



ELECTRONIC TUBE REFERENCE

4X150A

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
TETRODE

Forced-air-cooled external-anode radial-beam tetrode for mobile, wide-band, video, and RF power-amplifier service, with useful operation extending to approximately 500 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	9
NOMINAL HEATER	6 V / 2.6 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Tetrode	
TRANSCONDUCTANCE	0.012 S
AMPLIFICATION FACTOR	5
MAXIMUM PLATE VOLTAGE	1250 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	250 W
MAXIMUM SCREEN DISSIPATION	12 W
MAXIMUM GRID DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	250 mA
<i>Promoted from printed maximum-rating and general-characteristics tables.</i>	

4X150A is a Tetrode device. Forced-air-cooled external-anode tetrode for high-power mobile and wide-band/video amplifier service.

SOURCE OPERATING CONDITIONS

1940 RCA

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

1940 RCA

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
rating of 26.5 + 10% volts,	10 V	rating of 26.5 + 10% volts,
0.58 ampere.	580 mA	0.58 ampere.
Unipotential Cathode For Use at Frequencies Up to 500 Mc 2-15/32" Max. Length	32 MHz	Unipotential Cathode For Use at Frequencies Up to 500 Mc 2-15/32" Max. Length
Compact Design 370 Watts CW Output up to 150 Mc Integral Radiator	150 W	Compact Design 370 Watts CW Output up to 150 Mc Integral Radiator
140 Watts CW Output at	500 W	140 Watts CW Output at 500 Mc
service at frequencies up to 500 Mc. It is and heater . . [	16 MHz	service at frequencies up to 500 Mc. It is and heater . . [16 prf
useful as an af power amplifier and modulator, a and heater . . . e e e e	4.4	useful as an af power amplifier and modulator, a and heater . . . e e e e 4.4 gt
linear rf power amplifier Maximum Overall Length. e	32	linear rf power amplifier Maximum Overall Length. e 2-15/32"
amplifier or oscillator. Johnson No,	-1	amplifier or oscillator. Johnson No,124-110-1
250 watts. air over the base seals; past the grid-No.2 seal, glass	2 W	250 watts. air over the base seals; past the grid-No.2 seal, glass
cies up to 150 Mc, itoffers substantially higher altitudes and ambient temperatures,the air flow mus	150 MHz	cies up to 150 Mc, itoffers substantially higher altitudes and ambient temperatures,the air flow must be

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
250 watts with no sacrifice in tube reliability. altitudes and ambient temperatures, the air flow mu	250 W	250 watts with no sacrifice in tube reliability. altitudes and ambient temperatures, the air flow must be
DC PLATE VOLTAGE . . e e e 2000 max, volts	2000 V	DC PLATE VOLTAGE . . e e e 2000 max, volts
DC GRID-No.2 (SCREEN) VOLTAGE. 400 max. volts	400 V	DC GRID-No.2 (SCREEN) VOLTAGE. 400 max. volts
MAX.-SIGNAL OC PLQTE CURRENT 250 max. ma	250 mA	MAX.-SIGNAL OC PLQTE CURRENT 250 max. ma
GENERAL DATA PLATE DISSIPATION . . . « . « « & « « 250 max. watts	250 W	GENERAL DATA PLATE DISSIPATION . . . « . « « & « « 250 max. watts
Electrical: GRID-NC.2 DISSIPATION 12 max, watts	12 W	Electrical: GRID-NC.2 DISSIPATION 12 max, watts
voltage (AC or 0c)® 6.0+10% volis Heater negative with	10 V	voltage (AC or 0c)® 6.0+10% volis Heater negative with
respect to cathode . 150 max. volts	150 V	respect to cathode . 150 max. volts
Current at 6.0 volts . e e e	2.6 V	Current at 6.0 volts . e e e 2.6 amperes
Minimum heating time . . . e 30 seconds respect to cathocde . 150 max. volts	150 V	Minimum heating time . . . e 30 seconds respect to cathocde . 150 max. volts
for grid-No.2 volts =	300 V	for grid-No.2 volts = 300 and
Typical CCS Operation: Typical CCS Operation (With bandwidth of	5 MHz	Typical CCS Operation: Typical CCS Operation (With bandwidth of 5 Mc):
DC Plate voltage 750 1000	1250 V	DC Plate voltage 750 1000 1250 volts
DC Grid-No.2 voltage 300 300	300 V	DC Grid-No.2 voltage 300 300 300 volts
DC Plate voltage 800 1000 1500	2000 V	DC Plate voltage 800 1000 1500 2000 volts
DC Grid-No.1 voltage -60 -65 =	70 V	DC Grid-No.1 voltage -60 -65 =70 volts
DC Grid-No.2 voltage . . . 300 300 300	300 V	DC Grid-No.2 voltage . . . 300 300 300 300 volts
Peak RF Grid-No	1 V	Peak RF Grid-No.1 voltage:

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid) voltage. -40 -43 -50 -50 volts Synchronizing level. 85 95	100 V	Grid) voltage. -40 -43 -50 -50 volts Synchronizing level. 85 95 100 volts
Peak AF Grid-No.1-to-Grid- Pedestal level 65 70	75 V	Peak AF Grid-No.1-to-Grid- Pedestal level 65 70 75 volts



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1950 General Electric Transmitting Types

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

1950 GENERAL ELECTRIC TRANSMITTING TYPES

Section 1 · Tetrode

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling method	Forced air	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Service	RF power amplifier / oscillator	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1956 RCA Transmitting Tubes

