Shielded Power Inductors – XFL6012

- High current, very low DCR, soft saturation
- Very low profile – 1.2 mm maximum
- AEC-Q200 Grade 1 (–40°C to +125°C)

Core material: Composite
Core and winding loss: See www.coilcraft.com/coreloss
Environmental: RoHS compliant, halogen free
Terminations: RoHS compliant tin-silver over copper. Other terminations available at additional cost.
Weight: 0.20 – 0.22 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): 0.48 per billion hours / 2.08E+09 hours, calculated per Telcordia SR-332

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (µH)</th>
<th>DCR (mOhms)</th>
<th>SRF (MHz)</th>
<th>I sat (A)</th>
<th>I rms (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XFL6012-181ME</td>
<td>0.18</td>
<td>7.06</td>
<td>8.12</td>
<td>130</td>
<td>10.1</td>
</tr>
<tr>
<td>XFL6012-391ME</td>
<td>0.39</td>
<td>10.5</td>
<td>12.1</td>
<td>83</td>
<td>6.7</td>
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<tr>
<td>XFL6012-601ME</td>
<td>0.60</td>
<td>13.5</td>
<td>15.5</td>
<td>65</td>
<td>5.7</td>
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<tr>
<td>XFL6012-801ME</td>
<td>0.80</td>
<td>18.0</td>
<td>20.7</td>
<td>58</td>
<td>4.2</td>
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<tr>
<td>XFL6012-102ME</td>
<td>1.0</td>
<td>21.9</td>
<td>25.2</td>
<td>52</td>
<td>3.5</td>
</tr>
</tbody>
</table>

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

   XFL6012-102ME

   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 (750 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 (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 an inductance drop of 30% (typ) 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.

   Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

I rms Testing

I rms 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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L vs Current

- 0.18 µH
- 0.39 µH
- 0.60 µH
- 0.80 µH
- 1.0 µH

L vs Frequency

- 0.250 ±0.008
- 0.250 ±0.008

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

* 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

Dimensions are in inches

Packaging 750/7” reel; 3000/13” reel  Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 1.4 mm pocket depth