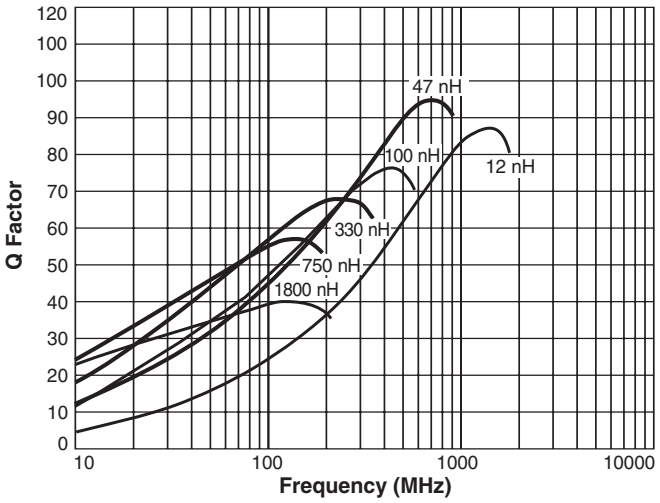
# Chip Inductors – 1008CS Series (2520)

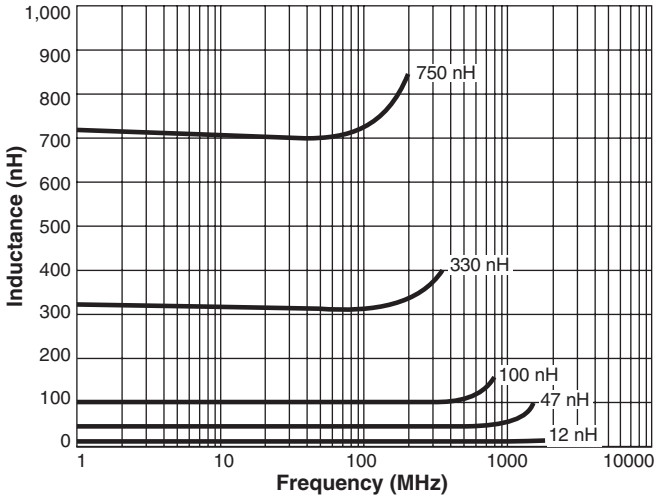
These chip inductors are designed for the needs of today's high frequency designer. Their ceramic construction delivers the highest possible SRFs and Q values. The non-magnetic coilform also ensures the utmost in thermal stability, predictability and batch consistency. They are available in 39 inductance values, most at 2% tolerance.

Coilcraft **Designer's Kit C300** contains samples of all 5% inductance tolerance parts. Kits with 2% tolerance parts are also available.

