



ELECTRONIC TUBE REFERENCE

8FQ7

Voltage - Dual Triode (similar) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Medium-mu twin triode used as combined horizontal- and vertical-deflection oscillator in television receivers, with published pulse ratings appropriate to sweep-generator service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9LP	BASE PINS	9
NOMINAL HEATER	8.4 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9LP - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	B	P – Plate (Anode)	CONNECTED
PIN2	B	G1 – Control Grid	CONNECTED
PIN3	B	K – Cathode	CONNECTED
PIN4	–	H – Heater	CONNECTED
PIN5	–	H – Heater	CONNECTED
PIN6	A	P – Plate (Anode)	CONNECTED
PIN7	A	G1 – Control Grid	CONNECTED
PIN8	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	7700 Ω
TRANSCONDUCTANCE	0.003 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	4 W
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed.</i>	

SECTION2 Triode	
PLATE RESISTANCE	7700 Ω
TRANSCONDUCTANCE	0.0026 S
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	4 W
MAXIMUM CATHODE CURRENT	22 mA
<i>Inherited from explicit parent 6FQ7; supplied 8FQ7 sheet changes heater characteristics only.</i>	

Medium-mu twin triode used as combined vertical- and horizontal-deflection oscillator in television receivers.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification Factor	20	EachUnit
Transconductance	3000 μ S	EachUnit



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	8.4 V	Rated heater condition
Heater current	450 mA	Rated heater condition
Plotecurrent for Grid voltage of	-12.5 V	Plotecurrent for Grid voltage of -12.5 Volts.. - 1.3



1966 Tung Sol Electronic Tubes 2 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4
Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	100 V	ClassA1
Grid Voltage	0 V	ClassA1
Plate Current	11.8 mA	ClassA1
Plate Voltage	250 V	ClassA1
Grid Voltage	-8.5 V	ClassA1
Plate Current	10.5 mA	ClassA1
Peak Cathode Current	330 mA	HorizontalDeflectionOscillator



SOURCE DATA APPENDIX

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
Heater voltage nominal	6.3 V	—
Heater current	600 mA	—
Maximum plate voltage	330 V	ClassA1
Maximum positive grid voltage	0 V	ClassA1
Maximum average cathode current	22 mA	ClassA1
Maximum plate dissipation, either plate	4 W	ClassA1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum combined plate dissipation	5.7 W	ClassA1;TwoTubes
Peak heater-cathode voltage, either polarity	200 V	—
Maximum grid-circuit resistance	1 MΩ	ClassA1;FixedBias
Maximum plate voltage	330 V	HorizontalDeflectionOscillator
Peak negative-pulse grid voltage	660 V	HorizontalDeflectionOscillator
Peak cathode current	330 mA	HorizontalDeflectionOscillator
Average cathode current	22 mA	HorizontalDeflectionOscillator
Maximum grid-circuit resistance	2.2 MΩ	HorizontalDeflectionOscillator
Maximum plate voltage	330 V	VerticalDeflectionOscillator
Peak negative-pulse grid voltage	440 V	VerticalDeflectionOscillator
Peak cathode current	77 mA	VerticalDeflectionOscillator
Average cathode current	22 mA	VerticalDeflectionOscillator
Maximum grid-circuit resistance	2.2 MΩ	VerticalDeflectionOscillator
Heater voltage nominal	8.4 V	—
Heater current nominal	450 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater warm-up time	11 s	Average
Plate voltage	90 V	ClassA1
Grid voltage	0 V	ClassA1;PlateVoltage=90V
Amplification factor	20	ClassA1;PlateVoltage=90V
Plate resistance	6700 ohm	ClassA1;PlateVoltage=90V
Transconductance	3000 μS	ClassA1;PlateVoltage=90V
Plate current	10 mA	ClassA1;PlateVoltage=90V
Grid voltage for plate current 10 μA	-7 V	ClassA1;PlateVoltage=90V
Plate voltage	250 V	ClassA1
Grid voltage	-8 V	ClassA1;PlateVoltage=250V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	20	ClassA1;PlateVoltage=250V
Plate resistance	7700 ohm	ClassA1;PlateVoltage=250V
Transconductance	2600 μS	ClassA1;PlateVoltage=250V
Plate current	9 mA	ClassA1;PlateVoltage=250V
Plate current at grid -12.5 V	1.3 mA	ClassA1;PlateVoltage=250V
Grid voltage for plate current 10 μ A	-18 V	ClassA1;PlateVoltage=250V

