



PAT 4144-00 Application: 6C33B-C 80 W
 Like the 300B, the Russian made 6C33B-C tubes are also popular. In Push Pull configuration they can handle 80 Watts. Primary impedance is 152 Ohms. The secondary impedances are 4 Ohms, 6 Ohms, and 8 Ohms offering fine tuning of the speaker loads to the precious power tubes. The frequency range extends up to 107 kHz without any feedback, while the power bandwidth (80 Watts nominal power) starts at 14 Hz.

Toroidal Output Transformer for Tube Amplifiers

Visit us on the web:

www.plitron.com

Special Toroidal Output Transformer Designs

PAT-4144-00 Ratings

Type & Application	4 OHM	6 OHM	8 OHM	
Primary Impedance	Raa = 0.152	Raa = 0.149	Raa = 0.152	[kΩ]
Secondary Impedance	Rls = 4	Rls = 6	Rls = 8	[Ω]
Turns Ratio Np/Ns	Ratio = 6.167	Ratio = 4.989	Ratio = 4.353	[]
Ultra Linear Tapping at	tap = 0	tap = 0	tap = 0	[%]
-.1 dB Frequency Range [Hz to KHz] ⁽³⁾	fif = 1.314 fhf = 111.814	fif = 1.301 fhf = 99.354	fif = 1.309 fhf = 93.978	
-1 dB Frequency Range [Hz to KHz] ⁽³⁾	fi1 = 0.561 fh1 = 253.892	fi1 = 0.555 fhf = 225.685	fi1 = 0.558 fh1 = 213.506	
-3 dB Frequency Range [Hz to KHz] ⁽³⁾	fi3 = 0.285 fh3 = 495.207	fi3 = 0.282 fhf = 440.76	fi3 = 0.284 fh3 = 417.18	
Nominal Power ⁽¹⁾	Pn = 80	Pn = 80	Pn = 80	[W]
-3 dB Power Bandwidth starting at	fu = 14	fu = 14	fu = 14	[Hz]
Total Primary Inductance ⁽²⁾	Lp = 42	Lp = 42	Lp = 42	[H]
Primary Leakage Inductance	lsp = 0.102	lsp = 0.113	lsp = 0.12	[mH]
Effective Primary Capacitance	cip = 0.311	cip = 0.319	cip = 0.324	[nF]
Total Primary DC Resistance	Rip = 4.63	Rip = 4.63	Rip = 4.63	[Ω]
Total Secondary DC Resistance	Ris = 0.13	Ris = 0.174	Ris = 0.22	[Ω]
Tubes Plate Resistance per section	ri = 0.07	ri = 0.07	ri = 0.07	[kΩ]
Insertion Loss	lloss = 0.265	lloss = 0.253	lloss = 0.245	[dB]
Q-factor 2nd order HF roll-off ⁽⁵⁾	Q = 0.336	Q = 0.323	Q = 0.318	[]
HF roll-off Specific Frequency ⁽⁵⁾	Fo = 1.312·10 ³	Fo = 1.224·10 ³	Fo = 1.182·10 ³	[kHz]
Quality Factor ⁽⁵⁾	QF = 4.118·10 ⁵	QF = 3.717·10 ⁵	QF = 3.5·10 ⁵	[]
Quality Decade Factor = log(QF) ⁽⁵⁾	QDF = 5.615	QDF = 5.57	QDF = 5.544	[]
Tuning Factor ⁽⁵⁾	TF = 4.215	TF = 4.2	TF = 4.194	[]
Tuning Decade Factor = log(TF) ⁽⁵⁾	TDF = 0.625	TDF = 0.623	TDF = 0.623	[]
Frequency Decade Factor ^(4,5)	FDF = 6.239	FDF = 6.193	FDF = 6.167	[]

(1): calculated under the conditions of balancing the DC-currents and the AC-anode voltages of the power tubes driving the transformer

