

ELECTRONIC TUBE REFERENCE

6HA5

Voltage - Triode (single high frequency) electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRIODE

Miniature triode used as an RF amplifier in VHF color and black-and-white television tuners.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7GM	BASE PINS	7
NOMINAL HEATER	6.3 V / 180 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7GM - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – G1	A	G1 – Control Grid	CONNECTED
PIN2 – K	A	K – Cathode	CONNECTED
PIN3 – H	–	H – Heater	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – P	A	P – Plate (Anode)	CONNECTED
PIN6 – IS	A	IS – Internal Screen	CONNECTED
PIN7 – K	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	5000 Ω
TRANSCONDUCTANCE	0.02 S
AMPLIFICATION FACTOR	80
MAXIMUM PLATE VOLTAGE	220 V
MAXIMUM PLATE DISSIPATION	2.6 W
MAXIMUM CATHODE CURRENT	22 mA
<i>VHF tuner service; published characteristics include 14.5-20 mS.</i>	

Miniature triode used as an RF amplifier in VHF color and black-and-white television tuners.



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

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	Published table
Control-grid bias	-5.7 V	Published table
Plate current	11.5 mA	Published table

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	14500 μ S	Published table
Amplification factor	72	Published table
Plate resistance	5600 ohm	Published table
Heater voltage	6.3 V	Published heater rating
Heater current	180 mA	Published heater rating



SOURCE OPERATING CONDITIONS

1965 Sylvania Electronic Tubes Vol3

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

1965 SYLVANIA ELECTRONIC TUBES VOL3

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	135 V	—
Grid voltage	-1 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	12.5 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	14500 μ S	—
Amplification factor	78 ratio	—
Hot input resistance	1000 Ω m	—
Noise figure	4.2 dB	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Hot input capacitance	8.5 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 5 of 7

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

1971 RCA HB3 BINDER 5 OF 7

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	135 V	ClassA
Plate current	11.5 mA	ClassA
Maximum plate voltage	330 V	—
respect to cathode	110 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater to grid – published value 1	0 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater to grid – published value 2	70 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Supply Voltage	600 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Voltage	220 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Negative-bias value	50 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Positive-bias value	0 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Cathode Current	22 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Dissipation	2.6 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	5000 ohm	ClassA
Transconductance	14500 uS	ClassA
Amplification factor	72	ClassA
Voltage (AC or DC) – published value 1	6.3 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Voltage (AC or DC) – published value 2	0.6 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Current at heater volts = 6.3 – published value 1	6.3 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Current at heater volts = 6.3 – published value 2	0 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Current at heater volts = 6.3 – published value 3	180 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid to plate	0.36 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
external shield, and heater	4.3 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
external shield, and heater	2.9 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Cathode to plate – published value 1	0 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Cathode to plate – published value 2	80 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
external shield, and heater	3.1 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Heater to cathode	2.3 pF	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Voltage	135 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid Voltage	-1 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Resistance (Approx)	5000 ohm	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Transconductance	14500	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Current	11.5 mA	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 1 -Grid – published value 1	1	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 1 -Grid – published value 2	5	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 2 -Cathode – published value 1	2	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 2 -Cathode – published value 2	6	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 3 -Heater	3	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 4 -Heater – published value 1	4	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Pin 4 -Heater – published value 2	7	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Grid Voltage	10 V	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Load Resistance	1000 ohm	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.
Plate Resistance (Approx 1 – published value 1	1 ohm	Published datasheet value; multiple values on one source row represent separate limits or operating conditions.



