

HQ-5090-SE je „zver“ među torusnim single ended izlaznim transformatorima. Podržava snage do 90 W. Primenjliv je do primarnih 5 kOma i sekundarnih 0-2-4-8 Oma za dve 211-ice od 845 trioda spojenih u paralelu. Takođe, moguća je i primarna impedansa od 10 kOma i sekundarnih 0-4-8-16 Oma sa jednom CV4 od 845 ili ..... Ovih 10kOma pruža najmanju distorziju sa jednom izlaznom triodom, a reprodukcija mikrodetalja i ovde poseduje zadivljujući kvalitet. Želite najbolje? HQ-5090 je rešenje za vas.

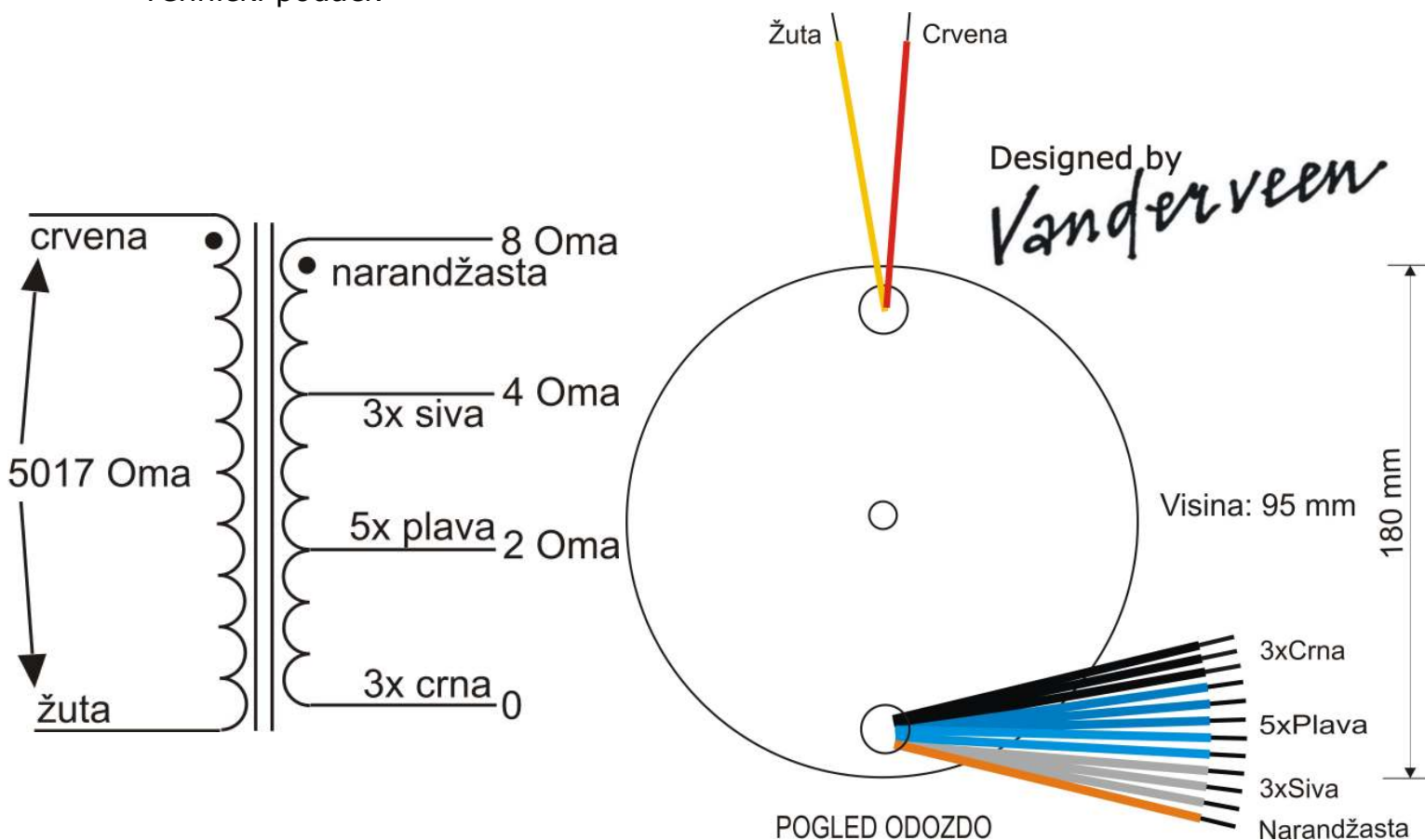
Transformator je zaliven u metalnom kružnom kućištu koje je plastificirano crnom mat bojom.

Dimenzije (prečnik x visina): 180mm x 95mm

Težina: 9,5 Kg.

Cena: 442€ (Dinarska protivvrednost).