(2): maximum value, measured over secondary, transferred to primary

(3): calculation at 1 mWatt in Rls; ri and Rls are pure Ohmic

(4): defined as FDF = log(fh3/fi3) = number of frequency decades transferred

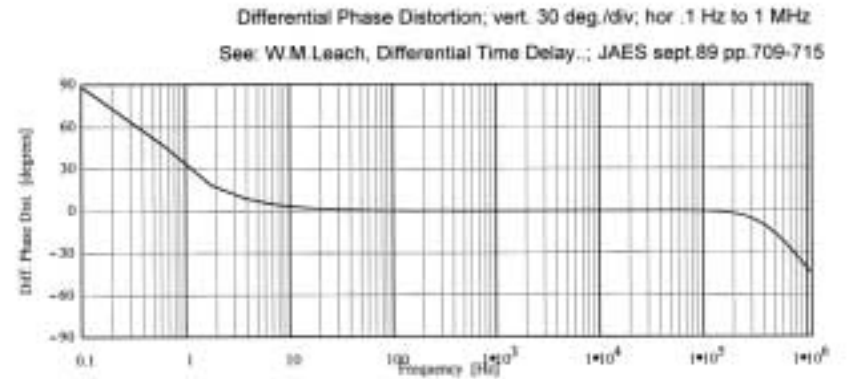
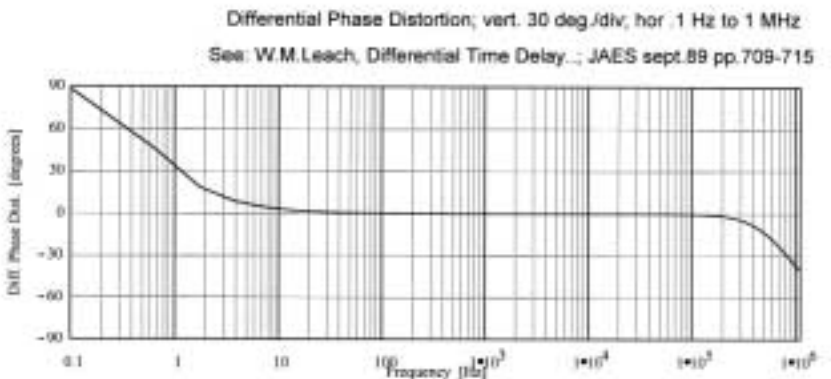
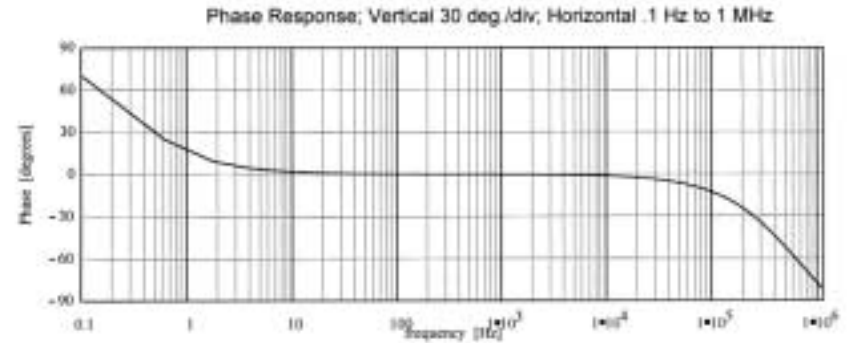
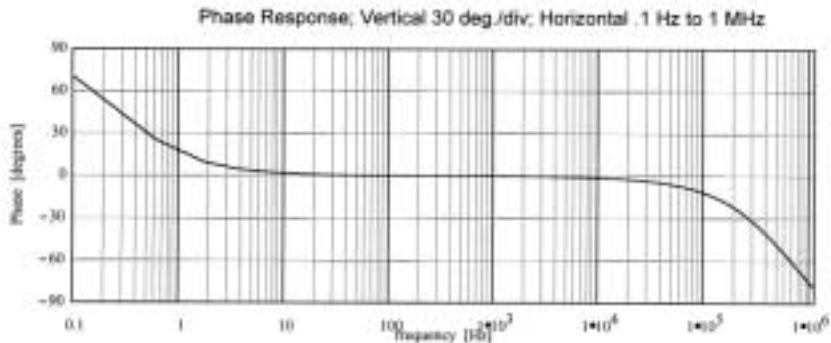
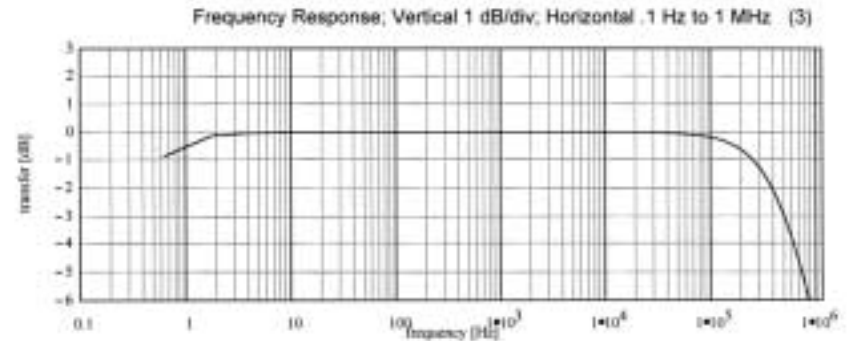
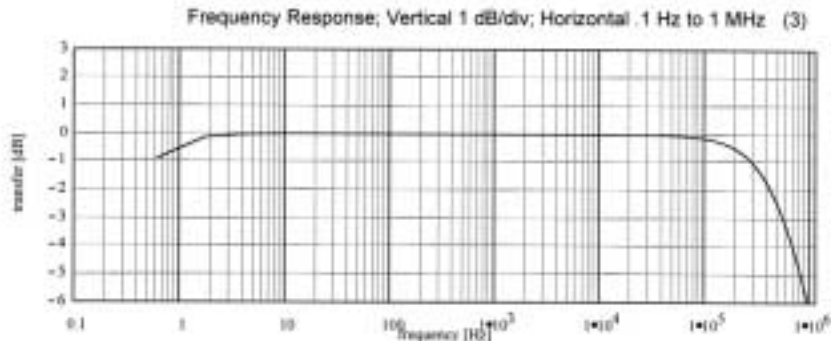
(5): ir. Menno van der Veen; Theory and Practise of Wide Bandwidth Toroidal Output Transformers; preprint 3887, 97th AES Convention San Fransico

