

ELECTRONIC TUBE REFERENCE

6DE7

Power - TV Vertical Output electronic tube

CONSOLIDATED TECHNICAL DATA
2 SECTIONS
CONSTRUCTION
TRIODE-TRIODE

Dual triode intended for television vertical-deflection service, combining oscillator/driver and power-output functions where applicable. Manufacturer data emphasize vertical-sweep operation, pulse-voltage capability, and the stronger section's current and dissipation requirements.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9HF	BASE PINS	9
NOMINAL HEATER	6.3 V / 900 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	8750 Ω
TRANSCONDUCTANCE	0.002 S
AMPLIFICATION FACTOR	17.5
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	1.6 W
MAXIMUM CATHODE CURRENT	22 mA
<i>Published promoted values applied where applicable; additional ratings and operating data retained as parameters.</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	175 mA
<i>Second dissimilar triode section; published section-specific values should be interpreted with datasheet section headings.</i>	

The 6DE7 contains a medium-mu oscillator section and a low-mu higher-power amplifier section for television vertical deflection.



SOURCE OPERATING CONDITIONS

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1950 Sylvania

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

1950 SYLVANIA

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Negative Pulse Grid Voltage	400 V	Oscillator section

1950 SYLVANIA

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Positive Pulse Plate Voltage	1500 V	Amplifier section; absolute maximum
Peak Negative Pulse Grid Voltage	250 V	Amplifier section



SOURCE OPERATING CONDITIONS

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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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	150 V	Published operating/characteristic table
Grid Voltage	20 V	Published operating/characteristic table

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	55 mA	Published operating/characteristic table
Transconductance	6500 μ S	Published operating/characteristic table
Amplification Factor	6	Published operating/characteristic table
Plate Resistance	925 ohm	Published operating/characteristic table



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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	250 V	TVVerticalDeflection
Grid voltage	-11 V	TVVerticalDeflection
Plate current	5.5 mA	TVVerticalDeflection

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	4 pF	—
Input capacitance	2.2 pF	—
Output capacitance	0.52 pF	—

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	150 V	TVVerticalDeflection
Grid voltage	-17.5 V	TVVerticalDeflection
Plate current	35 mA	TVVerticalDeflection

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	8.5 pF	—
Input capacitance	5.5 pF	—
Output capacitance	1 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 4 of 7

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

1971 RCA HB3 BINDER 4 OF 7

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage (AC or DC) – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Voltage (AC or DC) – published value 2	0.6 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Current at heater volts = 6.3 – published value 1	6.3 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Current at heater volts = 6.3 – published value 2	0.9 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid to plate – published value 1	4	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid to plate – published value 2	8.5	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid to cathode and heater – published value 1	2.2	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid to cathode and heater – published value 2	5.5	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate to cathode and heater – published value 1	0.52	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate to cathode and heater – published value 2	1	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 1	250 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 2	60 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Voltage – published value 3	150 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid Voltage – published value 1	-11 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid Voltage – published value 2	0 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Grid Voltage – published value 3	-17.5 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Resistance (Approx) – published value 1	8750 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Resistance (Approx) – published value 2	925 ohm	Published datasheet value; multiple values represent separate source-table limits or conditions.
Transconductance – published value 1	2000	Published datasheet value; multiple values represent separate source-table limits or conditions.
Transconductance – published value 2	6500	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 1	5.5 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Plate Current – published value 2	80 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current – published value 3	35 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 -Plate of – published value 1	1	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 1 -Plate of – published value 2	6	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 2 -Grid of – published value 1	2	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 2 -Grid of – published value 2	7	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 3 -Grid of – published value 1	3	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 3 -Grid of – published value 2	8	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 4 -Heater – published value 1	4	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 4 -Heater – published value 2	9	Published datasheet value; multiple values represent separate source-table limits or conditions.
Pin 5 -Heater	5	Published datasheet value; multiple values represent separate source-table limits or conditions.

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
respect to cathode	200 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
respect to cathode	200 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
DC PLATE VOLTAGE	330 V	Published datasheet value; multiple values represent separate source-table limits or conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PEAK NEGATIVE-PULSE GRID VOLTAGE	400 V	Pulse
Peak	77 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
PLATE DISSIPATION	1.5 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
bias operation	2.2 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
DC PLATE VOLTAGE	275 V	Published datasheet value; multiple values represent separate source-table limits or conditions.
PEAK POSITIVE-PULSE PLATE VOLTAGE#	1500 V	Pulse
PEAK NEGATIVE-PULSE GRID VOLTAGE	250 V	Pulse
Peak	175 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.
PLATE DISSIPATION	7 mA	Published datasheet value; multiple values represent separate source-table limits or conditions.



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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Warm-up Time (Average) –	11 s	Characteristic;PublishedValue1
Heater Warm-up Time (Average) –	11 s	Characteristic;PublishedValue2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak value	200 V	Characteristic;PublishedValue1
Peak value	200 V	Characteristic;PublishedValue2
Peak value	200 V	Characteristic;PublishedValue3
Average value	100 V	Characteristic;PublishedValue1
Average value	100 V	Characteristic;PublishedValue2
Average value	100 V	Characteristic;PublishedValue3
Plate Voltage	250 V	Characteristic;PublishedValue1
Plate Voltage	150 V	Characteristic;PublishedValue2
Grid Voltage	-11 V	Characteristic;PublishedValue1
Grid Voltage	-17.5 V	Characteristic;PublishedValue2
Plate Resistance (Approx.)	8750 ohm	Characteristic;PublishedValue1
Plate Resistance (Approx.)	925 ohm	Characteristic;PublishedValue2
Transconductance	2000 uS	Characteristic;PublishedValue1
Transconductance	6500 uS	Characteristic;PublishedValue2
Plate Current	5.5 mA	Characteristic;PublishedValue1
Plate Current	35 mA	Characteristic;PublishedValue2
Plate Current for grid voltage of	24 V	Characteristic;PublishedValue1
Plate Current for grid voltage of	-20 V	Characteristic;PublishedValue2
– –	10 mA	Characteristic
Grid Voltage (Approx.) for plate current of	10 uA	Characteristic
Grid Voltage (Approx.) for plate current of	50 V	Characteristic

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate	4 pF	Capacitance;PublishedValue1
Grid to Plate	8.5 pF	Capacitance;PublishedValue2
Plate to Cathode and Heater	0.52 pF	Capacitance;PublishedValue1
Plate to Cathode and Heater	1 pF	Capacitance;PublishedValue2

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
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 "	175 mA	MaximumRating
Average Cathode Current	22 mA	MaximumRating;PublishedValue1
Average Cathode Current	60 mA	MaximumRating;PublishedValue2
Plate Dissipation	1.6 W	MaximumRating;PublishedValue1
Plate Dissipation	7 W	MaximumRating;PublishedValue2
For grid-resistor bias or cathode-bias operation	2.2 megohm	MaximumCircuitValue;PublishedValue1
For grid-resistor bias or cathode-bias operation	2.2 megohm	MaximumCircuitValue;PublishedValue2
PLATE	92 V	MaximumCircuitValue
Maximum Plate Voltage	330 V	Section1
Maximum Plate Dissipation	1.6 W	Section1
Maximum Cathode Current	22 mA	Section1

1975 RCA RC30

Section 2 · Triode

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

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification Factor	6	Section2