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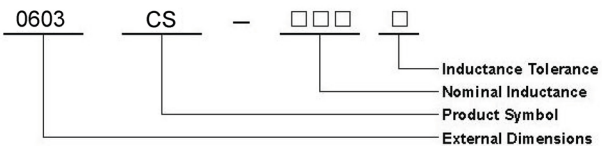
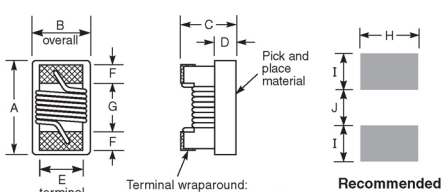
Chip Inductors – 0603CS (1608)

PRODUCT IDENTIFICATION



Inductance Tolerance: B=±0.1nH C=±0.2nH S=±0.3nH D=±0.5nH
F=±1% G=±2% J=±5% K=±10%

SHAPE AND DIMENSIONS



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.

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SPECIFICATIONS

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)
0603CS-1N6 _	1.6 @ 250 MHz	**5**	24	1.67	49	1.65	63	12.5	0.030	700
0603CS-1N8 _	1.8 @ 250 MHz	**5**	16	1.83	35	1.86	50	12.5	0.045	700
0603CS-2N2 _	2.2 @ 250 MHz	**5**	13	2.22	31	2.24	44	12.5	0.250	100
0603CS-3N3 _	3.3 @ 250 MHz	**5,2**	35	3.31	75	3.38	88	5.90	0.045	700
0603CS-3N6 _	3.6 @ 250 MHz	**5,2**	22	3.72	53	3.71	65	5.90	0.063	700
0603CS-3N9 _	3.9 @ 250 MHz	**5,2**	22	3.95	49	3.96	67	6.90	0.080	700
0603CS-4N3 _	4.3 @ 250 MHz	**5,2**	22	4.32	50	4.33	70	5.90	0.063	700
0603CS-4N7 _	4.7 @ 250 MHz	**5,2**	20	4.72	47	4.75	57	5.80	0.116	700
0603CS-5N1 _	5.1 @ 250 MHz	**5,2**	20	4.93	47	4.95	56	5.70	0.140	700
0603CS-5N6 _	5.6 @ 250 MHz	**5,2**	26	5.77	63	6.05	80	4.76	0.075	700
0603CS-6N8 _	6.8 @ 250 MHz	**5,2**	27	6.75	60	7.10	81	5.80	0.110	700
0603CS-7N5 _	7.5 @ 250 MHz	**5,2**	28	7.70	60	7.82	65	4.80	0.106	700
0603CS-8N2 _	8.2 @ 250 MHz	**5,2**	30	8.25	82	8.37	87	4.20	0.115	700
0603CS-8N7 _	8.7 @ 250 MHz	**5,2**	28	8.86	62	9.32	58	4.60	0.109	700
0603CS-9N5 _	9.5 @ 250 MHz	**5,2**	28	9.7	59	9.92	61	5.40	0.135	700
0603CS-10N _	10 @ 250 MHz	**5,2**	31	10.0	66	10.6	83	4.80	0.130	700
0603CS-11N _	11 @ 250 MHz	**5,2**	30	11.0	53	11.5	56	4.00	0.130	700
0603CS-12N _	12 @ 250 MHz	**5,2**	35	12.3	72	13.5	83	4.00	0.130	700
0603CS-15N _	15 @ 250 MHz	**5,2**	35	15.4	64	16.8	89	4.00	0.170	700
0603CS-16N _	16 @ 250 MHz	**5,2**	34	16.2	55	17.3	52	3.30	0.170	700
0603CS-18N _	18 @ 250 MHz	**5,2**	35	18.7	70	21.4	69	3.10	0.170	700
0603CS-22N _	22 @ 250 MHz	**5,2**	38	22.8	73	26.1	71	3.00	0.190	700
0603CS-23N _	23 @ 250 MHz	**5,2**	38	24.1	71	28.0	67	2.85	0.190	700
0603CS-24N _	24 @ 250 MHz	**5,2**	36	24.5	45	28.7	39	2.65	0.190	700
0603CS-27N _	27 @ 250 MHz	**5,2**	40	29.2	74	34.6	65	2.80	0.220	600
0603CS-30N _	30 @ 250 MHz	**5,2**	37	31.4	47	39.9	28	2.25	0.220	600
0603CS-33N _	33 @ 250 MHz	**5,2**	40	36.0	67	49.5	42	2.30	0.220	600
0603CS-36N _	36 @ 250 MHz	**5,2**	37	39.4	47	52.7	24	2.08	0.250	600
0603CS-39N _	39 @ 250 MHz	**5,2**	40	42.7	60	60.2	40	2.20	0.250	600
0603CS-43N _	43 @ 250 MHz	**5,2**	38	47.0	44	64.9	21	2.00	0.280	600
0603CS-47N _	47 @ 200 MHz	**5,2**	38	52.2	62	77.2	35	2.00	0.280	600
0603CS-51N _	51 @ 200 MHz	**5,2**	35	55.5	69	82.2	34	1.90	0.270	600
0603CS-56N _	56 @ 200 MHz	**5,2**	38	62.5	56	97.0	26	1.90	0.310	600
0603CS-68N _	68 @ 200 MHz	**5,2**	37	80.5	54	168	21	1.70	0.340	600
0603CS-72N _	72 @ 150 MHz	**5,2**	34	82.0	53	135	20	1.70	0.490	400
0603CS-82N _	82 @ 150 MHz	**5,2**	34	96.2	54	177	21	1.70	0.540	400
0603CS-R10 _	100 @ 150 MHz	**5,2**	34	124	49	—	—	1.40	0.580	400
0603CS-R11 _	110 @ 150 MHz	**5,2**	32	138	43	—	—	1.35	0.610	300
0603CS-R12 _	120 @ 150 MHz	**5,2**	32	166	39	—	—	1.30	0.650	300
0603CS-R15 _	150 @ 150 MHz	**5,2**	28	250	25	—	—	0.990	0.920	280

