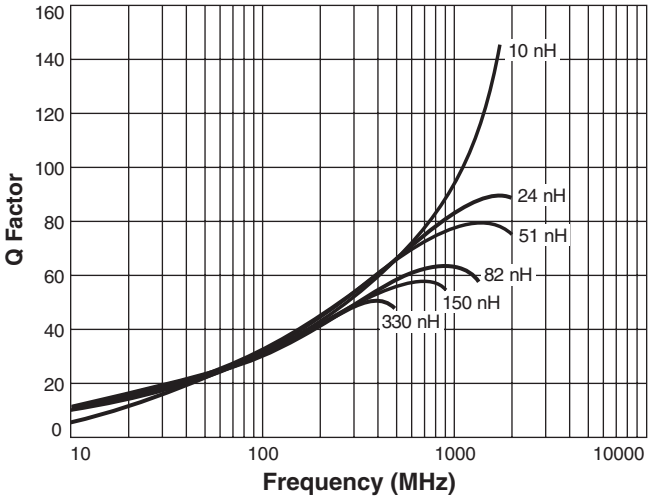
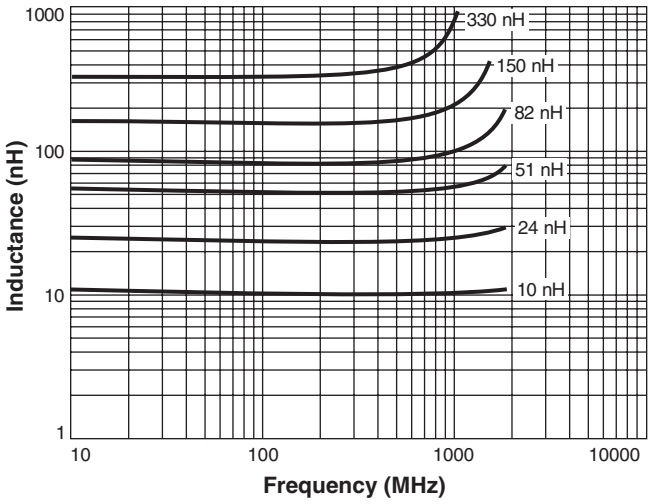
Chip Inductors – 0603HP Series (1608)

- Higher Q and lower DCR than other 0603 inductors
- Highest SRF values – as high as 16 GHz
- Excellent current handling capability – up to 2100 mA
- 54 inductance values from 1.8 to 390 nH

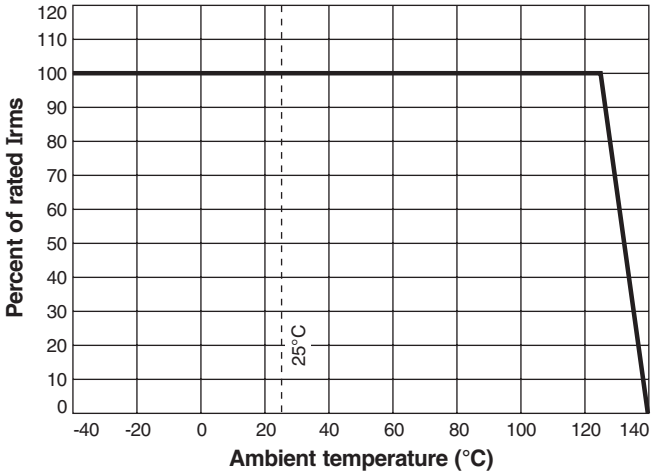
Typical Q vs Frequency

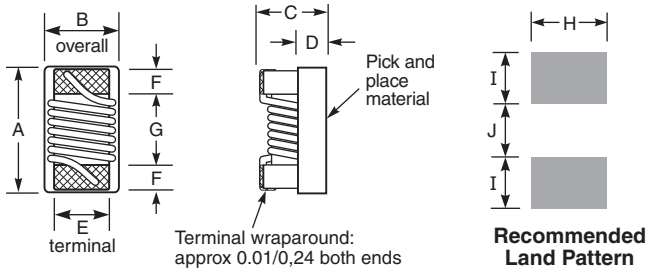


Typical L vs Frequency



Current Derating





A max	B (min–max)	C max	D	E	F	G	H	I	J	
0.069	0.034–0.043	0.037	0.015	0.029	0.013	0.038	0.040	0.027	0.028	inches
1,75	0,86–1,09	0,94	0,38	0,74	0,33	0,96	1,02	0,69	0,71	mm

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

Core material Ceramic

Environmental RoHS compliant, halogen free optional

Terminations RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.

