## Air Core Inductors

**For Linear Technology LT8697 switching regulator**

- Developed for Linear Technology LT8697 monolithic step-down switching regulator designed to power 5V USB applications.
- Tight DCR tolerance: ±5%
- Air core inductors feature high Q and high current ratings

### Part Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Turns</th>
<th>Inductance (\pm 2%) (nH)</th>
<th>Q (^3) typ</th>
<th>Q (^3) min</th>
<th>SRF min (^4) (GHz)</th>
<th>DCR (\pm 5%) (^5) (mOhm)</th>
<th>Irms (^6) (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAS931-AL</td>
<td>15</td>
<td>246</td>
<td>114</td>
<td>95</td>
<td>0.685</td>
<td>15.7</td>
<td>3.0</td>
</tr>
<tr>
<td>NAS932-AL</td>
<td>16</td>
<td>307</td>
<td>114</td>
<td>95</td>
<td>0.660</td>
<td>21.8</td>
<td>3.0</td>
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<tr>
<td>NAS933-AL</td>
<td>17</td>
<td>380</td>
<td>114</td>
<td>95</td>
<td>0.590</td>
<td>32.4</td>
<td>2.5</td>
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<tr>
<td>NAS934-AL</td>
<td>18</td>
<td>422</td>
<td>114</td>
<td>95</td>
<td>0.540</td>
<td>34.3</td>
<td>2.5</td>
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<tr>
<td>NAS935-AL</td>
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<td>491</td>
<td>114</td>
<td>95</td>
<td>0.535</td>
<td>44.1</td>
<td>2.0</td>
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<tr>
<td>NAS936-AL</td>
<td>20</td>
<td>538</td>
<td>104</td>
<td>87</td>
<td>0.490</td>
<td>47.2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

1. When ordering, please specify packaging code: NAS936-AL\(D\)

Packaging:  
**D** = 13" machine-ready reel. EIA-481 embossed plastic tape (800 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 D instead.

2. Inductance tested at 50 MHz on an Agilent/HP 4191A Impedance Analyzer or equivalent with a Coilcraft SMD-A fixture and correlation.

3. Q tested at 50 MHz on an Agilent/HP 4291A Impedance Analyzer or equivalent with a Coilcraft SMD-A fixture and correlation.

4. SRF tested on the Agilent/HP 8753D and a Coilcraft CCF1248 test fixture.

5. DCR tested on the Keithley 580 Micro Ohmmeter.

6. Current that causes a 15°C temperature rise from 25°C ambient.

7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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**Weight** 0.42 – 0.59 g

**Terminations** RoHS compliant tin-silver (96.5/3.5) over copper.

**Ambient temperature** –40°C to +125°C with Irms current, +125°C to +140°C with derated current

**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)** +5 to +70 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** 800/13" reel Plastic tape: 24 mm wide, 0.3 mm thick, 12 mm pocket spacing, 6.1 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf

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Air Core Inductors for Linear Technology LT8697

L vs Frequency

Q vs Frequency

Typical Irms Derating

Dimensions are in inches

Recommended Land Pattern

Dimensions are in millimeters