

ELECTRONIC TUBE REFERENCE

7AU7

Voltage - Dual Triode (similar) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Medium-mu twin triode, a heater variant of the 12AU7A family, suitable for Class-A amplification and television oscillator or deflection-related circuitry.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9A	BASE PINS	9
NOMINAL HEATER	7 V / 300 mA	PARALLEL HEATER	3.5 V / 600 mA
HEATING	Indirect	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9A - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – 2P	B	P – Plate (Anode)	CONNECTED
PIN2 – 2G1	B	G1 – Control Grid	CONNECTED
PIN3 – 2K	B	K – Cathode	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – 1P	A	P – Plate (Anode)	CONNECTED
PIN7 – 1G1	A	G1 – Control Grid	CONNECTED
PIN8 – 1K	A	K – Cathode	CONNECTED
PIN9 – HCT	–	HCT – Heater Center Tap	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	6250 Ω
TRANSCONDUCTANCE	0.0031 S
AMPLIFICATION FACTOR	19.5
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.75 W
MAXIMUM CATHODE CURRENT	22 mA
<i>Inherited from explicit parent 12AU7A; supplied 7AU7 sheet changes heater characteristics only.</i>	

SECTION2 Triode	
PLATE RESISTANCE	7700 Ω
TRANSCONDUCTANCE	0.0022 S
AMPLIFICATION FACTOR	17
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	2.75 W
MAXIMUM CATHODE CURRENT	22 mA
<i>Inherited from explicit parent 12AU7A; supplied 7AU7 sheet changes heater characteristics only.</i>	

Medium-mu twin triode used as phase inverter, push-pull amplifier, multivibrator, oscillator, and television deflection oscillator/amplifier.

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
Heater voltage	7 V	Nominal
Heater current	600 mA	Nominal
Plate voltage	330330 V	Typical operating conditions
Plate current	1.810.5 mA	Typical operating conditions

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	7 V	—
Heater Current	600 mA	—
Heater Voltage Series	7 V	—
Heater Current Series	600 mA	—
Heater Voltage Parallel	3.5 V	—
Heater Current Parallel	1.2 A	—
Grid To Plate Capacitance	1.9 pF	—
Input Capacitance	3 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Capacitance	0.5 pF	—
Plate Voltage	250 V	—
Grid Voltage	-8.5 V	—
Plate Current	10.5 mA	—
Plate Resistance	7700 ohm	—
Transconductance	2200 uS	—
Amplification Factor	17	—



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
Maximum_both_plate_dissipation	5.5 W	—
Maximum_heater_cathode_total	200 V	—
Peak_negative_pulse_grid_voltage	440 V	—
Peak_cathode_current	66 mA	—
Plate_voltage	250 V	Section1,Section2,ClassA
Heater_warmup_time	11 s	Section1,Section2,ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate_current	10.5 mA	Section1,Section2,ClassA
Amplification_factor	17	Section1,Section2,ClassA
Plate_resistance	7700 ohm	Section1,Section2,ClassA
Transconductance	2200 uS	Section1,Section2,ClassA

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	Section1,Section2
Grid-to-cathode capacitance	1.6 pF	Section1,Section2
Plate-to-cathode capacitance	0.5 pF	Section1,Section2



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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage series	12.6 V	SeriesHeater
Heater current series	150 mA	SeriesHeater
Heater voltage parallel	6.3 V	ParallelHeater
Heater current parallel	300 mA	ParallelHeater
Plate voltage	100 V	ClassA1;PublishedPoint1
Plate voltage	250 V	ClassA1;PublishedPoint2
Grid voltage	0 V	ClassA1;PublishedPoint1
Grid voltage	-8.5 V	ClassA1;PublishedPoint2
Amplification factor	19.5	ClassA1;PublishedPoint1
Amplification factor	17	ClassA1;PublishedPoint2
Plate resistance	6250 ohm	ClassA1;PublishedPoint1
Plate resistance	7700 ohm	ClassA1;PublishedPoint2
Transconductance	3100 μS	ClassA1;PublishedPoint1
Transconductance	2200 μS	ClassA1;PublishedPoint2
Plate current	11.8 mA	ClassA1;PublishedPoint1
Plate current	10.5 mA	ClassA1;PublishedPoint2

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	330 V	ClassA1
Maximum cathode current	22 mA	ClassA1
Maximum plate dissipation	2.75 W	ClassA1
Peak heater-cathode voltage	200 V	—
Peak negative-pulse grid voltage	660 V	HorizontalDeflectionOscillator
Peak cathode current	330 mA	HorizontalDeflectionOscillator
Peak negative-pulse grid voltage	440 V	VerticalDeflectionOscillator
Peak cathode current	66 mA	VerticalDeflectionOscillator
Peak positive-pulse plate voltage	1200 V	VerticalDeflectionAmplifier
Heater voltage nominal	7 V	—
Heater current nominal	300 mA	—
Heater voltage series	7 V	Series
Heater current series	300 mA	Series
Heater voltage parallel	3.5 V	Parallel
Heater current parallel	600 mA	Parallel

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	—
Grid-to-cathode-and-heater capacitance	1.6 pF	—
Plate-to-cathode-and-heater capacitance	0.5 pF	—

1971 RCA HB3 BINDER 5 OF 7

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage series	12.6 V	SeriesHeater
Heater current series	150 mA	SeriesHeater
Heater voltage parallel	6.3 V	ParallelHeater
Heater current parallel	300 mA	ParallelHeater

