



# Chip Inductors– 1008HQ (2520)

- Highest Q factors of any Coilcraft chip this body size, roughly 20% higher than our popular 1008CS and HS parts.
- Exceptional SRFs, tight tolerance and batch consistency

Coilcraft **Designer's Kit C323** contains samples of all 5% inductance tolerance parts. Kits with 2% tolerance are also available. To order, contact Coilcraft or purchase on-line at <http://order.coilcraft.com>.

Part number <sup>1</sup>	Inductance <sup>3</sup> (nH)	Percent tolerance <sup>4</sup>	Q min <sup>5</sup>	SRF min <sup>6</sup> (GHz)	DCR max <sup>7</sup> (Ohms)	Irms <sup>8</sup> (A)
1008HQ-3N0X_L_2	3.0 @ 50 MHz	<b>5</b>	70 @ 1500 MHz	8.10	0.04	1.6
1008HQ-4N1X_L_	4.1 @ 50 MHz	<b>5</b>	75 @ 1500 MHz	6.20	0.05	1.6
1008HQ-7N8X_L_2	7.8 @ 50 MHz	<b>5</b>	75 @ 500 MHz	3.80	0.05	1.6
1008HQ-10NX_L_	10 @ 50 MHz	<b>5,2</b>	60 @ 500 MHz	3.60	0.06	1.6
1008HQ-12NX_L_	12 @ 50 MHz	<b>5,2</b>	70 @ 500 MHz	2.80	0.06	1.5
1008HQ-18NX_L_	18 @ 50 MHz	<b>5,2,1</b>	62 @ 350 MHz	2.70	0.07	1.4
1008HQ-22NX_L_	22 @ 50 MHz	<b>5,2</b>	62 @ 350 MHz	2.05	0.07	1.4
1008HQ-33NX_L_	33 @ 50 MHz	<b>5,2</b>	75 @ 350 MHz	1.70	0.09	1.3
1008HQ-36NX_L_	36 @ 50 MHz	<b>5,2</b>	65 @ 350 MHz	1.40	0.09	1.3
1008HQ-39NX_L_	39 @ 50 MHz	<b>5,2</b>	75 @ 350 MHz	1.30	0.09	1.3
1008HQ-47NX_L_	47 @ 50 MHz	<b>5,2,1</b>	75 @ 350 MHz	1.45	0.12	1.2
1008HQ-56NX_L_	56 @ 50 MHz	<b>5,2,1</b>	75 @ 350 MHz	1.23	0.12	1.2
1008HQ-68NX_L_	68 @ 50 MHz	<b>5,2,1</b>	80 @ 350 MHz	1.15	0.13	1.1
1008HQ-82NX_L_	82 @ 50 MHz	<b>5,2</b>	80 @ 350 MHz	1.06	0.16	1.1
1008HQ-R10X_L_	100 @ 50 MHz	<b>5,2</b>	62 @ 350 MHz	0.82	0.16	1.0

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

1008HQ-R10XGLC

**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 parts 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 parts per full reel).

- Part is wound on low profile coilform.
- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
- Tolerances in bold are stocked for immediate shipment.
- Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
- For SRF less than 6 GHz, measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture. For SRF greater than 6 GHz, measured using an Agilent/HP 8722ES network analyzer and a Coilcraft SMD-D test fixture.
- DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 test fixture.
- Current that causes a 15°C temperature rise from 25°C ambient.
- Electrical specifications at 25°C.

For part marking data, visit <http://www.coilcraft.com/colrcode.cfm>.

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

**Core material** Ceramic

**Terminations** RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.

**Weight** 32.4– 35.7 mg; 17.1– 17.7 mg (Low profile parts)

**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** 2000/7" reel; 7500/13" reel

Standard height parts: Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.8 mm pocket depth

Low profile parts: Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.6 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.



