Shielded Power Inductor XEL5030

- Extremely low DCR and ultra low AC losses for high switching frequencies (2 to 5 MHz)
- Superior current handling with soft saturation characteristics
- AEC-Q200 Grade 1 (–40°C to +125°C)
- Can withstand high current spike

**Core material** Composite
**Environment** RoHS compliant, halogen free
**Terminations** RoHS compliant tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.
**Weight** 0.39 – 0.58 g
**Operating voltage** 0 – 80 V
**Ambient temperature** –40°C to +125°C with (40°C) Irms current.
**Maximum part temperature** +165°C (ambient + temp rise).
**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 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)** 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.

### Electrical Specifications

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Inductance2 ±20% (µH)</th>
<th>DCR (mOhms)3 typ</th>
<th>max</th>
<th>SRF typ4 (MHz)</th>
<th>Isat5 (A)</th>
<th>Irms (A)6</th>
<th>20°C rise</th>
<th>40°C rise</th>
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<tr>
<td>XEL5030-131ME</td>
<td>0.13</td>
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</table>

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

   XEL5030-472ME

   **Termination:** E = RoHS compliant tin-silver over copper.
   **Special order:** S = non-RoHS tin-lead (63/37).
   **Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (400 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 C.
   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.
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.
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 x 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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**Coefficient of Determination (R²):** 0.95

**Significance Level:** 0.05

**Model Summary:**

- **R²:** 0.95
- **Significance Level:** 0.05

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**Graph:**

A graph showing the relationship between temperature and voltage for various conditions.

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**Table:**

<table>
<thead>
<tr>
<th>Table Title</th>
<th>Table Data</th>
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**Referenced Documents:**

- Doc362 “Soldering Surface Mount Components”
- Doc787_PCB_Washing.pdf
Shielded Power Inductor – XEL5030

L vs Frequency

- **Inductance (µH)**
- **Frequency (MHz)**

- 4.7 µH
- 3.3 µH
- 2.2 µH
- 1.5 µH
- 1.2 µH
- 1.0 µH
- 0.60 µH
- 0.42 µH
- 0.26 µH
- 0.13 µH

- 0.091 ±0.010
- 0.039 ±0.002
- 2,31 ±0.25
- 1,0 ±0.05
- 0.091 ±0.010

- **Dash number**
- **Height**

- **Recommended Land Pattern**

- **Packaging**

0.40/7” reel; 1500/13” reel
Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.18 mm pocket depth

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

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Please check web site for latest information.
HIGH TEMPERATURE

Shielded Power Inductor – XEL5030

L vs Current

- 0.13 µH
- 0.26 µH
- 0.42 µH
- 0.60 µH
- 1.0 µH
- 1.2 µH
- 1.6 µH

Current (A) vs Inductance (µH)

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