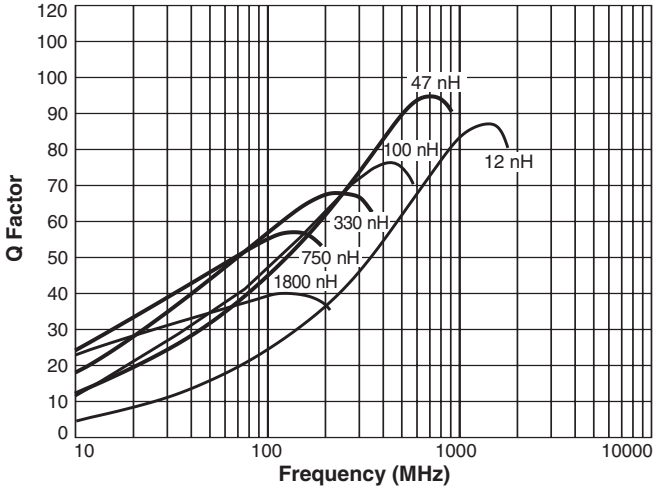
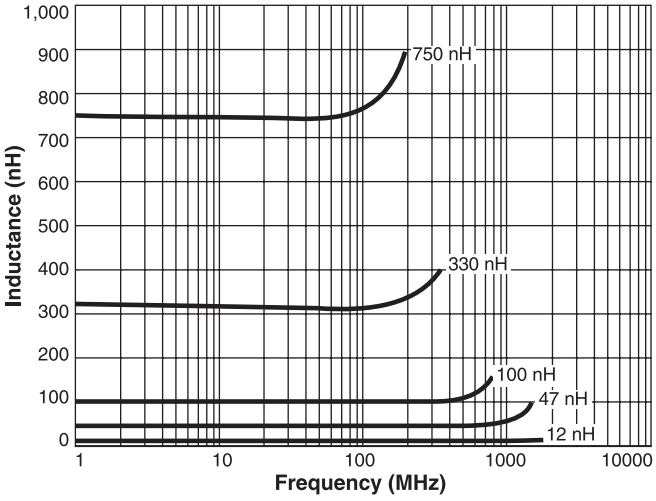
Chip Inductors–1008CS Series (2520)

- High SRF and excellent Q values
- Tight tolerances, many values at 1%
- 39 inductance values from 10 nH to 8.2 µH

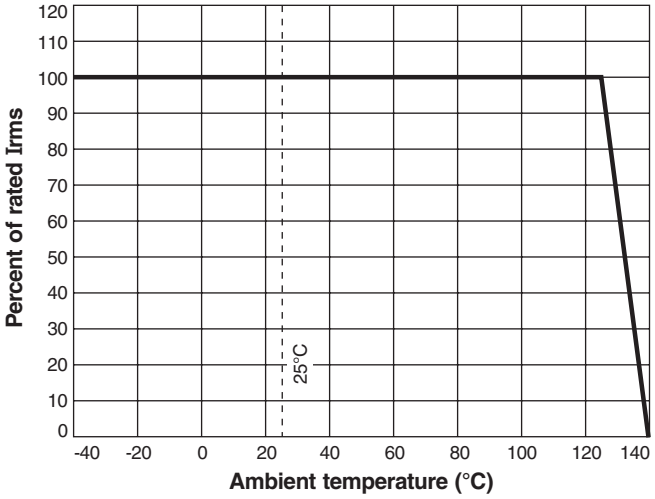
Typical Q vs Frequency

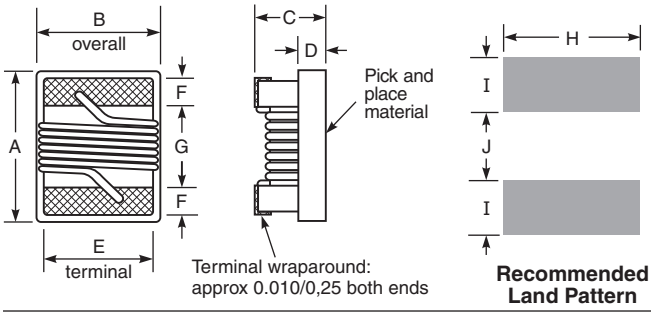


Typical L vs Frequency



Irms Derating





A max	B max	C max	D ref	E	F	G	H	I	J	
0.115	0.110	0.080	0.020	0.080	0.020	0.060	0.100	0.040	0.050	inches
2,92	2,79	2,03	0,51	2,03	0,51	1,52	2,54	1,02	1,27	mm

Note: Height dimension (C) is before optional solder application. For maximum height dimension including solder, add 0.006 in / 0,152 mm.