Weight 2.0 – 3.2 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 per 7″ reel. Paper tape: 8 mm wide, 1 mm thick, 4 mm pocket spacing

PCB washing Only pure water or alcohol recommended

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0603HP Series (1608)

Designer's Kits C406A and **B** contain 10 each of all 5% values
Designer's Kits C406A-2 and **B-2** contain 10 each of all 2% values

Part number[1]	Inductance[2] (nH)	Percent tol	L test freq (MHz)	Q typ at 250 MHz	900 MHz L typ	900 MHz Q typ[3]	1.7 GHz L typ	1.7 GHz Q typ[3]	SRF typ[4] (GHz)	DCR max[5] (Ohms)	Irms[6] (mA)	Color code
0603HP-1N8XJL_	1.8	**5**	250	23	1.77	40	1.77	65	16.0	0.033	2100	Black
0603HP-2N2XJL_	2.2	**5**	250	13	2.14	25	2.12	35	15.0	0.180	900	Yellow
0603HP-3N3X_L_	3.3	**5,2**	250	32	3.28	67	3.32	104	9.60	0.024	1900	Blue
0603HP-3N6X_L_	3.6	**5,2**	250	40	3.59	70	3.62	116	9.70	0.031	1900	Red
0603HP-3N9X_L_	3.9	**5,2**	250	35	3.88	68	3.95	108	7.50	0.039	1600	Brown
0603HP-4N3X_L_	4.3	**5,2**	250	30	4.29	58	4.31	91	7.50	0.080	1300	Orange
0603HP-4N7X_L_	4.7	**5,2**	250	26	4.65	48	4.71	75	7.90	0.100	1100	Violet
0603HP-5N1X_L_	5.1	**5,2**	250	40	5.08	84	5.12	140	8.90	0.036	1700	Green
0603HP-5N6X_L_	5.6	**5,2**	250	48	5.60	87	5.73	145	6.60	0.036	1700	Black
0603HP-6N0X_L_	6.0	**5,2**	250	49	5.92	94	6.12	154	6.00	0.036	1700	White
0603HP-6N8X_L_	6.8	**5,2**	250	42	6.83	88	7.05	143	5.80	0.042	1400	Red
0603HP-7N2X_L_	7.2	**5,2**	250	48	7.25	96	7.38	139	5.40	0.052	1400	Green
0603HP-7N5X_L_	7.5	**5,2**	250	41	7.55	81	7.85	112	5.30	0.080	1300	Brown
0603HP-8N2X_L_	8.2	**5,2**	250	46	8.21	96	8.39	148	5.90	0.054	1400	Orange
0603HP-8N7X_L_	8.7	**5,2**	250	46	8.73	97	9.00	149	5.50	0.054	1400	Yellow
0603HP-9N1X_L_	9.1	**5,2**	250	40	9.18	76	9.64	109	5.10	0.037	1400	Black
0603HP-9N5X_L_	9.5	**5,2**	250	49	9.56	98	9.99	149	4.90	0.053	1400	Blue
0603HP-10NX_L_	10	**5,2**	250	49	10.16	90	10.64	142	4.30	0.048	1400	Orange
0603HP-11NX_L_	11	**5,2**	250	41	11.06	78	11.82	108	4.10	0.042	1400	Gray
0603HP-12NX_L_	12	**5,2**	250	37	12.26	69	13.20	91	4.10	0.088	1100	Yellow
0603HP-15NX_L_	15	**5,2**	250	48	15.41	83	17.20	124	3.60	0.078	1200	Green
0603HP-16NX_L_	16	**5,2**	250	45	16.37	77	18.70	116	3.50	0.085	1100	White
0603HP-18NX_L_	18	**5,2**	250	41	18.56	76	20.90	100	3.30	0.066	1200	Blue
0603HP-22NX_L_	22	**5,2**	250	44	22.7	77	25.90	88	3.15	0.140	850	Violet
0603HP-23NX_L_	23	**5,2**	250	40	24.0	69	29.53	80	3.00	0.150	850	Orange
0603HP-24NX_L_	24	**5,2**	250	42	24.9	77	28.90	91	2.95	0.074	1100	Black
0603HP-27NX_L_	27	**5,2**	250	44	28.4	74	34.00	84	2.80	0.150	780	Gray
