



# Chip Inductors - 0603CS Series (1608)

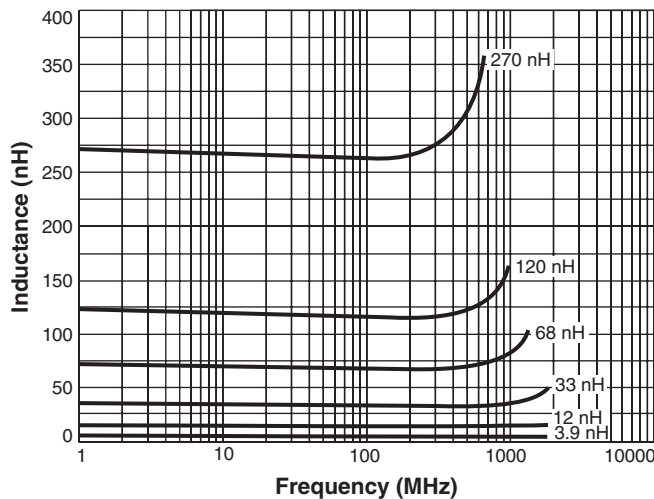
Ultra-small size, exceptional Q and high SRFs make these inductors ideal for high frequency applications where size is at a premium. They also have excellent DCR and current carrying characteristics.

Coilcraft **Designer's Kits C324A** and **C324B** contain samples of 5% tolerance parts. Kits with 2% tolerance are also available. To order, contact Coilcraft or visit <http://order.coilcraft.com> to purchase on-line.

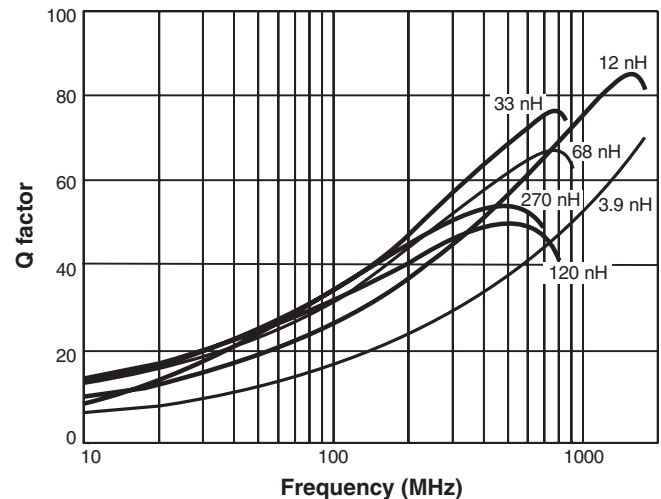
**S-Parameter files**  
ON OUR WEB SITE OR CD

**SPICE models**  
ON OUR WEB SITE OR CD

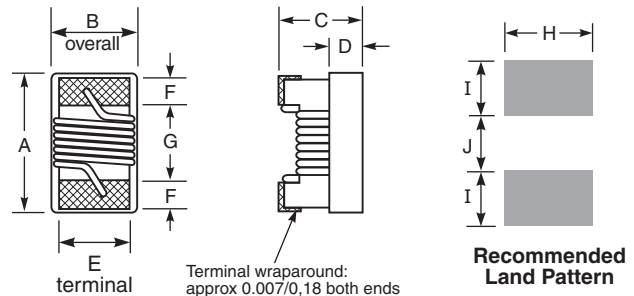
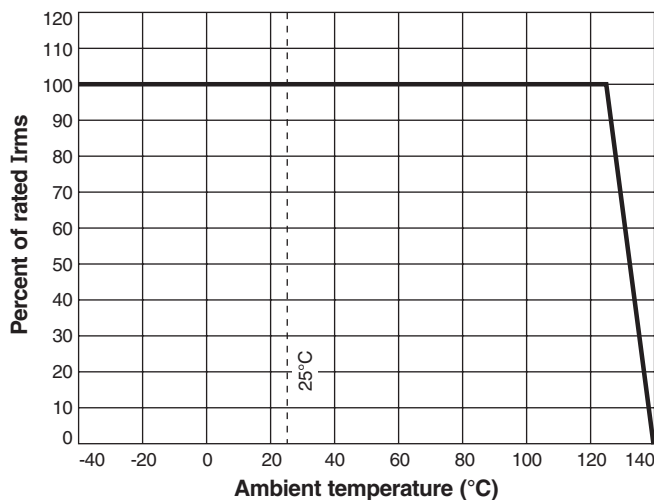
## Typical L vs Frequency



## Typical Q vs Frequency



## Irms Derating



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

**Weight:** 3.2 – 3.7 mg  
**Tape and reel:** 2000/7" reel 8 mm tape width  
 For packaging data see Tape and Reel Specifications section.

