



ELECTRONIC TUBE REFERENCE

YL1420

Power - Tetrode (NOT beam) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
TETRODE

Forced-air-cooled metal-ceramic VHF transmitting tetrode for television, AM/FM broadcast, transposer, and modulation service. Its directly heated cathode and multi-kilowatt plate dissipation support high-power professional broadcast RF and audio-frequency modulator stages.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 120 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Tetrode	
TRANSCONDUCTANCE	0.03 S
AMPLIFICATION FACTOR	7.5
MAXIMUM PLATE VOLTAGE	8500 V
MAXIMUM SCREEN VOLTAGE	1000 V
MAXIMUM PLATE DISSIPATION	6000 W
MAXIMUM SCREEN DISSIPATION	80 W
MAXIMUM GRID DISSIPATION	40 W
MAXIMUM CATHODE CURRENT	4.5 A
<i>VHF RF power tetrode</i>	

Forced-air-cooled metal-ceramic VHF power tetrode for television transmitters, AM/FM broadcast, AF

modulation, and transposer service.

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 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency f	175.25 MHz	ClassAB
Anode voltage Va	5 kV	ClassAB
Output power in load W,	8.6 kW	ClassAB
Frequency f	260 MHz	ClassB
Anode voltage Vv,	7 kv	ClassB
Output power in load Wy	10.5 kW	ClassB
Frequency f	260 MHz	ClassC
Output power in load Wy	11 kW	ClassC
Frequency f	175 to 225 MHz	Transposer
Anode voltage Va	4 kv	Transposer
Output power in load w	2.5 kW	Transposer
Filament voltage Vi	6.3 V	—
Filament current If	120 A	—
Filament peak starting current I _{ty max}	750 A	—
Waiting time T _{y min}	1 s	—
Frequency f up to	260 MHz	—
Anode voltage Va max	8.5 kv	—
Grid no. 2 voltage Vg _{Z max}	1 kV	—
Anode input power W _{ia max}	18.5 kW	—
Anode dissipation W, max	6 kW	—
Frequency f up to	260 MHz	—
Grid no.2 current Ig ₂	80 mA	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode input power Wia	15.4 kW	—
Anode dissipation W,	4.3 kW	—
Output power in load Wy	10.5 kW	—
Anode voltage Va max	6.5 kV	—
Anode input power, black Wi black max	12 kW	—
Grid no. 2 dissipation Wgz max	80 W	—
Frequency of vision carrier f	175.25 MHz	—
Bandwidth ([1]	-1 dB	—
Bandwidth ([2]	7 MHz	—
Frequency of vision carrier f 83,25	55.25 MHz	—
Anode voltage Va 4	4 kv	—
Grid no. 2 voltage Vgo 600	600 V	—
Anode current, no signal condition Ia 750	750 mA	—
Anode current, black Tapy 2,1	2.3 A	—
Grid no. 2 current, black Ig2b1 45	45 mA	—
Grid no.1 current, black Iglbl 75	85 mA	—
Output power in load, sync Wy sync 6,25	6.25 kW	—
black Wi plack 3,75	3.75 kW	—
Driving power, sync War sync 340	385 W	—
black Wdr plack 180	210 W	—
Frequency f	175 to 225 MHz	—
Bandwidth ([2]	8 MHz	—
Anode voltage Vg	4 kv	—
Grid no. 2 voltage Vg2	700 v	—
Grid no. 1 voltage ly A%	-65 A	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current, no signal condition lagl	1 A	—
Anode current 1,	1.65 A	—
Grid no. 2 current 6) Ig2	25 mA	—
Grid no. 1 current 6) Igl	10 mA	—
Driving power, sync War	85 W	—
Output power in load, sync Wy	2.5 kW	—
Intermodulation products ') d	-52 dB	—
Frequency f upto	260 MHz	ClassC
Anode voltage Va max	8.5 kV	—
Grid no. 2 voltage Vg2 max	1 kV	—
Grid no. 1 voltage -Vgl max	500 v	—
Anode current Iy max	4 A	—
Anode input power Wig max	18.5 kW	—
Grid no. 2 dissipation Wgz max	80 w	—
Grid no. 1 dissipation ng max	40 W	—
Cathode current Ik max	4.5 A	—
Frequency f	260 MHz	—
Anode voltage Va	7 kV	—
Grid no. 2 voltage Vg2	600 v	—
Grid no. 1 voltage Vg,	-120 v	—
Anode current, no signal condition I	200 mA	—
Anode current Iy	2.3 A	—
Grid no. 2 current lg2	80 mA	—
Grid no. 1 current Igl	150 mA	—
Anode input power Wia 16,	1 kW	—
Anode dissipation Wa	5 kW	—
Output power in load Wy	11 kW	—
Driving power War	325 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
3) Black signal including line sync pulses	4 A	—
with superimposed a 4,	43 MHz	—
) At c.w. output power	2.5 kW	—
) Three-tone test method (vision carrier [1])	-8 dB	—
) Three-tone test method (vision carrier [2])	7 dB	—
ti	25 °C	—
Vg1 IgZ:0.QA	300 mA	—
/ . T lgi [1]	12 A	—
/ . T lgi [2]	1 a	—
/ . T lgi [3]	10 A	—
~ A	9 A	—
LS =o T1	6 A	—
N "KL	50 S	—
C]	300 mA	—
gt =— —	100 mA	—
gt =— —	5 A	—
T—	1 A	—
Vg2	700 V	—
W 12 [1]	4 A	—
W 12 [2]	300 mA	—
N .1&\ – Ig1=1	2 A	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage Va	5 kV	—
Transconductance S	30 mA	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Cf(a)	48 pF	—
Output Ca(gl) 16 Ca(f) 16,	4 pF	—

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TUBE TINKER

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and their source documents.

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