



ELECTRONIC TUBE REFERENCE

E130L

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

PENTODE

Special-quality high-slope output pentode for industrial applications, with documented Class-A and push-pull Class-AB operation. It combines professional reliability with substantial power-amplifier capability.

GENERAL CHARACTERISTICS

BASE DESIGNATION	Octal	BASE PINS	8
NOMINAL HEATER	6.3 V / 1.7 A	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
PLATE RESISTANCE	10000 Ω
TRANSCONDUCTANCE	0.0275 S
MAXIMUM PLATE VOLTAGE	900 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	27.5 W
MAXIMUM SCREEN DISSIPATION	5 W
MAXIMUM GRID DISSIPATION	0.1 W
MAXIMUM CATHODE CURRENT	300 mA
<i>Special-quality high-slope power pentode for wide-band amplification, cathode-follower, series-regulator, and output service.</i>	

Special-quality high-slope output pentode intended for general industrial applications, with published Class A and push-pull Class AB operating conditions.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	Pentode
Screen voltage	150 V	Pentode
Maximum peak cathode current	1.5 A	Pulsed

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	85–115 mA	Pentode
Screen current	—6 mA	Pentode
Transconductance	22500–32500 uS	Pentode
Plate resistance	10 kOhm	Pentode



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Philips Electron Tubes Handbook V3

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

1963 PHILIPS ELECTRON TUBES HANDBOOK V3

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Chauffage: indirect par C.A. ou C.C. $V_f = 6.3V \pm 5\%$
Heater current	1.7 A	Heizung : indirekt Burch Wechsel- $I_f = 1.7$ A
Heater voltage	6.3 V	$V_f = 6.3 \pm 1$ V
Heater current	1.7 mA	$I_f = 1.7 \pm 1.62-1.78$ A
Heater voltage	6.3 V	$V_f = 6.3 \pm 1$ V
Heater voltage	6.3 V	$V_f = 6.3V \pm 5\%$ $R_k = 300 \Omega$
Cathode resistor	300 ohm	$V_f = 6.3V \pm 5\%$ $R_k = 300 \Omega$
Plate supply voltage	275 V	$V_{ba} = 275$ V $R_{gt} = 47$ kQ
Screen-grid supply voltage	180 V	$V_{bg2} = 180$ V $V_{kf} = 100$ V (k pos.)
Cathode-heater voltage	100 V	$V_{bg2} = 180$ V $V_{kf} = 100$ V (k pos.)

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid capacitance	1 pF	$C_g 1 =$ pF
Grid-to-plate capacitance	1 pF	$C_{ag1} =$

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	25011 V	$V_a = 25011 = 275 \pm 1$ V
Plate current	100 mA	$I_a = 100$ mA $R_k = 300 \Omega$
Plate current	100 mA	$I_{B2} = 4$ mA $I_a = 100 \pm 85-1151 \pm 1$) mA
Transconductance	27.5 mA/V	$S = 27.5$ mA/V $I_{B2} = 4 < 61$ mA
Transconductance	27.5 mA/V	$\mu_{82g1} = 6.5$ S $27.5 \pm 22.5-32.5 \pm 1$) mA/V
Amplification factor	82	$\mu_{82g1} = 6.5$ S $27.5 \pm 22.5-32.5 \pm 1$) mA/V
Plate resistance	10 kohm	$R_i = 10$ kQ
Plate voltage	2501 V	$V_a = 2501 \pm 1$ V
Plate current	1 mA	$= I_a \pm 1 \pm 1$ mA
Control-grid voltage	1 V	$= -V_{g1} \pm 1 < 30 \pm 1$ V
Plate supply voltage	275 V	$V_{ba} = 275 \pm 1$ V
Cathode resistor	3001 ohm	$R_k = 3001 \pm 1 \Omega$
Plate voltage	250 V	$V_a = 250$ V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	100 mA	Ia = 100 mA
Power output	11.5 W	Wo = 11.5W
Plate voltage	300 V	Va = 300 V
Screen-grid voltage	150 V	Vg2 = 150 V
Plate current	2 mA	Ia = 2x80 - 2x182 mA