**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
 MEASUREMENTS  
 SEE INDEX **TEST FIXTURES**



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

Document 195-1 Revised 09/21/07

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# 0603CS Series (1608)

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	Q min <sup>4</sup>	900 MHz		1.7 GHz		SRF min <sup>5</sup> (MHz)	DCR max <sup>6</sup> (Ohms)	Irms <sup>7</sup> (mA)	Color code
				L typ	Q typ	L typ	Q typ				
0603CS-1N6X_L_	1.6 @ 250 MHz	<b>5</b>	24	1.67	49	1.65	63	12500	0.030	700	Red
0603CS-1N8X_L_	1.8 @ 250 MHz	<b>5</b>	16	1.83	35	1.86	50	12500	0.045	700	Black
0603CS-2N2X_L_	2.2 @ 250 MHz	<b>5</b>	13	2.22	31	2.24	44	12500	0.250	100	Yellow
0603CS-3N3X_L_	3.3 @ 250 MHz	<b>5,2</b>	35	3.31	75	3.38	88	5900	0.045	700	Blue
0603CS-3N6X_L_	3.6 @ 250 MHz	<b>5,2</b>	22	3.72	53	3.71	65	5900	0.063	700	Red
0603CS-3N9X_L_	3.9 @ 250 MHz	<b>5,2</b>	22	3.95	49	3.96	67	6900	0.080	700	Brown
0603CS-4N3X_L_	4.3 @ 250 MHz	<b>5,2</b>	22	4.32	50	4.33	70	5900	0.063	700	Orange
0603CS-4N7X_L_	4.7 @ 250 MHz	<b>5,2</b>	20	4.72	47	4.75	57	5800	0.116	700	Violet
0603CS-5N1X_L_	5.1 @ 250 MHz	<b>5,2</b>	20	4.93	47	4.95	56	5700	0.140	700	Green
0603CS-5N6X_L_	5.6 @ 250 MHz	<b>5,2</b>	26	5.77	63	6.05	80	4760	0.075	700	Black
0603CS-6N8X_L_	6.8 @ 250 MHz	<b>5,2</b>	27	6.75	60	7.10	81	5800	0.110	700	Red
0603CS-7N5X_L_	7.5 @ 250 MHz	<b>5,2</b>	28	7.70	60	7.82	65	4800	0.106	700	Brown
0603CS-8N2X_L_	8.2 @ 250 MHz	<b>5,2</b>	30	8.25	82	8.37	87	4200	0.115	700	Orange
0603CS-8N7X_L_	8.7 @ 250 MHz	<b>5,2</b>	28	8.86	62	9.32	58	4600	0.109	700	Yellow
0603CS-9N5X_L_	9.5 @ 250 MHz	<b>5,2</b>	28	9.7	59	9.92	61	5400	0.135	700	Blue
0603CS-10NX_L_	10 @ 250 MHz	<b>5,2</b>	31	10.0	66	10.6	83	4800	0.130	700	Orange
0603CS-11NX_L_	11 @ 250 MHz	<b>5,2</b>	30	11.0	53	11.5	56	4000	0.130	700	Gray
0603CS-12NX_L_	12 @ 250 MHz	<b>5,2</b>	35	12.3	72	13.5	83	4000	0.130	700	Yellow
0603CS-15NX_L_	15 @ 250 MHz	<b>5,2</b>	35	15.4	64	16.8	89	4000	0.170	700	Green
0603CS-16NX_L_	16 @ 250 MHz	<b>5,2</b>	34	16.2	55	17.3	52	3300	0.170	700	White
0603CS-18NX_L_	18 @ 250 MHz	<b>5,2</b>	35	18.7	70	21.4	69	3100	0.170	700	Blue
0603CS-22NX_L_	22 @ 250 MHz	<b>5,2</b>	38	22.8	73	26.1	71	3000	0.190	700	Violet
0603CS-23NX_L_	23 @ 250 MHz	<b>5,2</b>	38	24.1	71	28.0	67	2850	0.190	700	Orange
0603CS-24NX_L_	24 @ 250 MHz	<b>5,2</b>	36	24.5	45	28.7	39	2650	0.190	700	Black
0603CS-27NX_L_	27 @ 250 MHz	<b>5,2</b>	40	29.2	74	34.6	65	2800	0.220	600	Gray
0603CS-30NX_L_	30 @ 250 MHz	<b>5,2</b>	37	31.4	47	39.9	28	2250	0.220	600	Brown
0603CS-33NX_L_	33 @ 250 MHz	<b>5,2</b>	40	36.0	67	49.5	42	2300	0.220	600	White
0603CS-36NX_L_	36 @ 250 MHz	<b>5,2</b>	37	39.4	47	52.7	24	2080	0.250	600	Red
0603CS-39NX_L_	39 @ 250 MHz	<b>5,2</b>	40	42.7	60	60.2	40	2200	0.250	600	Black
0603CS-43NX_L_	43 @ 250 MHz	<b>5,2</b>	38	47.0	44	64.9	21	2000	0.280	600	Orange
