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.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (nH)</th>
<th>Percent tolerance</th>
<th>Q min (GHz)</th>
<th>SRF min (GHz)</th>
<th>DCR max (Ohms)</th>
<th>Irms (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1008HQ-3N0X_L</td>
<td>3.0 @ 50 MHz</td>
<td>5%</td>
<td>70 @ 1500 MHz</td>
<td>8.10</td>
<td>0.04</td>
<td>1.6</td>
</tr>
<tr>
<td>1008HQ-4N1X_L</td>
<td>4.1 @ 50 MHz</td>
<td>5%</td>
<td>75 @ 1500 MHz</td>
<td>6.20</td>
<td>0.05</td>
<td>1.6</td>
</tr>
<tr>
<td>1008HQ-7N8X_L</td>
<td>7.8 @ 50 MHz</td>
<td>5%</td>
<td>75 @ 500 MHz</td>
<td>3.80</td>
<td>0.05</td>
<td>1.6</td>
</tr>
<tr>
<td>1008HQ-10NX_L</td>
<td>10 @ 50 MHz</td>
<td>5,2</td>
<td>60 @ 500 MHz</td>
<td>3.60</td>
<td>0.06</td>
<td>1.6</td>
</tr>
<tr>
<td>1008HQ-12NX_L</td>
<td>12 @ 50 MHz</td>
<td>5,2</td>
<td>70 @ 500 MHz</td>
<td>2.80</td>
<td>0.06</td>
<td>1.5</td>
</tr>
<tr>
<td>1008HQ-18NX_L</td>
<td>18 @ 50 MHz</td>
<td>5,2,1</td>
<td>62 @ 350 MHz</td>
<td>2.70</td>
<td>0.07</td>
<td>1.4</td>
</tr>
<tr>
<td>1008HQ-22NX_L</td>
<td>22 @ 50 MHz</td>
<td>5,2</td>
<td>62 @ 350 MHz</td>
<td>2.05</td>
<td>0.07</td>
<td>1.4</td>
</tr>
<tr>
<td>1008HQ-33NX_L</td>
<td>33 @ 50 MHz</td>
<td>5,2</td>
<td>75 @ 350 MHz</td>
<td>1.70</td>
<td>0.09</td>
<td>1.3</td>
</tr>
<tr>
<td>1008HQ-36NX_L</td>
<td>36 @ 50 MHz</td>
<td>5,2</td>
<td>65 @ 350 MHz</td>
<td>1.40</td>
<td>0.09</td>
<td>1.3</td>
</tr>
<tr>
<td>1008HQ-39NX_L</td>
<td>39 @ 50 MHz</td>
<td>5,2</td>
<td>75 @ 350 MHz</td>
<td>1.30</td>
<td>0.09</td>
<td>1.3</td>
</tr>
<tr>
<td>1008HQ-47NX_L</td>
<td>47 @ 50 MHz</td>
<td>5,2,1</td>
<td>75 @ 350 MHz</td>
<td>1.45</td>
<td>0.12</td>
<td>1.2</td>
</tr>
<tr>
<td>1008HQ-56NX_L</td>
<td>56 @ 50 MHz</td>
<td>5,2,1</td>
<td>75 @ 350 MHz</td>
<td>1.23</td>
<td>0.12</td>
<td>1.2</td>
</tr>
<tr>
<td>1008HQ-68NX_L</td>
<td>68 @ 50 MHz</td>
<td>5,2</td>
<td>80 @ 350 MHz</td>
<td>1.15</td>
<td>0.13</td>
<td>1.1</td>
</tr>
<tr>
<td>1008HQ-82NX_L</td>
<td>82 @ 50 MHz</td>
<td>5,2</td>
<td>80 @ 350 MHz</td>
<td>1.06</td>
<td>0.16</td>
<td>1.1</td>
</tr>
<tr>
<td>1008HQ-R10X_L</td>
<td>100 @ 50 MHz</td>
<td>5,2</td>
<td>62 @ 350 MHz</td>
<td>0.82</td>
<td>0.16</td>
<td>1.0</td>
</tr>
</tbody>
</table>

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

   - 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 (.35/5/40) 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. Part is wound on low profile coilform.
3. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
4. Tolerances in bold are stocked for immediate shipment.
5. Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
6. 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.
7. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 test fixture.
8. Current that causes a 15°C temperature rise from 25°C ambient.
9. Electrical specifications at 25°C.

For part marking data, visit http://www.coilcraft.com/coilcode.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**
- Tape and reel packaging: –40°C to +80°C
- Storage temperature: Component: –40°C to +140°C.
- Ambient temperature: –40°C to +140°C with derated current
- Ambient temperature: –40°C to +125°C with reduced current
- Ambient temperature: –40°C to +125°C with derated current

**PCB washing** Only pure water or alcohol recommended
Chip Inductors – 1008HQ Series (2520)

Typical Q vs Frequency

Typical L vs Frequency

Irms Derating

* 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.