**CCFL Transformers**

The FL Series of transformers is designed for use in cold cathode fluorescent lamp (CCFL) power supplies at operating frequencies up to 100 kHz. With output power from 3.5 to 6.0 Watts, these transformers are ideal for LCD backlight applications. They are available in two different gull wing, surface mount packages and one in-board configuration for height restricted designs.

Free evaluation samples are available by contacting Coilcraft or ordering them on-line at [www.coilcraft.com](http://www.coilcraft.com).

### Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Schematic</th>
<th>Package</th>
<th>Turns ratio</th>
<th>Output (Watts)</th>
<th>Inductance (µH)</th>
<th>Imax (mA)</th>
<th>Vrms</th>
<th>Vinst</th>
<th>DCR max (Ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL2015-1L_</td>
<td>B</td>
<td>1</td>
<td>1:67</td>
<td>6.0</td>
<td>43</td>
<td>5.0</td>
<td>22</td>
<td>1600</td>
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<td>1600</td>
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<td>1600</td>
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<td>12</td>
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<td>1600</td>
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</table>

Note: For Schematic B, primary is connected to secondary at pin 3. The primary is not isolated from the secondary.

### Isolation (tested for one minute)

<table>
<thead>
<tr>
<th>Part number</th>
<th>Primary to secondary</th>
<th>Primary to feedback</th>
<th>All windings to core</th>
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<tbody>
<tr>
<td>FL2015</td>
<td>1500 Vrms</td>
<td>500 Vrms</td>
<td>1500 Vrms</td>
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<tr>
<td>FL3209</td>
<td>500 Vrms</td>
<td>500 Vrms</td>
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<td>FL2810</td>
<td>1500 Vrms</td>
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<td>1500 Vrms</td>
</tr>
</tbody>
</table>

Note: For Schematic B, primary is connected to secondary at pin 3. The primary is not isolated from the secondary.

### Schematics

**A** Primary

- 1
- 3
- 5
- 7
- 9

Feedback

- 4

For Royer topology

**B** Primary

- 1
- 3
- 5
- 7

For Royer topology

**C** Primary

- 2
- 4

For full-bridge topology

**D** Primary

- 2
- 4
- 6

For Royer topology

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1. When ordering, please specify a packaging code:
   - FL2810-1LD (A)
   - FL3209-1L, FL3209-3L Not recommended for new designs. Order FL3209-5L, which is electrically equivalent.
   - FL3209-2L, FL3209-4L Not recommended for new designs. Order FL3209-6L, which is electrically equivalent.
   - FL3209-5L_ C 5 1 — 3.5 48 5.0 16 1600 20.0 2000 0.350 362 —
   - FL3209-6L_ D 5 1:100 — 3.5 40 5.0 17 1600 21.0 2000 0.400 800 0.08
   - FL2810-1L_ C 4 1:100 — 4.5 35 7.0 15 1500 16.5 1650 0.220 500 —

2. Inductance is measured across both halves of the primary.
3. Vrms = continuous voltage.
4. Vinst = instantaneous voltage at startup.
5. Ambient temperature range: -40°C to +85°C.
   - Storage temperature range: Component: -40°C to +85°C
   - Tape and reel packaging: -40°C to +80°C
6. Electrical specifications at 25°C.
### CCFL Transformers

#### Package 1

- **Weight:** 5.5 – 6.1 g
- **Terminations:** Tin-silver over tin over nickel over phos-bronze
- **Tape and reel:** 400/13” reel  44 mm tape width

For packaging data see Tape and Reel Specifications section.

#### Package 4

- **Weight:** 3.6 g
- **Terminations:** Tin-silver over tin over nickel over phos-bronze
- **Tape and reel:** 750/13” reel  44 mm tape width

For packaging data see Tape and Reel Specifications section.
CCFL Transformers
Package 5 – In-board mounting

Weight: 3.8 – 4.0 g
Terminations: Tin-silver over tin over copper over copper-steel
Tape and reel: 1000/13" reel  56 mm tape width
For packaging data see Tape and Reel Specifications section.