ELECTRONIC TUBE REFERENCE

YD1120

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRIODE

Directly heated thoriated-tungsten RF power triode for transmitting, industrial, and Class B service. Rated for approximately 5 kW plate dissipation, with moderate gain and high transconductance for substantial RF power-amplifier applications.

General characteristics

BASE DESIGNATION	–	**BASE PINS**	–
NOMINAL HEATER	12.6 V / 33 A	**PARALLEL HEATER**	– / –
HEATING	Direct	**SERIES OPERATION**	Not specified
CATHODE ARRANGEMENT	Separate cathodes	**SECTION CONSTRUCTION**	Similar

Section ratings

SECTION1 Triode

TRANSCONDUCTANCE	0.017 S
AMPLIFICATION FACTOR	32
MAXIMUM PLATE DISSIPATION	5000 W

Published electrical data additionally captured in parameter rows.

Directly heated thoriated-tungsten R.F. power triode. The Philips sheet publishes filament data, interelectrode capacitances, static characteristics, limiting ratings, and operating conditions for R.F. and/or Class B service.

SOURCE OPERATING CONDITIONS

1999 Philips E-Z

SOURCE PDF

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

1999 PHILIPS E-Z

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	**PUBLISHED VALUE**	**CONDITION / NOTE**
Filament voltage Vg	**12.6 V**	Filament voltage Vg = 12,6 V
Filament current If	**33 A**	Filament current If = 33 A
Anode voltage Vo,	**4 kV**	Anode voltage Vo, = 4.0 kV
Anode current I,	**1 A**	Anode current I, = 1.0 A
Amplification factor u	**32**	Amplification factor u = 32
Mutual conductance S	**17 mA**	Mutual conductance S = 17 mA/V
Frequency f	**2201**	Frequency f = 30 30 30 110 2201) MHz
Anode voltage Vo,	**3 kV**	Anode voltage Vo, = 6.0 5.0 4.0 5.0 3.0 kV
Grid voltage Vg	**-160 V**	Grid voltage Vg = -400 -300 -200 -300 -160 V
Anode current In	**1.25 A**	Anode current In = 1.5 1.5 1.37 1.25 1.25 A
Grid current Ig	**250 mA**	Grid current Ig = 310 330 300 300 250 mA
Driver output power Wdar	**510 W**	Driver output power Wdar = 275 240 190 250 510 W
Anode input power Wi,	**3.75 kW**	Anode input power Wi, = 9.0 7.5 5.5 6.25 3.75 kW
Anode dissipation W,	**1.6 kW**	Anode dissipation W, = 2.1 1.9 1.5 1.45 1.6 kW
Output power Wo	**2.65 kW**	Output power Wo = 6.9 5.6 4.0 4.8 2.65 kW
Tube efficiency	**70**	Tube efficiency 1 = 76.5 75 73 77 70 %
Output power in the load Wy	**2.15 kW**	Output power in the load Wy 5.5 4.5 3.2 3.9 2.15 kW
Frequency f up to	**220 MHz**	Frequency f up to 75 110 220 MHz
Frequency f	**110 MHz**	Frequency f = 75 110 MHz
Anode voltage vV,	**4 kV**	Anode voltage vV, = 5.0 4.0 kV
Grid voltage Vg	**350 V**	Grid voltage Vg = -400 =350 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode current I,	**930 mA**	Anode current I, = 1.2 0.93 A
Grid current Ig	**240 mA**	Grid current Ig = 300 240 mA
Driver output power War	**130 W**	Driver output power War = 205 130 W
Anode input power Wia	**3.72 kW**	Anode input power Wia = 6.0 3.72 kW
Anode dissipation Wy	**0.92 kW**	Anode dissipation Wy = 1.3 0.92 kW
Output power Wo	**2.8 kW**	Output power Wo = 4.7 2.8 kW
Tube efficiency n	**13**	Tube efficiency n = 78,5 13 %

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode voltage Va - max	**4 kV**	Anode voltage Va - max. 6.2 5.5 4.0 kV
Anode current Ia = max	**1.5 A**	Anode current Ia = max. 1.5 1.5 1.5 A
Anode input power Wi, = max	**6 kW**	Anode input power Wi, = max. 9.3 8.2 6.0 kW
Anode dissipation Wy = max	**5 kW**	Anode dissipation Wy = max. 5.0 5.0 5.0 kW
Negative grid voltage -Vg = max.1000	**1000 V**	Negative grid voltage -Vg = max.1000 1000 1000 V
Grid current Ig = max	**350 mA**	Grid current Ig = max. 350 350 350 mA
Anode voltage V, = max	**3.2 kV**	Anode voltage V, = max. 5.0 4.5 3.2 kV
Anode current Iy = max	**1.3 A**	Anode current Iy = max. 1.3 1.3 1.3 A
Anode input power Wia = max	**4 kW**	Anode input power Wia = max. 6.5 5.8 4.0 kW
Anode dissipation W, = max	**3.4 kW**	Anode dissipation W, = max. 3.4 3.4 3.4 kW
Negative grid voltage --Vg = max	**1000 V**	Negative grid voltage --Vg = max. 1000 1000 1000 V
Grid current	**350 mA**	Grid current 1g = max. 350 350 350 mA

Tube Tinker

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

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