Chip Inductor – 1008HT Series (2520)

- Low-profile inductors are 60% the height of our other 1008 size parts.
- They feature high SRFs and very high Q factors.

Coilcraft Designer’s Kit C322 contains samples of all 5% inductance tolerance parts. To order, please contact Coilcraft or order on-line at [http://order.coilcraft.com](http://order.coilcraft.com).

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (nH)</th>
<th>Percent tolerance</th>
<th>Q min (MHz)</th>
<th>SRF min (MHz)</th>
<th>DCR max (Ohms)</th>
<th>Irms (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1008HT-3N3TJL</td>
<td>3.3 @ 250 MHz</td>
<td>5</td>
<td>65 @ 1500 MHz</td>
<td>7900</td>
<td>0.025</td>
<td>1000</td>
</tr>
<tr>
<td>1008HT-6N8TJL</td>
<td>6.8 @ 250 MHz</td>
<td>5</td>
<td>70 @ 1500 MHz</td>
<td>5500</td>
<td>0.05</td>
<td>1000</td>
</tr>
<tr>
<td>1008HT-7N2TJL</td>
<td>7.2 @ 250 MHz</td>
<td>5</td>
<td>70 @ 1500 MHz</td>
<td>4800</td>
<td>0.05</td>
<td>1000</td>
</tr>
<tr>
<td>1008HT-12NTJL</td>
<td>12 @ 250 MHz</td>
<td>5</td>
<td>55 @ 700 MHz</td>
<td>3800</td>
<td>0.065</td>
<td>1000</td>
</tr>
<tr>
<td>1008HT-15NTJL</td>
<td>15 @ 250 MHz</td>
<td>5</td>
<td>55 @ 700 MHz</td>
<td>2800</td>
<td>0.08</td>
<td>1000</td>
</tr>
</tbody>
</table>

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

   - **Tolerance:** F = 1%, G = 2%, J = 5%
   - **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 (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 8720D 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. This information is for reference only and does not represent absolute maximum ratings.
8. Electrical specifications at 25°C.

See Color Coding section for part marking data. Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
### Typical Q vs Frequency

![Graph of Q factor vs Frequency](image)

**Q factor vs Frequency**

- **Q factor**: The quality factor is a measure of the Q factor of the inductor, which determines the frequency at which the inductor has maximum power transfer.

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Q factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>100</td>
<td>90</td>
</tr>
<tr>
<td>1000</td>
<td>80</td>
</tr>
<tr>
<td>10000</td>
<td>70</td>
</tr>
</tbody>
</table>

**Note:**
- Height dimension is before optional solder application. For maximum height dimension including solder, add 0.006 in / 0.152 mm.

### Typical L vs Frequency

![Graph of Inductance vs Frequency](image)

**Inductance vs Frequency**

- **Inductance (nH)**: The inductance of the inductor is a measure of the magnetic property that opposes the change in current.

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Inductance (nH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.105</td>
</tr>
<tr>
<td>10</td>
<td>0.095</td>
</tr>
<tr>
<td>100</td>
<td>0.045</td>
</tr>
<tr>
<td>1000</td>
<td>0.020</td>
</tr>
<tr>
<td>10000</td>
<td>0.010</td>
</tr>
</tbody>
</table>

**Core material**: Ceramic

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

**Weight**: 16.0 – 17.6 mg

**Ambient temperature**: –40°C to +125°C with Inrs current

**Maximum part temperature**: +140°C (ambient + temp rise).

**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, 1.14 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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**Recommended Land Pattern**

- **Land Pattern**: The recommended land pattern for the coil is shown in the diagram.

**Pick and place material**: The recommended pick and place material is specified in the diagram.

**Terminal wraparound**: approx 0.010/0.25 both ends

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