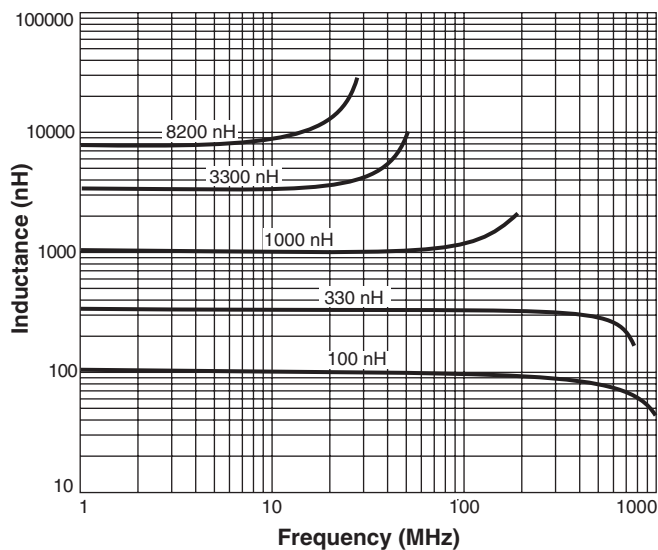


# Chip Inductors – 0603LS (1608)

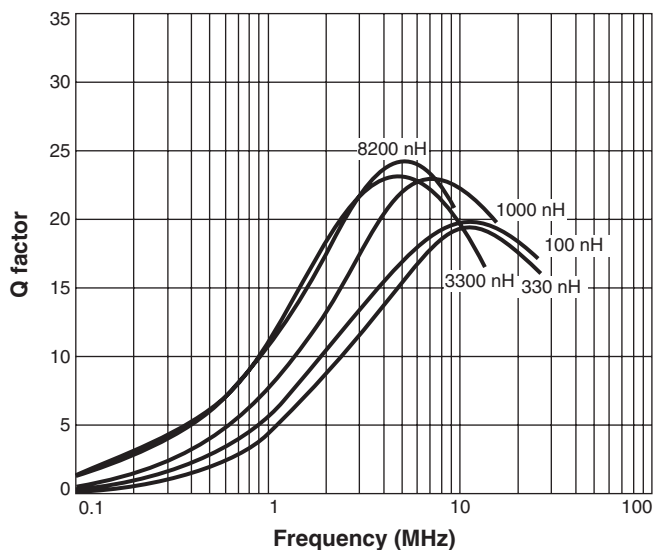


- Higher inductance values than other 0603 inductors
- Ferrite construction for high current handling
- Inductance values: 47 nH – 22  $\mu$ H; 5% and 2% tolerance

## Typical L vs Frequency



## Typical Q vs Frequency



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

**Core material** Ceramic/Ferrite

**Environmental** RoHS compliant, halogen free optional

**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 Irms current,  $+85^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$  with derated current

**Storage temperature** Component:  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ .  
Tape and reel 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)

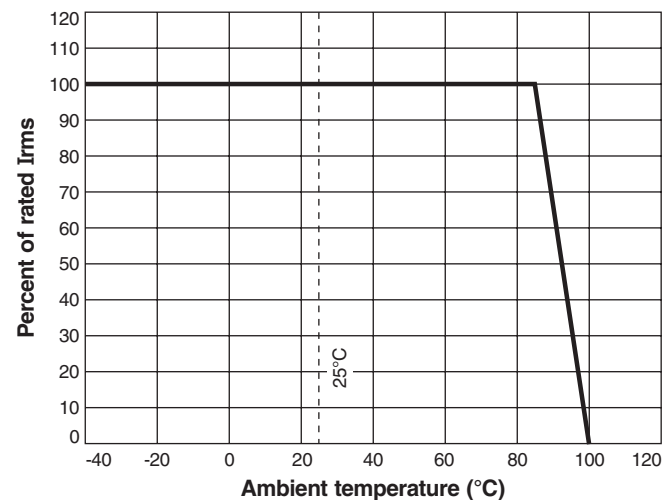
**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

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, 1.17 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.

## Irms Derating



**S-Parameter files**

ON OUR WEB SITE

**SPICE models**

ON OUR WEB SITE

# Chip Inductors – 0603LS Series



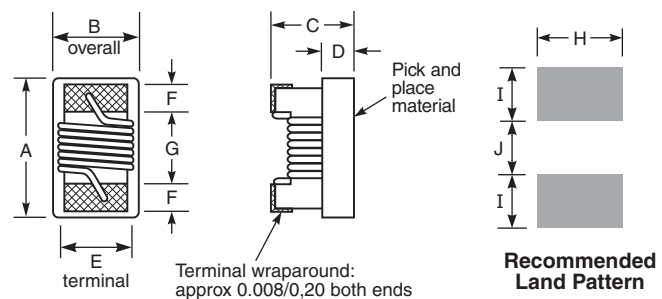
Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	Irms <sup>6</sup> (A)	Color code	Overall width
0603LS-47NX_L_	47 @ 7.9 MHz	<b>5,2</b>	12 @ 7.9 MHz	1500	0.075	1.40	Black	B1
0603LS-51NX_L_	51 @ 7.9 MHz	<b>5,2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

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

**0603LS-822XJLC**

- 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:** 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.

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.  
7. 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
0.071	See	0.044	0.015	0.030	0.013	0.034	0.040	0.025	0.025
1,80	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.



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