Shielded Power Inductors – XFL2005

- Lowest profile, ultra-miniature, magnetically shielded power inductor; only 0.5 mm high, 2 mm × 2 mm footprint
- Soft saturation

Designer’s Kit C479 contains 5 each of all values
Core material Composite
Core and winding loss See www.coilcraft.com/coreloss
Environmental RoHS compliant, halogen free
Terminations RoHS compliant tin-silver-copper (96.5/3/0.5) over tin over nickel over silver-platinum. Other terminations available.
Weight 8.4 – 9.3 mg
Operating voltage 0 – 40 V
Ambient temperature –40°C to +85°C with (40°C rise) Irms current.
Maximum part temperature +125°C (ambient + temp rise). Derating.
Storage temperature Component –55°C to +125°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)
Packaging 2000/7″ reel; 7500/13″ reel Plastic tape: 8 mm wide, 0.28 mm thick, 4 mm pocket spacing, 0.76 mm pocket depth
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance² ±20% (µH)</th>
<th>DCR (Ohms)³</th>
<th>SRF typ⁴ (MHz)</th>
<th>Isat (A)⁵</th>
<th>I rms (A)⁶</th>
</tr>
</thead>
<tbody>
<tr>
<td>XFL2005-151ME</td>
<td>0.15</td>
<td>0.085</td>
<td>0.098</td>
<td>590</td>
<td>1.05</td>
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<tr>
<td>XFL2005-221ME</td>
<td>0.22</td>
<td>0.111</td>
<td>0.128</td>
<td>480</td>
<td>0.72</td>
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<tr>
<td>XFL2005-331ME</td>
<td>0.33</td>
<td>0.144</td>
<td>0.166</td>
<td>380</td>
<td>0.65</td>
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<tr>
<td>XFL2005-471ME</td>
<td>0.47</td>
<td>0.177</td>
<td>0.204</td>
<td>275</td>
<td>0.60</td>
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<tr>
<td>XFL2005-681ME</td>
<td>0.68</td>
<td>0.215</td>
<td>0.247</td>
<td>220</td>
<td>0.50</td>
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<tr>
<td>XFL2005-102ME</td>
<td>1.00</td>
<td>0.377</td>
<td>0.430</td>
<td>160</td>
<td>0.33</td>
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<tr>
<td>XFL2005-152ME</td>
<td>1.50</td>
<td>0.483</td>
<td>0.555</td>
<td>130</td>
<td>0.30</td>
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<tr>
<td>XFL2005-222ME</td>
<td>2.20</td>
<td>0.674</td>
<td>0.775</td>
<td>110</td>
<td>0.25</td>
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<td>XFL2005-332ME</td>
<td>3.30</td>
<td>0.922</td>
<td>1.06</td>
<td>85</td>
<td>0.24</td>
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<td>XFL2005-472ME</td>
<td>4.70</td>
<td>1.46</td>
<td>1.69</td>
<td>70</td>
<td>0.20</td>
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<tr>
<td>XFL2005-562ME</td>
<td>5.60</td>
<td>1.72</td>
<td>1.98</td>
<td>65</td>
<td>0.155</td>
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<td>XFL2005-682ME</td>
<td>6.80</td>
<td>1.92</td>
<td>2.21</td>
<td>60</td>
<td>0.150</td>
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<tr>
<td>XFL2005-822ME</td>
<td>8.20</td>
<td>2.46</td>
<td>2.80</td>
<td>50</td>
<td>0.120</td>
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<tr>
<td>XFL2005-103ME</td>
<td>10.0</td>
<td>2.78</td>
<td>3.10</td>
<td>48</td>
<td>0.130</td>
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</tbody>
</table>

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

   XFL2005-103MEC
   Termination: E = RoHS compliant tin-silver-copper (96.5/3/0.5) over tin over nickel over silver-platinum.
   Special order: S = non-RoHS tin-lead (63/37).
   Packaging: C = 7″ machine-ready reel. EIA-481 embossed plastic tape 2000 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 7500 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. DC 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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Specification subject to change without notice.
Please check web site for latest information.
Shielded Power Inductor – XFL2005

L vs Current

- Inductance (µH) vs Current (A)

- L vs Current graphs for different inductance values:
  - 0.15 µH
  - 0.22 µH
  - 0.33 µH
  - 0.47 µH
  - 0.68 µH
  - 1.0 µH
  - 1.5 µH
  - 2.2 µH
  - 3.3 µH
  - 4.7 µH

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L vs Current

L vs Frequency

Inductance (µH) vs Current (A)

Inductance (µH) vs Frequency (MHz)

Indicates start lead. Connect high dvi/dt here for lowest EMI.

Earlier production parts may not be marked with a dot.

Recommended Land Pattern

Dimensions are in inches / 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.

Tape and reel orientation