Shielded Power Inductors – XAL1030

- Very high current and low DCR
- Low profile, only 3 mm high
- Soft saturation makes them ideal for VRM/VRD applications.

Core material: Composite
Environmental: RoHS compliant, halogen free
Terminations: RoHS compliant tin-silver over copper. Other terminations available at additional cost.
Weight: 1.6 – 1.8 g
Operating voltage: 0 – 60 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 +165°C.
Tape and reel packaging: -55°C to +80°C

Resistance to soldering heat: Max three 40 second reflovs at +260°C, parts cooled to room temperature between cycles
Moisture Sensitivity Level (MSL): 1 (unlimited floor life at <30°C / 85% relative humidity)
Packaging: 250/7” reel; 1000/13” reel. Plastic tape: 24 mm wide, 0.3 mm thick, 16 mm pocket spacing, 3.25 mm pocket depth

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance² ±20% (µH)</th>
<th>DCR (mOhms)²</th>
<th>SRF typ³ (MHz)</th>
<th>Isat (A)</th>
<th>20°C rise (A)</th>
<th>40°C rise (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XAL1030-161ME_</td>
<td>0.16</td>
<td>1.10</td>
<td>1.21</td>
<td>120</td>
<td>88.0</td>
<td>28.0</td>
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<tr>
<td>XAL1030-301ME_</td>
<td>0.30</td>
<td>1.55</td>
<td>1.70</td>
<td>78</td>
<td>68.0</td>
<td>25.5</td>
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<td>XAL1030-561ME_</td>
<td>0.56</td>
<td>2.50</td>
<td>2.75</td>
<td>53</td>
<td>44.0</td>
<td>23.0</td>
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<tr>
<td>XAL1030-102ME_</td>
<td>1.0</td>
<td>4.50</td>
<td>4.95</td>
<td>41</td>
<td>35.0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging codes:
   - XAL1030-102MEC
   - Termination: E = RoHS compliant tin-silver over copper.
   - 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 (250 parts per full reel).
   - Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).

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 a nonlinearity drop of 30% (typ) from its value without current.
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.

Irms Testing
Irms testing was performed on 0.75 inch wide × 0.25 inch thick copper traces in still air. Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
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L vs Current

L vs Frequency

Recommended Land Pattern

1.0 µH

0.56 µH

0.30 µH

0.16 µH

Dash number

Indicates direction of terminals and start (short) lead. Connect high dv/dt here for lowest EMI.

0.122

3.1 max

0.315

0.354

0.094

2.3

6.65

4.45 ± 0.25

0.175 ± 0.010

0.087 ± 0.004

2.20 ± 0.10

0.445 ± 0.020

11.3 ± 0.50

0.394 ± 0.020

10.0 ± 0.50

* 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.

Dimensions are in inches / mm

Inductance (µH)

Frequency (MHz)

Current (A)

Current (A)

Current (A)

Inductance (µH)

Inductance (µH)

Inductance (µH)

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