



ELECTRONIC TUBE REFERENCE

PCF801

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Triode-pentode for VHF frequency-converter service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9QA	BASE PINS	9
NOMINAL HEATER	8.5 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9QA - TERMINAL PINOUT

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

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	18000 Ω
TRANSCONDUCTANCE	0.009 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	125 V
MAXIMUM PLATE DISSIPATION	1.5 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Published ratings and characteristics promoted from the approved English source.</i>	

SECTION2 Pentode	
PLATE RESISTANCE	350000 Ω
TRANSCONDUCTANCE	0.011 S
AMPLIFICATION FACTOR	55
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	2 W
MAXIMUM SCREEN DISSIPATION	0.55 W
MAXIMUM CATHODE CURRENT	18 mA
<i>Published ratings and characteristics promoted from the approved English source.</i>	

Triode-pentode for VHF frequency-converter service.

SOURCE OPERATING CONDITIONS

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1959 Telefunken

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

1959 TELEFUNKEN

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	—
Plate Current	15 mA	—

1959 TELEFUNKEN

Section 2 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	170 V	—
Screen Voltage	120 V	—
Plate Current	10 mA	—

SOURCE OPERATING CONDITIONS

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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	Oscillator
Control-grid voltage	-3 V	Oscillator
Plate current	15 mA	Oscillator
Oscillator supply voltage	200 V	Oscillator
Oscillator voltage	4.5 V RMS	Oscillator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	9000 μ S	Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	20	Section1

1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	Mixer
Screen voltage	120 V	Mixer
Control-grid voltage	-1.2 V	Mixer
Plate current	10 mA	Mixer
Screen current	3 mA	Mixer

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	11000 μ S	Section2
Plate resistance	350000 Ω	Minimum
Amplification factor	55	Section2



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1967 Mullard Receiving and Amplifying Valves

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1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Grid No.1 voltage	-3 V	ClassA
Plate current	15 mA	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	600 V	—

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	ClassA
Screen-grid voltage	120 V	ClassA
Grid No.1 voltage	-1.2 V	ClassA
Plate current	10 mA	ClassA
Screen-grid current	3 mA	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	600 V	—
Screen-grid supply voltage	600 V	—



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1968 Mazda Belvu

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1968 MAZDA BELVU

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	8.5 V	Nominal
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Plate Dissipation	1.5 W	—
Maximum Cathode Current	20 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5000 μS	Typical
Amplification Factor	50	Typical
Plate Resistance	18000 ohm	Typical

1968 MAZDA BELVU

Section 2 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	8.5 V	Nominal

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterCurrentNominal	300 mA	Nominal
Maximum Plate Voltage	250 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	2.5 W	—
Maximum Screen Dissipation	0.5 W	—
Maximum Cathode Current	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6000 μ S	Typical
Plate Resistance	300000 ohm	Typical


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SOURCE OPERATING CONDITIONS

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1972 Philips Receiving Tubes

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1972 PHILIPS RECEIVING TUBES

Section 1 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	VHF0scillator text	—

1972 PHILIPS RECEIVING TUBES

Section 2 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	VHFMixer_IFAmplifier text	—


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1973 Mazda Valves Binder 2

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1973 MAZDA VALVES BINDER 2

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
changer and I.F, amplifier at frequencies up to	200 Mc/s	—
Pentode Input cin(p)	62 pF	—
Pentode Output cout(p)	3.7 pF	—
Pentode Anode to Grid 1 cap-g1 0	9 pF	—
Pentode Anode to Grid 1 Cap-g1 <	12 pF	—
Grid 1 to Grid 2 cS1_S2	1.6 pF	—
Triode Input cin(t)	3.3 pF	—
Triode Output cout(t)	1.7 pF	—
Anode Triode to Grid Triode cat-gt	18 pF	—
Anode Pentode to Anode Triode Cap-at <	25 pF	—
Anode Pentode to Grid Triode cap-gt <	10 pF	—
Grid 1 to Anode Triode c8i_at <	0.01 pF	—
Grid 1 to Grid Triode cS1_gt <	10 pF	—
Anode Voltage Va 100	170 V	—
Screen Grid Voltage Vg2 –	120 V	—
Control Grid Voltage Vg1 -30	-14 V	—
Anode Current Ia 15	10 mA	—
Screen Grid Current Ig2	30 mA	—
Mutual Conductance gm 90	11 mA	—
Anode Current Ia 10	93 mA	—
Screen Grid Current I\$z 30	2.9 mA	—
R.M.S. Heterodyne Voltage Vhet(r.m.s.) 16	16 V	—
Conversion Conductance gc 50	47 mA	—
Anode Current I0	13 mA	—
Screen Grid Current Igz 30	3.9 mA	—
Mutual Conductance gm 11	145 mA	—
Control Grid Voltage for gm =	11 mA	—
Input Resistance at	50 Mc/s	—
R.M.S. Heterodyne Voltage Vhet(r.m.s.) 4.5	3.3 V	—
Anode Current Ia 16	12 mA	—
Mutual Conductance gm 3.7	3.7 mA	—
Vg =	170 V	—
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4 IIIIIIIIIIIl~~~~~!il~~~~i!111111!~1!ii111111111111IIIIIIIIIIIIIIIIIIII	0.4 a	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current Ib	300 mA	—
Heater Voltage Vh	8.5 V	—
Maximum Anode Dissipation pa(max) 15	20 W	—
Maximum Screen Grid Dissipation (V8i =	0 V	—
Maximum Anode Supply Voltage Va(b)max 550	550 V	—
Maximum Anode Voltage Va(max) 125	250 V	—
Maximum Screen Grid Supply Voltage V\$2(b)max —	550 V	—
Maximum Screen Grid Voltage VS2 (max) —	250 V	—
Maximum Negative Control Grid Voltage -VS1(max) 50	50 V	—
Maximum Cathode Current Ik(max) 20	18 mA	—
t For V81 equal to or more negative than 52 V then pg2 (max) =	2 W	—
Anode Supply Voltage Va(b) 200	200 V	—
Screen Grid Supply Voltage Vg2(b) 200	200 V	—
Control Grid Supply Voltage Vgi(b) -1.4	0 V	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1975 RCA RC30

