Shielded Power Inductors – XFL4015

- Very low profile, only 1.5 mm high
- Extremely low DCR, excellent current handling, soft saturation
- AEC-Q200 Grade 1 (~40°C to +125°C)

Designer's Kit C455 contains 5 of each XFL4012 and XFL4015 value.

Core material: Composite
Environmental: RoHS compliant, halogen free
Terminations: RoHS compliant tin-silver over copper. Other terminations available at additional cost.
Weight: 0.128 - 0.136 g
Operating voltage: 0 – 20 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 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

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

- **Termination:** E = RoHS compliant tin-silver over copper.
- **Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (1000 parts per full reel).
- **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 (4000 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 the specified inductance drop 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.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance ±20% (µH)</th>
<th>DCR (mOhms)</th>
<th>SRF typ (MHz)</th>
<th>Isat (A)</th>
<th>Irms (A)</th>
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<tbody>
<tr>
<td></td>
<td>typ</td>
<td>max</td>
<td></td>
<td>10% drop</td>
<td>20% drop</td>
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<tr>
<td>XFL4015-181ME</td>
<td>0.18</td>
<td>4.20</td>
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<tr>
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<td>18.8</td>
<td>20.7</td>
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</table>

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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Typical L vs Current

Typical L vs Frequency

Packaging 1000/7” reel; 4000/13” reel Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 1.78 mm pocket depth

*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

Dash thickness (typ) number (in / mm)

Terminal

Recommended Land Pattern

Dimensions are in inches

0.032 ±0.002 0.82 ±0.05
0.062 ±0.010 1.57 ±0.25

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

Recommended Land Pattern

Dimensions are in inches

0.032 ±0.002 0.82 ±0.05
0.062 ±0.010 1.57 ±0.25

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