



ELECTRONIC TUBE REFERENCE

EL81

Power - TV Horizontal Output (sweep) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Output pentode designed for television line time-base service and also usable as a series-regulator valve in stabilized power supplies.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B9A	BASE PINS	9
NOMINAL HEATER	6.3 V / 1.05 A	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	15000 Ω
TRANSCONDUCTANCE	0.011 S
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	8 W
MAXIMUM SCREEN DISSIPATION	4.5 W
MAXIMUM CATHODE CURRENT	180 mA
<i>Published maximum ratings/characteristics promoted from source.</i>	

OUTPUT PENTODE Output pentode suitable for use in the line time base of television receivers or as a series regulator valve in stabilised EL81 power supply units. HEATER Vh 6.3 V Ih 1.05 A



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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	1.05 A	Nominal
Maximum Plate Voltage	300 V	—
Maximum Screen Voltage	300 V	—
Maximum Plate Dissipation	8 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	6200 μ S	Typical
Amplification Factor	69	Typical
Plate Resistance	15000 ohm	Typical



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195X Tesla

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195X TESLA

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	900 mA	Nominal

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	700 V	—
Maximum Screen Voltage	250 V	—
Maximum Plate Dissipation	8 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	11000 μ S	Typical



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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 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	—
Heater Current	1.05 A	—
Application	Television line time-base output	—



SOURCE DATA APPENDIX

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1963 Mullard

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1963 MULLARD

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current	32 mA	Pentode

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen current	2.4 mA	Pentode
Triode transconductance	5500 μ S	TriodeConnection
Triode plate resistance	1000 ohm	TriodeConnection
Triode amplification factor	5.5	TriodeConnection

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak anode voltage	7 kV	Pulse limited


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1963 Philips Electron Tubes Handbook V1a

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1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published heater rating
Heater current	800 mA	Published heater rating
Transconductance	4600 μ S	CharacteristicPoint
Plate resistance	15000 ohm	CharacteristicPoint

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	CharacteristicPoint
Screen voltage	250 V	CharacteristicPoint
Grid bias	-38.5 V	CharacteristicPoint
Plate current	32 mA	CharacteristicPoint
Screen current	2.4 mA	CharacteristicPoint
Maximum plate voltage	300 V	Published limit

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	8 W	Published limit
Maximum screen voltage	300 V	Published limit
Maximum screen dissipation	4.5 W	Published limit



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1967 Mullard Receiving Tubes for Maintenance

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

1967 MULLARD RECEIVING TUBES FOR MAINTENANCE

Section 1 · Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cout	11.4 pF	CAPACITANCES (measured without external shield)

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Vg3	0 V	CHARACTERISTICS
Vg I	5 V	CHARACTERISTICS
gm	4.6 mA	CHARACTERISTICS
Vg1	38 V	CHARACTERISTICS
gm	5.5 mA	CHARACTERISTICS

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va(b) max	550 V	LIMITING VALUES
Va max	300 V	LIMITING VALUES
*valPk) max	7 kV	LIMITING VALUES
Vg2(b) max	550 V	LIMITING VALUES
Vg2 max	300 V	LIMITING VALUES
Vg1 max. (Ig[= +	1.3 V	LIMITING VALUES



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1972 Philips Receiving Tubes

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1972 PHILIPS RECEIVING TUBES

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal value
Heater current	1.05 A	Published nominal value
Transconductance	14000 μ S	Published or referenced operating characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum peak anode voltage	7 kV	Pulse duration $\leq$ 22% cycle, max 18 μ s
Audio output power	20 W	ClassB, two tubes



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
Typical plate voltage	170 V	—
Typical screen voltage	170 V	—

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

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