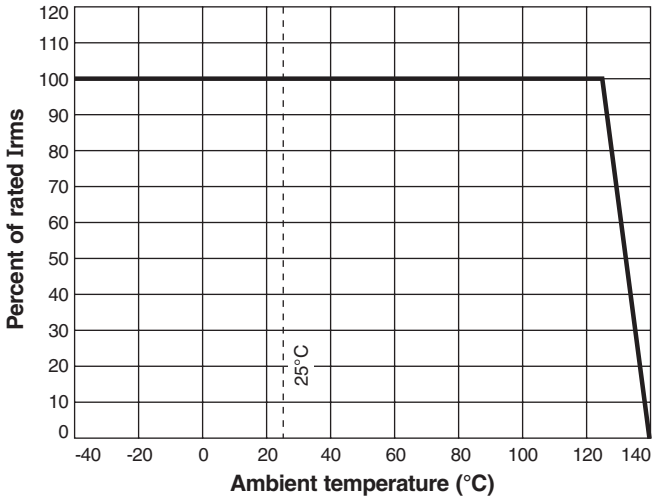
## Typical Q vs Frequency

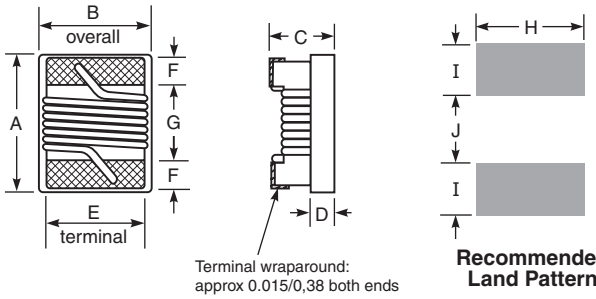



## Typical L vs Frequency




## 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 |

**Weight:** 29.6 – 37.4 mg
**Tape and reel:** 2000/7″ reel; 7500/13″ reel 8 mm tape width
For packaging data see Tape and Reel Specifications section.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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) |
|---|---|---|---|---|---|---|
| 1008CS-100X_L_ | 10 @ 50 MHz | **5,2** | 50 @ 500 MHz | 4100 | 0.08 | 1000 |
| 1008CS-120X_L_ | 12 @ 50 MHz | **5,2** | 50 @ 500 MHz | 3300 | 0.09 | 1000 |
| 1008CS-150X_L_ | 15 @ 50 MHz | **5,2** | 50 @ 500 MHz | 2500 | 0.10 | 1000 |
| 1008CS-180X_L_ | 18 @ 50 MHz | **5,2** | 50 @ 350 MHz | 2500 | 0.11 | 1000 |
| 1008CS-220X_L_ | 22 @ 50 MHz | **5,2**,1 | 55 @ 350 MHz | 2400 | 0.12 | 1000 |
| 1008CS-270X_L_ | 27 @ 50 MHz | **5,2** | 55 @ 350 MHz | 1600 | 0.13 | 1000 |
| 1008CS-330X_L_ | 33 @ 50 MHz | **5,2** | 60 @ 350 MHz | 1600 | 0.14 | 1000 |
| 1008CS-390X_L_ | 39 @ 50 MHz | **5,2** | 60 @ 350 MHz | 1500 | 0.15 | 1000 |
| 1008CS-470X_L_ | 47 @ 50 MHz | **5,2**,1 | 65 @ 350 MHz | 1500 | 0.16 | 1000 |
| 1008CS-560X_L_ | 56 @ 50 MHz | **5,2**,1 | 65 @ 350 MHz | 1300 | 0.18 | 1000 |
| 1008CS-680X_L_ | 68 @ 50 MHz | **5,2**,1 | 65 @ 350 MHz | 1300 | 0.20 | 1000 |
| 1008CS-820X_L_ | 82 @ 50 MHz | **5,2**,1 | 60 @ 350 MHz | 1000 | 0.22 | 1000 |
| 1008CS-101X_L_ | 100 @ 25 MHz | **5,2**,1 | 60 @ 350 MHz | 1000 | 0.56 | 650 |
| 1008CS-121X_L_ | 120 @ 25 MHz | **5,2**,1 | 60 @ 350 MHz | 950 | 0.63 | 650 |
| 1008CS-151X_L_ | 150 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 850 | 0.70 | 580 |
| 1008CS-181X_L_ | 180 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 750 | 0.77 | 620 |
| 1008CS-221X_L_ | 220 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 700 | 0.84 | 500 |
| 1008CS-271X_L_ | 270 @ 25 MHz | **5,2,1** | 45 @ 100 MHz | 600 | 0.91 | 500 |
| 1008CS-331X_L_ | 330 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 570 | 1.05 | 450 |
| 1008CS-391X_L_ | 390 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 500 | 1.12 | 470 |
| 1008CS-471X_L_ | 470 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 450 | 1.19 | 470 |
| 1008CS-561X_L_ | 560 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 415 | 1.33 | 400 |
| 1008CS-621X_L_ | 620 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 375 | 1.40 | 300 |
| 1008CS-681X_L_ | 680 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 375 | 1.47 | 400 |
| 1008CS-751X_L_ | 750 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 360 | 1.54 | 360 |
| 1008CS-821X_L_ | 820 @ 25 MHz | **5,2**,1 | 45 @ 100 MHz | 350 | 1.61 | 400 |
| 1008CS-911X_L_ | 910 @ 25 MHz | **5,2,1** | 35 @ 50 MHz | 320 | 1.68 | 380 |
| 1008CS-102X_L_ | 1000 @ 25 MHz | **5,2,1** | 35 @ 50 MHz | 290 | 1.75 | 370 |
| 1008CS-122X_L_ | 1200 @ 7.9 MHz | **5,2** | 35 @ 50 MHz | 250 | 2.0 | 310 |
| 1008CS-152X_L_ | 1500 @ 7.9 MHz | **5,2** | 28 @ 50 MHz | 200 | 2.3 | 330 |
| 1008CS-182X_L_ | 1800 @ 7.9 MHz | **5,2** | 28 @ 50 MHz | 160 | 2.6 | 300 |
| 1008CS-222X_L_ | 2200 @ 7.9 MHz | **5,2** | 28 @ 50 MHz | 160 | 2.8 | 280 |
| 1008CS-272X_L_ | 2700 @ 7.9 MHz | **5,2** | 22 @ 25 MHz | 140 | 3.2 | 290 |
| 1008CS-332X_L_ | 3300 @ 7.9 MHz | **5,2** | 22 @ 25 MHz | 110 | 3.4 | 290 |
| 1008CS-392X_L_ | 3900 @ 7.9 MHz | **5,2** | 20 @ 25 MHz | 100 | 3.6 | 260 |
| 1008CS-472X_L_ | 4700 @ 7.9 MHz | **5,2** | 20 @ 25 MHz | 90 | 4.0 | 260 |
| 1008CS-562X_L_ | 5600 @ 7.9 MHz | **5** | 16 @ 7.9 MHz | 20 | 4.0 | 240 |
| 1008CS-682X_L_ | 6800 @ 7.9 MHz | **5** | 18 @ 7.9 MHz | 40 | 4.9 | 200 |
| 1008CS-822X_L_ | 8200 @ 7.9 MHz | **5** | 18 @ 7.9 MHz | 25 | 6.0 | 170 |

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

**1008CS-822X J L C**

**Tolerance:** **F** = 1% **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:** **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. **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.



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