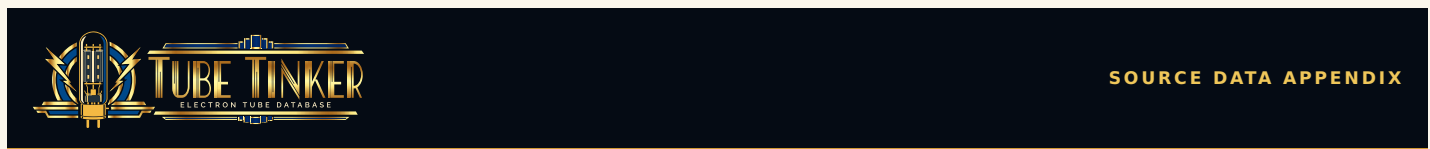
Published test conditions and operating points. Values on this page are preserved as reported by this source.

1956 RCA TRANSMITTING TUBES

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum full-rating frequency	500 MHz	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling method	Forced air	—



SOURCE OPERATING CONDITIONS

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1958 Amperex Industrial

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

1958 AMPEREX INDUSTRIAL

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	1250 V	RFAmplifierOrOscillator; ClassC; Telegraphy
Plate current	200 mA	RFAmplifierOrOscillator; ClassC; Telegraphy
RF output power	195 W	RFAmplifierOrOscillator; ClassC; Telegraphy
Grid voltage	-90 V	RFAmplifierOrOscillator; ClassC; Telegraphy
Grid current	11 mA	RFAmplifierOrOscillator; ClassC; Telegraphy
Maximum frequency at full input rating	500 MHz	—
Screen voltage	250 V	RFAmplifierOrOscillator; ClassC; Telegraphy

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.03 pF	—
Grid-to-filament/cathode capacitance	15.7 pF	—
Plate-to-filament/cathode capacitance	4.3 pF	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 Eimac

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

1962 EIMAC

Section 1 · Tetrode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	15.7 pF	—
Output Capacitance	4.5 pF	—
Feedback Capacitance	0.03 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency of Maximum Rating	150 MHz	—
Maximum DC Plate Current	250 mA	ClassAB1
Typical Linear Plate Voltage	2000 V	ClassAB1
Typical Linear Plate Output Power	300 W	ClassAB1
Class C Plate-Modulated Maximum Plate Voltage	1600 V	ClassC;Telephony

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Highest Useful Frequency	500 MHz	—

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	1250 V	RFAmplifierOrOscillator; ClassC; Telegraphy
Plate current	200 mA	RFAmplifierOrOscillator; ClassC; Telegraphy
RF output power	195 W	RFAmplifierOrOscillator; ClassC; Telegraphy
Grid voltage	-90 V	RFAmplifierOrOscillator; ClassC; Telegraphy
Grid current	11 mA	RFAmplifierOrOscillator; ClassC; Telegraphy
Maximum frequency at full input rating	500 MHz	—
Screen voltage	250 V	RFAmplifierOrOscillator; ClassC; Telegraphy

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.03 pF	—
Grid-to-filament/cathode capacitance	15.7 pF	—
Plate-to-filament/cathode capacitance	4.3 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1971 RCA HB3 Binder 6 of 7

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

1971 RCA HB3 BINDER 6 OF 7

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC)a – published value 1	6	Published datasheet value
Voltage (AC or DC)a – published value 2	0	Published datasheet value
Voltage (AC or DC)a – published value 3	10	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current at heater volts = 6.0 – published value 1	6 A	Published datasheet value
Current at heater volts = 6.0 – published value 2	26 A	Published datasheet value
/'''~,	300	Published datasheet value
grid-No.2 ma. = 50 – published value 1	50 mA	Published datasheet value
grid-No.2 ma. = 50 – published value 2	5 mA	Published datasheet value
Grid No.1 to plate	0.03	Published datasheet value
and heater	16	Published datasheet value
and heater – published value 1	4	Published datasheet value
and heater – published value 2	4	Published datasheet value
Pin 1 -Grid No.24 – published value 1	1	Published datasheet value
Pin 1 -Grid No.24 – published value 2	8	Published datasheet value
Pin 3 -Heater	3	Published datasheet value
Pin 4 -Cathode	4	Published datasheet value
Pin 7 -Heater	7	Published datasheet value
20° C	20	Published datasheet value
DC Plate Voltage – published value 1	800	Published datasheet value
DC Plate Voltage – published value 2	1000	Published datasheet value
DC Plate Voltage – published value 3	1500	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
for each class of service, a minimum air flow of 5.6 cfm	5.6	Published datasheet value
class of service, a minimum air flow of 5.3 cfm must	5.3 cfm	Published datasheet value
of plate surface at junction with fins)	250 mA	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Temperature of Plate Seal	200 mA	Published datasheet value
Grid-No.2 Seal	175 mA	Published datasheet value
DC PLATE VOLTAGE	2 A	Published datasheet value
DC GRID-No.2 (SCREEN-RID) VOLTAGE	400 mA	Published datasheet value
MAX.-SIGNAL DC PLATE CURRENT _h	250 mA	Published datasheet value
GRID-No.2 INPUT _h	12 mA	Published datasheet value
PLATE DISSIPATION _h	250 mA	Published datasheet value
Heater negative with respect to cathode	150 mA	Published datasheet value



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

199X Svetlana

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

199X SVETLANA

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	2000 V	—
Maximum Screen Voltage	400 V	—
Maximum Plate Dissipation	250 W	—
Maximum Screen Dissipation	12 W	—