RoHS/ REACH COMPLIANT

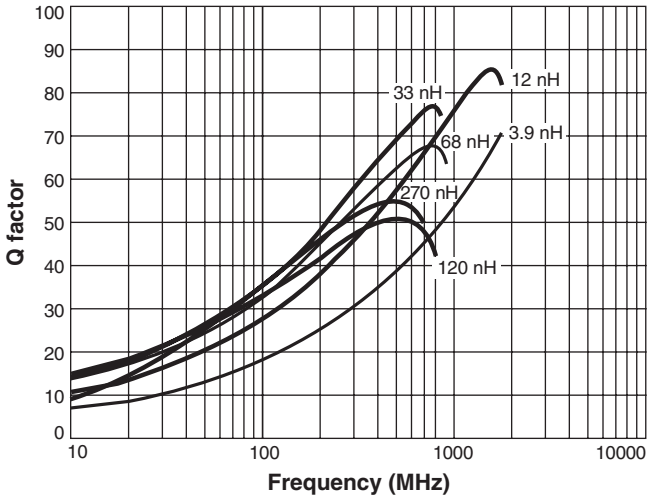
Halogen Free

AEC Q200 +125°C

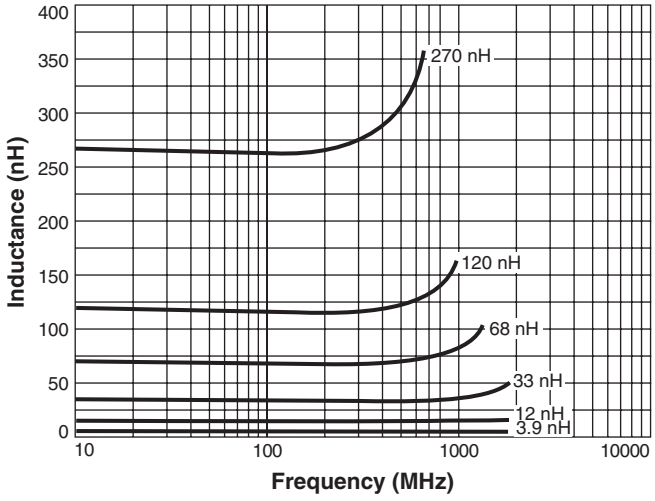
Chip Inductors – 0603CS (1608)

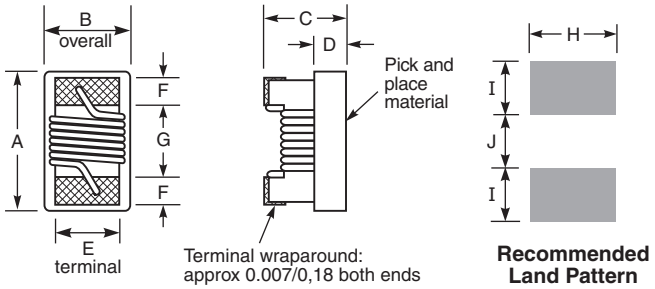
Ultra-small size, exceptional Q and high SRFs make these inductors ideal for high frequency applications where size is at a premium. They also have excellent DCR and current carrying characteristics.

Typical Q vs Frequency



Typical L vs Frequency





A max	B max	C max	D ref	E	F	G	H	I	J	
0.071	0.044	0.040	0.015	0.030	0.013	0.034	0.040	0.025	0.025	inches
1,80	1,12	1,02	0,38	0,76	0,33	0,86	1,02	0,64	0,64	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
Terminations RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.
Weight 3.2 – 3.7 mg
Ambient temperature –40°C to +125°C with Irms current
Maximum part temperature +140°C (ambient + temp rise).
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)
Packaging 2000 per 7″ reel; 10000 per 7″ reel Paper tape: 8 mm wide, 1.0 mm thick, 4 mm pocket spacing
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

S-Parameter files
ON OUR WEB SITE

SPICE models
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Document 195-1 Revised 08/06/21

0603CS Series (1608)

Designer's Kit C324 contains 10 each of all 5% values
Designer's Kit C324-2 contains 10 each of all 2% values

