Chip Inductors - 0604HQ (1610)

- Combines the exceptionally high Q of an air core inductor with the rugged construction of a ceramic body component.
- Provides intermediate inductance values not available in Coilcraft’s 0603, 0402 or 0906 product families.

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Inductance2 (nH)</th>
<th>Percent tolerance3</th>
<th>Q min4</th>
<th>900 MHz L typ</th>
<th>Q typ</th>
<th>1.7 GHz L typ</th>
<th>Q typ</th>
<th>SRF min5 (GHz)</th>
<th>DCR max6 (Ohms)</th>
<th>Irms7 (A)</th>
<th>Color code8</th>
</tr>
</thead>
<tbody>
<tr>
<td>0604HQ-1N1XJL_</td>
<td>1.15</td>
<td>5</td>
<td>25</td>
<td>1.2</td>
<td>40</td>
<td>1.2</td>
<td>136</td>
<td>12.3</td>
<td>0.021</td>
<td>3.0</td>
<td>Black</td>
</tr>
<tr>
<td>0604HQ-2N6XJL_</td>
<td>2.6</td>
<td>5</td>
<td>45</td>
<td>2.6</td>
<td>78</td>
<td>2.6</td>
<td>163</td>
<td>9.3</td>
<td>0.026</td>
<td>2.0</td>
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<tr>
<td>0604HQ-4N5XJL_</td>
<td>4.5</td>
<td>5</td>
<td>50</td>
<td>4.5</td>
<td>103</td>
<td>4.7</td>
<td>155</td>
<td>5.8</td>
<td>0.032</td>
<td>1.8</td>
<td>Red</td>
</tr>
<tr>
<td>0604HQ-5N0XJL_</td>
<td>5.0</td>
<td>5</td>
<td>60</td>
<td>4.9</td>
<td>106</td>
<td>5.2</td>
<td>178</td>
<td>5.3</td>
<td>0.032</td>
<td>1.6</td>
<td>Orange</td>
</tr>
<tr>
<td>0604HQ-6N8XJL_</td>
<td>6.8</td>
<td>5</td>
<td>60</td>
<td>6.9</td>
<td>101</td>
<td>7.4</td>
<td>172</td>
<td>4.7</td>
<td>0.035</td>
<td>1.8</td>
<td>Yellow</td>
</tr>
<tr>
<td>0604HQ-7N6XJL_</td>
<td>7.6</td>
<td>5</td>
<td>60</td>
<td>7.4</td>
<td>109</td>
<td>7.9</td>
<td>137</td>
<td>4.4</td>
<td>0.035</td>
<td>1.5</td>
<td>Green</td>
</tr>
<tr>
<td>0604HQ-10NXJL_</td>
<td>10.4</td>
<td>5</td>
<td>60</td>
<td>10.6</td>
<td>103</td>
<td>11.5</td>
<td>160</td>
<td>4.1</td>
<td>0.037</td>
<td>1.7</td>
<td>Blue</td>
</tr>
</tbody>
</table>

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

   - **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.

2. Inductance measured at 500 MHz using a Coilcraft SMD-A fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.
3. Tolerances in bold are stocked for immediate shipment.
4. Q measured at 500 MHz using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
5. 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.
6. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF858 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. Each part is marked with a single dot. The color dots are not unique identifiers and correspond to multiple inductance values.
9. Electrical specifications at 25°C.
10. Temperature coefficient of inductance: +25 to +126 ppm/°C.

Request free evaluation samples by contacting Coilcraft or visiting www.coilcraft.com.

Designer’s Kit C351 contains 10 each of all values.
Core material: Ceramic
Terminations: RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.
Weight: 4.6 – 5.6 g
Ambient temperature: –40°C to +125°C with Irms 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 reflo ws at +260°C, parts cooled to room temperature between cycles.
Temperature Coefficient of Inductance (TCL): +25 to +126 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 per 7” reel; Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.27 mm pocket depth

Chip Inductors - 0604HQ (1610) combines the exceptionally high Q of an air core inductor with the rugged construction of a ceramic body component. It provides intermediate inductance values not available in Coilcraft’s 0603, 0402 or 0906 product families. To order, specify the termination and packaging codes: L = RoHS compliant silver-palladium-platinum-glass frit, T = RoHS tin-silver-copper (95.5/4/0.5), or S = non-RoHS tin-lead (63/37). Inductance is measured at 500 MHz using a Coilcraft SMD-A fixture and an Agilent/HP 4286 impedance analyzer. Tolerances in bold are stocked for immediate shipment. Q is measured at 500 MHz using an Agilent/HP 4291A and an Agilent/HP 16193 test fixture. The DCR is measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF858 test fixture. The information provided is for reference only and does not represent absolute maximum ratings. Each part is marked with a single dot, and the color dots correspond to multiple inductance values. The electrical specifications are at 25°C. The temperature coefficient of inductance ranges from +25 to +126 ppm/°C. The kit contains 10 each of all values. For more information, visit www.coilcraft.com.
0604HQ Series (1610)

Typical Q vs Frequency

![Typical Q vs Frequency graph](image1)

Typical L vs Frequency

![Typical L vs Frequency graph](image2)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>max</td>
<td>max</td>
<td>max</td>
<td>ref</td>
<td>max</td>
<td>max</td>
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<tr>
<td>0.073</td>
<td>0.054</td>
<td>0.047</td>
<td>0.025</td>
<td>0.040</td>
<td>0.013</td>
<td>0.034</td>
<td>0.053</td>
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<tr>
<td>1.85</td>
<td>1.37</td>
<td>1.19</td>
<td>0.64</td>
<td>1.02</td>
<td>0.33</td>
<td>0.86</td>
<td>1.35</td>
<td>0.63</td>
<td>0.63</td>
</tr>
</tbody>
</table>

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