



ELECTRONIC TUBE REFERENCE

PCF80

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Triode-pentode for VHF oscillator and frequency-converter service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B9A	BASE PINS	9
NOMINAL HEATER	9 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	400000 Ω
TRANSCONDUCTANCE	0.006 S
AMPLIFICATION FACTOR	50
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	175 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.5 W
MAXIMUM CATHODE CURRENT	25 mA
<i>RF pentode mixer system.</i>	

SECTION2 Triode	
PLATE RESISTANCE	4000 Ω
TRANSCONDUCTANCE	0.005 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	1.1 W
MAXIMUM CATHODE CURRENT	14 mA
<i>Low-mu triode oscillator system.</i>	

Triode-pentode for VHF oscillator and frequency-converter service.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1953 La Radiotechnique

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

1953 LA RADIOTECHNIQUE

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Indirect (cathodes isolees du filament)	8 A	Pentode
Alimentation du filament en serie. Vt	9 V	Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	Pentode
Screen-grid voltage	170 V	Pentode
Control-grid voltage	2 V	Pentode
Plate current	10 mA	Pentode
Screen-grid current	28 mA	Pentode
Transconductance	62 mA/V	Pentode
Control-grid capacitance	55 pF	Pentode
Capacite anode-grille 1	0.025 pF	Pentode
Capacite anode pentode-anode triode	0.07 pF	Pentode
Capacite anode pentode-grille triode	0.02 pF	Pentode
Capacite grille 1 pentode-anode triode	0.16 pF	Pentode
Plate voltage	250 V	Pentode
Screen-grid voltage	175 V	Pentode
Plate dissipation	1.7 W	Pentode
Screen-grid dissipation	5 W	Pentode

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Control-grid voltage	1.3 V	Pentode
[1 1-1 419 A RE Vkf	100 V	Pentode
[111:119 A RS Vkf	200 V	Pentode
22pF 220 fii en	22 pF	Pentode
Plate voltage	170 V	Pentode
Screen-grid voltage	170 V	Pentode
Grid-circuit resistance 1 Rg,	0.1 Mohm	Pentode
Cathode-bias resistance	820 ohm	Pentode
Tension d'oscillation (grille 1)	35 V	Pentode
Plate current	5.2 mA	Pentode
Screen-grid current	15 mA	Pentode
Transconductance de conversion	2.1 mA/V	Pentode
Plate resistance	870 kohm	Pentode

1953 LA RADIOTECHNIQUE

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	Triode
Tension de la grille	2 V	Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacite de la grille	25 pF	Triode
Plate capacitance	1.8 pF	Triode
Capacite anode-grille	1.5 pF	Triode
Plate voltage	250 V	Triode
Plate dissipation	15 W	Triode
Grid-circuit resistance	5 Mohm	Triode
Tension de la grille	1.3 V	Triode
ment)	100 V	Triode
e en u en e Vkf	200 V	Triode

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
(3) La composante continue ne doit pas dépasser 120 V	120 V	Triode



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1955 Marconi

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1955 MARCONI

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode Grid-All Capacitance	4.5 pF	—
Pentode Anode-All Capacitance	4 pF	—
Pentode Anode-Grid Capacitance	0.02 pF	—
Frequency Changer Maximum Signal Frequency	250 MHz	—
Typical IF Frequency	34 MHz	—

1955 MARCONI

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode Grid-Cathode Capacitance	3 pF	—
Triode Anode-Cathode Capacitance	0.5 pF	—
Triode Anode-Grid Capacitance	2 pF	—
Typical Oscillator Voltage Minimum	2 V	—
Typical Oscillator Voltage Maximum	3 V	—

SOURCE OPERATING CONDITIONS

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1961 Ferranti Technical Handbook

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

1961 FERRANTI TECHNICAL HANDBOOK

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	9 V	—
Heater Current	300 mA	—
Maximum Intended Frequency	220 MHz	FrequencyChanger

SOURCE OPERATING CONDITIONS

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1963 Philips Electron Tubes Handbook V1

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1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	Mixer
Screen voltage	170 V	Mixer
Control-grid voltage	-2 V	Mixer
Plate current	10 mA	Mixer
Screen current	2.8 mA	Mixer

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6200 μS	Section2
Plate resistance	400000 Ω	Section2
Amplification factor	47	Section2

1963 PHILIPS ELECTRON TUBES HANDBOOK V1

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	Oscillator
Control-grid voltage	-2 V	Oscillator
Plate current	14 mA	Oscillator

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5000 μS	Section1
Amplification factor	20	Section1