Part number[1]	Inductance[2] (nH)	Percent tolerance[3]	Q min[4]	900 MHz L typ	900 MHz Q typ	1.7 GHz L typ	1.7 GHz Q typ	SRF min[5] (GHz)	DCR max[6] (Ohms)	Irms[7] (mA)	Color dot[8]
0603CS-1N6XJE_	1.6 @ 250 MHz	**5**	24	1.67	49	1.65	63	12.5	0.030	700	Red
0603CS-1N8XJE_	1.8 @ 250 MHz	**5**	16	1.83	35	1.86	50	12.5	0.045	700	Black
0603CS-2N2XJE_	2.2 @ 250 MHz	**5**	13	2.22	31	2.24	44	12.5	0.250	100	Yellow
0603CS-3N3X_E_	3.3 @ 250 MHz	**5**,3,**2**	35	3.31	75	3.38	88	5.90	0.045	700	Blue
0603CS-3N6X_E_	3.6 @ 250 MHz	**5**,3,**2**	22	3.72	53	3.71	65	5.90	0.063	700	Red
0603CS-3N9X_E_	3.9 @ 250 MHz	**5**,3,**2**	22	3.95	49	3.96	67	6.90	0.080	700	Brown
0603CS-4N3X_E_	4.3 @ 250 MHz	**5**,3,**2**	22	4.32	50	4.33	70	5.90	0.063	700	Orange
0603CS-4N7X_E_	4.7 @ 250 MHz	**5**,3,**2**	20	4.72	47	4.75	57	5.80	0.116	700	Violet
0603CS-5N1X_E_	5.1 @ 250 MHz	**5**,3,**2**	20	4.93	47	4.95	56	5.70	0.140	700	Green
0603CS-5N6X_E_	5.6 @ 250 MHz	**5**,3,**2**	26	5.77	63	6.05	80	4.76	0.075	700	Black
0603CS-6N8X_E_	6.8 @ 250 MHz	**5**,3,**2**	27	6.75	60	7.10	81	5.80	0.110	700	Red
0603CS-7N5X_E_	7.5 @ 250 MHz	**5**,3,**2**	28	7.70	60	7.82	65	4.80	0.106	700	Brown
0603CS-8N2X_E_	8.2 @ 250 MHz	**5**,3,**2**	30	8.25	82	8.37	87	4.20	0.115	700	Orange
0603CS-8N7X_E_	8.7 @ 250 MHz	**5**,3,**2**	28	8.86	62	9.32	58	4.60	0.109	700	Yellow
0603CS-9N5X_E_	9.5 @ 250 MHz	**5**,3,**2**	28	9.7	59	9.92	61	5.40	0.135	700	Blue
0603CS-10NX_E_	10 @ 250 MHz	**5**,3,**2**	31	10.0	66	10.6	83	4.80	0.130	700	Orange
0603CS-11NX_E_	11 @ 250 MHz	**5**,3,**2**	30	11.0	53	11.5	56	4.00	0.130	700	Gray
0603CS-12NX_E_	12 @ 250 MHz	**5**,3,**2**	35	12.3	72	13.5	83	4.00	0.130	700	Yellow
0603CS-15NX_E_	15 @ 250 MHz	**5**,3,**2**	35	15.4	64	16.8	89	4.00	0.170	700	Green
0603CS-16NX_E_	16 @ 250 MHz	**5**,3,**2**	34	16.2	55	17.3	52	3.30	0.170	700	White
0603CS-18NX_E_	18 @ 250 MHz	**5**,3,**2**	35	18.7	70	21.4	69	3.10	0.170	700	Blue
0603CS-22NX_E_	22 @ 250 MHz	**5**,3,**2**	38	22.8	73	26.1	71	3.00	0.190	700	Violet
0603CS-23NX_E_	23 @ 250 MHz	**5**,3,**2**	38	24.1	71	28.0	67	2.85	0.190	700	Orange
0603CS-24NX_E_	24 @ 250 MHz	**5**,3,**2**	36	24.5	45	28.7	39	2.65	0.190	700	Black
0603CS-27NX_E_	27 @ 250 MHz	**5**,3,**2**	40	29.2	74	34.6	65	2.80	0.220	600	Gray
0603CS-30NX_E_	30 @ 250 MHz	**5**,3,**2**	37	31.4	47	39.9	28	2.25	0.220	600	Brown
0603CS-33NX_E_	33 @ 250 MHz	**5**,3,**2**	40	36.0	67	49.5	42	2.30	0.220	600	White
0603CS-36NX_E_	36 @ 250 MHz	**5**,3,**2**	37	39.4	47	52.7	24	2.08	0.250	600	Red
0603CS-39NX_E_	39 @ 250 MHz	**5**,3,**2**	40	42.7	60	60.2	40	2.20	0.250	600	Black
