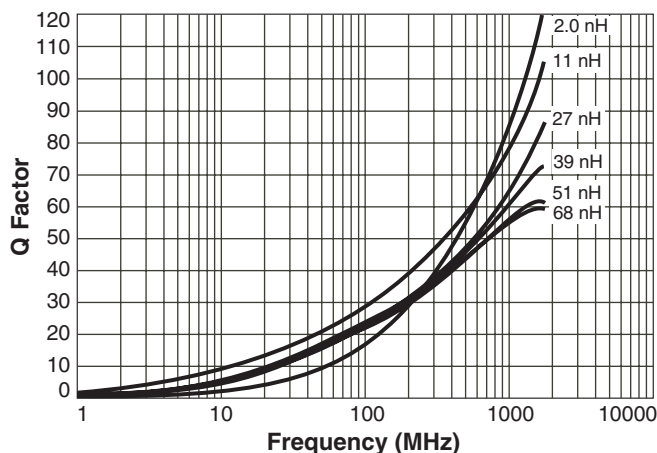
	A max ²	B (min – max)	C max ³	
0402HP	0.043	0.020 – 0.028	0.024	inches
	1,09	0,51 – 0,71	0,61	mm

	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)

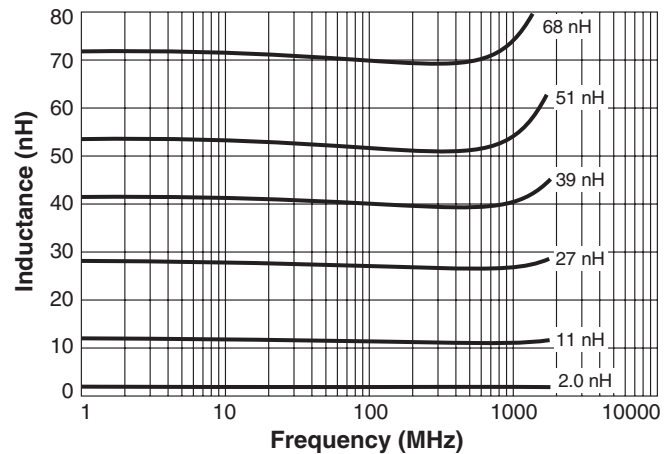
One per billion hours / one billion hours, calculated per Telcordia SR-332

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.

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. 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 10/03/18

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