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1963 Siemens

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

1963 SIEMENS

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical Plate Voltage	250 V	PentodeConnection
Typical Screen Voltage	150 V	PentodeConnection
Typical Plate Current	100 mA	PentodeConnection
Typical Screen Current	4 mA	PentodeConnection


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1967 Mullard Receiving Tubes for Maintenance

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1967 MULLARD RECEIVING TUBES FOR MAINTENANCE

Section 1 · Pentode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	35 pF	PublishedCapacitance
Output Capacitance	17 pF	PublishedCapacitance
Plate-to-Control-Grid Capacitance	<2.0 pF	PublishedCapacitance

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	PublishedCharacteristics
Screen Voltage	150 V	PublishedCharacteristics
Control Grid Voltage	-15.5 V	PublishedCharacteristics
Plate Current	100 mA	PublishedCharacteristics
Screen Current	4 mA	PublishedCharacteristics
Transconductance	27500 uS	PublishedCharacteristics
Screen-to-Control-Grid Mu	6.5	PublishedCharacteristics
Plate Resistance	10 kohm	PublishedCharacteristics

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	ClassA
Screen Voltage	150 V	ClassA
Control Grid Voltage	-15.5 V	ClassA
Load Resistance	2.7 kohm	ClassA
Input Voltage RMS	3.82 V	ClassA
ZeroSignal Plate Current	100 mA	ClassA
ZeroSignal Screen Current	4 mA	ClassA
Power Output	11.5 W	ClassA
Total Distortion	10 %	ClassA
Plate Voltage	300 V	ClassAB;PushPull
Screen Voltage	150 V	ClassAB;PushPull
Control Grid Voltage	-17 V	ClassAB;PushPull
Plate-to-Plate Load	1.6 kohm	ClassAB;PushPull
Input Voltage RMS	9 V	ClassAB;PushPull

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
ZeroSignal Plate Current	80 mA	ClassAB;PushPull;EachTube
MaximumSignal Plate Current	182 mA	ClassAB;PushPull;EachTube
MaximumSignal Screen Current	22 mA	ClassAB;PushPull;EachTube
Power Output	60 W	ClassAB;PushPull
Plate Supply Voltage	2000 V	AbsoluteRatings



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
Heater voltage V _h	6.3 V	Heating
Heater current I _h	1.7 A	Heating
Anode current I _y	100 mA	Heating
Mutual conductance S	27.5 mA	Heating
Output power, one tube W _o	11.5 W	Heating
Heater voltage V _i	6.3 A	Characteristics
Heater current I _h	711.62 A–1.78 A	Characteristics
Grid No.1 supply voltage +V _{bgl}	1 V	Life

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage V _a	250 v	Characteristics
Grid No.2 voltage V _{g,2}	2 v	Characteristics
Grid No.1 voltage –V _{gl}	1 A	Characteristics
Anode current I _y	100 mA	Characteristics
Grid No.2 current I _{g2}	2 mA	Characteristics

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mutual conductance S	27.5 mA	Characteristics
Internal resistance R	10 k Ω	Characteristics
Anode supply voltage Vya	275 v	Characteristics
Grid No.2 supply voltage Vbg2	2 A	Characteristics
voltage Vbgl	15.7 v	Characteristics
Cathode resistor Ry	300 Ω	Characteristics
Anode current I,	85–115 mA	Characteristics
Grid No.2 current Ig2	2 mA	Characteristics
Mutual conductance S	5122.5–32.5 mA	Characteristics
Anode voltage vV,	250 v	Characteristics
Grid No.2 voltage Vg2	2 v	Characteristics
Anode current Ip	1 mA	Characteristics
Negative grid No.1 voltage – Vgl max	1 v	Characteristics

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
cathode and heater Cgl/gSgzk_f	35 pF	Capacitances
cathode and heater Ca/g3g2kf	3 pF	Capacitances
Anode to grid No.1 Cagl max	1 pF	Capacitances