Shielded Power Inductors – XFL7015

- Very low profile, only 1.5 mm tall
- High current and very low DCR
- AEC-Q200 Grade 1 qualified (−40°C to +125°C ambient)

**Environmental**
RoHS compliant, halogen free

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

**Core material**
Composite

**Weight**
0.37 – 0.38 g

**Operating voltage**
0 – 20 V

**Ambient temperature**
−40°C to +125°C with (40°C rise) I rms 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)**
38 per billion hours / 26,315,789 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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<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance^2 ±20% (µH)</th>
<th>DCR (mOhms)^3</th>
<th>SRF typ^4 (MHz)</th>
<th>Isat (A)^5</th>
<th>Irms (A)^6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>typ</td>
<td>max</td>
<td>10% drop</td>
<td>20% drop</td>
<td>30% drop</td>
</tr>
<tr>
<td>XFL7015-251ME_</td>
<td>0.25</td>
<td>3.90</td>
<td>4.30</td>
<td>80</td>
<td>9.0</td>
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<tr>
<td>XFL7015-471ME_</td>
<td>0.47</td>
<td>6.20</td>
<td>6.83</td>
<td>56</td>
<td>6.5</td>
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<tr>
<td>XFL7015-681ME_</td>
<td>0.68</td>
<td>7.70</td>
<td>8.47</td>
<td>49</td>
<td>4.7</td>
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<tr>
<td>XFL7015-102ME_</td>
<td>1.0</td>
<td>13.6</td>
<td>16.0</td>
<td>39</td>
<td>4.0</td>
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<tr>
<td>XFL7015-152ME_</td>
<td>1.5</td>
<td>18.3</td>
<td>22.6</td>
<td>33</td>
<td>3.0</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging codes:
   - **XFL7015-152MEC**
   - Termination: E = RoHS compliant tin-silver over copper.
     Special order:
     - T = RoHS tin-silver-copper (96.5/3.5/0.5) or
     - S = non-RoHS tin-lead (63/37).
   - Packaging: C = 7” machine-ready reel. EIA-481 embossed plastic tape (750 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 C instead.
     D = 13” machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (3000 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.
   - Click for temperature derating information.
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**
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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Specification subject to change without notice.
Please check web site for latest information.
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### L vs Current

<table>
<thead>
<tr>
<th>Current (A)</th>
<th>Inductance (µH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.25</td>
</tr>
<tr>
<td>2</td>
<td>0.47</td>
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<tr>
<td>3</td>
<td>0.68</td>
</tr>
<tr>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td>5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

### L vs Frequency

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Inductance (µH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>0.25 ±0.020</td>
</tr>
<tr>
<td>1.0</td>
<td>0.295 ±0.020</td>
</tr>
<tr>
<td>10</td>
<td>0.592 ±0.05</td>
</tr>
</tbody>
</table>

#### Dimensions

- **Dash number** indicates start lead and orientation of terminations.
- **C** (see table)
- **A** (see table)
- **B** (see table)

*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.

#### Recommended Land Pattern

- **Recommended**
- **Packaging** 750/7” reel; 3000/13” reel
- **Plastic tape** 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 1.65 mm pocket depth