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1975 RCA RC30

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Grid No.1 voltage	-3 V	ClassA
Plate current	15 mA	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	600 V	—

1975 RCA RC30

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	ClassA
Screen-grid voltage	120 V	ClassA
Grid No.1 voltage	-1.2 V	ClassA
Plate current	10 mA	ClassA
Screen-grid current	3 mA	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate supply voltage	600 V	—
Screen-grid supply voltage	600 V	—


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SOURCE OPERATING CONDITIONS

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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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I_y	15 mA	—
Transconductance S	9 mA/V	—
Heater current I_f	300 mA	—
Heater voltage V_i	8.5 V	—
Grid to all except anode	3.3 pF	—
Ca(g)	1.7 pF	—
Anode to grid	1.8 pF	—
Pentode anode to triode anode CaPaT max	0.025 pF	—
Pentode anode to triode grid CanT max.,	0.01 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode grid No. 1 to triode anode CglPaT max	0.01 pF	—
Pentode grid No. 1 to triode grid	0.01 pF	—
Anode current 16	12 mA	—
ST	~1.4 V	—
Vg, [1]	0 V	—
Vg, [2]	5 V	—
Vg, [3]	-1 V	—
{ Va	170 V	—
FIT 1 Vb	200 V	—
Ril Vb92,	200 V	—
Hboo [1]	200 V	—
Hboo [2]	200 V	—

1999 PHILIPS E-Z

Section 2 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance S	11 mA/V	—
Grid No.1 to grid No.2	1.6 pF	—
Grid No. 2 voltage	120 V	—
Anode current	10 mA	—
Transconductance	11 mA	—
Equivalent noise resistance	1.5 kΩ	—
Grid No.1 supply voltage Vbgl -1.4	0 V	—
Anode current Iy 10	13 mA	—
Grid No.2 current Igz 3.0	3.9 mA	—
Transconductance S 11	14.5 mA/V	—
Input resistance at	50 MHz	—
Anode current 10	9.3 mA	—
Grid No.2 current 3.0	2.9 mA	—
Grid No.2 voltage Vgz max	250 V	—
Grid No.1 voltage -Vgl max. oS	0 V	—
Grid No.1 resistor, fixed bias Rgl max	1 MΩ	—
automatic bias Rgl max	2.2 MΩ	—
Cathode current I max	18 mA	—
Anode voltage Vag max,	550 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode supply voltage Vba max	2350 V	—
Anode voltage Va max	125 V	—
Anode dissipation W, max	1.5 W	—
Grid voltage ~Vg max	50 V	—
Cathode current I max	20 mA	—
Cathode to heater voltage Vit max	100 V	—
voltage between heater and cathode should not exceed	100 V	—
heater and cathode should not exceed	50 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to all except anode	5.9 pF	—
Anode to all except grid No. 1	3.7 pF	—
Cagl	0.009 pF	—
Cag 1 max	0.012 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode supply voltage Vpa	200 V	—
Grid No. 2 supply voltage Vbgz	200 V	—
Anode voltage Vag max	530 V	—
Va max	250 V	—
Anode dissipation Wy max	2 W	—
Grid No.2 voltage VgZ0 max	550 V	—
Grid No.2 supply voltage Vbg2 max	250 V	—

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