



Plitron Electrostatic Loudspeaker Step Up Transformer are superior, wide bandwidth devices, designed to provide the output voltages necessary to drive electrostatic loudspeakers.

Toroidal Output Transformer for Tube Amplifiers

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PAT-4133-ES Ratings

Type & Application	:	PAT-VDV-50FB-ESL ; step-up	
Step-Up Ratio (=Ns / Np)	:	Ratio = 50	[]
Nominal Power -	:	Pnom = 80	[Watt] (1)
Nominal Power to be delivered in	:	Zout = 4	[Ω] (1)
Secondary Inductance (maximum value)	:	Ls = 719	[H] (2)
Effective Secondary Leakage Inductance	:	Lsse = 15	[mH]
Primary DC Resistance	:	Rip = 0.1	[Ω]
Secondary DC Resistance	:	Ris = 190	[Ω]
Effective Secondary Internal Capacitance	:	Cis = 7•10 ⁻¹⁰	[F]

Low Frequency Information:

-3 dB Power Bandwidth starting at	:	fu = 35.355	[Hz] (3)
Tuning Resistor in series with Primary	:	Rep = 1.8	[Ω] (4)
-3dB Bandwith (with Rep) starting at	:	f3L = 1.051	[Hz] (5)
Primary Impedance at 10 Hz (with Rep)	:	z10 = 18.257	[Ω] (6)

High Frequency Information (with Ces & Rep)

Capacitance of Electrostatic Loudspeaker	:	Ces = 1•10 ⁻⁹	[F]
2-nd order Resonance Frequency	:	Fo = 31.517	[kHz] (7)
Q-factor 2-nd order HF filter section	:	Q = 0.601	[] (8)
-3dB High Frequency Bandwith	:	F3H = 26.141	[kHz] (8)
Effective Primary Impedance at 20 kHz	:	Z20k = 2.272	[Ω]

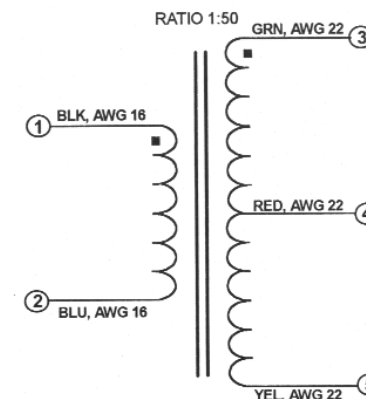
- (1): A step-up transformer transforms Voltages; $V\text{-primary} = (Pnom \cdot Zout)^{0.5}$
 - (2): Ls is not constant; see M. van der Veen, Glass Audio 5/97 starting pp.20
 - (3): -3dB means $1/2 \cdot Pnom$ at fu: $Pnom$ at $1.4 \cdot fu$: $2 \cdot Pnom$ at $2 \cdot fu$: etc.
 - (4): Rep (= series resistor with primary) stops High Frequency ringing. This resistor is an important external High Frequency tuning device.
 - (5): With Ls,max (see (2)) and Rep; values upto $6 \cdot f3L$ can be met in practice.
 - (6): This impedance is based on Ls,max (see (2)) and Rep. At small primary Voltages values of $1/6 \cdot z10$ can be measured.
 - (7): This fundamental frequency is determined by Lss and Cis + Ces.
 - (8): Rep influences Q, f3H, Zp; Select Rep for $0.50 < Q < 0.74$
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Electrostatic Loudspeaker Step Up Transformers

