

TRAFCO-VDV-4134-ES ; toroidal step-up transformer for Electrostatic Loudspeakers

General specifications:

Step-Up Ratio (=Ns / Np)	: Ratio = 75	[]
Nominal Power	: Pnom = 80	[Watt] (1)
Nominal Power to be delivered in	: Zout = 4	[Ω] (1)
Secondary Inductance (maximum value)	: Ls = 1600	[H] (2)
Effective Secondary Leakage Inductance	: Lsse = 24	[mH]
Primary DC Resistance	: Rip = 0.062	[Ω]
Secondary DC Resistance	: Ris = 174	[Ω]
Effective Secondary Internal Capacitance	: Cis = 300	[pF]

Low Frequency Information:

-3 dB Power Bandwidth starting at	: fu = 35	[Hz] (3)
Tuning Resistor in series with Primary	: Rep = 1	[Ω] (4,8)
-3dB Bandwith (with Rep) starting at	: f3L = 1.1	[Hz] (5)
Primary Impedance at 10 Hz (with Rep)	: Z10 = 18	[Ω] (6)

High Frequency Information (with Ces & Rep):

Capacitance of Electrostatic Loudspeaker	: Ces = 1	[nF]
2-nd order Resonance Frequency	: Fo = 28	[kHz] (7)
Q-factor 2-nd order HF filter section	: Q = 0.7	[] (8)
-3dB High Frequency Bandwidth	: F3H = 28	[kHz] (8)
Effective Primary Impedance at 20 kHz	: Z20k = 1.2	[Ω]

Conditional Remarks:

(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 up to $6 \cdot f3L$ can be met in practice.

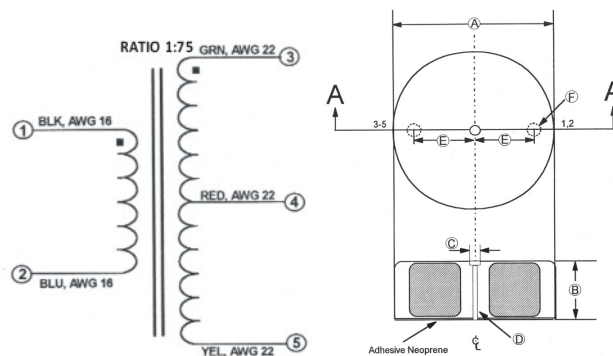
(6): This impedance is based on Ls,max (see (2)) and Rep.

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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Dimension in mm: A = 130 ; B = 65 ; C = flat ; D = internal-M6-nut ; E = 55

WIDE BANDWIDTH TOROIDAL STEP-UP TRANSFORMER TRAFCO-VDV-4134-ES