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SPECIFICATIONS

Part number	Inductance [1] (nH)	Percent tolerance [2]	Q [3] min	900 MHz L typ	900 MHz Q typ	1.7 GHz L typ [4]	1.7 GHz Q typ [4]	SRF min (GHz)	DCR max [5] (Ohms)	Irms [6] (mA)
0603CS-R18 _	180 @ 100 MHz	**5,2**	25	305	22	—	—	0.990	1.25	240
0603CS-R20 _	200 @ 100 MHz	**5,2**	25	—	—	—	—	0.900	1.98	200
0603CS-R21 _	210 @ 100 MHz	**5,2**	27	—	—	—	—	0.895	2.06	200
0603CS-R22 _	220 @ 100 MHz	**5,2**	25	—	—	—	—	0.900	2.10	200
0603CS-R25 _	250 @ 100 MHz	**5,2**	25	—	—	—	—	0.822	3.55	120
0603CS-R27 _	270 @ 100 MHz	**5,2**	26	—	—	—	—	0.830	2.16	170
0603CS-R33 _	330 @ 100 MHz	**5,2**	25	—	—	—	—	0.900	3.89	100
0603CS-R39 _	390 @ 100 MHz	**5,2**	25	—	—	—	—	0.780	4.35	100

1. Inductance measured using a Frcoil SMD-A fxture in an Agilent/ HP 4286 impedance analyzer with Frcoil-provided correlation pieces.
2. Tolerances in bold are stocked for immediate shipment.
3. Q measured at the same frequency as inductance using an Agilent/ HP 4291A with an Agilent/HP 16193 test fixture.
4. SRF measured using an Agilent/HP 8720D network analyzer and a Frcoil SMD-D test fxture.
5. DCR measured on a Cambridge Technology micro-ohmmeter and a Frcoil test fxture.
6. Current that causes a 15°C temperature rise from 25°C ambient.
7. Electrical specifications at 25°C.

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.

Core material Ceramic

Environmental RoHS compliant, halogen free optional

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, +125°C to +140°C with derated current

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)

Failures in Time (FIT) / Mean Time Between Failures (MTBF) One per billion hours / one billion hours, calculated per Telcordia SR-332

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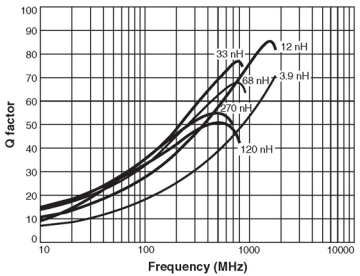
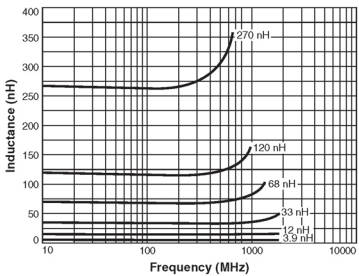
TYPICAL ELECTRICAL CHARACTERISTICS

Typical Q vs Frequency



Typical L vs Frequency



Irms Derating