



# Chip Inductors – 1008HS (2520)

Coilcraft “HS” series chip inductors have been designed especially for the needs of today’s high frequency designer. Their ceramic construction delivers the highest possible

SRF and excellent Q values. The non-magnetic coilform also ensures the utmost in thermal stability, predictability and batch consistency.

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(nH) | Percent tolerance <sup>3</sup> | Q min <sup>4</sup> | SRF min <sup>5</sup><br>(MHz) | DCR max <sup>6</sup><br>(Ohms) | Irms <sup>7</sup><br>(mA) |
|--------------------------|---------------------------------|--------------------------------|--------------------|-------------------------------|--------------------------------|---------------------------|
| 1008HS-100T_L_           | 10 @ 50 MHz                     | <b>5</b>                       | 50 @ 500 MHz       | 4100                          | 0.08                           | 1000                      |
| 1008HS-120T_L_           | 12 @ 50 MHz                     | <b>5</b>                       | 50 @ 500 MHz       | 3300                          | 0.09                           | 1000                      |
| 1008HS-150T_L_           | 15 @ 50 MHz                     | <b>5</b>                       | 50 @ 500 MHz       | 2500                          | 0.10                           | 1000                      |
| 1008HS-180T_L_           | 18 @ 50 MHz                     | <b>5</b>                       | 50 @ 350 MHz       | 2500                          | 0.11                           | 1000                      |
| 1008HS-220T_L_           | 22 @ 50 MHz                     | <b>5</b>                       | 55 @ 350 MHz       | 2400                          | 0.12                           | 1000                      |
| 1008HS-270T_L_           | 27 @ 50 MHz                     | <b>5,2</b>                     | 55 @ 350 MHz       | 1600                          | 0.13                           | 1000                      |
| 1008HS-330T_L_           | 33 @ 50 MHz                     | <b>5,2</b>                     | 60 @ 350 MHz       | 1600                          | 0.14                           | 1000                      |
| 1008HS-390T_L_           | 39 @ 50 MHz                     | <b>5,2</b>                     | 60 @ 350 MHz       | 1500                          | 0.15                           | 1000                      |
| 1008HS-470T_L_           | 47 @ 50 MHz                     | <b>5,2,1</b>                   | 65 @ 350 MHz       | 1500                          | 0.16                           | 1000                      |
| 1008HS-560T_L_           | 56 @ 50 MHz                     | <b>5,2,1</b>                   | 65 @ 350 MHz       | 1300                          | 0.18                           | 1000                      |
| 1008HS-680T_L_           | 68 @ 50 MHz                     | <b>5,2,1</b>                   | 65 @ 350 MHz       | 1300                          | 0.20                           | 1000                      |
| 1008HS-820T_L_           | 82 @ 50 MHz                     | <b>5,2,1</b>                   | 60 @ 350 MHz       | 1000                          | 0.22                           | 1000                      |
| 1008HS-101T_L_           | 100 @ 25 MHz                    | <b>5,2,1</b>                   | 60 @ 350 MHz       | 1000                          | 0.56                           | 650                       |
| 1008HS-121T_L_           | 120 @ 25 MHz                    | <b>5,2,1</b>                   | 60 @ 350 MHz       | 950                           | 0.63                           | 650                       |
| 1008HS-151T_L_           | 150 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 850                           | 0.70                           | 580                       |
| 1008HS-181T_L_           | 180 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 750                           | 0.77                           | 620                       |
| 1008HS-221T_L_           | 220 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 700                           | 0.84                           | 500                       |
| 1008HS-271T_L_           | 270 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 600                           | 0.91                           | 500                       |
| 1008HS-331T_L_           | 330 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 570                           | 1.05                           | 450                       |
| 1008HS-391T_L_           | 390 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 500                           | 1.12                           | 470                       |
| 1008HS-471T_L_           | 470 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 450                           | 1.19                           | 470                       |
| 1008HS-561T_L_           | 560 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 415                           | 1.33                           | 400                       |
| 1008HS-621T_L_           | 620 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 375                           | 1.40                           | 300                       |
| 1008HS-681T_L_           | 680 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 375                           | 1.47                           | 400                       |
| 1008HS-751T_L_           | 750 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 360                           | 1.54                           | 360                       |
| 1008HS-821T_L_           | 820 @ 25 MHz                    | <b>5,2,1</b>                   | 45 @ 100 MHz       | 350                           | 1.61                           | 400                       |
| 1008HS-911T_L_           | 910 @ 25 MHz                    | <b>5,2,1</b>                   | 35 @ 50 MHz        | 320                           | 1.68                           | 380                       |
| 1008HS-102T_L_           | 1000 @ 25 MHz                   | <b>5,2</b>                     | 35 @ 50 MHz        | 290                           | 1.75                           | 370                       |

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

1008HS-102TGLC

**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).

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 Agilent/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. Electrical specifications at 25°C.

