

30P16/PL82

OUTPUT PENTODE

TENTATIVE

GENERAL

The 30P16/PL82 is a miniature based indirectly heated output pentode having a maximum anode dissipation of 9 watts. It is intended for use as an Audio or Frame Time-Base Output Valve in AC/DC Television Receivers having series connected heater chains.

RATING

Heater Current (amps)	I_h	0.3
Heater Voltage (volts)	V_h	16.5
Maximum Anode Voltage (volts)	$V_a(\text{max})$	250
Maximum Screen Voltage (volts)	$V_{g_2}(\text{max})$	250
Maximum Anode Dissipation (watts)	P_a	9
Maximum Screen Dissipation (watts)	P_{g_2}	2.5
Mutual Conductance (mA/V)	g_m	9*
Anode Impedance (ohms)	r_a	20,000*
Inner Amplification Factor ($\mu_{g_1-g_2}$)		10*
Maximum Mean Cathode Current (mA)	$I_{k-av}(\text{max})$	75
Maximum Heater to Cathode Voltage (volts)	$V_{h-k}(\text{max})$	200†

* Taken at $V_a = V_{g_2} = 170$ volts. $I_a = 53$ mA. $V_{g_1} = -10.4$ volts

† Measured with respect to the higher potential heater pin.

INTER-ELECTRODE CAPACITANCES (pF)

Anode/Earth	C_{out}	6.2
Anode/Control Grid	C_{a,g_1}	1.0
Grid/Earth	C_{in}	11.0

"Earth" denotes all remaining earth potential electrodes including heater, shields and cathode.

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DIMENSIONS

Maximum Overall Length (mm)	78.5
Maximum Diameter (mm)	22.2
Maximum Seated Height (mm)	71.5
Approximate Nett Weight (ozs)	$\frac{1}{2}$
Approximate Packed Weight (ozs)	$\frac{3}{4}$

MOUNTING POSITION—Unrestricted but adequate ventilation should be provided.

TYPICAL OPERATION—Audio Output (Class A)

Anode Voltage (volts)	V_a	200	170
Screen Voltage (volts)	V_{g2}	200	170
Anode Current (mA) (Quiescent)	$I_{a(o)}$	45	53
Screen Current (mA) (Quiescent)	$I_{g2(o)}$	8.5	10
Grid Bias (volts) (approx)	V_{g1}	-14.4	-10.4
Power Output (watts)	P_{out}	4.2†	4†
Anode Load (ohms)	R_a	4,000	3,000
Input Swing (volts r.m.s.)	$V_{in} (rms)$	7†	6†
Input Swing for 50 mW output (volts r.m.s.)	$V_{in} (rms)$	0.55	0.5

† For 10% total harmonic distortion.

TYPICAL OPERATION—Frame Time-Base

The frame output stage should be designed to allow for valve spread and deterioration during life in addition to component variation. Values of total peak anode current available for a new average valve and at assumed end-of-life point for any valve are as follows:—

	V_a	V_{g2}	V_{g1}	$I_a (mA)$
Average new valve	50	170	-1	140
Assumed end-of-life condition	50	170	-1	90

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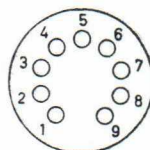
OUTPUT PENTODE

Indirectly heated—for series operation

TENTATIVE

BULB—Clear

BASE—Noval (B9A)



Viewed from Free end of Pins

VALVE HOLDER—Ediswan Clix VH599/9 series.

