Shielded Power Inductors – XAL40xx

- High current and very low DCR
- AEC-Q200 Grade 1 (~40°C to +125°C)
- Soft saturation makes them ideal for VRM/VRD applications.

Designer’s Kit C429 contains 5 of each value
Core material: Composite
Core and winding loss: See www.coilcraft.com/coreloss
Environmental: RoHS compliant, halogen free
Terminations: RoHS compliant tin-silver (95.5/0.5) over copper. Other terminations available at additional cost.
Operating voltage: 0 – 60 V
Storage temperature: Component: –55°C to +165°C. Tape and reel: –55°C to +80°C Resistance to soldering heat: Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles
Moisture Sensitivity Level (MSL): 1 (unlimited floor life at <30°C / 85% relative humidity)

### Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance $^2$ (μH) ±20%</th>
<th>DCR (mOhms) $^3$</th>
<th>SRF typ $^4$ (MHz)</th>
<th>I$_{sat}$$^5$ (A)</th>
<th>I$_{rms}$$^6$ (A)</th>
<th>20°C rise</th>
<th>40°C rise</th>
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</thead>
<tbody>
<tr>
<td>XAL4020-221ME</td>
<td>0.22</td>
<td>5.81</td>
<td>6.40</td>
<td>191</td>
<td>18.7</td>
<td>12.0</td>
<td>16.8</td>
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<td>XAL4020-401ME</td>
<td>0.40</td>
<td>7.55</td>
<td>8.30</td>
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<td>12.5</td>
<td>10.0</td>
<td>14.0</td>
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<td>0.60</td>
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<td>10.45</td>
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<td>11.7</td>
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<td>7.5</td>
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</table>

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

   **XAL4040-153ME**

   **Termination:** E = RoHS compliant tin-silver over copper.
   Special order: T = RoHS tin-silver-copper (95.5/0.5) or S = non-RoHS tin-lead (63/37).

   **Packaging:** C = 7” machine-ready reel. EIA-481 embossed plastic tape. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
   B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.
   D = 13” machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked.

2. Inductance tested at 1 MHz, 0.1 Vrms, 0 Adc.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 4395A or equivalent.
5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current. Click for temperature derating information.
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. Click for temperature derating information.
7. Electrical specifications at 25°C. Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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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
Shielded Power Inductors – XAL40xx

L vs Current

![Graphs showing inductance vs current for different inductance values.](image-url)
Shielded Power Inductors – XAL40xx

L vs Current

- L vs Current for 8.2 µH
- L vs Current for 10 µH
- L vs Current for 15 µH
Shielded Power Inductors – XAL40xx

Typical L vs Frequency

Typical ESR vs Frequency

Packaging
XAL4020: 1000/7" reel; 3500/13" reel. Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 2.3 mm pocket depth
XAL4030: 500/7" reel; 2000/13" reel. Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 3.25 mm pocket depth
XAL4040: 500/7" reel; 2000/13" reel. Plastic tape: 12 mm wide, 0.30 mm thick, 8 mm pocket spacing, 4.27 mm pocket depth

* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.