



ELECTRONIC TUBE REFERENCE

7604

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Forced-air-cooled VHF power triode for oscillator, amplifier, and modulator service. Its external radiator handles hundreds of watts of dissipation, with full ratings through VHF and reduced-input operation extending toward UHF.

GENERAL CHARACTERISTICS

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

SECTION RATINGS

SECTION 1 Triode	
MAXIMUM PLATE VOLTAGE	4000 V
MAXIMUM PLATE DISSIPATION	600 W
MAXIMUM CATHODE CURRENT	500 mA
Source-derived physical/electrical section.	

Westinghouse January 1, 1941 VHF POWER TRIODE TYPE 7604 The 7604 is a three electrode tube designed for use as an oscillator, amplifier or modulator. The forced-air- cooled external radiator is capable of dissipating 600 watts. An efficient oxide coated cathode is employed. Maximum ratings apply to 60 megacycles and operation with reduced input is permissible to 350 megacycles. ELECTRICAL: MAXIMUM RATINGS - CLASS C TELEGRAPHY Cathode. v v v v oo e i i e e i ee v e Oxide Coated Unipotential {Key down conditions per tube without modulation} Heater: D.C. Plate Voltage 4000 Volts Voltage o v v v v t i e i e 5.0 Volts D.C. Plate Current. . . v v v v v i m v v o n v o e 0.50 Amperes Current & . o i t e e e e e e 8.0 Amperes D.C. Grid Voltage . . . e -500 Volts Amplification Factor. 20 D.C. Grid Current, . . , < v v o i s v e v e e e e n s 0.075 Amperes Interelectrode Capacitances: Plate Input. v 0 t t t 1.8 Kilowatts Grid to Plate.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1947 Westinghouse

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

1947 WESTINGHOUSE

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The	7604	The 7604 is a three electrode tube designed for use as an oscillator, amplifier or modulator. The forced-air-
cocled external radiator is capable of dissipating	600	cocled external radiator is capable of dissipating 600 watts. An efficient oxide coated cathode is employed.
Maximum ratings apply to	350	Maximum ratings apply to 60 megacycles and operation with reduced input is permissable to 350 megacycles.
Haater: D.C. Plote Voltage	4000	Haater: D.C. Plote Voltage 000uunn 4000 VYolts
Yoltage o v v v vt i e i e	0.5	Yoltage o v v v vt i e i e 5.0 Yolts D.C.Plate Current. . . v v v v v i m v v o n v o e 0.50 Ampares
Current & . o it e e e e e e e	-500	Current & . o it e e e e e e e 8.0 Ampsres D.C. Grid VYoltage . . . e -500 Yolts
Gridto Plate	600	Gridto Plate. 0 i v i m i e 11.8 et Plate Dissipation y 600 Watts
Gridto Cathode	15	Gridto Cathode. 26 ppaf Grid Dissipation o 15 Watts
Plate te Cathode . . v . v o v v v v e i e a e	400	Plate te Cathode . . v . v o v v v v e i e a e 0.24 pepf D.C. Grid Voltage oovvvenes —275 400 Volts
Peak R.F. Grid Voltage	525	Peak R.F. Grid Voltage 370 525 Yolts
MECHANICAL: D.C. Plate Current. o v v	400	MECHANICAL: D.C. Plate Current. o v v 0.272 0,400 Amperes
Mounting Pesitionll , ... Vertical - anode up or down D.C.GridCurrent c... 0.046 C	0.069	Mounting Pesitionll , ... Vertical - anode up or down D.C.GridCurrent c... 0.046 0.069 Amperes

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Type of Cooling + v v v v v v v t v i t e i e e s Forced Air Peak R.F. Plate Voltage	2950	Type of Cooling + v v v v v v t v i t e i e e s Forced Air Peak R.F. Plate Voltage. 2100 2950 Volts
Maximum Incoming Air Temperature	35	Maximum Incoming Air Temperature 45 °C Driving Power {(Approx.)}® ., ... 17 35 Watts
Minimum Required Air Flow on Radiator: Power Output	1100	Minimum Required Air Flow on Radiator: Power Output 530 1100 Watts
Plate Dissipation. « v « v v e v v e v v v v v t o o a n s	600	Plate Dissipation. « v « v e v v e v v v v t o o a n s 600 Watts
Air Flow Cubic Feet per Min. . « o o u . e	30	Air Flow Cubic Feet per Min. . « o o u . e . . 30 cfm R°F. POWER AMPLIFIER-CLASS AB
. 160 °C Max. Signal D.C. Plate Current. 0.400	0.4	. 160 °C Max. Signal D.C. Plate Current. 0.400 Amperes
Shipping Weight . « v v e e e s e e e	1.5	Shipping Weight . « v v e e e s e e e 3 Pounds Max. Signal Input. o v v v e 1.5 Kilowatts
Plate Dissipation	600	Plate Dissipation 600 Watts
Grid Dissipation Grid Dissipation ,	15	Grid Dissipation Grid Dissipation , 15 Watts
78 Class AB2 R-F Linear Amplifier {Ona Tube}	78	78 Class AB2 R-F Linear Amplifier {Ona Tube}
2000" L 03" —m] e T Grounded Grid Operation - Frequencies Below	60	2000" L 03" —m] e T Grounded Grid Operation - Frequencies Below 60 mc.:
% " : é " D.C. Grid Voltage v o	-210	% " : é " D.C. Grid Voltage v o -210 Volts
D.C. Plate Current. v v v v v e v e a s	285	D.C. Plate Current. v v v v v e v e a s .285 Amperes
1 Zero Signal Plate Current 0.045 Amperes	0.045	1 Zero Signal Plate Current 0.045 Amperes
D.C. Grid Current	0.008	D.C. Grid Current. 0.008 Amperes
Peak R.F. Grid Voltage	270	. Peak R.F. Grid Voltage. 270 Volts
% t % Plate Dissipation	245	% t % Plate Dissipation. 245 Watts
29 s, . Driving Power (Approx.) o o v l 65 Watts	65	29 s, . Driving Power (Approx.) o o v l 65 Watts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
18 MAK.W _;" :la" Power Output (Apprex.). v v v v v v v w v v	755	18 MAK.W _;" :la" Power Qutput (Apprex.). v v v v v v w v v 755 Watts
400 . . Plote Amperes	400	400 . . Plote Amperes
St	1	St 1o °"' ,ozI
KILOWATT LINEAR AMPLIFIER FOR	10	KILOWATT LINEAR AMPLIFIER FOR 80 THROUGH 10 METERS
500 ppf National Plote Voltoge: 3500 V at 300 Ma.	300	500 ppf National Plote Voltoge: 3500 V at 300 Ma.
000Ipf Barker	6	OOOIpf Barker 6 Willtamson
Termingl	0.012	Termingl 0.012 pf)
0004 pf _	4	0004 pf _
Note	90	Note 1: Four 0.003 uf, 1.6 KV disc-caps attached at 90° intervals around grid ring
iti suppressor consists of	2	iti suppressor consists of 7 turns of #12 wire on 47), 2 watt resistor

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification Factor	0.075	Amplification Factor. 20 D.C. Grid Current, . . , < v v o i s v e v e e e e n s 0.075 Ampares
Note	3	Note 3: Twa TV high voltage filter capacitors in parallel.