



ELECTRONIC TUBE REFERENCE

EL91

Voltage - Pentode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Output pentode rated for approximately 4 W anode dissipation and suitable for RF or AF amplification. Its compact construction supports both radio-frequency and low-frequency power service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	7
NOMINAL HEATER	6.3 V / 200 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	130000 Ω
TRANSCONDUCTANCE	0.0026 S
AMPLIFICATION FACTOR	12
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	4 W
MAXIMUM SCREEN DISSIPATION	0.6 W
<i>Published ratings/characteristics promoted where clearly stated; repeated identical rectifier sections compressed to one section row.</i>	

OUTPUT PENTODE Output pentode rated for 4W anode dissipation suitable for use as an r.f. or a.f. amplifier. EL91



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1951 Mullard Valve and Service Manual

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

1951 MULLARD VALVE AND SERVICE MANUAL

Section 1 · Pentode

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Service	Audio power output	—



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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal value
Heater current	200 mA	Published nominal value
Transconductance	2600 μ S	Published typical/nominal value
Warm-up time	12 s	Published



1963 Mullard

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

1963 MULLARD
Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	6.3 V	—
HeaterOrFilamentCurrent	200 mA	—
Input Capacitance	4.2 pF	—
Output Capacitance	3.2 pF	—
PlateToGridCapacitanceMax	0.5 pF	—
Transconductance	2.6 mA/V	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	ClassA
Screen Voltage	250 V	ClassA
Plate Current	16 mA	ClassA
Screen Current	2.4 mA	ClassA
Load Resistance	16 kohm	ClassA
Power Output	1.4 W	ClassA



SOURCE DATA APPENDIX

1963 Philips Electron Tubes Handbook V1a

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V1A

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	—
Screen voltage	250 V	—
Plate current	16 mA	—
Screen current	2.4 mA	—
Transconductance	2600 μ S	—
Amplification factor grid2/grid1	12	—
Plate resistance	130 k Ω m	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid capacitance without external shield	4 pF	—
Grid capacitance with external shield	6.6 pF	—
Plate capacitance without external shield	3.75 pF	—
Plate capacitance with external shield	4 pF	—
Grid-to-plate capacitance	—0.25 pF	Maximum

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode resistor	740 Ω m	ClassA
Load resistance	16 k Ω m	ClassA
Grid drive at 10 percent distortion	5.3 V RMS	ClassA
Power output at 10 percent distortion	1.4 W	ClassA
Cathode resistor	600 Ω m	ClassAB; PushPull; TwoTubes
Load resistance plate-to- plate	24 k Ω m	ClassAB; PushPull; TwoTubes
Power output	4 W	ClassAB; PushPull; TwoTubes

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output pentode rated for	4	Characteristic
Va	250 V	Characteristic
Vg3	0 V	Characteristic
Vg	250 V	Characteristic
Vg	5 V	Characteristic
gm	2.5 mA	Characteristic
Vg	-13.5 V	Characteristic
gm	2.7 mA	Characteristic

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cin	3.8 pF	Characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Va - k	250 V	OPERATING CONDITIONS AS SINGLE VALVE AMPLIFIER
Vg	250 V	OPERATING CONDITIONS AS SINGLE VALVE AMPLIFIER
Ra	18	OPERATING CONDITIONS AS SINGLE VALVE AMPLIFIER
OPERATING CONDITIONS FOR	2	OPERATING CONDITIONS AS SINGLE VALVE AMPLIFIER
Rk (per valve)	820	OPERATING CONDITIONS AS SINGLE VALVE AMPLIFIER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
screen-grid currents. This will result in approximately	10 w	OPERATING CONDITIONS AS SINGLE VALVE AMPLIFIER
Va	250 V	OPERATING CONDITIONS AS R.F. AMPLIFIER
Vg2 (L J)	250 V	OPERATING CONDITIONS AS R.F. AMPLIFIER
Vg	-14 V	OPERATING CONDITIONS AS R.F. AMPLIFIER
Vg	250 V	OPERATING CONDITIONS AS FREQUENCY DOUBLER
Va	250 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Vg	-75 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Va(l») max	550 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Va max	250 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Vg	550 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Vg	250 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Vg	100 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Vg l (V)	0 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
VOL TA GE WITH CON T ROL-G RID VOLTAGE AS PARAMETER. Vg	150 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Vg2	-200 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
VOLTAGE W ITH CO NT ROL-G RID VOLTA GE AS PARAMETER. Vg2 =	200 W	OPERATING CONDITIONS AS FREQUENCY TREBLER
VO LTAGE WITH CO NT RO L- GRID VOL TAG E AS PARAMETER. Vg	250	OPERATING CONDITIONS AS FREQUENCY TREBLER
Va = V"	150 V	OPERATING CONDITIONS AS FREQUENCY TREBLER
Va = Vg	0	OPERATING CONDITIONS AS FREQUENCY TREBLER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
V _a = V _g	250 V	OPERATING CONDITIONS AS FREQUENCY TREBLER



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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	250 V	—
Typical plate current	16 mA	—
Typical screen current	2.4 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Screen-to-grid amplification factor	12	—

TUBE TINKER

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

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