



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.

| Part number ¹ | Schematic | Package | Turns ratio | | Output (Watts) | Inductance ² nom (μH) | Imax sec (mA) | Vrms ³ | | Vinst max ⁴ | | DCR max (Ohms) | | |
|--------------------------|-----------|---------|-------------|--------|----------------|----------------------------------|---------------|-------------------|------|------------------------|------|----------------|-----|------|
| | | | pri:sec | pri:fb | | | | pri | sec | pri | sec | pri | sec | fb |
| FL2015-1L_ | B | 1 | 1:67 | 1:0.19 | 6.0 | 43 | 5.0 | 22 | 1600 | 25.0 | 2000 | 0.220 | 285 | 0.10 |
| FL2015-2L_ | A | 1 | 1:67 | 1:0.19 | 6.0 | 43 | 5.0 | 23 | 1600 | 29.0 | 2000 | 0.220 | 285 | 0.10 |
| FL2015-3L_ | A | 1 | 1:100 | 1:0.25 | 6.0 | 19 | 5.0 | 16 | 1600 | 20.0 | 2000 | 0.190 | 285 | 0.10 |
| FL2015-4L_ | A | 1 | 1:50 | 1:0.14 | 6.0 | 44 | 7.0 | 32 | 1600 | 40.0 | 2000 | 0.220 | 165 | 0.10 |
| FL2015-5L_ | A | 1 | 1:125 | 1:0.38 | 6.0 | 20 | 7.0 | 12 | 1600 | 16.0 | 2000 | 0.160 | 330 | 0.10 |
| FL2015-6L_ | B | 1 | 1:67 | 1:0.19 | 6.0 | 48 | 11.0 | 23 | 1600 | 29.0 | 2000 | 0.160 | 176 | 0.10 |
| FL2015-7L_ | A | 1 | 1:67 | 1:0.19 | 6.0 | 50 | 11.0 | 23 | 1600 | 29.0 | 2000 | 0.160 | 176 | 0.10 |
| FL2015-8L_ | A | 1 | 1:86 | 1:0.21 | 6.0 | 31 | 11.0 | 18 | 1600 | 23.0 | 2000 | 0.132 | 176 | 0.10 |
| FL2015-9L_ | A | 1 | 1:100 | 1:0.25 | 6.0 | 22 | 11.0 | 16 | 1600 | 20.0 | 2000 | 0.132 | 176 | 0.10 |
| FL2015-10L_ | A | 1 | 1:93 | 1:0.25 | 4.5 | 40 | 11.0 | 17 | 1600 | 21.0 | 2000 | 0.175 | 675 | 0.05 |

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 | 1:100 | — | 3.5 | 48 | 5.0 | 16 | 1600 | 20.0 | 2000 | 0.350 | 362 | — |
| FL3209-6L_ | D | 5 | 1:93 | 1:0.17 | 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 | — |

1. When ordering, please specify a **packaging** code:

FL2810-1LD

Packaging: D = 13" machine ready reel. EIA-481 embossed plastic tape.

Package 1: 400 parts per full reel.

Package 4: 750 parts per full reel.

Package 5: 1000 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 D instead.

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

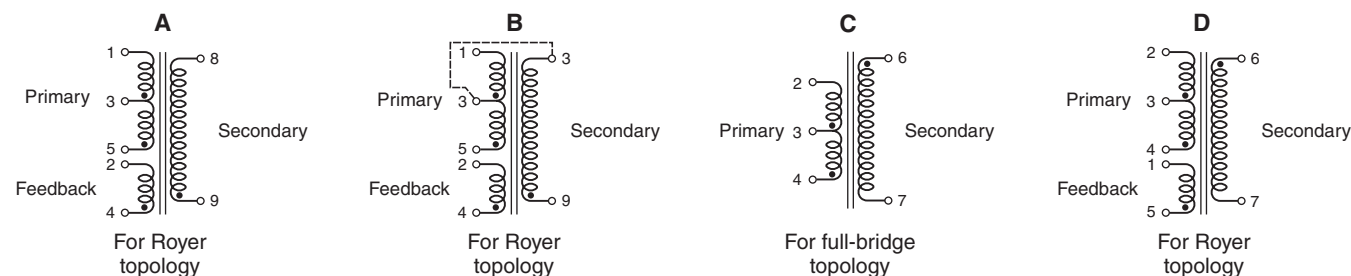
6. Electrical specifications at 25°C.

