

ELECTRONIC TUBE REFERENCE

UCL82

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA
2 SECTIONS
CONSTRUCTION
PENTODE-TRIODE

Series-heater triode/pentode combination for audio voltage amplification and approximately 5 W power output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9EX	BASE PINS	9
NOMINAL HEATER	50 V / 100 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9EX - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	B	G1 – Control Grid	CONNECTED
PIN2	A	G3 – Suppressor Grid	CONNECTED
PIN2	A	K – Cathode	CONNECTED
PIN3	A	G1 – Control Grid	CONNECTED
PIN4	–	H – Heater	CONNECTED
PIN5	–	H – Heater	CONNECTED
PIN6	A	P – Plate (Anode)	CONNECTED
PIN7	A	G2 – Screen Grid	CONNECTED
PIN8	B	K – Cathode	CONNECTED
PIN9	B	P – Plate (Anode)	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	28000 Ω
TRANSCONDUCTANCE	0.0022 S
AMPLIFICATION FACTOR	70
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Published ratings and characteristics promoted from the approved source.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	16000 Ω
TRANSCONDUCTANCE	0.0075 S
AMPLIFICATION FACTOR	9.5
MAXIMUM PLATE VOLTAGE	600 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	7 W
MAXIMUM SCREEN DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	50 mA
<i>Published ratings and characteristics promoted from the approved source.</i>	

Triode-pentode for audio-frequency voltage and output amplification. The supplied French datasheet was translated to English for descriptive output.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1957 Philips Receiving and Amplifying Tubes

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1957 PHILIPS RECEIVING AND AMPLIFYING TUBES

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Audio output stage	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Output	5 W	Representative published ClassA point



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X Tesla

Published test conditions and operating points. Values on this page are preserved as reported by this source.

195X TESLA

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	50 V	Nominal
HeaterCurrentNominal	100 mA	Nominal
Maximum Plate Voltage	300 V	—
Maximum Plate Dissipation	1 W	—

195X TESLA

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	50 V	Nominal
HeaterCurrentNominal	100 mA	Nominal
Maximum Plate Voltage	600 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	7 W	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1963 Philips Electron Tubes Handbook V1

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	AF preamplifier
Plate current	3.5 mA	AF preamplifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2200 μ S	AF preamplifier
Amplification factor	70	AF preamplifier

1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	ClassA
Screen voltage	170 V	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid voltage	-11.5 V	ClassA
Plate current	41 mA	ClassA
Screen current	9 mA	ClassA
Maximum plate dissipation	7 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7500 uS	—
Plate resistance	16 kohm	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1967 Mullard Receiving and Amplifying Valves

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
cathodes and	100	Characteristic

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va	100 V	CAPACITANCES (measured without external shie ld)
(gm	2.5	CAPACITANCES (measured without external shie ld)
ra	28 k0	CAPACITANCES (measured without external shie ld)
cathodes and	100	CAPACITANCES (measured without external shie ld)

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
microphon y in circu its in wh ich the input voltage is ~	0 V	TRIODE SECTION AS A.F. AMPLIFIER
for an output of	50	TRIODE SECTION AS A.F. AMPLIFIER
cathodes and	100	TRIODE SECTION AS A.F. AMPLIFIER

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 2 · Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va	200 V	CAPACITANCES (measured without external shie ld)
Vg	200 V	CAPACITANCES (measured without external shie ld)
Vg I	16 V	CAPACITANCES (measured without external shie ld)
Vg2	200 V	CAPACITANCES (measured without external shie ld)
Vg1	16 V	CAPACITANCES (measured without external shie ld)
Vln (r. rn.s.) Pout =	600 mV	CAPACITANCES (measured without external shie ld)
Ra	5.6 k0	CAPACITANCES (measured without external shie ld)
* Pout	3.5 W	CAPACITANCES (measured without external shie ld)
Pout	9.8 W	CAPACITANCES (measured without external shie ld)
cathodes and	100	CAPACITANCES (measured without external shie ld)

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va max	250 V	LIMITING VALUES
Vg	550 V	LIMITING VALUES
Vg	250 V	LIMITING VALUES
Rg	2	LIMITING VALUES