SOURCE OPERATING CONDITIONS

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1967 Mullard Receiving and Amplifying Valves

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1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	ClassA
Screen-grid voltage	170 V	ClassA
Grid No.1 voltage	-2 V	ClassA
Plate current	10 mA	ClassA
Screen-grid current	2.8 mA	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input resistance at 50 MHz	0.01 megohm	50MHz
Equivalent noise resistance	1500 ohm	—

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

1967 MULLARD RECEIVING AND AMPLIFYING VALVES

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Grid No.1 voltage	-2 V	ClassA
Plate current	14 mA	ClassA

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


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1968 Mazda Belvu

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1968 MAZDA BELVU

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	9 V	Nominal
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	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Cathode Current	25 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	5500 μS	Typical
Plate Resistance	300000 ohm	Typical

1968 MAZDA BELVU

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	9 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



TUBE TINKER
ELECTRON TUBE DATABASE

SOURCE DATA APPENDIX

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1972 Philips Receiving Tubes

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1972 PHILIPS RECEIVING TUBES

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	FrequencyChangerMixer text	—

Section 2 · Triode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	FrequencyChangerOscillator text	—



SOURCE DATA APPENDIX

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1973 Mazda Valves Binder 2

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1973 MAZDA VALVES BINDER 2

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
* Taken at $V_a = 170$: $V_{gY} = 170$: $I_a = 10\text{mA}$: $V_{gt} =$	-2 V	—
CHARACTERISTIC CURVES	1 a	—



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1975 RCA RC30

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1975 RCA RC30

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	ClassA
Screen-grid voltage	170 V	ClassA
Grid No.1 voltage	-2 V	ClassA
Plate current	10 mA	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen-grid current	2.8 mA	ClassA
Input resistance at 50 MHz	0.01 megohm	50MHz
Equivalent noise resistance	1500 ohm	—

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

1975 RCA RC30

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA
Grid No.1 voltage	-2 V	ClassA
Plate current	14 mA	ClassA

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


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1999 Philips E-Z

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1999 PHILIPS E-Z

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I _y	10 mA	—
Transconductance S	6.2 mA/V	—
Heater current I _t	300 mA	—
Heater voltage V _s	9 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode triode to grid No.1 pentode CaTglP max	0.16 pF	—
Grid triode to anode pentode cgTaP max	0.02 pF	—
Anode triode to anode pentode CaTaP max	0.07 pF	—
Anode voltage Va	170 V	—
Grid No.2 voltage Vg2	170 V	—
Grid No.2 current Ig2	2.8 mA	—
Internal resistance Ry	0.4 MΩ	—
(Frequency [1])	50 MHz	—
(Frequency [2])	10 kΩ	—
Grid No.2 current IgZ 2.0	1.5 mA	—
Conversion conductance S _ç 2.2	2.1 mA/V	—
Anode voltage Vao max	550 V	—
Va max	250 V	—
Grid No.2 voltage Vgzo max	550 V	—
Ix = max [1]	10 mA	—
Ix = max [2]	200 V	—
Anode dissipation W, max	1.7 W	—
at W, = min [1]	1.2 W	—
at W, = min [2]	0.5 W	—
at W, = max [1]	1.2 W	—
at W, = max [2]	0.75 W	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode to all except grid No.1 Ca(gl)	3.4 pF	—
Grid No.1 to all except anode Cgl(a)	5.2 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage Va 170	170 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.2 voltage Vg2 170	170 V	—
Grid No.1 resistor Rgl 0.1	0.1 MΩ	—
Anode current I, 6.5	5.2 mA	—

1999 PHILIPS E-Z

Section 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I,	14 mA	—
Transconductance S	5 mA/V	—
Anode voltage Va	100 V	—
Grid voltage Vg	-2 V	—
Anode current I	14 mA	—
isfactorily with a peak cathode current of	100 mA	—
with new tubes should be limited automatically to this max. value of	100 mA	—
Grid resistor Rg max	0.5 MΩ	—
cathode neg Vit max	100 V	—
cathode pos Vki max	200 V	—
D.C. component max	120 V	—
) jo	0 V	—
Vg1	0 V	—
14 11 W2	170 V	—
(k£)) 3: Vg =2	100 V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode to all except grid (1-4+5+7+8) Ca(g)	1.8 pF	—
Grid to all except anode (9-4+5+7+8) Cg(a)	2.5 pF	—
Anode to grid Cag	1.5 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage Vag max	550 V	—
Va max	250 V	—
Anode dissipation W, max	1.5 W	—
average Ik max	14 mA	—

TUBE TINKER

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and their source documents.

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