9. Temperature coefficient of inductance: +25 to +125 ppm/°C.

For part marking data, please visit <http://www.coilcraft.com/colrcode.cfm>.  
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
MEASUREMENTS  
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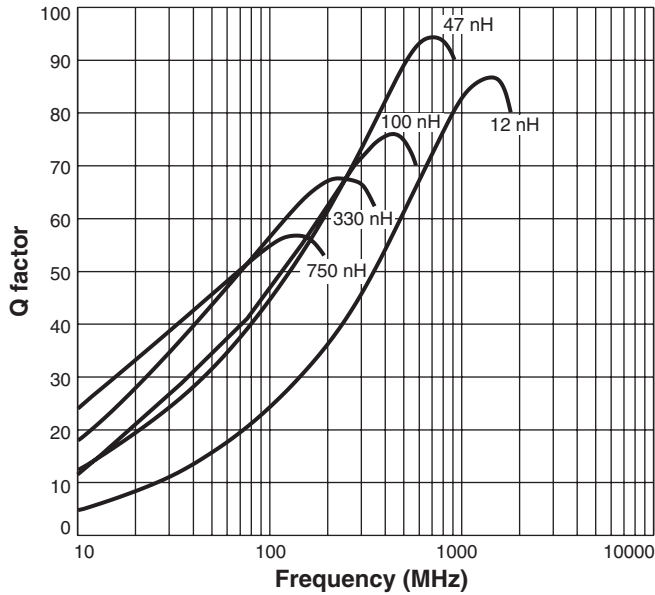
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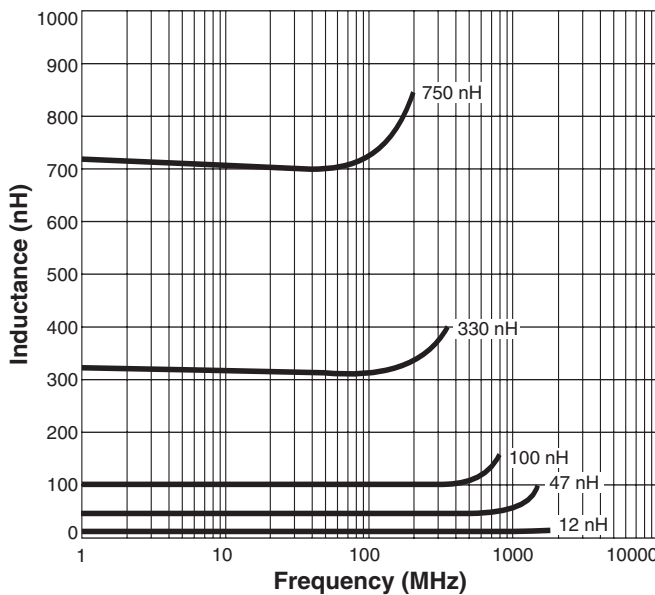


# 1008HS Series (2520)

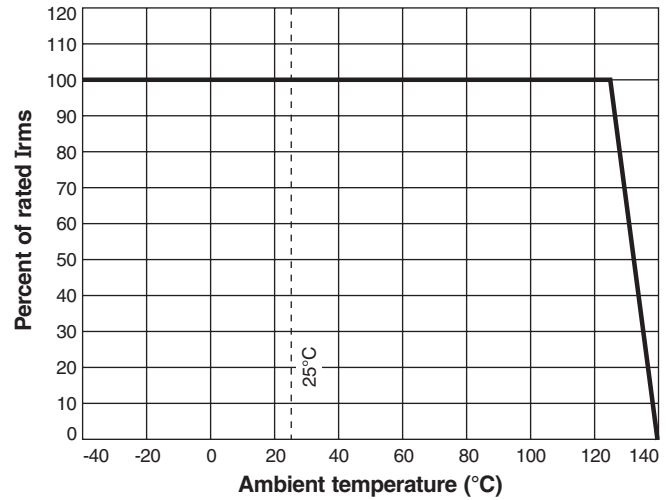
## Typical Q vs Frequency



## Typical L vs Frequency



## Irms Derating



**Core material** Ceramic

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

**Weight** 28.3–31.5 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

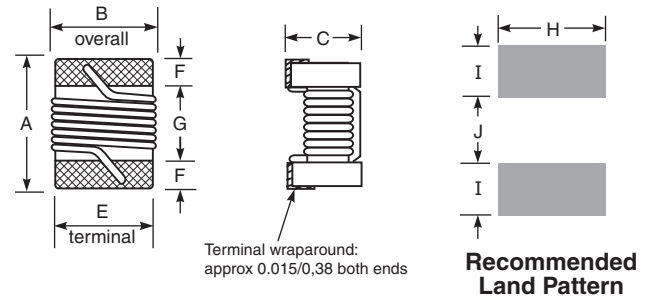
**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

One per billion hours / one billion hours, calculated per Telcordia SR-332

**Packaging** 2000/7" reel; 7500/13" reel Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.3 mm pocket depth

**PCB washing** Only pure water or alcohol recommended



| A     | B     | C     | E     | F     | G     | H     | I     | J     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| max   | max   | max   |       |       |       |       |       |       |
| 0.105 | 0.095 | 0.070 | 0.080 | 0.020 | 0.060 | 0.100 | 0.040 | 0.050 |
| 2,67  | 2,41  | 1,78  | 2,03  | 0,51  | 1,52  | 2,54  | 1,02  | 1,27  |
|       |       |       |       |       |       |       |       |       |

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



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