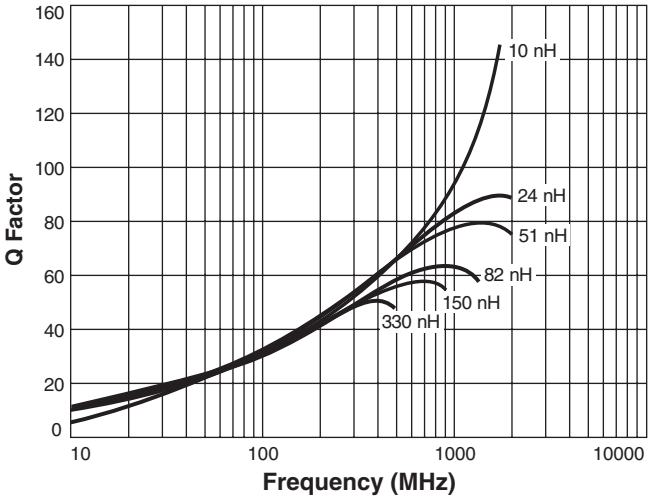
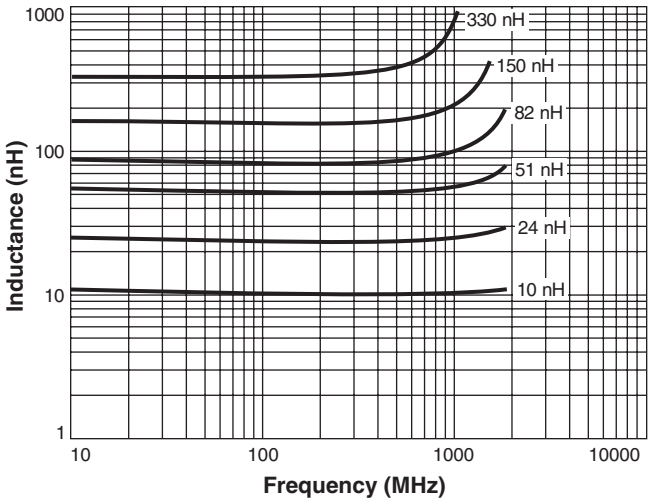
# Chip Inductors – 0603HP Series (1608)

- 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

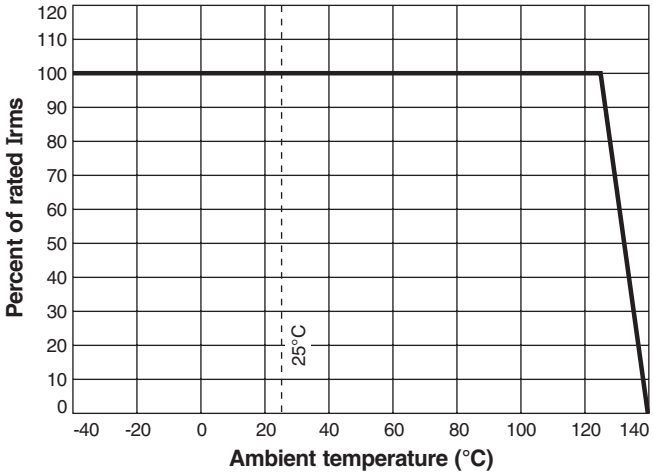
## Typical Q vs Frequency

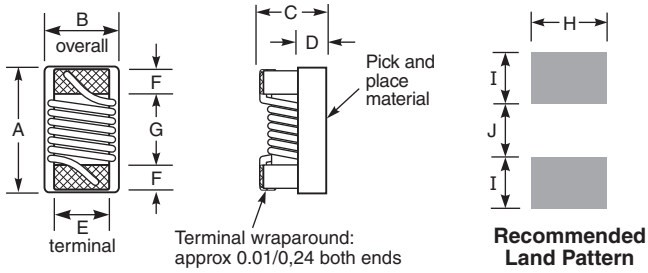



## Typical L vs Frequency




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

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

**0603HP-R39XJLW**

**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).
**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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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

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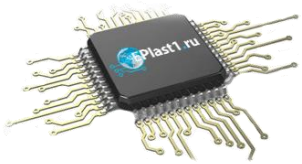
- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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