PLITRON

Designed by Vanderveen

The Specialist Range allows tube amplifier designers to go beyond existing technologies. The Specialist Range introduces output transformers for use in amplifiers with sophisticated circuit topologies.

Toroidal Output Transformer for Tube Amplifiers

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PAT-4070-SSCR

Ratings

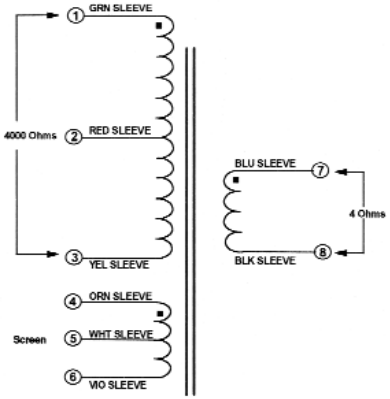
Type & Application	:	**VDV-4070-SSCR (tested Apr 23, 1998)**			
Primary Impedance	:	Raa = 3.998		[kΩ]	
Secondary Impedance	:	Rls = 4		[Ω]	
Turns Ratio Np/Ns	:	Ratio = 31.615		[ ]	
Ultra Linear Tapping at	:	tap = 40		[%]	
Flat Frequency Range	:	flf = 1.717	[Hz]->	fhf = 84.839	[kHz]
-1 dB Frequency Range	:	fl1 = 0.732	[Hz]->	fh1 = 131.044	[kHz]
-3 dB Frequency Range	:	fl3 = 0.373	[Hz]->	fh3 = 185.388	[kHz]
Nominal Power (1)	:	Pn = 70		[W]	
-3 dB Power Bandwidth starting at	:	fu = 14		[Hz]	
Total Primary Inductance (2)	:	$Lp = 1.163 \cdot 10^3$		[H]	
Primary Leakage Inductance to sec.	:	lsp = 3.2		[mH]	
Effective Primary Capacitance	:	cip = 0.345		[nF]	
Total Primary Resistance	:	Rip = 114		[Ω]	
Total Secondary Resistance	:	Ris = 0.1		[Ω]	
Tube-Resistance per section	:	ri = 4		[kΩ]	
Q-factor 2-nd order HF roll-off	:	Q = 0.701		[ ] (5)	
HF roll-off Specific Frequency	:	Fo = 187.148		[kHz] (5)	
Quality Factor = Lp/Lsp	:	$QF = 3.634 \cdot 10^5$		[ ] (5)	
Quality Decade Factor = log(QF)	:	QDF = 5.56		[ ] (5)	
Tuning Factor	:	TF = 1.369		[ ] (5)	
Tuning Decade Factor = log(TF)	:	TDF = 0.136		[ ] (5)	
Frequency Decade Factor (4)	:	FDF = 5.697		[ ] (5)	

(1): calculated under the conditions of balancing the DC-currents and the AC-anode voltages of the powertubes driving the transformer
(2): 240 Volt 60 Hz measurement over the total primary winding
(3): calculation at 1 mWatt in Rls; ri and Rls are pure Ohmic
(4): defined as FDF = log(fh3/fl3) = number of frequency decades transfered
(5): ir. Menno van der Veen: Theory and Practise of Wide Bandwidth Toroidal Output Transformers, 97-th AES Convention San Fransico, preprint
(@): copyright Vanderveen Sept 20 1994, Version 1.5, design date Jun 1, 98

Specialist Range Toroidal Output Transformers

- Separate screen grid winding
- 70 watts power
- primary impedance 4000 ohms
- Power bandwidth
  14 Hz – 185kHz (-3dB)