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	3.6 pF	Section1
Grid-to-cathode-and-heater capacitance	2.4 pF	Section1
Plate-to-cathode-and-heater capacitance	0.34 pF	Section1
Plate-to-plate interunit capacitance	1 pF	BetweenSections

1971 RCA HB3 BINDER 5 OF 7

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage nominal	6.3 V	—
Heater current	600 mA	—
Maximum plate voltage	330 V	ClassA1
Maximum positive grid voltage	0 V	ClassA1
Maximum average cathode current	22 mA	ClassA1
Maximum plate dissipation, either plate	4 W	ClassA1
Maximum combined plate dissipation	5.7 W	ClassA1;TwoTubes
Peak heater-cathode voltage, either polarity	200 V	—
Maximum grid-circuit resistance	1 MΩ	ClassA1;FixedBias

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	330 V	HorizontalDeflectionOscillator
Peak negative-pulse grid voltage	660 V	HorizontalDeflectionOscillator
Peak cathode current	330 mA	HorizontalDeflectionOscillator
Average cathode current	22 mA	HorizontalDeflectionOscillator
Maximum grid-circuit resistance	2.2 MΩ	HorizontalDeflectionOscillator
Maximum plate voltage	330 V	VerticalDeflectionOscillator
Peak negative-pulse grid voltage	440 V	VerticalDeflectionOscillator
Peak cathode current	77 mA	VerticalDeflectionOscillator
Average cathode current	22 mA	VerticalDeflectionOscillator
Maximum grid-circuit resistance	2.2 MΩ	VerticalDeflectionOscillator
Heater voltage nominal	8.4 V	—
Heater current nominal	450 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater warm-up time	11 s	Average
Plate voltage	90 V	ClassA1
Grid voltage	0 V	ClassA1;PlateVoltage=90V
Amplification factor	20	ClassA1;PlateVoltage=90V
Plate resistance	6700 ohm	ClassA1;PlateVoltage=90V
Transconductance	3000 μS	ClassA1;PlateVoltage=90V
Plate current	10 mA	ClassA1;PlateVoltage=90V
Grid voltage for plate current 10 μA	-7 V	ClassA1;PlateVoltage=90V
Plate voltage	250 V	ClassA1
Grid voltage	-8 V	ClassA1;PlateVoltage=250V
Amplification factor	20	ClassA1;PlateVoltage=250V
Plate resistance	7700 ohm	ClassA1;PlateVoltage=250V
Transconductance	2600 μS	ClassA1;PlateVoltage=250V
Plate current	9 mA	ClassA1;PlateVoltage=250V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current at grid -12.5 V	1.3 mA	ClassA1;PlateVoltage=250V
Grid voltage for plate current 10 μ A	-18 V	ClassA1;PlateVoltage=250V

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	3.8 pF	Section2
Grid-to-cathode-and-heater capacitance	2.4 pF	Section2
Plate-to-cathode-and-heater capacitance	0.26 pF	Section2
Plate-to-plate interunit capacitance	1 pF	BetweenSections