CONNECTIONS

Pin 1	Internal Connection	IC
Pin 2	Control Grid	g1
Pin 3	Cathode, Suppressor Grid	k,g3
Pin 4	Heater	h
Pin 5	Heater	h
Pin 6	Internal Connection	IC
Pin 7	Anode	a
Pin 8	Internal Connection	IC
Pin 9	Screen Grid	g2

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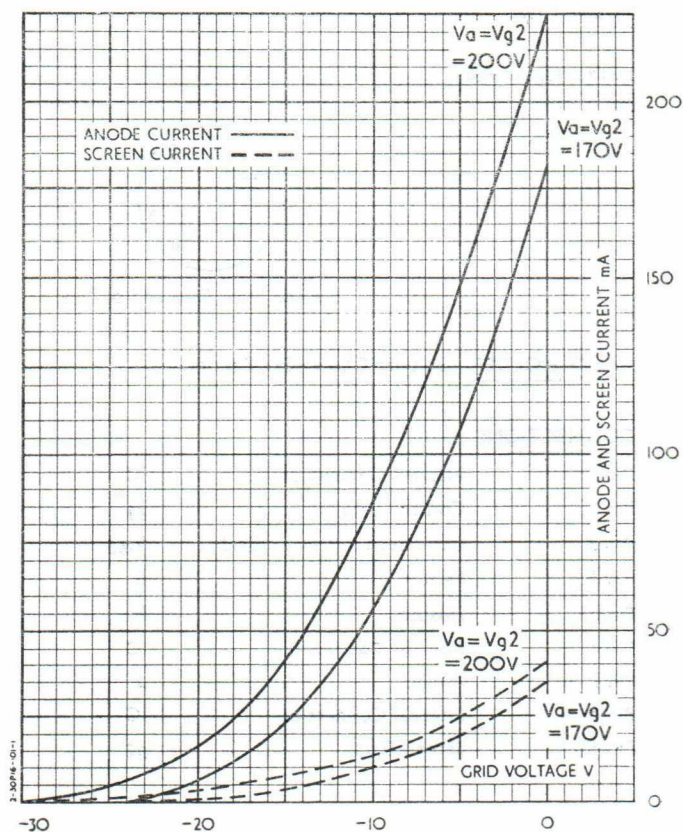
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TENTATIVE

CHARACTERISTIC CURVES: $I_a, I_{g2}/V_{g1}$

Heater Current = 0.3 amps



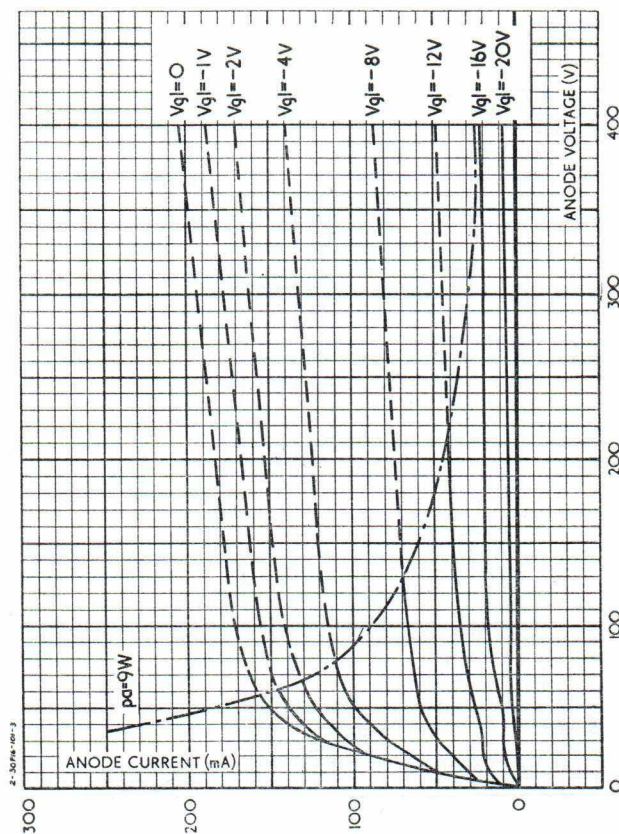
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Indirectly heated—for series operation

CHARACTERISTIC CURVES : I_a/V_a

$V_{g2}=170V$



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OUTPUT PENTODE

Indirectly heated—for series operation

CHARACTERISTIC CURVES : I_a/V_a $V_{g2} = 200V$ 