



ELECTRONIC TUBE REFERENCE

PL83

Power - Pentode Single (NOT beam) (under 10W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

High-transconductance series-heater pentode specifically for television video-output amplification.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B9A	BASE PINS	9
NOMINAL HEATER	15 V / 300 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.009 S
AMPLIFICATION FACTOR	24
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	9 W
MAXIMUM SCREEN DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	70 mA
<i>Published values promoted where clearly readable; identical repeated sections compressed when applicable.</i>	

Power pentode for video-frequency amplification. The supplied French datasheet was translated to English for descriptive output.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1951 Philips Receiving Tubes for Television

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

1951 PHILIPS RECEIVING TUBES FOR TELEVISION

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode Voltage	170 V	—
Screen Voltage	170 V	—
Anode Current	36 mA	—
Screen Current	5 mA	—
Transconductance	10500 uS	—
Anode Voltage	200 V	—
Screen Voltage	200 V	—
Anode Current	36 mA	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Video Output Voltage	80 V	VideoOutput

SOURCE OPERATING CONDITIONS

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1953 La Radiotechnique

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1953 LA RADIOTECHNIQUE

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Indirect (cathode isolee du filament)	3 A	Pentode
Alimentation du fllament en serie vf	15 V	Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	Pentode
Screen-grid voltage	200 V	Pentode
Control-grid voltage	3.5 V	Pentode
Plate current	36 mA	Pentode
Screen-grid current	5 mA	Pentode
Plate resistance	1 Mohm	Pentode
Transconductance	10.5 mA/V	Pentode
Plate voltage	250 V	Pentode
Screen-grid voltage	250 V	Pentode
Plate dissipation	9 W	Pentode
Screen-grid dissipation	2 W	Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Capacite de ta grille 1	11.2 pF	Pentode
Plate capacitance	66 pF	Pentode
Capacite anode-grille 1	0.1 pF	Pentode



SOURCE OPERATING CONDITIONS

1955 Marconi

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

1955 MARCONI

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	15 V	—
Heater current	300 mA	—
Maximum plate voltage	250 V	—
Maximum screen voltage	250 V	—
Maximum plate dissipation	9 W	—
Maximum screen dissipation	2 W	—

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	9000 μ S	—

Application		
Parameter	Published Value	Condition / Note
Primary application	High-transconductance video power pentode for television video-output service.	



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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195X Tesla

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

195X TESLA

Section 1 · Pentode

Characteristics		
Parameter	Published Value	Condition / Note
Heater voltage	15 V	Published nominal value or midpoint of published range
Heater current	300 mA	Published nominal value or midpoint of published range

Capacitance		
Parameter	Published Value	Condition / Note
Input capacitance	10.4 pF	Published first-page value
Output capacitance	6.6 pF	Published first-page value



SOURCE DATA APPENDIX

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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	15 V	—
Heater Current	300 mA	—
Anode Voltage	200 V	—
Screen Voltage	200 V	—
Anode Current	36 mA	—
Screen Current	5 mA	—
Transconductance	10500 uS	—
Plate Resistance	100000 ohm	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Output Voltage	70 V	VideoOutput; Minimum



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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	VideoOutput
Screen voltage	170 V	VideoOutput
Control-grid voltage	-2.3 V	VideoOutput
Plate current	36 mA	VideoOutput
Screen current	5 mA	VideoOutput

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	10500 μS	Section1
Plate resistance	100000 Ω	Section1
Amplification factor	24	Section1

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 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	CharacteristicSet1
Screen-grid voltage	170 V	CharacteristicSet1
Grid voltage	-2.3 V	CharacteristicSet1
Plate current	36 mA	CharacteristicSet1
Screen-grid current	5 mA	CharacteristicSet1
Transconductance	10000 uS	CharacteristicSet1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	10.4 pF	—
Output capacitance	6.6 pF	—
Plate-grid capacitance	0.06 pF	—
Heater input capacitance	0.15 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	170 V	CRTDriveCathodeInjection
Screen-grid voltage	170 V	CRTDriveCathodeInjection
Plate current	4 mA	CRTDriveCathodeInjection
Screen-grid current	0.25 mA	CRTDriveCathodeInjection
Grid voltage	-6.7 V	CRTDriveCathodeInjection

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension filament	15 V	—
Courant filament	300 mA	—
Tension d'anode carssanse	250 V	—
Tension de grille n° 2	250 V	—
Tension entre filament et cathode n Vfk	200 V	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
La composante continue ne doit pas dépasser	150 V	—



SOURCE DATA APPENDIX

1972 Philips Receiving Tubes

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1972 PHILIPS RECEIVING TUBES

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	15 V	Published nominal value
Heater current	300 mA	Published nominal value
Transconductance	10500 μ S	Published operating characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	9 W	Published maximum rating
Application	Video output	Printed source application

SOURCE OPERATING CONDITIONS

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1973 Mazda Valves Binder 2

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

1973 MAZDA VALVES BINDER 2

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	15 V	Published nominal value
Heater current	300 mA	Published nominal value
Transconductance	10000 μ S	Published operating characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	9 W	Published maximum rating
Application	CRT video drive	Projection/high-definition television

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I_a	36 mA	Anode current I_a 36 mA
Transconductance S	10.5 mA	Transconductance S 10,5 mA/V
Heater current I_{ϕ}	300 mA	Heater current I_{ϕ} 300 mA
Anode to all except grid No.1 Ca(gl)	6.6 pF	Anode to all except grid No.1 Ca(gl) 6.6 pF
Grid No.1 to all except anode Cgl(a)	10.8 pF	Grid No.1 to all except anode Cgl(a) 10.8 pF
Anode to grid No.1 Cagl max	0.1 pF	Anode to grid No.1 Cagl max. 0.1 pF
Grid No.1 to grid No.2 Cglgz	3.2 pF	Grid No.1 to grid No.2 Cglgz 3.2 pF

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to heater C_{g1} max	0.15 pF	Grid No.1 to heater C_{g1} max. 0.15 pF
Anode voltage V_a 170	200 V	Anode voltage V_a 170 200V
Grid No.2 voltage V_{g2} 170	200 V	Grid No.2 voltage V_{g2} 170 200 V
Grid No.1 voltage V_{g1} -2.3	-3.5 V	Grid No.1 voltage V_{g1} -2.3 =-3.5 V
Anode current I_a 36	36 mA	Anode current I_a 36 36 mA
Grid No.2 current I_{g2} 5.0	5 mA	Grid No.2 current I_{g2} 5.0 5.0 mA
Transconductance S 10.5	10.5 mA	Transconductance S 10.5 10.5 mA/V
Anode voltage V_{ao} max	550 V	Anode voltage V_{ao} max. 550 V