

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 ¹ | Inductance ³ (nH) | Percent tolerance ⁴ | Q min ⁵ | SRF min ⁶ (GHz) | DCR max ⁷ (Ohms) | Irms ⁸ (A) |
|--------------------------|---------------------------------|--------------------------------|--------------------|-------------------------------|--------------------------------|--------------------------|
| 1008HQ-3N0X_L_2 | 3.0 @ 50 MHz | 5 | 70 @ 1500 MHz | 8.10 | 0.04 | 1.6 |
| 1008HQ-4N1X_L_ | 4.1 @ 50 MHz | 5 | 75 @ 1500 MHz | 6.20 | 0.05 | 1.6 |
| 1008HQ-7N8X_L_2 | 7.8 @ 50 MHz | 5 | 75 @ 500 MHz | 3.80 | 0.05 | 1.6 |
| 1008HQ-10NX_L_ | 10 @ 50 MHz | 5,2 | 60 @ 500 MHz | 3.60 | 0.06 | 1.6 |
| 1008HQ-12NX_L_ | 12 @ 50 MHz | 5,2 | 70 @ 500 MHz | 2.80 | 0.06 | 1.5 |
| 1008HQ-18NX_L_ | 18 @ 50 MHz | 5,2,1 | 62 @ 350 MHz | 2.70 | 0.07 | 1.4 |
| 1008HQ-22NX_L_ | 22 @ 50 MHz | 5,2 | 62 @ 350 MHz | 2.05 | 0.07 | 1.4 |
| 1008HQ-33NX_L_ | 33 @ 50 MHz | 5,2 | 75 @ 350 MHz | 1.70 | 0.09 | 1.3 |
| 1008HQ-36NX_L_ | 36 @ 50 MHz | 5,2 | 65 @ 350 MHz | 1.40 | 0.09 | 1.3 |
| 1008HQ-39NX_L_ | 39 @ 50 MHz | 5,2 | 75 @ 350 MHz | 1.30 | 0.09 | 1.3 |
| 1008HQ-47NX_L_ | 47 @ 50 MHz | 5,2,1 | 75 @ 350 MHz | 1.45 | 0.12 | 1.2 |
| 1008HQ-56NX_L_ | 56 @ 50 MHz | 5,2,1 | 75 @ 350 MHz | 1.23 | 0.12 | 1.2 |
| 1008HQ-68NX_L_ | 68 @ 50 MHz | 5,2,1 | 80 @ 350 MHz | 1.15 | 0.13 | 1.1 |
| 1008HQ-82NX_L_ | 82 @ 50 MHz | 5,2 | 80 @ 350 MHz | 1.06 | 0.16 | 1.1 |
| 1008HQ-R10X_L_ | 100 @ 50 MHz | 5,2 | 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 to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).



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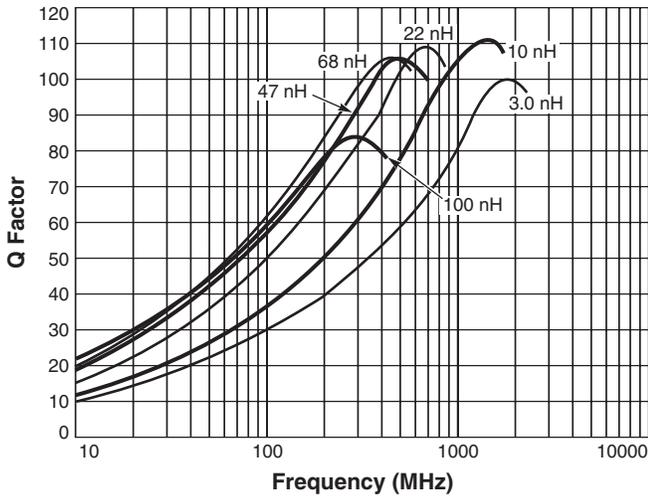
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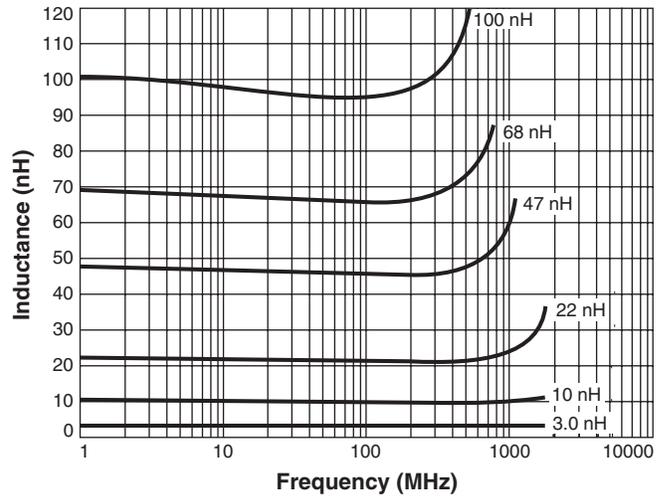
Chip Inductors – 1008HQ Series (2520)

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

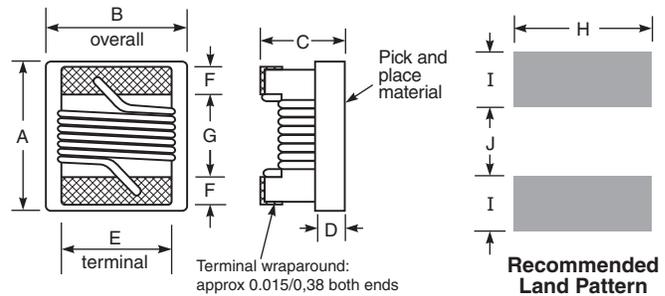
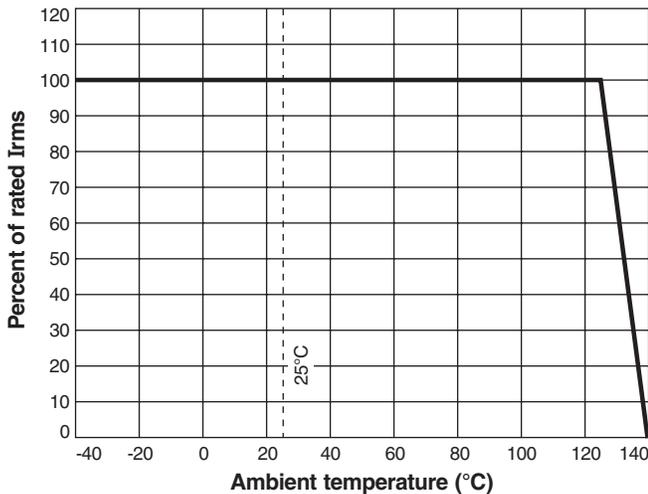
Typical Q vs Frequency



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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