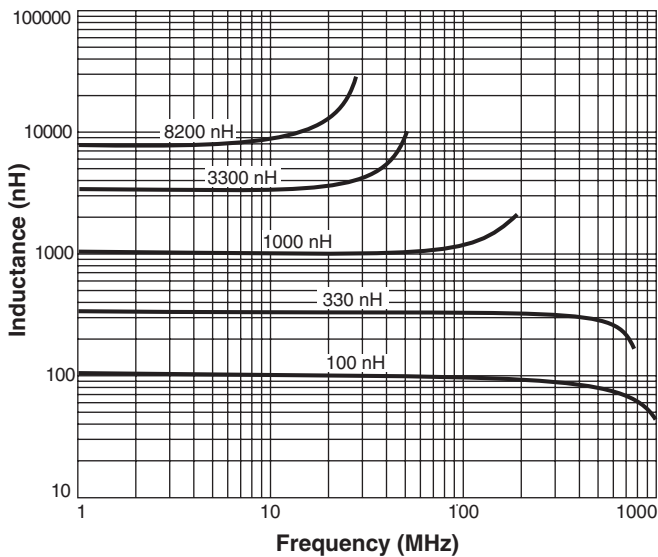




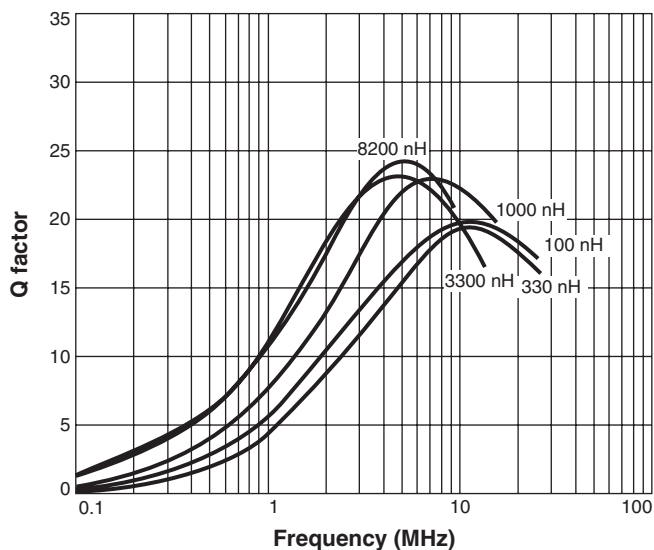
# Chip Inductors - 0603LS Series (1608)

- Higher inductance values than other 0603 inductors
- Ferrite construction for high current handling
- Inductance values: 47 nH – 22  $\mu$ H; 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

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

**Weight** 4.8 – 6.2 mg

**Ambient temperature**  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with  $I_{\text{rms}}$  current,  $+85^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$  with derated current

**Storage temperature** Component:  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ .  
Packaging:  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

**Resistance to soldering heat** Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles

**Temperature Coefficient of Inductance (TCL)**  $+50$  to  $+150$  ppm/ $^{\circ}\text{C}$

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at  $<30^{\circ}\text{C}$  / 85% relative humidity)

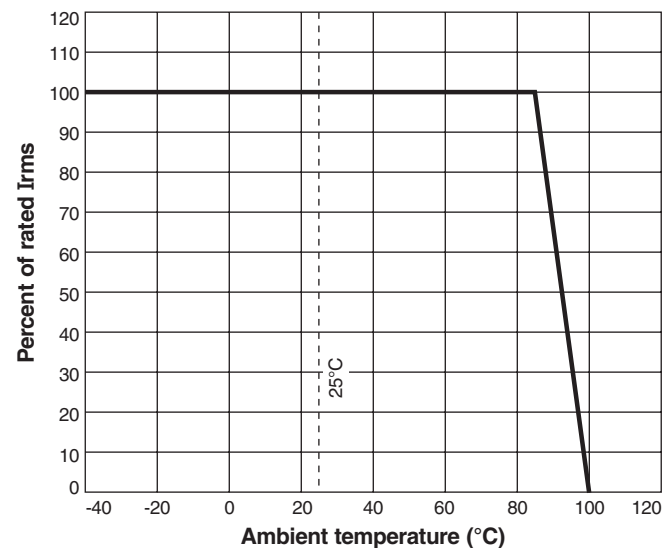
**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

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

**Packaging** 2000 per 7" reel. Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.1 mm pocket depth

**PCB washing** Only pure water or alcohol recommended

## I<sub>rms</sub> Derating



**Coilcraft**<sup>®</sup>

Specifications subject to change without notice.  
Please check our website for latest information.