Designer's Kit C300 contains 10 each of all 5% tolerance values
Core material Ceramic
Environmental RoHS compliant, halogen free
Terminations RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.
Weight 29.6 – 37.4 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
Packaging 2000 per 7″ reel; 7500 per 13″ reel. Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 2.0 mm pocket depth
PCB washing Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf

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SPICE models
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1008CS Series (2520)

Part number[1]	Inductance[2] (nH)	Percent tolerance[3]	Q min[4]	SRF min[5] (MHz)	DCR max[6] (Ohms)	Irms[7] (mA)	Color code[8]
1008CS-100X_L_	10 @ 50 MHz	**5,2**	50 @ 500 MHz	4100	0.08	1000	Black
1008CS-120X_L_	12 @ 50 MHz	**5,2**	50 @ 500 MHz	3300	0.09	1000	Red
1008CS-150X_L_	15 @ 50 MHz	**5,2**	50 @ 500 MHz	2500	0.10	1000	Orange
1008CS-180X_L_	18 @ 50 MHz	**5,2**	50 @ 350 MHz	2500	0.11	1000	Yellow
1008CS-220X_L_	22 @ 50 MHz	**5,2**,1	55 @ 350 MHz	2400	0.12	1000	Blue
1008CS-270X_L_	27 @ 50 MHz	**5,2**	55 @ 350 MHz	1600	0.13	1000	Black
1008CS-330X_L_	33 @ 50 MHz	**5,2**	60 @ 350 MHz	1600	0.14	1000	Orange
1008CS-390X_L_	39 @ 50 MHz	**5,2**	60 @ 350 MHz	1500	0.15	1000	Violet
1008CS-470X_L_	47 @ 50 MHz	**5,2**,1	65 @ 350 MHz	1500	0.16	1000	Red
1008CS-560X_L_	56 @ 50 MHz	**5,2**,1	65 @ 350 MHz	1300	0.18	1000	Yellow
1008CS-680X_L_	68 @ 50 MHz	**5,2**,1	65 @ 350 MHz	1300	0.20	1000	Gray
1008CS-820X_L_	82 @ 50 MHz	**5,2**,1	60 @ 350 MHz	1000	0.22	1000	Red
1008CS-101X_L_	100 @ 25 MHz	**5,2**,1	60 @ 350 MHz	1000	0.56	650	Violet
1008CS-121X_L_	120 @ 25 MHz	**5,2**,1	60 @ 350 MHz	950	0.63	650	White
1008CS-151X_L_	150 @ 25 MHz	**5,2**,1	45 @ 100 MHz	850	0.70	580	Red
1008CS-181X_L_	180 @ 25 MHz	**5,2**,1	45 @ 100 MHz	750	0.77	620	Orange
1008CS-221X_L_	220 @ 25 MHz	**5,2**,1	45 @ 100 MHz	700	0.84	500	Green
1008CS-271X_L_	270 @ 25 MHz	**5,2,1**	45 @ 100 MHz	600	0.91	500	White
1008CS-331X_L_	330 @ 25 MHz	**5,2**,1	45 @ 100 MHz	570	1.05	450	Orange
1008CS-391X_L_	390 @ 25 MHz	**5,2**,1	45 @ 100 MHz	500	1.12	470	Blue
1008CS-471X_L_	470 @ 25 MHz	**5,2**,1	45 @ 100 MHz	450	1.19	470	Black
1008CS-561X_L_	560 @ 25 MHz	**5,2**,1	45 @ 100 MHz	415	1.33	400	Green
1008CS-621X_L_	620 @ 25 MHz	**5,2**,1	45 @ 100 MHz	375	1.40	300	Blue
1008CS-681X_L_	680 @ 25 MHz	**5,2**,1	45 @ 100 MHz	375	1.47	400	Gray
1008CS-751X_L_	750 @ 25 MHz	**5,2**,1	45 @ 100 MHz	360	1.54	360	Black
1008CS-821X_L_	820 @ 25 MHz	**5,2**,1	45 @ 100 MHz	350	1.61	400	Brown
1008CS-911X_L_	910 @ 25 MHz	**5,2,1**	35 @ 50 MHz	320	1.68	380	Red
1008CS-102X_L_	1000 @ 25 MHz	**5,2,1**	35 @ 50 MHz	290	1.75	370	Yellow
1008CS-122X_L_	1200 @ 7.9 MHz	**5,2**	35 @ 50 MHz	250	2.0	310	Blue
1008CS-152X_L_	1500 @ 7.9 MHz	**5,2**	28 @ 50 MHz	200	2.3	330	Gray
1008CS-182X_L_	1800 @ 7.9 MHz	**5,2**	28 @ 50 MHz	160	2.6	300	Brown
1008CS-222X_L_	2200 @ 7.9 MHz	**5,2**	28 @ 50 MHz	160	2.8	280	Orange
1008CS-272X_L_	2700 @ 7.9 MHz	**5,2**	22 @ 25 MHz	140	3.2	290	Green
1008CS-332X_L_	3300 @ 7.9 MHz	**5,2**	22 @ 25 MHz	110	3.4	290	Violet
1008CS-392X_L_	3900 @ 7.9 MHz	**5,2**	20 @ 25 MHz	100	3.6	260	Gray
1008CS-472X_L_	4700 @ 7.9 MHz	**5,2**	20 @ 25 MHz	90	4.0	260	White
1008CS-562XJL_	5600 @ 7.9 MHz	**5**	16 @ 7.9 MHz	20	4.0	240	Black
1008CS-682XJL_	6800 @ 7.9 MHz	**5**	18 @ 7.9 MHz	40	4.9	200	Brown
1008CS-822XJL_	8200 @ 2.5 MHz	**5**	18 @ 7.9 MHz	25	6.0	170	Red

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

1008CS-472XJLC

Tolerance: **F** = 1% **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 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.
D = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (7500 per full reel).

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
3. Tolerances in bold are stocked for immediate shipment.
4. Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
5. SRF measured using an Aglilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.
6. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 test fixture.
7. Current that causes a 15°C temperature rise from 25°C ambient.
8. Current production parts are marked with one dot. Prior production parts were marked with three dots. Part marking does not indicate polarity.
9. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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