# Shielded Power Inductors XAL1580

- High current – up to 111 A; Very low DCR – 0.50 mOhms
- AEC-Q200 Grade 1 (–40°C to +125°C)
- Soft saturation makes them ideal for VRM/VRD applications.

### Core material
Composite

### Core and winding loss
Go to online calculator

### Environmental
RoHS compliant, halogen free

### Terminations
RoHS compliant tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.

- **Weight**: 10.6 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 refows 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)**: 0.48 per billion hours / 2.08E+09 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.

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Go to online calculator

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## Shielded Power Inductors XAL1580

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance&lt;sup&gt;a&lt;/sup&gt; (±20% (µH))</th>
<th>DCR (mOhms)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>SRF typ&lt;sup&gt;c&lt;/sup&gt; (MHz)</th>
<th>Isat&lt;sup&gt;d&lt;/sup&gt; (A)</th>
<th>Irms&lt;sup&gt;e&lt;/sup&gt; (A)</th>
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<tbody>
<tr>
<td>XAL1580-401ME</td>
<td>0.40</td>
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<td>0.72</td>
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<td>5.66</td>
<td>6.79</td>
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</table>

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

XAL1580-612MED

- **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**: D = 13” machine-ready reel. EIA-481 embossed plastic tape (300 parts per full reel). 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 D.

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.
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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**Irms Testing**
I rms 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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[Click for temperature derating information](#).

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**Click for temperature derating information**

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Shielded Power Inductors – XAL1580

Typical L vs Current

- 0.40 µH at 100 A
- 0.74 µH at 100 A
- 1.0 µH at 100 A
- 1.3 µH at 70 A
- 1.6 µH at 50 A
- 1.8 µH at 40 A
- 2.0 µH at 50 A
- 2.5 µH at 40 A
- 3.0 µH at 30 A
- 6.1 µH at 40 A
- 7.4 µH at 40 A
- 10 µH at 40 A

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.
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Typical L vs Frequency

- Inductance (µH) vs Frequency (MHz)
  - 0.1 µH
  - 1 µH
  - 10 µH
  - 100 µH

- Dimensions in inches and millimeters
  - 0.118 ±0.004
  - 3.0 ±0.1
  - 0.125 ±0.010
  - 3.2 ±0.25

- Dash number 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.

- 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.

- Typical L vs Frequency graph shows the relationship between inductance and frequency.

- Recommended Land Pattern dimensions are in inches and millimeters.

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

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