(C): Copyright 1994 Vanderveen; Version 1.7; design date May 13, 1996

PAT-4144-00 Response Curves

4 OHM

6 OHM

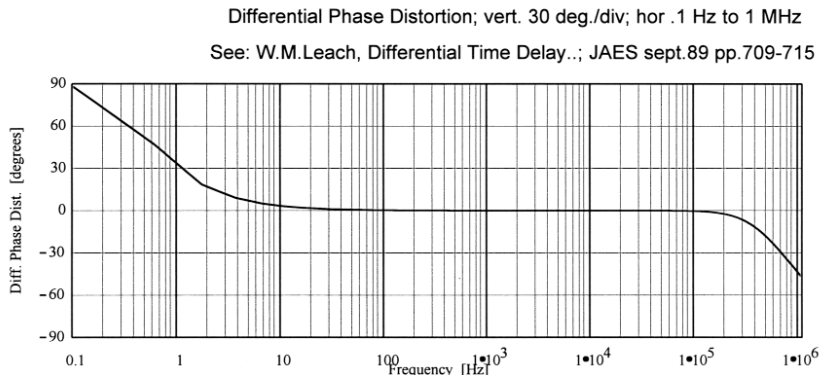
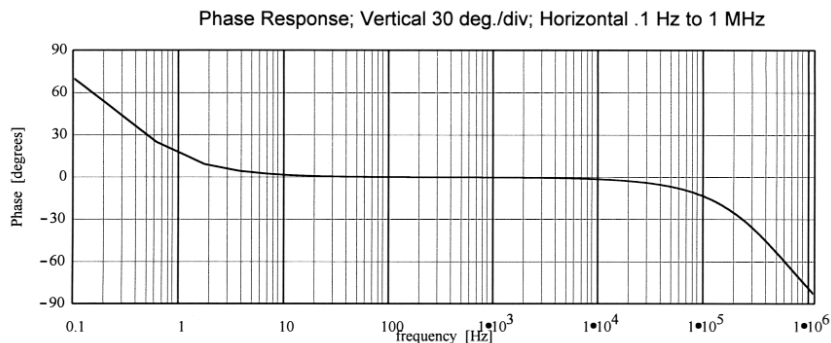
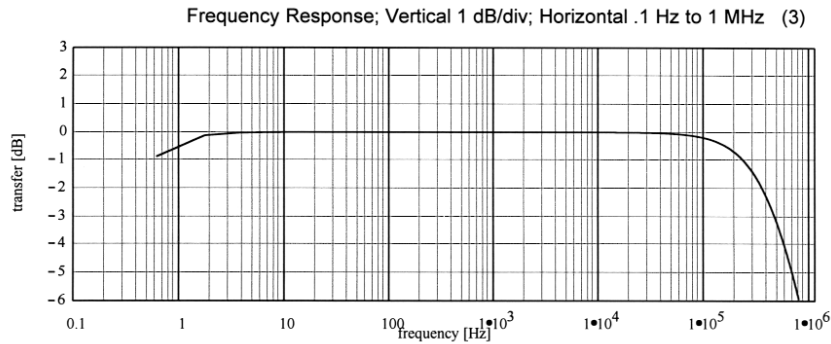


(C) Copyright 1994: Ir. buro Vanderveen

(C) Copyright 1994: Ir. buro Vanderveen

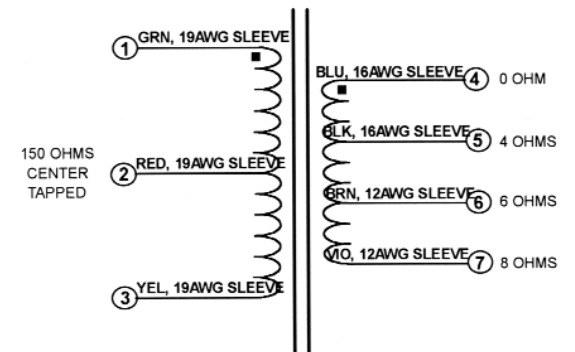
PAT-4144-00 Response Curves

8 OHM



(C): Copyright 1994: Ir. buro Vanderveen

Schematic



Mechanical

REF	Dimension, in mm
A	152.4 nominal
B	88.9 nominal
C	5/16-18T-NUT
D	20 +/- 5 (2 places)
E	70 +/- 5 (2 places)

Weight: 5.7kg
Lead Length: 200mm (+/- 10mm)