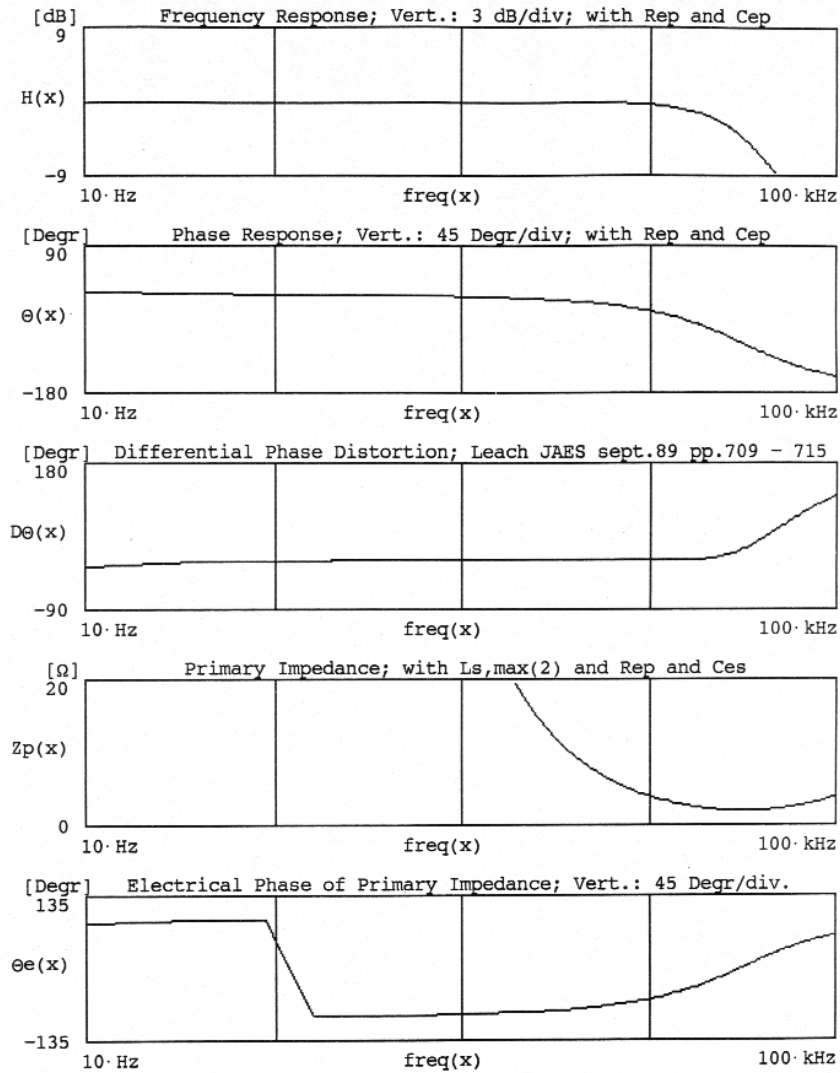


- 80 Watts
- 4 : 50 Step-Up ratio
- bandwidth to 26 kHz
- suppression of ringing through Rep

Schematic

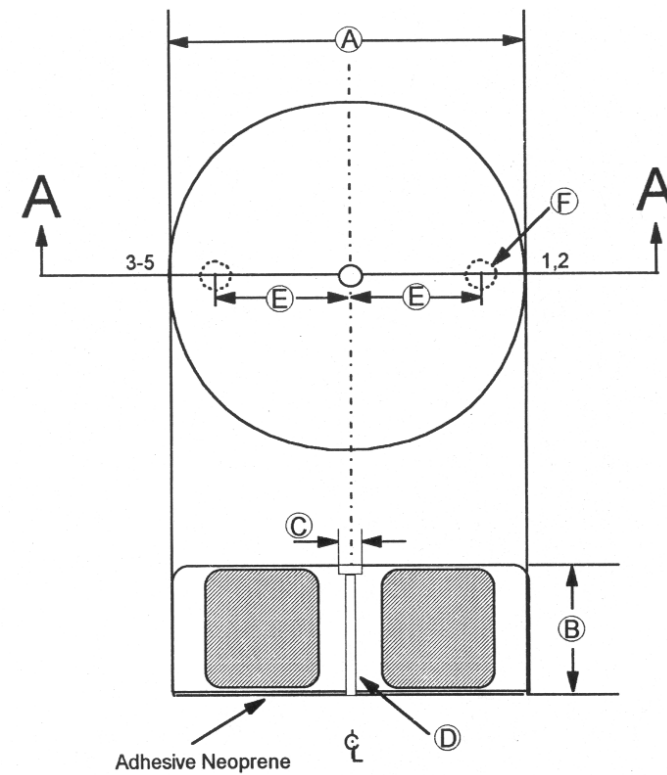


PAT-4133-ES Response Curves



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Mechanical



REF	Dimension, in mm
A	139.6 +/- 0.3
B	65.7 +/- 0.2
C	13 nominal
D	8.2 +/- 0.1
E	50 nominal
F	25.4 nominal

Weight: 3.0kg
Lead Length: 200mm (+/- 10mm)

