Shielded Power Inductors – XAL7030

- High current and very low DCR
- AEC-200 Grade 1 qualified (–40°C to +125°C ambient)
- Soft saturation makes them ideal for VRM/VRD applications.

Designer’s Kit C441 contains 3 each of all values
Core material Composite
Environmental RoHS compliant, halogen free
Terminations RoHS compliant tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.
Weight 0.83 – 0.86 g
Operating voltage: 0 – 55 V
Ambient temperature –40°C to +125°C with (40°C rise) Irms current.
Maximum part temperature +165°C (ambient + temp rise). Derating.
Storage temperature Component: –55°C to +125°C. Tape and reel packaging: –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)
Failures in Time (FIT) / Mean Time Between Failures (MTBF) 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

### Table: Inductance, DCR, SRF, Isat, and Irms

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Inductance2</th>
<th>DCR (mOhms)3</th>
<th>SRF typ4</th>
<th>Isat5</th>
<th>Irms (A)6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±20% (µH)</td>
<td>typ</td>
<td>max</td>
<td>(MHz)</td>
<td>(A)</td>
</tr>
<tr>
<td>XAL7030-161ME_</td>
<td>0.16</td>
<td>1.15</td>
<td>1.26</td>
<td>158</td>
<td>60.0</td>
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<tr>
<td>XAL7030-301ME_</td>
<td>0.30</td>
<td>1.75</td>
<td>1.92</td>
<td>101</td>
<td>41.0</td>
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<tr>
<td>XAL7030-601ME_</td>
<td>0.60</td>
<td>3.00</td>
<td>3.30</td>
<td>72</td>
<td>36.0</td>
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<tr>
<td>XAL7030-102ME_</td>
<td>1.0</td>
<td>4.55</td>
<td>5.00</td>
<td>52</td>
<td>28.0</td>
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<tr>
<td>XAL7030-152ME_</td>
<td>1.5</td>
<td>7.60</td>
<td>8.36</td>
<td>39</td>
<td>23.5</td>
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<tr>
<td>XAL7030-222ME_</td>
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<td>13.7</td>
<td>15.07</td>
<td>29</td>
<td>18.0</td>
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<tr>
<td>XAL7030-272ME_</td>
<td>2.7</td>
<td>15.7</td>
<td>17.30</td>
<td>32</td>
<td>12.8</td>
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<td>XAL7030-332ME_</td>
<td>3.3</td>
<td>19.5</td>
<td>21.45</td>
<td>25</td>
<td>12.3</td>
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<td>XAL7030-472ME_</td>
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<td>26.1</td>
<td>30.00</td>
<td>21</td>
<td>10.1</td>
</tr>
<tr>
<td>XAL7030-562ME_</td>
<td>5.6</td>
<td>28.1</td>
<td>32.32</td>
<td>17</td>
<td>9.8</td>
</tr>
<tr>
<td>XAL7030-682ME_</td>
<td>6.8</td>
<td>45.0</td>
<td>51.75</td>
<td>15</td>
<td>8.7</td>
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<tr>
<td>XAL7030-822ME_</td>
<td>8.2</td>
<td>53.0</td>
<td>60.94</td>
<td>13</td>
<td>8.4</td>
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<td>XAL7030-103ME_</td>
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<td>60.4</td>
<td>69.46</td>
<td>12</td>
<td>7.7</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging code:
   - XAL7030-562ME: E = Halogen free component. RoHS compliant tin-silver over copper terminations.
   - 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 (400 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 (1500 parts per full reel).

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.
Shielded Power Inductors – XAL7030

Typical L vs Frequency

Inductance (µH)

Frequency (MHz)

Lowest Inductance

Dash number Indicates start lead and orientation of terminations

Recommended Land Pattern

Dash number | Terminal thickness (typ) (in / mm) | Terminal width ±0.004 / ±0.10 (in / mm) | Land pattern width (in / mm)
--- | --- | --- | ---
-161 | 0.0138 / 0.35 | 0.063 / 1.60 | 0.070 / 1.78
-301 | 0.0138 / 0.35 | 0.063 / 1.60 | 0.070 / 1.78
-601 | 0.0098 / 0.25 | 0.063 / 1.60 | 0.070 / 1.78
-102 | 0.0079 / 0.20 | 0.063 / 1.60 | 0.070 / 1.78
-152 | 0.0059 / 0.15 | 0.063 / 1.60 | 0.070 / 1.78
-222 | 0.0039 / 0.10 | 0.063 / 1.60 | 0.070 / 1.78
-272 | 0.0039 / 0.10 | 0.063 / 1.60 | 0.070 / 1.78
-332 | 0.0039 / 0.10 | 0.063 / 1.60 | 0.070 / 1.78
-472 | 0.0031 / 0.08 | 0.055 / 1.40 | 0.062 / 1.58
-562 | 0.0031 / 0.08 | 0.055 / 1.40 | 0.062 / 1.58
-682 | 0.0024 / 0.06 | 0.055 / 1.40 | 0.062 / 1.58
-822 | 0.0024 / 0.06 | 0.055 / 1.40 | 0.062 / 1.58
-103 | 0.0024 / 0.06 | 0.055 / 1.40 | 0.062 / 1.58

Packaging 400/7” reel; 1500/13” reel Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.3 mm pocket depth
Shielded Power Inductors – XAL7030

L vs Current

Inductance (µH) vs Current (A) for various values:
- 0.16 µH at 50 A
- 0.30 µH at 40 A
- 0.60 µH at 40 A
- 1.0 µH at 30 A
- 1.5 µH at 25 A
- 2.2 µH at 20 A
- 2.7 µH at 20 A
- 3.3 µH at 15 A

Specification subject to change without notice.
Please check web site for latest information.

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Shielded Power Inductors – XAL7030

L vs Current

- 4.7 µH at 0.1 A
- 5.6 µH at 1 A
- 6.6 µH at 2 A
- 7.6 µH at 3 A
- 8.6 µH at 4 A
- 9.6 µH at 5 A
- 10 µH at 6 A

High Temperature
AEC Q200 125°C+
Halogen Free