0603HP-30NX_L_	30	**5,2**	250	49	31.5	82	37.90	82	2.80	0.130	920	Brown
0603HP-33NX_L_	33	**5,2**	250	45	34.9	76	42.90	80	2.70	0.170	680	White
0603HP-36NX_L_	36	**5,2**	250	44	38.5	69	50.00	64	2.50	0.225	720	Red
0603HP-39NX_L_	39	**5,2**	250	48	41.5	78	51.90	74	2.45	0.19	680	Black
0603HP-43NX_L_	43	**5,2**	250	45	45.7	83	58.10	76	2.45	0.17	810	Orange
0603HP-47NX_L_	47	**5,2**	200	47	50.6	77	66.90	72	2.30	0.24	680	Brown
0603HP-51NX_L_	51	**5,2**	200	49	54.6	73	71.30	62	2.30	0.28	660	Blue
0603HP-56NX_L_	56	**5,2**	200	50	60.3	74	79.90	56	2.20	0.30	610	Red
0603HP-68NX_L_	68	**5,2**	200	46	75.5	73	113.3	49	2.00	0.33	600	Orange
0603HP-72NX_L_	72	**5,2**	150	46	80.8	69	—	—	1.90	0.42	550	Yellow
0603HP-75NX_L_	75	**5,2**	150	46	84.6	71	—	—	1.90	0.52	500	Violet
0603HP-82NX_L_	82	**5,2**	150	45	94.0	62	—	—	1.80	0.46	510	Green
0603HP-91NX_L_	91	**5,2**	150	45	103.0	64	—	—	1.65	0.58	440	White
0603HP-R10X_L_	100	**5,2**	150	49	114.0	69	—	—	1.70	0.54	470	Blue
0603HP-R11X_L_	110	**5,2**	150	47	126.2	63	—	—	1.60	0.58	440	Violet
0603HP-R12X_L_	120	**5,2**	150	47	142.4	61	—	—	1.55	0.72	420	Gray
0603HP-R15X_L_	150	**5,2**	150	47	188.8	57	—	—	1.35	0.82	390	White
0603HP-R18X_L_	180	**5,2**	100	48	232.2	50	—	—	1.30	1.50	310	Black
0603HP-R20X_L_	200	**5,2**	100	47	265.0	47	—	—	1.25	2.00	280	Green
0603HP-R21X_L_	210	**5,2**	100	48	288.0	45	—	—	1.20	2.00	280	Gray
0603HP-R22X_L_	220	**5,2**	100	47	315.0	41	—	—	1.10	2.00	280	Brown
0603HP-R25X_L_	250	**5,2**	100	45	—	—	—	—	1.05	3.00	240	Violet
0603HP-R27X_L_	270	**5,2**	100	46	—	—	—	—	1.05	2.25	260	Red
0603HP-R30X_L_	300	**5,2**	100	47	—	—	—	—	0.99	2.80	220	Green
0603HP-R33X_L_	330	**5,2**	100	46	—	—	—	—	0.93	3.60	180	Blue
0603HP-R36X_L_	360	**5,2**	100	47	—	—	—	—	0.93	4.00	170	Gray
0603HP-R39X_L_	390	**5,2**	100	47	—	—	—	—	0.88	4.00	170	Yellow

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

0603HP-R39XJLW

Tolerance: **G** = 2% **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).
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 tested at listed frequency using an Agilent/HP 4286A impedance analyzer with a Coilcraft SMD-A fixture and Coilcraft-provided correlation pieces.
3. Q measured using an Agilent/HP 16197 test fixture in an Agilent/HP 4291 impedance analyzer.
4. SRF measured using an Agilent/HP 8722ES network analyzer and a Coilcraft SMD-D test fixture.
5. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
6. Current that causes a 15°C temperature rise from 25°C ambient.
7. Electrical specifications at 25°C.

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

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