Document 264-1 Revised 10/06/08

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# Chip Inductors – 0603LS Series

**S-Parameter files**

ON OUR WEB SITE OR CD

**SPICE models**

ON OUR WEB SITE OR CD

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	Irms <sup>6</sup> (A)	Color code	Overall width
0603LS-47NX_L_	47 @ 7.9MHz	<b>5,2</b>	12 @ 7.9MHz	1500	0.075	1.40	Black	B1
0603LS-51NX_L_	51 @ 7.9MHz	<b>5,2</b>	12 @ 7.9MHz	1400	0.075	1.00	Violet	B1
0603LS-72NX_L_	72 @ 7.9MHz	<b>5,2</b>	12 @ 7.9MHz	1400	0.12	1.40	Brown	B1
0603LS-101X_L_	100 @ 7.9MHz	<b>5,2</b>	12 @ 7.9MHz	1150	0.13	1.40	Red	B1
0603LS-121X_L_	120 @ 7.9MHz	<b>5,2</b>	12 @ 7.9MHz	1100	0.15	1.40	Orange	B1
0603LS-151X_L_	150 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	1050	0.15	1.30	Yellow	B1
0603LS-181X_L_	180 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	950	0.15	1.30	Green	B1
0603LS-241X_L_	240 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	800	0.16	0.95	Violet	B1
0603LS-271X_L_	270 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	775	0.30	0.71	Gray	B1
0603LS-331X_L_	330 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	725	0.46	0.56	White	B1
0603LS-391X_L_	390 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	620	0.51	0.50	Black	B1
0603LS-471X_L_	470 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	540	0.62	0.42	Brown	B1
0603LS-561X_L_	560 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	525	0.44	0.55	Red	B1
0603LS-681X_L_	680 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	260	0.52	0.47	Orange	B2
0603LS-781X_L_	780 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	460	0.83	0.39	Yellow	B1
0603LS-821X_L_	820 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	410	0.69	0.40	Green	B2
0603LS-102X_L_	1000 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	190	0.81	0.40	Blue	B2
0603LS-122X_L_	1200 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	160	0.87	0.37	Violet	B2
0603LS-152X_L_	1500 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	100	0.96	0.35	Gray	B2
0603LS-182X_L_	1800 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	80	1.1	0.35	White	B2
0603LS-222X_L_	2200 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	68	1.2	0.32	Black	B2
0603LS-272X_L_	2700 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	60	1.5	0.28	Brown	B2
0603LS-332X_L_	3300 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	42	1.5	0.28	Red	B2
0603LS-392X_L_	3900 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	40	1.6	0.28	Orange	B2
0603LS-472X_L_	4700 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	34	2.1	0.26	Yellow	B2
0603LS-562X_L_	5600 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	32	2.6	0.24	Green	B2
0603LS-682X_L_	6800 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	31	3.1	0.20	Black	B2
0603LS-782X_L_	7800 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	28	3.5	0.20	Blue	B2
0603LS-822X_L_	8200 @ 7.9MHz	<b>5,2</b>	15 @ 7.9MHz	26	3.6	0.19	Violet	B2
0603LS-103X_L_	10,000 @ 2.5MHz	<b>5,2</b>	12 @ 2.5MHz	25	4.8	0.18	Gray	B2
0603LS-153X_L_	15,000 @ 2.5MHz	<b>5,2</b>	20 @ 2.5MHz	23	7.1	0.17	White	B2
0603LS-183X_L_	18,000 @ 2.5MHz	<b>5,2</b>	20 @ 2.5MHz	22	7.6	0.16	Brown	B2
0603LS-223X_L_	22,000 @ 2.5MHz	<b>5,2</b>	22 @ 2.5MHz	19	8.81	0.13	Black	B2

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

**0603LS-822X J L C**

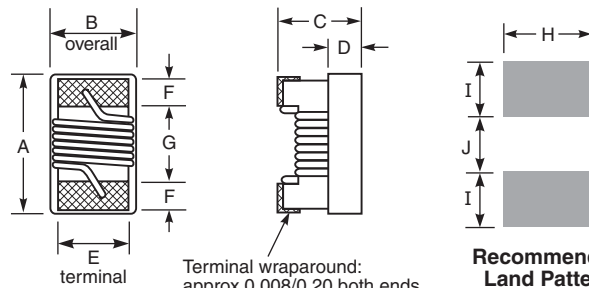
**Tolerance:** G = 2% J = 5% (Table shows stock tolerances in bold.)

**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel).

B = Less than full reel. In tape, but not machine ready.  
To have a leader and trailer added (\$25 charge), use code letter C instead.

- Inductance measured at 0.1 Vrms, using Coilcraft SMD-A fixture in Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
  - Q measured on Agilent/HP 4395A with Agilent/HP 16193 test fixture.
  - SRF measured using Agilent/HP 8753D network analyzer with Coilcraft SMD-D test fixture.
  - DCR measured on Cambridge Technology Micro-ohmmeter.
  - Current that causes a 15°C temperature rise from 25°C ambient. Because of their open construction, these parts will not saturate.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



A	B	C	D	E	F	G	H	I	J
max	ref	max	ref	ref	ref	ref	ref	ref	ref
0.071	See note	0.044	0.015	0.030	0.013	0.034	0.040	0.025	0.025
1,80		1,12	0,38	0,76	0,33	0,86	1,02	0,64	0,64

inches  
mm

Note:

B1 = 0.040 ±0.004 in / 1,016 ±0,102 mm  
B2 = 0.046 ±0.004 in / 1,169 ±0,102 mm



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Please check our website for latest information.

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