

ELECTRONIC TUBE REFERENCE

YD1010

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Directly heated thoriated-tungsten very-high-power RF triode for transmitting, industrial, and Class B service. Rated for approximately 120 kW plate dissipation and 11 kV plate voltage, with exceptionally high transconductance for major installations.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	18 V / 280 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
TRANSCONDUCTANCE	0.13 S
AMPLIFICATION FACTOR	55
MAXIMUM PLATE VOLTAGE	11000 V
MAXIMUM PLATE DISSIPATION	120000 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
[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 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage V_f	18 V	Filament voltage $V_f = 18 \text{ V}$
Filament current I_f	280 A	Filament current $I_f = 280 \text{ A}$
Anode voltage v_a ,	4 kv	Anode voltage $v_a = 4 \text{ kv}$
Anode current I_a	5 A	Anode current $I_a = 5 \text{ A}$
Amplification factor μ	55	Amplification factor $\mu = 55$
Mutual conductance S	130 mA	Mutual conductance $S = 130 \text{ mA/V}$
Frequency f up to	30 MHz	Frequency f up to 10 upto 30 MHz
Anode voltage $V_a = \text{majx-} \dots$ T	-2	Anode voltage $V_a = \text{majx-} \dots$ T -1-5-----1-2- - -k- V)
Frequency f	30 MHz	Frequency $f = 10 \ 10 \ 30 \ 30 \text{ MHz}$
Anode voltage V_a	12 kv	Anode voltage $V_a = 15 \ 15 \ 12 \ 12 \text{ kv}$
Grid voltage $V_g = -520$	-720 V	Grid voltage $V_g = -520 \ -800 \ -480 \ -720 \text{ V}$
Anode current I_a	24.7 A	Anode current $I_a = 29.3 \ 24.7 \ 29.3 \ 24.7 \text{ A}$
Grid current I_g	5.5 A	Grid current $I_g = 5.4 \ 5.2 \ 5.9 \ 5.5 \text{ A}$
Peak driving voltage V_{gp}	1290 V	Peak driving voltage $V_{gp} = 1090 \ 1370 \ 1030 \ 1290 \text{ V}$
Anode input power W_{ia}	296 kw	Anode input power $W_{ia} = 440 \ 371 \ 353 \ 296 \text{ kw}$
Anode dissipation W_a ,	51 kW	Anode dissipation $W_a = 80 \ 61 \ 68 \ 51 \text{ kW}$
Output power W_o ,	245 kW	Output power $W_o = 360 \ 310 \ 285 \ 245 \text{ kW}$
Efficiency η	82.6	Efficiency $\eta = 81.8 \ 83.5 \ 80.8 \ 82.6 \ \%$
Frequency f of e....Upt0	30	Frequency f of e....Upt0 30 Mz
Frequency f	30 MHz	Frequency $f = 30 \ 30 \ 30 \text{ MHz}$
Anode voltage V_a	8 kv	Anode voltage $V_a = 11 \ 10 \ -8 \text{ kv}$

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid voltage $V_g = -170$	-100 V	Grid voltage $V_g = -170 -140 -100$ V
Anode current I_a ,	18 A	Anode current $I_a = 19 17.3 18$ A
Grid current I_g	7.6 A	Grid current $I_g = 7.4 6.9 7.6$ A
Peak driving voltage V_{gp}	355 A	Peak driving voltage $V_{gp} = 1000 930 \{355 A\}$
Anode input power W_{ia}	144 kW	Anode input power $W_{ia} = 209 173 144$ kW
Anode dissipation W_a ,	34 kW	Anode dissipation $W_a = 44 38 34$ kW
Output power W_o ,	110 kW	Output power $W_o = 165 135 110$ kW
Efficiency η	76.5	Efficiency $\eta = 79 78 76.5$ %

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode dissipation $W_a = \max$	120 kW	Anode dissipation $W_a = \max. 120 120$ kW
Negative grid voltage $-V_g = \max$	1200 V	Negative grid voltage $-V_g = \max. 1200 1200$ V
Grid dissipation $W_g = \max$	4 kW	Grid dissipation $W_g = \max. 4 4$ kW
Anode current $I_z = \max$	33 A	Anode current $I_z = \max. 33 33$ A
Grid current $I_g = \max$	8	Grid current $I_g = \max. 8 8\frac{1}{2}$ A
Anode voltage $V_a = \max$	11 kV	Anode voltage $V_a = \max. 11$ kV
Anode dissipation ' $W_a = \max$	80 kW	Anode dissipation ' $W_a = \max. 80$ kW
Negative grid voltage $-V_g = \max$	1000 V	Negative grid voltage $-V_g = \max. 1000$ V
Grid dissipation i $W_g = \max$	4 kW	Grid dissipation i $W_g = \max. 4$ kW
Anode current $I_a = \max$	22 A	Anode current $I_a = \max. 22$ A
Grid current $I_g = \max$	8 A	Grid current $I_g = \max. 8$ A

TUBE TINKER

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