Schematic



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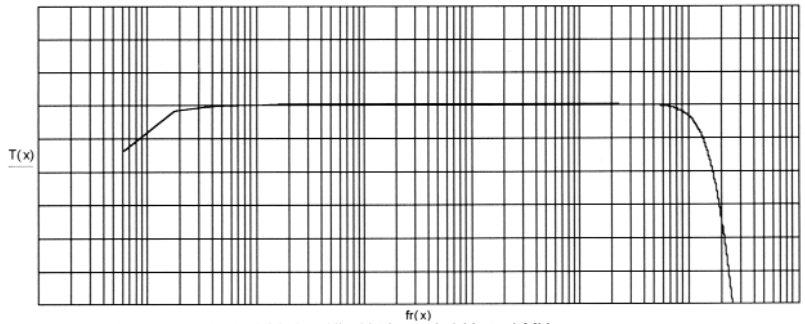
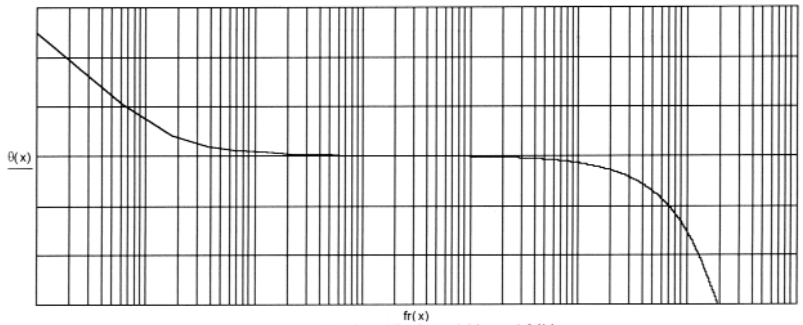
PAT–4070-SSCR

Response Curves

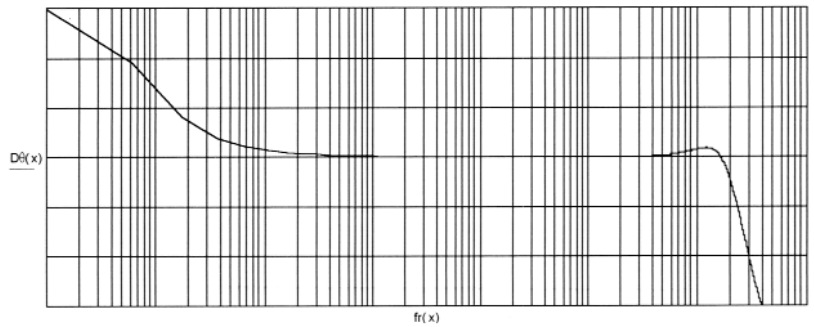
[dB] Frequency Response; Vertical 1 dB/div; Horizontal .1 Hz to 1 MHz (3)



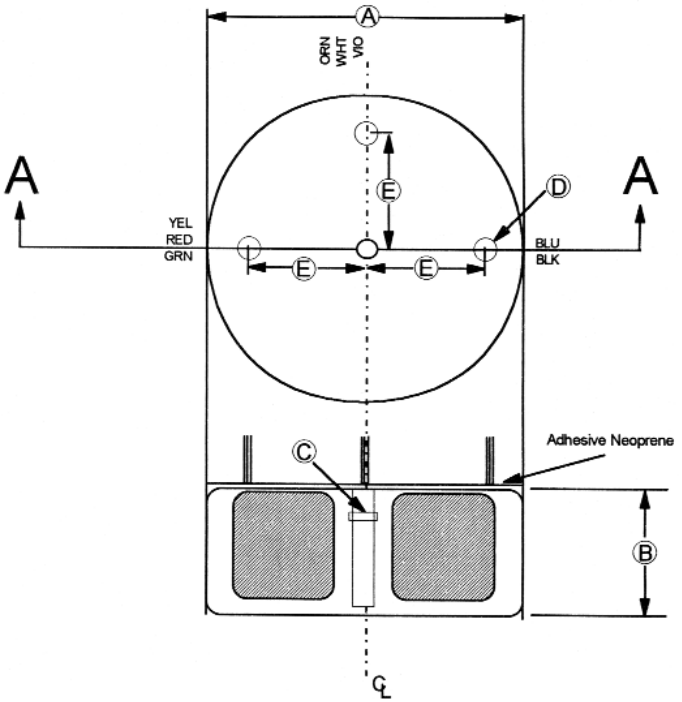
[degrees] Phase Response; Vertical 30 deg./div; Horizontal .1 Hz to 1 MHz



[degrees] Differential Phase Response; vert 30 deg./div; hor .1 Hz to 1 MHz
See: W.M.Leach, Differential Time Delay..; JAES sept.89 pp.709-715



Mechanical



REF	Dimension, in mm
A	152.4 nominal
B	88.9 nominal
C	5/16-18 T-NUT
D	16 nominal
E	50 +/- 3

Weight: 5.43kg
Lead Length: 300mm (+/- 10mm)

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