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) 6.3 8.4	12.6 V	Published in approved 12FQ7 target entry; Section1
Heater Current 0.6 0.45	300 mA	Published in approved 12FQ7 target entry; Section1
Heater Warm-up Time (Average)	11 seconds	Published in approved 12FQ7 target entry; Section1
Grid to Plate 3.6	3.8 pF	Published in approved 12FQ7 target entry; Section1
Grid to Cathode and Heater 2.4	2.4 pF	Published in approved 12FQ7 target entry; Section1
Plate to Cathode and Heater 0.34	0.26 pF	Published in approved 12FQ7 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	330 V	Published in approved 12FQ7 target entry; Section1
Grid Voltage, Positive-bias value	0 V	Published in approved 12FQ7 target entry; Section1
Cathode Current	22 mA	Published in approved 12FQ7 target entry; Section1
For both plates with both units opex'ating	5.7 W	Published in approved 12FQ7 target entry; Section1
Plate Voltage 90	250 V	Published in approved 12FQ7 target entry; Section1
Grid Voltage 0	-8 V	Published in approved 12FQ7 target entry; Section1
Plate Resistance (Approx.) 6700	7700 Ω	Published in approved 12FQ7 target entry; Section1
DC Plate Voltage 330	330 V	Published in approved 12FQ7 target entry; Section1
Peak Negative-Pulse Grid Voltage 440	660 V	Published in approved 12FQ7 target entry; Section1
Peak Cathode Current 77	330 mA	Published in approved 12FQ7 target entry; Section1
Average Cathode Current 22	22 mA	Published in approved 12FQ7 target entry; Section1
For either plate 4	4 W	Published in approved 12FQ7 target entry; Section1
For both plates with both units operating . . . 5.7	6.7 W	Published in approved 12FQ7 target entry; Section1
Grid-Circuit Resistance 2.2	2.2 MΩ	Published in approved 12FQ7 target entry; Section1
Heater Voltage (ac/dc) 2.4 2.9	6.3 V	Published in approved 12FQ7 target entry; Section1
Heater Current 0.6 0.45	200 mA	Published in approved 12FQ7 target entry; Section1
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 12FQ7 target entry; Section1
Plate Voltage	300 V	Published in approved 12FQ7 target entry; Section1
Grid-No.3 (Screen-Grid) Voltage	150 V	Published in approved 12FQ7 target entry; Section1
Negative-bias value	60 V	Published in approved 12FQ7 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Positive-bias value	0 V	Published in approved 12FQ7 target entry; Section1
Cathode Current	20 mA	Published in approved 12FQ7 target entry; Section1
Plate Dissipation	3.25 W	Published in approved 12FQ7 target entry; Section1
Grid-No.3 Input	0.16 W	Published in approved 12FQ7 target entry; Section1
Plate Voltage	275 V	Published in approved 12FQ7 target entry; Section1
Grid-No.3 Voltage	135 V	Published in approved 12FQ7 target entry; Section1
Grid-No.1 Voltage	-0.2 V	Published in approved 12FQ7 target entry; Section1
Grid-No.1-Circuit Resistance, for fixed-bias operation	0.5 MΩ	Published in approved 12FQ7 target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate of Unit No.1 to Plate of Unit No	2 pF	Published in approved 12FQ7 target entry; Section1
Grid No.1 to Plate 0.03	0.016 pF	Published in approved 12FQ7 target entry; Section1
No.3, and Grid No.4	4.8 pF	Published in approved 12FQ7 target entry; Section1
and Grid No	4 pF	Published in approved 12FQ7 target entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current 10	9 mA	Published in approved 12FQ7 target entry; Section1
Grid Voltage (Approx.) for plate current of 10 /iA. -7	-18 V	Published in approved 12FQ7 target entry; Section1
12.5 volts	1.3 mA	Published in approved 12FQ7 target entry; Section1
Plate Resistance (Approx.)	0.24 MΩ	Published in approved 12FQ7 target entry; Section1
Transconductance	10000 μS	Published in approved 12FQ7 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	9 mA	Published in approved 12FQ7 target entry; Section1
Grid-No.3 Current	0.17 mA	Published in approved 12FQ7 target entry; Section1
Grid-No.1 Voltage (Approx.) for transconductance of	100 μS	Published in approved 12FQ7 target entry; Section1
Grid-No.1 Voltage (Approx.) for transconductance of 100 /imhos	-5 V	Published in approved 12FQ7 target entry; Section1

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