0603CS-43NX_E_	43 @ 250 MHz	**5**,3,**2**	38	47.0	44	64.9	21	2.00	0.280	600	Orange
0603CS-47NX_E_	47 @ 200 MHz	**5**,3,**2**	38	52.2	62	77.2	35	2.00	0.280	600	Brown
0603CS-51NX_E_	51 @ 200 MHz	**5**,3,**2**	35	55.5	69	82.2	34	1.90	0.270	600	Blue
0603CS-56NX_E_	56 @ 200 MHz	**5**,3,**2**	38	62.5	56	97.0	26	1.90	0.310	600	Red
0603CS-68NX_E_	68 @ 200 MHz	**5**,3,**2**	37	80.5	54	168	21	1.70	0.340	600	Orange
0603CS-72NX_E_	72 @ 150 MHz	**5**,3,**2**	34	82.0	53	135	20	1.70	0.490	400	Yellow
0603CS-82NX_E_	82 @ 150 MHz	**5**,3,**2**	34	96.2	54	177	21	1.70	0.540	400	Green
0603CS-R10X_E_	100 @ 150 MHz	**5**,3,**2**	34	124	49	—	—	1.40	0.580	400	Blue
0603CS-R11X_E_	110 @ 150 MHz	**5**,3,**2**	32	138	43	—	—	1.35	0.610	300	Violet
0603CS-R12X_E_	120 @ 150 MHz	**5**,3,**2**	32	166	39	—	—	1.30	0.650	300	Gray
0603CS-R15X_E_	150 @ 150 MHz	**5**,3,**2**	28	250	25	—	—	0.990	0.920	280	White
0603CS-R18X_E_	180 @ 100 MHz	**5**,3,**2**	25	305	22	—	—	0.990	1.25	240	Black
0603CS-R20X_E_	200 @ 100 MHz	**5**,3,**2**	25	—	—	—	—	0.900	1.98	200	Green
0603CS-R21X_E_	210 @ 100 MHz	**5**,3,**2**	27	—	—	—	—	0.895	2.06	200	Gray
0603CS-R22X_E_	220 @ 100 MHz	**5**,3,**2**	25	—	—	—	—	0.900	2.10	200	Brown
0603CS-R25X_E_	250 @ 100 MHz	**5**,3,**2**	25	—	—	—	—	0.822	3.55	120	Violet
0603CS-R27X_E_	270 @ 100 MHz	**5**,3,**2**	26	—	—	—	—	0.830	2.16	170	Red
0603CS-R33X_E_	330 @ 100 MHz	**5**,3,**2**	25	—	—	—	—	0.900	3.89	100	Blue
0603CS-R39X_E_	390 @ 100 MHz	**5**,3,**2**	25	—	—	—	—	0.780	4.35	100	Yellow

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

0603CS-R39XJEW

Tolerance: **G** = 2% **H** = 3% **J** = 5%
(Table shows stock tolerances in bold.)

Termination: **E** = Halogen free component. RoHS compliant silver-palladium-platinum-glass frit. terminations.
L = RoHS compliant silver-palladium-platinum-glass frit.
R = RoHS compliant matte tin over nickel over silver-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). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
Y = 13″ machine-ready reel. EIA-481 punched paper tape. Factory order only, not stocked (10000 parts per full reel).
U = 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 U to W.

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. This information is for reference only and does not represent absolute maximum ratings.
8. Each part is marked with a single dot. The color dots are not unique identifiers and correspond to multiple inductance values.
9. Electrical specifications at 25°C.

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

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