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	100 V	ClassA1;PublishedPoint1
Plate voltage	250 V	ClassA1;PublishedPoint2
Grid voltage	0 V	ClassA1;PublishedPoint1
Grid voltage	-8.5 V	ClassA1;PublishedPoint2
Amplification factor	19.5	ClassA1;PublishedPoint1
Amplification factor	17	ClassA1;PublishedPoint2
Plate resistance	6250 ohm	ClassA1;PublishedPoint1
Plate resistance	7700 ohm	ClassA1;PublishedPoint2
Transconductance	3100 μ S	ClassA1;PublishedPoint1
Transconductance	2200 μ S	ClassA1;PublishedPoint2
Plate current	11.8 mA	ClassA1;PublishedPoint1
Plate current	10.5 mA	ClassA1;PublishedPoint2

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	330 V	ClassA1
Maximum cathode current	22 mA	ClassA1
Maximum plate dissipation	2.75 W	ClassA1
Peak heater-cathode voltage	200 V	—
Peak negative-pulse grid voltage	660 V	HorizontalDeflectionOscillator
Peak cathode current	330 mA	HorizontalDeflectionOscillator
Peak negative-pulse grid voltage	440 V	VerticalDeflectionOscillator
Peak cathode current	66 mA	VerticalDeflectionOscillator
Peak positive-pulse plate voltage	1200 V	VerticalDeflectionAmplifier
Heater voltage nominal	7 V	—
Heater current nominal	300 mA	—
Heater voltage series	7 V	Series
Heater current series	300 mA	Series
Heater voltage parallel	3.5 V	Parallel
Heater current parallel	600 mA	Parallel

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	1.5 pF	—
Grid-to-cathode-and-heater capacitance	1.6 pF	—
Plate-to-cathode-and-heater capacitance	0.35 pF	—



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
Plate Supply Voltage 100	250 V	Published in approved ECC82 target datasheet entry; Section1
Cathode-Bias Resistor 270	200 Ω	Published in approved ECC82 target datasheet entry; Section1
Plate Resistance (Approx.) 15000	10900 Ω	Published in approved ECC82 target datasheet entry; Section1
Transconductance 4000	5500 μS	Published in approved ECC82 target datasheet entry; Section1
Grid Voltage (Approx.) for plate current of 10 /iA -5	12 V	Published in approved ECC82 target datasheet entry; Section1
Plate Current 3.7	10 mA	Published in approved ECC82 target datasheet entry; Section1
Series 7 9.4	12.6 V	Published in approved ECC82 target datasheet entry; Section1
Parallel 3.5 4.7	6.3 V	Published in approved ECC82 target datasheet entry; Section1
Series 0.3 0.225	150 mA	Published in approved ECC82 target datasheet entry; Section1
Parallel 0.6 0.45	300 mA	Published in approved ECC82 target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Warm-up Time (Parallel, Average) 11	11 seconds	Published in approved ECC82 target datasheet entry; Section1
Plate Voltage	330 V	Published in approved ECC82 target datasheet entry; Section1
Cathode Current	22 mA	Published in approved ECC82 target datasheet entry; Section1
Each Plate	2.75 W	Published in approved ECC82 target datasheet entry; Section1
Both Plates (Both units operating)	5.5 W	Published in approved ECC82 target datasheet entry; Section1
Plate Resistance (Approx.) 6250	7700 Ω	Published in approved ECC82 target datasheet entry; Section1
Transconductance 3100	2200 μS	Published in approved ECC82 target datasheet entry; Section1
For fixed-bias operation	0.25 MΩ	Published in approved ECC82 target datasheet entry; Section1
For cathode-bias operation	1 MΩ	Published in approved ECC82 target datasheet entry; Section1
DC Plate Voltage 330	330 V	Published in approved ECC82 target datasheet entry; Section1
Peak Negative-Pulse Grid Voltage 440	660 V	Published in approved ECC82 target datasheet entry; Section1
Peak Cathode Current 66	330 mA	Published in approved ECC82 target datasheet entry; Section1
Average Cathode Current 22	22 mA	Published in approved ECC82 target datasheet entry; Section1
Each Plate 2.75	2.75 W	Published in approved ECC82 target datasheet entry; Section1
Both Plates (Both units operating) 5.5	5.5 W	Published in approved ECC82 target datasheet entry; Section1
Grid-Circuit Resistance 2.2	2.2 MΩ	Published in approved ECC82 target datasheet entry; Section1
DC Plate Voltage	330 V	Published in approved ECC82 target datasheet entry; Section1
Peak Positive-Pulse Plate Voltage#	1200 V	Published in approved ECC82 target datasheet entry; Section1
Peak Negative-Pulse Grid Voltage	275 V	Published in approved ECC82 target datasheet entry; Section1
Peak Cathode Current	66 mA	Published in approved ECC82 target datasheet entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate 1.5	1.5 pF	Published in approved ECC82 target datasheet entry; Section1
Grid to Cathode and Heater 1.6	1.6 pF	Published in approved ECC82 target datasheet entry; Section1
Plate to Cathode and Heater 0.5	0.35 pF	Published in approved ECC82 target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current 11.8	10.5 mA	Published in approved ECC82 target datasheet entry; Section1

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