The PFD3215 has a footprint less than 3.2 x 2.3 mm, making this shielded coupled inductor ideal for applications with limited board space. It is designed for use in a variety of circuits including flyback, multi-output buck, SEPIC and Zeta.

These inductors provide high efficiency and excellent current handling in a rugged, low cost part.

They can also be used as two single inductors connected in series or parallel, as a wideband transformers or as a common mode choke.

**Recommended Land Pattern**

Dimensions are in

<table>
<thead>
<tr>
<th></th>
<th>inches</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.078</td>
<td>1.98</td>
</tr>
<tr>
<td>2</td>
<td>0.099</td>
<td>2.53</td>
</tr>
<tr>
<td>3</td>
<td>0.635</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.578</td>
<td></td>
</tr>
</tbody>
</table>

**Typical Flyback Converter**

**Typical Buck Converter with auxiliary output**

**Typical SEPIC schematic**

**Typical Zeta schematic**
PFD3215 Coupled Inductors for SEPIC applications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance&lt;sup&gt;2&lt;/sup&gt;</th>
<th>DCR max&lt;sup&gt;3&lt;/sup&gt;</th>
<th>SRF typ&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Coupling coefficient typ</th>
<th>Leakage inductance&lt;sup&gt;5&lt;/sup&gt;</th>
<th>Isat (A)&lt;sup&gt;6&lt;/sup&gt;</th>
<th>I rms (A)&lt;sup&gt;6&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFD3215-391ME</td>
<td>0.39</td>
<td>0.070</td>
<td>600</td>
<td>0.89</td>
<td>0.08</td>
<td>2.10</td>
<td>0.98</td>
</tr>
<tr>
<td>PFD3215-102ME</td>
<td>1.0</td>
<td>0.123</td>
<td>400</td>
<td>0.95</td>
<td>0.09</td>
<td>1.35</td>
<td>0.85</td>
</tr>
<tr>
<td>PFD3215-182ME</td>
<td>1.8</td>
<td>0.250</td>
<td>230</td>
<td>0.97</td>
<td>0.11</td>
<td>1.00</td>
<td>0.60</td>
</tr>
<tr>
<td>PFD3215-222ME</td>
<td>2.2</td>
<td>0.265</td>
<td>270</td>
<td>0.97</td>
<td>0.13</td>
<td>0.95</td>
<td>0.57</td>
</tr>
<tr>
<td>PFD3215-332ME</td>
<td>3.3</td>
<td>0.360</td>
<td>190</td>
<td>0.98</td>
<td>0.14</td>
<td>0.75</td>
<td>0.55</td>
</tr>
<tr>
<td>PFD3215-472ME</td>
<td>4.7</td>
<td>0.450</td>
<td>175</td>
<td>0.98</td>
<td>0.17</td>
<td>0.65</td>
<td>0.51</td>
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<tr>
<td>PFD3215-622ME</td>
<td>6.8</td>
<td>0.630</td>
<td>155</td>
<td>0.98</td>
<td>0.25</td>
<td>0.55</td>
<td>0.40</td>
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<tr>
<td>PFD3215-103ME</td>
<td>10</td>
<td>1.25</td>
<td>110</td>
<td>0.98</td>
<td>0.31</td>
<td>0.45</td>
<td>0.27</td>
</tr>
</tbody>
</table>

1. When ordering, please specify packaging code:

PFD3215-103MEC

Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 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 (7500 parts per full reel).

2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.

3. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.

4. SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value. When leads are connected in series, SRF is half the value.

5. Leakage inductance is for the primary winding with the secondary windings shorted.

6. DC current, at which the inductance drops the specified amount from its value without current. It is the current flowing in one winding.

7. Equal current when applied to each winding simultaneously that causes a 40°C temperature rise from 25°C ambient. See temperature rise calculation.

8. Maximum current when applied to one winding that causes a 40°C temperature rise from 25°C ambient. See temperature rise calculation.

9. Electrical specifications at 25°C.

Coupled Inductor Core and Winding Loss Calculator
This web-based utility allows you to enter frequency, peak-to-peak (ripple) current, and Irms current to predict temperature rise and overall losses, including core loss.

Go to online calculator.

PFD3215 Coupled Inductors for Flyback applications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance&lt;sup&gt;2&lt;/sup&gt; at 0 A&lt;sup&gt;2&lt;/sup&gt; ±20% (µH)</th>
<th>Inductance at Ipk&lt;sup&gt;3&lt;/sup&gt; A&lt;sup&gt;2&lt;/sup&gt; ±20% (µH)</th>
<th>DCR max&lt;sup&gt;3&lt;/sup&gt; (Ohms)</th>
<th>Leakage inductance&lt;sup&gt;5&lt;/sup&gt; typ (µH)</th>
<th>Turns ratio</th>
<th>Ip&lt;sup&gt;3&lt;/sup:k (A)</th>
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<tr>
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<td>0.070</td>
<td>0.08</td>
<td>1 : 1</td>
<td>2.40</td>
</tr>
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<td>0.70</td>
<td>0.123</td>
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<td>1.8</td>
<td>1.26</td>
<td>0.250</td>
<td>0.11</td>
<td>1 : 1</td>
<td>1.30</td>
</tr>
<tr>
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<td>2.2</td>
<td>1.54</td>
<td>0.265</td>
<td>0.13</td>
<td>1 : 1</td>
<td>1.15</td>
</tr>
<tr>
<td>PFD3215-332ME</td>
<td>3.3</td>
<td>2.31</td>
<td>0.335</td>
<td>0.14</td>
<td>1 : 1</td>
<td>0.90</td>
</tr>
<tr>
<td>PFD3215-472ME</td>
<td>4.7</td>
<td>3.29</td>
<td>0.442</td>
<td>0.17</td>
<td>1 : 1</td>
<td>0.80</td>
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<tr>
<td>PFD3215-682ME</td>
<td>6.8</td>
<td>4.76</td>
<td>0.600</td>
<td>0.25</td>
<td>1 : 1</td>
<td>0.70</td>
</tr>
<tr>
<td>PFD3215-103ME</td>
<td>10</td>
<td>7.00</td>
<td>1.25</td>
<td>0.31</td>
<td>1 : 1</td>
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2. Inductance for the primary, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent.

3. Peak primary current drawn at minimum input voltage.

4. Leakage inductance is for the primary winding with the secondary windings shorted.

5. Electrical specifications at 25°C.

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

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This product may not be used in medical or high risk applications without prior Coilcraft approval.

Specifications subject to change without notice. Please check website for latest information.
PFD3215 Coupled Inductors for Flyback, SEPIC and other applications

**L vs Current**

![Graph showing L vs Current](image)

**L vs Frequency**

![Graph showing L vs Frequency](image)

Core material: Ferrite
Core and winding loss: Go to online calculator
Environmental: RoHS compliant, halogen free
Weight: 18 – 28 mg
Terminations: Silver-palladium-platinum-glass frit
Ambient temperature: –40°C to +85°C with Irms current
Maximum part temperature: +125°C (ambient + temp rise)
Storage temperature: Component: –40°C to +125°C.
Tape and reel packaging: –40°C to +80°C
Winding to winding isolation: 250 Vrms, one minute
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
Packaging: 2000/7" reel; 7500/13" reel Plastic tape: 8 mm wide, 0.20 mm thick, 4 mm pocket spacing, 1.21 mm pocket depth
PCB washing: Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.