

ELECTRONIC TUBE REFERENCE

PL519

Power - TV Horizontal Output (sweep) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

High-power line-output pentode designed for color-television horizontal deflection.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	9
NOMINAL HEATER	40 V / 300 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Pentode	
MAXIMUM PLATE VOLTAGE	700 V
MAXIMUM SCREEN VOLTAGE	275 V
MAXIMUM PLATE DISSIPATION	35 W
MAXIMUM SCREEN DISSIPATION	7 W
MAXIMUM CATHODE CURRENT	500 mA
Published ratings and characteristics promoted where clearly stated; identical repeated sections compressed when applicable.	

High-power line-output pentode for color-television horizontal deflection.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1972 Philips Receiving Tubes

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

1972 PHILIPS RECEIVING TUBES

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	40 V	Published nominal value
Heater current	300 mA	Published nominal value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	35 W	Published maximum rating
Maximum peak anode voltage	7 kV	Design-centre rating; 8 kV design-max



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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	40 V	—
Heater current	300 mA	—
Heater current If 300 mA	300 a	Heater current If 300 mA
Heater voltage Vs 40 v	40 a	Heater voltage Vs 40 v
Anode to grid No. 1 281 b	281 A	Anode to grid No. 1 281 b
Anode voltage Va 160 50 70 V	70 A	Anode voltage Va 160 50 70 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 3 voltage Vgs 0 0 (VY	3 v	Grid No. 3 voltage Vgs 0 0 (VY
Grid No. 2 voltage Vg2 160 175 205V	2 v	Grid No. 2 voltage Vg2 160 175 205V
Grid No. 1 voltage Vgl 0 ~10 -11 Vv	1 v	Grid No. 1 voltage Vgl 0 ~10 -11 Vv
Anode current I, 1400 800 1100 mA	1100 A	Anode current I, 1400 800 1100 mA
Grid No. 2 current Ig2 45 70 85 mA	85 mA	Grid No. 2 current Ig2 45 70 85 mA
The minimum required cut-off voltage (_Vgl) during flyback at V,	7000 v	The minimum required cut-off voltage (_Vgl) during flyback at V, = 7000 V and
Minimum required screen grid voltage: Vg2 min. See page 4, 5	5 s	Minimum required screen grid voltage: Vg2 min. See page 4, 5
Recommended screen grid series resistor: Rgy rec See page 4, 5	5 s	Recommended screen grid series resistor: Rgy rec See page 4, 5
In circuits where decoupling capacitors in the grid no.2 or the grid no.3 circuits are	3 s	In circuits where decoupling capacitors in the grid no.2 or the grid no.3 circuits are
by means of a 1002 resistor between g2 and the gy-bypass capacitor and a 1000	1000 a	by means of a 1002 resistor between g2 and the gy-bypass capacitor and a 1000
resistor between g3 and the g3-bypass capacitor. The 1000 Q2 resistor should be	1000 s	resistor between g3 and the g3-bypass capacitor. The 1000 Q2 resistor should be
At Zgl	220 A	At Zgl = 200 k2 (f = 50 Hz), kaRMS = 220 V and without wiring and socket
capacitance, the equivalent grid hum voltage is less than 5 mV,	5 a	capacitance, the equivalent grid hum voltage is less than 5 mV,
4. With Rgy < 10 K< capacitive decoupling of g3 is not required	4 W	4. With Rgy < 10 K< capacitive decoupling of g3 is not required.
of 1000 pA and a nominal mains voltage	1000 A	of 1000 pA and a nominal mains voltage.
tube. (Tolerances of deflection-components and 10 7 mains voltage fluctuations taken	7 a	tube. (Tolerances of deflection-components and 10 7 mains voltage fluctuations taken

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
a D.C. voltage of at least +20 V is applied to the beam plate (g3), To compensate	20 a	a D.C. voltage of at least +20 V is applied to the beam plate (g3), To compensate
must be increased with 10 % of the anode supply voltage when not stabilized	10 s	must be increased with 10 % of the anode supply voltage when not stabilized.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No. 1 to filament Cglf max. 0.2 pF	1 a	Grid No. 1 to filament Cglf max. 0.2 pF
Anode voltage in cold condition Vao max. 700	700 A	Anode voltage in cold condition Vao max. 700
Anode peak voltage Vap max. 7000 V	7000 A	Anode peak voltage Vap max. 7000 V
Anode dissipation Wy max. 35 W	35 A	Anode dissipation Wy max. 35 W
Grid No. 3 voltage Vg3 max. 30 Vv	3 v	Grid No. 3 voltage Vg3 max. 30 Vv
Grid No. 2 voltage in cold condition Vg20 max. 700 V	2 v	Grid No. 2 voltage in cold condition Vg20 max. 700 V
Grid No. 2 voltage Vg2 max. 275 V	2 v	Grid No. 2 voltage Vg2 max. 275 V
Grid No. 2 dissipation Wg, max. 7 W 2	2 s	Grid No. 2 dissipation Wg, max. 7 W 2
Cathode current I max. 500 mA	500 a	Cathode current I max. 500 mA
Cathode peak current Ikp max. 1500 mA	1500 a	Cathode peak current Ikp max. 1500 mA
Cathode-to-heater voltage Vi max. 250 V	250 a	Cathode-to-heater voltage Vi max. 250 V
Grid No. 1 resistor: fixed bias Rg1 max., 0.5 MQ 9)	1 s	Grid No. 1 resistor: fixed bias Rg1 max., 0.5 MQ 9)
Grid No. 3 circuit resistance Rgs max. 10 kQ 4)	3 s	Grid No. 3 circuit resistance Rgs max. 10 kQ 4)
Bulb temperature thulb max. 300 °C 5)	5 a	Bulb temperature thulb max. 300 °C 5)
Anode dissipation W, max. 45 W	45 A	Anode dissipation W, max. 45 W
Grid No. 2 dissipation Wgz max, 9 W	2 s	Grid No. 2 dissipation Wgz max, 9 W

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode peak voltage Vap max. 8000 V 3	3 A	Anode peak voltage Vap max. 8000 V 3
Neg. grid No. 1 peak voltage ~Veip max. 550 V D	1 a	Neg. grid No. 1 peak voltage ~Veip max. 550 V D
3. The circuit design has to be such that negative control grid currents up to 5	3 s	3. The circuit design has to be such that negative control grid currents up to 5
Care should be taken that with 5 micro-amperes grid current the limiting values	5 a	Care should be taken that with 5 micro-amperes grid current the limiting values
4 I3 peak V	4 a	4 I3 peak V=265V