

ELECTRONIC TUBE REFERENCE

13DR7

Power - TV Vertical Output electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Dissimilar dual triode developed for combined television vertical-deflection oscillator and amplifier service. Its high-mu small-signal section works with a low-mu 7 W output section rated for high pulse voltage and current.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9HF	BASE PINS	8
NOMINAL HEATER	13 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

9HF - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	B	P – Plate (Anode)	CONNECTED
PIN2	B	G1 – Control Grid	CONNECTED
PIN3	B	G3 – Suppressor Grid	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
PIN9	B	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	40000 Ω
TRANSCONDUCTANCE	0.0016 S
AMPLIFICATION FACTOR	65
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	1 W
MAXIMUM CATHODE CURRENT	20 mA
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed.</i>	

SECTION2 Triode	
PLATE RESISTANCE	925 Ω
TRANSCONDUCTANCE	0.0065 S
AMPLIFICATION FACTOR	6
MAXIMUM PLATE VOLTAGE	275 V
MAXIMUM PLATE DISSIPATION	7 W
MAXIMUM CATHODE CURRENT	50 mA
WARM-UP TIME	11 s
<i>Published promoted fields populated semantically; identical repeated sections compressed.</i>	

Dissimilar dual triode for combined television vertical-deflection oscillator and amplifier service.



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 2 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Section2Transconductance	6500 μ S	Section2



SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 3 of 4

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1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	250 V	VerticalDeflection
Typical plate current	3.4 mA	VerticalDeflection
Maximum peak cathode current	70 mA	VerticalDeflection
Maximum plate voltage	330 V	PromotedValue
Maximum plate dissipation	1 W	PromotedValue
Maximum cathode current	20 mA	PromotedValue

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	40000 ohm	PromotedValue
Transconductance	0.0016 A/V	PromotedValue
Amplification factor	65	PromotedValue

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical plate voltage	150 V	VerticalDeflection
Typical plate current	35 mA	VerticalDeflection
Maximum peak cathode current	175 mA	VerticalDeflection
Maximum peak positive pulse plate voltage	1500 V	VerticalDeflection
Maximum plate voltage	275 V	PromotedValue
Maximum plate dissipation	7 W	PromotedValue
Maximum cathode current	50 mA	PromotedValue

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	925 ohm	PromotedValue
Transconductance	0.0065 A/V	PromotedValue
Amplification factor	6	PromotedValue



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

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	250 V	TVVerticalDeflection Inherited from explicitly referenced 6DR7.
Grid voltage	-3 V	TVVerticalDeflection Inherited from explicitly referenced 6DR7.
Plate current	3.4 mA	TVVerticalDeflection Inherited from explicitly referenced 6DR7.

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	4.5 pF	Inherited from explicitly referenced 6DR7.
Input capacitance	2.2 pF	Inherited from explicitly referenced 6DR7.
Output capacitance	0.3 pF	Inherited from explicitly referenced 6DR7.

1971 RCA HB3 BINDER 5 OF 7

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	TVVerticalDeflection Inherited from explicitly referenced 6DR7.
Grid voltage	-17.5 V	TVVerticalDeflection Inherited from explicitly referenced 6DR7.
Plate current	35 mA	TVVerticalDeflection Inherited from explicitly referenced 6DR7.

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	8.5 pF	Inherited from explicitly referenced 6DR7.
Input capacitance	5.5 pF	Inherited from explicitly referenced 6DR7.
Output capacitance	1 pF	Inherited from explicitly referenced 6DR7.



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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 Warm-up Time (Average) –	11 s	Other;PublishedValue1
Heater Warm-up Time (Average) –	11 s	Other;PublishedValue2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak value	200 V	Other;PublishedValue1
Peak value	200 V	Other;PublishedValue2
Peak value	200 V	Other;PublishedValue3
Average value	100 V	Other;PublishedValue1
Average value	100 V	Other;PublishedValue2
Average value	100 V	Other;PublishedValue3
DC Plate Voltage	330 V	MaximumRating;PublishedValue1
DC Plate Voltage	275 V	MaximumRating;PublishedValue2
Peak Positive-Pulse Plate Voltage* –	1500 V	MaximumRating
Peak Negative-Pulse Grid Voltage	400 V	MaximumRating;PublishedValue1
Peak Negative-Pulse Grid Voltage	250 V	MaximumRating;PublishedValue2
Peak Cathode Current	70 mA	MaximumRating;PublishedValue1
Peak Cathode Current	175 mA	MaximumRating;PublishedValue2
Average Cathode Current	20 mA	MaximumRating;PublishedValue1
Average Cathode Current	50 mA	MaximumRating;PublishedValue2
Plate Dissipation	1 W	MaximumRating;PublishedValue1
Plate Dissipation	7 W	MaximumRating;PublishedValue2
For grid-resistance-bias or cathode-bias operation	2.2 megohm	MaximumCircuitValue;PublishedValue1
For grid-resistance-bias or cathode-bias operation	2.2 megohm	MaximumCircuitValue;PublishedValue2
Maximum Plate Voltage	330 V	Section1
Maximum Plate Dissipation	1 W	Section1
Maximum Cathode Current	70 mA	Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate	4.5 pF	Capacitance;PublishedValue1
Grid to Plate	8.5 pF	Capacitance;PublishedValue2
Grid to Cathode and Heater	2.2 pF	Capacitance;PublishedValue1
Grid to Cathode and Heater	5.5 pF	Capacitance;PublishedValue2
Plate to Cathode and Heater	0.34 pF	Capacitance;PublishedValue1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate to Cathode and Heater	1 pF	Capacitance;PublishedValue2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	Characteristic;PublishedValue1
Plate Voltage	150 V	Characteristic;PublishedValue2
Grid Voltage	-3 V	Characteristic;PublishedValue1
Grid Voltage	-17.5 V	Characteristic;PublishedValue2
Plate Resistance (Approx.)	40000 ohm	Characteristic;PublishedValue1
Plate Resistance (Approx.)	925 ohm	Characteristic;PublishedValue2
Transconductance	1600 uS	Characteristic;PublishedValue1
Transconductance	6500 uS	Characteristic;PublishedValue2
Plate Current	1.4 mA	Characteristic;PublishedValue1
Plate Current	35 mA	Characteristic;PublishedValue2
Plate Current for grid voltage of –	24 V	Characteristic
Grid Voltage (Approx.) for plate current of	10 uA	Characteristic
Grid Voltage (Approx.) for plate current of	50 uA	Characteristic;PublishedValue1
Grid Voltage (Approx.) for plate current of	44 uA	Characteristic;PublishedValue2
PLATE	92 V	Characteristic;PublishedValue1
PLATE	99 V	Characteristic;PublishedValue2
PLATE	92 V	Characteristic;PublishedValue3
PLATE	99 V	Characteristic;PublishedValue4
Plate Resistance	40000 ohm	Section1
Transconductance	1600 uS	Section1
Amplification Factor	68	Section1

1975 RCA RC30

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	275 V	Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Dissipation	7 W	Section2
Maximum Cathode Current	175 mA	Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	925 ohm	Section2
Transconductance	6500 uS	Section2
Amplification Factor	6	Section2

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

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