



**THE DATASHEET OF
0603LS-47NXGRC**

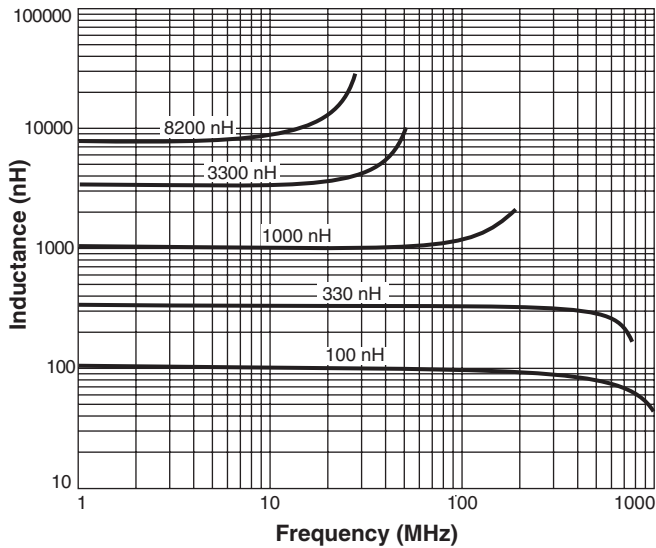


Chip Inductors – 0603LS (1608)

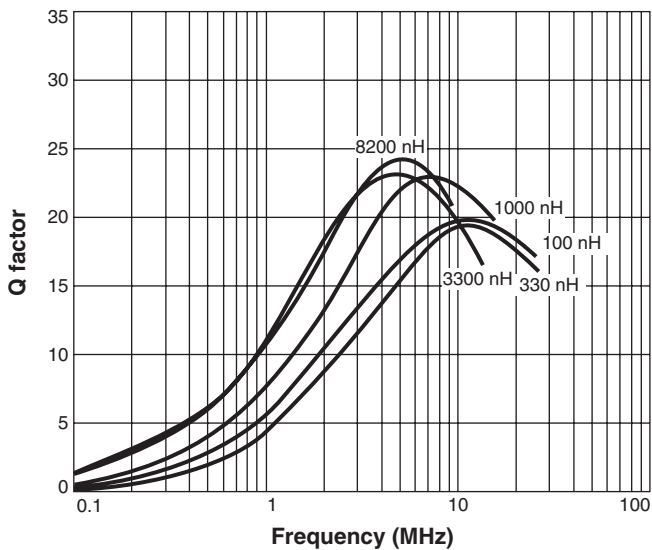


- Higher inductance values than other 0603 inductors
- Ferrite construction for high current handling
- Inductance values: 47 nH – 22 µH; 5% and 2% tolerance

Typical L vs Frequency



Typical Q vs Frequency



Designer's Kit C347 contains 10 each of all 5% values

Core material Ceramic/Ferrite

Environmental RoHS compliant, halogen free

Terminations RoHS matte Sn over Ni over Ag-Pt-glass frit. Other terminations available at additional cost.

Weight 4.8 – 6.2 mg

Ambient temperature –40°C to +85°C with Irms current

Maximum part temperature +100°C (ambient + temp rise)

Storage temperature Component: –40°C to +100°C.

Tape and reel packaging: –40°C to +80°C

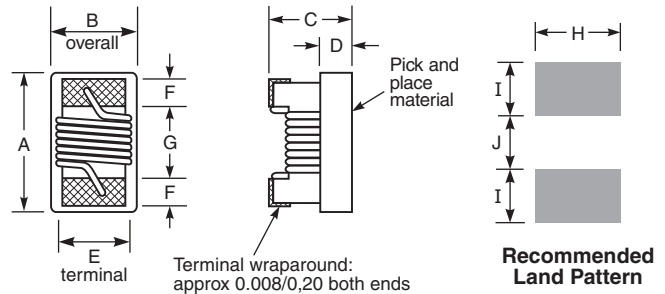
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +50 to +150 ppm/°C

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Packaging 2000 per 7" reel. Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.17 mm pocket depth

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



| A | B | C | D | E | F | G | H | I | J |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| max | See | max | ref | | | | | | |
| 0,071 | 1,80 | 0,044 | 0,015 | 0,030 | 0,013 | 0,034 | 0,040 | 0,025 | 0,025 |
| | note | 1,12 | 0,38 | 0,76 | 0,33 | 0,86 | 1,02 | 0,64 | 0,64 |