Isolation (tested for one minute)

| Part number | Primary to secondary | Primary to feedback | All windings to core |
|-------------|----------------------|---------------------|----------------------|
| FL2015 | 1500 Vrms | 500 Vrms | 1500 Vrms |
| FL3209 | 500 Vrms | 500 Vrms | 1500 Vrms |
| FL2810 | 1500 Vrms | — | 1500 Vrms |

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

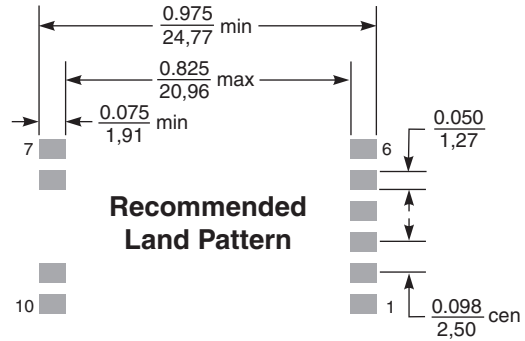
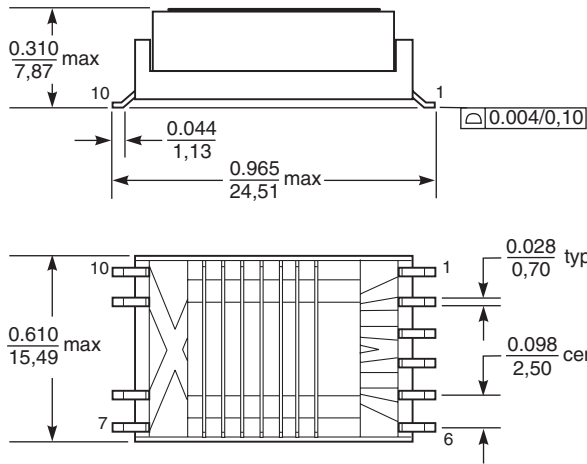
Schematics





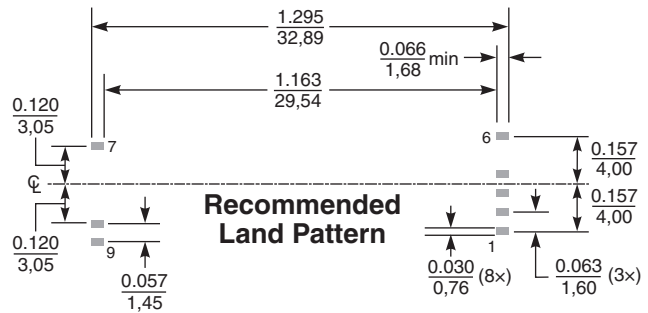
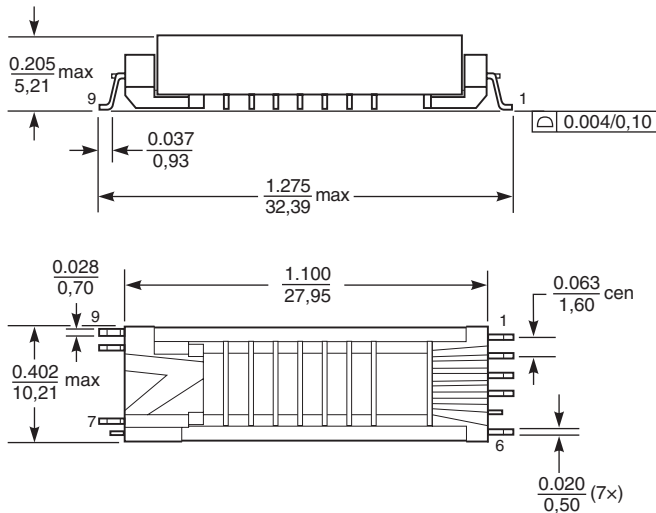
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Package 1



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.



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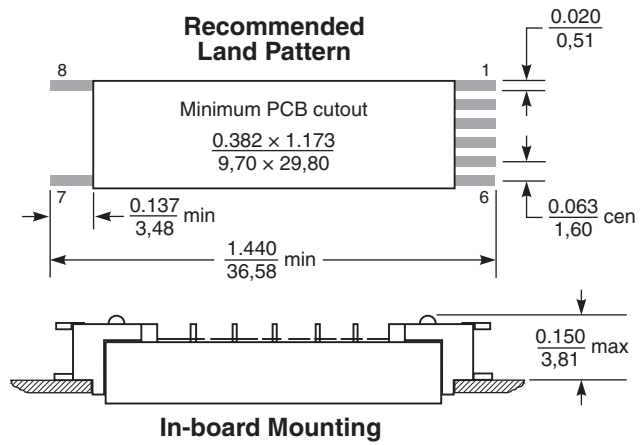
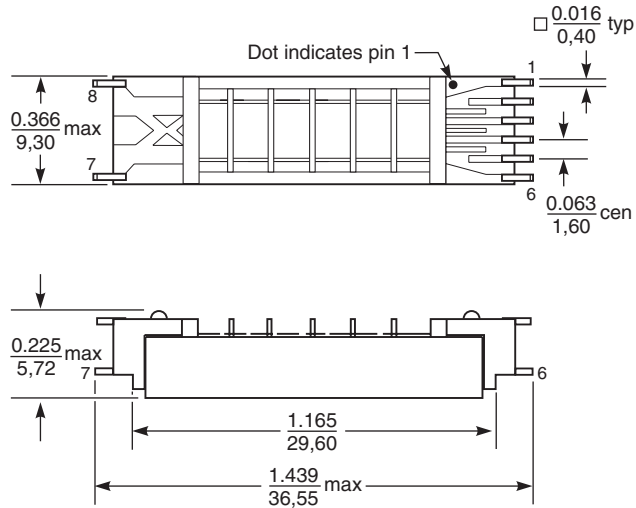
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CCFL Transformers

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.



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