

## Moving Coil Input Transformer LL1678XL

LL1678XL is a Moving Coil Step-Up Transformer based on (and pin compatible with) our LL1678.

In LL1678XL we have increased the core cross section 45% and in addition redesigned coils to reduce winding resistance. The objective is to better match the low impedance cartridges most often used with this type of MC transformers.

The transformer is built up from two coils, each coil with one secondary winding surrounded by two primary windings. This structure results in excellent frequency response and high immunity to surrounding magnetic fields. For flexibility, all winding ends are available on the pins. As a result, LL1678XL can be used in 1:8, 1:16 and 1:32 configurations.

The LL1678XL core is our cobalt based uncut amorphous strip core. The transformer is encapsulated in a double thickness mu metal housing for increased noise immunity.

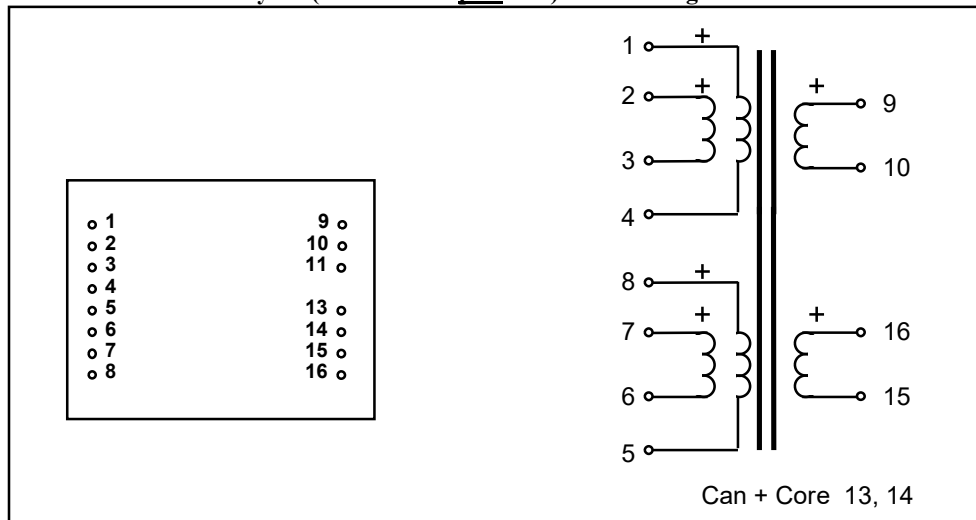
**Turns ratio:**

1 + 1 + 1 + 1 : 16 + 16

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

33 x 27 x 16 (Note! Bigger than the LL1678)

**Pin Layout (viewed from pins side) and windings schematics:**



<b>Spacing between pins:</b>	2.54 mm (0.1")
<b>Spacing between rows of pins:</b>	22.86 mm (0.9")
<b>Weight:</b>	42 g
<b>Rec. PCB hole diameter:</b>	1.3 mm
<b>Static resistance of <u>each</u> primary (average):</b>	2.4 Ω
<b>Static resistance of <u>each</u> secondary (average):</b>	215 Ω
<b>Frequency response</b> (@ -10 dBu, Connection "A", source 40Ω , load 47 kΩ) :	10 Hz -- 80 kHz +/- 1 dB
<b>Distortion</b> (primaries connected in series, source impedance 40Ω) :	< 0.5% @ -8 dBu, 50 Hz
<b>Primary no load impedance @ 0 dBu, 50 Hz, all in series:</b>	4.2 kΩ typically
<b>Core / Can:</b>	Cobalt amorphous strip core / Double thickness mu metal can
<b>Isolation between windings / between windings and core:</b>	3 kV / 1.5 kV

Turns ratio and suggested use at different termination alternatives. Termination alternatives are shown on the next page			
Termination Alternative	Turns ratio	Copper Resistance prim/sec	Suggested use for best frequency response
A	1:8	10 Ω / 430 Ω	MC cartridge < 100 Ω
B	1:8	2.4 Ω / 110 Ω	Not recommended
C	1:16	2.4 Ω / 430 Ω	MC cartridge < 40 Ω
D	1:16	0.6 Ω / 110 Ω	Not recommended
E	1:32	0.6 Ω / 430 Ω	MC cartridge < 10 Ω

**Application hint:**  
As the LL1678XL does not have Faraday shields, both sides of the transformer should have a common ground reference.

## LL1678XL Termination Alternatives (Left side is input if not stated otherwise) (Pins side view)