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1975 RCA RC30

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

1975 RCA RC30

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 2.0 2.7 4.0	6.3 V	Published in approved 2HA5 target datasheet entry; Section1
Heater Current 0.6 0.45 0.3	180 mA	Published in approved 2HA5 target datasheet entry; Section1
DC Plate Voltage	220 V	Published in approved 2HA5 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Supply Voltage	600 V	Published in approved 2HA5 target datasheet entry; Section1
Grid Voltage	-50 V	Published in approved 2HA5 target datasheet entry; Section1
Cathode Current	22 mA	Published in approved 2HA5 target datasheet entry; Section1
Plate Dissipation	2.6 W	Published in approved 2HA5 target datasheet entry; Section1
DC Plate Supply Voltage 135 135 135	135 V	Published in approved 2HA5 target datasheet entry; Section1
Plate-Load Resistor 1000	5600 Ω	Published in approved 2HA5 target datasheet entry; Section1
Internal-Shield Voltage 0 0 0	0 V	Published in approved 2HA5 target datasheet entry; Section1
DC Grid Voltage -1	-2.7 V	Published in approved 2HA5 target datasheet entry; Section1
Cathode-Bias Resistor 0	87 Ω	Published in approved 2HA5 target datasheet entry; Section1
Transconductance 14500 1500 20000	14500 μS	Published in approved 2HA5 target datasheet entry; Section1
Plate Current 11.5 19	11.5 mA	Published in approved 2HA5 target datasheet entry; Section1
DC Grid Current	10 mA	Published in approved 2HA5 target datasheet entry; Section1
transconductance -5.3	-8.1 V	Published in approved 2HA5 target datasheet entry; Section1
Heater Voltage (ac/dc) '2.4 3 4.2	6.3 V	Published in approved 2HA5 target datasheet entry; Section1
Heater Current 0.6 0.45 0.3	200 mA	Published in approved 2HA5 target datasheet entry; Section1
Heater Warm-up Time (Average) .11 11	11 seconds	Published in approved 2HA5 target datasheet entry; Section1
Plate Voltage	200 V	Published in approved 2HA5 target datasheet entry; Section1
Grid Voltage, Negative-bias Value	50 V	Published in approved 2HA5 target datasheet entry; Section1
Plate Dissipation	2.5 W	Published in approved 2HA5 target datasheet entry; Section1
Plate Voltage	135 V	Published in approved 2HA5 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Voltage	-1 V	Published in approved 2HA5 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate	0.36 pF	Published in approved 2HA5 target datasheet entry; Section1
Grid to Cathode, Heater, Internal Shield, and External Shield	4.3 pF	Published in approved 2HA5 target datasheet entry; Section1
, Shield	0.08 pF	Published in approved 2HA5 target datasheet entry; Section1
Cathode to Plate	2.9 pF	Published in approved 2HA5 target datasheet entry; Section1
Cathode to Heater, Grid, Internal Shield, and External Shield	3.1 pF	Published in approved 2HA5 target datasheet entry; Section1
Heater to Cathode	2.3 pF	Published in approved 2HA5 target datasheet entry; Section1
Grid to Plate	0.52 pF	Published in approved 2HA5 target datasheet entry; Section1
Grid to Cathode, Heater, and Internal Shield	5 pF	Published in approved 2HA5 target datasheet entry; Section1
Plate to Cathode, Heater, and Internal Shield	3.5 pF	Published in approved 2HA5 target datasheet entry; Section1
Heater to Cathode	2.5 pF	Published in approved 2HA5 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	5400 Ω	Published in approved 2HA5 target datasheet entry; Section1
Transconductance	15000 μS	Published in approved 2HA5 target datasheet entry; Section1
Plate Current	11.5 mA	Published in approved 2HA5 target datasheet entry; Section1
Input Resistance**	275 Ω	Published in approved 2HA5 target datasheet entry; Section1
Input Capacitance**	11.2 pF	Published in approved 2HA5 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Voltage (Approx.) for transconductance of	150 μS	Published in approved 2HA5 target datasheet entry; Section1
Grid Voltage (Approx.) for transconductance of 150 /imhos	-4.2 V	Published in approved 2HA5 target datasheet entry; Section1
Grid Voltage (Approx.) for transconductance of 1500 ftmhos	-2.5 V	Published in approved 2HA5 target datasheet entry; Section1

TUBE TINKER

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