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Rg1__k max. (fixed bias)	1	LIMITING VALUES
Rg _ k max. (se lf bias)	3	LIMITING VALUES
Rg _ k max. (fixed bias)	1	LIMITING VALUES
Rg _ k max. (grid cur rent biasing)	22	LIMITING VALUES
cathodes and	100	LIMITING VALUES
CON TRO L-GRID VOLTAG E AS PARAM ETER. Vg	100	LIMITING VALUES
CO N TROL-GRID VO LTAG E AS PARAM ETER. V g	200 V	LIMITING VALUES
Vg (V)	0 V	LIMITING VALUES
PERFORMAN C E OF SING LE UCL8	100 A	LIMITING VALUES
PERFORMANCE O F SINGLE UC L8	200 A	PERFORMANCE O F SINGLE UC L82 CLASS 'A' AMPLIFIER. V, =V g 2 = 200V
cathodes and	100	PERFORMANCE O F SINGLE UC L82 CLASS 'A' AMPLIFIER. V, =V g 2 = 200V
PE RFO RMA NCE O F UCL	100 V	PERFORMANCE O F SINGLE UC L82 CLASS 'A' AMPLIFIER. V, =V g 2 = 200V



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1968 Mazda Belvu

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1968 MAZDA BELVU

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension filament ...c VI	50 V	—
Courant filament . .qIf	100 mA	—
Capacité anode/ grille n° 1 Ca/	0.3 pF	—
Capacité grille n° 1/ filament CglfĚ	0.3 pF	—
Capacité grille/filament . . Cg/f	0.02 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacité anodeTriode/ grille n° 1 Pentode CaT/gP	0.02 pF	—
Capacité grilleTriode/anode Pentode C&T/aP	0.02 pF	—
Capacité grilleTriode/ grille n° 1 Pentode..... CgeT/g,P	0.025 pF	—
Capacité anodeTriode/anode Pentode..... CaT/aP ,	25 pF	—
Tension d'anode à courant nul !s	550 V	—
Tension d'anode ... vosseus	250 V	—
Tension de grille n° 2 à courant nul	550 V	—
Tension de grille n° 2	250 V	—
Pissipation d'anode	7 W	—
Dissipation de grille n° 2 00e	2 W	—
Dissipation de crête de grille n° 2	3.2 W	—
Courant de cathode	50 mA	—
Tension entre filament et cathode VÊk	200 V	—
Tension d'anode à courant nul Va bl	550 V	—
Tetision d'anode Va	250 V	—
Dissipation d'anode ... Pa	1 W	—
Courant de cathode... cessosrsecaseraseserecnsacerseasecasecsrcrcesee ÎK	15 mA	—
Tension entre filament et cathode VÊk	200 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacité d'entrée.....s Ce	9.3 pF	—
Capacité de sortie Cs	8 pF	—
Capacité d'entrée neereenmennenns CE	21 pF	—
Capacité de sortie Cs	43 pF	—
Capacité anode/ grille Ca/g	4.4 pF	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension d'Anod® creicereerrieircenseresveuenc Va	170 V	—
Tension de grille n°2. VE	170 V	—
Tension de grille n°e1 Veg	-11.5 V	—
Courant de grille n° 2 csvereceseceee secereesececoec 182	9 mA	—
ve vavs vuce secasecase se saseeesene e S	7.5 mA	—
Tension d'AnodE ssersoreceeececnnsennnnnnenns Va	100 V	—
Courant d'anode la	3.5 mA	—
Pente... .. \$	2.2 mA	—
VN 100	170 v	—
Rk 170	2600 Ω	—
Ra 3	3.25 kΩ	—
Ps 0 0,05 1 0 0,05	3.2 W	—
Rk (1) 140	125 Ω	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1972 Philips Receiving Tubes

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1972 PHILIPS RECEIVING TUBES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	30 V	Nominal
HeaterCurrentNominal	100 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Cathode Current	15 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification Factor	70	Typical

1972 PHILIPS RECEIVING TUBES

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	30 V	Nominal
HeaterCurrentNominal	100 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	7 W	—
Maximum Screen Dissipation	2 W	—
Maximum Cathode Current	50 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	7500 μ S	Typical
Amplification Factor	9.5	Typical
Plate Resistance	16000 ohm	Typical



TUBE TINKER
ELECTRON TUBE DATABASE

SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1975 RCA RC30

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1975 RCA RC30

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	550 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Plate current	3.5 mA	ClassA

1975 RCA RC30

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	900 V	—
Screen-grid supply voltage	550 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	ClassA
Screen-grid voltage	200 V	ClassA
Grid No.1 voltage	-16 V	ClassA
Plate current	35 mA	ClassA
Screen-grid current	7 mA	ClassA