0603CS-47NX_L_	47 @ 200 MHz	<b>5,2</b>	38	52.2	62	77.2	35	2000	0.280	600	Brown
0603CS-51NX_L_	51 @ 200 MHz	<b>5,2</b>	35	55.5	69	82.2	34	1900	0.270	600	Blue
0603CS-56NX_L_	56 @ 200 MHz	<b>5,2</b>	38	62.5	56	97.0	26	1900	0.310	600	Red
0603CS-68NX_L_	68 @ 200 MHz	<b>5,2</b>	37	80.5	54	168	21	1700	0.340	600	Orange
0603CS-72NX_L_	72 @ 150 MHz	<b>5,2</b>	34	82.0	53	135	20	1700	0.490	400	Yellow
0603CS-82NX_L_	82 @ 150 MHz	<b>5,2</b>	34	96.2	54	177	21	1700	0.540	400	Green
0603CS-R10X_L_	100 @ 150 MHz	<b>5,2</b>	34	124	49	—	—	1400	0.580	400	Blue
0603CS-R11X_L_	110 @ 150 MHz	<b>5,2</b>	32	138	43	—	—	1350	0.610	300	Violet
0603CS-R12X_L_	120 @ 150 MHz	<b>5,2</b>	32	166	39	—	—	1300	0.650	300	Gray
0603CS-R15X_L_	150 @ 150 MHz	<b>5,2</b>	28	250	25	—	—	990	0.920	280	White
0603CS-R18X_L_	180 @ 100 MHz	<b>5,2</b>	25	305	22	—	—	990	1.25	240	Black
0603CS-R20X_L_	200 @ 100 MHz	<b>5,2</b>	25	—	—	—	—	900	1.98	200	Green
0603CS-R21X_L_	210 @ 100 MHz	<b>5,2</b>	27	—	—	—	—	895	2.06	200	Gray
0603CS-R22X_L_	220 @ 100 MHz	<b>5,2</b>	25	—	—	—	—	900	2.10	200	Brown
0603CS-R25X_L_	250 @ 100 MHz	<b>5,2</b>	25	—	—	—	—	822	3.55	120	Violet
0603CS-R27X_L_	270 @ 100 MHz	<b>5,2</b>	24	—	—	—	—	900	2.30	170	Red
0603CS-R33X_L_	330 @ 100 MHz	<b>5,2</b>	25	—	—	—	—	900	3.89	100	Blue
0603CS-R39X_L_	390 @ 100 MHz	<b>5,2</b>	25	—	—	—	—	900	4.35	100	Yellow

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

0603CS-R39X J L W

**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:** 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 measured using a Coilcraft SMD-A fixture in an Agilent/  
HP 4286 impedance analyzer with Coilcraft-provided correlation  
pieces.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured at the same frequency as inductance using an Agilent/  
HP 4291A with an Agilent/HP 16193 test fixture.

5. SRF measured using an Agilent/HP 8720D network analyzer and a  
Coilcraft SMD-D test fixture.

6. DCR measured on a Cambridge Technology micro-ohmmeter and a  
Coilcraft CCF858 test fixture.

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

8. **Ambient temperature range:** -40°C to +125°C with Irms current  
+125°C to +140°C with derated current

9. **Storage temperature range:** Component: -40°C to +140°C  
Packaging: -55°C to +80°C

10. **Resistance to soldering heat:** Three reflows at >217°C for  
90 seconds (+260°C ±5°C for 20 – 40 seconds), allowing parts to  
cool to room temperature between.

11. Electrical specifications at 25°C.

12. Temperature coefficient of inductance: +25 to +125 ppm/°C.

See Qualification Standards section for environmental and test data.

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

# Coilcraft®

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

Document 195-2 Revised 09/21/07

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