Mic/Line Input Transformer
LL7906

The LL7906 is a large, high level, high performance audio transformer, pin compatible with our LL17905, but with an internal structure better optimized for high turns-ratio step-up applications. The transformer combines very high secondary level capability (+37 dBu [54.5V rms] @ 50 Hz) with low copper resistance. The LL7906 consists of two coils, each with two primary and one secondary windings separated by electrostatic shields. The core is a high permeability mu metal lamination core. The transformer is magnetically shielded by a mu metal case.

**Turns ratio:** 1 + 1 + 1 + 1 : 5.6 + 5.6

**Dims (Length x Width x Height above PCB (mm)):** 66 x 32 x 21

**Pin layout** (viewed from pins side) and winding schematics:

<table>
<thead>
<tr>
<th>Pins</th>
<th>Coil 1</th>
<th>Coil 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1* 7</td>
<td>8</td>
<td>6* 11</td>
</tr>
<tr>
<td>2* 8</td>
<td>1</td>
<td>5* 12</td>
</tr>
<tr>
<td>13* 19</td>
<td>14 * 20</td>
<td>17* 23</td>
</tr>
<tr>
<td>15* 21</td>
<td>16 * 22</td>
<td>18* 24</td>
</tr>
</tbody>
</table>

Note! Isolation between shields is not guaranteed!

**Spacing between pins:** 5.08 mm (0.2")

**Spacing between rows of pins:** 5.08 / 45.72 mm (0.2 / 1.8")

**Weight:** 155 g

**Rec. PCB hole diameter:** 1.5 mm

**Static resistance of each primary** (average): 24Ω

**Static resistance of each secondary** (average): 450Ω

**Distortion** (primary connection L1, source impedance 150Ω):

- 8 dBu primary level, 50 Hz: 0.1%
- 16 dBu primary level, 50 Hz: 1%

**Self resonance point:** 30 kHz

**Optimum termination for best square-wave response** (Connections L1-R2 [1:11.2], source imp. 200Ω):

80kΩ

**Frequency response**: (source and load as above, connection L1-R2, secondary side balanced with or without grounded centertap.)

10 Hz - 45 kHz +/- 1 dB

**Frequency response** (source and load as above, connection L1-R2, secondary side unbalanced with pin 23 grounded)

10 Hz - 25 kHz +/- 1 dB

**Isolation between primary and secondary windings/ between windings and shield:** 4 kV / 2 kV
Connection alternatives, LL7906

Left side connections

![Diagram of left side connections]

NOTE! Pin side view

Right side connections

![Diagram of right side connections]

NOTE! Pin side view

Suggested applications using LL7906

<table>
<thead>
<tr>
<th>Application</th>
<th>Connections</th>
<th>Max primary level, &lt; 1% THD@50 Hz</th>
<th>Corresponding secondary level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microphone / line input 1:2.8</td>
<td>L4 – R2</td>
<td>+28 dBu (19.5 V rms)</td>
<td>+37 dBu (54.5V rms)</td>
</tr>
<tr>
<td>Microphone / line input 1:5.6</td>
<td>L2 – R2</td>
<td>+22 dBu (9.7 V rms)</td>
<td>+37 dBu (54.5V rms)</td>
</tr>
<tr>
<td>Microphone / line input 1:11.2</td>
<td>L1 – R2</td>
<td>+16 dBu (4.9 V rms)</td>
<td>+37 dBu (54.5V rms)</td>
</tr>
</tbody>
</table>

R2. Center tap at 15 + 18