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1999 Philips E-Z

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1999 PHILIPS E-Z

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I_a , mA	1 A	Anode current I_a , mA
Heater current 100 mA	100 a	Heater current 100 mA
Heater voltage 30 Vv	30 a	Heater voltage 30 Vv
Anode to all except grid C_{ag} 4.3 pF	4.3 A	Anode to all except grid C_{ag} 4.3 pF
Grid to all except anode $C_{g(a)}$ 2.7 pF	2.7 a	Grid to all except anode $C_{g(a)}$ 2.7 pF
Anode to grid C_{ag} 4.4 pF	4.4 A	Anode to grid C_{ag} 4.4 pF
Anode to all except grid No. 1 $C_{a(g1)}$ 8.0 pF	8 A	Anode to all except grid No. 1 $C_{a(g1)}$ 8.0 pF
Grid No. 1 to all except anode $C_{g1(a)}$ 9.3 pF	1 a	Grid No. 1 to all except anode $C_{g1(a)}$ 9.3 pF
Anode voltage V_a 100 Vv	100 A	Anode voltage V_a 100 Vv
Grid voltage V_g 0 Vv	0 v	Grid voltage V_g 0 Vv
Anode current I_y 3.5 mA	3.5 A	Anode current I_y 3.5 mA
Transconductance S 2.2 mA/V	2.2 a	Transconductance S 2.2 mA/V
Amplification factor L 70	70 A	Amplification factor L 70 -
Anode voltage V_a 170 v	170 A	Anode voltage V_a 170 v
Grid No. 1 voltage V_{g1} -11.5 V	1 v	Grid No. 1 voltage V_{g1} -11.5 V
Anode current I_y 41 mA	41 A	Anode current I_y 41 mA
Transconductance S 7.5 mA/V	7.5 a	Transconductance S 7.5 mA/V
Amplification factor H_{gog_y} 9.5	9.5 A	Amplification factor H_{gog_y} 9.5 -
Internal resistance R 16 k@	16 a	Internal resistance R 16 k@
A) Signal source resistance R_g 0.22 MQ	220 mA	A) Signal source resistance R_g 0.22 MQ
Grid resistor R_g 3 MQ	3 s	Grid resistor R_g 3 MQ
Grid resistor of next stage $R_{g'}$ 0.68 M	0.68 s	Grid resistor of next stage $R_{g'}$ 0.68 M
Supply voltage V_p 170 100 Vv	100 S	Supply voltage V_p 170 100 Vv
Cathode resistor R_y 2.7 2.7 kQ	2.7 a	Cathode resistor R_y 2.7 2.7 kQ

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode resistor R, 220 220 kS2	2 A	Anode resistor R, 220 220 kS2
Anode current Iq 0.43 0.23 mA	230 mA	Anode current Iq 0.43 0.23 mA
Voltage gain Vo/Vi 1) 51 47	47 V	Voltage gain Vo/Vi 1) 51 47 -
B) Signal source resistance Rg 0.22 MQ	0.22 S	B) Signal source resistance Rg 0.22 MQ
Grid resistor Rg 22 MQ	22 s	Grid resistor Rg 22 MQ
Grid resistor of next stage Rg 0.68 MQ	0.68 s	Grid resistor of next stage Rg 0.68 MQ

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to heater Cgf max. 0.02 pF	0.02 a	Grid to heater Cgf max. 0.02 pF
Anode to grid No.1 Cag; max. 0.3 pF	300 mA	Anode to grid No.1 Cag; max. 0.3 pF
Grid No.1 to heater Cglf max. 0.3 pF	1 a	Grid No.1 to heater Cglf max. 0.3 pF
Max. output voltage Vo max 25 15 VRums	15 Ma	Max. output voltage Vo max 25 15 VRums

1999 PHILIPS E-Z

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode triode to grid No.1 pentode CaTglP max., 0.02 pF	20 mA	Anode triode to grid No.1 pentode CaTglP max., 0.02 pF
Grid triode to anode pentode CgTaP max. 0.02 pF	0.02 a	Grid triode to anode pentode CgTaP max. 0.02 pF
Grid triode to grid No. 1 pentode Cng 1p max. 0.025 pF	1 ma	Grid triode to grid No. 1 pentode Cng 1p max. 0.025 pF
Anode triode to anode pentode CaTaP max. 0.25 pF	250 mA	Anode triode to anode pentode CaTaP max. 0.25 pF

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.2 voltage Vg2 170 v	2 v	Grid No.2 voltage Vg2 170 v
Grid No.2 current Ig2 9 mA	9 mA	Grid No.2 current Ig2 9 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply voltage Vpa	170 S	Supply voltage Vpa = Vbg2 100 170 v