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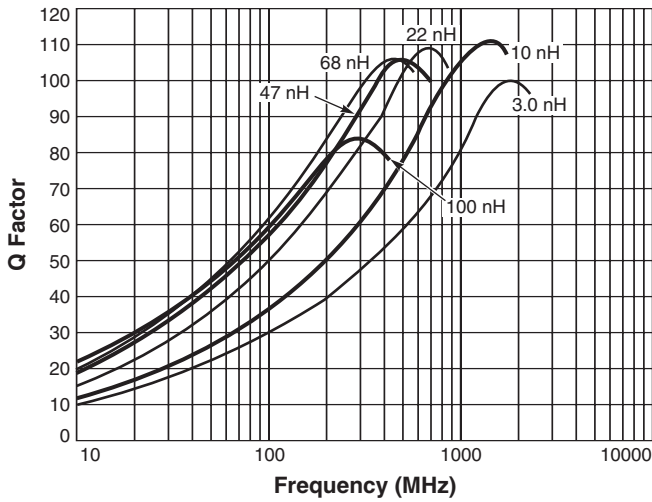
**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
 MEASUREMENTS  
 SEE WEB SITE **TEST FIXTURES**



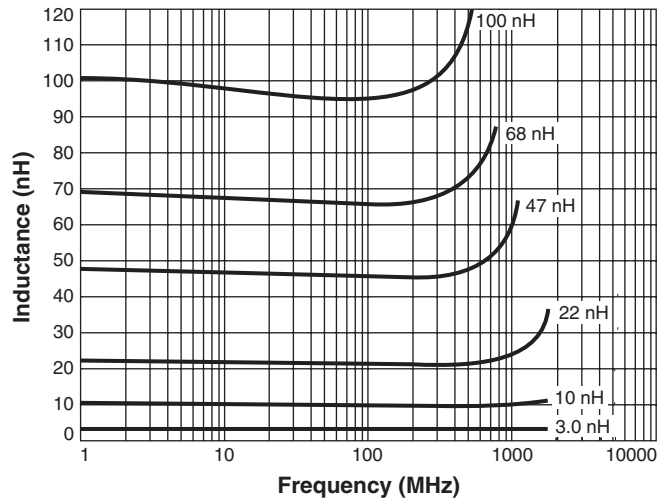
# Chip Inductors – 1008HQ Series (2520)

**S-Parameter files**  
ON OUR WEB SITE  
**SPICE models**  
ON OUR WEB SITE

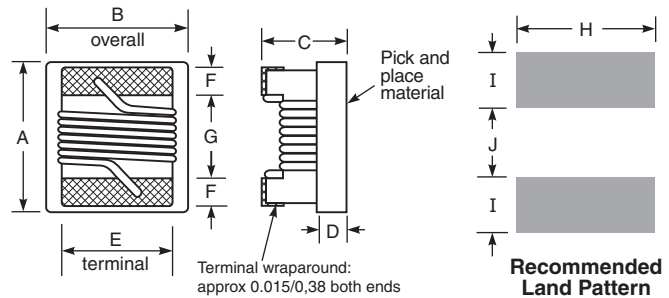
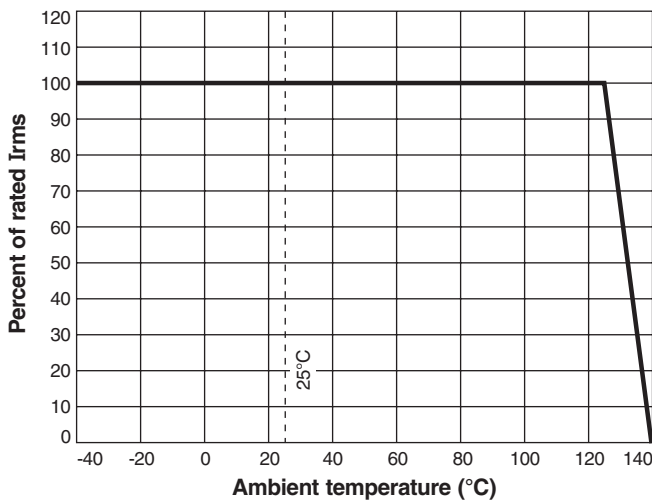
## Typical Q vs Frequency



## Typical L vs Frequency



## Irms Derating



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

\* Low profile parts: 0.050/1,27  
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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