Chip Inductors – 0603HC (1608)

With their high current ratings and ultra-small size, these chip inductors are ideal for today's high frequency, low voltage applications like mobile phones. They feature continuous current ratings up to 2.4 Amps DC and will handle transient currents up to 50% higher. At low inductance values, their Q factors are also higher than our 0603CS Series.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (nH)</th>
<th>Percent tolerance</th>
<th>Q min</th>
<th>900 MHz L typ</th>
<th>900 MHz Q typ</th>
<th>1.7 GHz L typ</th>
<th>1.7 GHz Q typ</th>
<th>SRF min (MHz)</th>
<th>DCR max (Ohms)</th>
<th>Irms (A)</th>
<th>Color code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0603HC-1N6XJE_</td>
<td>1.6</td>
<td>5</td>
<td>24</td>
<td>1.67</td>
<td>49</td>
<td>1.65</td>
<td>63</td>
<td>12500</td>
<td>0.030</td>
<td>2.4</td>
<td>Black</td>
</tr>
<tr>
<td>0603HC-3N6XJE_</td>
<td>3.6</td>
<td>5</td>
<td>24</td>
<td>3.65</td>
<td>70</td>
<td>3.75</td>
<td>90</td>
<td>5900</td>
<td>0.048</td>
<td>2.3</td>
<td>Brown</td>
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<tr>
<td>0603HC-3N9XJE_</td>
<td>3.9</td>
<td>5</td>
<td>25</td>
<td>3.74</td>
<td>70</td>
<td>3.90</td>
<td>90</td>
<td>5900</td>
<td>0.054</td>
<td>2.2</td>
<td>Red</td>
</tr>
<tr>
<td>0603HC-6N8XJE_</td>
<td>6.8</td>
<td>5</td>
<td>35</td>
<td>6.72</td>
<td>70</td>
<td>7.10</td>
<td>75</td>
<td>5800</td>
<td>0.054</td>
<td>2.1</td>
<td>Orange</td>
</tr>
<tr>
<td>0603HC-7N5XJE_</td>
<td>7.5</td>
<td>5</td>
<td>38</td>
<td>7.33</td>
<td>70</td>
<td>7.90</td>
<td>68</td>
<td>3700</td>
<td>0.059</td>
<td>2.1</td>
<td>Yellow</td>
</tr>
<tr>
<td>0603HC-10NXE_</td>
<td>10</td>
<td>5,2</td>
<td>38</td>
<td>9.70</td>
<td>73</td>
<td>10.5</td>
<td>57</td>
<td>3700</td>
<td>0.071</td>
<td>2.0</td>
<td>Green</td>
</tr>
<tr>
<td>0603HC-12NXE_</td>
<td>12</td>
<td>5,2</td>
<td>38</td>
<td>12.3</td>
<td>68</td>
<td>14.5</td>
<td>41</td>
<td>3000</td>
<td>0.075</td>
<td>2.0</td>
<td>Blue</td>
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<tr>
<td>0603HC-15NXE_</td>
<td>15</td>
<td>5,2</td>
<td>38</td>
<td>15.5</td>
<td>65</td>
<td>17.6</td>
<td>40</td>
<td>2800</td>
<td>0.080</td>
<td>1.9</td>
<td>Violet</td>
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<tr>
<td>0603HC-18NXE_</td>
<td>18</td>
<td>5,2</td>
<td>40</td>
<td>19.5</td>
<td>62</td>
<td>25.0</td>
<td>40</td>
<td>2800</td>
<td>0.099</td>
<td>1.9</td>
<td>Gray</td>
</tr>
<tr>
<td>0603HC-22NXE_</td>
<td>22</td>
<td>5,2</td>
<td>42</td>
<td>24.0</td>
<td>61</td>
<td>31.5</td>
<td>26</td>
<td>2400</td>
<td>0.099</td>
<td>1.8</td>
<td>White</td>
</tr>
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<td>0603HC-24NXE_</td>
<td>24</td>
<td>5,2</td>
<td>42</td>
<td>25.8</td>
<td>55</td>
<td>35.0</td>
<td>21</td>
<td>2400</td>
<td>0.105</td>
<td>1.8</td>
<td>Black</td>
</tr>
<tr>
<td>0603HC-33NXJE_</td>
<td>33</td>
<td>5</td>
<td>47</td>
<td>34.3</td>
<td>50</td>
<td>—</td>
<td>—</td>
<td>1900</td>
<td>0.175</td>
<td>0.95</td>
<td>Brown</td>
</tr>
<tr>
<td>0603HC-47NXJE_</td>
<td>47</td>
<td>5</td>
<td>40</td>
<td>49.5</td>
<td>45</td>
<td>—</td>
<td>—</td>
<td>1530</td>
<td>0.195</td>
<td>0.85</td>
<td>Red</td>
</tr>
</tbody>
</table>

1. When ordering, specify tolerance, termination and packaging codes:
   
   0603HC-24NXJEW
   
   Tolerance: G = ±2% D = ±5% (Table shows stock tolerances in bold.)
   
   Termination: E = Halogen free component. RoHS compliant silver-palladium-platinum-glass frit terminations.
   
   L = RoHS compliant, not halogen-free. Silver-palladium-platinum-glass frit terminations.
   
   Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
   
   
   U = Less than full reel. In tape, not machine ready. To have a leader and trailer added ($25 charge), use code letter W instead.

2. Inductance measured at 250 MHz using Coilcraft SMD-A fixture in Agilent/HP 4286 impedance analyzer and Coilcraft-provided correlation pieces.

3. Tolerances in bold are stocked for immediate shipment.

4. Q measured at 250 MHz using Agilent/HP 4291A with Agilent/HP 16193 test fixture.

5. SRF measured using Agilent/HP 8720D network analyzer and Coilcraft SMD-D test fixture.

6. DCR measured on micro-ohmmeter and Coilcraft CCF858 test fixture.

7. Current that causes a 20°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.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
**HIGH CURRENT**

0603HC (1608) Chip Inductors

Typical Q vs Frequency

![Q vs Frequency Graph](image)

Typical L vs Frequency

![L vs Frequency Graph](image)

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**Recommended Land Pattern**

- **A** max: 0.071, 0.044
- **B** max: 0.040
- **C** max: 0.015
- **D** ref: 0.030
- **E** ref: 0.013
- **F** ref: 0.034
- **G** ref: 0.040
- **H** max: 0.025
- **I** max: 0.025 inches
- **J** max: 1.80 mm

**Note:** 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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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.