Tehnički podaci:



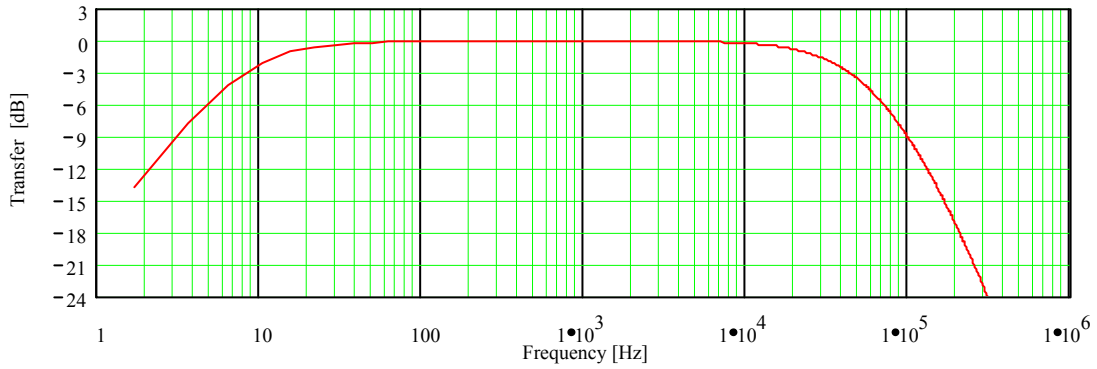
## HQ-5090-SE SINGLE ENDED OUTPUT TRANSFORMER

TYPE & APPLICATION	:	VDV-HQ-5090-SE: 211 & equivalents	
Primary Impedance	:	$R_{aa} = 5.017$	[k $\Omega$ ]
Secondary Impedance	:	$R_{ls} = 4$	[ $\Omega$ ]
Turns Ratio $N_p/N_s$	:	Ratio = 35.415	[ ]
-1 dB Frequency Range [Hz] - [kHz]	:	$f_{lf} = 37.287$	$f_{hf} = 10.195$
-1 dB Frequency Range [Hz] - [kHz]	:	$f_{l1} = 15.904$	$f_{h1} = 22.975$
-3 dB Frequency Range [Hz] - [kHz]	:	$f_{l3} = 8.094$	$f_{h3} = 43.791$
Nominal Power (1)	:	$P_n = 90$	[W]
Full Power Bandwidth Starting at	:	$f_{Pnom} = 28$	[Hz]
Total Primary Inductance (2)	:	$L_p = 32$	[H]
Primary Leakage Inductance to sec.	:	$l_{sp} = 28$	[mH]
Effective Primary Capacitance	:	$C_{ip} = 0.44$	[nF]
Saturation Primary Current	:	$2 \cdot I_{dc} = 378.838$	[mA]
Total Primary DC Resistance	:	$R_{ip} = 88.3$	[ $\Omega$ ]
Total Secondary DC Resistance	:	$R_{is} = 0.072$	[ $\Omega$ ]
Tubes Plate Resistance	:	$r_p = 2.3$	[k $\Omega$ ]
Insertion Loss	:	$l_{loss} = 0.152$	[dB]
Q-factor 2-nd order HF roll-of (5)	:	$Q = 0.438$	[ ]
HF roll-off Specific Frequency (5)	:	$F_o = 81.856$	[kHz]
Quality Factor = $L_p/L_{sp}$ (5)	:	$QF = 1.143 \cdot 10^3$	[ ]
Quality Decade Factor (5)	:	$QDF = 3.058$	[ ]
Tuning Factor (5)	:	$TF = 4.734$	[ ]
Tuning Decade Factor (5)	:	$TDF = 0.675$	[ ]
Frequency Decade Factor (4,5)	:	$FDF = 3.733$	[ ]

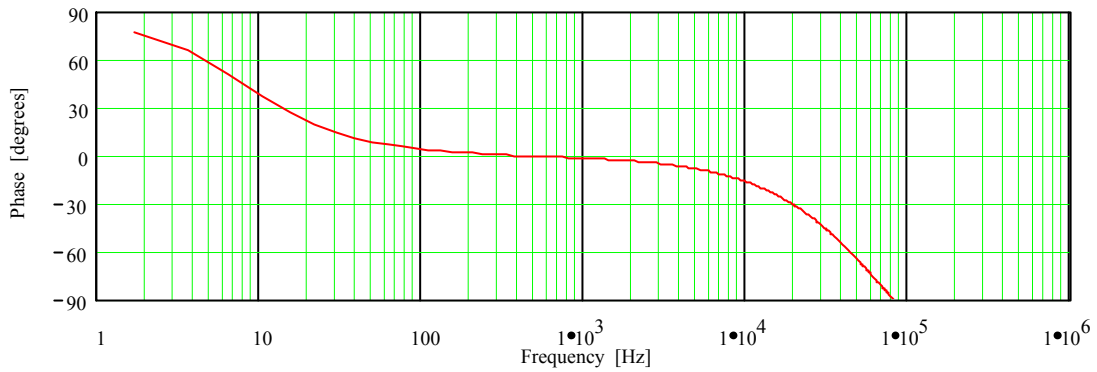
- (1): calculated and measured under the conditions of applying  $0.5 \cdot I_{dc-sat}$ .  
(2): 230 Volt 50 Hz measurement over the total primary winding  
(3): calculated and measured at 1 Watt in  $R_{ls}$ ;  $r_i$  and  $R_{ls}$  are pure Ohmic  
(4): defined as  $FDF = \log(f_{h3}/f_{l3}) =$  number of frequency decades transferred  
(5): ir. Menno van der Veen; Theory and Practise of Wide Bandwidth Toroidal Output Transformers, 97-th AES Convention San Francisco, preprint  
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[dB] Frequency Response; Vertical: 3 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