Note: B1 = 0.040 ±0.004 in / 1,016 ±0,102 mm

B2 = 0.046 ±0.004 in / 1,169 ±0,102 mm

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

S-Parameter files

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Chip Inductors – 0603LS Series



| Part number ¹ | Inductance ² (nH) | Percent tolerance | Q min ³ | SRF min ⁴ (MHz) | DCR max ⁵ (Ohms) | Irms ⁶ (A) | Color code | Overall width |
|--------------------------|---------------------------------|----------------------|--------------------|-------------------------------|--------------------------------|--------------------------|---------------|------------------|
| 0603LS-47NX_R_ | 47 @ 7.9 MHz | 5,2 | 12 @ 7.9 MHz | 1500 | 0.075 | 1.40 | Black | B1 |
| 0603LS-51NX_R_ | 51 @ 7.9 MHz | 5,2 | 12 @ 7.9 MHz | 1400 | 0.075 | 1.00 | Violet | B1 |
| 0603LS-72NX_R_ | 72 @ 7.9 MHz | 5,2 | 12 @ 7.9 MHz | 1400 | 0.12 | 1.40 | Brown | B1 |
| 0603LS-101X_R_ | 100 @ 7.9 MHz | 5,2 | 12 @ 7.9 MHz | 1150 | 0.13 | 1.40 | Red | B1 |
| 0603LS-121X_R_ | 120 @ 7.9 MHz | 5,2 | 12 @ 7.9 MHz | 1100 | 0.15 | 1.40 | Orange | B1 |
| 0603LS-151X_R_ | 150 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 1050 | 0.15 | 1.30 | Yellow | B1 |
| 0603LS-181X_R_ | 180 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 950 | 0.15 | 1.30 | Green | B1 |
| 0603LS-241X_R_ | 240 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 800 | 0.16 | 0.95 | Violet | B1 |
| 0603LS-271X_R_ | 270 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 775 | 0.30 | 0.71 | Gray | B1 |
| 0603LS-331X_R_ | 330 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 725 | 0.46 | 0.56 | White | B1 |
| 0603LS-391X_R_ | 390 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 620 | 0.51 | 0.50 | Black | B1 |
| 0603LS-471X_R_ | 470 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 540 | 0.62 | 0.42 | Brown | B1 |
| 0603LS-561X_R_ | 560 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 525 | 0.44 | 0.55 | Red | B1 |
| 0603LS-681X_R_ | 680 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 260 | 0.52 | 0.47 | Orange | B2 |
| 0603LS-781X_R_ | 780 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 460 | 0.83 | 0.39 | Yellow | B1 |
| 0603LS-821X_R_ | 820 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 410 | 0.69 | 0.40 | Green | B1 |
| 0603LS-102X_R_ | 1000 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 190 | 0.81 | 0.40 | Blue | B2 |
| 0603LS-122X_R_ | 1200 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 160 | 0.87 | 0.37 | Violet | B2 |
| 0603LS-152X_R_ | 1500 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 100 | 0.96 | 0.35 | Gray | B2 |
| 0603LS-182X_R_ | 1800 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 80 | 1.1 | 0.35 | White | B2 |
| 0603LS-222X_R_ | 2200 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 68 | 1.2 | 0.32 | Black | B2 |
| 0603LS-272X_R_ | 2700 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 60 | 1.5 | 0.28 | Brown | B2 |
| 0603LS-332X_R_ | 3300 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 42 | 1.5 | 0.28 | Red | B2 |
| 0603LS-392X_R_ | 3900 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 40 | 1.6 | 0.28 | Orange | B2 |
| 0603LS-472X_R_ | 4700 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 34 | 2.1 | 0.26 | Yellow | B2 |
| 0603LS-562X_R_ | 5600 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 32 | 2.6 | 0.24 | Green | B2 |
| 0603LS-682X_R_ | 6800 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 31 | 3.1 | 0.20 | Black | B2 |
| 0603LS-782X_R_ | 7800 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 28 | 3.5 | 0.20 | Blue | B2 |
| 0603LS-822X_R_ | 8200 @ 7.9 MHz | 5,2 | 15 @ 7.9 MHz | 26 | 3.6 | 0.19 | Violet | B2 |
| 0603LS-103X_R_ | 10000 @ 2.5 MHz | 5,2 | 12 @ 2.5 MHz | 25 | 4.8 | 0.18 | Gray | B2 |
| 0603LS-153X_R_ | 15000 @ 2.5 MHz | 5,2 | 20 @ 2.5 MHz | 23 | 7.1 | 0.17 | White | B2 |
| 0603LS-183X_R_ | 18000 @ 2.5 MHz | 5,2 | 20 @ 2.5 MHz | 22 | 7.6 | 0.16 | Brown | B2 |
| 0603LS-223X_R_ | 22000 @ 2.5 MHz | 5,2 | 22 @ 2.5 MHz | 19 | 8.81 | 0.13 | Black | B2 |

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

0603LS-223XJRC

Tolerance: G = 2% J = 5%

(Table shows stock tolerances in bold.)

Termination: R = RoHS matte Sn over Ni over Ag-Pt-glass frit.

Special order:

T = RoHS Sn/Ag/Cu (95.5/4.0/0.5)

S = Not RoHS Sn/Pb (63/37).

Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

B = 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 B to C.

2. Inductance measured at 0.1 Vrms, using Coilcraft SMD-A fixture in Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.

3. Q measured on Agilent/HP 4395A with Agilent/HP 16193 test fixture.

4. SRF measured using Agilent/HP 8753D network analyzer with Coilcraft SMD-D test fixture.

5. DCR measured on Cambridge Technology Micro-ohmmeter.

6. Current that causes a 15°C temperature rise from 25°C ambient.

Because of their open construction, these parts will not saturate. This information is for reference only and does not represent absolute maximum ratings

7. Electrical specifications at 25°C.

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



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